CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

REVISED

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, December 18, 2025**
Meeting Time: **10:30 AM**

1. Site Plan for JSR, LLC, Assessor's Map D, Lot 11-5, zoned IT, located at Venture Drive. (Proposal is to construct an approximately 10,080 s.f. building with four (4) contractor bays and office space with associated parking and stormwater management. (SITE-2025-0019)

PLAN SNAPSHOT REPORT SITE-2025-0019
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	12/01/2025
Work Class:	New Construction	**District:**	None	**Exp Date:**	02/04/2026
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Construction of a 10,080 SF building with 4 contractor bays and office space with associated parking & stormwater. Driveway taken from Venture Drive with building facing Quality Way. Project involves a lot line revision with Tax Map D, Lot 11-5 SND. A CUP for impact within 50' wetland buffer previously approved as P22-56/SITE-2022-0005.

Parcel:	D0011-005000	Main	**Address:** Venture Dr Dover, NH	Main	**Zone:** IT(Non-Residential - Innovative Technolo

Engineer
Kenneth Berry
Home: (603) 332-2863
Business: (603) 332-2863
Mobile: (603) 332-2863

Owner
JSR LLC
Business: (978) 979-2170

Wetlands Scientist
Deidra Benjamin
Home: (603) 332-2863

Landscape Architect
Eric Buck
Home: (603) 491-2322
Business: (603) 491-4322
Mobile: (603) 491-4322

Soil Scientist
John Hayes III
Home: (603) 205-2396
Business: (603) 205-2396
Mobile: (603) 205-2396

Applicant
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Applicant
JSR LLC
Business: (978) 979-2170

Surveyor
Kenneth Berry
Home: (603) 332-2863
Business: (603) 332-2863
Mobile: (603) 332-2863

Plan Custom Fields

Total2	10080	Total3	9717	Total	0
Total5	0	Total4	0	Total6	0
Total7	0	Total9	10080	Total8	10080
Street Classification Type	Municipal	Recording Number		Net Change in # Parking Spaces (+/-)	14
Water Service	Municipal	Sewer Service	Municipal	Deed Book	4980
Total Acres (GIS)	0.99	Deed Page	632	Total SQFT	43124.4
Deed Date	November 19, 2021	Proposed Property Use	Construction of a 10,080 SF building with 4 contractor bays and office space with associated parking & stormwater. Driveway taken from Venture Drive with building facing Quality Way. Project involves a lot line revision with Tax Map D, Lot 11-5 SND. A CUP for impact within 50' wetland buffer previously approved as P22-56/SITE-2022-0005.	Area of Parcel to be Developed (SQFT)	46275
Number of Parking Spaces Existing	0	Number of Parking Spaces Proposed	14	Number of Employees Total	12
Number of Employees in Max Shift	1	Distance to City Water	0	Distance to City Sewer	0
Type of Building to be Built	Steel Commercial building w/ brick/concrete facade features	Estimated Construction Value	750000.00	Refuse Removal	Private
Is there an existing Conservation Easement?	No	Existing Conservation Easement Details		Total of Impact Fees to be Assessed	0.00

PLAN SNAPSHOT REPORT (SITE-2025-0019)

TotalImpactFeeSDTOD	0.00	Sub Total Residential	0.00	TotalImpactFeeTHTOD	0.00
TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00
TotalImpactFeeADUTOD	0.00	TotalImpactFeeAONRTOD	0.00	TotalImpactFeeAR55TOD	0.00
TotalImpactFeeAR62TOD	0.00	TotalImpactFeeRIRCTOD	0.00	Sub Total Non-Residential	0.00
TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00
TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00		

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Chris_Berry_12/1/2025.jpg	12/01/2025 11:12	Berry, Chris		Uploaded via CSS
2025.12.18_PlanningTechnicalReviewCommittee.Agenda.pdf	12/04/2025 17:01	Blonigen, Rachel		TRC Agenda

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025014760	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2025014760	**$200.00**	**$0.00**
NOT INVOICED	Planning Impervious Paved Area Fee	$680.19	$0.00
	Planning Non-Res/Mixed Use – New Construction	$1,512.00	$0.00
	Total for Invoice NOT INVOICED	**$2,192.19**	**$0.00**
	Grand Total for Plan	**$2,392.19**	**$0.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	12/18/2025	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	12/04/2025	12/17/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	In Review	12/04/2025	01/01/2026	
City Engineer	Community Services - Engineering	Semprini, Jillian	In Review	12/04/2025	12/17/2025	
Planning	Planning	Bassegio, Erin	In Review	12/04/2025	01/01/2026	
Zoning Administrator	Planning	Crouser, Paul	In Review	12/04/2025	12/17/2025	
IS Building Official	Planning / Inspection Services	Maxfield, Jim	In Review	12/04/2025	12/17/2025	
Traffic	Police	Mitrushi, Alex	In Review	12/04/2025	12/17/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		12/03/2025 11:05	
Confirm application complete v.1	Generic Action		12/03/2025 11:05
Technical Review Committee Meeting Agenda v.1	Task	12/03/2025 11:05	12/04/2025 17:04
Land Use Plan Technical Review v.1	Receive Submittal	12/04/2025 0:00	

PLAN SNAPSHOT REPORT (SITE-2025-0019)

Technical Review Committee Meeting v.1	Hold Meeting	12/04/2025 17:03
Planning Board v.1		
Planning Board Agenda v.1	Task	
Invoice for Notices v.1	Task	
Send Notices v.1	Task	
Planner Creates Staff Recommendations v.1	Plan Activity	
Distribute Planning Board Materials v.1	Task	
Planning Board Hearing v.1	Hold Hearing	
Planning Board Decision v.1	Plan Activity	
NOD Sent to Applicant v.1	Create Report	
Final Plan v.1		
Land Use Plan Stamped and Signed v.1	Generic Action	
Recording v.1	Task	
Document Archival v.1	Generic Action	
Internal Notification of Plan Completion v.1	Generic Action	
Building Official Notifies Address v.1	Generic Action	
Pre-Con Meeting v.1	Hold Meeting	
Create/Link to Records v.1		
Create / Link to Permit - Building Major v.1	Create Sub Permit	
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit	

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: JSR, LLC Telephone # 1-978-979-2170

Address of Applicant: 17 Fosters Drive, Dover, NH 03820

E-Mail Address: rswhit10@gmail.com

Name of Property Owner (*if different from applicant*): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: Quality Way and Venture Drive

Assessor's Map # D Lot(s) # 11-5 & 11-5SND

Zoning District(s) IT Overlay District(s) Wetlands Protection

Size of Parcel: ~~43,517~~ 43,314 sq. ft. ~~1.00~~ 0.99 ac. Property Deed: Book 4980 Page: 632

Existing Use of Property: Vacant Land

SITE PLAN INFORMATION

Describe Proposed Use: 4 Contractor Bays / Office Space

Area of Parcel to be Developed: 10,080 SF sq. ft.

If Multi-family Residential: Number of Units N/A & Buildings Proposed N/A

If lodging: Number of Units N/A & number of Buildings N/A

Number of Parking Spaces: Existing N/A Proposed 15

Highway Access (check where applicable): X City Street ____ State Highway

Number of Employees Total: +/-10-12 In Maximum Shift: 1 Shift

Disposition of Parcel: Building Setbacks: Original TDR

Building Footprint 10,080 sq. ft. Front Yard 15' Where 50' Req. ft.

Total Building Area 10,080 sq. ft. Rear Yard +50' Where 50'Req. ft.

Paved Area 9,717 sq. ft. Side Yard: Right N/A ft. Left 40 ft.

City Water? X Yes ___ No How far is city water from the property? Quality Way

City Sewer? X Yes ___ No How far is city sewer from the property? Quality Way

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

□ Residential □ Residential (reduced size) ☒ Industrial | □ Purchase □ Land Preservation

Relief sought (Check All That Apply):

□ Lot Size □ Frontage ☒ Setback □ 30' Buffer □ Increase by _____ units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

The project was designed as an Industrial TDR when built. The subject parcel requires relief to the new underlying zoning requirements of 50' front setbacks and 50' side setbacks to be a viable commercial building lot.

BUILDING INFORMATION

Type of Building to be Built: Steel Commercial Building with brick/concrete facade features

Height of Building: 30' +/- Finished Floor Elevation: 172.00

Number of Seats (where applicable) N/A

Estimated value of construction: 750,000 Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: None

Justification for waiver request(s) (*attach additional sheets as needed*):

N/A

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kenneth A Berry, PE, LLS
Christopher R. Berry
Berry Surveying & Engineering

Address 335 Second Crown Point Rd, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 805 E-mail address: K.Berry@BerrySurveying.com
crberry@metrocast.net

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Kenneth A Berry, PE, LLS
Christopher R. Berry
Berry Surveying & Engineering

Address 335 Second Crown Point Rd, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 14243 E-mail address: K.Berry@BerrySurveying.com
crberry@metrocast.net

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) _____

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Terrain Planting & Design LLC
Eric Buck

Address 311 Kast Hill Road, Hopkinton NH 03229 Telephone #: 603-491-2322

Professional License #: 78 E-mail address: _____

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) John P. Hayes III

Address 7 Limestone Way, North Hampton NH 03862 Telephone #: 603-205-4396

Professional License #: 87 E-mail address: johnphayes@comcast.net

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone #_____

Wetlands Scientist
Deidra Benjamin, CWS 295
100 Leavitt Road
Pittsfield, NH 03263

Address Easement Holder: _____

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 12-1-25

Signature of Applicant (*if different from owner*): _____ Date: _____

Signature of Agent: _____ Date: 12-1-25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 12-1-25

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 12-1-25

Signature of Applicant (*if different from owner*): _____ Date: _____

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: _____ Date: 12-1-25

Signature of Applicant (*if different from owner*): _____ Date: _____

CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan Review Fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☒ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____

2. TOTAL IMPERVIOUS PAVED AREA (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE (A) = $_____

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $8.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $8.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $100.00 x # _____ applications = $_____

SUBTOTAL NOTICE FEE (B & C) = $_____

TOTAL INVOICE AMOUNT (A, B & C) = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The balance due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This site plan review checklist, as required by Chapter 153-6-B(2), should be completed by the applicant. It is intended to assist the applicant in the planning process of preparing a Site Plan Review application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

The first step would be to appear before the Technical Review Committee, to apply, eight (8) folded copies of the site plan with scale of not less than 1"=50' or 1" =100' for larger site plans, need to be provided, along with payment of plan review fees.

Two weeks prior to Planning Board, three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, including response to TRC comments, will be due. Abutter/Notice Fees will be invoiced and need to be paid 28 hours prior to the Planning Board meeting.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan Review Regulations for full details.

APPLICANT: JSR LLC File Number: _____

PROJECT TITLE: Quality Way and Venture Drive

PROPERTY LOCATION: Quality Way Tax Map: D Lot: 11-5 & 11-5SND

	Where/How Provided	Reviewed
1. Completed and signed Application form	x	
2. Plan Review Fees are provided	x	
3. Electronic copy of the engineered/surveyed plan layout	x	
4. Electronic copy of supplementary materials and application	x	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	x	
6. Waiver requests to the Site Plan Review Regulations, with written justification	x	
7. Conditional Use Permit applications	X	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	x	
9. A colored architectural plan showing all sides of buildings	x	
10. Folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	x	
Location map at appropriate scale	x	
Proposed Project name and title and Planning File #	x	
Date, north arrow and scale	x	
Names of all abutting property owners	x	
Name and address of owners and/or applicants	x	
Signature & stamp of NH licensed land surveyor and/or engineer	x	
Zoning District boundaries, including any special or overlay districts	x	
Location of Conservation District areas	x	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	x	
Location and widths of existing & proposed easements & right of ways	x	
Location and width of existing and proposed access/egress ways	x	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	x	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	x	
Existing and proposed topographic information at two foot intervals	x	
Existing and proposed buildings and structure locations	x	
Minimum building setbacks or build to lines on all lots	x	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	x	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	x	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	x	
Existing and proposed stormwater lines and facilities	x	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	x	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	X	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	x	
Existing natural features and/or significant vegetation on property	x	
Depict existing contours up to 100 ft. beyond project limits	x	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	x	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	x	
Location, material and size of existing and proposed pavement area	x	
Location of proposed fire lanes	x	
Specify finished floor elevations of buildings	x	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	x	
Depict all service, storage, loading bays and utility areas	x	
All applicable Dover Common Site Plan notes	x	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	x	
Stormwater Management System Operation and Maintenance Plan	x	
Letter to Serve from Public and Private Utilities	Will provide	
Erosion and Sedimentation Control Plan	x	
Landscape Operation and Maintenance Plan	x	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	N/A	
If wetland buffer, indicate placards locations, as applicable	x	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	x	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	Will provide as needed	

REVIEWED BY: _____ DATE_____ TRC DATE_____

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Property Owner Name: JSR, LLC

Signature(s) of Property Owner(s): _____ Date: 2025-12-01

Signature of Applicant: _____ Date: 2025-12-01
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity..

Property Owner Name: JSR, LLC

Signature(s) of Property Owner(s): _____ Date: 2025-12-01

Signature of Applicant: _____ Date: 2025-12-01
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com
crberry@metrocast.net
April 1, 2025

City of Dover Planning and Community Development
Attention: Mrs. Donna Benton, AICP, Director of Planning and Community Development
288 Central Ave
Dover, NH 03820

Re: Non-Residential Site Plan
Project Narrative
Quality Way/Venture Drive
Tax Map D, Lot 11-5 & 11-5SND
Owner & Applicant: JSR, LLC

Mrs. Benton,

Berry Surveying & Engineering (BS&E,) on behalf of JSR, LLC respectfully submits to Planning Department a proposed Commercial Contractor Storage / Office Building with a Non-Residential Site Plan application located on the corner of Quality Way and Venture Drive. Reference is made throughout the narrative to the previous approval, which has lapsed, obtained by BS&E for the subject parcel (P22-55/SITE-2022-0011).

Background

JSR LLC owns the parcels on the corner of Quality Way and Venture Drive commonly known as Tax Map D, Lots 11-5 and 11-5SND. The site is comprised of nearly 2 acres of land which is wooded. Wetlands were delineated at the rear of the site by Deidra Benjamin, CWS and are largely consistent with the wetlands delineated for the development of the industrial park undertaken by the City of Dover. On-site test pitting was conducted by John P. Hayes, CWS and a Site-Specific Soils Map was produced for the use in developing a hydraulic stormwater model for the project.

This project was one of the original Transfer of Development Rights (TDR) projects where development rights were transferred or "sent" from certain lots in the development for the purposes of development use in other areas of the City of Dover. Many owners in the development were sold the development lots and then the sending lots, which are denoted with the same tax map and lot number followed by "SND". Though the project now falls in the IT Zone, the project requests modification to the setbacks within the zone using the mechanism found in the TDR.

Municipal water, sewer, and gas stubs are provided to the project site. Utilities are in close proximity found on the lot line and the corner of Quality Way and Venture Drive. Both roads contain sidewalks, with curbing and closed stormwater systems. There are two stormwater outfalls onto the property and one further up on Quality Way that has minor impacts on the project site. There is an easement at the corner of the property for the outfalls which is proposed to be modified in the proposed condition, noted below.

Proposal

The proposal is to construct a 10,080 Sq.Ft., Contractor Storage Bay / Office facility which faces Quality Way. The building is designed with 4 units to be sold or rented to small contractors that need space to run businesses. The front of the building and each unit (Quality Way side of building) will be equipped with a small office area or reception as may be needed for each business. The rear section will be for storage of goods and materials as may be needed on project sites. The building is proposed to be steel construction, single slope roof with an ornamental layer of brick or cement style siding on the lower portion of the structure. Due to the site constraints parking is at the rear of the site with accessibility to the front being provided across the parking lot that is less than 5% to the doors. An accessible parking space with less than 2% slope in all directions is provided. Each bay has a 12' overhead door at the rear of the building along with an egress door. The rear of the site provides an at-grade entrance for overhead doors and pedestrian doors. Due to the project constraints and being part of the original TDR, the application requires relief to the front and side setbacks from the current zoning requirements in the IT Zone. The building is proposed to be 15' off the front lot line and 40' from the side lot line, where 50' is required.

In meeting with the Inspection Services Department, it was determined that a full circulation loop between Venture Drive & Quality Way is not required for the project. This is due to the close proximity of the proposed building to Venture Drive & Quality Way. As a result, the project driveway is 240 feet in length, ending just after the western side of the building. A block retaining wall is proposed at the site entrance to minimize environmental impact adjacent to the wetlands. Driveway side slopes of either 1.5:1 or 2:1 with guard rail is proposed to fit within the foot print of the previously approved wetland buffer impacts.

Stormflow from the project site, including the roof is captured through the use of three catch basins, and routed to an onsite rain garden for treatment and attenuation. The rain garden is designed to range between 0.5'-2.2' above seasonal high-water table to promote infiltration of the treated stormflow during periods the ground will accept the

volume. This recharge assumption was not included in the stormwater modeling of the site. The flow from the pond is attenuated in an outlet control structure and is designed to control the 100 Yr. 24Hr storm event without the use of the emergency spillway. Dover is a coastal community and therefore 15% was added to each of the assumed storm events. The rain garden is designed to treat the water quality event and discharges flow a small enough rate to adhere to the Alteration of Terrain Channel Flow Protection rules.

In the existing condition there are two outfalls for the stormwater infrastructure along Quality Way and Venture Drive that drain onto the subject parcels. Due to the placement of the driveway onto Venture Drive, the applicant is encroaching into the easement a bit and will need to work with the City of Dover on either a revised easement or a joint use agreement. Additionally, due to the vertical design of the driveway there was an opportunity to improve the stormwater that enters the site by detaining it further and providing additional pre-treatment through the construction of a small detention facility within the easement. Operation and Maintenance of this facility is now proposed to be the applicant's responsibility; however, the easement rights of the City of Dover should be maintained at the pipe outlets.

Due to the layout of the usable spaces outside of the 50' wetlands buffer, a lot line revision is proposed between 11-5 and 11-5SND to swap an equal amount of land between the two lots. Since the development of the industrial park, an additional environmental layer by way of the 50' buffer has been added to the site. In an effort to utilize space outside of the buffer to the extent practical and reduce buffer impacts a corner of the sending lot is proposed to be used for the stormwater practice. The project does require a conditional use permit for work within the buffer of 7,935 Sq. Ft. This includes the site access off of Venture Drive and construction of the project rain garden. This has been approved under the previous project design (P22-56/COND-2022-0005).

Lighting on site meets the regulations in the two statistical zones through the use of a pole mounted lamp at the rear of the site and 4 architectural wall packs over each door on the contractor bay. There is an existing cobra head lamp in Quality Way which provides ample lighting along the Quality Way side of the structure.

Unfortunately, due to site constraints there is no existing vegetation to remain in the developed areas. However, a landscape design has been prepared and provides for overstory design at the front and rear of the site as well as ornamental building plantings as well as plantings along the perimeter.

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As noted above the site proposes to use municipal utilities which are provided at the front boundary line. Both electric utility and gas utility is provided to the site already.

The project required the following approvals:

- TDR Setback relief
- Site Plan Approval
- Conditional Use Permit for Wetland Buffer (Approved P22-56/SITE-2022-0005)
- NHDES Sewer Discharge Permit (Approved D2023-301)
- US EPA Notice of Intent

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

Christopher R. Berry, LLS
Principal, President

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City of Dover, New Hampshire
MINOR LOT LINE ADJUSTMENT APPLICATION

[Revision Date: June 4, 2019]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT INFORMATION

Name of Applicant: JSR LLC Telephone # 1-978-979-2170

Address of Applicant: 17 Fosters Drive, Dover, NH 03820

FIRST PROPERTY OWNER AND PARCEL INFORMATION

Name of 1st Property Owner (*if different from applicant*): Same Telephone #_____

Address of 1st Property Owner: _____

Address of Property: Quality Way and Venture Drive

Assessor's Map # D Lot(s) # 11-5

Property Deed: Book 4980 Page: 63

Zoning District(s) IT Overlay District(s) Wetlands Protection

Size of Existing Parcel (sq. ft.): 43,314 Size of Proposed Parcel (sq. ft.): 43,314

SECOND PROPERTY OWNER AND PARCEL INFORMATION

Name of 2nd Property Owner (*if different from applicant*): Same Telephone #_____

Address of 2nd Property Owner: _____

Address of Property: _____

Assessor's Map # D Lot(s) # 11-5SND

Property Deed: Book 4980 Page: 63

Zoning District(s) IT Overlay District(s) Wetlands Protection

Size of Existing Parcel (sq. ft.): 43,517 Size of Proposed Parcel (sq. ft.): 43,517

THIRD PROPERTY OWNER AND PARCEL INFORMATION

Name of 3rd Property Owner (*if different from applicant*): _____ Telephone #_____

Address of 3rd Property Owner: _____

Address of Property: _____

Assessor's Map # _____ Lot(s) # _____

Property Deed: Book _____ Page: _____

Zoning District(s) _____ Overlay District(s) _____

Size of Existing Parcel (sq. ft.): _____ Size of Proposed Parcel (sq. ft.): _____

[Use additional application form if more than two lots are being adjusted]

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Berry Surveying & Engineering
Kenneth A. Berry, LLS
Christopher R. Berry PM

Address 335 Second Crown Point Road, Barrington, NH 03820 Telephone #: 603-332-2863
k.berry@berrysurveying.com

Professional License #: 805 E-mail address: crberry@metrocast.net

CONSERVATION EASEMENT HOLDER (s)

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Name of 2nd Easement Holder: _____ Telephone #_____

Address 2nd Easement Holder: _____

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of First Property Owner: _____ Date: 12-1-25

Signature of Second Property Owner: _____ Date: _____

Signature of Applicant (*if different from owner*): _____ Date: _____

Signature of Agent: _____ Date: 12-1-25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 12-1-25

CITY OF DOVER MINOR LOT LINE ADJUSTMENT LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
LOT LINE ADJUSTMENT SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, 3 weeks prior to the Planning Board meeting. Abutter/Notice Fees will be invoiced and are due 28 hours prior to Planning Board.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: JSR, LLC File Number: _____

PROPERTY LOCATION: Quality Way and Venture Drive Tax Map: D Lot: 11-5 and Lot: 11-5SND

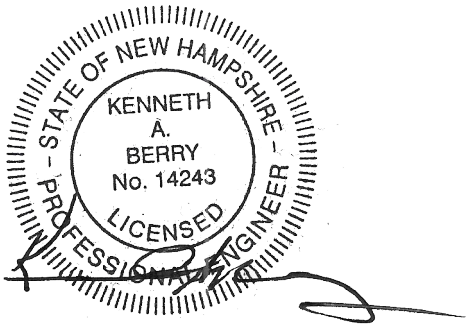
	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the surveyed plat layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Fifteen copies of LLA plan w/scale of not less than 1"=50' or 1"=100' for larger adjustments. Plans shall contain the following items as appropriate:	X	
Location map at appropriate scale	X	
Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners	X	
Signature & stamp of NH licensed land surveyor	X	
Zoning District boundaries, including any special or overlay districts	X	
Location of Conservation District areas	X	
Location, names and widths of existing and streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location, material and size of existing and proposed permanent monuments	X	
All applicable Dover Common Subdivision notes	X	

REVIEWED BY: _____ DATE_____

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com

April 1, 2025

City of Dover Planning Department
Attn: Director of Department of Planning and Community Development,
Mrs. Donna Benton, AICP
288 Central Ave.
Dover, NH 03820



RE: Traffic Impact Memo
JSR, LLC
Tax Map D, Lot 11-5
Venture Drive & Quality Way
Dover, NH 03820

Mrs. Benton,

Pursuant to the City of Dover Site Review Regulations, Berry Surveying & Engineering (BS&E), on behalf of the applicant, has prepared a Trip Generation memo for the construction of four (4) Specialty Trade Contractor units at the corner of Venture Drive & Quality Way. The point of analysis is the intersection of the proposed site driveway and Venture Drive

The following trip generations are calculated from the 11th Edition Trip Generation Manual using Code 180, Specialty Trade Contractor:

Specialty Trade Contractor Proposed Generation

Time Method	Weekday Total Dwelling Units			Time Method	AM Peak Adj. Street Dwelling Units			Time Method	PM Peak Adj. Street Dwelling Units		
1,000 SF GFA	10.08			1,000 SF GFA	10.08			1,000 SF GFA	10.08		
Avg. Rate	9.82			Avg. Rate	1.66			Avg. Rate	1.93		
Total Trips	99			Total Trips	17			Total Trips	19		
% Enter	50	Total Enter	49	% Enter	74	Total Enter	12	% Enter	32	Total Enter	6
% Exit	50	Total Exit	50	% Exit	26	Total Exit	5	% Exit	68	Total Exit	13

It can be seen from the proposed trip generation that a generation of 99 weekday total trips, seventeen (17) trips during the AM weekend peak hour, and nineteen (19) trips during the PM weekday peak hour.

As Venture Drive terminates in a cul-de-sac and Quality Way terminates in the same manner, it is assumed that all vehicle trips will enter left from Venture Drive northbound and will exit right to Venture Drive southbound. To the south, the intersection of

Venture Drive and Sixth Street is signalized. This signalized intersection provides a safe opportunity for protected right and left turns out of the Industrial Park. The Industrial Park provides walkability throughout, with a sidewalk on the western side of the roadway (in front of subject parcel). Coast Bus Route 33 (Weekday County Complex) provides a stop at the intersection of Venture Drive and Sixth Street. While this intersection / bus stop is over a half mile away, it provides the possibly of bus transportation if desired.

The following tables are a summary of the directional distribution.

Weekday AM Peak Hour Directional Distribution

Time	AM Peak Hour	# Trips	Turn Type	% Distribution
Total Trips	17			
Trips Enter from Venture Drive Northbound		12.6	Left	74.0
Trips Enter from Venture Drive Southbound		0.0	Right	0.0
Trips Exit to Venture Drive Northbound		0.0	Left	0.0
Trips Exit to Venture Drive Southbound		4.4	Right	26.0

Weekday PM Peak Hour Directional Distribution

Time	PM Peak Hour	# Trips	Turn Type	% Distribution
Total Trips	19			
Trips Enter from Venture Drive Northbound		6.1	Left	32.0
Trips Enter from Venture Drive Southbound		0.0	Right	0.0
Trips Exit to Venture Drive Northbound		0.0	Left	0.0
Trips Exit to Venture Drive Southbound		12.9	Right	68.0

- It is recommended that the existing and surrounding infrastructure will be sufficient to handle the vehicle trip generation during the weekday AM, PM peak hour and all other hours for Venture Drive and Quality Way.

Respectfully Submitted,

BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

Kenneth A. Berry, PE, LLS,
CPSWQ, CPESC, CESSWI
Principal, VP-Technical Operations

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www.BerrySurveying.Com

DRAINAGE ANALYSIS
&
EROSION AND SEDIMENT CONTROL PLAN

Prepared for:

JSR, LLC
17 Fosters Drive
DOVER, NH 03820

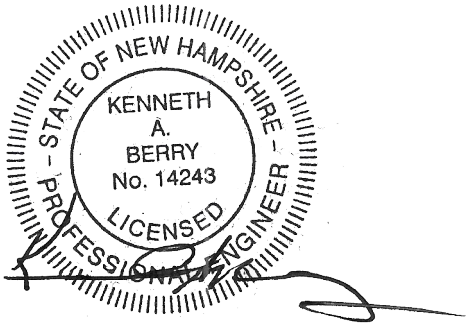
Land of

JSR, LLC
17 Fosters Drive
DOVER, NH 03820

QUALITY WAY, DOVER, NH
TAX MAP D, LOTS 11-5 & 11-5SND

Prepared by:

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825



Project Number:
DB 2021-134

April 1, 2025

Table of Contents

USGS Quadrangle Location Map

Design Method Objectives		Page 2
1.0	Existing Conditions Analysis	Page 2
2.0	Proposed Conditions Analysis	Page 4
3.0a	Stormwater Treatment	Page 5
3.0b	Full Comparative Analysis	Page 5
3.0c	Groundwater Recharge	Page 5
3.0d	Stormwater Volume	Page 6
3.0e	Other Improvements	Page 6
4.0	Erosion & Sediment Control, BMP's	Page 7
5.0	Demonstration of Compliance with Dover Chapter 153-14	Page 14
6.0	Conclusion	Page 29

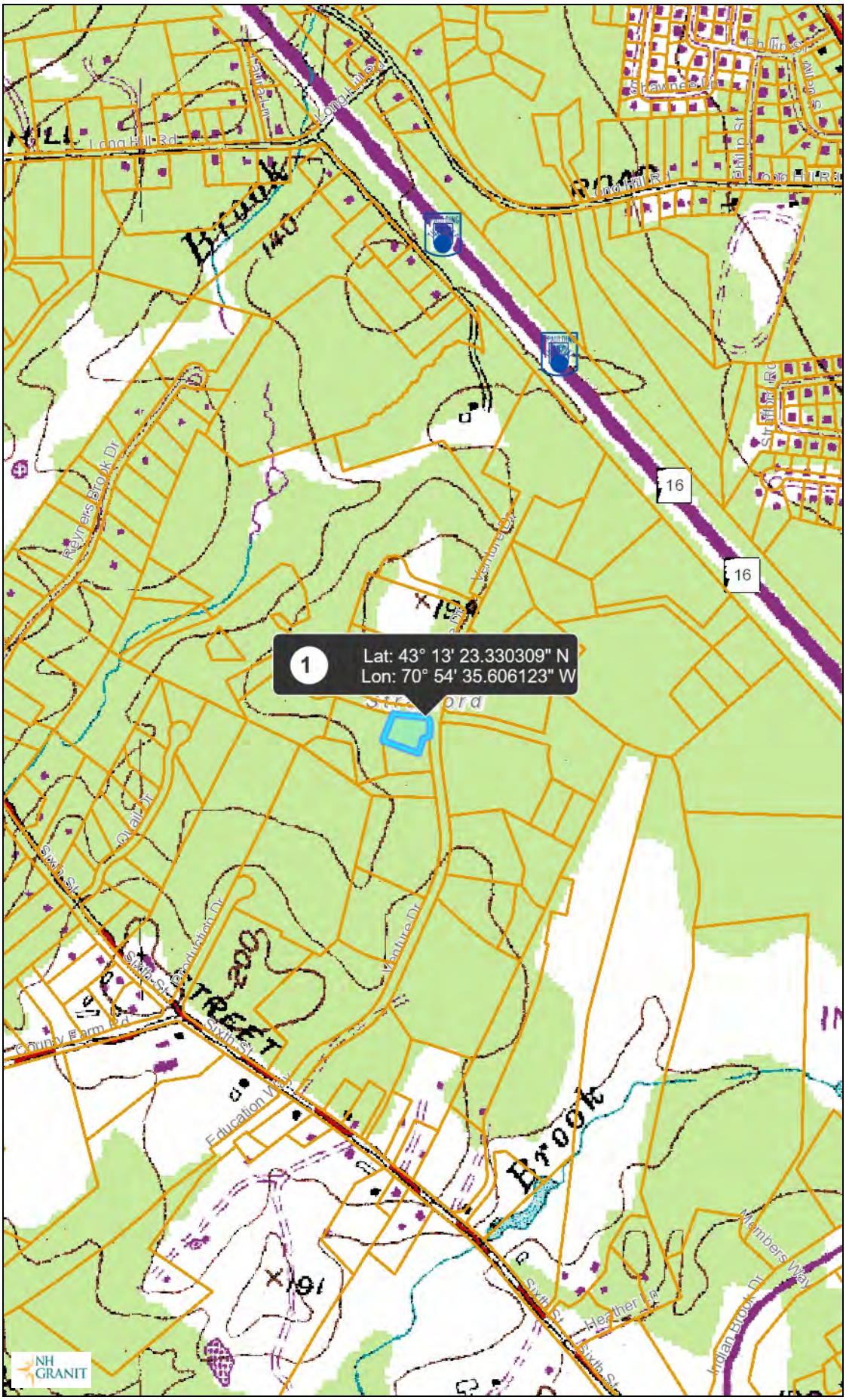
Appendix I - Existing Conditions Analysis
25 Yr-24 Hr Full Summary
2 Yr-24 Hr Node Listing
10 Yr-24 Hr Node Listing
25 Yr-24Hr Node Listing
50 Yr-24 Hr Node Listing
100 Yr-24 Hr Node Listing

Appendix II - Proposed Conditions Analysis
25 Yr-24 Hr Full Summary
2 Yr-24 Hr Node Listing
10 Yr-24 Hr Node Listing
25 Yr-24Hr Node Listing
50 Yr-24 Hr Node Listing
100 Yr-24 Hr Node Listing

Appendix III - Calculations, Charts, & Graphs
Extreme Precipitation Tables
Rip Rap Calculations
AoT Stormwater Treatment Spreadsheets
NCRS USDA Web-soil Map
Site Specific Soils Map & Report
Stormwater System Management: Inspection & Maintenance Manual & Plan
Watershed Report Card, 303(d) List, & ORW List
Ksat New Hampshire Manual
Filtrexx Specifications Sheets

Enclosed:	W-1 Sheet	Existing Conditions Watershed Plan	Sheet 1
	W-2 Sheet	Post Construction Watershed Plan	Sheet 2
	Stormwater BMP Plans		
	Erosion & Sediment Control Plan		

Map by NH GRANIT



Legend

- Parcels
  - Parcel Polygons
  - Attributes for Additional Lines
- State
- County
- City/Town

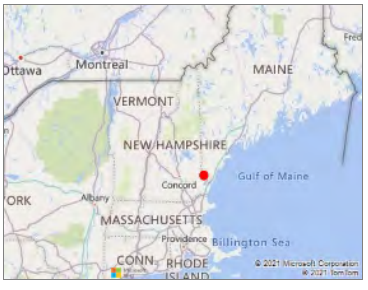
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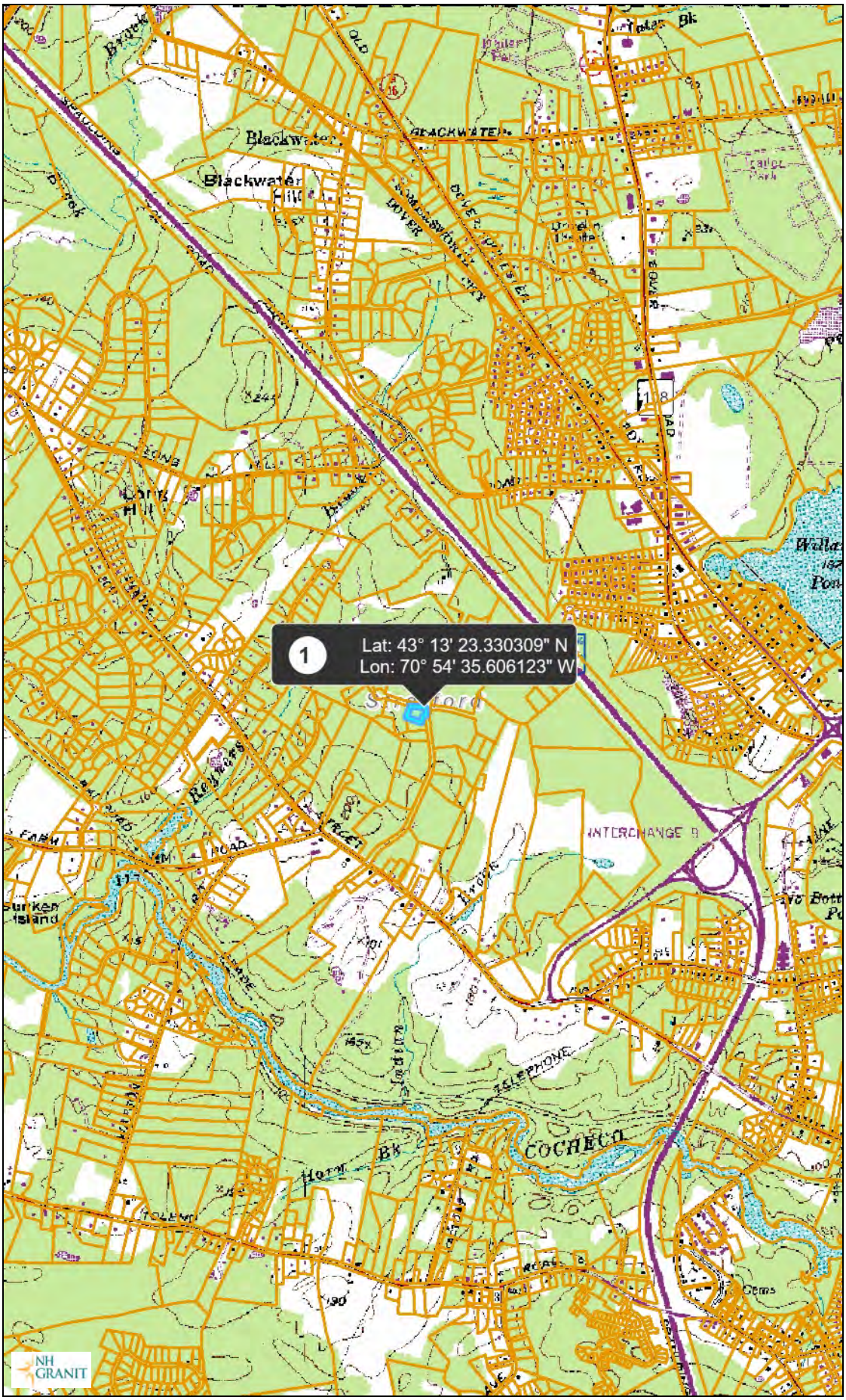
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Map Generated: 8/13/2021

Notes



Map by NH GRANIT



Legend

Parcels
- Parcel Polygons
- Attributes for Additional Lines

State

County

City/Town

Map Scale

1: 24,000

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Map Generated: 8/13/2021

Notes



DESIGN METHOD OBJECTIVES

JSR, LLC is proposing to develop a commercial building within the parcel at Quality Way & Venture Drive (Tax Map D, Lots 11-5 & 11-5SND.) The property is currently vacant and wooded.

Runoff from the parcel flows south to an onsite wetland (which continues offsite) as shallow concentrated flow.

An Existing and Proposed Conditions analysis was conducted for the purpose of estimating the peak rate of stormwater run-off from the property, Quality Way, and Venture Drive and to subsequently design adequate mitigation of drainage. There are two drainage discharge points which were identified in the existing analysis and duplicated in the proposed conditions analysis. Designing two watershed models we have compared the differences in these rates of peak run-off and surface water volume. Sheet W1, Existing Conditions Watershed Plan, outlines the characteristics of the site in its existing or pre-construction conditions. The second analysis displays the proposed (post-construction) conditions (See Sheet W2.) The analysis was conducted using data for; 2 Yr – 24 Hr (3.60”), 10 Yr – 24 Hr (5.42”), 25 Yr -24 Hr (6.85”), 50 Yr – 24 Hr (8.18”), and 100 YR-24 Hr (9.76”) storm events. Storm event analysis was accomplished using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment and rainfall quantities are based on the Extreme Precipitation Table for this location from the Northeast Regional Climate Center / Cornell University (http://precip.eas.cornell.edu). As Dover is considered a Seacoast Community by NHDES the Extreme Precipitation quantities have been adjusted to be 115% of the documented rainfalls for the 24-hour events.

1.0 Existing Conditions Analysis:

Reference: Sheet W1 - Existing Conditions Watershed Plan (Enclosed)
Existing Conditions Plan
Site Specific Soils Map

The existing property consists of vacant, wooded land. The surface water runoff is evaluated at the onsite wetland line in the southern portion of the parcel. Runoff from the parcel is within the Lower Cocheco River Watershed (NHRIV60030608-05) which has impaired waters of Mercury, NE Regional Mercury TMDL, December 20, 2008, TMDL #33883, Escherichia coli (NH Statewide Bacteria TMDL #39269), & pH. This is a Non-Outstanding Resource Water based on the NHDES evaluation. Bacteria is the only established New Hampshire TMDL with the exception of Mercury which is covered by the NE Regional Mercury TMDL #33883. The area of the property is 1.98 acres and the area of the analysis is 5.66 acres. The current lot is supported by municipal water and sewer.

The onsite soils are made up of Gs – Gloucester (very stony) & Hg – Hollis-Gloucester Complex (very rocky), which are classified as Hydrologic Soil Group (HSG) A, as well as Sc - Scitico, 500 – Udorthents, 600 – Endoaquents, Ea (State #238) – Elmridge

(very stony) which are classified as HSG C, and Be – Maybid which is classified as HSG D (None within the limit of drainage analysis) based on the Site Specific Soil Survey conducted by John P. Hayes III (CSS #87). The offsite soils are made up of GlB – Gloucester fine sandy loam & GsC – Gloucester very stony fine sandy loam, which are classified as HSG A, as well as EaB – Elmwood fine sandy loam which is classified as HSG B based on the USDA, NRCS Websoil.

Note: Elmridge is abbreviated as Ea (State No. 238) in the provided Site Specific Soils Survey. Due to Elmwood being abbreviated as Ea in the provided USDA, NRCS Websoils Report we have primarily used the state number of 238 to denote Elmridge on the Site Specific Soils Map used throughout this plan set.

Final Reach #100:

Reach #2

Subcatchments #1 & #2 make up the offsite land area surrounding and including a portion of Quality Way north and east of the parcel with runoff draining east of the property through a culvert (**Pond #1**) and a catch basin (**Pond #2**). Runoff flows through an overland reach (**Reach #2**) through **Subcatchment #12** to the delineated wetland line evaluated as **Final Reach #100**.

Reach #4

Subcatchments #3 & #4 make up the offsite land area surrounding and including a majority of the intersection of Quality Way and Venture Drive with runoff draining onto the property through a pair of catch basins (**Ponds #3 & #4**). Runoff flows through an overland reach (**Reach #4**) to a combined overland reach (**Reach #10**) through **Subcatchment #12** to the delineated wetland line evaluated as **Final Reach #100**.

Reach #6

Subcatchments #5 - #11 make up the offsite land area north of Quality Way including a portion of Venture Drive. Runoff drains onto the property through a series of catch basins (**Ponds #5-#6, #7-#9, #10, & #11**). Runoff flows through an overland reach (**Reach #6**) to a combined overland reach (**Reach #10**) through **Subcatchment #12** to the delineated wetland line evaluated as **Final Reach #100**.

Subcatchment #12 consists of the entirety of the analyzed area of the locus parcel as well as a portion of offsite land and is defined by the runoff that drains to the delineated wetland line on the southern side of the parcel (**Final Reach #100**).

Final Reach #200:

Final Reach #200 serves only as an overflow analysis reach during larger storm events when **Ponds #5 & #6** overflow and runoff may flow further down Venture Drive away from the locus parcel.

Subcatchment #13 consists of a section on Venture Drive and sidewalk in front of the area of proposed development. (**Final Reach #200**).

2.0 Proposed Conditions Analysis:

Reference: Sheet W2 - Proposed Conditions Watershed Plan (Enclosed)
Proposed Site Plan
Proposed Grading & Drainage Plan

The proposed conditions analysis consists of 18 subcatchments. Subcatchments #1 - #11, & #13 are largely offsite and therefore unchanged. Subcatchment #12 is altered as a result of the proposed construction. Subcatchments #20 - #24 are proposed subcatchments defined by the location of the proposed commercial building, paved area, and rain garden and divided by catch basins. The catch basins are modelled as ponds and routed to the proposed rain garden.

Final Reach #100:

Subcatchments #1 - #11, & #13 remain unchanged.

Subcatchment #12 is greatly decreased in size due to the construction of the proposed commercial building and the related parking area and Rain Garden (**Pond #101**). Runoff still flows directly to the delineated wetland line analyzed as **Final Reach #100**.

Subcatchment #20 consists of the land area between the proposed commercial building and Venture Drive limited by the proposed entrance off of Venture Drive. Runoff is collected in a detention pond (**Pond #102**) and outlets through a cross culvert under the entrance and to **Final Reach #100**.

Subcatchments #21, #22, #23 encompass the proposed commercial building and the related driveway and parking area including the entrance from Venture Drive. Runoff drains to catch basins with deep sumps (**Ponds #C01, #C02, #C03**) which outlet to through drain manhole **#1 (D01P),** discharging to **Rain Garden #101 (Pond #101)** and eventually to **Final Reach #100**.

Subcatchment #24 Consists solely of the land area contributing directly to Rain Garden #101 (**Pond #101).** This is mostly comprised of the pond footprint and collection/conveyance swale. **Rain Garden #101** outlets through an outlet structure

and emergency spillway utilizing two short overland reaches (**Reaches #101a & #101b**) to **Final Reach #100**.

Final Reach #200:

Subcatchments #5 & #6 remain unchanged

Subcatchment #13 Consists solely of the small driveway area that drains back to **Final Reach #200**. The crest of the driveway is located at the existing back of sidewalk location, to replicate the existing drainage condition.

3.0a STORMWATER TREATMENT

Stormwater treatment of the entirety of the newly developed area is provided via Rain Garden #101 (101P). Pre-treatment is provided via three separate deep sump catch basins. Using the data provided in the NHDES stormwater manual, Volume #2, the following removal percentages can be expected of the constructed rain garden: 90% TSS, 65% TP, & 65% of TN. As the BMP treats stormwater at a volume of greater than the Water Quality Volume (WQV), a better treatment percentage could likely be expected than what is provided.

3.0b FULL COMPARATIVE ANALYSIS

ANALYSIS COMPONENT: PEAK RATE DISCHARGE (Cubic Feet / Second)

		2 Yr	10 Yr	25 Yr	50 Yr	100 Yr
Final Reach #100	Existing	3.42	7.94	12.48	16.62	22.05
	Proposed	3.32	7.81	12.47	15.96	20.48
Final Reach #200	Existing	0.11	0.17	0.22	1.89	2.46
	Proposed	0.11	0.17	0.22	0.73	1.55

ANALYSIS COMPONENT: VOLUME (Acre Feet)

		2 Yr	10 Yr	25 Yr	50 Yr	100 Yr
Final Reach #100	Existing	0.373	0.833	1.269	1.703	2.263
	Proposed	0.453	0.970	1.447	1.923	2.513
Final Reach #200	Existing	0.009	0.014	0.018	0.034	0.043
	Proposed	0.009	0.014	0.018	0.025	0.042

3.0c GROUND WATER RECHARGE

The soils onsite are not conducive to infiltration practices, due to KSat values being less than allowable rates in the C horizon for the majority of the site outside of the proposed

building area. The onsite rain garden is specifically designed to be above seasonal high-water table to the base of the stone. On the high side of the design the stone base is 0.5' above seasonal high-water table while on the low side it is approximately 2.2' above.

3.0d STORMWATER VOLUME (Dover Chapter 153-14.B(4))

Per Dover Site Review Regulations, measures shall be taken to control the post development surface water volume so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five-, and fifty year, 24-hour storm events. In the event where infiltration/recharge is limited or not practical, the owner/applicant must demonstrate that the project will not contribute the flood or functional impairments to streets, adjacent properties, and downstream properties.

As demonstrated in the Comparative Analysis at Final Reach #100, there is a minor volumetric increase at the required storm events. Based on several factors of the property, this increase will not contribute the flood or functional impairments to streets, adjacent properties, and downstream properties. The site, as shown on the Site-Specific Soils Map by John P Hayes III, CSS, CWS, the site soils outside of the limit of the building construction consist of Elmridge, HSG C. Determining an Infiltration Rate in accordance with Env-Wq 1508.02, the Ksat NH manual shows an Infiltration Rate in the C horizon of 0.0 in/hour. Utilizing Alteration of Terrain Standards, ground water recharge is not practical on the project site outside of the limit of building construction.

The project is compliant with the Channel Protection Requirements of Env-Wq 1507.05(b)(1)(a-b). The 2-year, 24 hour post-development peak flow rate generated from the proposed disturbance is equal or less than the 2-year, 24-hour pre-development peak flow rate and: a.) The 2 year, 24-hour post-development storm volume, directed to a channel, downstream receiving water, or wetland has not increased over the pre-development volume by more than 0.1 acre-feet; b.) The 2-year, 24-hour post-development peak flow rate directed to a channel, downstream receiving water, or wetland is less than 2 cfs. Based upon these factors, in addition to the extensive downstream receiving wetland complex, the applicant feels this demonstration is compliant to satisfy the requirements of Dover Chapter 153-14.B(4).

3.0e Other Improvements

The design captures two, point source discharges from Quality Way and Venture Drive which have historically discharged to a swale and then directly to a wetland system (Pond 4P & 6P). The flow from these two outfalls is now captured, and attenuated in a detention pond. This provides a level a pre-treatment before discharge to the wetland that does not currently exist.

4.0 EROSION & SEDIMENT CONTROL PLANS BEST MANAGEMENT PRACTICES (BMP's)

Reference: Proposed Site Plan and Grading Plan
Erosion & Sediment Control Plan
Erosion & Sediment Control Details

The proposed site development is protected from erosion and the abutting properties are protected from sediment by the use of Best Management Practices as outlined in the New Hampshire Stormwater Manual, Volume 2, Post-Construction Best Management Practices Selection & Design (December 2008, NHDES & US EPA); and City of Dover Chapter 153-14 A, Stormwater Management, Erosion Control, and Flood Hazards. **Any area disturbed by construction will be re-stabilized within 14 calendar days and abutting properties will not be adversely affected by this development. All disturbed soils within 100 feet of surface waters or wetlands will be temporarily or permanently stabilized within 7 calendar days. Erosion and sediment control measures shall be installed prior to any soil land disturbance and must be reviewed and approved by the City of Dover Community Services Department. All swales and drainage structures will be constructed and stabilized prior to having run-off directed to them.** Reference is also made to the Stormwater System Operation Inspection & Maintenance Manual which has been written specifically for this project and available to the owner.

As this proposed site redevelopment will disturb less than one acre of land, a Notice of Intent does not need to be submitted to the US EPA. This project will not be covered by the Construction General Permit. As this project proposes less than 100,000 square feet of impact it does not require an issued permit by NHDES AoT, however construction is governed by a General Permit by Rule under NH RSA 485-A:17. Either a Stormwater Pollution Prevention Plan (SWPPP) or a Stormwater Management Plan (SWMP) as required by the City of Dover will be required. In either case, the requirements of Chapter 153-14 A will be included in the plan.

Perimeter Control (Silt Fence / Silt Soxx / Erosion Control Mix Berm)

The plan set demonstrates the location of perimeter sediment control. The Erosion and Sediment Control Details, Sheet E-101, has the specifications for installation and maintenance of the silt fence, Filtrexx mulch filled Silt Soxx (or approved equal), and Erosion Control Mix Berm. There are locations on the site, for example bio-media rain garden protection, where Silt Soxx protection is specified.

Detention Ponds

Description: Detention Ponds are also constructed ponds with the purpose of detaining runoff but not for infiltration purposes. The pond is equipped with an outlet structure and stage-discharge orifice system. Construction specifications are included in the plan

set and New Hampshire Stormwater Manual, Volume 2, Section 4-6, Conveyance Practices, 2. Detention Basins.

Maintenance Considerations:
Detention Ponds should be inspected at least twice annually and following any rainfall event exceeding 2.5 inches in a twenty-four hour period. Maintenance rehabilitation will be conducted as warranted by each inspection. Trash and debris will be removed at each inspection.

Any pilot channel within the detention pond and the sump in front of the primary discharge need to be maintained and kept clear of vegetated material.

Also on an annual basis the vegetation should be inspected to ensure healthy condition. Invasive species need to be removed along with dead or diseased vegetation.

Bio-Retention System (Rain-Garden)

Description: A bioretention system (sometimes referred to as a "rain garden") is a type of filtration BMP designed to collect and filter moderate amounts of stormwater runoff using conditioned planting soil beds, gravel beds and vegetation within shallow depressions. The bioretention system may be designed with an underdrain, to collect treated water and convey it to discharge, or it may be designed to infiltrate the treated water directly to the subsoil. Bioretention cells are capable of reducing sediment, nutrients, oil and grease, and trace metals. Bioretention systems should be sited in close proximity to the origin of the stormwater runoff to be treated. The major difference between bioretention systems and other filtration systems is the use of vegetation. A typical surface sand filter is designed to be maintained with no vegetation, whereas a bioretention cell is planted with a variety of shrubs and perennials whose roots assist with pollutant uptake. The use of vegetation allows these systems to blend in with other landscaping features. See SWM Volume 2, 4-3.4c, Treatment Practices, Bio-Retention System, page 110.

Construction Considerations: After the stone and bio-media has been installed, Filtrexx Silt Soxx or approved equal, will be installed at the toe of slope intersection between the berm and bio-media and will remain until the slopes of the berm are stable.

Maintenance Considerations: Systems should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection. Pretreatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually. Trash and debris should be removed at each inspection. At least once annually, system should be inspected for drawdown time. If bioretention system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore filtration function or infiltration function (as applicable), including but not limited to removal of accumulated sediments or

reconstruction of the filter media. Vegetation should be inspected at least annually, and maintained in healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species. The rain garden is equipped with an underdrain and end cap assembly which will need to be routinely inspected for obstructions.

Vegetated Stabilization

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutter's property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification and on Sheet E-102 using seeding mixture C, as follows:

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

Conservation Mix

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.
Virginia Wild Rye	Native	FACW-
Little Bluestem	Native	FACU
Big Bluestem	Native	FAC
Red Fescue	Native	FACU
Switch Grass	Native	FAC
Partridge Pea	Native	FACU
Showy Tick Trefoil	Native	FAC
Butterfly Milkweed	Native	NI
Beggar Ticks	Native	FACW
Purple Joe Pye Weed	Native	FAC
Black Eyed Susan	Native	FACU-
Total	**25**	**0.57**

Conservation Mix will used to stabilize all 2:1 slopes and all land area disturbed within the wetland buffer. (If applicable).

Stabilized Construction Entrance

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be 3" coarse aggregate, and the pad itself constructed to a minimum length

of 75' for the full width of the access road. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E-101- Erosion & Sediment Control Detail Plan. (If applicable).

Environmental Dust Control

Dust will be controlled on the site by the use of multiple Best Management Practices. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water and calcium chloride can be applied. Calcium chloride will be applied at a rate that will keep the surface moist but not cause pollution.

Drainage Swales / Stormwater Conveyance Channels

Drainage swales will be stabilized with vegetation for long term cover as outlined below, and on Sheet E-102 using seed mixture C. As a general rule, velocities in the swale should not exceed 3.0 feet per second for a vegetated swale although velocities as high as 4.5 FPS are allowed under certain soil conditions (If applicable).

Outlet Protection

Description: Outlet protection is typically provided at stormwater discharge conduits from structural best management practices to reduce the velocity of concentrated stormwater flows to prevent scour and minimize the potential for downstream erosion. Outlet protection is also provided where conduits discharge runoff into an in-ground stormwater management practice (e.g., pond or swale) to prevent scour where flow enters the BMP. See SWM Volume 2, 4-6.6 Conveyance Practices, Outlet Protection, page 172.

Level Spreader

Description: A level spreader is an outlet structure constructed at zero percent grade across a slope used to convert concentrated flow to "sheet flow." It disperses or "spreads" flow thinly over a receiving area, usually consisting of undisturbed, vegetated ground. The conversion of concentrated flow to shallow, sheet flow allows runoff to be discharged at non-erosive velocities onto natural ground. To stabilize the outlet, a stone berm is provided to dissipate flow energy, and help disperse flows along the length of the outlet. Level lips are not designed to remove pollutants from stormwater; however, some suspended sediment and associated phosphorous, nitrogen, metals and hydrocarbons will settle out of the runoff through settlement, filtration, infiltration, absorption, decomposition and volatilization. See SWM Volume 2, 4-6.6 Conveyance Practices, Stone Berm Level Spreader, page 162.

Maintenance Considerations: Inspect at least once annually for accumulation of sediment and debris and for signs of erosion within approach channel, spreader channel or down-slope of the spreader. Remove debris whenever observed during inspection.

Remove sediment when accumulation exceeds 25% of spreader channel depth. Mow as required by landscaping design. At a minimum, mow annually to control woody vegetation within the spreader. Snow should not be stored within or down-slope of the level spreader or its approach channel. Repair any erosion and re-grade or replace stone berm material, as warranted by inspection. Reconstruct the spreader if down-slope channelization indicates that the spreader is not level or that discharge has become concentrated, and corrections cannot be made through minor re-grading.

Rolled Erosion Control Blanket

Description: Rolled Erosion Control Blankets, such as North American Green BioNet series (or equal), consist of interlocking fiber mesh which is bio-degradable, used to stabilize sloping earth while vegetation is being established. The product comes in rolls that are laid out over the earth, normally over-lapped, and secured to the soil by the use of anchors or staples. The RECB may be anchored in the earth at the top of the slope to prevent wash-out. Construction specifications are included in the plan set and New Hampshire Stormwater Manual, Volume 3, 4-1 Erosion Control Practices, Temporary Erosion Control Blanket. See the chart on E-102 for compatible products with given slopes.

Construction Considerations: It is recommended that the blanket be installed in the same direction as the water flow or perpendicular to the slope. The manufacturer will recommend the amount of over-lap from one row to the next and on longer slopes between sections. Care must be taken that the RECB is laid directly on the earth / topsoil and that any existing vegetation not cause tenting as this will cause an issue with the blanket not staying in place. The staples or stakes are to be placed according to the manufacturer based on the slope of the receiving soil and forces that may be encountered. Care must be taken to utilize the correct product as specified. The choice of product are all different and in most cases are not interchangeable. NHDES or NH F&G may specify that some RECBs not be used in some applications.

Maintenance Considerations: RECBs will be inspected during the regular inspection schedule and any construction corrections made if the blanket is compromised.

Stockpiled Sediment or Soil

Stockpiled materials including topsoil, excavated materials, borrow materials imported onto the site, construction aggregates, and sediment removed from temporary sediment traps will be located in designated areas at least 50 feet away form concentrated flows. All stockpiles will have erosion protection in the form of silt fence and diversion swales will be applied to protect the material and surrounding areas. Inactive stockpiles will be seeded for temporary stabilization. Erosion control measures will be inspected in accordance with the schedule for all other activities on site.

At a minimum, you must comply with following (EPA CGP 2022) "Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any

stormwater conveyance (unless connected to a sediment basin, sediment trap, or similar effective control,) storm drain inlet, or surface water."

Construction Sequence

1.) Cut and remove trees in construction area only as required, relocate any project T.B.M.

2.) Construct and/or install temporary and permanent sediment erosion and detention control facilities as specified. Erosion and sediment control measures shall be installed prior to any soil land disturbance and must be reviewed and approved by the community services department.

3.) Erosion, sediment and detention control facility shall be installed & stabilized prior to directing runoff to them. Temporary diversions may be required. Post construction storm water management practices must be initiated and stabilized early in the process. Runoff must be directed to temporary practices until stormwater BMPs are stabilized.

4.) Clear, cut and dispose of debris in approved facility

5.) Construct temporary culverts as required, or directed

6.) Construct roadways for access to desired construction areas. All roads shall be stabilized immediately.

7.) Install pipe and construction associated appurtenances as required or directed. Install stormwater BMPs. All disturbed areas shall stabilized immediately after grading.

8.) Start building construction.

9.) Begin permanent and temporary seeding and mulching. All cut and fill slopes and disturbed areas shall be seeded or mulched as required, or directed. No area is allowed to be disturbed for a length of time that exceeds 45 days before being stabilized. Daily, or as required. All roadways and parking areas shall be stabilized within 72 hours of achieving finished grades. All cut and fill slopes shall be stabilized within 72 hours of achieving finished grades. Limit the length of exposure of unstabilized soil to 45 days or less.

10.) Construct temporary berms, drains ditches, silt fences, sediment traps, etc. Mulch and seed as required.

11.) Inspect and maintain all erosion and sediment control measures during construction. All SWPPP inspections must be conducted by a qualified professional such as a professional engineer (PE), a certified professional in erosion and sediment control (CPESC), a certified erosion sediment and storm water inspector (CESSWI), or a certified professional in storm water quality (CPSWQ). Inspection reports shall be

submitted to the community services department. Erosion and sediment control practices are to be inspected weekly and after 0.5" of rainfall.

12.) Complete permanent seeding and landscaping.

13.) Remove temporary erosion control measures after seeding areas have established themselves and site improvements are complete.

14.) Smooth and revegetate all disturbed areas.

15.) Finish paving all roadways.

Temporary Erosion Control Measures

1. The smallest practical area of land shall be exposed at any one time.

2. Erosion, sediment and detention measures shall be installed as shown on the plans and at locations as required, directed by the engineer.
3. All disturbed areas shall be returned to original grades and elevations. Disturbed areas shall be loamed with a minimum of 4" of loam and seeded with not less than one pound of seed per 50 square yards of area. (see seed specifications this sheet)

4. All disturbed areas will be restabilized within 45 days. At any one time, no more than 5 acres, (217,800 Sq. Ft.) Will be disturbed.

5. Silt fences and perimeter barriers shall be inspected periodically and after every rain during the life of the project. All damaged areas shall be repaired, sediment deposits shall periodically be removed and disposed of.

6. After all disturbed areas have been stabilized, the temporary erosion and sediment control measures are to be removed and the area disturbed by the removal smoothed and re-vegetated.

7. Per the EPA CGP requirements there will be reports of the erosion control inspections IAW SWPPP prepared by BS&E. All erosion controls shall be inspected weekly and within 24 hours after 0.25" or greater rain event.

8. Ditches, swales, and basins shall be stabilized prior to directing runoff to them.

9. Do not traffic exposed soil surfaces with construction equipment. If feasible, perform excavations with equipment positioned outside the limits of the infiltration system.

10. Roadways, driveways and cut and fill slopes must be stabilized within 72 hours of achieving final grade.

11. Stabilization means:

    11.1. A minimum of 85% of vegetative cover has been established.

    11.2. A minimum of 3 inches of non-erosive material such as stone or rip rap has been installed, or

    11.3. Erosion control blankets have been installed.

12. This project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and chapter AGR 3800 relative to invasive species.

13. The NHDES stormwater manual, in three volumes, dated December 2008, is a part of this plan set and the more restrictive will govern. (NH SWM)

Inspection and Maintenance Schedule

Fencing (if used) will be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass. Depending on SWPPP criteria, all controls will be inspected either once every 7 days and after storm events. Inspection reports must be submitted to City of Dover Engineering Department. See also Stormwater System Management: Inspection & Maintenance Manual published separately also by Berry Surveying & Engineering. See also Storm Water Pollution Prevention Plan (SWPPP) developed in accordance with EPA NPDES requirements & the City of Dover Stormwater regulations. Stabilization is required within 14 calendar days IAW Chapter 153-14, Site Development Criteria.

Corrective Action measures will be made in accordance with SWPPP requirements and records maintained on site by the Contractor.

5.0 Demonstration of Compliance with Dover Chapter 153-14

The following list of standards from chapter 153-14 are shown to demonstrate compliance with Dover stormwater regulations, starting with section 3: Design Standards. Our demonstration of compliance is *italicized* after each standard:

(3) Design standards.

(a) Minimum protections and management standards.

[1] Where applicable, all development must comply with the EPA Phase II Stormwater Rules and the City's MS4 permit, as amended.

Acknowledgement of project compliance with the EPA Phase II stormwater rules is shown in E&SC Notes, note #9. As the impact of the

proposal is greater than one acre, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and a Notice of Intent (NOI) submitted to the EPA.

[2] Existing surface waters, including ponds, rivers, perennial and intermittent streams (natural or channelized), and wetlands (including vernal pools), shall be protected by the minimum buffer setback as specified in Chapter **170**, Zoning, § 170-27.1. Stormwater and erosion and sediment control best management practices (BMPs) shall be located outside the specified buffer zone unless otherwise approved by the Planning Board.

Please find Grading & Drainage/Watershed Plans showing stormwater BMPs locations. Conditional Use Permit approval was previously received for disturbance within the 50′ wetland buffer.

[3] Low-impact development (LID) site planning and design strategies shall be used to the most extent practicable (MEP) in order to reduce the generation of the stormwater runoff volume for both new and redevelopment projects. An owner/applicant must document why LID strategies are not appropriate if not used to manage stormwater.

Please find rain garden design. Reference is made to the US EPA Low Impact Development (LID) and green infrastructure resources.

[4] All proposed stormwater practices and measures shall be installed and maintained in accordance with manufacturers' specifications and performance specifications outlined in the New Hampshire Stormwater Management Manual Volume 2 (December 2008 or current revision) a copy of which can be found on the NHDES website.

Please find Inspection & Maintenance Manual included in the drainage binder. The NH Stormwater Manuals are referenced in the I & M Manual in the Introduction on Page 2.

[5] All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials shall meet the regulations of the NHDES, including but not limited to those involving underground storage tanks, aboveground storage tanks, hazardous waste and best management practices for groundwater protection (Part Env-Wq 401).

Please find note shown in E&SC Notes, note #8. Prior to construction, a stormwater pollution prevention plan will be developed in accordance with US EPA CGP 2022.

[6] Salt and other deicing materials shall be stored under cover or located such that no direct discharges to receiving waters are possible. Snow storage

areas shall be located such that no direct discharges to receiving waters are possible. See the NHDES guidance fact sheet on road salt and snow disposal.

Please find the topic Snow Storage Areas & Winter Maintenance within the Inspection & Maintenance Manual included in the drainage binder.

[7] The use of sodium-chloride-based materials for winter maintenance shall be the minimum necessary for safety. The use of sodium-chloride-based materials is discouraged within the groundwater protection districts.

Please find the topic Snow Storage Areas & Winter Maintenance within the Inspection & Maintenance Manual included in the drainage binder.

[8] Impervious surfaces for parking areas and roads shall be minimized to the extent possible.

Impervious surfaces for parking surfaces and roads are minimized to the extent practical, providing pavement only where required for the number of project parking spaces and vehicle movement.

[9] Stormwater runoff from new impervious surfaces shall be directed to a best management practice for flow mitigation, treatment and/or infiltration.

Stormwater runoff is conveyed a series of deep sump catch basins and rain garden for mitigation and treatment.

(b) Stormwater management for new development.

[1] Runoff of impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus. Removal rates shall be determined using approved manufacturer's pollutant removal efficiency analysis or the pollutant removal efficiencies outlined in the New Hampshire Stormwater Management Manual Volume 1, Appendix E (December 2008 or current revision), a copy of which is available from the NHDES website.

Bioretention System:

- *Total Suspended Solids (TSS) reduction of 90%*
- *Total Nitrogen (TN) reduction of 60%*
- *Total Phosphorous (TP) reduction of 65%*

[2] Rainfall amount shall be based on current extreme precipitation estimates obtained from the Northeast Regional Climate Center.

Extreme Precipitation Tables are included in the drainage binder and have been used for analysis.

[3] Measures shall be taken to control the post-development peak rate runoff so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events.

Please find comparative analysis, Section 3.0b of this document, for this demonstration at all final reaches.

[4] Measures shall be taken to control the post-development surface water runoff volume so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events. For sites where infiltration/recharge is limited or not practicable, the owner/applicant must demonstrate that the project will not cause or contribute to flooding or functional impairments to streets, adjacent properties, and downstream properties.

Please find comparative analysis, Section 3.0d of this document, for this discussion of stormwater volumes.

[5] Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14.

Infiltration is not proposed on site due to the restrictive "B" & "C" horizons in the soils outside of the proposed building area, as defined by KSat NH.

[6] Stormwater conveyance practices shall be sized appropriately to convey the ten-year, twenty-four-hour storm event without overtopping or causing flooding on the property.

All Practices have been sized within these parameters. Rain Garden #101 provides 1.78' of freeboard and Detention Pond #102 provides 1.51' at the 10YR-24HR event.

[7] For large projects adding greater than or equal to 10 acres of impervious cover, or projects located in known areas of flooding concern, or specifically within areas with a 1% chance of being inundated by water in any given year, the owner/applicant shall submit a supplementary report that describes how the project will not increase the future flooding potential and complies with the AoT requirements pertaining to floodplain impacts as described in Section Env-Wq 1503.09, regardless of whether an AoT permit is required.

This standard is not applicable for this project.

[8] The design of the stormwater management systems shall take into account upstream and upgradient runoff that flows onto, over, or through the site to be developed or redeveloped and provide for this contribution of runoff.

Off-site stormwater flow has been accounted for in the project design. Please find watershed sheets within the drainage binder.

[9] Seasonal high-water table elevations must be accounted for in all BMP design criteria.

The seasonal high-water table elevations are shown in the test pit data.

[10] Access for maintenance of stormwater facilities must be included as part of the design, where necessary. Access easements may be required.

All practices have been designed to be maintained and located in open or paved areas. See the appropriate sections of the Inspection and Maintenance Manual for specified maintenance activity.

[11] Plantings in treatment areas shall be native grasses, shrubs and/or other native plants in sufficient numbers and density to prevent soil erosion and to achieve water-quality treatment.

See Section 4.0 Vegetative Stabilization, of this narrative, for BMP plantings and stabilization seeding descriptions. The applicant is following USDA NRCS seeding recommendations and native conservation mix.

(c) Stormwater management for redevelopment. In order to determine the stormwater requirements for redevelopment projects, the percentage of the site covered by existing impervious areas must be calculated. Stormwater requirements for redevelopment will vary based upon the amount of site surface area that is covered by existing impervious surfaces.

[1] For sites meeting the definition of a redevelopment project and having less than 40% existing impervious surface coverage, the stormwater management requirements will be the same as new development projects, with the important distinction that the applicant can meet those requirements either on site or at an approved off-site location (i.e., off-site mitigation). The applicant must satisfactorily demonstrate that impervious area reduction, LID strategies and BMPs have been implemented on site to the MEP.

This standard is not applicable.

[2] For sites meeting the definition of a redevelopment project and having more than 40% existing impervious surface coverage, stormwater shall be managed in accordance with one or more of the following techniques, listed in order of preference:

This standard is not applicable for this project.

[a] Implement measures on site that result in mitigation and treatment of at least 30% of the existing impervious cover as well as 50% of the additional proposed impervious surfaces and pavement areas through the application of LID; or

[b] Implement other LID techniques on site to the MEP to provide mitigation and treatment for at least 50% of the entire site area.

This standard is not applicable for this project.

[3] The owner/applicant may utilize off-site mitigation to meet the redevelopment requirements when the following standards have been met:

This standard is not applicable for this project.

[a] The owner/applicant shall demonstrate, to the satisfaction of the Planning Board, that on-site treatment has been implemented to the MEP.

[b] The owner/applicant shall find an approved, off-site location within the same watershed as the project site or within the drainage area of the same receiving water body.

[c] Off-site mitigation shall be equivalent to no less than the total area of impervious cover not treated on site.

[d] The owner/applicant shall submit a full design of the proposed off-site measures for review and approval.

[e] The owner/applicant must also demonstrate that there is no downstream drainage or flooding impact as a result of not providing on-site management.

(d) Erosion control standards during construction. The following standards shall be applied in project planning and shall be implemented prior to and during construction activity:

[1] All proposed measures shall meet, at a minimum, the design standards for best management practices set forth in the New Hampshire Stormwater Management Manual Volume 3 (December 2008 or current revision), a copy of which is available from the NHDES website.

See Inspection & Maintenance Manual and note is shown on E&SC Notes, note #10A.

[2] When a project requires a stormwater permit from the EPA Construction General Permit (CGP) Program, copies of the stormwater pollution

prevention plan (SWPPP) inspections shall be provided to the Community Services Department.

Copies will be provided when developed and published prior to NOI submittal and construction. Note is shown in E&SC Notes, note #10G.

[3] Stripping of vegetation shall be done in a manner that minimizes soil erosion. Whenever practical, natural vegetation shall be retained, protected, or supplemented.

There is to be no disturbance outside of the limit of construction. Erosion & sediment control measures are to be in place prior to the start of land grubbing. Note is shown in project specific notes, E&SC Notes, note #10B.

[4] The area of land disturbance shall be kept to a minimum and be limited to an area only large enough to accommodate construction activities for a particular construction phase.

This project is proposed in a single phase of less than five acres.

[5] Off-site surface water and runoff from undisturbed areas shall be diverted away from disturbed areas where feasible, or measures to convey stormwater through the project area without causing erosion of sediment must be included. Integrity of downstream drainage systems shall be maintained.

Please find Erosion & Sediment Control Plan, sheet #10.

[6] Appropriate erosion and sediment control measures shall be installed prior to any soil land disturbance and must be reviewed and approved by the Community Services Department.

Note is shown in E&SC Notes, note #10B, sheet #10.

[7] Perimeter site controls shall not be placed within wetland areas, stream channels or wetland buffers.

No perimeter controls are shown within wetland areas or stream channels. Previous Conditional Use Approval was obtained for the wetland buffer impact areas.

[8] Disturbed soil areas shall be either temporarily or permanently stabilized. In areas where final grading has not occurred, temporary stabilization measures should be in place within seven calendar days for exposed soil areas that are within 100 feet of a surface water body or a wetland and no more than 14 calendar days for all other areas. Permanent stabilization should be in place

within three calendar days following completion of final grading of exposed soil areas.

Note is shown in E&SC Notes, note #10C, sheet #10.

[9] All temporary erosion and sediment control measures shall be maintained in functioning condition until final site stabilization is accomplished. A proposed BMP inspection schedule shall be included in the submittal.

Note is shown in E&SC Notes, note #10D, sheet #10 and Inspection & Maintenance Manual.

[10] Additional temporary stabilization for the winter season consistent with NHDES guidelines shall be in place for disturbed areas that are not permanently stabilized by October 1, or at the discretion of the Community Services Department.

Please find winter stabilization note E22, sheet E-102.

[11] Special stabilization details shall be provided with the submission for any land disturbance on slopes equal to or steeper than 3:1.

Please find Rolled Erosion Control Blanket (RECB) Slope Stabilization Detail E21, sheet E-102.

[12] All temporary erosion and sediment control measures shall be removed after final site stabilization. Trapped sediment and other disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized within 30 calendar days unless conditions dictate otherwise.

Note is shown in E&SC Notes, note #10D, sheet #10 and find Inspection & Maintenance Manual containing this statement.

[13] For projects proposing to disturb and expose soils in areas of 10 acres or more at one time, a temporary (or permanent) sediment basin must be provided with storage for a calculated volume of runoff from a drainage area from a two-year, twenty-four-hour storm, or equivalent control measures, where attainable, until final stabilization of the site. Alternatively, the sediment basin can be sized to provide 3,600 cubic feet of storage per acre of drainage area until final stabilization of the site. In determining appropriate locations and number of sediment basins needed, the operators may consider such factors as erodibility of site soils, slope lengths, available area on site, construction period and other unique site considerations.

This standard is not applicable for this project.

[14] Use of temporary sediment basins should avoid any additional vegetation clearing or site land disturbance not otherwise needed for post-construction. Sediment basin locations must be reviewed by the Community Services Department prior to construction and must consider the potential for off-site impacts, including public safety, especially as it relates to sediment movement and/or sediment basin failure, and alternative sediment controls must be used where site limitations preclude a safe design.

The limit of construction is not to be expanded beyond the staked construction limits. Note is shown in E&SC Notes, note #7, sheet #10.

(e) Installation and construction inspections. The owner/applicant shall be responsible for inspection requirements as follow:

[1] The Community Services Department or its designated agent shall have access to the site to complete routine inspections.

The applicant acknowledges this standard. Note is shown in E&SC Notes, note #10E, sheet #10.

[2] The Community Services Department shall be notified 24 hours prior to installation of a stormwater BMP in order to schedule an inspection. These inspections shall be completed during normal working hours.

Note is shown in E&SC Notes, note #10E, sheet #10.

[3] The Planning Board or Community Services Department may require the design engineer and/or an independent third party to provide inspection and oversight of the construction of the stormwater management facilities and erosion and sediment control measures at its discretion. Such oversight may be especially important for implementing techniques such as porous pavement or subsurface stormwater infiltration systems. The owner/applicant shall be responsible for all fees associated with third-party inspections.

Note is shown in E&SC Notes, note #10F, sheet #10.

[4] All SWPPP inspections must be conducted by a qualified professional such as a professional engineer (PE), a certified professional in erosion and sediment control (CPESC), a certified erosion sediment and stormwater inspector (CESSWI), or a certified professional in stormwater quality (CPSWQ). Inspection reports shall be submitted to the Community Services Department.

Note is shown in E&SC Notes, note #10G, sheet #10.

[5] The owner is ultimately responsible for the installation, construction, inspection, and disposition of all stormwater management and erosion control measures required by the provisions of these regulations.

Note is shown in E&SC Notes, note #10H, sheet #10.

(f) Stormwater management plan (SWMP) submittal requirements. At the discretion of the Planning Board or Community Services Department, a technical review by an independent third party may be required of any SWMP prepared under these regulations. Such a review shall be performed by a qualified professional consultant and the expense of which shall be the full responsibility of the owner/applicant.

Much of the standards required in the Stormwater Management Plan (SWMP) are already covered in the Erosion & Sediment Control Plan in Section 4 above. Some items are already covered in the Stormwater System Management: Inspection and Maintenance Manual which is an attached document. The Stormwater Pollution Prevention Plan, as required by the US EPA CGP must be prepared prior to the submittal of a Notice of Intent which is required for this project as it exceeds one-acre in area of disturbance. Note is shown in project specific notes, E&SC Notes, note #9.

[1] For projects requiring minimum protection standards, a plan including the following information shall be submitted:

[a] Description of erosion and sediment control measures as well as sequence for final stabilization of the project site.

Please find Erosion & Sediment Control Plan Section 4 of this document, specifically section 4.0.

[b] Proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns.

Please find W1 Existing watershed and W2 Proposed watershed plans within the drainage binder. This is covered in detail in Section 1 and Section 2 of this document.

[c] Description of LID proposed measures.

Please see Section 4.0 of this drainage narrative. Low impact development measures include the implementation of a rain garden for treatment.

[2] For projects requiring new development or redevelopment standards, a drainage report that contains the following items shall be submitted:

[a] Description of construction period and earth movement schedule, including anticipated project start and completion dates, sequence and duration of grading and construction activities, sequence and timing of installation and/or application of soil erosion and sediment control measures as well as sequence for final stabilization of the project site.

Please find Section 4.0 in this drainage narrative containing the construction sequence.

[b] Description of the on-site and adjacent wetlands, streams and other water resources, including methods used to identify these resources, and a description of any buffer setbacks that may apply, steep slopes, critical habitat, existing vegetation, areas with a 1% chance of being inundated by water in any given year, and whether any downstream water bodies are listed as impaired according to NHDES's most recent 303(d) list.

Please find Existing Conditions Plan. There is no flood zone or steep slope on site. A wetland has been identified in the southern portion of the site with a 50′ buffer provided. A Conditional Use Permit was previously approved for disturbance within the wetland buffer.

[c] Soils information for proposed disturbed areas shall be delineated by a certified soil scientist. For all other areas that contribute runoff to the project site, soil types may be identified in accordance with Natural Resources Conservation Service (NRCS) countywide soil survey.

Please find Site Specific Soils Survey (sheet #3) and W-1 Existing Watershed Plans.

[d] Description of existing drainage patterns, receiving water bodies or drainage infrastructure and soil types for recharge potential.

Please find W-1 Existing Watershed Plan & Site Specific Soils Survey (sheet #3).

[e] Watershed area limits, including any off-site and upstream areas contributing flow to shared drainage channels and/or infrastructure.

Please find W-1 Existing Watershed Plan & W-2 Proposed Watershed Plan within the drainage binder.

[f] Description of proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns.

Please find sections 1.0 and 2.0 of this narrative as well as W-1 Existing Watershed Plan, Existing Drainage Analysis, W-2 Proposed Watershed Plan & Proposed Drainage Analysis. The existing impervious area and proposed impervious area are documented on the Site Plan.

[g] Methods and assumptions used to calculate pre- and post-development runoff volume, peak discharge, and discharge velocity for the specified design storm events.

Please find Section 1.0 & 2.0 of this drainage narrative discussing the existing and proposed development conditions.

[h] Methods and assumptions used to calculate the pollutant load removal.

Bioretention System:

- *Total Suspended Solids (TSS) reduction of 90%*
- *Total Nitrogen (TN) reduction of 60%*
- *Total Phosphorous (TP) reduction of 65%*

[i] Description of LID measures that are proposed to limit the development footprint, preserve existing vegetation and mimic existing hydrology to the extent feasible.

Please find Section 4.0 of this drainage narrative describing stormwater BMPs used for the design. Low impact development measures include the implementation of rain gardens and detention ponds.

[j] If not used, provide rationale why LID measures are not practical for the site.

A rain garden is proposed on site and qualify as low impact development.

[k] Describe measures and calculations for proposed practices used to achieve no net increase in runoff volumes leaving the site.

Please find comparative analysis, Section 3.0d of this document, for this discussion of stormwater volumes.

[l] Provide calculations for the infiltration or exfiltration system.

Infiltration is not proposed on site due to the restrictive "B" & "C" horizons in the soils outside of the proposed building area, as defined by KSat NH.

[m] If an increase in post-development runoff volume is anticipated due to limited applicability for LID measures and site constraints, provide an assessment and supporting calculations to demonstrate no adverse impacts to downstream infrastructure, adjacent properties or aquatic habitat.

Please find comparative analysis, Section 3.0d of this document, for this discussion of stormwater volumes.

[n] Descriptions, details, and design criteria and calculations for all structural, nonstructural, permanent, and temporary erosion and sedimentation control measures and BMPs. This information should include seeding mixtures and rates, types of sod, methods of seedbed preparation, expected seeding dates (or limitations on seeding time frames), type and rate of lime and fertilizer application, and type and quantity of mulching for temporary and permanent control facilities.

Please find section 4.0 of this narrative, the Inspection & Maintenance Manual and Plan, as well as the Erosion & Sediment Control Plan. Type and rate of lime and fertilizer will be determined on site by testing the topsoil for requirements.

[o] Where proposed changes are anticipated within mapped limits of the areas with a 1% chance of being inundated by water in any given year, provide hydrologic and hydraulic analysis to show no net increase in flood elevations.

There is no disturbance proposed within any flood zones.

[p] Proposed schedule for the inspection and maintenance of all erosion control measures on site prior to achieving final site stabilization.

Please find Section 4.0 of this document, and the Stormwater System Operation: Inspection & Maintenance Manual. EPA and NHDES will require an inspection every 7 days and after a storm event greater than 0.25".

[q] Describe procedures for removing temporary erosion control measures and removal of accumulated sediment captured by such measures.

The maintenance requirements for each erosion and sediment control method are detailed within the Construction Detail on Sheets E-101 and E-102

[r] Any other specific study, calculation, or investigation as requested by the City.

No additional studies or investigations have been requested at this time.

[s] Describe procedures to limit and/or optimize the use of deicing materials and minimize off-site increases in chloride levels in adjacent surface water and groundwater.

Please find Inspection & Maintenance Manual.

[t] Provide a maintenance and inspection plan for post-construction monitoring of stormwater BMPs to ensure long-term performance and functionality, including details of who will be responsible for inspections and maintenance, proposed schedule, documentation, submittal procedures and contingency plans if future maintenance is required.

Please find Inspection & Maintenance Manual and plan.

[u] Provide copies of pertinent state and federal permits.

Copies of all state and federal permits will be provided when received.

(q) Long-term operation and maintenance. The owner shall be responsible for continued inspection and maintenance requirements.

[1] An operation and maintenance manual shall be created with the following information:

[a] The names of the responsible qualified professionals who will implement the required reporting, inspections, and maintenance activities.

Please find Inspection & Maintenance Manual.

[b] An inspection checklist, identifying item or BMP, inspection frequency, and components to be inspected. The list shall clearly outline performance thresholds and triggers for maintenance.

Please find Inspection & Maintenance Manual.

[c] Snow and ice removal shall be performed by a contractor certified by the "Green SnoPro" Program, or approved equivalent, following best management practices for the application of deicing materials.

Please find Inspection & Maintenance Manual.

[d] Deicing log to track amount and type of deicing material applied.

Please find Inspection & Maintenance Manual.

[e] A site plan clearly identifying the locations of all stormwater practices to be inspected and maintained.

Please find Inspection & Maintenance Plan within the drainage binder.

[f] Inspection and maintenance log to be submitted to the City of Dover Community Services Department on an annual basis. Documents shall be submitted no later than December 15 of each year.

Please find Inspection & Maintenance Manual.

[2] The owner of record shall record at the Registry of Deeds documentation sufficient to provide notice to all persons that may acquire any property subject to the requirements and responsibilities described in the approved stormwater management plan. The notice shall comply with the applicable requirements for recording contained in RSA 477 and 478. The notice need not set forth the requirements at length, so long as it is sufficient to provide notice to prospective purchasers of the requirements for maintenance and reporting.

Please find note #27 on the Site Plan, sheet #6.

Corrective Action measures will be made in accordance with Stormwater Management Plan (SWMP) / SWPPP requirements and records maintained on site by the Contractor.

5.0 CONCLUSION

Peak rates of runoff flow are modeled to be reduced in the post-construction analysis / condition, as compared to the pre-construction peak rates of runoff flow at Final Reach #100 & Final Reach #200. This reduction occurs during the 2 Yr, 10 Yr, 25 Yr, 50 Yr, and 100 Yr/24 Hour extreme storm events due to the mitigation provided by the Rain Garden and detention pond. Per Env-Wq 1507.05(b)(1)(a) the channel protection volume is satisfied by the 2-year, 24-hour post-development peak flow rate generated from the proposed disturbance being less than the 2-year, 24-hour pre-development peak flow rate and the 2 year, 24-hour post-development storm volume has not increased over the pre-development volume by more than 0.1 acre-feet. In depth discussion regarding stormwater volume is provided in section 3.0d.

A Site Specific, Terrain Alteration Permit (RSA 485: A-17) is not required for this site plan due to the area of disturbance being less than 100,000 SF and the site will operate as a General Permit by Rule under this rule. Because the site impact is greater than one acre, a Notice of Intent with the EPA is required and the site will operate in accordance with the EPA 2022 Construction General Permit and the City of Dover Chapter 153-14 A Stormwater Management, Erosion Control, and Flood Hazards and the approved Stormwater Management Plan.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

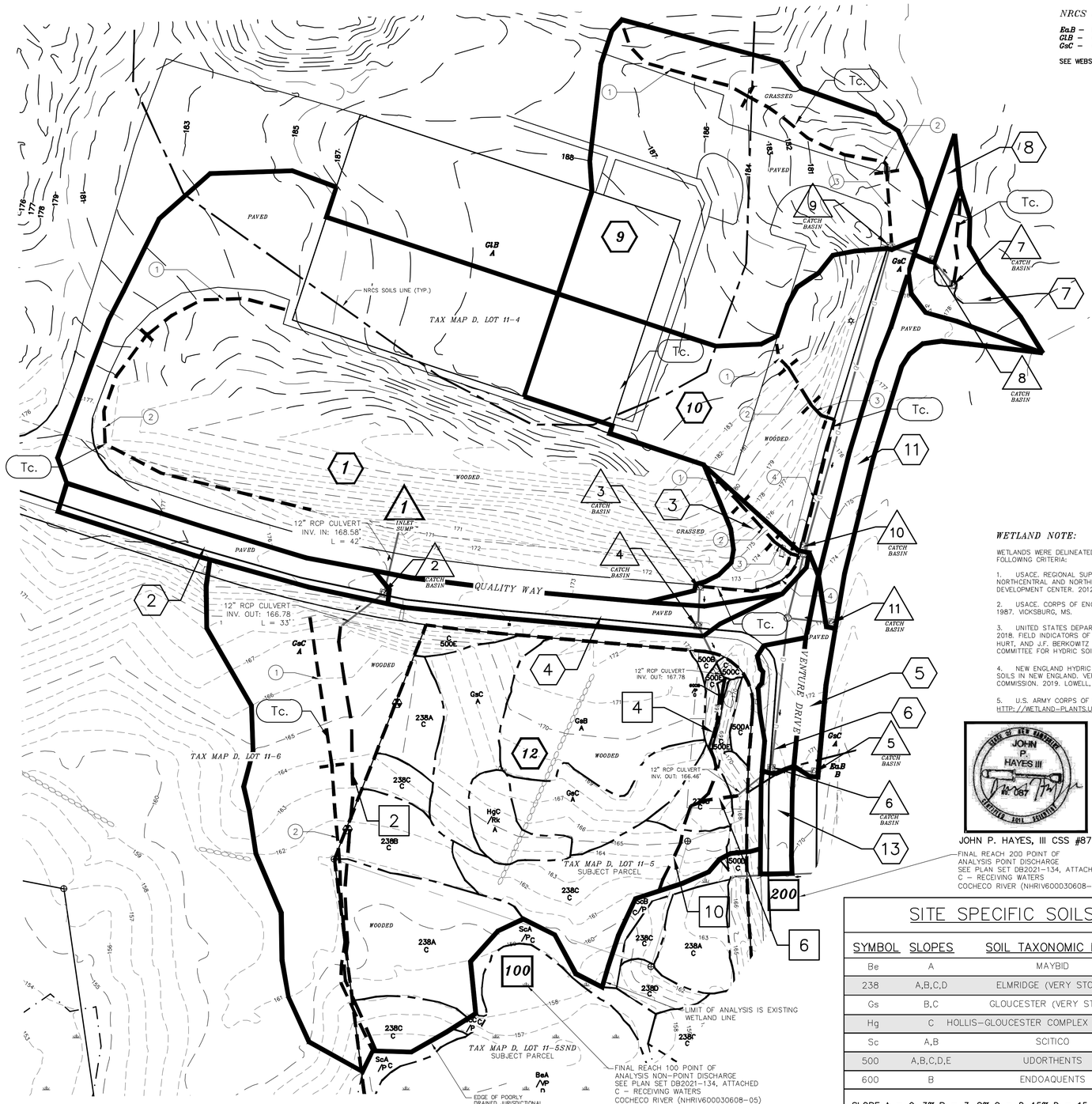
Christopher R. Berry, SIT 567
Principal, President

Kenneth A. Berry PE, LLS,
CPSWQ, CPESC, CESSWI
Principal, VP - Technical Operations

Kevin R. Poulin,
Project Engineer

Appendix I – Existing Conditions Analysis

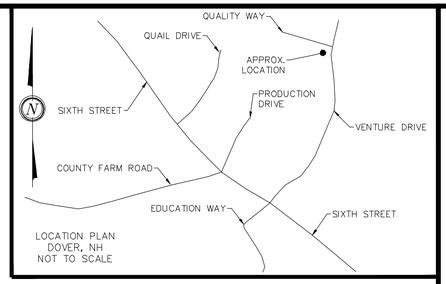
25 Yr - 24 Hr. Full Summary
2 Yr - 24 Hr. Node Listing
10 Yr - 24 Hr. Node Listing
25 Yr - 24 Hr. Node Listing
50 Yr - 24 Hr. Node Listing
100 Yr - 24 Hr. Node Listing



NRCS SOILS:

EaB – ELMWOOD FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
GLB – GLOUCESTER FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
GsC – GLOUCESTER VERY STONY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES

SEE WEBSOIL USDA-NRCS



LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 0.99 Ac.

6.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING DRAINAGE CONDITIONS OF TAX MAP D, LOT 11-5 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN AUGUST 2021.

7.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

8.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

9.) HYDROCAD USES A SERIES OF NODE SUFFIXES FOR NUMBERING PURPOSES (S=SUBCATCHMENT, P=POND DEVICE, R=REACH), TO SIMPLIFY ANNOTATION THESE SUFFIXES ARE LEFT OFF THE WATERSHED PLANS AND NODE TYPE IS DENOTED BY THE SYMBOL SHAPE ACCORDING TO THE DISPLAYED LEGEND WHICH COINCIDES WITH HYDROCAD GRAPHICS.

WETLAND NOTE:

WETLANDS WERE DELINEATED BY DEIDRA L. BENJAMIN, CWS, IN THE SUMMER OF 2021 USING THE FOLLOWING CRITERIA:

1. USACE. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. VERSION 2.0. U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER. 2012. VICKSBURG, MS.

2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

STATE OF NEW HAMPSHIRE
JOHN P. HAYES III
No. 87
CERTIFIED SOIL SCIENTIST

JOHN P. HAYES, III CSS #87

STATE OF NEW HAMPSHIRE
DEIDRA L. BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

DEIDRA BENJAMIN, CWS #295

EXISTING LEGEND:

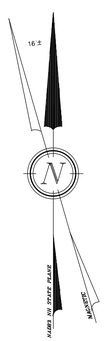
- STONE BOUND (FND)
- DRILL HOLE (FND)
- IRON BOUND (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- SINGLE POST SIGN
- TEMPORARY BENCHMARK
- CATCH BASIN
- STONE WALL
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING DRAIN LINE
- OVERHEAD UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING TREELINE
- NRCS SOIL LINE/LABEL
- LIMIT OF SITE SPECIFIC SOIL SURVEY SOIL LINE
- SOIL SERIES
- LIMIT OF WATERSHED
- TIME OF CONCENTRATION PATH
- FLOW REACH
- FND FOUND
- TYP TYPICAL
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

SITE SPECIFIC SOILS LEGEND

SYMBOL	SLOPES	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
Be	A	MAYBID	D
238	A,B,C,D	ELMRIDGE (VERY STONY)	C
Gs	B,C	GLOUCESTER (VERY STONY)	A
Hg	C	HOLLIS-GLOUCESTER COMPLEX (VERY ROCKY)	A/D
Sc	A,B	SCITICO	C
500	A,B,C,D,E	UDORTHENTS	C
600	B	ENDOAQUENTS	C

SLOPE: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25-50% F = 50%+

DENOMINATOR: /VP = VERY POORLY DRAINED /P = POORLY DRAINED
/Rk = VERY ROCKY



SYMBOLS LEGEND:

- SUBCATCHMENT AREA SYMBOL
- FLOW REACH SYMBOL
- POND DEVICE SYMBOL
- TIME OF CONCENTRATION SEGMENT

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

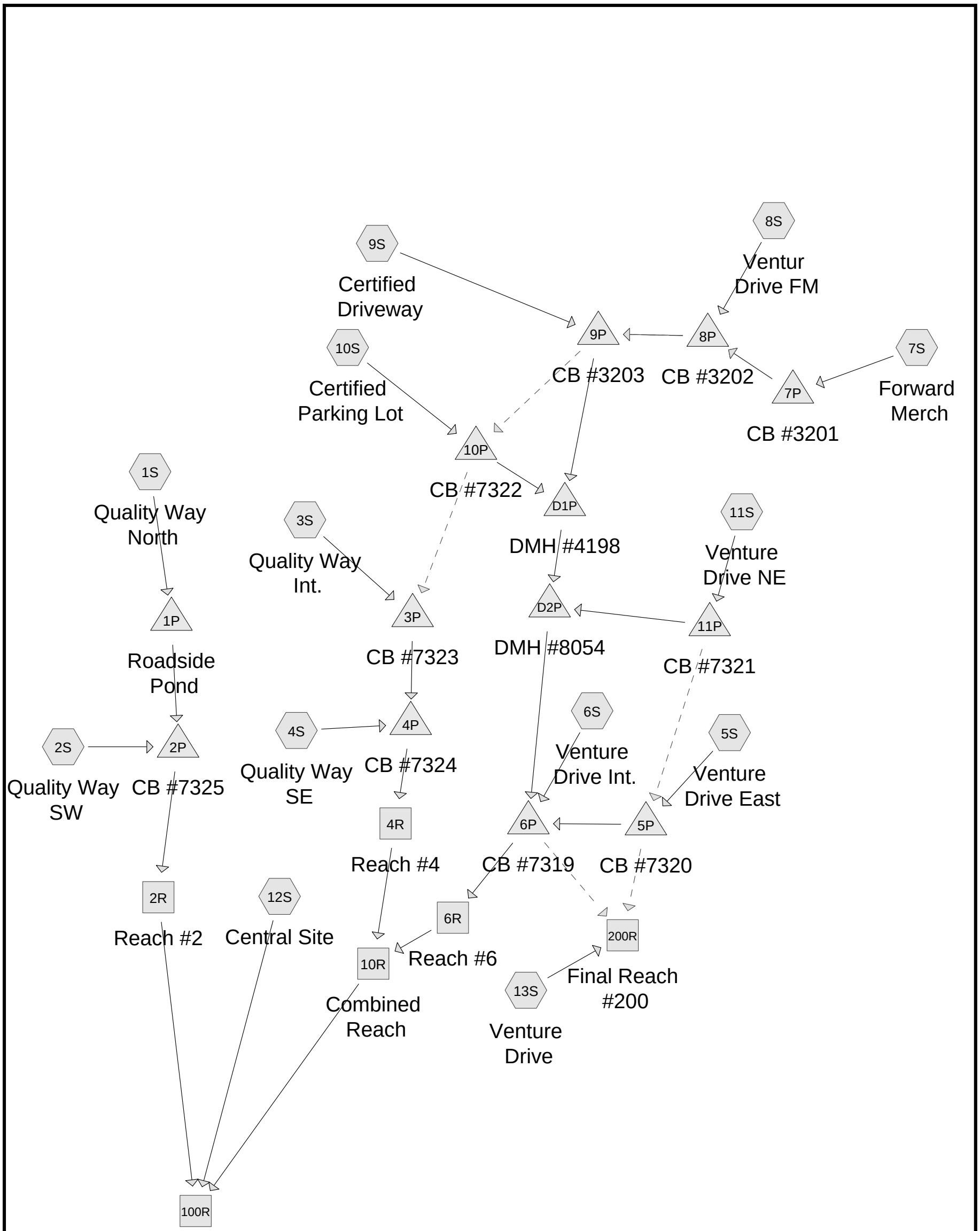
SWPPP EPA SITE MAP (EXISTING)
W-1 EXISTING CONDITIONS WATERSHED PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 40 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



Routing Diagram for 21-134 Existing Conditions

Prepared by Berry Surveying & Engineering

HydroCAD® 10.00-25 s/n 07605 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.062	39	>75% Grass cover, Good, HSG A (1S, 3S, 6S, 7S, 9S, 10S, 12S)
0.019	74	>75% Grass cover, Good, HSG C (12S)
1.569	98	Paved parking, HSG A (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S)
0.036	98	Paved parking, HSG B (5S, 13S)
0.475	98	Unconnected roofs, HSG A (1S, 9S, 10S)
1.821	30	Woods, Good, HSG A (1S, 3S, 7S, 10S, 12S)
0.677	70	Woods, Good, HSG C (12S)
5.659	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.927	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S
0.036	HSG B	5S, 13S
0.696	HSG C	12S
0.000	HSG D	
0.000	Other	
5.659		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.062	0.000	0.019	0.000	0.000	1.081	>75% Grass cover, Good	1S, 3S, 6S, 7S, 9S, 10S, 12S
1.569	0.036	0.000	0.000	0.000	1.605	Paved parking	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S, 13S
0.475	0.000	0.000	0.000	0.000	0.475	Unconnected roofs	1S, 9S, 10S
1.821	0.000	0.677	0.000	0.000	2.499	Woods, Good	1S, 3S, 7S, 10S, 12S
4.927	**0.036**	**0.696**	**0.000**	**0.000**	**5.659**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	168.58	167.36	42.3	0.0288	0.012	12.0	0.0	0.0
2	2P	166.90	166.78	32.7	0.0037	0.012	12.0	0.0	0.0
3	3P	168.90	168.43	24.4	0.0193	0.012	12.0	0.0	0.0
4	4P	168.33	167.78	36.3	0.0152	0.012	12.0	0.0	0.0
5	5P	167.11	166.51	25.3	0.0237	0.012	12.0	0.0	0.0
6	6P	166.45	166.46	27.1	-0.0004	0.012	12.0	0.0	0.0
7	7P	174.37	173.93	17.5	0.0251	0.012	12.0	0.0	0.0
8	8P	173.61	173.31	25.8	0.0116	0.012	12.0	0.0	0.0
9	9P	173.21	168.55	208.7	0.0223	0.012	12.0	0.0	0.0
10	10P	171.40	170.45	1.0	0.9500	0.012	12.0	0.0	0.0
11	11P	167.17	167.86	25.8	-0.0267	0.012	12.0	0.0	0.0
12	D1P	168.45	168.02	40.1	0.0107	0.012	12.0	0.0	0.0
13	D2P	167.86	166.51	96.9	0.0139	0.012	12.0	0.0	0.0

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>2.30"
Flow Length=326' Tc=10.1 min CN=58 Runoff=3.98 cfs 0.344 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>2.30"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.17 cfs 0.014 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.70 cfs 0.058 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.024 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>5.79"
Tc=6.0 min CN=91 Runoff=0.31 cfs 0.024 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>3.28"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.23 cfs 0.021 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>4.01"
Flow Length=257' Tc=7.9 min CN=75 Runoff=3.46 cfs 0.266 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>3.91"
Flow Length=151' Tc=6.4 min CN=74 Runoff=2.54 cfs 0.186 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>1.32"
Flow Length=296' Tc=16.0 min CN=47 Runoff=1.70 cfs 0.208 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Reach 2R: Reach #2 Avg. Flow Depth=0.24' Max Vel=1.08 fps Inflow=4.38 cfs 0.399 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=4.10 cfs 0.398 af

Reach 4R: Reach #4 Avg. Flow Depth=0.21' Max Vel=0.69 fps Inflow=2.27 cfs 0.080 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=1.60 cfs 0.080 af

Reach 6R: Reach #6 Avg. Flow Depth=0.43' Max Vel=1.04 fps Inflow=6.98 cfs 0.584 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=6.96 cfs 0.583 af

Reach 10R: Combined Reach Avg. Flow Depth=0.28' Max Vel=1.57 fps Inflow=7.77 cfs 0.663 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=7.72 cfs 0.663 af

Reach 100R: Final Reach #100 Inflow=12.48 cfs 1.269 af
Outflow=12.48 cfs 1.269 af

Reach 200R: Final Reach #200 Inflow=0.22 cfs 0.018 af
Outflow=0.22 cfs 0.018 af

Pond 1P: Roadside Pond Peak Elev=170.15' Storage=62 cf Inflow=3.98 cfs 0.344 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=3.92 cfs 0.344 af

Pond 2P: CB #7325 Peak Elev=168.93' Storage=25 cf Inflow=4.39 cfs 0.400 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=4.38 cfs 0.399 af

Pond 3P: CB #7323 Peak Elev=169.67' Storage=10 cf Inflow=2.01 cfs 0.022 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=1.93 cfs 0.022 af

Pond 4P: CB #7324 Peak Elev=169.19' Storage=11 cf Inflow=2.33 cfs 0.080 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=2.27 cfs 0.080 af

Pond 5P: CB #7320 Peak Elev=170.40' Storage=41 cf Inflow=0.75 cfs 0.028 af
Primary=0.75 cfs 0.028 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 0.028 af

Pond 6P: CB #7319 Peak Elev=170.36' Storage=49 cf Inflow=7.03 cfs 0.584 af
Primary=6.98 cfs 0.584 af Secondary=0.00 cfs 0.000 af Outflow=6.98 cfs 0.584 af

Pond 7P: CB #3201 Peak Elev=177.11' Storage=34 cf Inflow=0.23 cfs 0.021 af
Primary=0.45 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.45 cfs 0.021 af

Pond 8P: CB #3202 Peak Elev=177.11' Storage=44 cf Inflow=0.51 cfs 0.034 af
Primary=0.55 cfs 0.034 af Secondary=0.00 cfs 0.000 af Outflow=0.55 cfs 0.034 af

Pond 9P: CB #3203 Peak Elev=177.11' Storage=49 cf Inflow=3.77 cfs 0.301 af
Primary=3.74 cfs 0.301 af Secondary=0.00 cfs 0.000 af Outflow=3.74 cfs 0.301 af

Pond 10P: CB #7322 Peak Elev=174.65' Storage=35 cf Inflow=2.54 cfs 0.186 af
Primary=2.55 cfs 0.178 af Secondary=1.87 cfs 0.008 af Outflow=2.55 cfs 0.186 af

Pond 11P: CB #7321 Peak Elev=173.39' Storage=73 cf Inflow=0.69 cfs 0.058 af
Primary=0.61 cfs 0.053 af Secondary=0.55 cfs 0.004 af Outflow=0.63 cfs 0.057 af

Pond D1P: DMH #4198 Peak Elev=175.75' Storage=70 cf Inflow=6.25 cfs 0.479 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=6.05 cfs 0.479 af

Pond D2P: DMH #8054 Peak Elev=173.88' Storage=64 cf Inflow=6.52 cfs 0.532 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=6.50 cfs 0.532 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.290 af Average Runoff Depth = 2.74"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

Summary for Subcatchment 1S: Quality Way North

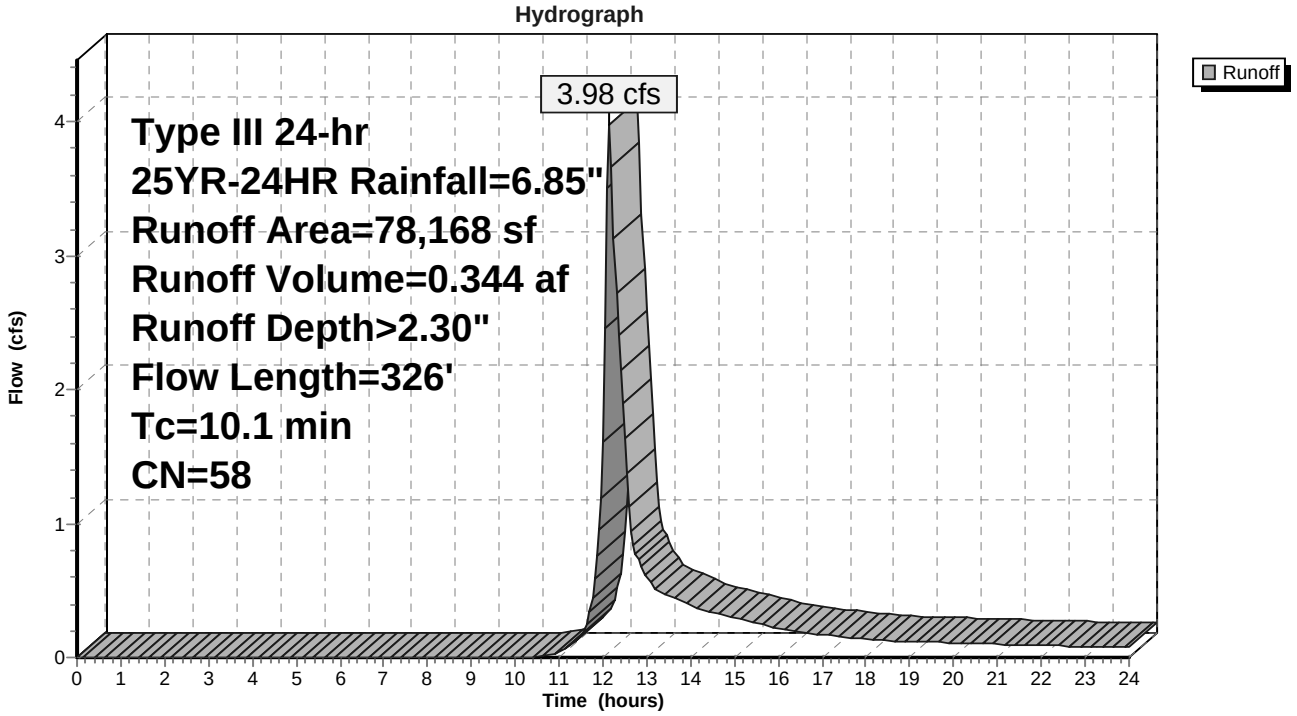
Runoff = 3.98 cfs @ 12.15 hrs, Volume= 0.344 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
11,732	98	Unconnected roofs, HSG A
18,602	39	>75% Grass cover, Good, HSG A
17,923	98	Paved parking, HSG A
29,911	30	Woods, Good, HSG A
78,168	58	Weighted Average
48,513		62.06% Pervious Area
29,655		37.94% Impervious Area
11,732		39.56% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0375	0.23		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
2.9	226	0.0354	1.32		**Shallow Concentrated Flow, Segment #2** Short Grass Pasture Kv= 7.0 fps
10.1	326	Total			

Subcatchment 1S: Quality Way North



Summary for Subcatchment 2S: Quality Way SW

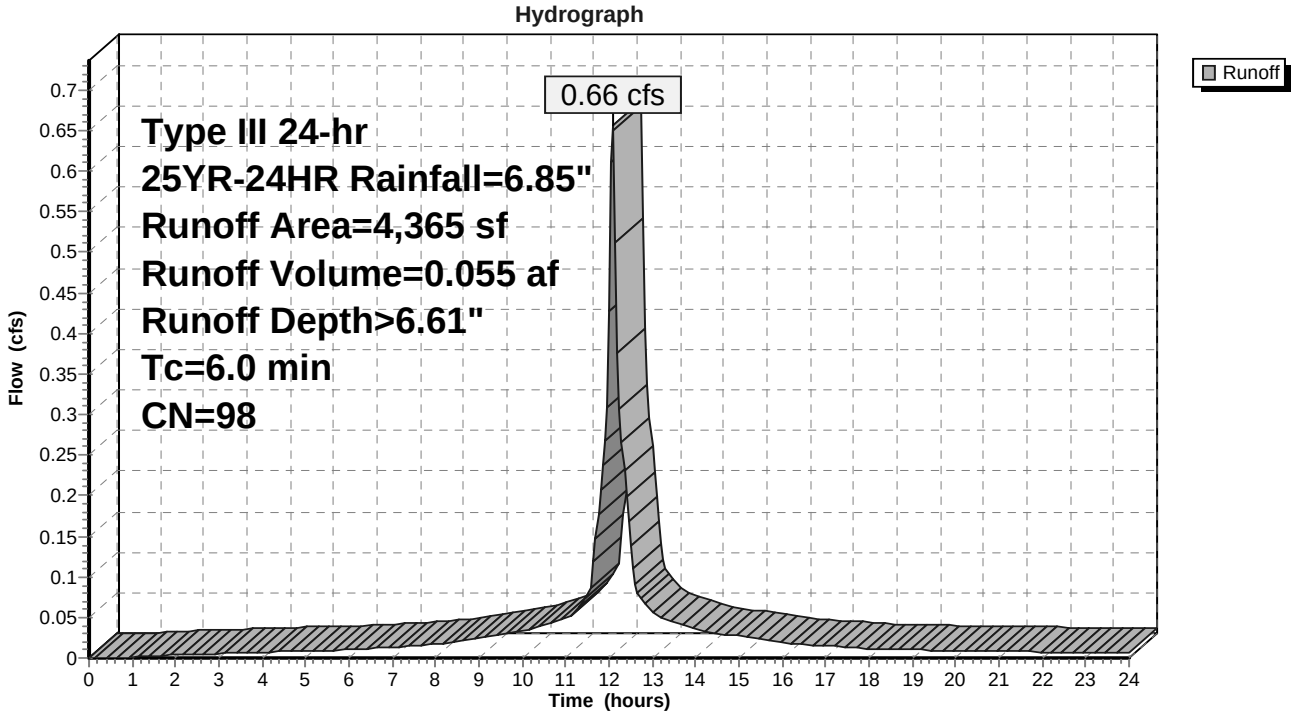
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.055 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,365	98	Paved parking, HSG A
4,365		100.00% Impervious Area

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

Subcatchment 2S: Quality Way SW



Summary for Subcatchment 3S: Quality Way Int.

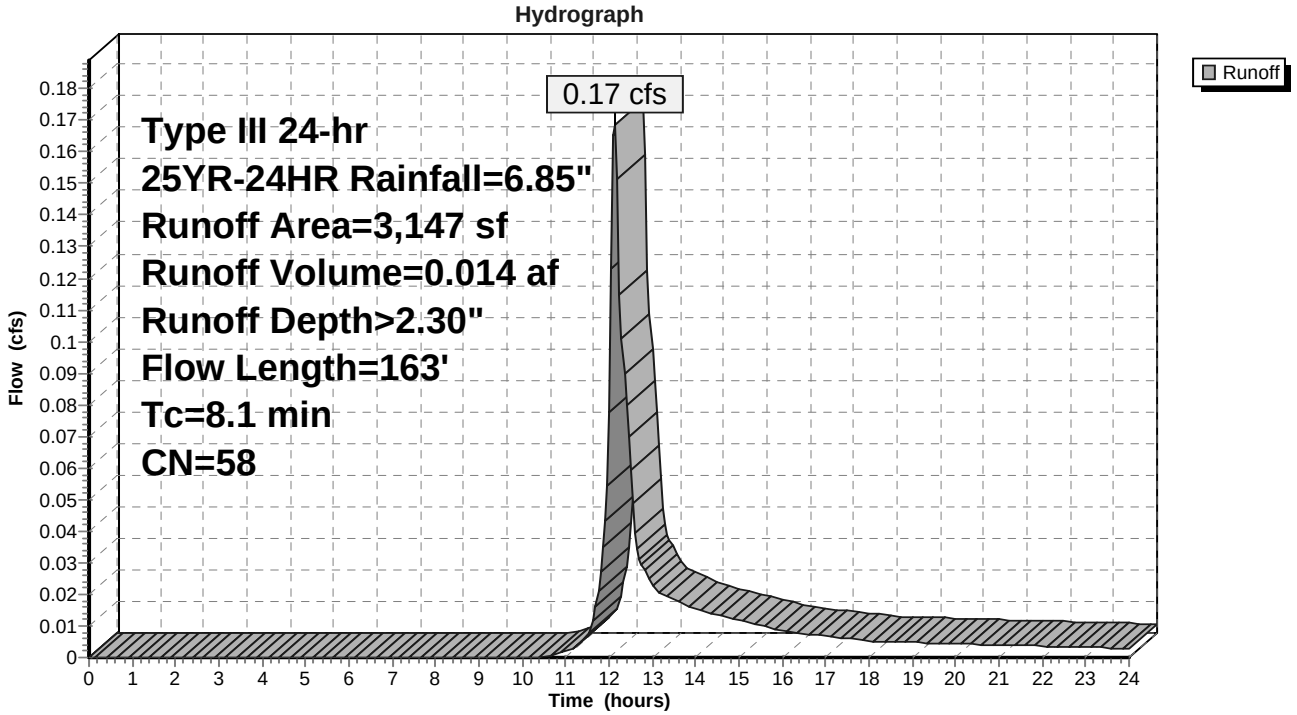
Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,775	39	>75% Grass cover, Good, HSG A
1,076	98	Paved parking, HSG A
296	30	Woods, Good, HSG A
3,147	58	Weighted Average
2,071		65.81% Pervious Area
1,076		34.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	36	0.0830	0.26		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
3.7	33	0.1517	0.15		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.61"
1.5	14	0.0356	0.15		**Sheet Flow, Segment #3** Grass: Short n= 0.150 P2= 3.61"
0.6	80	0.0125	2.27		**Shallow Concentrated Flow, Segment #4** Paved Kv= 20.3 fps
8.1	163	Total			

Subcatchment 3S: Quality Way Int.



Summary for Subcatchment 4S: Quality Way SE

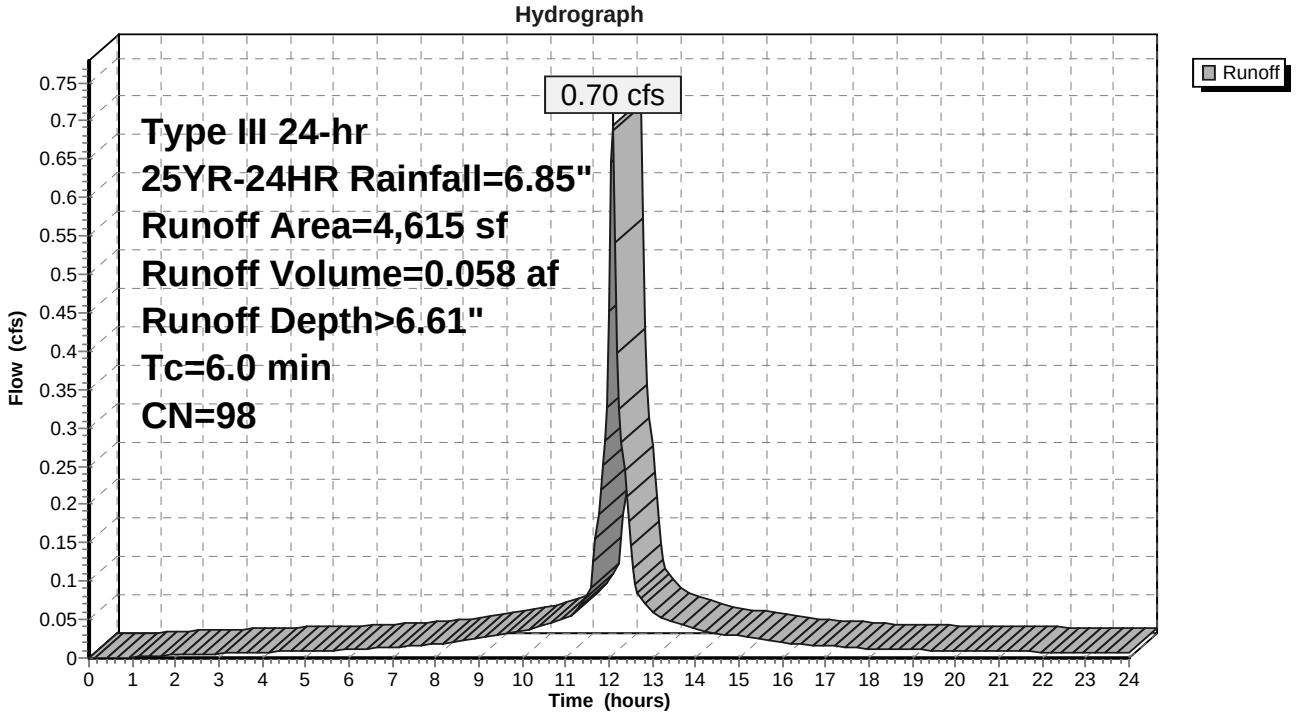
Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,615	98	Paved parking, HSG A
4,615		100.00% Impervious Area

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

Subcatchment 4S: Quality Way SE



Summary for Subcatchment 5S: Venture Drive East

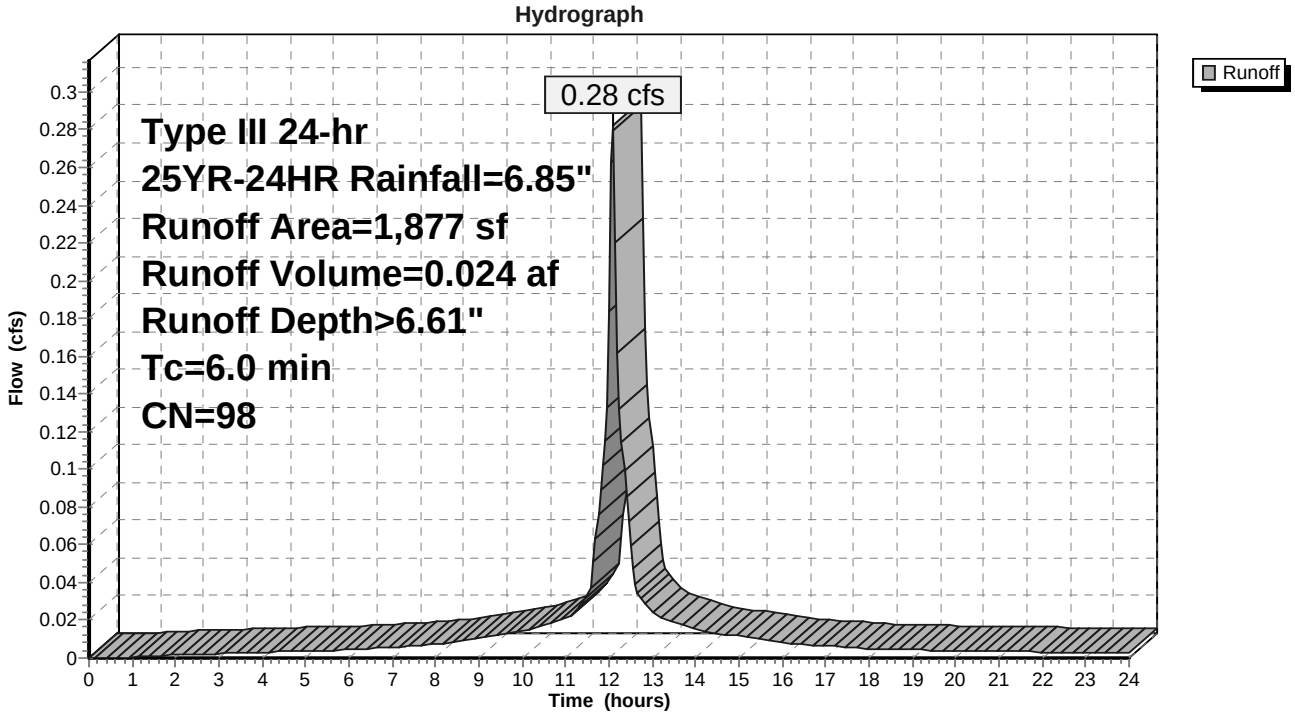
Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,765	98	Paved parking, HSG A
112	98	Paved parking, HSG B
1,877	98	Weighted Average
1,877		100.00% Impervious Area

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

Subcatchment 5S: Venture Drive East



Summary for Subcatchment 6S: Venture Drive Int.

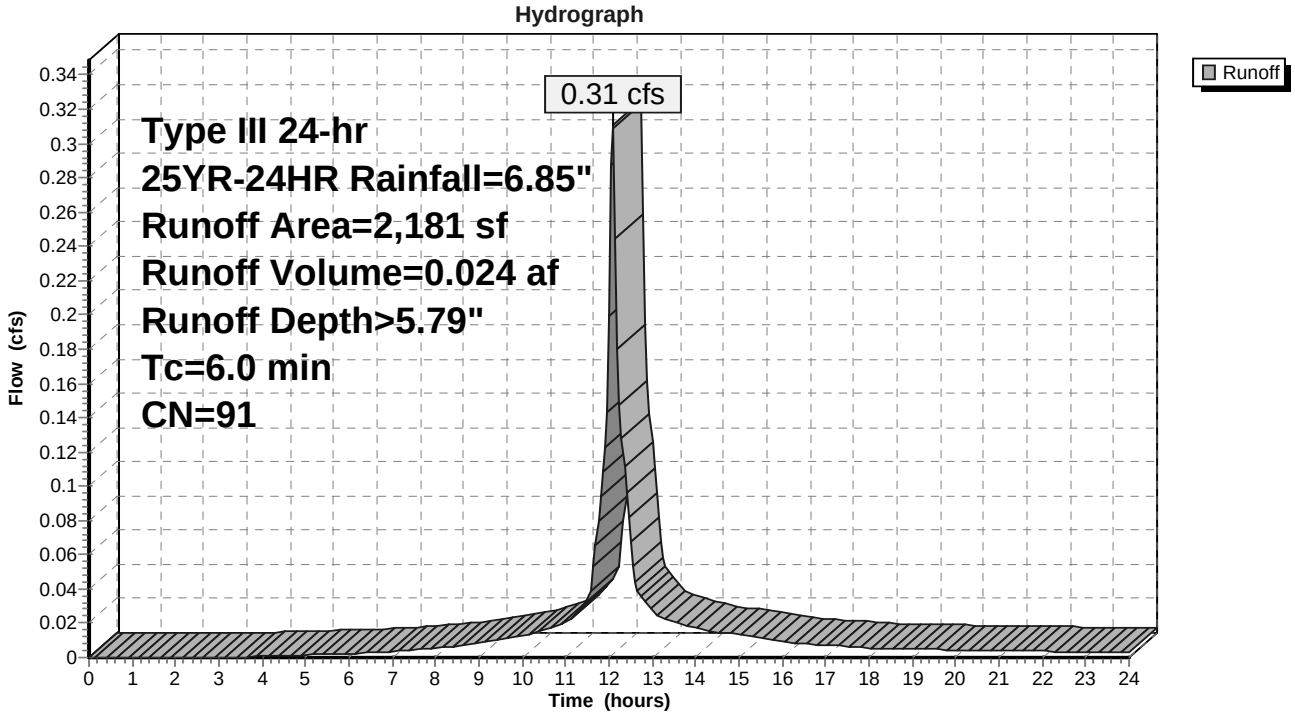
Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 5.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
252	39	>75% Grass cover, Good, HSG A
1,929	98	Paved parking, HSG A
2,181	91	Weighted Average
252		11.55% Pervious Area
1,929		88.45% Impervious Area

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

Subcatchment 6S: Venture Drive Int.



Summary for Subcatchment 7S: Forward Merch

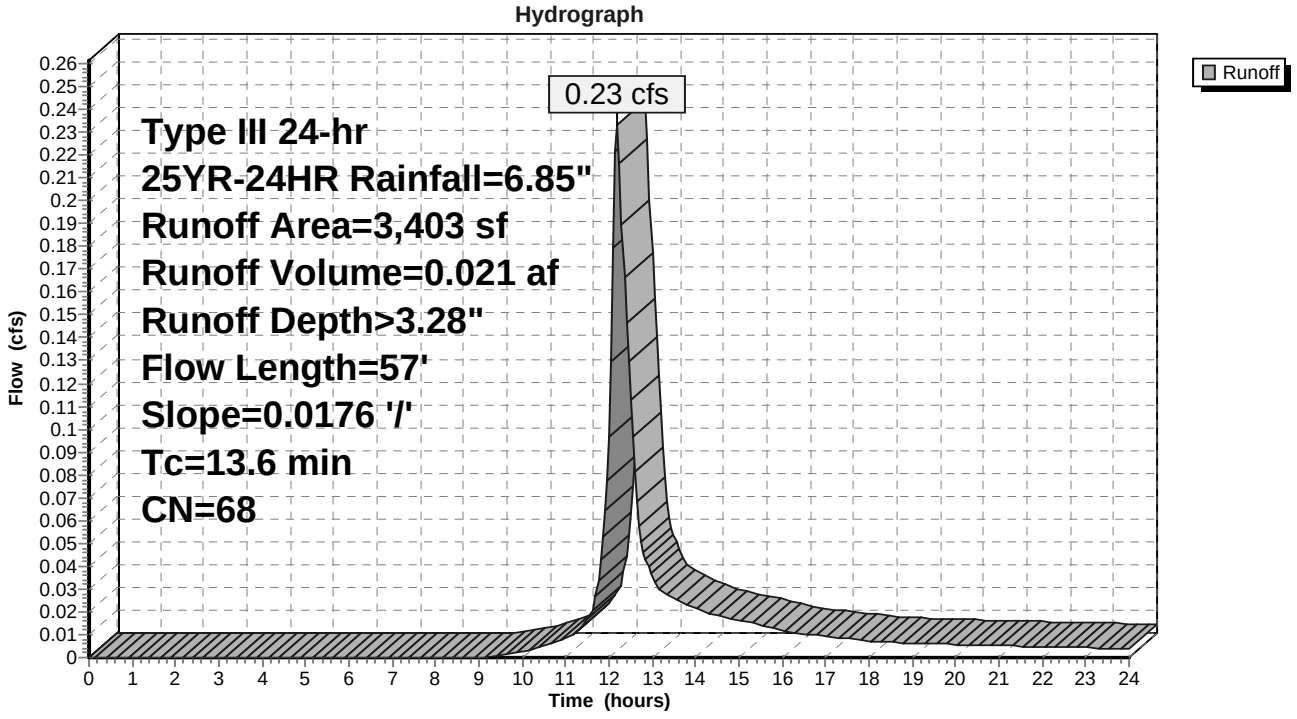
Runoff = 0.23 cfs @ 12.20 hrs, Volume= 0.021 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
493	39	>75% Grass cover, Good, HSG A
1,830	98	Paved parking, HSG A
1,080	30	Woods, Good, HSG A
3,403	68	Weighted Average
1,573		46.22% Pervious Area
1,830		53.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	57	0.0176	0.07		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.61"

Subcatchment 7S: Forward Merch



Summary for Subcatchment 8S: Ventur Drive FM

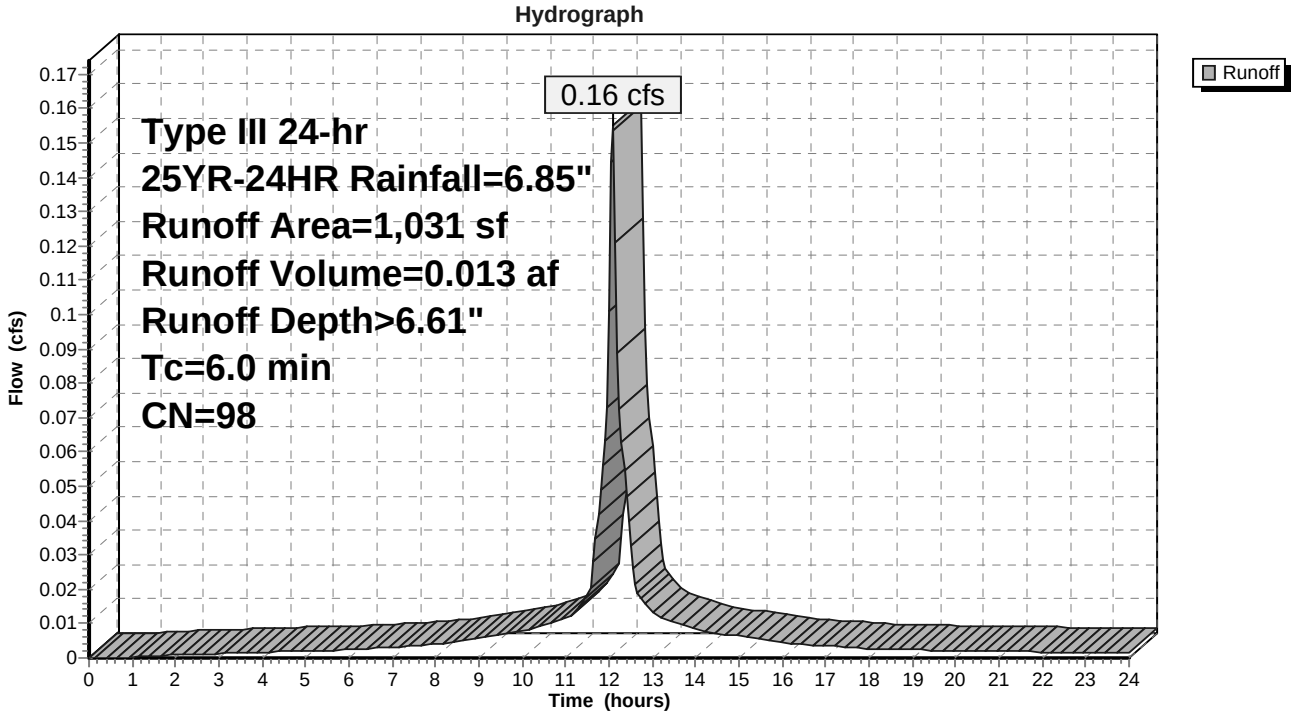
Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,031	98	Paved parking, HSG A
1,031		100.00% Impervious Area

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

Subcatchment 8S: Ventur Drive FM



Summary for Subcatchment 9S: Certified Driveway

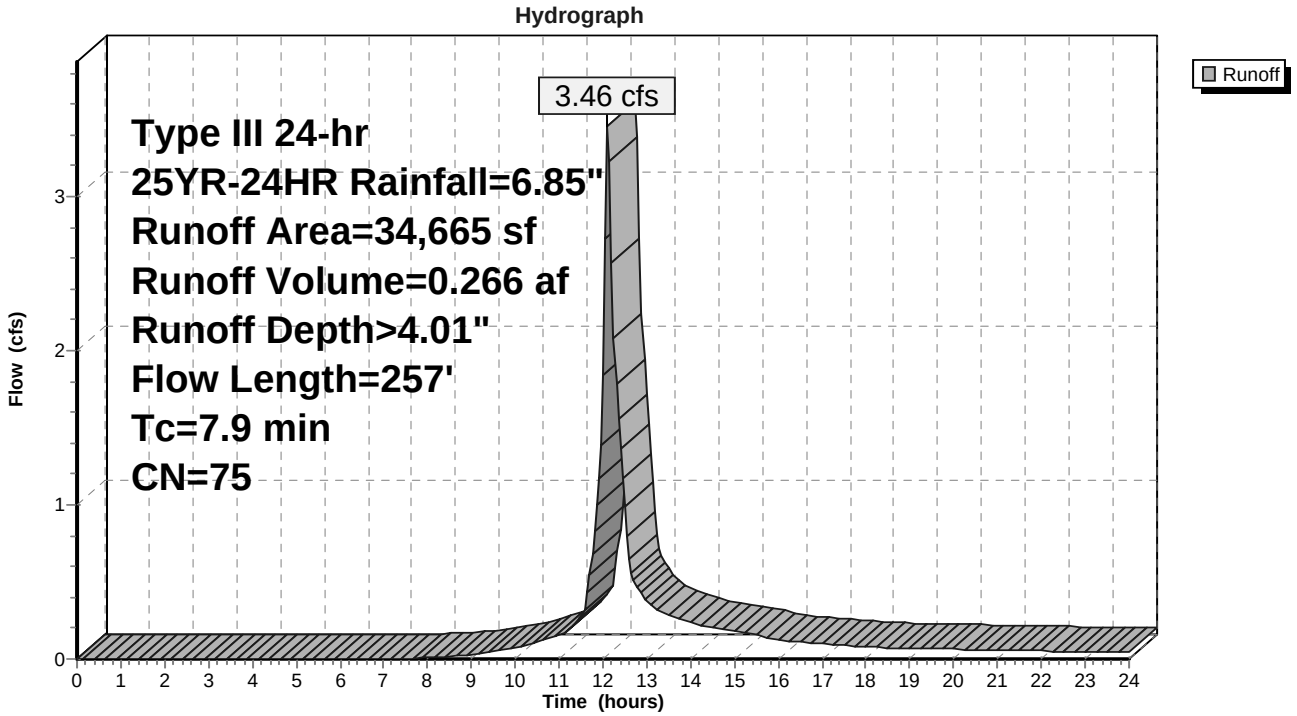
Runoff = 3.46 cfs @ 12.11 hrs, Volume= 0.266 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,472	98	Unconnected roofs, HSG A
13,788	39	>75% Grass cover, Good, HSG A
16,405	98	Paved parking, HSG A
34,665	75	Weighted Average
13,788		39.77% Pervious Area
20,877		60.23% Impervious Area
4,472		21.42% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0500	0.26		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
1.2	110	0.0499	1.56		**Shallow Concentrated Flow, Segment #2** Short Grass Pasture Kv= 7.0 fps
0.3	47	0.0212	2.96		**Shallow Concentrated Flow, Segment #3** Paved Kv= 20.3 fps
7.9	257	Total			

Subcatchment 9S: Certified Driveway



Summary for Subcatchment 10S: Certified Parking Lot

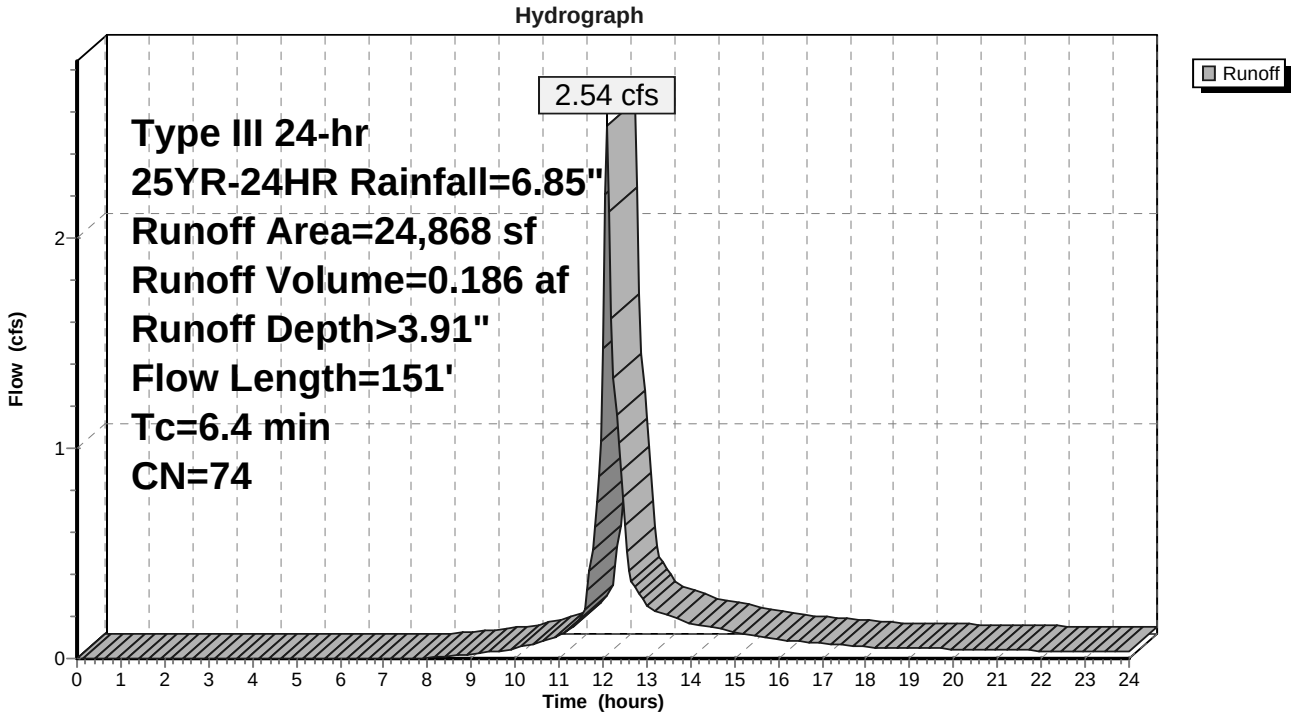
Runoff = 2.54 cfs @ 12.10 hrs, Volume= 0.186 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,472	98	Unconnected roofs, HSG A
5,585	39	>75% Grass cover, Good, HSG A
10,965	98	Paved parking, HSG A
3,846	30	Woods, Good, HSG A
24,868	74	Weighted Average
9,431		37.92% Pervious Area
15,437		62.08% Impervious Area
4,472		28.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	18	0.1382	0.28		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
3.9	29	0.1021	0.12		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.61"
0.9	14	0.1439	0.27		**Sheet Flow, Segment #3** Grass: Short n= 0.150 P2= 3.61"
0.5	90	0.0223	3.03		**Shallow Concentrated Flow, Segment #4** Paved Kv= 20.3 fps
6.4	151	Total			

Subcatchment 10S: Certified Parking Lot



Summary for Subcatchment 11S: Venture Drive NE

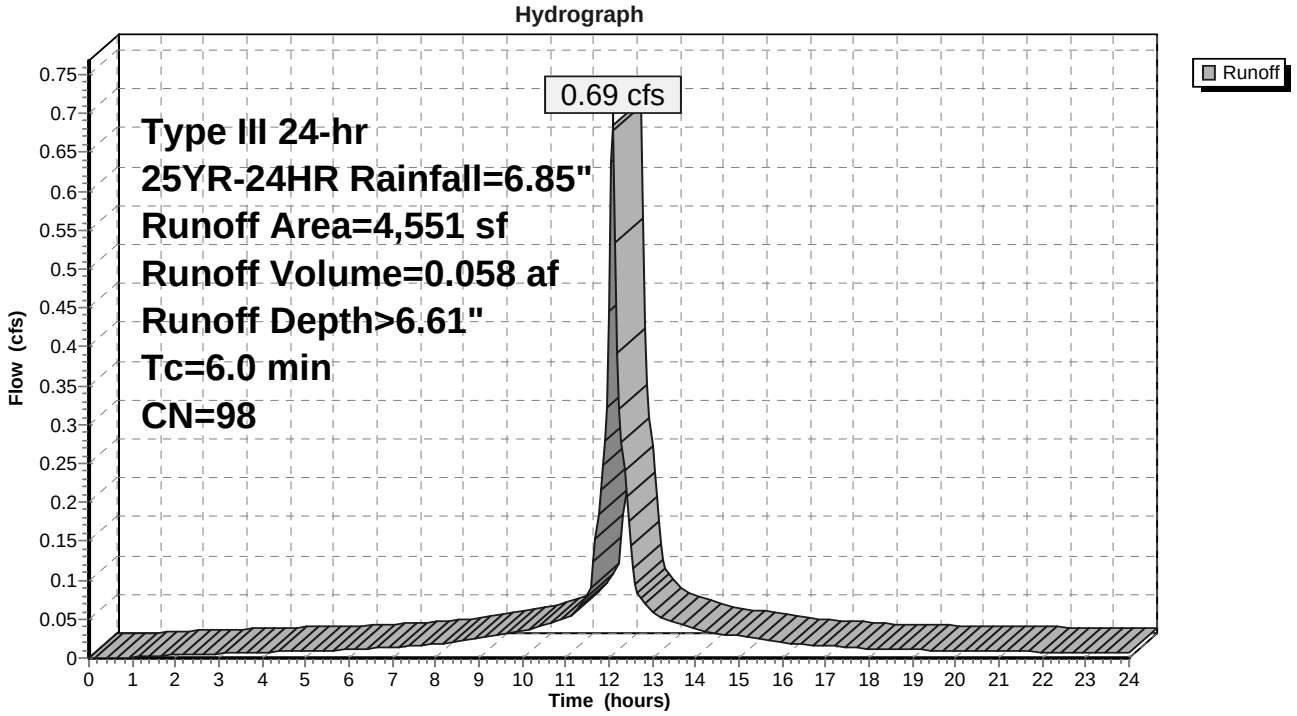
Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,551	98	Paved parking, HSG A
4,551		100.00% Impervious Area

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

Subcatchment 11S: Venture Drive NE



Summary for Subcatchment 12S: Central Site

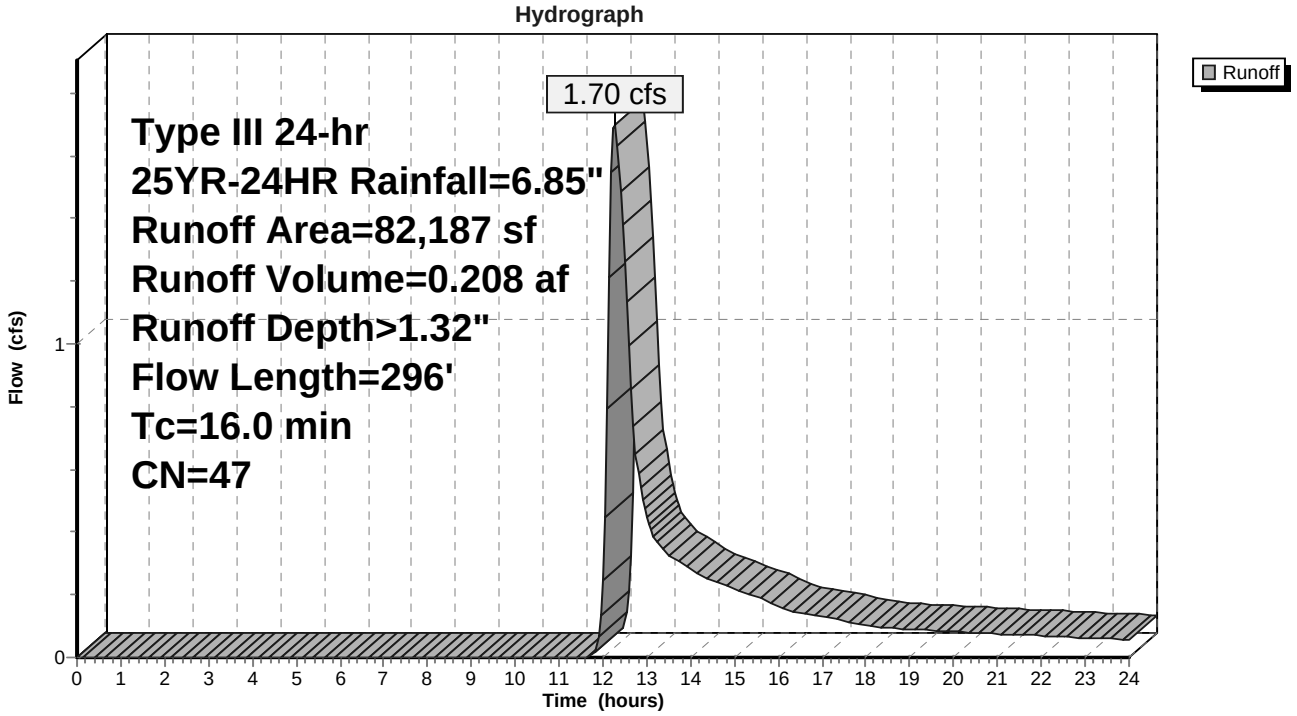
Runoff = 1.70 cfs @ 12.27 hrs, Volume= 0.208 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
5,778	39	>75% Grass cover, Good, HSG A
1,890	98	Paved parking, HSG A
44,201	30	Woods, Good, HSG A
811	74	>75% Grass cover, Good, HSG C
29,507	70	Woods, Good, HSG C
82,187	47	Weighted Average
80,297		97.70% Pervious Area
1,890		2.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0600	0.13		**Sheet Flow, Segment #1** Woods: Light underbrush n= 0.400 P2= 3.61"
3.0	196	0.0460	1.07		**Shallow Concentrated Flow, Segment #2** Woodland Kv= 5.0 fps
16.0	296	Total			

Subcatchment 12S: Central Site



Summary for Subcatchment 13S: Venture Drive

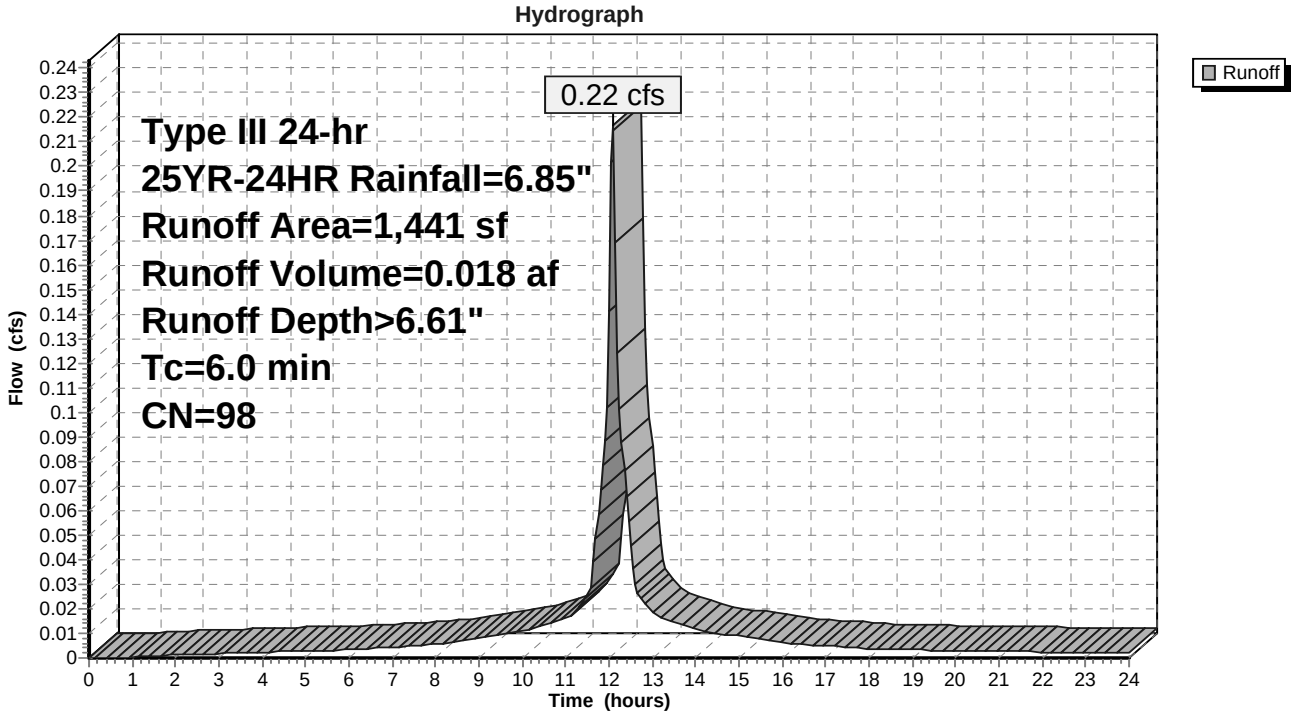
Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,441	98	Paved parking, HSG B
1,441		100.00% Impervious Area

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

Subcatchment 13S: Venture Drive



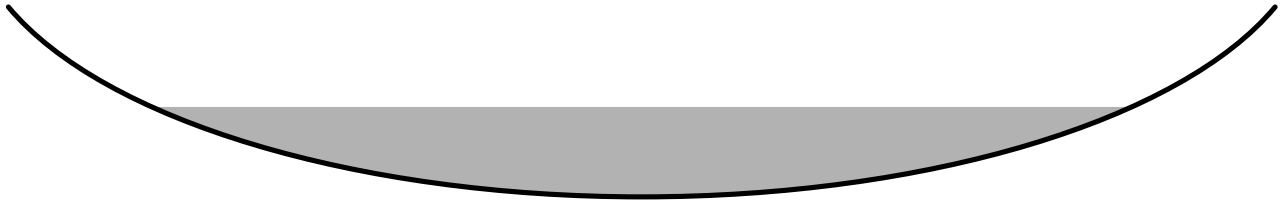
Summary for Reach 2R: Reach #2

Inflow Area = 1.895 ac, 41.22% Impervious, Inflow Depth > 2.53" for 25YR-24HR event
Inflow = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af
Outflow = 4.10 cfs @ 12.21 hrs, Volume= 0.398 af, Atten= 6%, Lag= 3.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.08 fps, Min. Travel Time= 4.5 min
Avg. Velocity = 0.33 fps, Avg. Travel Time= 14.6 min

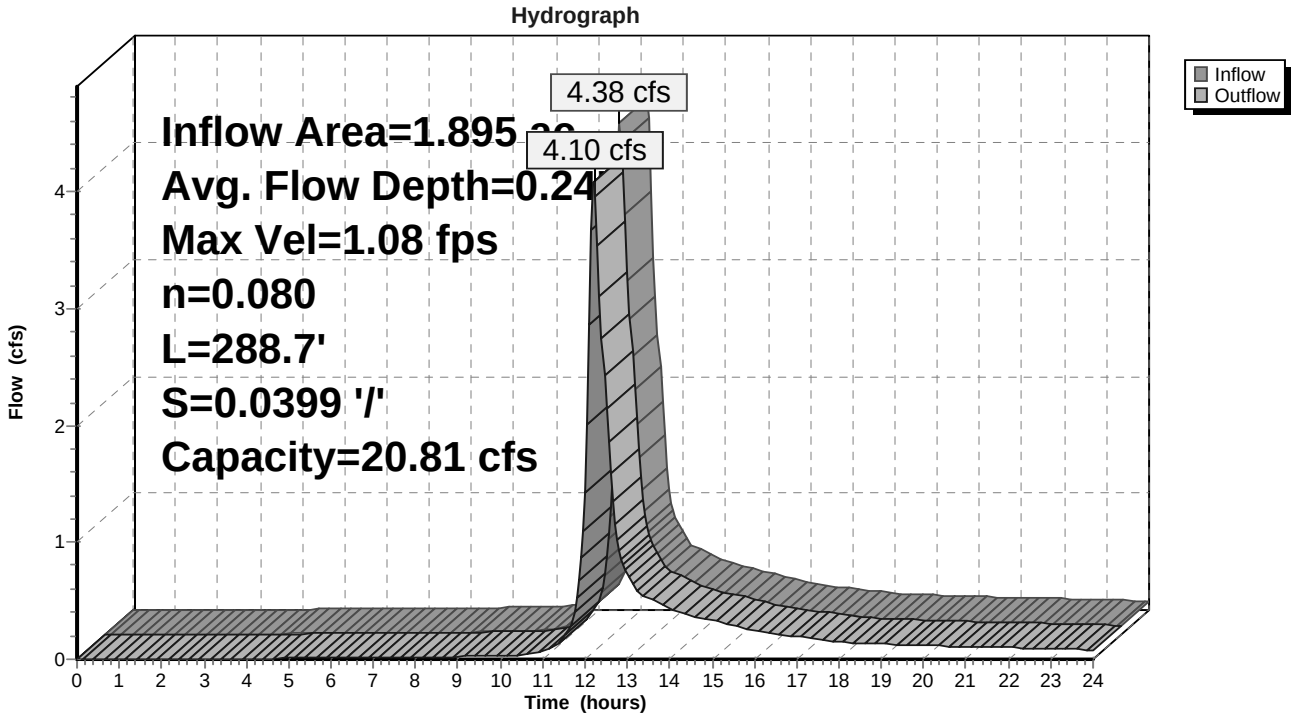
Peak Storage= 1,093 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 0.50' Flow Area= 11.7 sf, Capacity= 20.81 cfs

35.00' x 0.50' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 288.7' Slope= 0.0399 '/'
Inlet Invert= 166.78', Outlet Invert= 155.25'



‡

Reach 2R: Reach #2



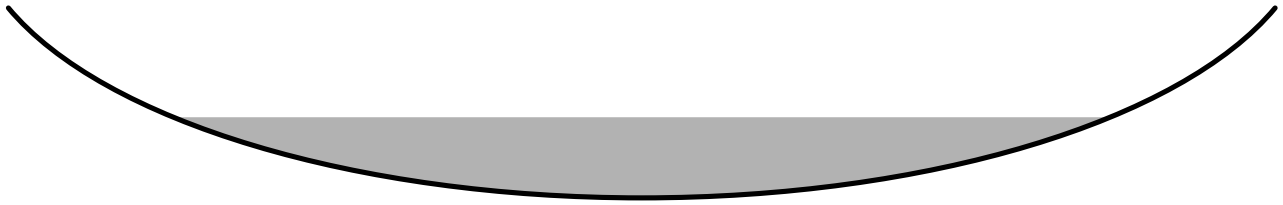
Summary for Reach 4R: Reach #4

Inflow Area = 0.178 ac, 73.32% Impervious, Inflow Depth > 5.39" for 25YR-24HR event
Inflow = 2.27 cfs @ 12.20 hrs, Volume= 0.080 af
Outflow = 1.60 cfs @ 12.23 hrs, Volume= 0.080 af, Atten= 29%, Lag= 1.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.69 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 7.9 min

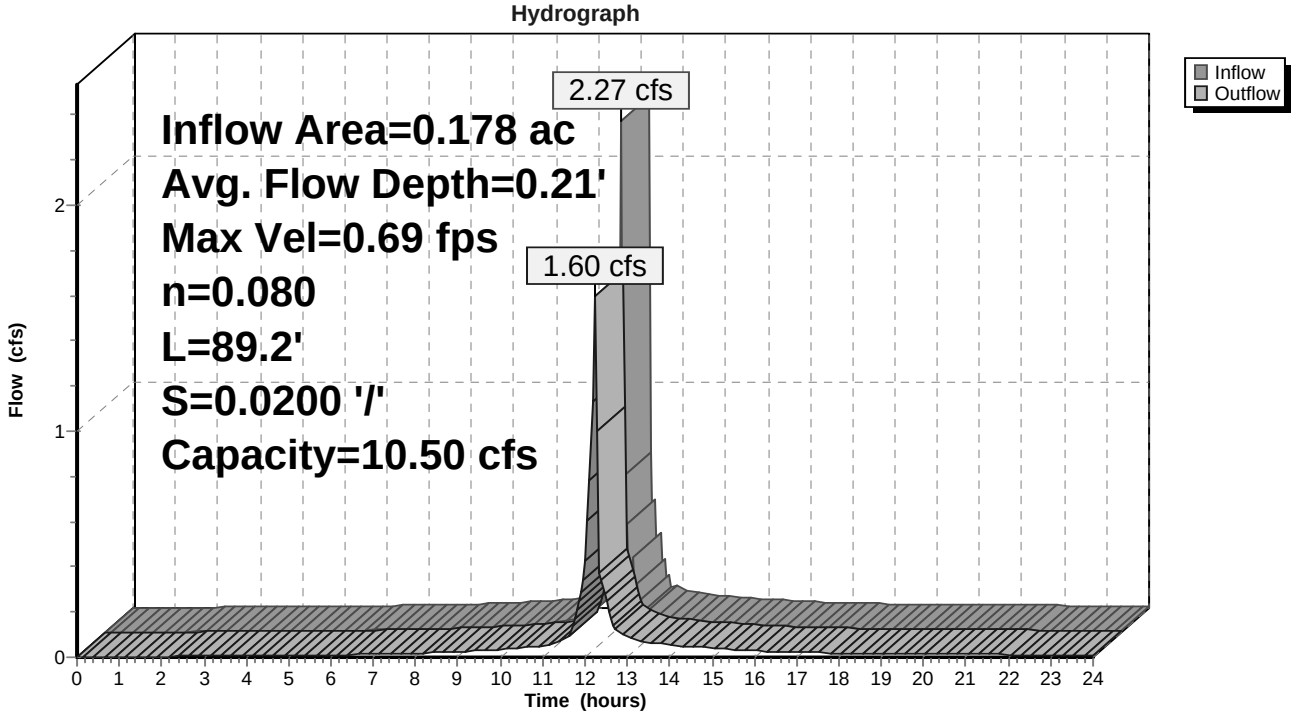
Peak Storage= 204 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 0.50' Flow Area= 8.3 sf, Capacity= 10.50 cfs

25.00' x 0.50' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 89.2' Slope= 0.0200 '/'
Inlet Invert= 167.78', Outlet Invert= 166.00'



‡

Reach 4R: Reach #4



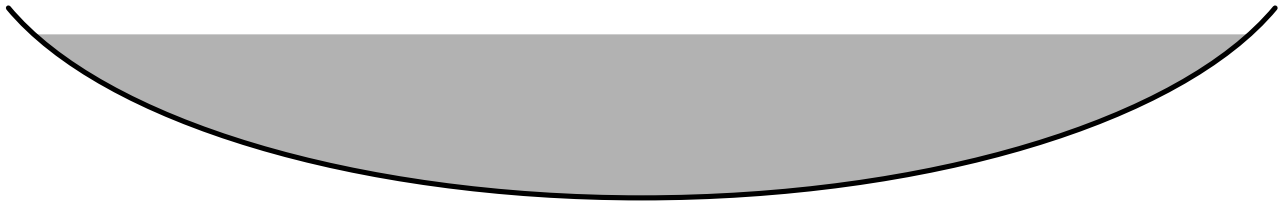
Summary for Reach 6R: Reach #6

Inflow Area = 1.666 ac, 65.49% Impervious, Inflow Depth > 4.20" for 25YR-24HR event
Inflow = 6.98 cfs @ 12.11 hrs, Volume= 0.584 af
Outflow = 6.96 cfs @ 12.12 hrs, Volume= 0.583 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.04 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 1.5 min

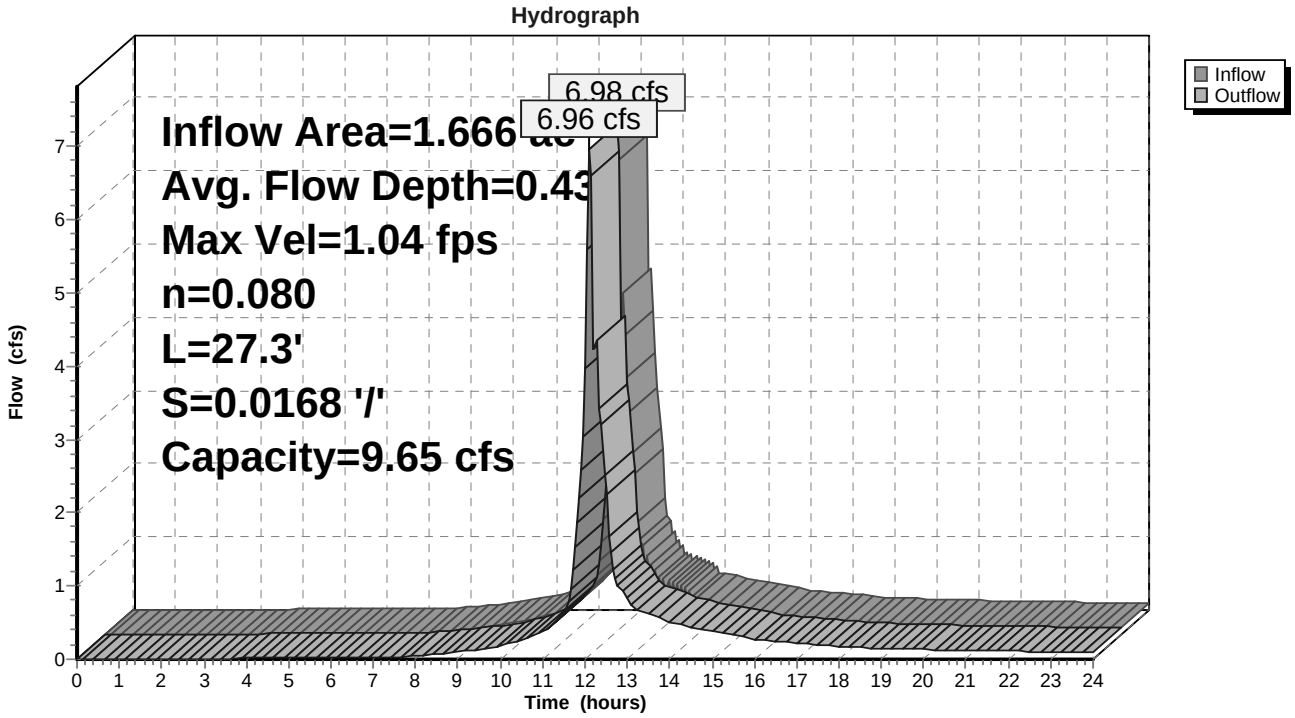
Peak Storage= 182 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 0.50' Flow Area= 8.3 sf, Capacity= 9.65 cfs

25.00' x 0.50' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 27.3' Slope= 0.0168 '/'
Inlet Invert= 166.46', Outlet Invert= 166.00'



‡

Reach 6R: Reach #6



Summary for Reach 10R: Combined Reach

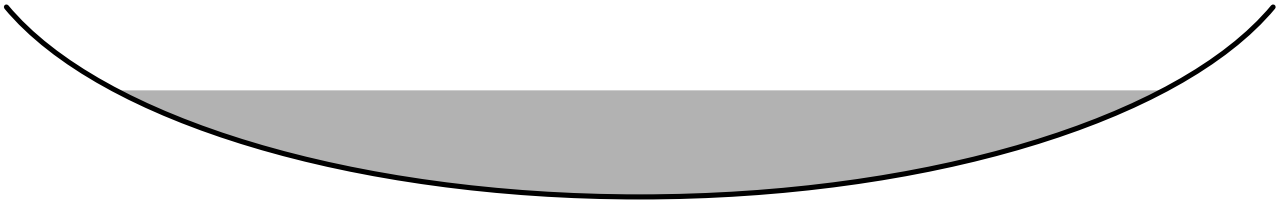
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.13' @ 12.15 hrs
[61] Hint: Exceeded Reach 6R outlet invert by 0.28' @ 12.15 hrs

Inflow Area = 1.844 ac, 66.25% Impervious, Inflow Depth > 4.32" for 25YR-24HR event
Inflow = 7.77 cfs @ 12.12 hrs, Volume= 0.663 af
Outflow = 7.72 cfs @ 12.13 hrs, Volume= 0.663 af, Atten= 1%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.57 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.48 fps, Avg. Travel Time= 2.3 min

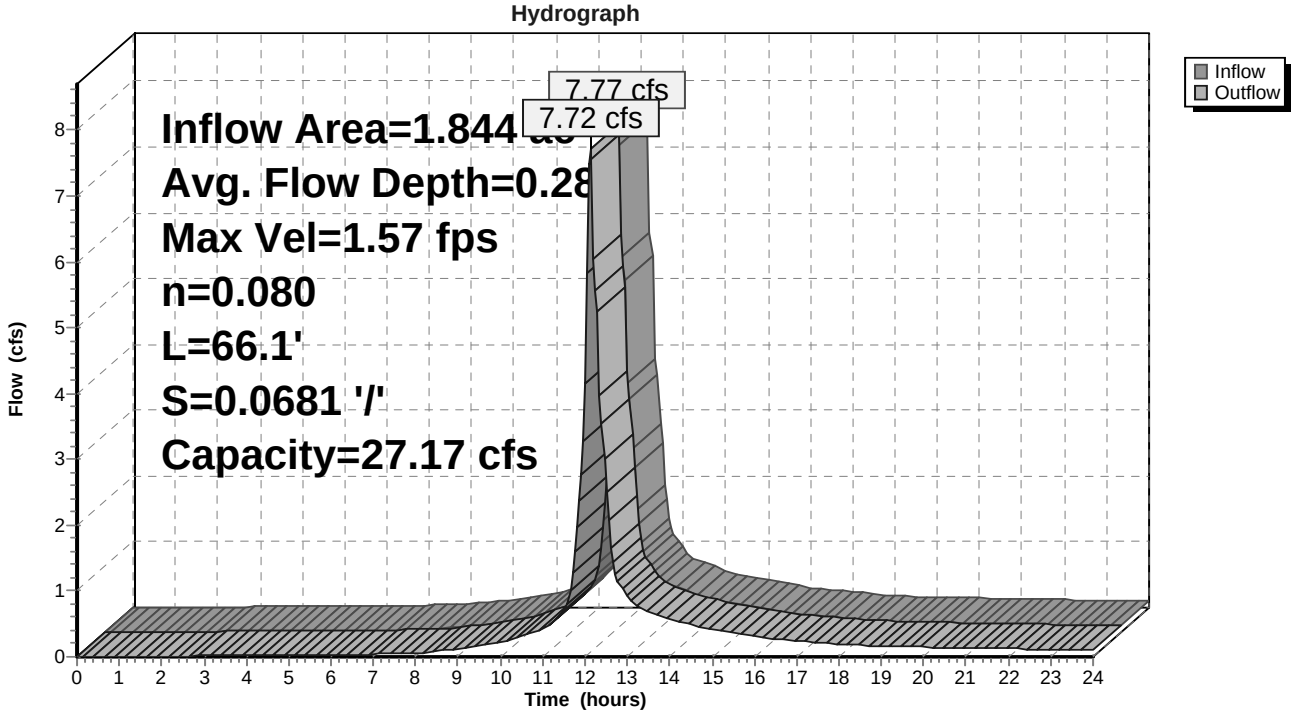
Peak Storage= 323 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 0.50' Flow Area= 11.7 sf, Capacity= 27.17 cfs

35.00' x 0.50' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 66.1' Slope= 0.0681 '/'
Inlet Invert= 166.00', Outlet Invert= 161.50'



‡

Reach 10R: Combined Reach



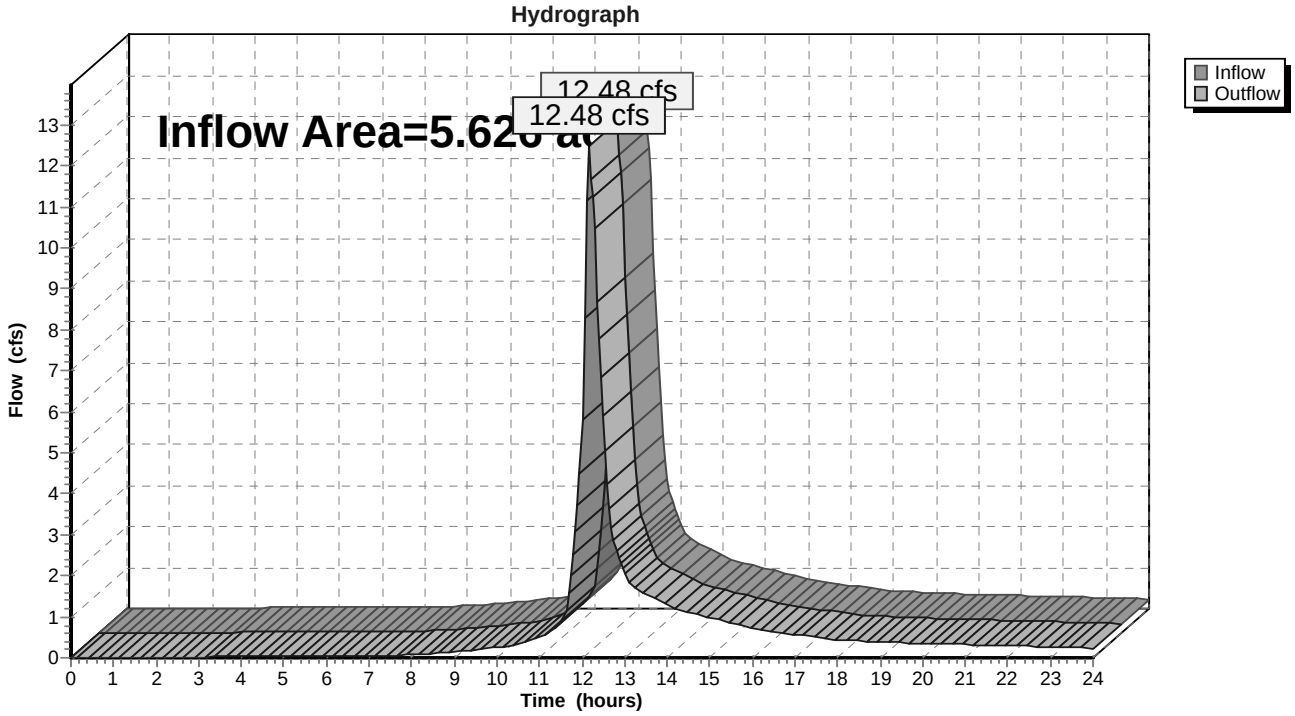
Summary for Reach 100R: Final Reach #100

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.626 ac, 36.37% Impervious, Inflow Depth > 2.71" for 25YR-24HR event
Inflow = 12.48 cfs @ 12.16 hrs, Volume= 1.269 af
Outflow = 12.48 cfs @ 12.16 hrs, Volume= 1.269 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 100R: Final Reach #100



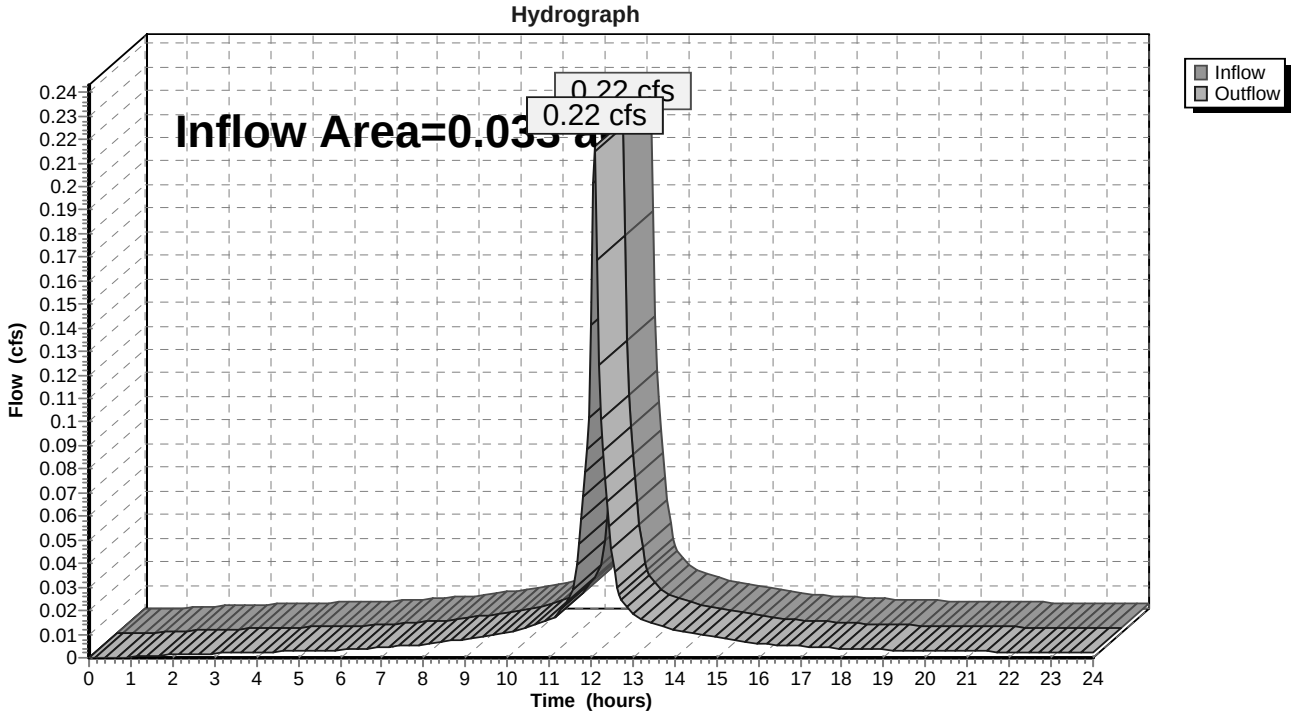
Summary for Reach 200R: Final Reach #200

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.033 ac,100.00% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 200R: Final Reach #200



Summary for Pond 1P: Roadside Pond

Inflow Area = 1.794 ac, 37.94% Impervious, Inflow Depth > 2.30" for 25YR-24HR event
Inflow = 3.98 cfs @ 12.15 hrs, Volume= 0.344 af
Outflow = 3.92 cfs @ 12.17 hrs, Volume= 0.344 af, Atten= 2%, Lag= 1.0 min
Primary = 3.92 cfs @ 12.17 hrs, Volume= 0.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 170.15' @ 12.17 hrs Surf.Area= 146 sf Storage= 62 cf

Plug-Flow detention time= 0.1 min calculated for 0.344 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (862.3 - 862.2)

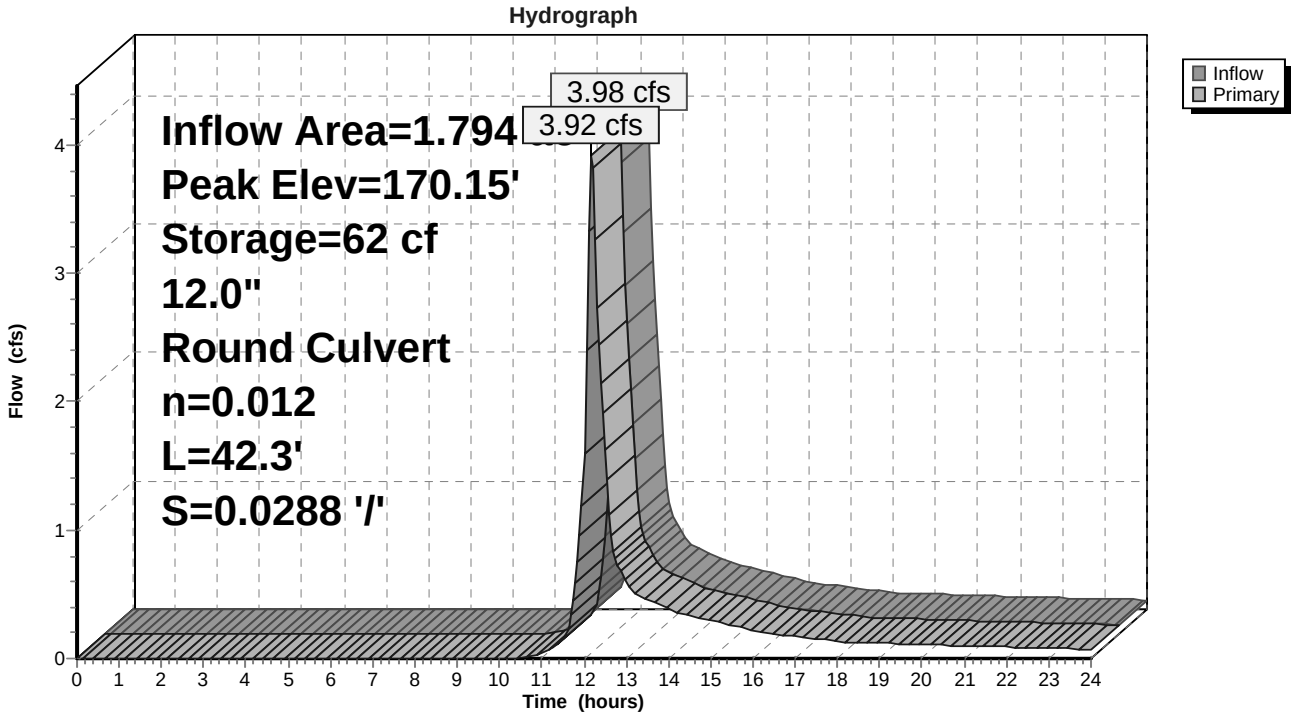
Volume	Invert	Avail.Storage	Storage Description
#1	168.58'	1,980 cf	**Open Water Storage (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
168.58	0	3.2	0	0	0
170.00	93	71.6	44	44	411
171.00	665	272.4	336	380	5,910
172.00	2,778	538.9	1,601	1,980	23,120

Device	Routing	Invert	Outlet Devices
#1	Primary	168.58'	**12.0" Round 12" RCP** L= 42.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.58' / 167.36' S= 0.0288 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.85 cfs @ 12.17 hrs HW=170.11' TW=168.89' (Dynamic Tailwater)
↑—**1=12" RCP** (Inlet Controls 3.85 cfs @ 4.90 fps)

Pond 1P: Roadside Pond



Summary for Pond 2P: CB #7325

Inflow Area = 1.895 ac, 41.22% Impervious, Inflow Depth > 2.53" for 25YR-24HR event
Inflow = 4.39 cfs @ 12.16 hrs, Volume= 0.400 af
Outflow = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af, Atten= 0%, Lag= 0.1 min
Primary = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 168.93' @ 12.16 hrs Surf.Area= 13 sf Storage= 25 cf

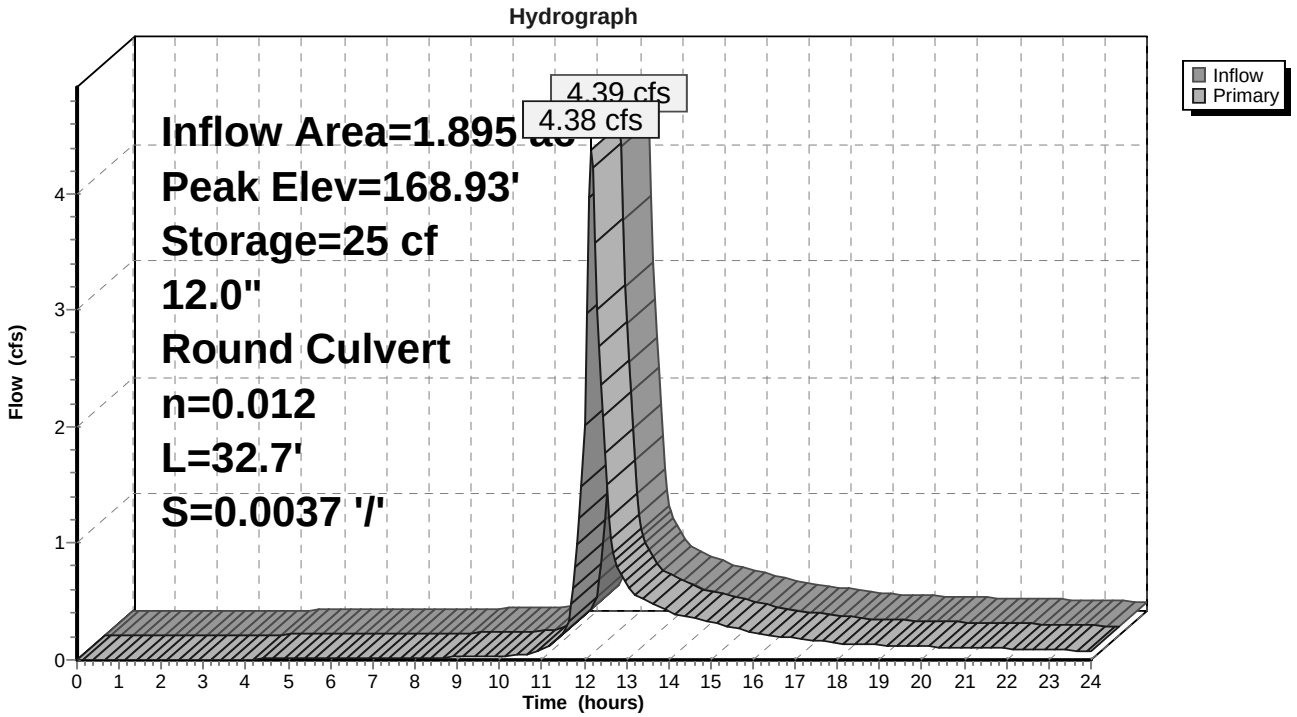
Plug-Flow detention time= 0.2 min calculated for 0.399 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (845.9 - 845.8)

Volume	Invert	Avail.Storage	Storage Description
#1	166.90'	97 cf	**4.00'D x 7.70'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	166.90'	**12.0" Round 12" RCP** L= 32.7' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 166.90' / 166.78' S= 0.0037 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.33 cfs @ 12.16 hrs HW=168.90' TW=167.01' (Dynamic Tailwater)
1=12" RCP (Barrel Controls 4.33 cfs @ 5.52 fps)

Pond 2P: CB #7325



Summary for Pond 3P: CB #7323

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=3)

Inflow Area = 0.072 ac, 34.19% Impervious, Inflow Depth > 3.61" for 25YR-24HR event
Inflow = 2.01 cfs @ 12.20 hrs, Volume= 0.022 af
Outflow = 1.93 cfs @ 12.20 hrs, Volume= 0.022 af, Atten= 4%, Lag= 0.1 min
Primary = 1.93 cfs @ 12.20 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.67' @ 12.20 hrs Surf.Area= 13 sf Storage= 10 cf

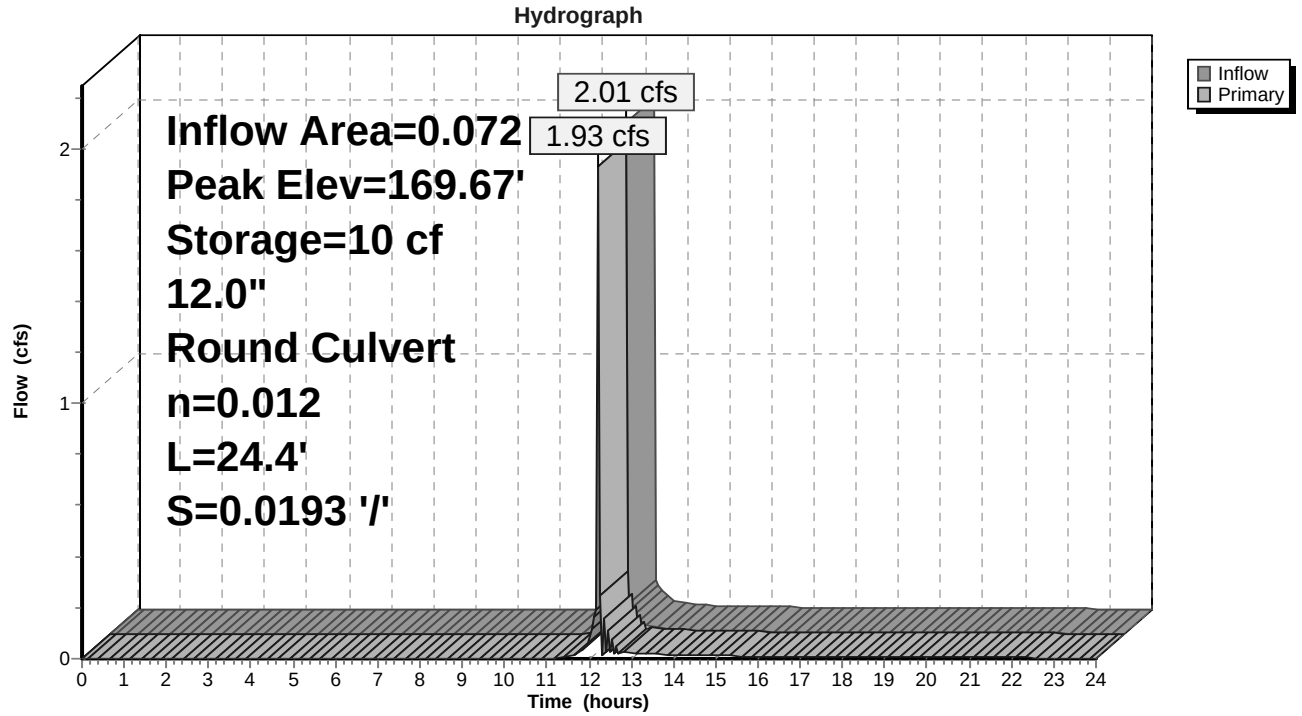
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (814.5 - 814.2)

Volume	Invert	Avail.Storage	Storage Description
#1	168.90'	40 cf	**4.00'D x 3.20'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.90'	**12.0" Round 12" RCP** L= 24.4' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.90' / 168.43' S= 0.0193 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.79 cfs @ 12.20 hrs HW=169.66' TW=169.19' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 1.79 cfs @ 3.85 fps)

Pond 3P: CB #7323



Summary for Pond 4P: CB #7324

Inflow Area = 0.178 ac, 73.32% Impervious, Inflow Depth > 5.39" for 25YR-24HR event
Inflow = 2.33 cfs @ 12.20 hrs, Volume= 0.080 af
Outflow = 2.27 cfs @ 12.20 hrs, Volume= 0.080 af, Atten= 3%, Lag= 0.1 min
Primary = 2.27 cfs @ 12.20 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.19' @ 12.20 hrs Surf.Area= 13 sf Storage= 11 cf

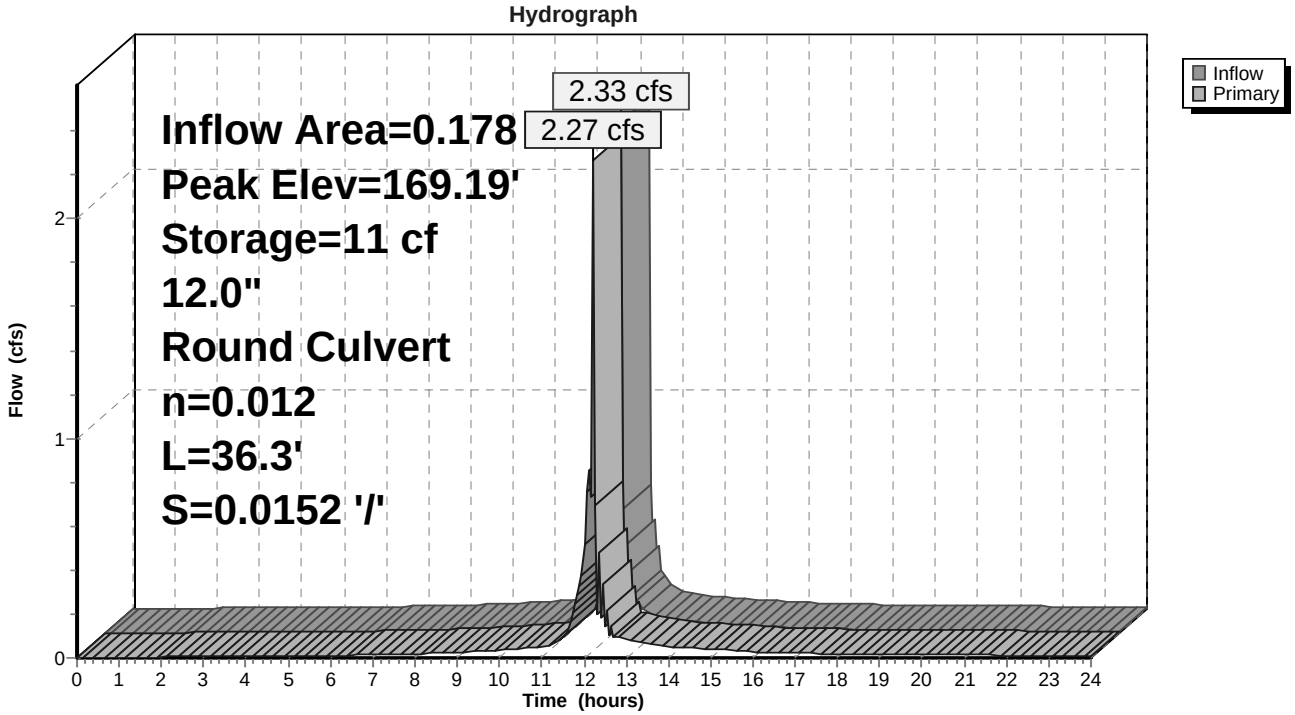
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (762.5 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1	168.33'	47 cf	**4.00'D x 3.75'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.33'	**12.0" Round 12" RCP** L= 36.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.33' / 167.78' S= 0.0152 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.26 cfs @ 12.20 hrs HW=169.19' TW=167.98' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 2.26 cfs @ 3.15 fps)

Pond 4P: CB #7324



Summary for Pond 5P: CB #7320

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=11)

Inflow Area = 0.043 ac,100.00% Impervious, Inflow Depth > 7.67" for 25YR-24HR event
Inflow = 0.75 cfs @ 12.16 hrs, Volume= 0.028 af
Outflow = 0.75 cfs @ 12.18 hrs, Volume= 0.028 af, Atten= 1%, Lag= 1.0 min
Primary = 0.75 cfs @ 12.18 hrs, Volume= 0.028 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 170.40' @ 12.16 hrs Surf.Area= 13 sf Storage= 41 cf
Flood Elev= 170.63' Surf.Area= 13 sf Storage= 44 cf

Plug-Flow detention time= 1.2 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (742.1 - 741.1)

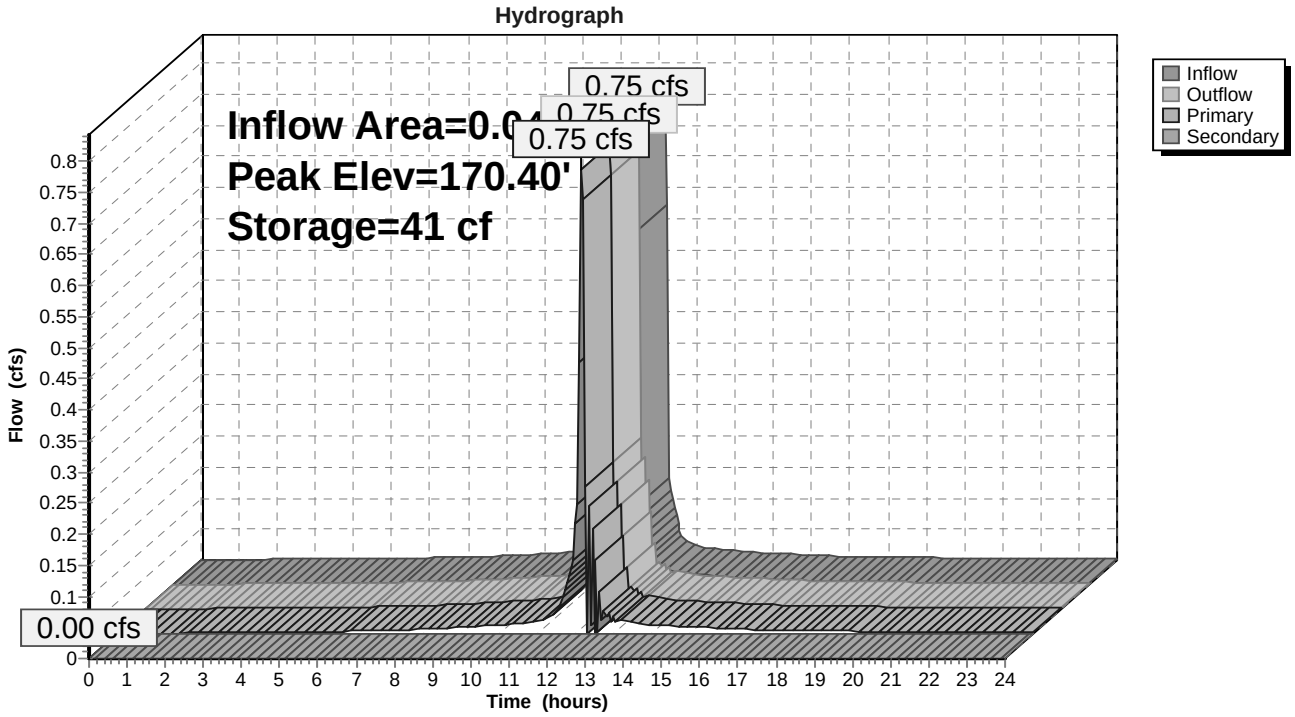
Volume	Invert	Avail.Storage	Storage Description
#1	167.11'	44 cf	**4.00'D x 3.52'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.11'	**12.0" Round 12" RCP** L= 25.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.11' / 166.51' S= 0.0237 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	170.62'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=4.04 cfs @ 12.18 hrs HW=170.12' TW=168.98' (Dynamic Tailwater)
↑—**1=12" RCP** (Inlet Controls 4.04 cfs @ 5.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=167.11' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: CB #7320



Summary for Pond 6P: CB #7319

[80] Warning: Exceeded Pond 5P by 1.00' @ 12.10 hrs (3.78 cfs 0.067 af)

Inflow Area =	1.666 ac,	65.49% Impervious,	Inflow Depth >	4.20" for 25YR-24HR event
Inflow =	7.03 cfs @	12.11 hrs,	Volume=	0.584 af
Outflow =	6.98 cfs @	12.11 hrs,	Volume=	0.584 af, Atten= 1%, Lag= 0.2 min
Primary =	6.98 cfs @	12.11 hrs,	Volume=	0.584 af
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 170.36' @ 12.11 hrs Surf.Area= 13 sf Storage= 49 cf
Flood Elev= 170.61' Surf.Area= 13 sf Storage= 52 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (810.3 - 810.1)

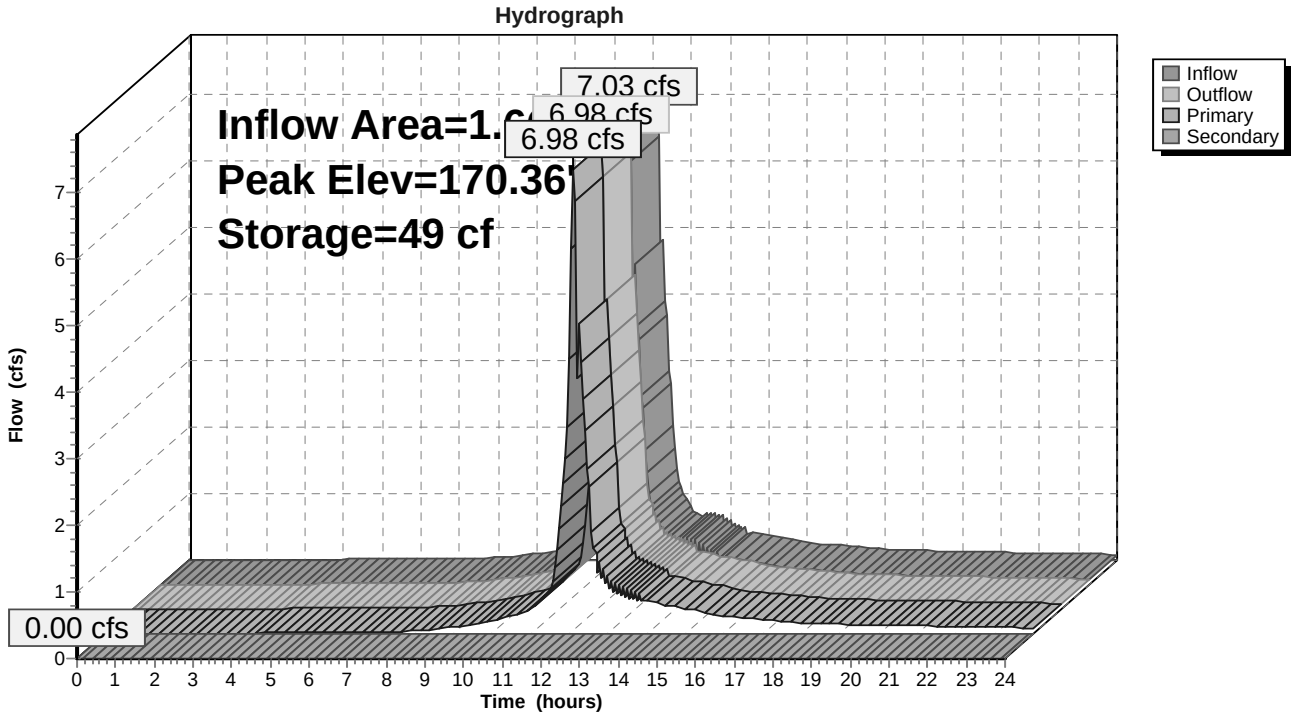
Volume	Invert	Avail.Storage	Storage Description
#1	166.45'	52 cf	**4.00'D x 4.16'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	166.46'	**12.0" Round 12" RCP** L= 27.1' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 166.45' / 166.46' S= -0.0004 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	170.60'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.85 cfs @ 12.11 hrs HW=170.24' TW=166.89' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 6.85 cfs @ 8.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.45' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 6P: CB #7319



Summary for Pond 7P: CB #3201

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=6)

Inflow Area = 0.078 ac, 53.78% Impervious, Inflow Depth > 3.28" for 25YR-24HR event
Inflow = 0.23 cfs @ 12.20 hrs, Volume= 0.021 af
Outflow = 0.45 cfs @ 12.34 hrs, Volume= 0.021 af, Atten= 0%, Lag= 8.9 min
Primary = 0.45 cfs @ 12.34 hrs, Volume= 0.021 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 177.11' @ 12.29 hrs Surf.Area= 13 sf Storage= 34 cf
Flood Elev= 177.22' Surf.Area= 13 sf Storage= 35 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (841.9 - 841.8)

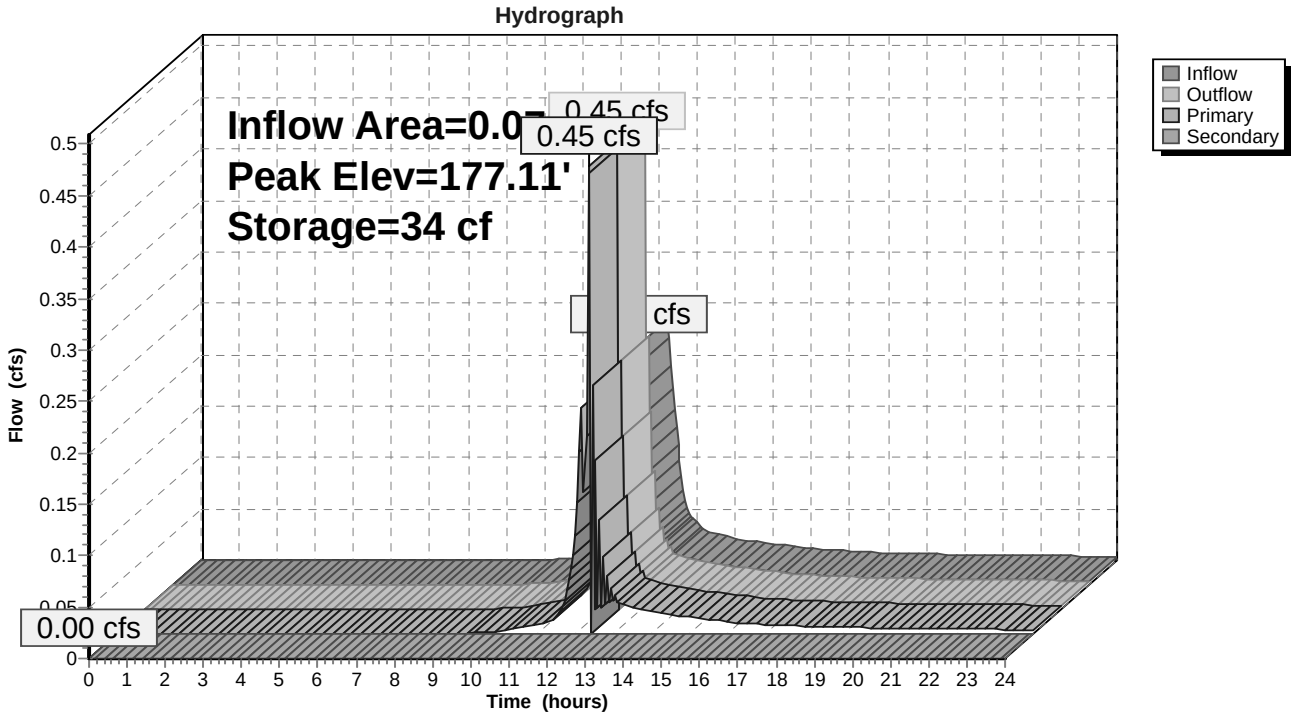
Volume	Invert	Avail.Storage	Storage Description
#1	174.37'	35 cf	**4.00'D x 2.80'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	174.37'	**12.0" Round 12" RCP** L= 17.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 174.37' / 173.93' S= 0.0251 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	177.16'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.55 cfs @ 12.34 hrs HW=175.32' TW=174.23' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 2.55 cfs @ 3.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=174.37' TW=173.61' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 7P: CB #3201



Summary for Pond 8P: CB #3202

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[80] Warning: Exceeded Pond 7P by 1.24' @ 12.20 hrs (3.99 cfs 0.034 af)

Inflow Area =	0.102 ac, 64.52% Impervious, Inflow Depth > 4.06"	for 25YR-24HR event		
Inflow =	0.51 cfs @	12.34 hrs, Volume=	0.034 af	
Outflow =	0.55 cfs @	12.31 hrs, Volume=	0.034 af, Atten= 0%, Lag= 0.0 min	
Primary =	0.55 cfs @	12.31 hrs, Volume=	0.034 af	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 177.11' @ 12.24 hrs Surf.Area= 13 sf Storage= 44 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.6 min (805.1 - 804.4)

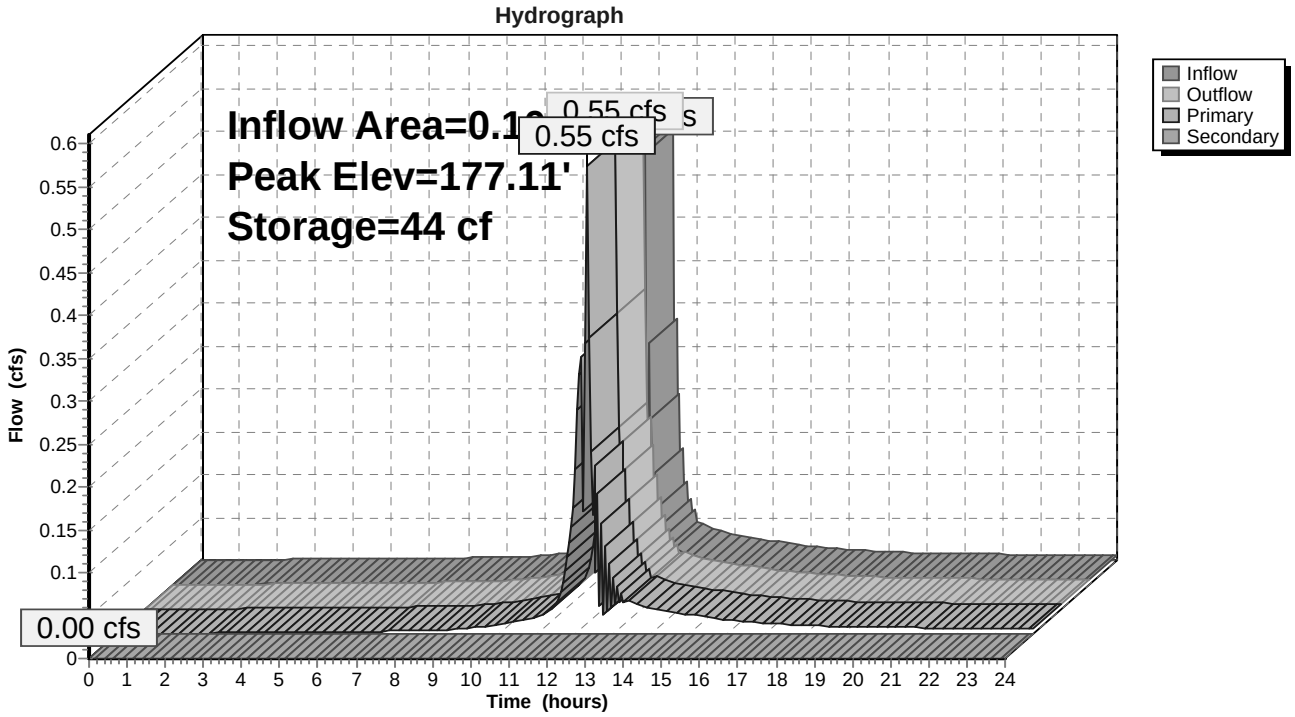
Volume	Invert	Avail.Storage	Storage Description
#1	173.61'	57 cf	**4.00'D x 4.54'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.61'	**12.0" Round 12" RCP** L= 25.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 173.61' / 173.31' S= 0.0116 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	178.14'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=3.23 cfs @ 12.31 hrs HW=174.84' TW=174.04' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 3.23 cfs @ 4.11 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.61' TW=173.21' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 8P: CB #3202



Summary for Pond 9P: CB #3203

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=5)
[80] Warning: Exceeded Pond 8P by 1.30' @ 12.15 hrs (4.31 cfs 0.049 af)

Inflow Area =	0.898 ac,	60.71% Impervious,	Inflow Depth >	4.02" for 25YR-24HR event
Inflow =	3.77 cfs @	12.12 hrs,	Volume=	0.301 af
Outflow =	3.74 cfs @	12.11 hrs,	Volume=	0.301 af, Atten= 1%, Lag= 0.0 min
Primary =	3.74 cfs @	12.11 hrs,	Volume=	0.301 af
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 177.11' @ 12.19 hrs Surf.Area= 13 sf Storage= 49 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (819.9 - 819.7)

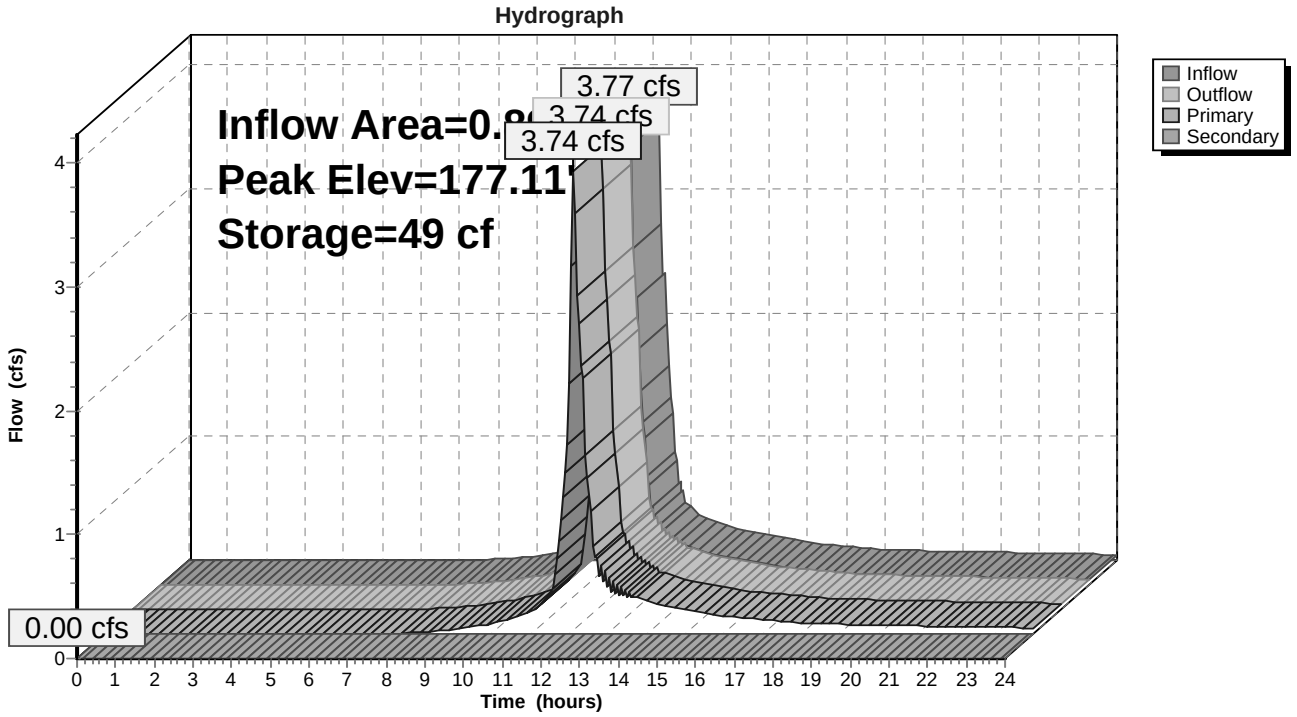
Volume	Invert	Avail.Storage	Storage Description
#1	173.21'	62 cf	**4.00'D x 4.92'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.21'	**12.0" Round 12" RCP** L= 208.7' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 173.21' / 168.55' S= 0.0223 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	178.12'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.90 cfs @ 12.11 hrs HW=174.93' TW=174.29' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 1.90 cfs @ 2.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.21' TW=171.40' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 9P: CB #3203



Summary for Pond 10P: CB #7322

[93] Warning: Storage range exceeded by 0.50'
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=13)

Inflow Area = 0.571 ac, 62.08% Impervious, Inflow Depth > 3.91" for 25YR-24HR event
Inflow = 2.54 cfs @ 12.10 hrs, Volume= 0.186 af
Outflow = 2.55 cfs @ 12.09 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
Primary = 2.55 cfs @ 12.09 hrs, Volume= 0.178 af
Secondary = 1.87 cfs @ 12.20 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 174.65' @ 12.20 hrs Surf.Area= 13 sf Storage= 35 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (822.8 - 822.7)

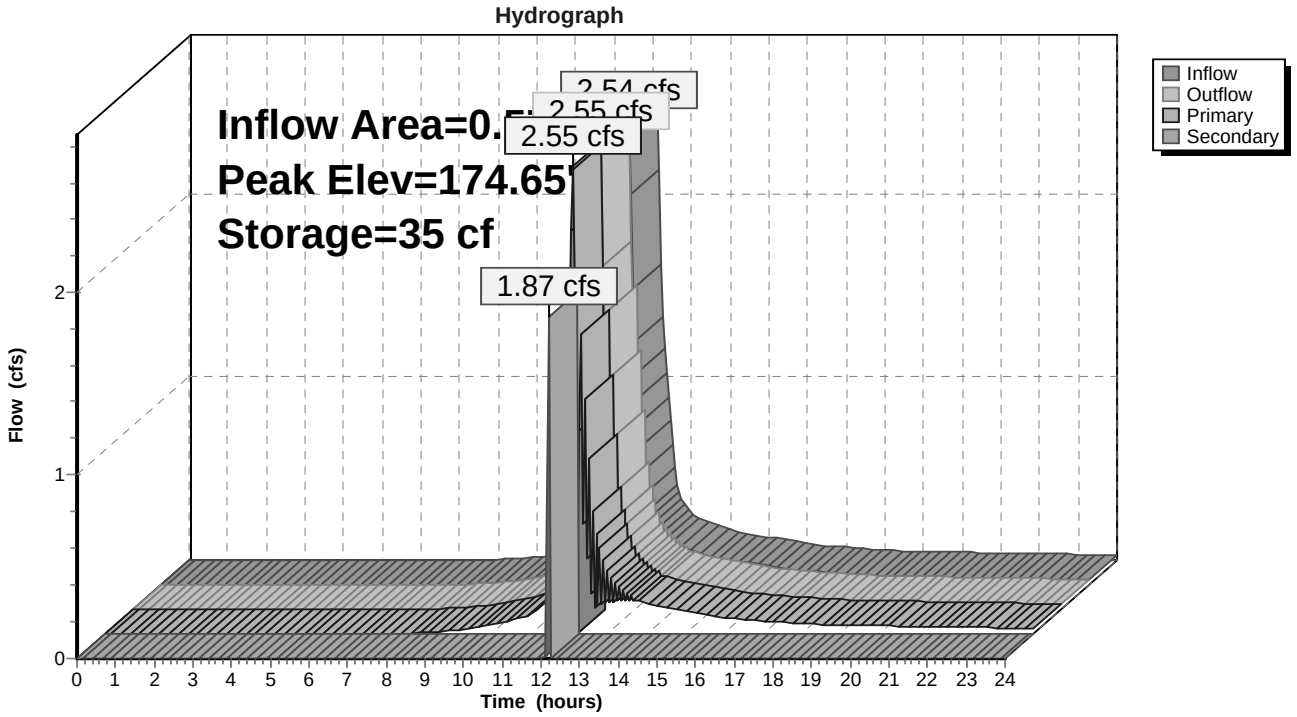
Volume	Invert	Avail.Storage	Storage Description
#1	171.40'	35 cf	**4.00'D x 2.75'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	171.40'	**12.0" Round 12" RCP** L= 1.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 171.40' / 170.45' S= 0.9500 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	174.14'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=172.33' TW=173.48' (Dynamic Tailwater)
1=12" RCP (Controls 0.00 cfs)

Secondary OutFlow Max=1.86 cfs @ 12.20 hrs HW=174.64' TW=169.67' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 1.86 cfs @ 1.85 fps)

Pond 10P: CB #7322



Summary for Pond 11P: CB #7321

[93] Warning: Storage range exceeded by 0.42'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=101)

Inflow Area = 0.104 ac,100.00% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 0.69 cfs @ 12.09 hrs, Volume= 0.058 af
Outflow = 0.63 cfs @ 12.24 hrs, Volume= 0.057 af, Atten= 8%, Lag= 9.1 min
Primary = 0.61 cfs @ 12.25 hrs, Volume= 0.053 af
Secondary = 0.55 cfs @ 12.17 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 173.39' @ 12.17 hrs Surf.Area= 13 sf Storage= 73 cf

Plug-Flow detention time= 6.3 min calculated for 0.057 af (99% of inflow)
Center-of-Mass det. time= 3.4 min (746.2 - 742.8)

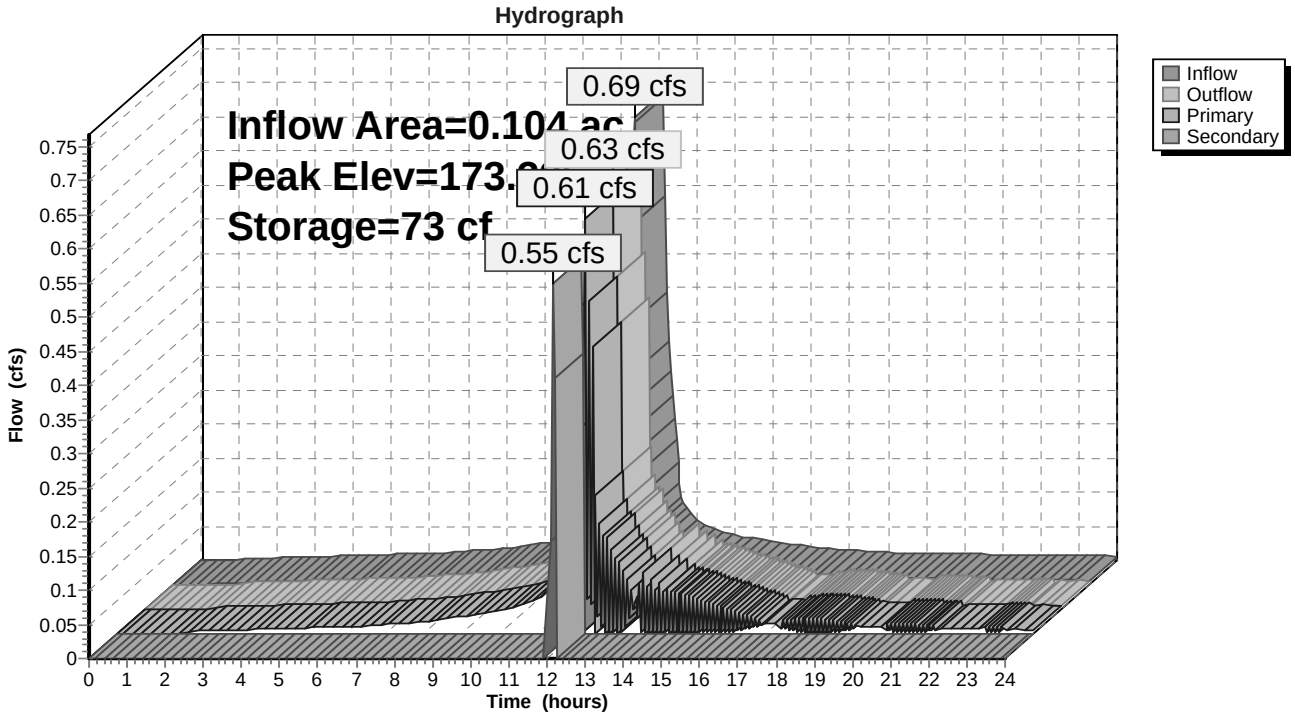
Volume	Invert	Avail.Storage	Storage Description
#1	167.17'	73 cf	**4.00'D x 5.80'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.86'	**12.0" Round 12" RCP** L= 25.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.17' / 167.86' S= -0.0267 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	172.96'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.56 cfs @ 12.25 hrs HW=170.76' TW=170.30' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 2.56 cfs @ 3.25 fps)

Secondary OutFlow Max=0.48 cfs @ 12.17 hrs HW=173.17' TW=170.22' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.48 cfs @ 1.16 fps)

Pond 11P: CB #7321



Summary for Pond D1P: DMH #4198

[93] Warning: Storage range exceeded by 1.70'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=7)
[80] Warning: Exceeded Pond 10P by 1.59' @ 12.10 hrs (4.77 cfs 0.039 af)

Inflow Area = 1.468 ac, 61.24% Impervious, Inflow Depth > 3.91" for 25YR-24HR event
Inflow = 6.25 cfs @ 12.10 hrs, Volume= 0.479 af
Outflow = 6.05 cfs @ 12.11 hrs, Volume= 0.479 af, Atten= 3%, Lag= 0.3 min
Primary = 6.05 cfs @ 12.11 hrs, Volume= 0.479 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 175.75' @ 12.15 hrs Surf.Area= 13 sf Storage= 70 cf

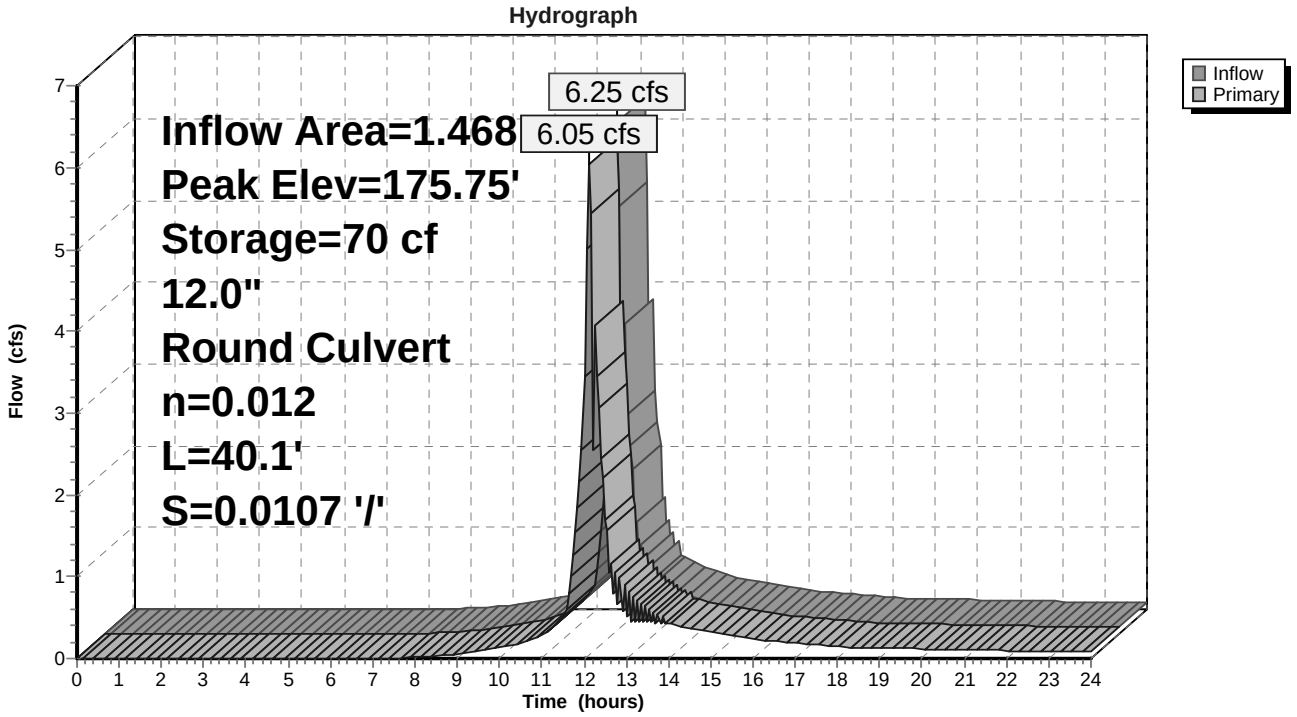
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (822.6 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	168.45'	70 cf	**4.00'D x 5.60'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.45'	**12.0" Round 12" RCP** L= 40.1' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.45' / 168.02' S= 0.0107 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.75 cfs @ 12.11 hrs HW=174.17' TW=173.64' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 2.75 cfs @ 3.50 fps)

Pond D1P: DMH #4198



Summary for Pond D2P: DMH #8054

[93] Warning: Storage range exceeded by 0.92'
[80] Warning: Exceeded Pond 11P by 2.28' @ 12.10 hrs (5.71 cfs 0.134 af)
[80] Warning: Exceeded Pond D1P by 0.15' @ 12.05 hrs (1.44 cfs 0.006 af)

Inflow Area = 1.573 ac, 63.82% Impervious, Inflow Depth > 4.06" for 25YR-24HR event
Inflow = 6.52 cfs @ 12.10 hrs, Volume= 0.532 af
Outflow = 6.50 cfs @ 12.10 hrs, Volume= 0.532 af, Atten= 0%, Lag= 0.2 min
Primary = 6.50 cfs @ 12.10 hrs, Volume= 0.532 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 173.88' @ 12.12 hrs Surf.Area= 13 sf Storage= 64 cf

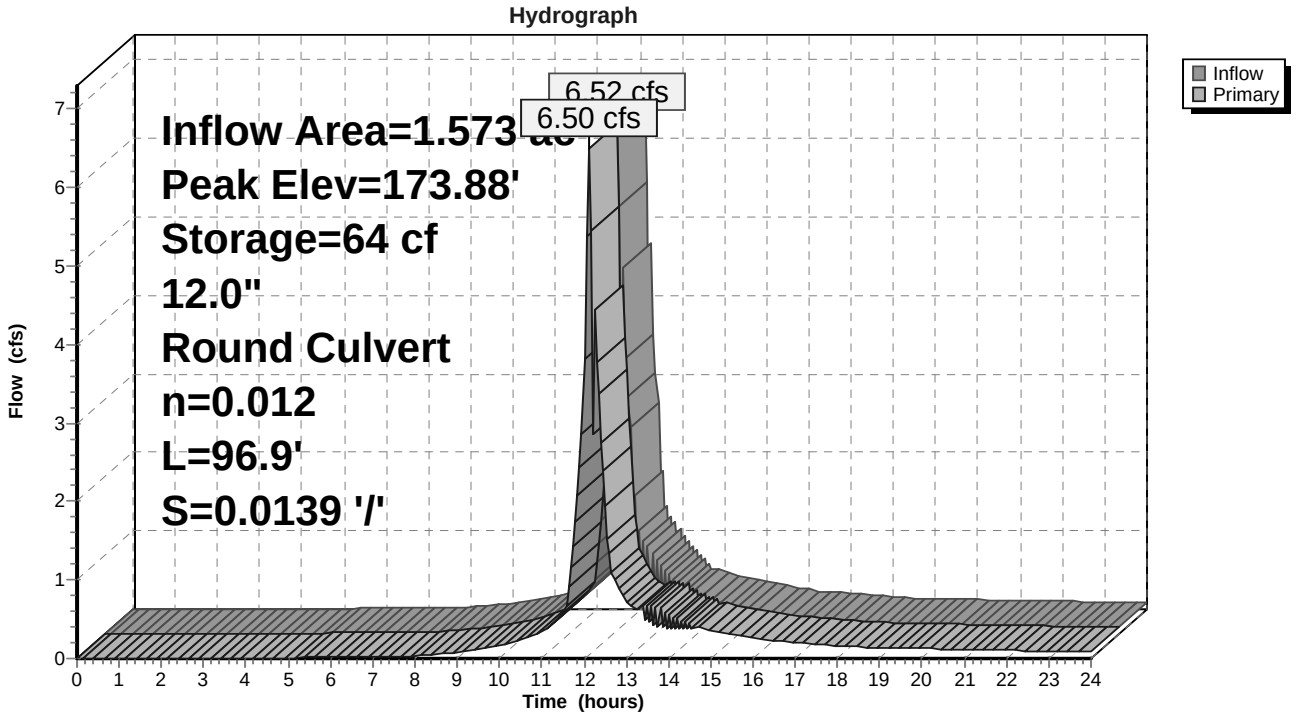
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (815.2 - 815.0)

Volume	Invert	Avail.Storage	Storage Description
#1	167.86'	64 cf	**4.00'D x 5.10'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.86'	**12.0" Round 12" RCP** L= 96.9' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.86' / 166.51' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.70 cfs @ 12.10 hrs HW=173.68' TW=170.33' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 5.70 cfs @ 7.26 fps)

Pond D2P: DMH #8054



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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>0.49"
Flow Length=326' Tc=10.1 min CN=58 Runoff=0.55 cfs 0.073 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>0.49"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.02 cfs 0.003 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.030 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>2.63"
Tc=6.0 min CN=91 Runoff=0.15 cfs 0.011 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>0.96"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.06 cfs 0.006 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>1.37"
Flow Length=257' Tc=7.9 min CN=75 Runoff=1.15 cfs 0.091 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>1.31"
Flow Length=151' Tc=6.4 min CN=74 Runoff=0.82 cfs 0.062 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.029 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>0.14"
Flow Length=296' Tc=16.0 min CN=47 Runoff=0.04 cfs 0.022 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Reach 2R: Reach #2 Avg. Flow Depth=0.10' Max Vel=0.62 fps Inflow=0.78 cfs 0.102 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=0.65 cfs 0.101 af

Reach 4R: Reach #4 Avg. Flow Depth=0.10' Max Vel=0.44 fps Inflow=0.38 cfs 0.033 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=0.35 cfs 0.033 af

Reach 6R: Reach #6 Avg. Flow Depth=0.28' Max Vel=0.78 fps Inflow=2.67 cfs 0.218 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=2.67 cfs 0.218 af

Reach 10R: Combined Reach Avg. Flow Depth=0.18' Max Vel=1.18 fps Inflow=3.01 cfs 0.250 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=2.97 cfs 0.250 af

Reach 100R: Final Reach #100 Inflow=3.42 cfs 0.373 af
Outflow=3.42 cfs 0.373 af

Reach 200R: Final Reach #200 Inflow=0.11 cfs 0.009 af
Outflow=0.11 cfs 0.009 af

Pond 1P: Roadside Pond Peak Elev=168.95' Storage=1 cf Inflow=0.55 cfs 0.073 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=0.55 cfs 0.073 af

Pond 2P: CB #7325 Peak Elev=167.45' Storage=7 cf Inflow=0.77 cfs 0.102 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=0.78 cfs 0.102 af

Pond 3P: CB #7323 Peak Elev=168.97' Storage=1 cf Inflow=0.02 cfs 0.003 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=0.02 cfs 0.003 af

Pond 4P: CB #7324 Peak Elev=168.63' Storage=4 cf Inflow=0.38 cfs 0.033 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=0.38 cfs 0.033 af

Pond 5P: CB #7320 Peak Elev=167.86' Storage=9 cf Inflow=0.15 cfs 0.012 af
Primary=0.13 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.012 af

Pond 6P: CB #7319 Peak Elev=167.86' Storage=18 cf Inflow=2.68 cfs 0.218 af
Primary=2.67 cfs 0.218 af Secondary=0.00 cfs 0.000 af Outflow=2.67 cfs 0.218 af

Pond 7P: CB #3201 Peak Elev=174.49' Storage=1 cf Inflow=0.06 cfs 0.006 af
Primary=0.06 cfs 0.006 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.006 af

Pond 8P: CB #3202 Peak Elev=173.86' Storage=3 cf Inflow=0.12 cfs 0.013 af
Primary=0.12 cfs 0.013 af Secondary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.013 af

Pond 9P: CB #3203 Peak Elev=173.80' Storage=7 cf Inflow=1.27 cfs 0.104 af
Primary=1.27 cfs 0.104 af Secondary=0.00 cfs 0.000 af Outflow=1.27 cfs 0.104 af

Pond 10P: CB #7322 Peak Elev=171.86' Storage=6 cf Inflow=0.82 cfs 0.062 af
Primary=0.82 cfs 0.062 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.062 af

Pond 11P: CB #7321 Peak Elev=168.78' Storage=20 cf Inflow=0.36 cfs 0.029 af
Primary=0.34 cfs 0.029 af Secondary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.029 af

Pond D1P: DMH #4198 Peak Elev=169.29' Storage=11 cf Inflow=2.09 cfs 0.166 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=2.08 cfs 0.166 af

Pond D2P: DMH #8054 Peak Elev=168.77' Storage=11 cf Inflow=2.42 cfs 0.195 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=2.42 cfs 0.195 af

Total Runoff Area = 5.659 ac Runoff Volume = 0.384 af Average Runoff Depth = 0.81"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>1.40"
Flow Length=326' Tc=10.1 min CN=58 Runoff=2.28 cfs 0.210 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.043 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>1.40"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.10 cfs 0.008 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.046 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.019 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>4.39"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.018 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>2.18"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.15 cfs 0.014 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>2.79"
Flow Length=257' Tc=7.9 min CN=75 Runoff=2.41 cfs 0.185 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>2.70"
Flow Length=151' Tc=6.4 min CN=74 Runoff=1.75 cfs 0.128 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.045 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>0.69"
Flow Length=296' Tc=16.0 min CN=47 Runoff=0.68 cfs 0.108 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Reach 2R: Reach #2 Avg. Flow Depth=0.18' Max Vel=0.91 fps Inflow=2.66 cfs 0.253 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=2.38 cfs 0.252 af

Reach 4R: Reach #4 Avg. Flow Depth=0.13' Max Vel=0.52 fps Inflow=0.64 cfs 0.054 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=0.59 cfs 0.054 af

Reach 6R: Reach #6 Avg. Flow Depth=0.37' Max Vel=0.95 fps Inflow=5.06 cfs 0.419 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=5.07 cfs 0.419 af

Reach 10R: Combined Reach Avg. Flow Depth=0.24' Max Vel=1.43 fps Inflow=5.66 cfs 0.473 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=5.58 cfs 0.473 af

Reach 100R: Final Reach #100 Inflow=7.94 cfs 0.833 af
Outflow=7.94 cfs 0.833 af

Reach 200R: Final Reach #200 Inflow=0.17 cfs 0.014 af
Outflow=0.17 cfs 0.014 af

Pond 1P: Roadside Pond Peak Elev=169.44' Storage=10 cf Inflow=2.28 cfs 0.210 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=2.27 cfs 0.210 af

Pond 2P: CB #7325 Peak Elev=168.12' Storage=15 cf Inflow=2.66 cfs 0.253 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=2.66 cfs 0.253 af

Pond 3P: CB #7323 Peak Elev=169.05' Storage=2 cf Inflow=0.10 cfs 0.008 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=0.10 cfs 0.008 af

Pond 4P: CB #7324 Peak Elev=168.73' Storage=5 cf Inflow=0.64 cfs 0.054 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=0.64 cfs 0.054 af

Pond 5P: CB #7320 Peak Elev=168.88' Storage=22 cf Inflow=0.22 cfs 0.019 af
Primary=0.18 cfs 0.019 af Secondary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.019 af

Pond 6P: CB #7319 Peak Elev=168.88' Storage=31 cf Inflow=5.07 cfs 0.420 af
Primary=5.06 cfs 0.419 af Secondary=0.00 cfs 0.000 af Outflow=5.06 cfs 0.419 af

Pond 7P: CB #3201 Peak Elev=174.56' Storage=2 cf Inflow=0.15 cfs 0.014 af
Primary=0.15 cfs 0.014 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.014 af

Pond 8P: CB #3202 Peak Elev=174.20' Storage=7 cf Inflow=0.24 cfs 0.024 af
Primary=0.24 cfs 0.024 af Secondary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.024 af

Pond 9P: CB #3203 Peak Elev=174.18' Storage=12 cf Inflow=2.63 cfs 0.209 af
Primary=2.63 cfs 0.209 af Secondary=0.00 cfs 0.000 af Outflow=2.63 cfs 0.209 af

Pond 10P: CB #7322 Peak Elev=172.12' Storage=9 cf Inflow=1.75 cfs 0.128 af
Primary=1.75 cfs 0.128 af Secondary=0.00 cfs 0.000 af Outflow=1.75 cfs 0.128 af

Pond 11P: CB #7321 Peak Elev=170.87' Storage=47 cf Inflow=0.54 cfs 0.045 af
Primary=0.49 cfs 0.045 af Secondary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.045 af

Pond D1P: DMH #4198 Peak Elev=171.83' Storage=42 cf Inflow=4.37 cfs 0.338 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=4.28 cfs 0.338 af

Pond D2P: DMH #8054 Peak Elev=170.86' Storage=38 cf Inflow=4.74 cfs 0.383 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=4.66 cfs 0.383 af

Total Runoff Area = 5.659 ac Runoff Volume = 0.850 af Average Runoff Depth = 1.80"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>2.30"
Flow Length=326' Tc=10.1 min CN=58 Runoff=3.98 cfs 0.344 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>2.30"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.17 cfs 0.014 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.70 cfs 0.058 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.024 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>5.79"
Tc=6.0 min CN=91 Runoff=0.31 cfs 0.024 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>3.28"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.23 cfs 0.021 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>4.01"
Flow Length=257' Tc=7.9 min CN=75 Runoff=3.46 cfs 0.266 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>3.91"
Flow Length=151' Tc=6.4 min CN=74 Runoff=2.54 cfs 0.186 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>1.32"
Flow Length=296' Tc=16.0 min CN=47 Runoff=1.70 cfs 0.208 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Reach 2R: Reach #2 Avg. Flow Depth=0.24' Max Vel=1.08 fps Inflow=4.38 cfs 0.399 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=4.10 cfs 0.398 af

Reach 4R: Reach #4 Avg. Flow Depth=0.21' Max Vel=0.69 fps Inflow=2.27 cfs 0.080 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=1.60 cfs 0.080 af

Reach 6R: Reach #6 Avg. Flow Depth=0.43' Max Vel=1.04 fps Inflow=6.98 cfs 0.584 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=6.96 cfs 0.583 af

Reach 10R: Combined Reach Avg. Flow Depth=0.28' Max Vel=1.57 fps Inflow=7.77 cfs 0.663 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=7.72 cfs 0.663 af

Reach 100R: Final Reach #100 Inflow=12.48 cfs 1.269 af
Outflow=12.48 cfs 1.269 af

Reach 200R: Final Reach #200 Inflow=0.22 cfs 0.018 af
Outflow=0.22 cfs 0.018 af

Pond 1P: Roadside Pond Peak Elev=170.15' Storage=62 cf Inflow=3.98 cfs 0.344 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=3.92 cfs 0.344 af

Pond 2P: CB #7325 Peak Elev=168.93' Storage=25 cf Inflow=4.39 cfs 0.400 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=4.38 cfs 0.399 af

Pond 3P: CB #7323 Peak Elev=169.67' Storage=10 cf Inflow=2.01 cfs 0.022 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=1.93 cfs 0.022 af

Pond 4P: CB #7324 Peak Elev=169.19' Storage=11 cf Inflow=2.33 cfs 0.080 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=2.27 cfs 0.080 af

Pond 5P: CB #7320 Peak Elev=170.40' Storage=41 cf Inflow=0.75 cfs 0.028 af
Primary=0.75 cfs 0.028 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 0.028 af

Pond 6P: CB #7319 Peak Elev=170.36' Storage=49 cf Inflow=7.03 cfs 0.584 af
Primary=6.98 cfs 0.584 af Secondary=0.00 cfs 0.000 af Outflow=6.98 cfs 0.584 af

Pond 7P: CB #3201 Peak Elev=177.11' Storage=34 cf Inflow=0.23 cfs 0.021 af
Primary=0.45 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.45 cfs 0.021 af

Pond 8P: CB #3202 Peak Elev=177.11' Storage=44 cf Inflow=0.51 cfs 0.034 af
Primary=0.55 cfs 0.034 af Secondary=0.00 cfs 0.000 af Outflow=0.55 cfs 0.034 af

Pond 9P: CB #3203 Peak Elev=177.11' Storage=49 cf Inflow=3.77 cfs 0.301 af
Primary=3.74 cfs 0.301 af Secondary=0.00 cfs 0.000 af Outflow=3.74 cfs 0.301 af

Pond 10P: CB #7322 Peak Elev=174.65' Storage=35 cf Inflow=2.54 cfs 0.186 af
Primary=2.55 cfs 0.178 af Secondary=1.87 cfs 0.008 af Outflow=2.55 cfs 0.186 af

Pond 11P: CB #7321 Peak Elev=173.39' Storage=73 cf Inflow=0.69 cfs 0.058 af
Primary=0.61 cfs 0.053 af Secondary=0.55 cfs 0.004 af Outflow=0.63 cfs 0.057 af

Pond D1P: DMH #4198 Peak Elev=175.75' Storage=70 cf Inflow=6.25 cfs 0.479 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=6.05 cfs 0.479 af

Pond D2P: DMH #8054 Peak Elev=173.88' Storage=64 cf Inflow=6.52 cfs 0.532 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=6.50 cfs 0.532 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.290 af Average Runoff Depth = 2.74"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>3.24"
Flow Length=326' Tc=10.1 min CN=58 Runoff=5.75 cfs 0.484 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.79 cfs 0.066 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>3.24"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.25 cfs 0.019 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.83 cfs 0.070 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>7.10"
Tc=6.0 min CN=91 Runoff=0.38 cfs 0.030 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>4.38"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.31 cfs 0.028 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.016 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>5.20"
Flow Length=257' Tc=7.9 min CN=75 Runoff=4.47 cfs 0.345 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>5.08"
Flow Length=151' Tc=6.4 min CN=74 Runoff=3.29 cfs 0.242 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.82 cfs 0.069 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>2.03"
Flow Length=296' Tc=16.0 min CN=47 Runoff=2.90 cfs 0.319 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.26 cfs 0.022 af

Reach 2R: Reach #2 Avg. Flow Depth=0.26' Max Vel=1.16 fps Inflow=5.26 cfs 0.550 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=5.20 cfs 0.548 af

Reach 4R: Reach #4 Avg. Flow Depth=0.36' Max Vel=1.01 fps Inflow=5.78 cfs 0.123 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=5.11 cfs 0.123 af

Reach 6R: Reach #6 Avg. Flow Depth=0.46' Max Vel=1.08 fps Inflow=8.15 cfs 0.713 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=8.06 cfs 0.712 af

Reach 10R: Combined Reach Avg. Flow Depth=0.30' Max Vel=1.64 fps Inflow=8.81 cfs 0.835 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=8.76 cfs 0.835 af

Reach 100R: Final Reach #100 Inflow=16.62 cfs 1.703 af
Outflow=16.62 cfs 1.703 af

Reach 200R: Final Reach #200 Inflow=1.89 cfs 0.034 af
Outflow=1.89 cfs 0.034 af

Pond 1P: Roadside Pond Peak Elev=171.09' Storage=449 cf Inflow=5.75 cfs 0.484 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=4.86 cfs 0.484 af

Pond 2P: CB #7325 Peak Elev=169.43' Storage=32 cf Inflow=5.29 cfs 0.550 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=5.26 cfs 0.550 af

Pond 3P: CB #7323 Peak Elev=171.82' Storage=37 cf Inflow=5.65 cfs 0.053 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=5.40 cfs 0.053 af

Pond 4P: CB #7324 Peak Elev=171.08' Storage=35 cf Inflow=6.01 cfs 0.123 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=5.78 cfs 0.123 af

Pond 5P: CB #7320 Peak Elev=171.30' Storage=44 cf Inflow=1.16 cfs 0.034 af
Primary=0.73 cfs 0.029 af Secondary=1.24 cfs 0.005 af Outflow=1.25 cfs 0.035 af

Pond 6P: CB #7319 Peak Elev=171.31' Storage=52 cf Inflow=9.36 cfs 0.719 af
Primary=8.15 cfs 0.713 af Secondary=1.46 cfs 0.006 af Outflow=9.44 cfs 0.719 af

Pond 7P: CB #3201 Peak Elev=178.72' Storage=35 cf Inflow=0.31 cfs 0.028 af
Primary=0.73 cfs 0.027 af Secondary=0.52 cfs 0.002 af Outflow=0.73 cfs 0.029 af

Pond 8P: CB #3202 Peak Elev=178.81' Storage=57 cf Inflow=0.79 cfs 0.045 af
Primary=0.72 cfs 0.043 af Secondary=0.23 cfs 0.002 af Outflow=0.73 cfs 0.045 af

Pond 9P: CB #3203 Peak Elev=178.81' Storage=62 cf Inflow=4.82 cfs 0.389 af
Primary=4.63 cfs 0.376 af Secondary=2.39 cfs 0.013 af Outflow=4.57 cfs 0.389 af

Pond 10P: CB #7322 Peak Elev=175.17' Storage=35 cf Inflow=5.11 cfs 0.255 af
Primary=3.27 cfs 0.221 af Secondary=5.42 cfs 0.034 af Outflow=5.32 cfs 0.255 af

Pond 11P: CB #7321 Peak Elev=173.47' Storage=73 cf Inflow=0.82 cfs 0.069 af
Primary=0.67 cfs 0.063 af Secondary=0.87 cfs 0.006 af Outflow=0.83 cfs 0.069 af

Pond D1P: DMH #4198 Peak Elev=178.26' Storage=70 cf Inflow=7.88 cfs 0.598 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=8.02 cfs 0.598 af

Pond D2P: DMH #8054 Peak Elev=177.06' Storage=64 cf Inflow=8.18 cfs 0.660 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=8.29 cfs 0.660 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.739 af Average Runoff Depth = 3.69"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>4.43"
Flow Length=326' Tc=10.1 min CN=58 Runoff=7.98 cfs 0.663 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.079 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>4.44"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.34 cfs 0.027 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.99 cfs 0.084 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.034 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,181 sf 88.45% Impervious Runoff Depth>8.66"
Tc=6.0 min CN=91 Runoff=0.46 cfs 0.036 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>5.74"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.41 cfs 0.037 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.019 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>6.65"
Flow Length=257' Tc=7.9 min CN=75 Runoff=5.68 cfs 0.441 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>6.52"
Flow Length=151' Tc=6.4 min CN=74 Runoff=4.19 cfs 0.310 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.98 cfs 0.083 af

Subcatchment 12S: Central Site Runoff Area=82,187 sf 2.30% Impervious Runoff Depth>2.99"
Flow Length=296' Tc=16.0 min CN=47 Runoff=4.52 cfs 0.470 af

Subcatchment 13S: Venture Drive Runoff Area=1,441 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.026 af

Reach 2R: Reach #2 Avg. Flow Depth=0.28' Max Vel=1.20 fps Inflow=5.90 cfs 0.742 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=5.81 cfs 0.740 af

Reach 4R: Reach #4 Avg. Flow Depth=0.49' Max Vel=1.24 fps Inflow=10.61 cfs 0.190 af
n=0.080 L=89.2' S=0.0200 '/' Capacity=10.50 cfs Outflow=9.99 cfs 0.190 af

Reach 6R: Reach #6 Avg. Flow Depth=0.45' Max Vel=1.08 fps Inflow=7.93 cfs 0.864 af
n=0.080 L=27.3' S=0.0168 '/' Capacity=9.65 cfs Outflow=7.76 cfs 0.864 af

Reach 10R: Combined Reach Avg. Flow Depth=0.35' Max Vel=1.80 fps Inflow=12.69 cfs 1.054 af
n=0.080 L=66.1' S=0.0681 '/' Capacity=27.17 cfs Outflow=12.16 cfs 1.053 af

Reach 100R: Final Reach #100 Inflow=22.05 cfs 2.263 af
Outflow=22.05 cfs 2.263 af

Reach 200R: Final Reach #200 Inflow=2.46 cfs 0.043 af
Outflow=2.46 cfs 0.043 af

Pond 1P: Roadside Pond Peak Elev=171.86' Storage=1,613 cf Inflow=7.98 cfs 0.663 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=5.45 cfs 0.663 af

Pond 2P: CB #7325 Peak Elev=169.86' Storage=37 cf Inflow=5.92 cfs 0.742 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=5.90 cfs 0.742 af

Pond 3P: CB #7323 Peak Elev=178.75' Storage=40 cf Inflow=9.22 cfs 0.105 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=9.48 cfs 0.106 af

Pond 4P: CB #7324 Peak Elev=176.11' Storage=47 cf Inflow=10.33 cfs 0.190 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=10.61 cfs 0.190 af

Pond 5P: CB #7320 Peak Elev=171.16' Storage=44 cf Inflow=1.54 cfs 0.040 af
Primary=0.65 cfs 0.034 af Secondary=1.54 cfs 0.006 af Outflow=1.55 cfs 0.040 af

Pond 6P: CB #7319 Peak Elev=171.23' Storage=52 cf Inflow=9.91 cfs 0.875 af
Primary=7.93 cfs 0.864 af Secondary=2.05 cfs 0.010 af Outflow=9.89 cfs 0.875 af

Pond 7P: CB #3201 Peak Elev=179.27' Storage=35 cf Inflow=0.41 cfs 0.037 af
Primary=0.65 cfs 0.033 af Secondary=0.60 cfs 0.004 af Outflow=0.68 cfs 0.037 af

Pond 8P: CB #3202 Peak Elev=179.27' Storage=57 cf Inflow=0.80 cfs 0.056 af
Primary=0.64 cfs 0.053 af Secondary=0.52 cfs 0.003 af Outflow=0.68 cfs 0.056 af

Pond 9P: CB #3203 Peak Elev=179.27' Storage=62 cf Inflow=5.92 cfs 0.497 af
Primary=5.34 cfs 0.464 af Secondary=4.95 cfs 0.033 af Outflow=6.05 cfs 0.497 af

Pond 10P: CB #7322 Peak Elev=175.77' Storage=35 cf Inflow=8.66 cfs 0.343 af
Primary=3.68 cfs 0.264 af Secondary=8.89 cfs 0.079 af Outflow=8.52 cfs 0.343 af

Pond 11P: CB #7321 Peak Elev=173.36' Storage=73 cf Inflow=0.98 cfs 0.083 af
Primary=1.07 cfs 0.077 af Secondary=1.14 cfs 0.006 af Outflow=1.14 cfs 0.083 af

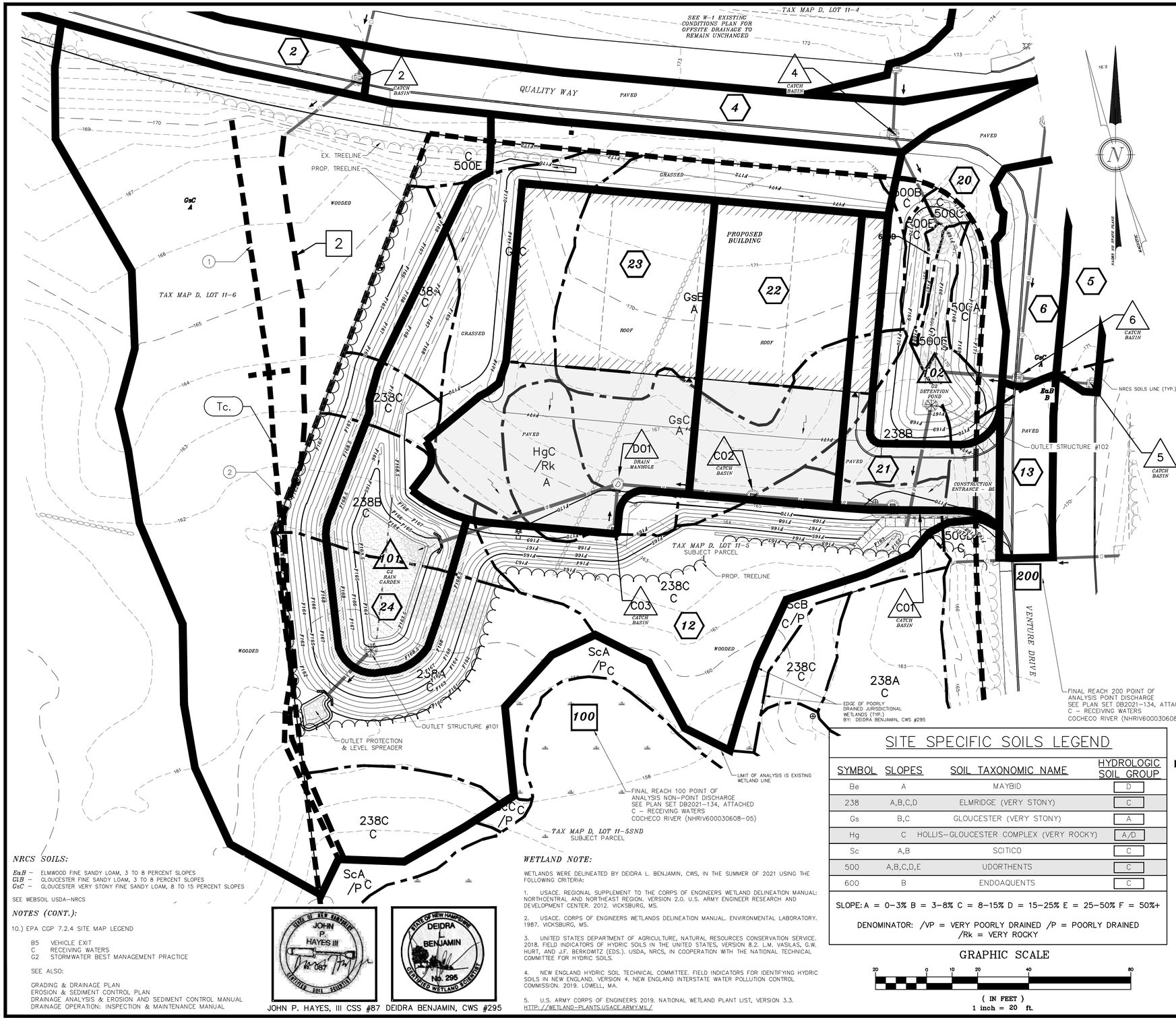
Pond D1P: DMH #4198 Peak Elev=179.37' Storage=70 cf Inflow=8.33 cfs 0.728 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=8.34 cfs 0.728 af

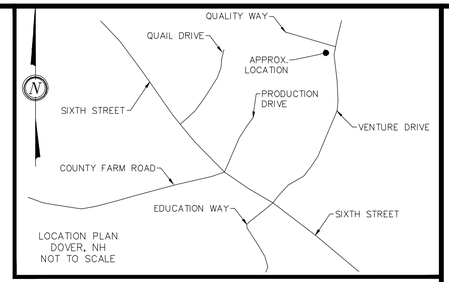
Pond D2P: DMH #8054 Peak Elev=178.40' Storage=64 cf Inflow=9.08 cfs 0.805 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=9.22 cfs 0.805 af

Total Runoff Area = 5.659 ac Runoff Volume = 2.309 af Average Runoff Depth = 4.90"
63.26% Pervious = 3.580 ac 36.74% Impervious = 2.079 ac

Appendix II - Proposed Conditions Analysis

25 Yr - 24 Hr. Full Summary
2 Yr - 24 Hr. Node Listing
10 Yr - 24 Hr. Node Listing
25 Yr - 24 Hr. Node Listing
50 Yr - 24 Hr. Node Listing
100 Yr - 24 Hr. Node Listing





LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5ND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 0.99 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED DRAINAGE CONDITIONS OF TAX MAP D, LOT 11-5 LOCATED IN DOVER, N.H., AT THE COMPLETION OF THE PROPOSED DEVELOPMENT.

6.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

7.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

8.) SEE PROPOSED GRADING & DRAINAGE PLAN FOR SLOPES & EROSION & SEDIMENT CONTROL PLAN FOR STOCKPILE AREA AND CONSTRUCTION ENTRANCE.

9.) HYDROCAD USES A SERIES OF NODE SUFFIXES FOR NUMBERING PURPOSES (S=SUBCATCHMENT, P=POND DEVICE, R=REACH), TO SIMPLIFY ANNOTATION THESE SUFFIXES ARE LEFT OFF THE WATERSHED PLANS AND NODE TYPE IS DENOTED BY THE SYMBOL SHAPE ACCORDING TO THE DISPLAYED LEGEND WHICH COINCIDES WITH HYDROCAD GRAPHICS.

LEGEND:

- STONE BOUND (FND)
- DRILL HOLE (FND)
- IRON BOUND (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- SINGLE POST SIGN
- TEMPORARY BENCHMARK
- CATCH BASIN
- STONE WALL
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING DRAIN LINE
- OVERHEAD UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING TREELINE
- NRCS SOIL LINE/LABEL
- LIMIT OF SITE SPECIFIC SOIL SURVEY
- SOIL LINE
- SOIL SERIES
- LIMIT OF WATERSHED
- TIME OF CONCENTRATION PATH
- FLOW REACH
- FND FOUND
- TYP TYPICAL
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
- DRAIN MANHOLE W/STRUCTURE
- CATCH BASIN W/ STRUCTURE
- STORMWATER BMP OUTLET STRUCTURE
- DRAIN CULVERT W/ FLARED END SECTION (F.E.S.) UNDERDRAIN
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM
- RETAINING WALL

SYMBOLS LEGEND:

- SUBCATCHMENT AREA SYMBOL
- FLOW REACH SYMBOL
- POND DEVICE SYMBOL
- TIME OF CONCENTRATION SEGMENT

SITE SPECIFIC SOILS LEGEND

SYMBOL	SLOPES	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
Be	A	MAYBID	D
238	A,B,C,D	ELMRIDGE (VERY STONY)	C
Gs	B,C	GLOUCESTER (VERY STONY)	A
Hg	C	HOLLIS-GLOUCESTER COMPLEX (VERY ROCKY)	A/D
Sc	A,B	SCITICO	C
500	A,B,C,D,E	UDORTHENTS	C
600	B	ENDOAQUENTS	C

SLOPE: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25-50% F = 50%+

DENOMINATOR: /VP = VERY POORLY DRAINED /P = POORLY DRAINED /Rk = VERY ROCKY

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NRCS SOILS:

EaB - ELMWOOD FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
GlB - GLOUCESTER FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
GsC - GLOUCESTER VERY STONY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES

SEE WEBSOIL USDA-NRCS

NOTES (CONT.):

10.) EPA CGP 7.2.4 SITE MAP LEGEND

B5 VEHICLE EXIT
C RECEIVING WATERS
G2 STORMWATER BEST MANAGEMENT PRACTICE

SEE ALSO:

GRADING & DRAINAGE PLAN
EROSION & SEDIMENT CONTROL PLAN
DRAINAGE ANALYSIS & EROSION AND SEDIMENT CONTROL MANUAL
DRAINAGE OPERATION: INSPECTION & MAINTENANCE MANUAL

WETLAND NOTE:

WETLANDS WERE DELINEATED BY DEIDRA L. BENJAMIN, CWS, IN THE SUMMER OF 2021 USING THE FOLLOWING CRITERIA:

1. USACE. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0. U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER. 2012. VICKSBURG, MS.

2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

STATE OF NEW HAMPSHIRE JOHN P. HAYES III 10167 CERTIFIED SOIL SCIENTIST

STATE OF NEW HAMPSHIRE DEIDRA L. BENJAMIN No. 295 CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, III CSS #87 DEIDRA BENJAMIN, CWS #295

DOVER FILE #

REVISION	DATE	DESCRIPTION

SWPPP EPA SITE MAP (PROPOSED)
W-2 PROPOSED CONDITIONS WATERSHED PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

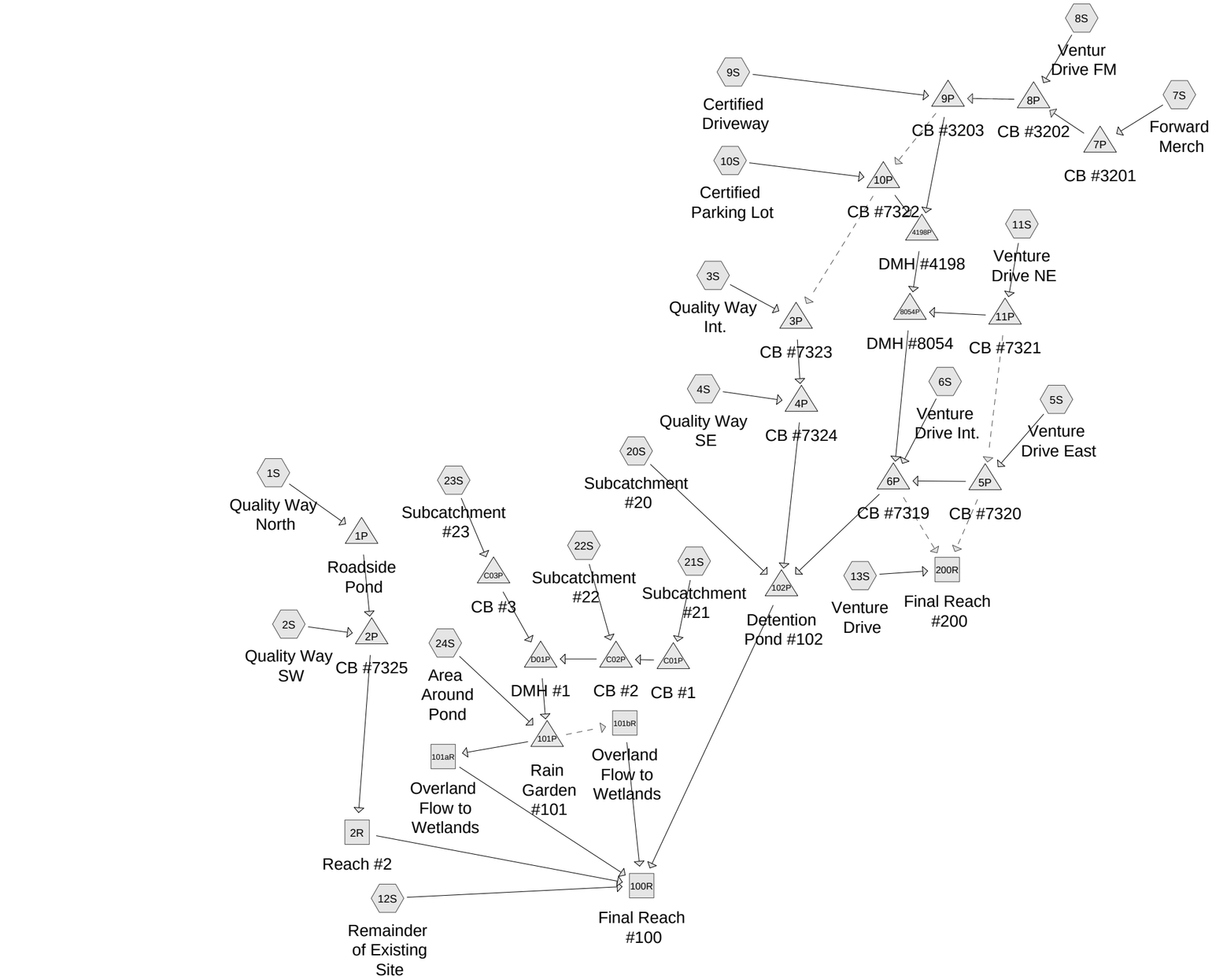
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE KENNETH A. BERRY No. 14541 LICENSED PROFESSIONAL ENGINEER

SHEET 2 OF 2

NOT FOR CONSTRUCTION



Subcat Reach Pond Link

Routing Diagram for 21-134 Proposed Conditions

Prepared by Berry Surveying & Engineering

HydroCAD® 10.00-25 s/n 07605 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.179	39	>75% Grass cover, Good, HSG A (1S, 3S, 6S, 7S, 9S, 10S, 12S, 20S, 23S, 24S)
0.422	74	>75% Grass cover, Good, HSG C (12S, 20S, 24S)
1.747	98	Paved parking, HSG A (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 20S, 21S, 22S, 23S)
0.036	98	Paved parking, HSG B (5S, 13S)
0.053	98	Paved parking, HSG C (21S, 22S, 23S)
0.231	98	Roofs, HSG A (21S, 22S, 23S)
0.475	98	Unconnected roofs, HSG A (1S, 9S, 10S)
1.296	30	Woods, Good, HSG A (1S, 3S, 7S, 10S, 12S)
0.221	70	Woods, Good, HSG C (12S)
5.659	**67**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.927	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S, 20S, 21S, 22S, 23S, 24S
0.036	HSG B	5S, 13S
0.696	HSG C	12S, 20S, 21S, 22S, 23S, 24S
0.000	HSG D	
0.000	Other	
5.659		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.179	0.000	0.422	0.000	0.000	1.601	>75% Grass cover, Good	1S, 3S, 6S, 7S, 9S, 10S, 12S, 20S, 23S, 24S
1.747	0.036	0.053	0.000	0.000	1.835	Paved parking	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 13S, 20S, 21S, 22S, 23S
0.231	0.000	0.000	0.000	0.000	0.231	Roofs	21S, 22S, 23S
0.475	0.000	0.000	0.000	0.000	0.475	Unconnected roofs	1S, 9S, 10S
1.296	0.000	0.221	0.000	0.000	1.517	Woods, Good	1S, 3S, 7S, 10S, 12S
4.927	**0.036**	**0.696**	**0.000**	**0.000**	**5.659**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	168.58	167.36	42.3	0.0288	0.012	12.0	0.0	0.0
2	2P	166.90	166.78	32.7	0.0037	0.012	12.0	0.0	0.0
3	3P	168.90	168.43	24.4	0.0193	0.012	12.0	0.0	0.0
4	4P	168.33	167.78	36.3	0.0152	0.012	12.0	0.0	0.0
5	5P	167.11	166.51	25.3	0.0237	0.012	12.0	0.0	0.0
6	6P	166.45	166.25	28.0	0.0071	0.012	15.0	0.0	0.0
7	7P	174.37	173.93	17.5	0.0251	0.012	12.0	0.0	0.0
8	8P	173.61	173.31	25.8	0.0116	0.012	12.0	0.0	0.0
9	9P	173.21	168.55	208.7	0.0223	0.012	12.0	0.0	0.0
10	10P	171.40	170.45	1.0	0.9500	0.012	12.0	0.0	0.0
11	11P	167.17	167.86	25.8	-0.0267	0.012	12.0	0.0	0.0
12	101P	160.90	160.40	20.0	0.0250	0.012	15.0	0.0	0.0
13	102P	165.75	163.00	46.7	0.0589	0.012	15.0	0.0	0.0
14	4198P	168.45	168.02	40.1	0.0107	0.012	12.0	0.0	0.0
15	8054P	167.86	166.51	96.9	0.0139	0.012	12.0	0.0	0.0
16	C01P	165.63	165.27	51.0	0.0071	0.012	12.0	0.0	0.0
17	C02P	165.17	164.92	49.0	0.0051	0.012	12.0	0.0	0.0
18	C03P	165.20	164.92	14.0	0.0200	0.012	12.0	0.0	0.0
19	D01P	164.67	164.25	71.5	0.0059	0.012	15.0	0.0	0.0

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>2.30"
Flow Length=326' Tc=10.1 min CN=58 Runoff=3.98 cfs 0.344 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>2.30"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.17 cfs 0.014 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.70 cfs 0.058 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.024 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>5.79"
Tc=6.0 min CN=91 Runoff=0.31 cfs 0.024 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>3.28"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.23 cfs 0.021 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>4.01"
Flow Length=257' Tc=7.9 min CN=75 Runoff=3.46 cfs 0.266 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>3.91"
Flow Length=151' Tc=6.4 min CN=74 Runoff=2.54 cfs 0.186 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>1.49"
Flow Length=296' Tc=16.0 min CN=49 Runoff=1.08 cfs 0.125 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>3.59"
Tc=6.0 min CN=71 Runoff=0.66 cfs 0.048 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.033 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=1.01 cfs 0.085 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=1.63 cfs 0.137 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>2.12"
Tc=6.0 min CN=56 Runoff=0.60 cfs 0.046 af

Reach 2R: Reach #2 Avg. Flow Depth=0.24' Max Vel=1.08 fps Inflow=4.38 cfs 0.399 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=4.10 cfs 0.398 af

Reach 100R: Final Reach #100 Inflow=12.47 cfs 1.447 af
Outflow=12.47 cfs 1.447 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.11' Max Vel=1.74 fps Inflow=0.55 cfs 0.213 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=0.55 cfs 0.213 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.00 cfs 0.000 af

Reach 200R: Final Reach #200 Inflow=0.22 cfs 0.018 af
Outflow=0.22 cfs 0.018 af

Pond 1P: Roadside Pond Peak Elev=170.15' Storage=62 cf Inflow=3.98 cfs 0.344 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=3.92 cfs 0.344 af

Pond 2P: CB #7325 Peak Elev=168.93' Storage=25 cf Inflow=4.39 cfs 0.400 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=4.38 cfs 0.399 af

Pond 3P: CB #7323 Peak Elev=169.67' Storage=10 cf Inflow=1.99 cfs 0.022 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=1.92 cfs 0.022 af

Pond 4P: CB #7324 Peak Elev=169.33' Storage=13 cf Inflow=2.31 cfs 0.080 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=2.26 cfs 0.080 af

Pond 5P: CB #7320 Peak Elev=169.92' Storage=35 cf Inflow=0.72 cfs 0.026 af
Primary=0.67 cfs 0.026 af Secondary=0.00 cfs 0.000 af Outflow=0.67 cfs 0.026 af

Pond 6P: CB #7319 Peak Elev=169.91' Storage=43 cf Inflow=7.04 cfs 0.584 af
Primary=7.01 cfs 0.584 af Secondary=0.00 cfs 0.000 af Outflow=7.01 cfs 0.584 af

Pond 7P: CB #3201 Peak Elev=176.85' Storage=31 cf Inflow=0.23 cfs 0.021 af
Primary=0.44 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.021 af

Pond 8P: CB #3202 Peak Elev=176.87' Storage=41 cf Inflow=0.49 cfs 0.035 af
Primary=0.57 cfs 0.035 af Secondary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.035 af

Pond 9P: CB #3203 Peak Elev=176.87' Storage=46 cf Inflow=3.77 cfs 0.301 af
Primary=3.74 cfs 0.301 af Secondary=0.00 cfs 0.000 af Outflow=3.74 cfs 0.301 af

Pond 10P: CB #7322 Peak Elev=174.67' Storage=35 cf Inflow=2.54 cfs 0.186 af
Primary=2.55 cfs 0.178 af Secondary=1.86 cfs 0.008 af Outflow=2.55 cfs 0.186 af

Pond 11P: CB #7321 Peak Elev=173.31' Storage=73 cf Inflow=0.69 cfs 0.058 af
Primary=0.58 cfs 0.055 af Secondary=0.50 cfs 0.002 af Outflow=0.58 cfs 0.057 af

Pond 101P: Rain Garden #101 Peak Elev=167.34' Storage=6,489 cf Inflow=3.56 cfs 0.299 af
Primary=0.55 cfs 0.213 af Secondary=0.00 cfs 0.000 af Outflow=0.55 cfs 0.213 af

Pond 102P: Detention Pond #102 Peak Elev=168.90' Storage=2,597 cf Inflow=8.51 cfs 0.712 af
Outflow=6.96 cfs 0.712 af

Pond 4198P: DMH #4198 Peak Elev=175.43' Storage=70 cf Inflow=6.26 cfs 0.479 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=6.06 cfs 0.479 af

Pond 8054P: DMH #8054 Peak Elev=173.46' Storage=64 cf Inflow=6.53 cfs 0.534 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=6.49 cfs 0.534 af

Pond C01P: CB #1 Peak Elev=167.34' Storage=22 cf Inflow=0.40 cfs 0.033 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.39 cfs 0.033 af

Pond C02P: CB #2 Peak Elev=167.34' Storage=27 cf Inflow=1.40 cfs 0.118 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=1.38 cfs 0.117 af

Pond C03P: CB #3 Peak Elev=167.34' Storage=27 cf Inflow=1.63 cfs 0.137 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=1.61 cfs 0.137 af

Pond D01P: DMH #1 Peak Elev=167.34' Storage=34 cf Inflow=2.99 cfs 0.254 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=2.97 cfs 0.254 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.555 af Average Runoff Depth = 3.30"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

Summary for Subcatchment 1S: Quality Way North

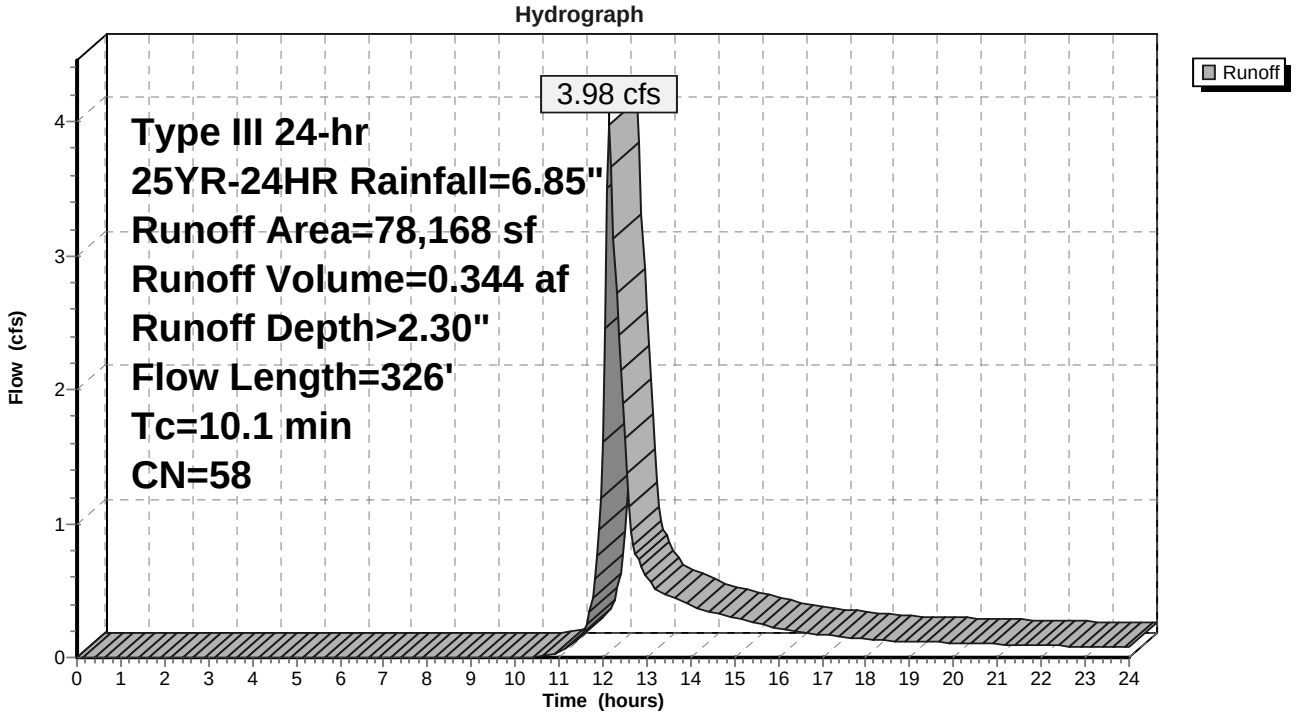
Runoff = 3.98 cfs @ 12.15 hrs, Volume= 0.344 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
11,732	98	Unconnected roofs, HSG A
18,602	39	>75% Grass cover, Good, HSG A
17,923	98	Paved parking, HSG A
29,911	30	Woods, Good, HSG A
78,168	58	Weighted Average
48,513		62.06% Pervious Area
29,655		37.94% Impervious Area
11,732		39.56% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0375	0.23		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
2.9	226	0.0354	1.32		**Shallow Concentrated Flow, Segment #2** Short Grass Pasture Kv= 7.0 fps
10.1	326	Total			

Subcatchment 1S: Quality Way North



Summary for Subcatchment 2S: Quality Way SW

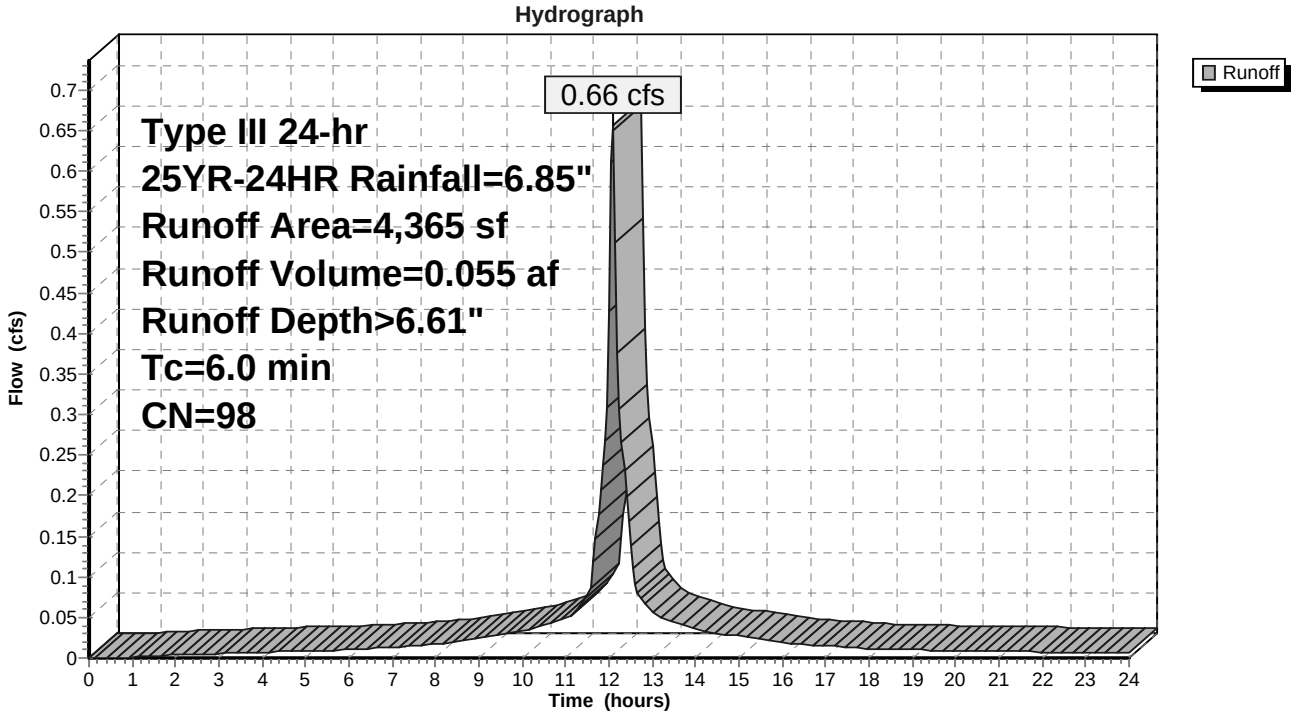
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.055 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,365	98	Paved parking, HSG A
4,365		100.00% Impervious Area

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

Subcatchment 2S: Quality Way SW



Summary for Subcatchment 3S: Quality Way Int.

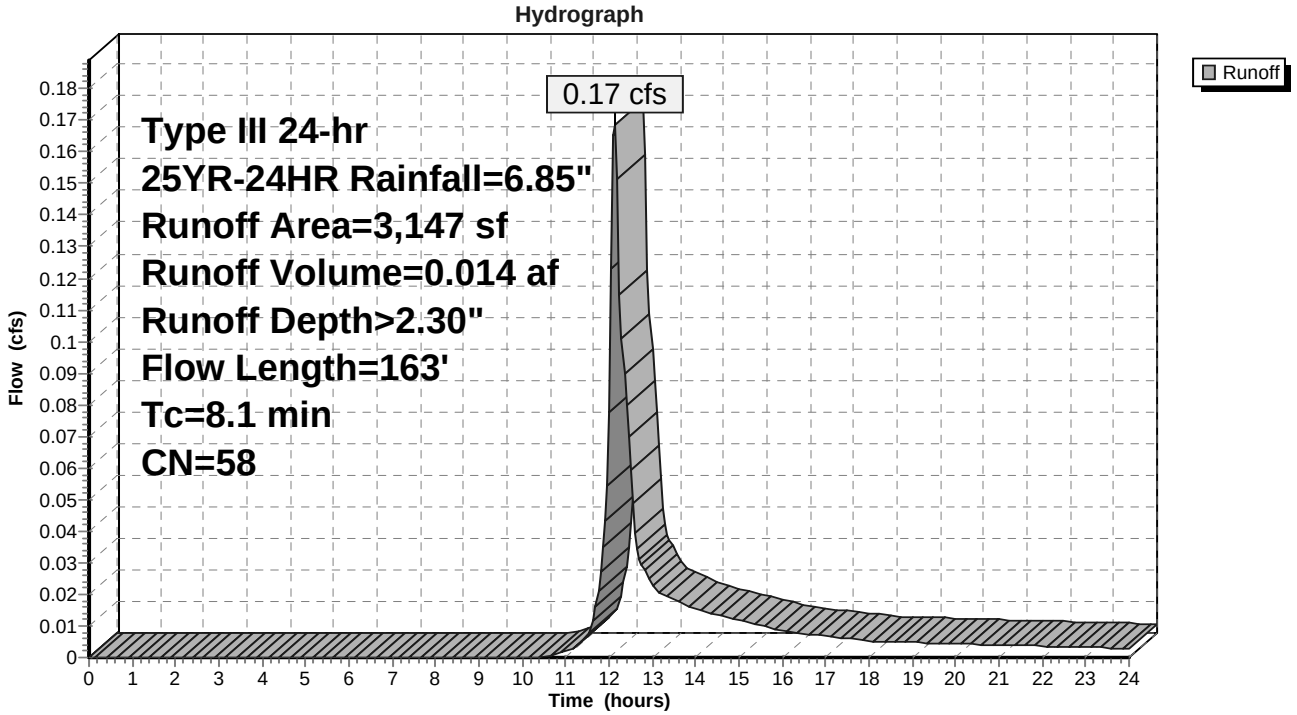
Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,775	39	>75% Grass cover, Good, HSG A
1,076	98	Paved parking, HSG A
296	30	Woods, Good, HSG A
3,147	58	Weighted Average
2,071		65.81% Pervious Area
1,076		34.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	36	0.0830	0.26		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
3.7	33	0.1517	0.15		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.61"
1.5	14	0.0356	0.15		**Sheet Flow, Segment #3** Grass: Short n= 0.150 P2= 3.61"
0.6	80	0.0125	2.27		**Shallow Concentrated Flow, Segment #4** Paved Kv= 20.3 fps
8.1	163	Total			

Subcatchment 3S: Quality Way Int.



Summary for Subcatchment 4S: Quality Way SE

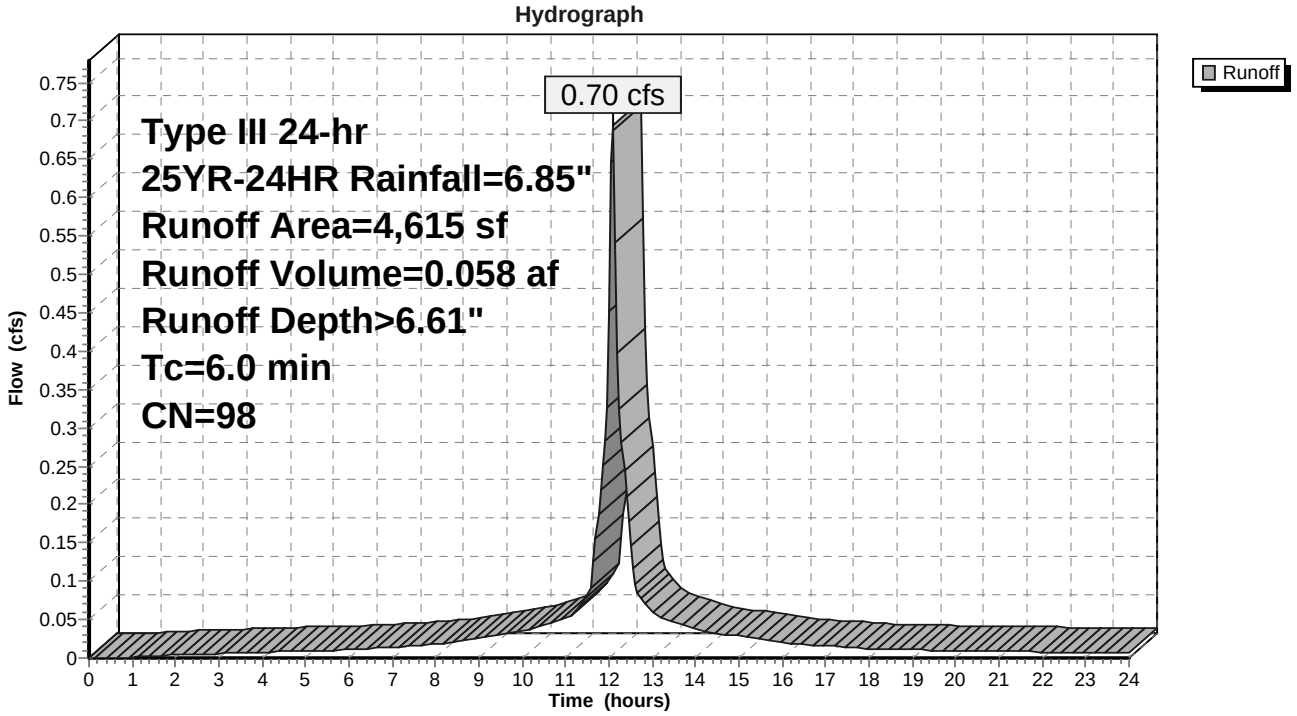
Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,615	98	Paved parking, HSG A
4,615		100.00% Impervious Area

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

Subcatchment 4S: Quality Way SE



Summary for Subcatchment 5S: Venture Drive East

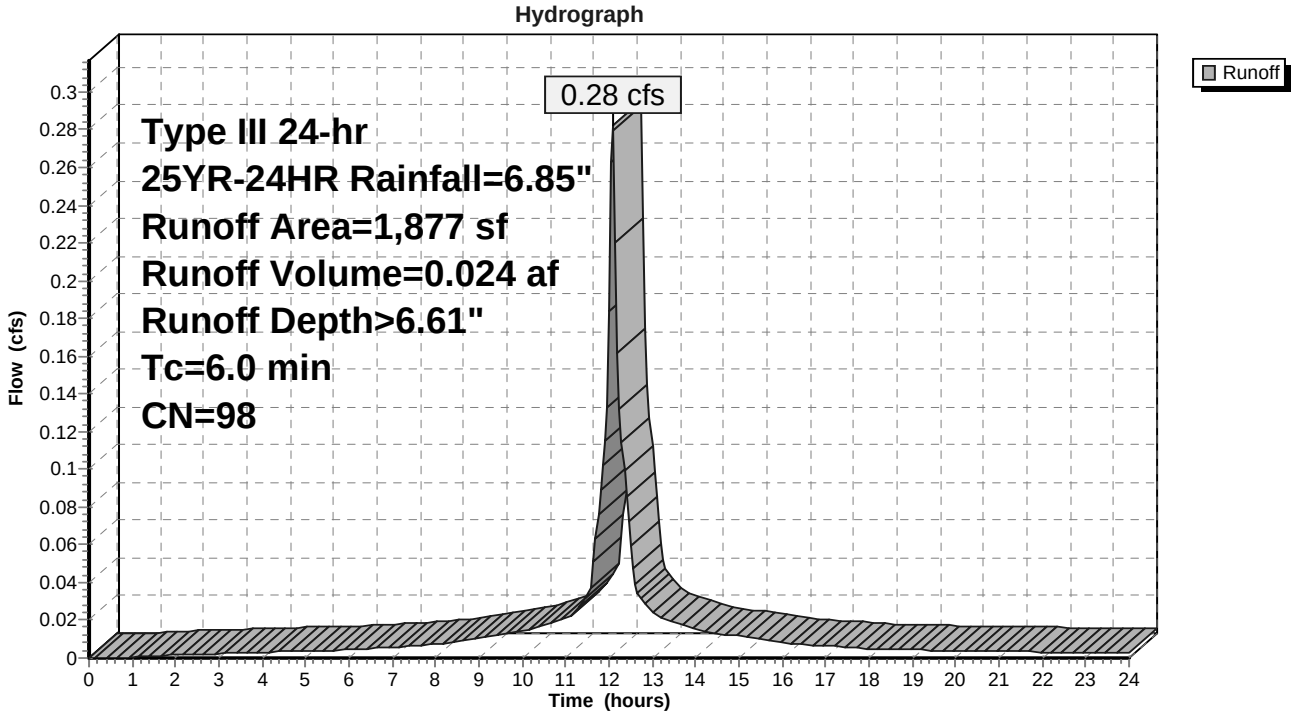
Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,765	98	Paved parking, HSG A
112	98	Paved parking, HSG B
1,877	98	Weighted Average
1,877		100.00% Impervious Area

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

Subcatchment 5S: Venture Drive East



Summary for Subcatchment 6S: Venture Drive Int.

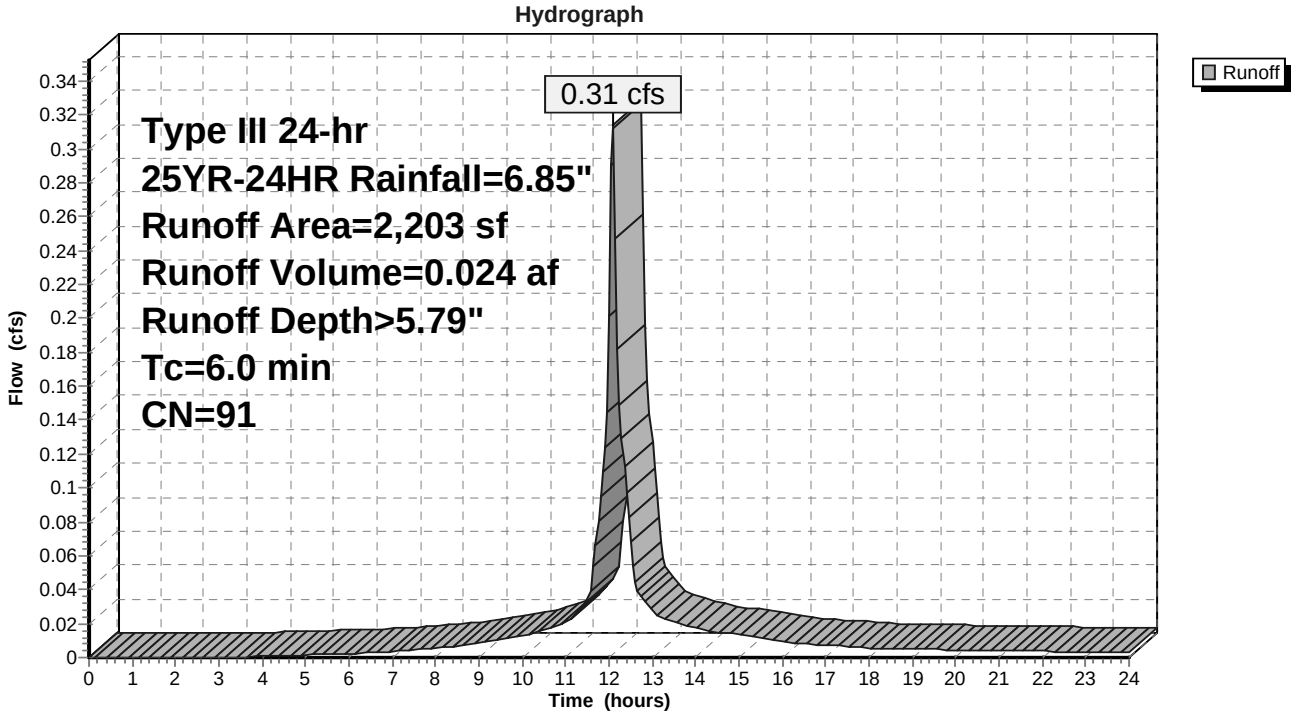
Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 5.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
252	39	>75% Grass cover, Good, HSG A
1,951	98	Paved parking, HSG A
2,203	91	Weighted Average
252		11.44% Pervious Area
1,951		88.56% Impervious Area

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

Subcatchment 6S: Venture Drive Int.



Summary for Subcatchment 7S: Forward Merch

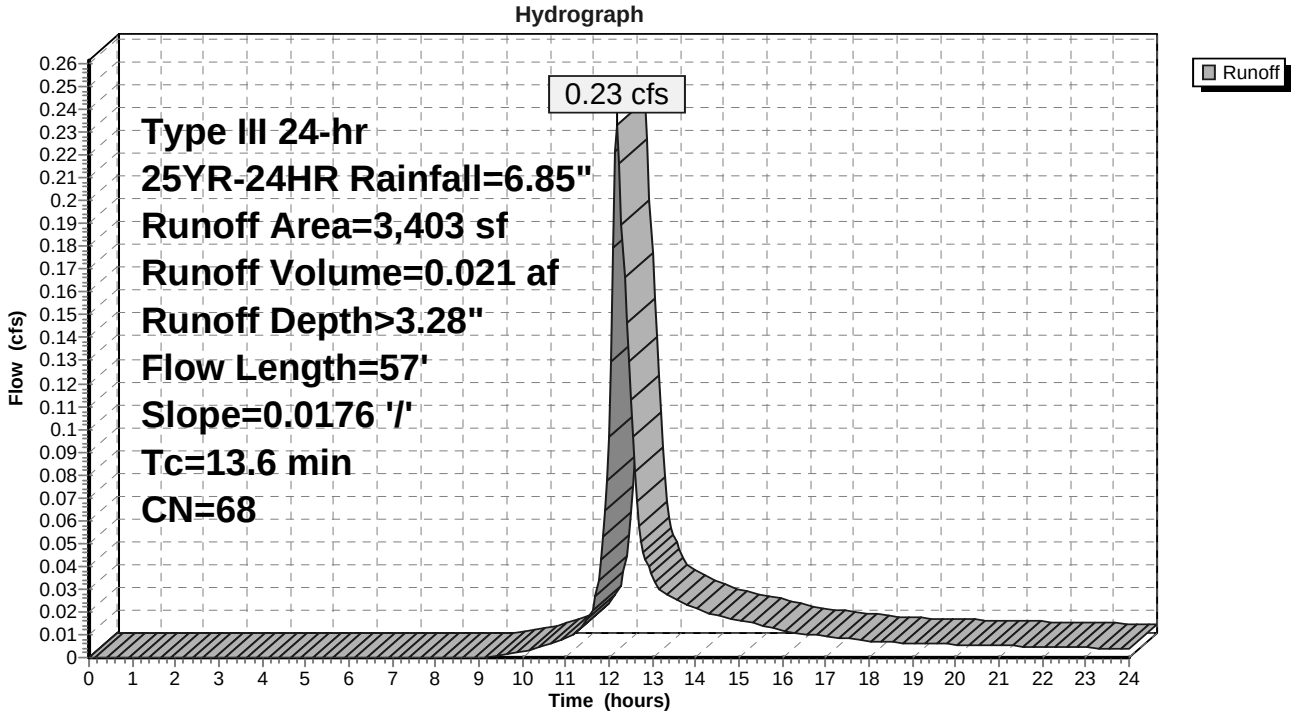
Runoff = 0.23 cfs @ 12.20 hrs, Volume= 0.021 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
493	39	>75% Grass cover, Good, HSG A
1,830	98	Paved parking, HSG A
1,080	30	Woods, Good, HSG A
3,403	68	Weighted Average
1,573		46.22% Pervious Area
1,830		53.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	57	0.0176	0.07		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.61"

Subcatchment 7S: Forward Merch



Summary for Subcatchment 8S: Ventur Drive FM

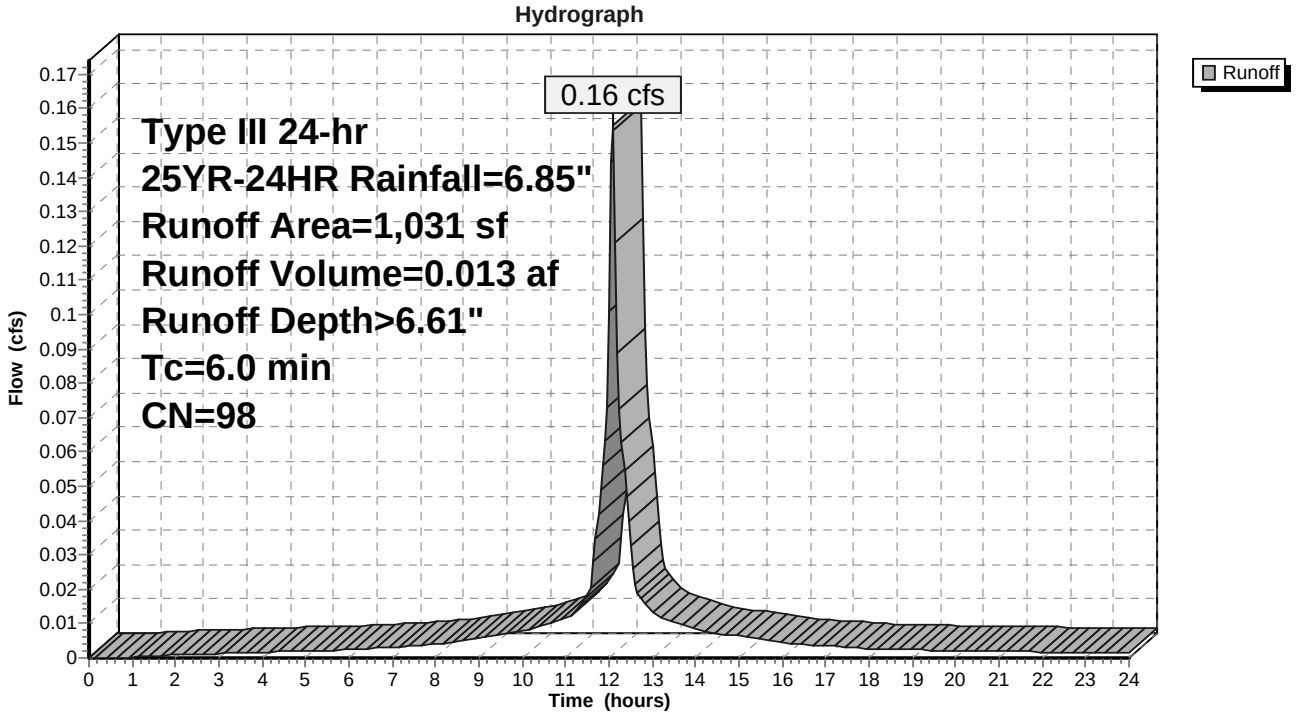
Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,031	98	Paved parking, HSG A
1,031		100.00% Impervious Area

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

Subcatchment 8S: Ventur Drive FM



Summary for Subcatchment 9S: Certified Driveway

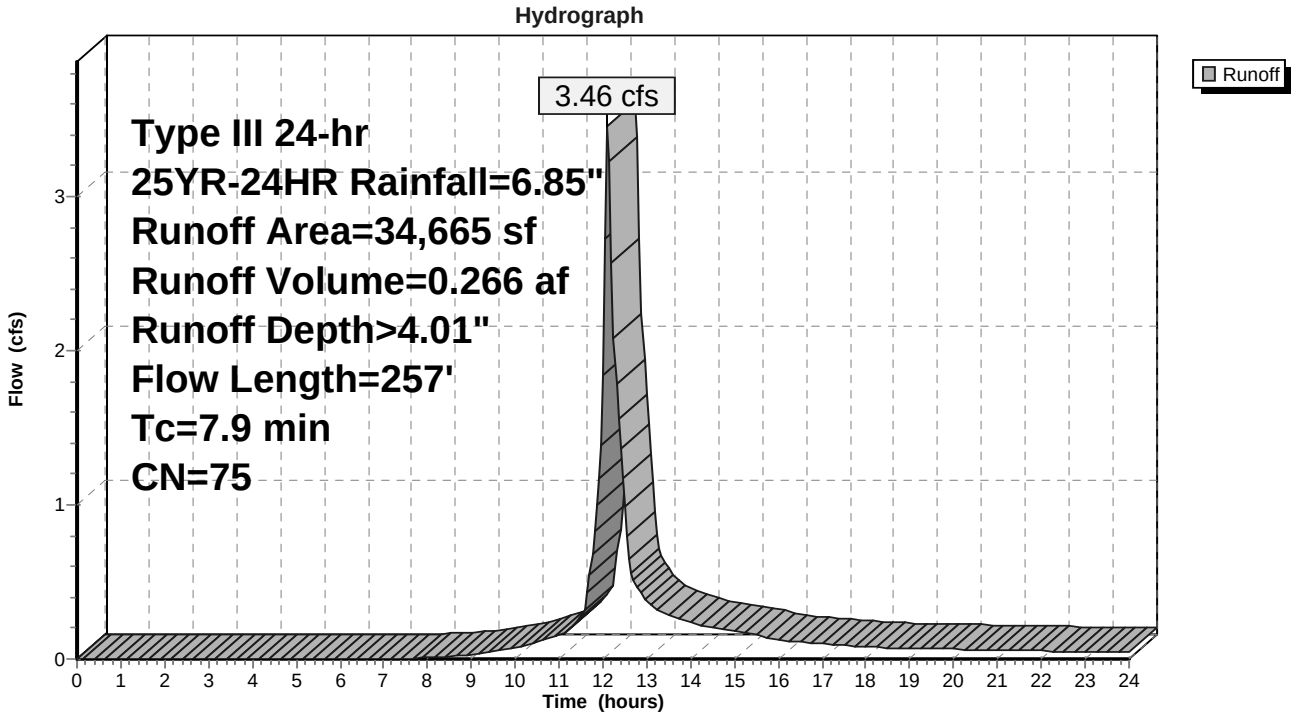
Runoff = 3.46 cfs @ 12.11 hrs, Volume= 0.266 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,472	98	Unconnected roofs, HSG A
13,788	39	>75% Grass cover, Good, HSG A
16,405	98	Paved parking, HSG A
34,665	75	Weighted Average
13,788		39.77% Pervious Area
20,877		60.23% Impervious Area
4,472		21.42% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0500	0.26		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
1.2	110	0.0499	1.56		**Shallow Concentrated Flow, Segment #2** Short Grass Pasture Kv= 7.0 fps
0.3	47	0.0212	2.96		**Shallow Concentrated Flow, Segment #3** Paved Kv= 20.3 fps
7.9	257	Total			

Subcatchment 9S: Certified Driveway



Summary for Subcatchment 10S: Certified Parking Lot

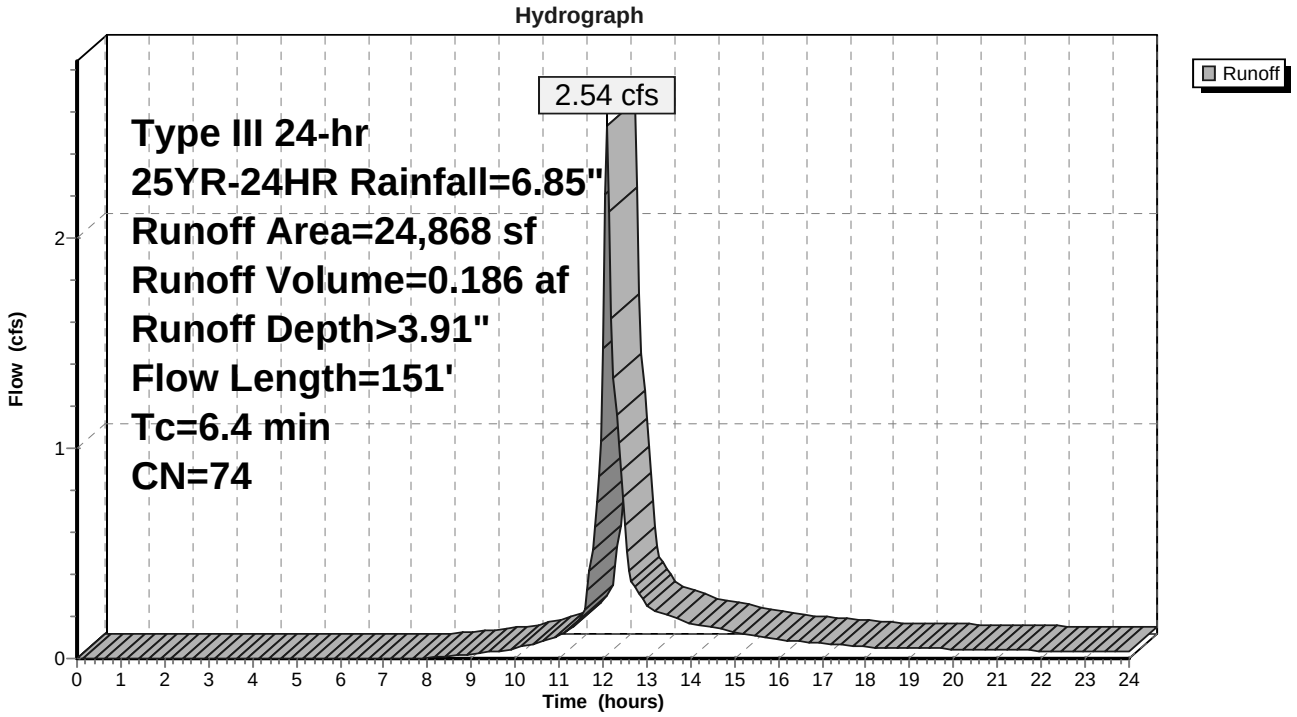
Runoff = 2.54 cfs @ 12.10 hrs, Volume= 0.186 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,472	98	Unconnected roofs, HSG A
5,585	39	>75% Grass cover, Good, HSG A
10,965	98	Paved parking, HSG A
3,846	30	Woods, Good, HSG A
24,868	74	Weighted Average
9,431		37.92% Pervious Area
15,437		62.08% Impervious Area
4,472		28.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	18	0.1382	0.28		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.61"
3.9	29	0.1021	0.12		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.61"
0.9	14	0.1439	0.27		**Sheet Flow, Segment #3** Grass: Short n= 0.150 P2= 3.61"
0.5	90	0.0223	3.03		**Shallow Concentrated Flow, Segment #4** Paved Kv= 20.3 fps
6.4	151	Total			

Subcatchment 10S: Certified Parking Lot



Summary for Subcatchment 11S: Venture Drive NE

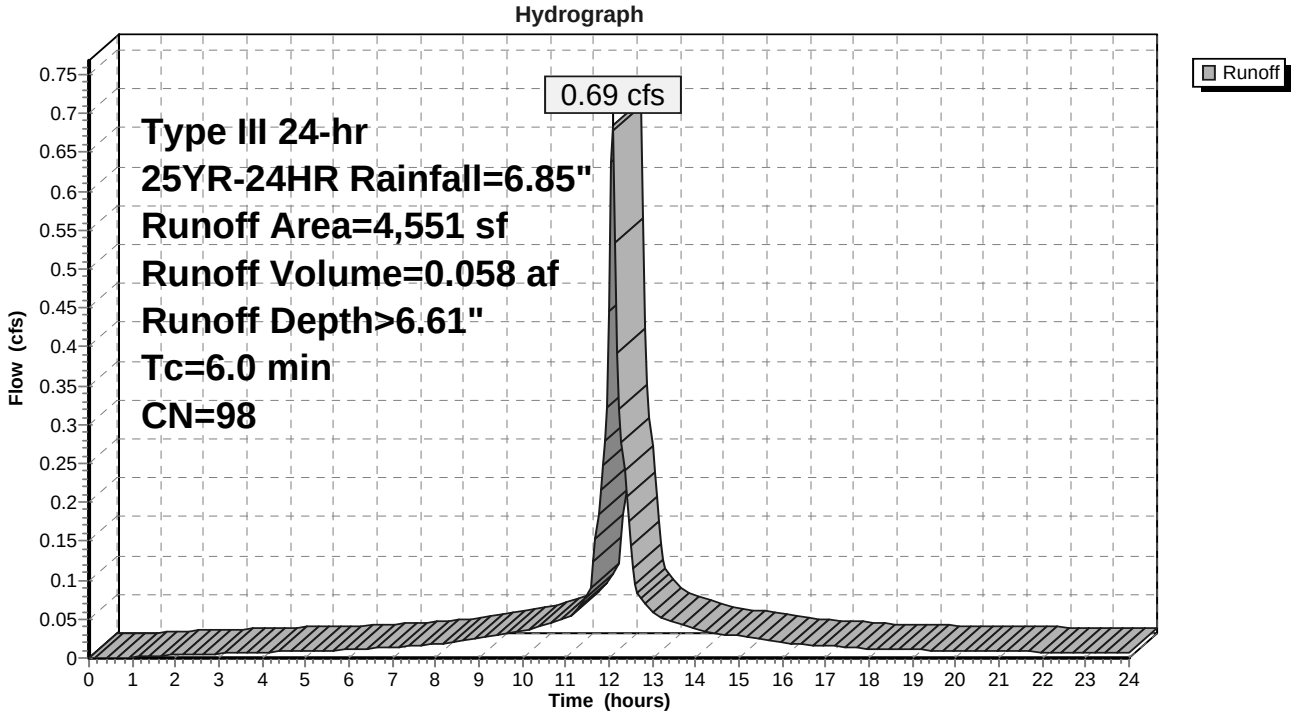
Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,551	98	Paved parking, HSG A
4,551		100.00% Impervious Area

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

Subcatchment 11S: Venture Drive NE



Summary for Subcatchment 12S: Remainder of Existing Site

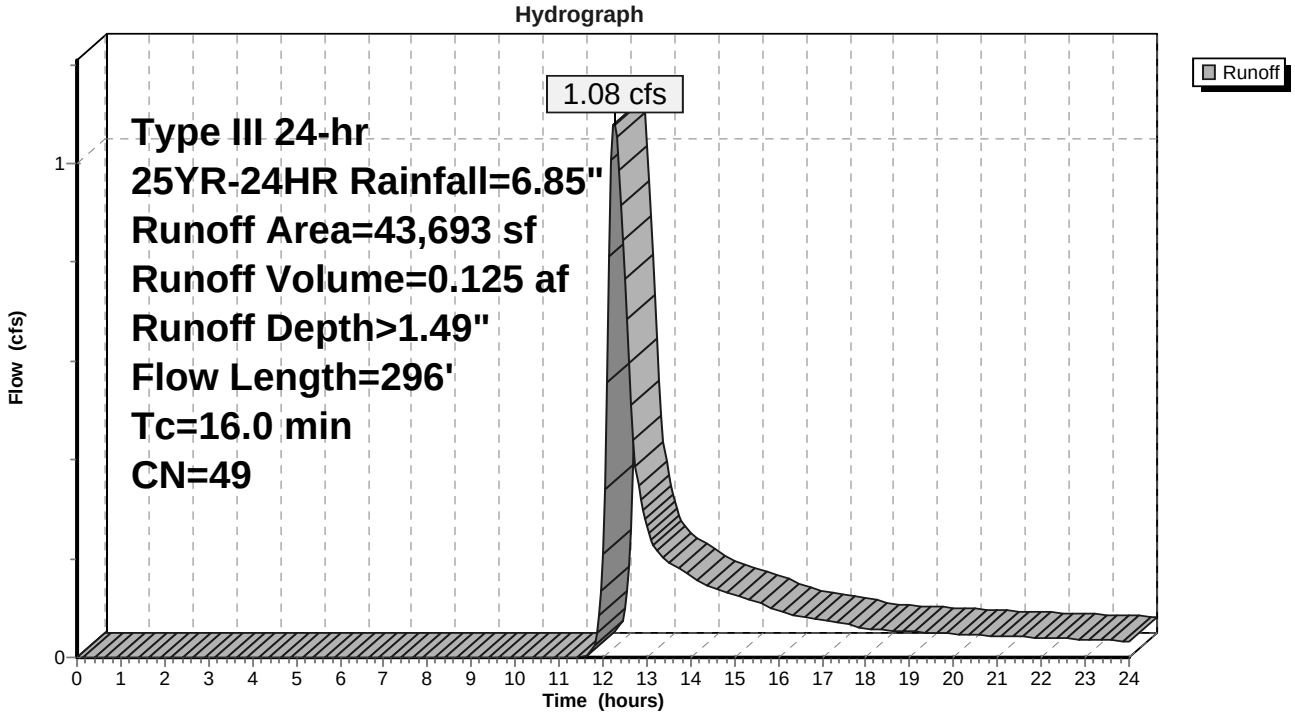
Runoff = 1.08 cfs @ 12.26 hrs, Volume= 0.125 af, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
3,230	39	>75% Grass cover, Good, HSG A
21,307	30	Woods, Good, HSG A
9,525	74	>75% Grass cover, Good, HSG C
9,631	70	Woods, Good, HSG C
43,693	49	Weighted Average
43,693		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0600	0.13		**Sheet Flow, Segment #1** Woods: Light underbrush n= 0.400 P2= 3.61"
3.0	196	0.0460	1.07		**Shallow Concentrated Flow, Segment #2** Woodland Kv= 5.0 fps
16.0	296	Total			

Subcatchment 12S: Remainder of Existing Site



Summary for Subcatchment 13S: Venture Drive

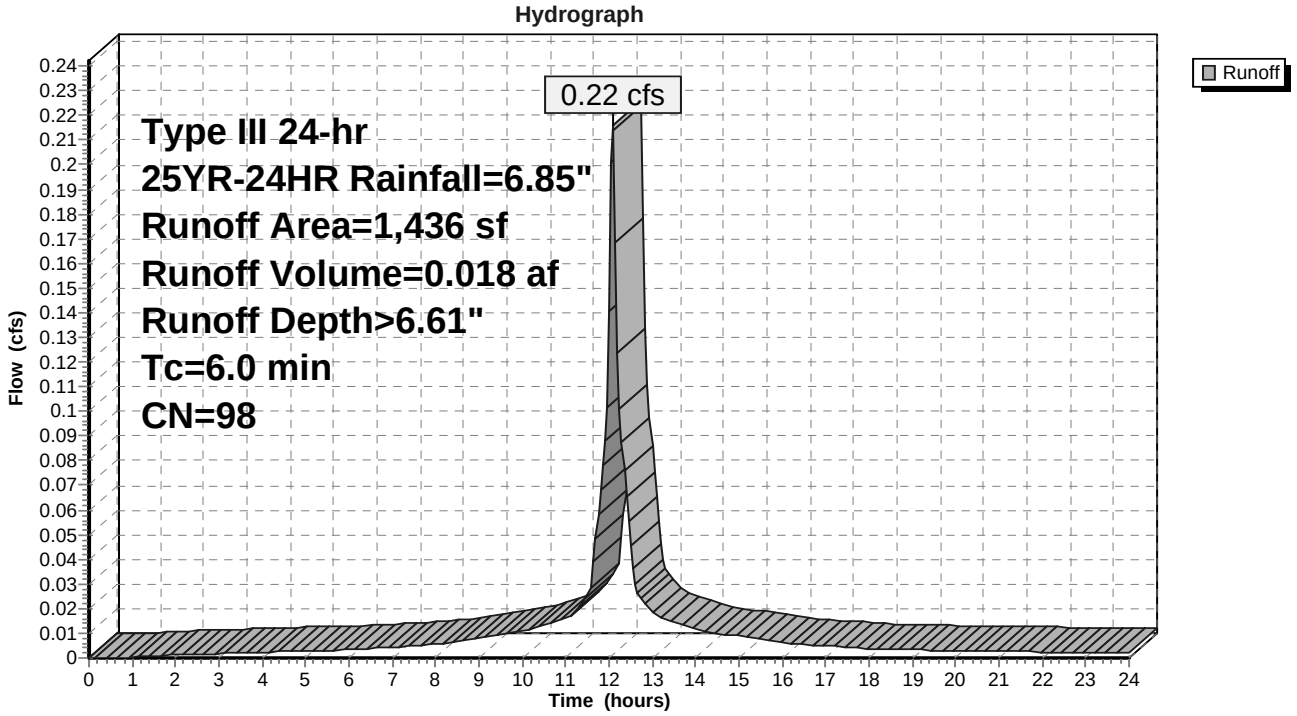
Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,436	98	Paved parking, HSG B
1,436		100.00% Impervious Area

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

Subcatchment 13S: Venture Drive



Summary for Subcatchment 20S: Subcatchment #20

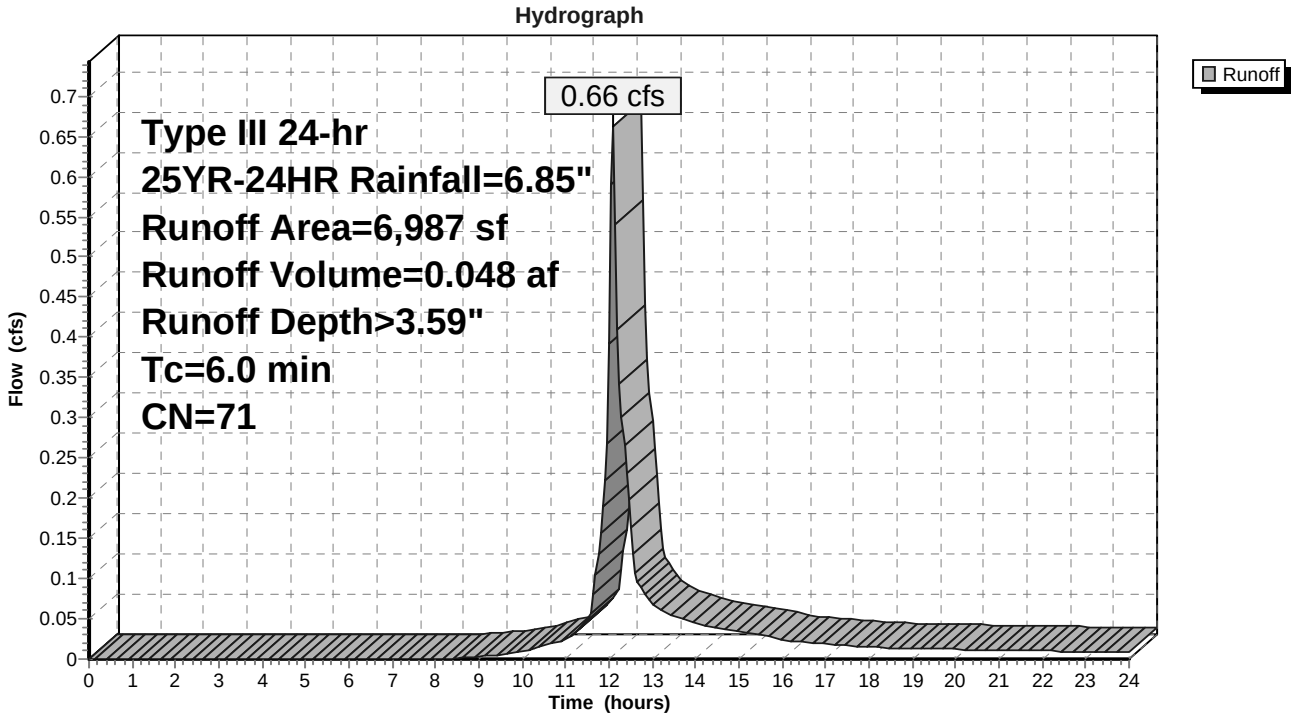
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
1,784	39	>75% Grass cover, Good, HSG A
1,859	98	Paved parking, HSG A
3,344	74	>75% Grass cover, Good, HSG C
6,987	71	Weighted Average
5,128		73.39% Pervious Area
1,859		26.61% Impervious Area

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

Subcatchment 20S: Subcatchment #20



Summary for Subcatchment 21S: Subcatchment #21

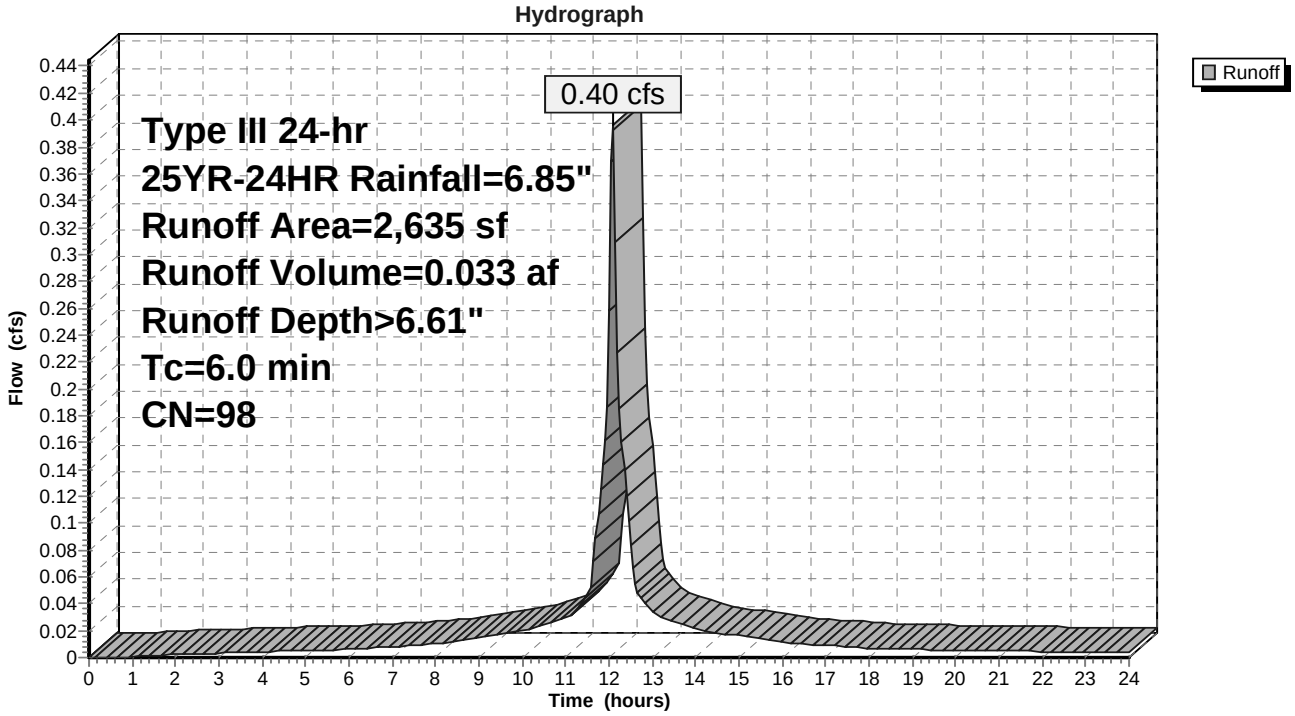
Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.033 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
714	98	Roofs, HSG A
427	98	Paved parking, HSG A
1,494	98	Paved parking, HSG C
2,635	98	Weighted Average
2,635		100.00% Impervious Area

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

Subcatchment 21S: Subcatchment #21



Summary for Subcatchment 22S: Subcatchment #22

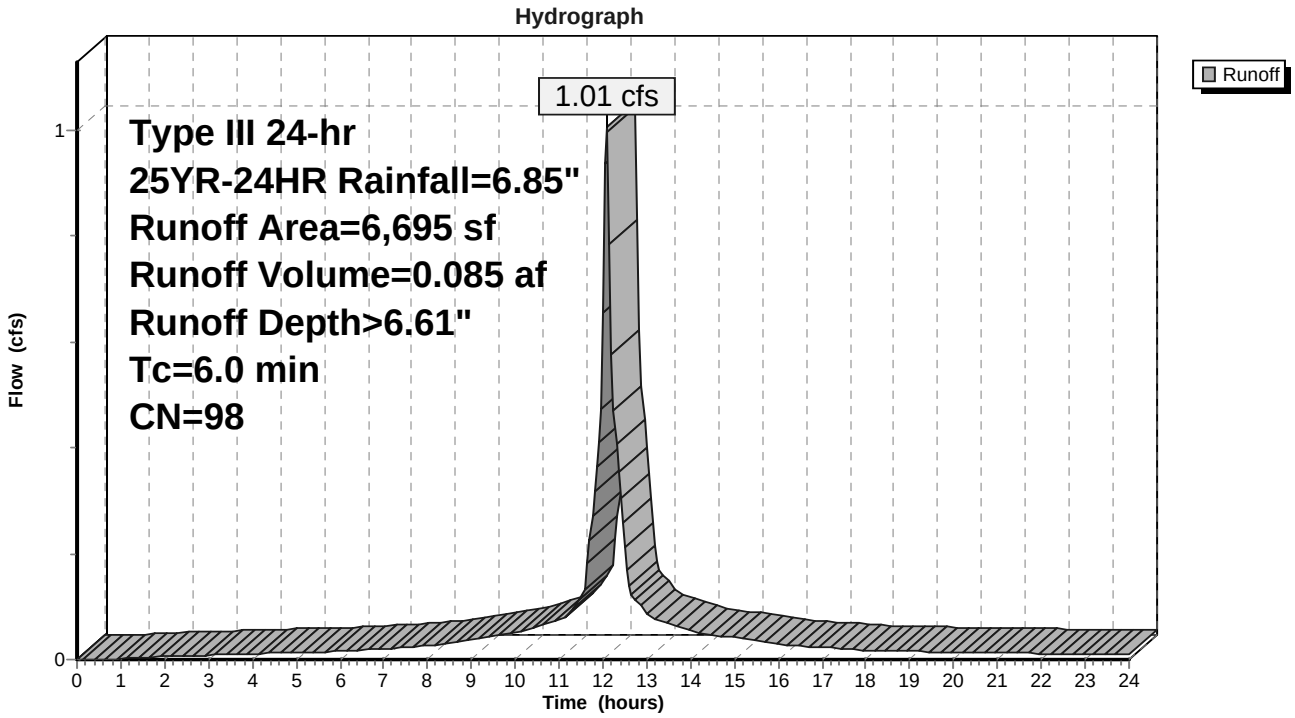
Runoff = 1.01 cfs @ 12.09 hrs, Volume= 0.085 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
4,058	98	Roofs, HSG A
2,187	98	Paved parking, HSG A
450	98	Paved parking, HSG C
6,695	98	Weighted Average
6,695		100.00% Impervious Area

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

Subcatchment 22S: Subcatchment #22



Summary for Subcatchment 23S: Subcatchment #23

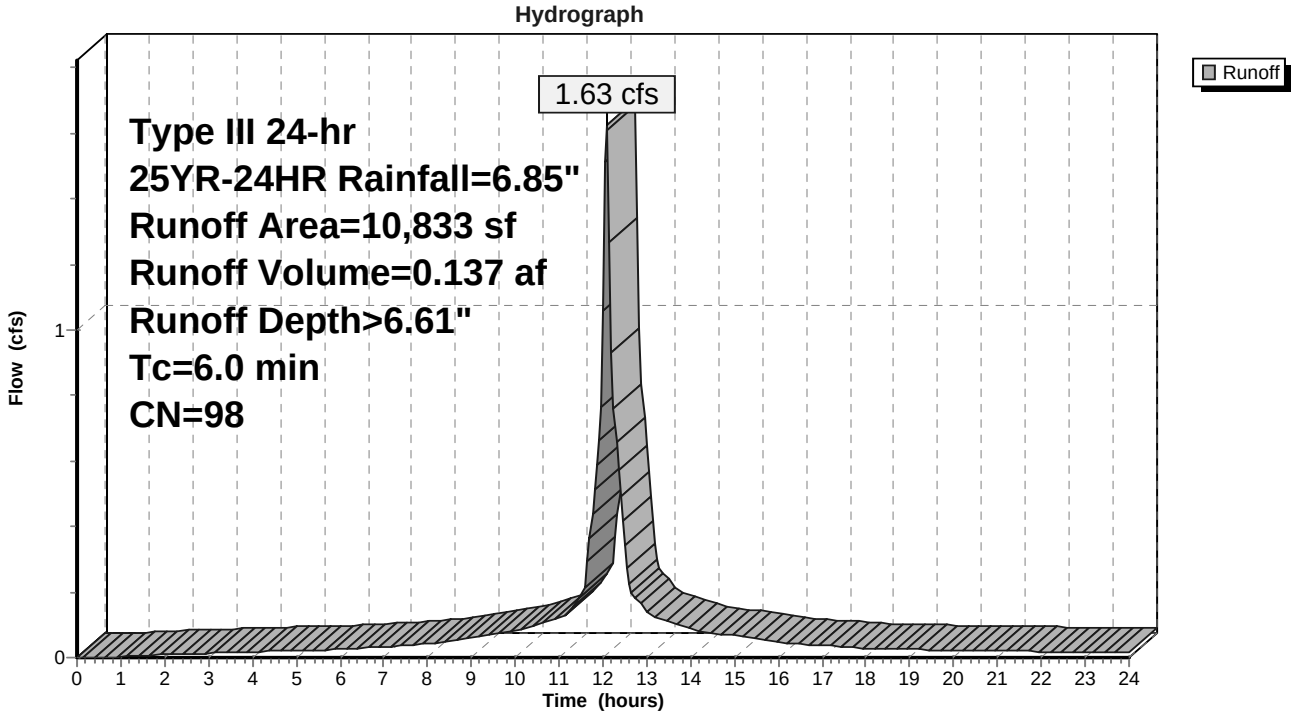
Runoff = 1.63 cfs @ 12.09 hrs, Volume= 0.137 af, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
5,303	98	Roofs, HSG A
5,132	98	Paved parking, HSG A
50	39	>75% Grass cover, Good, HSG A
348	98	Paved parking, HSG C
10,833	98	Weighted Average
50		0.46% Pervious Area
10,783		99.54% Impervious Area

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

Subcatchment 23S: Subcatchment #23



Summary for Subcatchment 24S: Area Around Pond

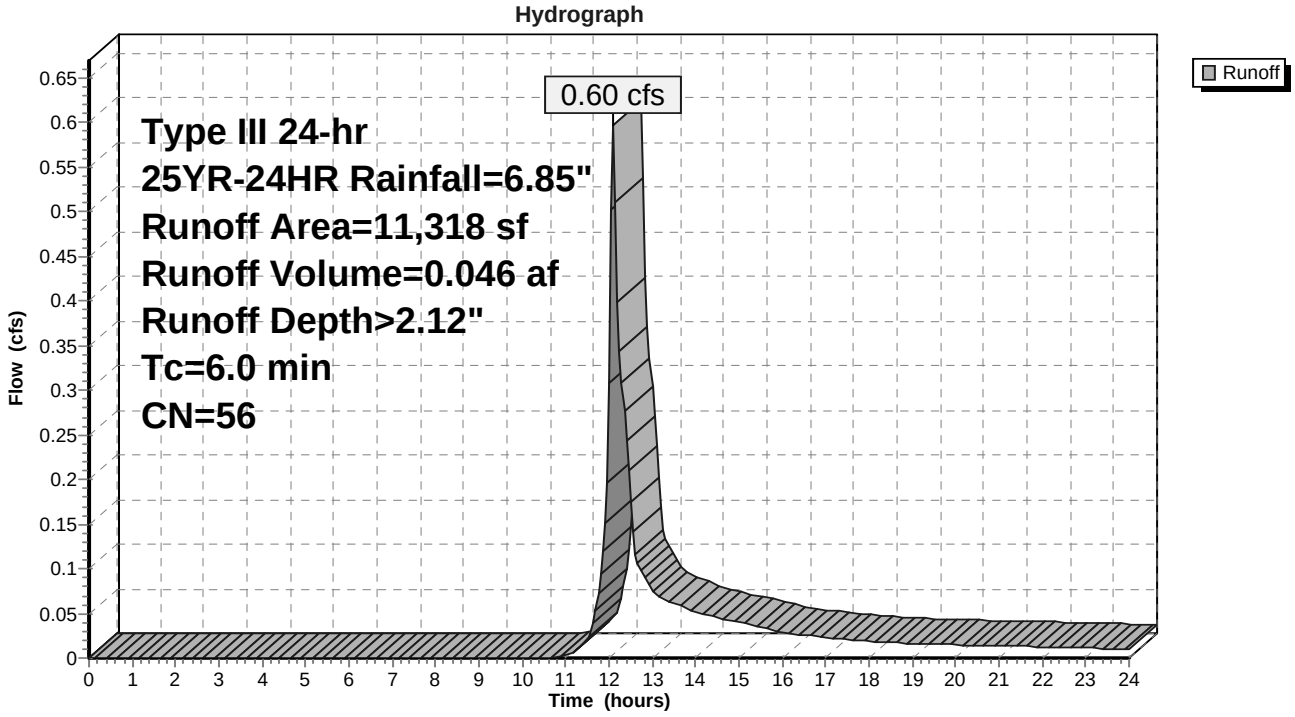
Runoff = 0.60 cfs @ 12.10 hrs, Volume= 0.046 af, Depth> 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25YR-24HR Rainfall=6.85"

Area (sf)	CN	Description
5,527	74	>75% Grass cover, Good, HSG C
5,791	39	>75% Grass cover, Good, HSG A
11,318	56	Weighted Average
11,318		100.00% Pervious Area

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

Subcatchment 24S: Area Around Pond



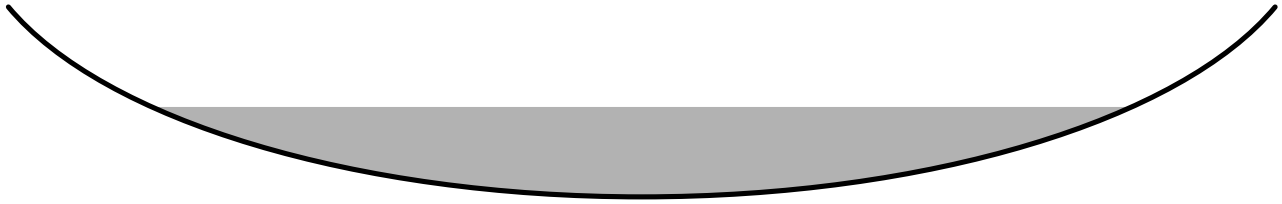
Summary for Reach 2R: Reach #2

Inflow Area = 1.895 ac, 41.22% Impervious, Inflow Depth > 2.53" for 25YR-24HR event
Inflow = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af
Outflow = 4.10 cfs @ 12.21 hrs, Volume= 0.398 af, Atten= 6%, Lag= 3.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.08 fps, Min. Travel Time= 4.5 min
Avg. Velocity = 0.33 fps, Avg. Travel Time= 14.6 min

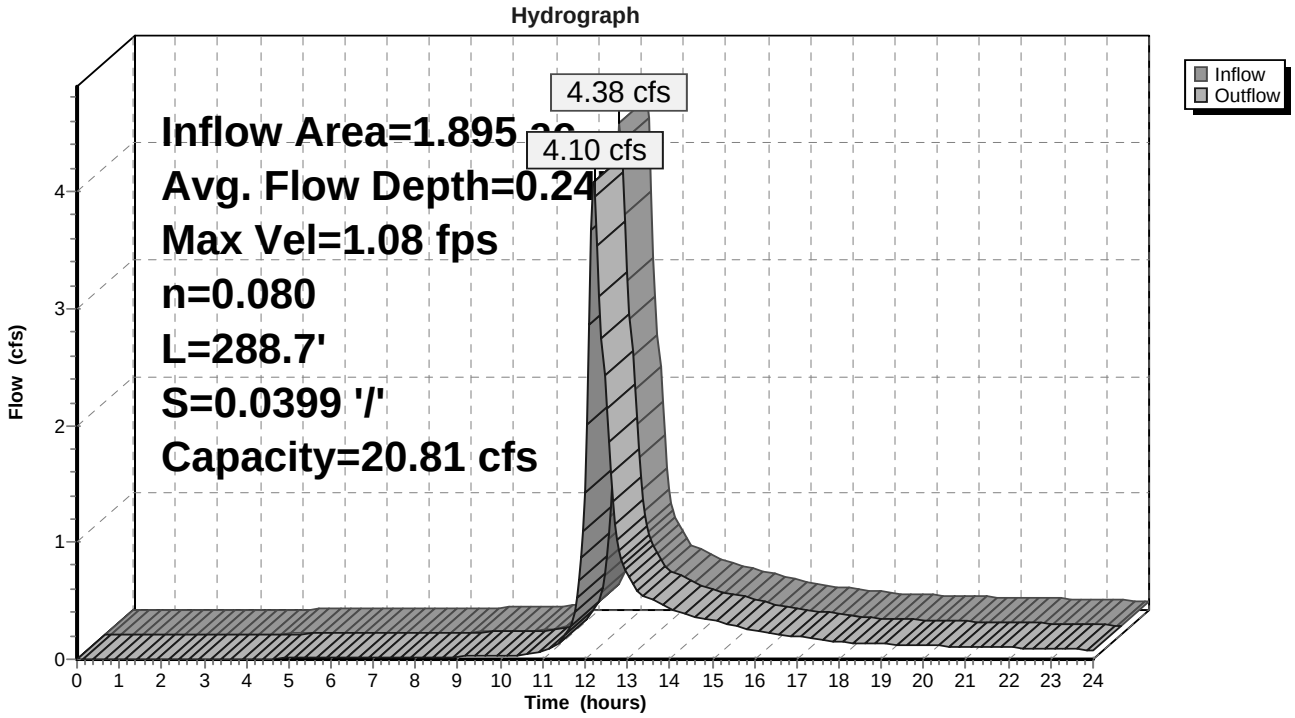
Peak Storage= 1,093 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 0.50' Flow Area= 11.7 sf, Capacity= 20.81 cfs

35.00' x 0.50' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 288.7' Slope= 0.0399 '/'
Inlet Invert= 166.78', Outlet Invert= 155.25'



‡

Reach 2R: Reach #2



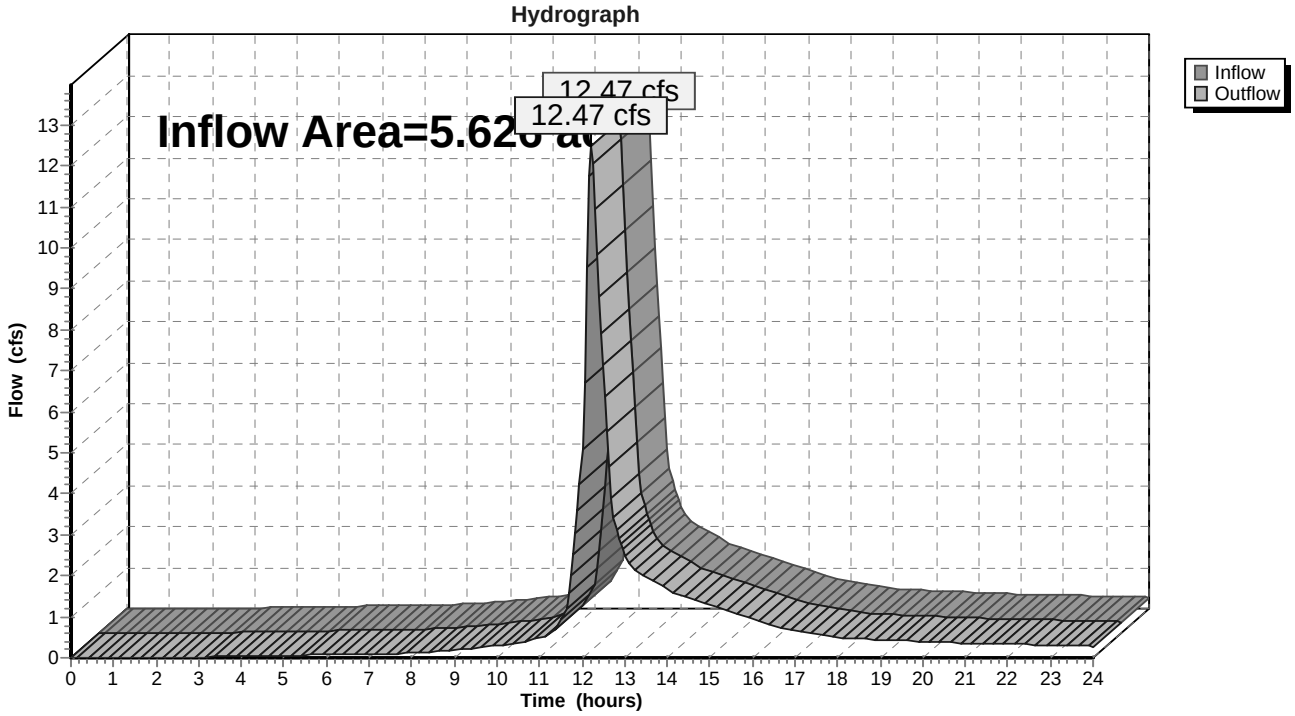
Summary for Reach 100R: Final Reach #100

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.626 ac, 44.58% Impervious, Inflow Depth > 3.09" for 25YR-24HR event
Inflow = 12.47 cfs @ 12.21 hrs, Volume= 1.447 af
Outflow = 12.47 cfs @ 12.21 hrs, Volume= 1.447 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 100R: Final Reach #100



Summary for Reach 101aR: Overland Flow to Wetlands

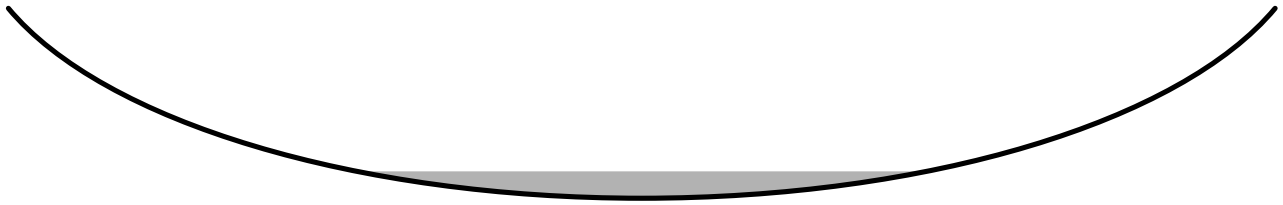
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 0.723 ac, 63.89% Impervious, Inflow Depth > 3.53" for 25YR-24HR event
Inflow = 0.55 cfs @ 12.59 hrs, Volume= 0.213 af
Outflow = 0.55 cfs @ 12.56 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.02 fps, Avg. Travel Time= 0.3 min

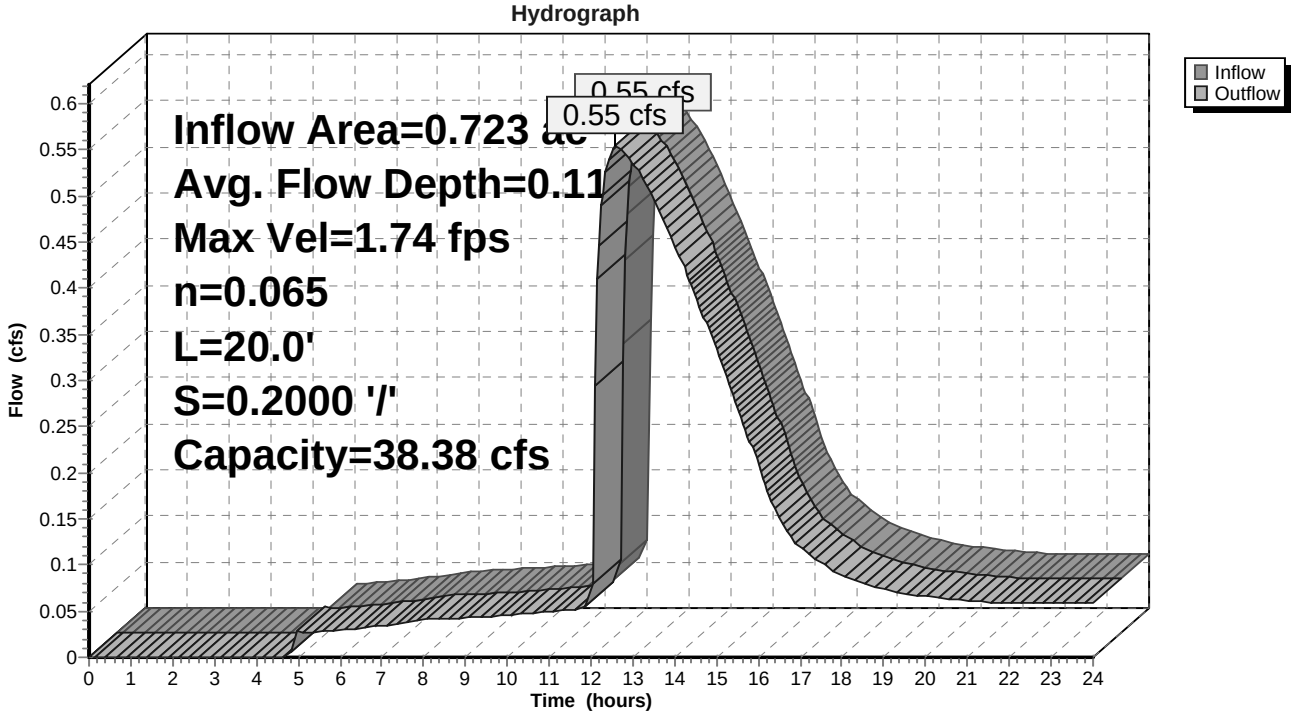
Peak Storage= 6 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 0.75' Flow Area= 6.0 sf, Capacity= 38.38 cfs

12.00' x 0.75' deep Parabolic Channel, n= 0.065
Length= 20.0' Slope= 0.2000 '/'
Inlet Invert= 159.50', Outlet Invert= 155.50'



‡

Reach 101aR: Overland Flow to Wetlands



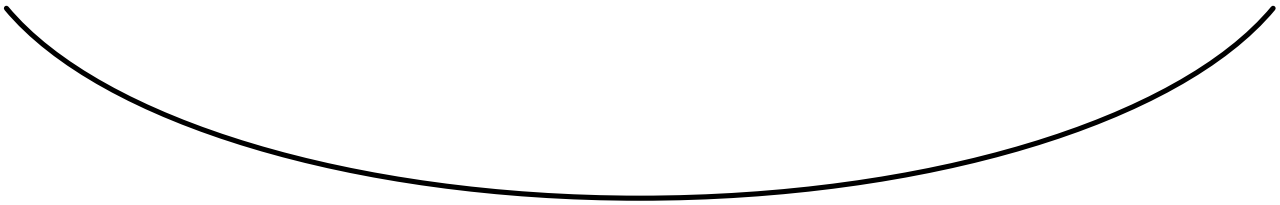
Summary for Reach 101bR: Overland Flow to Wetlands

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

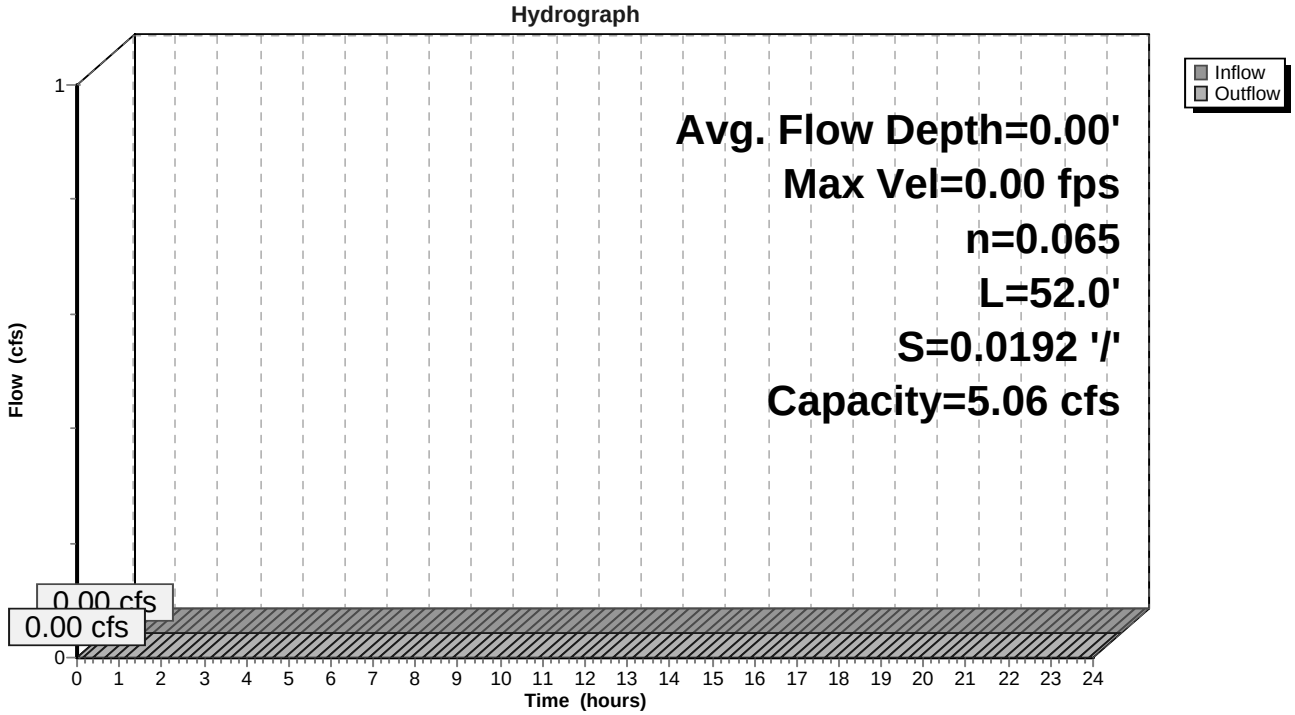
Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 3.3 sf, Capacity= 5.06 cfs

10.00' x 0.50' deep Parabolic Channel, n= 0.065
Length= 52.0' Slope= 0.0192 '/'
Inlet Invert= 161.00', Outlet Invert= 160.00'



‡

Reach 101bR: Overland Flow to Wetlands



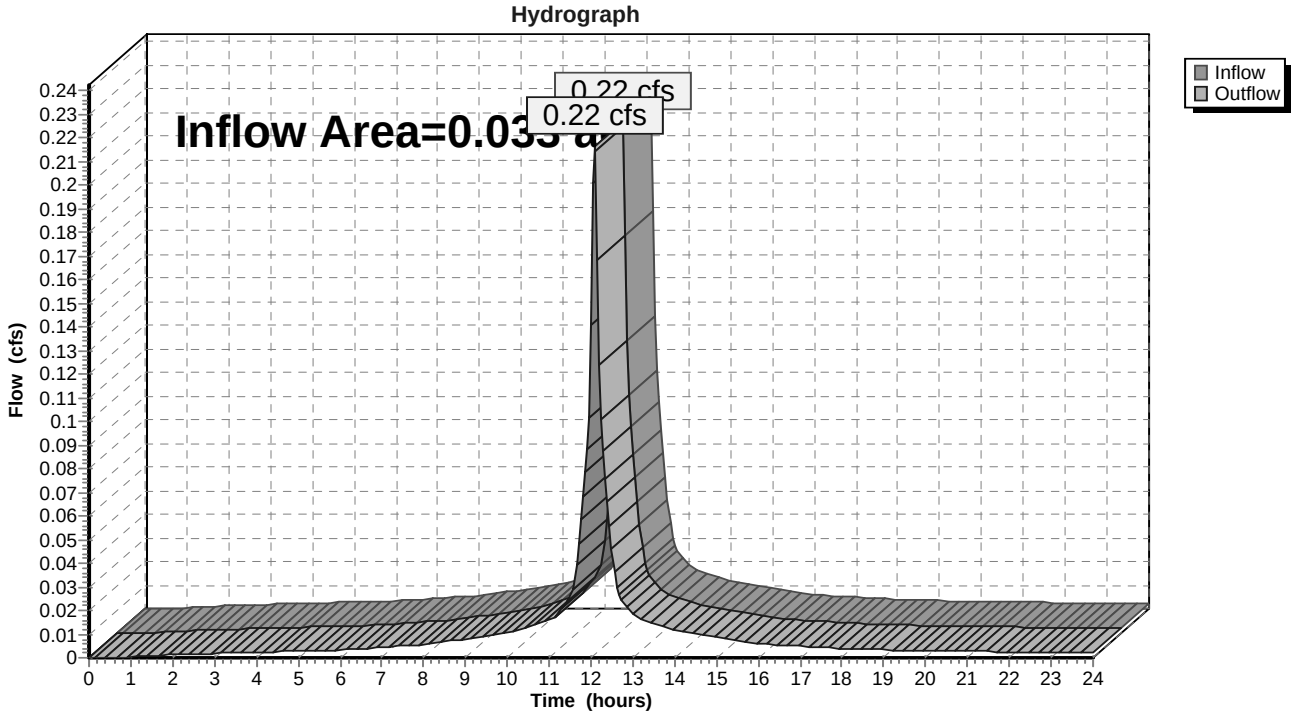
Summary for Reach 200R: Final Reach #200

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.033 ac,100.00% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 200R: Final Reach #200



Summary for Pond 1P: Roadside Pond

Inflow Area = 1.794 ac, 37.94% Impervious, Inflow Depth > 2.30" for 25YR-24HR event
Inflow = 3.98 cfs @ 12.15 hrs, Volume= 0.344 af
Outflow = 3.92 cfs @ 12.17 hrs, Volume= 0.344 af, Atten= 2%, Lag= 1.0 min
Primary = 3.92 cfs @ 12.17 hrs, Volume= 0.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 170.15' @ 12.17 hrs Surf.Area= 146 sf Storage= 62 cf

Plug-Flow detention time= 0.1 min calculated for 0.344 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (862.3 - 862.2)

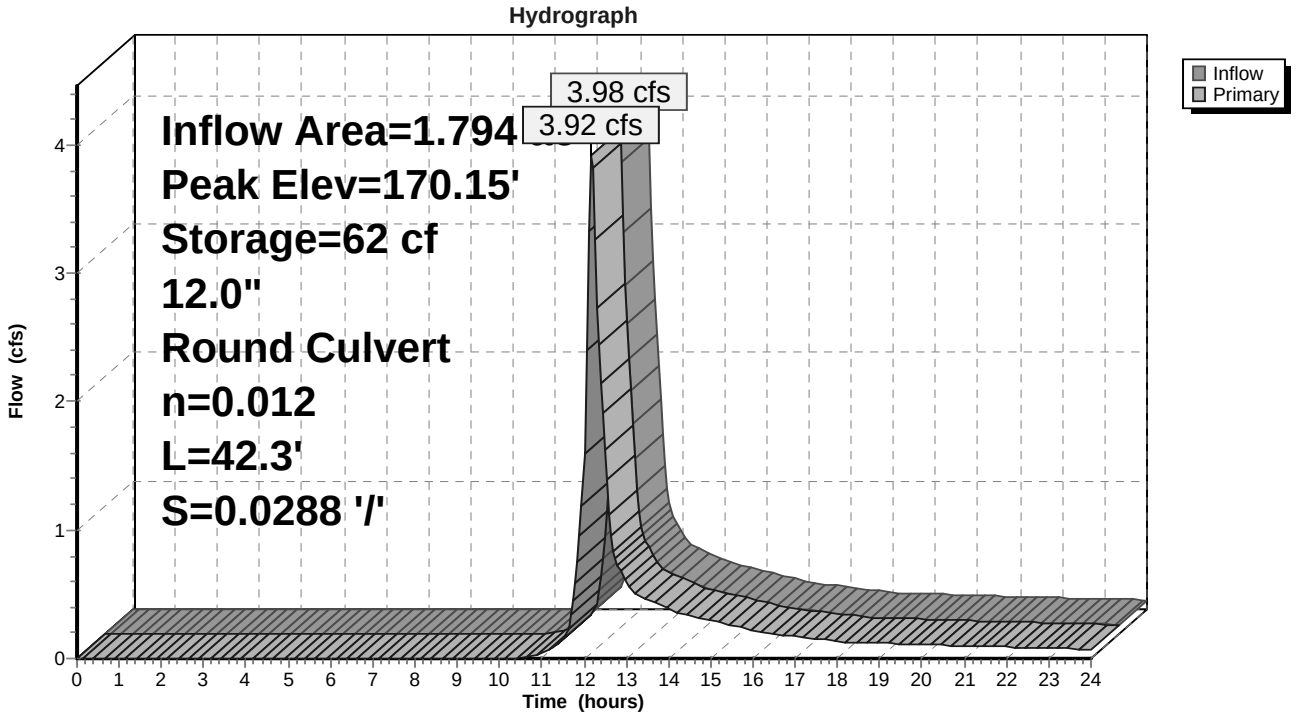
Volume	Invert	Avail.Storage	Storage Description
#1	168.58'	1,980 cf	**Open Water Storage (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
168.58	0	3.2	0	0	0
170.00	93	71.6	44	44	411
171.00	665	272.4	336	380	5,910
172.00	2,778	538.9	1,601	1,980	23,120

Device	Routing	Invert	Outlet Devices
#1	Primary	168.58'	**12.0" Round 12" RCP** L= 42.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.58' / 167.36' S= 0.0288 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.85 cfs @ 12.17 hrs HW=170.11' TW=168.89' (Dynamic Tailwater)
↑—**1=12" RCP** (Inlet Controls 3.85 cfs @ 4.90 fps)

Pond 1P: Roadside Pond



Summary for Pond 2P: CB #7325

Inflow Area = 1.895 ac, 41.22% Impervious, Inflow Depth > 2.53" for 25YR-24HR event
Inflow = 4.39 cfs @ 12.16 hrs, Volume= 0.400 af
Outflow = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af, Atten= 0%, Lag= 0.1 min
Primary = 4.38 cfs @ 12.16 hrs, Volume= 0.399 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 168.93' @ 12.16 hrs Surf.Area= 13 sf Storage= 25 cf

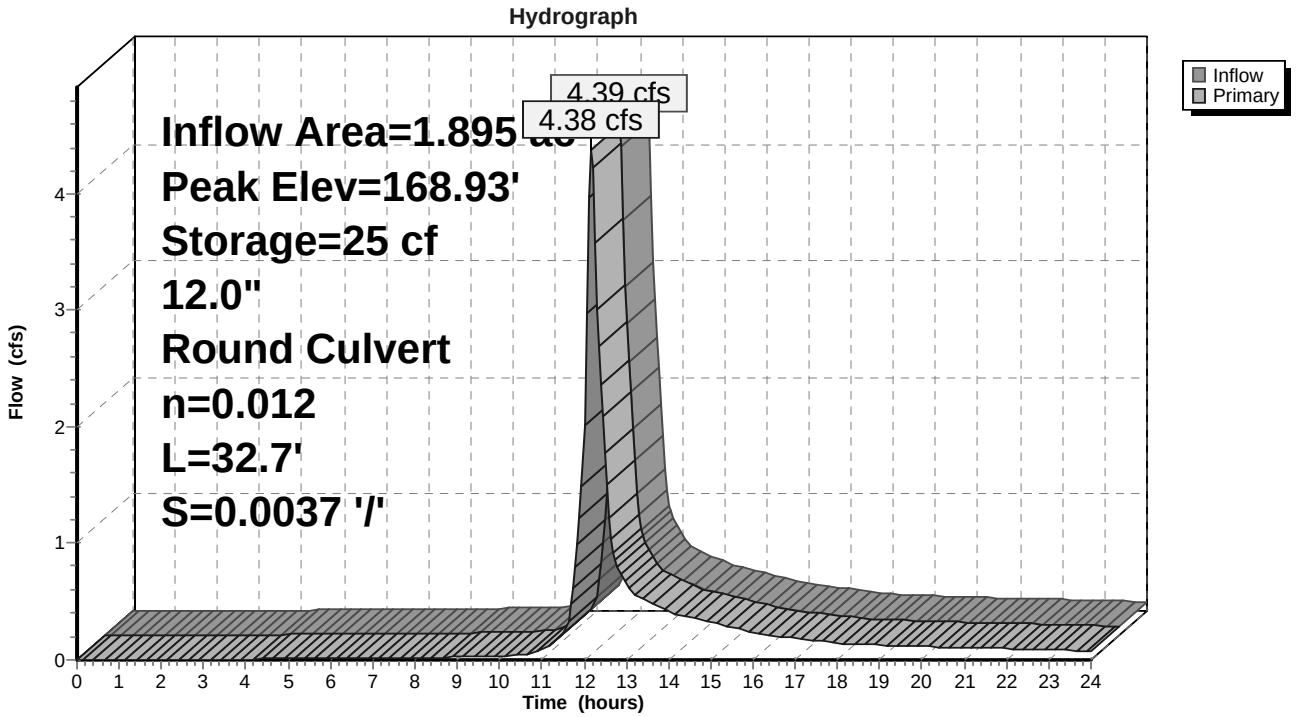
Plug-Flow detention time= 0.2 min calculated for 0.399 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (845.9 - 845.8)

Volume	Invert	Avail.Storage	Storage Description
#1	166.90'	97 cf	**4.00'D x 7.70'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	166.90'	**12.0" Round 12" RCP** L= 32.7' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 166.90' / 166.78' S= 0.0037 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.33 cfs @ 12.16 hrs HW=168.90' TW=167.01' (Dynamic Tailwater)
1=12" RCP (Barrel Controls 4.33 cfs @ 5.52 fps)

Pond 2P: CB #7325



Summary for Pond 3P: CB #7323

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=3)

Inflow Area = 0.072 ac, 34.19% Impervious, Inflow Depth > 3.58" for 25YR-24HR event
Inflow = 1.99 cfs @ 12.20 hrs, Volume= 0.022 af
Outflow = 1.92 cfs @ 12.20 hrs, Volume= 0.022 af, Atten= 4%, Lag= 0.1 min
Primary = 1.92 cfs @ 12.20 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.67' @ 12.21 hrs Surf.Area= 13 sf Storage= 10 cf

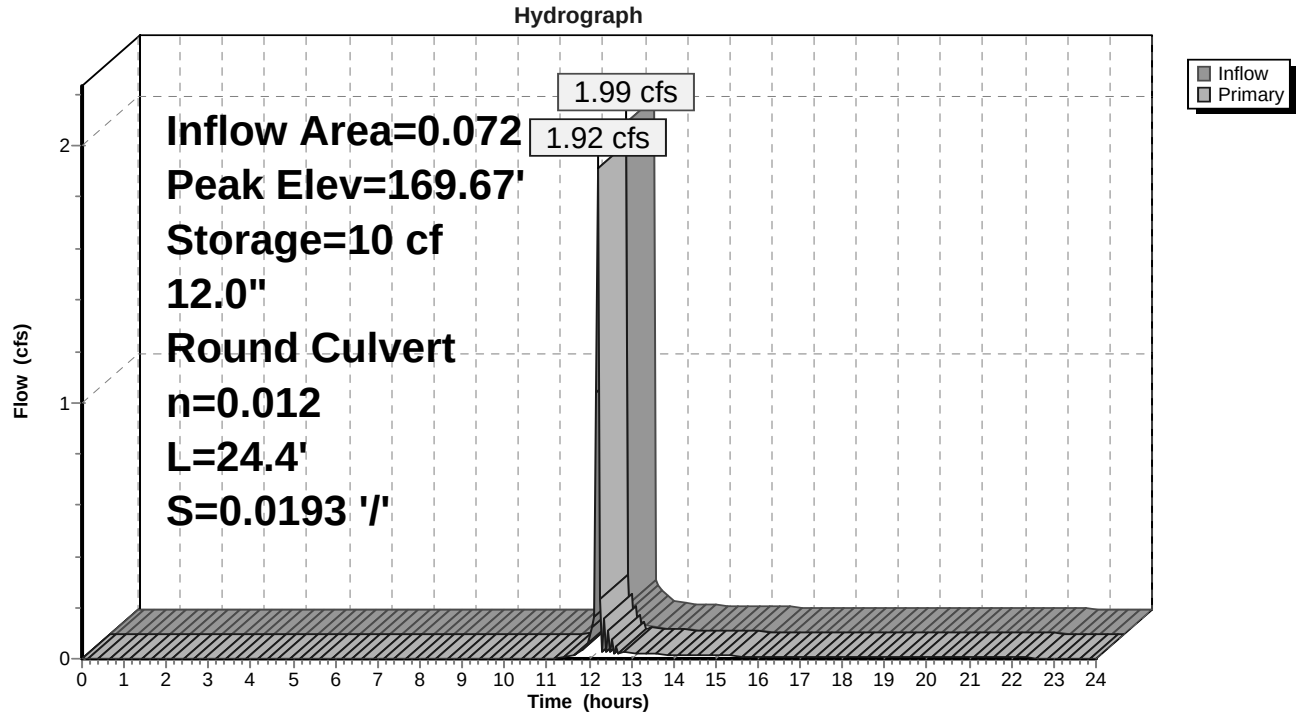
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (815.2 - 814.9)

Volume	Invert	Avail.Storage	Storage Description
#1	168.90'	40 cf	**4.00'D x 3.20'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.90'	**12.0" Round 12" RCP** L= 24.4' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.90' / 168.43' S= 0.0193 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.49 cfs @ 12.20 hrs HW=169.66' TW=169.32' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 1.49 cfs @ 3.23 fps)

Pond 3P: CB #7323



Summary for Pond 4P: CB #7324

Inflow Area = 0.178 ac, 73.32% Impervious, Inflow Depth > 5.38" for 25YR-24HR event
Inflow = 2.31 cfs @ 12.20 hrs, Volume= 0.080 af
Outflow = 2.26 cfs @ 12.20 hrs, Volume= 0.080 af, Atten= 2%, Lag= 0.0 min
Primary = 2.26 cfs @ 12.20 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.33' @ 12.20 hrs Surf.Area= 13 sf Storage= 13 cf

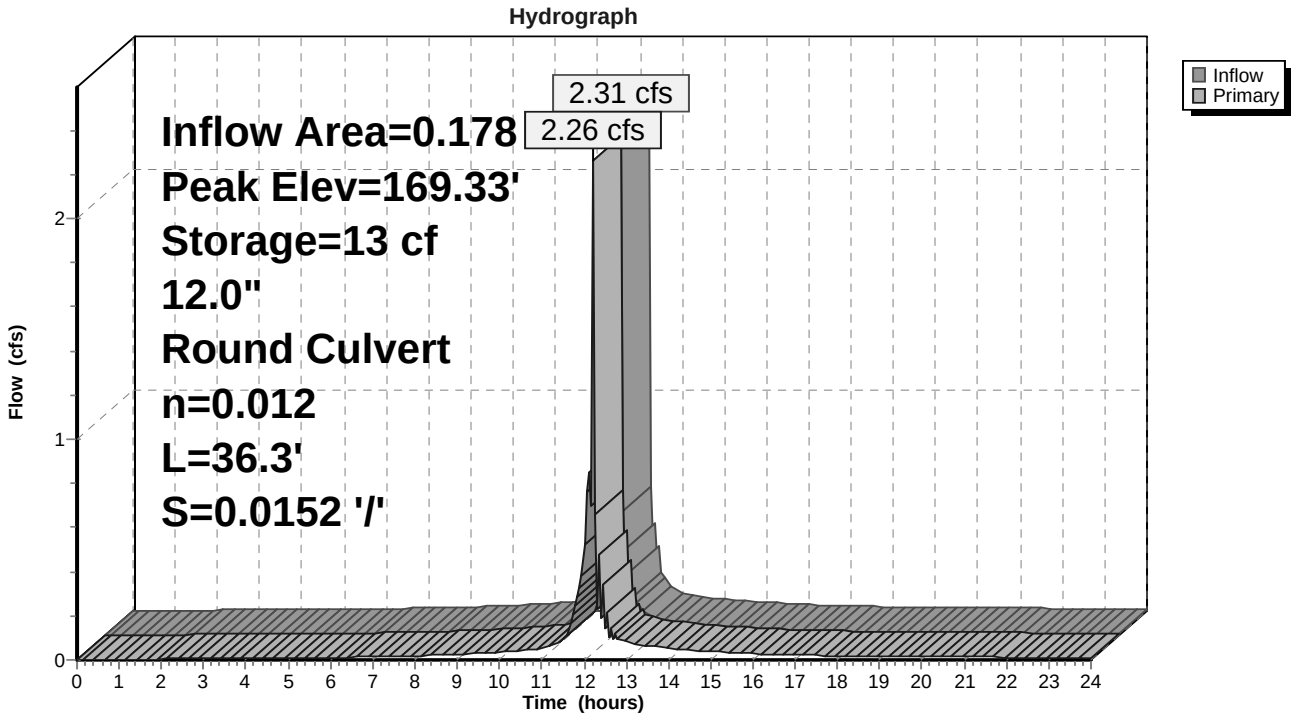
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (762.6 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1	168.33'	47 cf	**4.00'D x 3.75'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.33'	**12.0" Round 12" RCP** L= 36.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.33' / 167.78' S= 0.0152 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.20 cfs @ 12.20 hrs HW=169.32' TW=168.89' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 2.20 cfs @ 3.51 fps)

Pond 4P: CB #7324



Summary for Pond 5P: CB #7320

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=18)

Inflow Area = 0.043 ac,100.00% Impervious, Inflow Depth > 7.18" for 25YR-24HR event
Inflow = 0.72 cfs @ 12.15 hrs, Volume= 0.026 af
Outflow = 0.67 cfs @ 12.15 hrs, Volume= 0.026 af, Atten= 6%, Lag= 0.1 min
Primary = 0.67 cfs @ 12.15 hrs, Volume= 0.026 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.92' @ 12.18 hrs Surf.Area= 13 sf Storage= 35 cf
Flood Elev= 170.63' Surf.Area= 13 sf Storage= 44 cf

Plug-Flow detention time= 1.6 min calculated for 0.026 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (743.2 - 741.7)

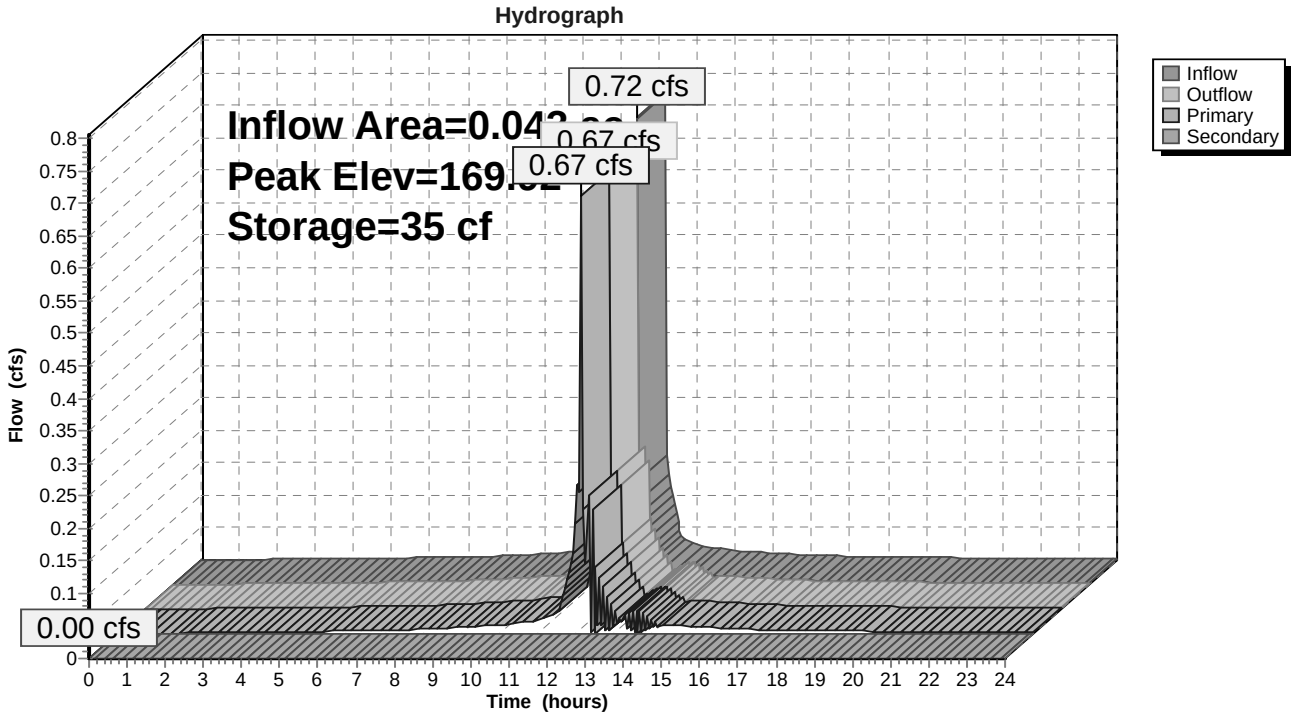
Volume	Invert	Avail.Storage	Storage Description
#1	167.11'	44 cf	**4.00'D x 3.52'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.11'	**12.0" Round 12" RCP** L= 25.3' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.11' / 166.51' S= 0.0237 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	170.62'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 12.15 hrs HW=169.76' TW=169.87' (Dynamic Tailwater)
↑—**1=12" RCP** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=167.11' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: CB #7320



Summary for Pond 6P: CB #7319

[80] Warning: Exceeded Pond 5P by 0.74' @ 12.10 hrs (3.24 cfs 0.065 af)

Inflow Area =	1.667 ac,	65.50% Impervious,	Inflow Depth >	4.21" for 25YR-24HR event
Inflow =	7.04 cfs @	12.11 hrs,	Volume=	0.584 af
Outflow =	7.01 cfs @	12.11 hrs,	Volume=	0.584 af, Atten= 0%, Lag= 0.1 min
Primary =	7.01 cfs @	12.11 hrs,	Volume=	0.584 af
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.91' @ 12.13 hrs Surf.Area= 13 sf Storage= 43 cf
Flood Elev= 170.61' Surf.Area= 13 sf Storage= 52 cf

Plug-Flow detention time= 0.2 min calculated for 0.583 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (810.3 - 810.1)

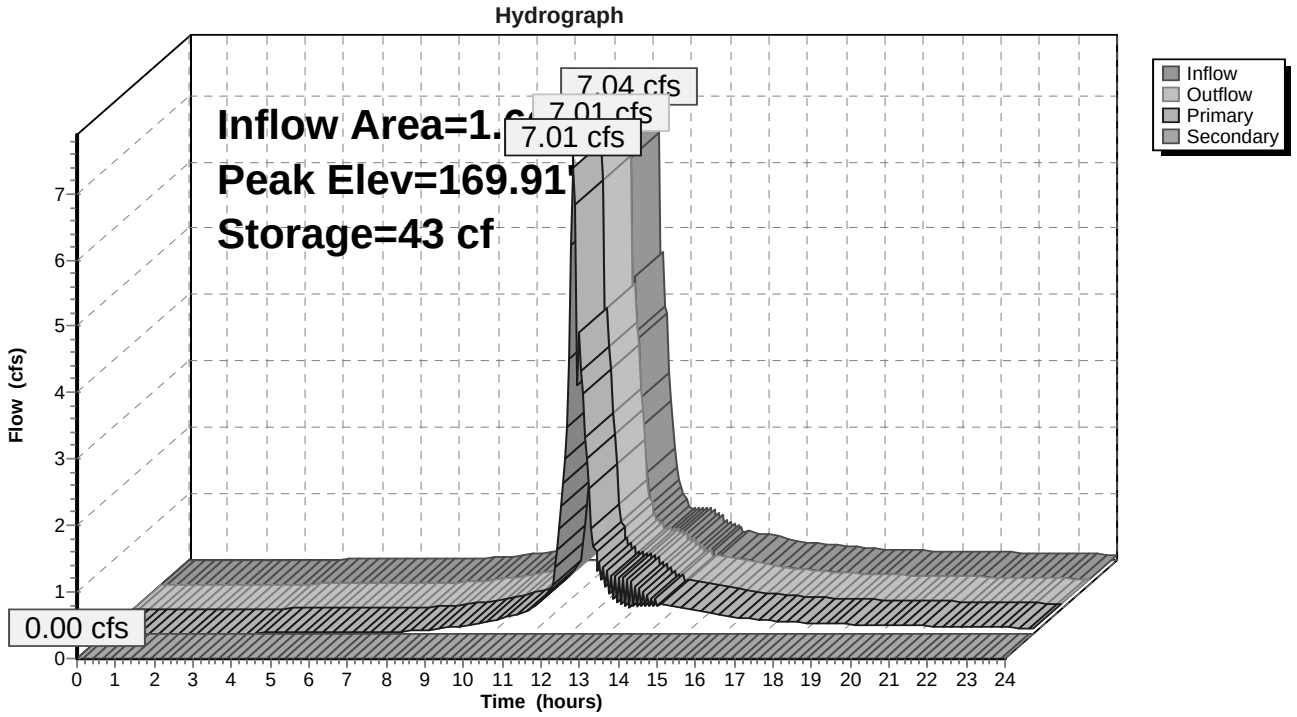
Volume	Invert	Avail.Storage	Storage Description
#1	166.45'	52 cf	**4.00'D x 4.16'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	166.45'	**15.0" Round Prop. 15" RCP** L= 28.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 166.45' / 166.25' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	170.60'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.04 cfs @ 12.11 hrs HW=169.76' TW=168.72' (Dynamic Tailwater)
1=Prop. 15" RCP (Inlet Controls 6.04 cfs @ 4.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.45' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 6P: CB #7319



Summary for Pond 7P: CB #3201

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=6)

Inflow Area = 0.078 ac, 53.78% Impervious, Inflow Depth > 3.28" for 25YR-24HR event
Inflow = 0.23 cfs @ 12.20 hrs, Volume= 0.021 af
Outflow = 0.44 cfs @ 12.34 hrs, Volume= 0.021 af, Atten= 0%, Lag= 8.8 min
Primary = 0.44 cfs @ 12.34 hrs, Volume= 0.021 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 176.85' @ 12.29 hrs Surf.Area= 13 sf Storage= 31 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

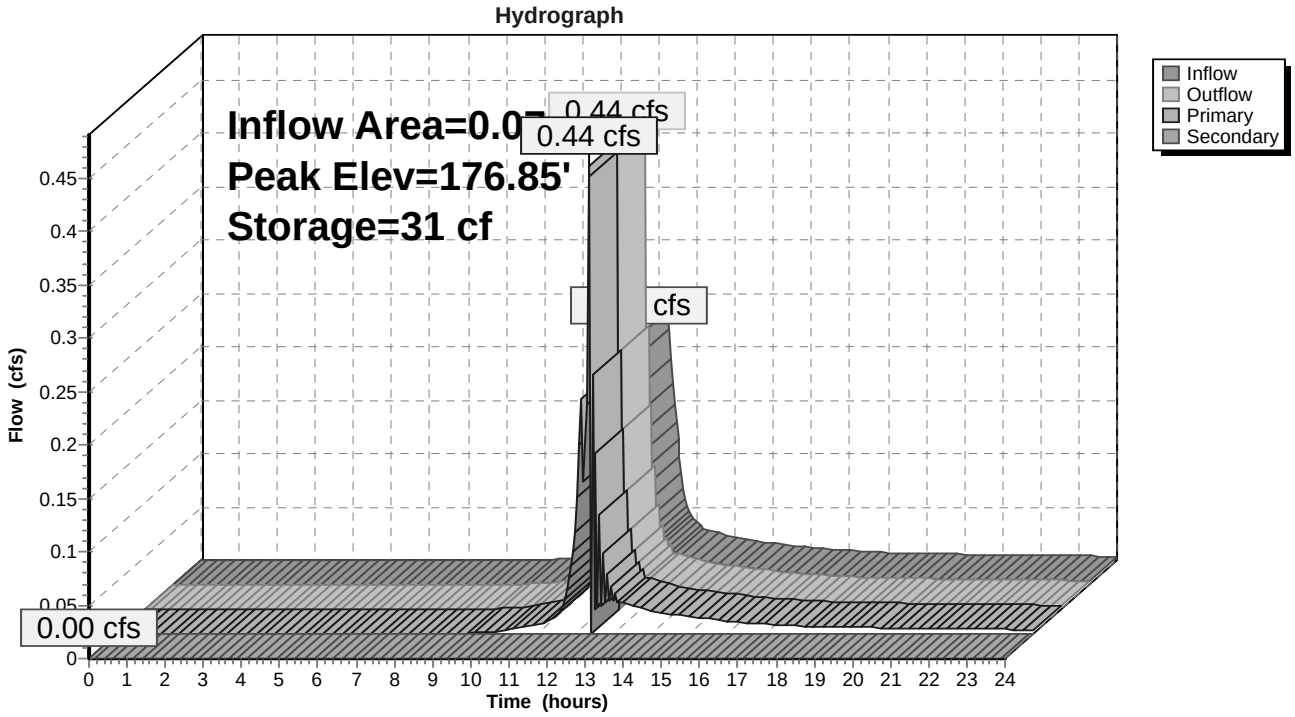
Volume	Invert	Avail.Storage	Storage Description
#1	174.37'	35 cf	**4.00'D x 2.80'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	174.37'	**12.0" Round 12" RCP** L= 17.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 174.37' / 173.93' S= 0.0251 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	177.16'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.66 cfs @ 12.34 hrs HW=175.07' TW=174.13' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 1.66 cfs @ 2.84 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=174.37' TW=173.61' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 7P: CB #3201



Summary for Pond 8P: CB #3202

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[80] Warning: Exceeded Pond 7P by 1.18' @ 12.20 hrs (3.87 cfs 0.031 af)

Inflow Area = 0.102 ac, 64.52% Impervious, Inflow Depth > 4.07" for 25YR-24HR event
Inflow = 0.49 cfs @ 12.34 hrs, Volume= 0.035 af
Outflow = 0.57 cfs @ 12.30 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.30 hrs, Volume= 0.035 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 176.87' @ 12.24 hrs Surf.Area= 13 sf Storage= 41 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.6 min (805.0 - 804.3)

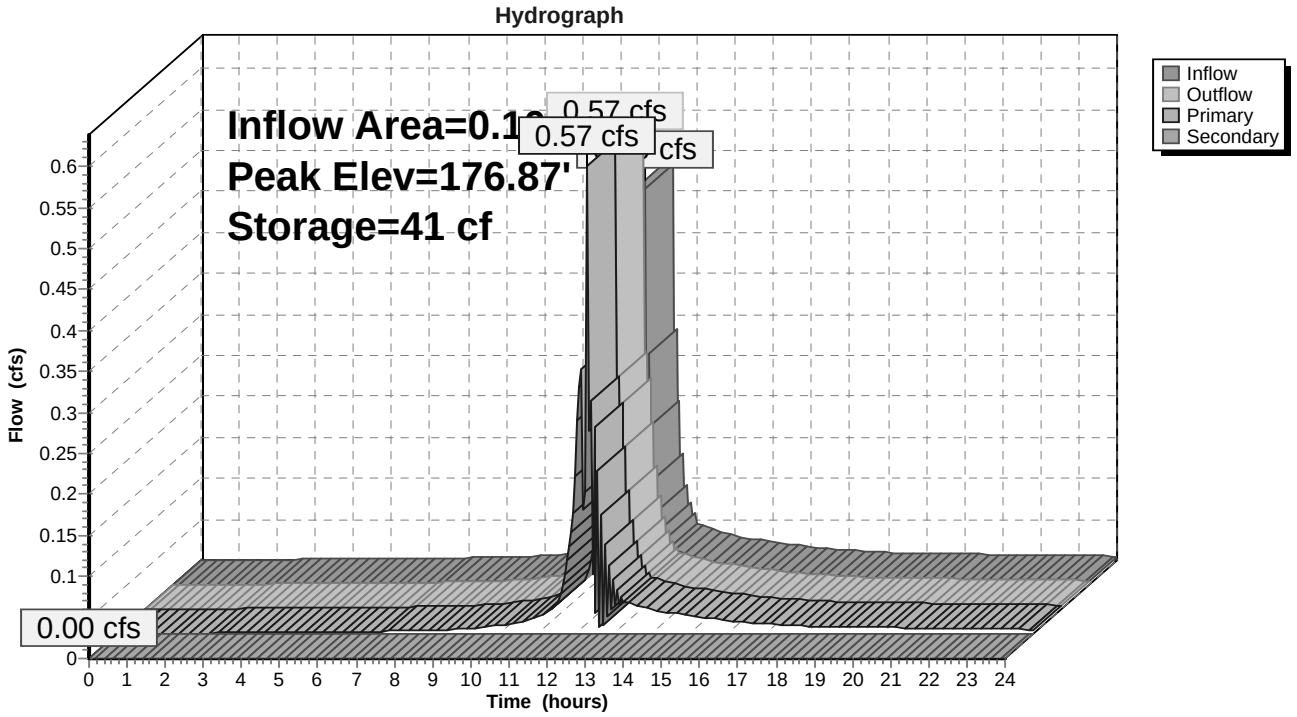
Volume	Invert	Avail.Storage	Storage Description
#1	173.61'	57 cf	**4.00'D x 4.54'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.61'	**12.0" Round 12" RCP** L= 25.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 173.61' / 173.31' S= 0.0116 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	178.14'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.86 cfs @ 12.30 hrs HW=174.45' TW=174.03' (Dynamic Tailwater)
↑—**1=12" RCP** (Outlet Controls 1.86 cfs @ 3.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.61' TW=173.21' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: CB #3202



Summary for Pond 9P: CB #3203

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=7)
[80] Warning: Exceeded Pond 8P by 1.23' @ 12.15 hrs (4.20 cfs 0.047 af)

Inflow Area =	0.898 ac,	60.71% Impervious,	Inflow Depth >	4.02"	for 25YR-24HR event
Inflow =	3.77 cfs @	12.12 hrs,	Volume=	0.301 af	
Outflow =	3.74 cfs @	12.11 hrs,	Volume=	0.301 af,	Atten= 1%, Lag= 0.0 min
Primary =	3.74 cfs @	12.11 hrs,	Volume=	0.301 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 176.87' @ 12.19 hrs Surf.Area= 13 sf Storage= 46 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (819.8 - 819.7)

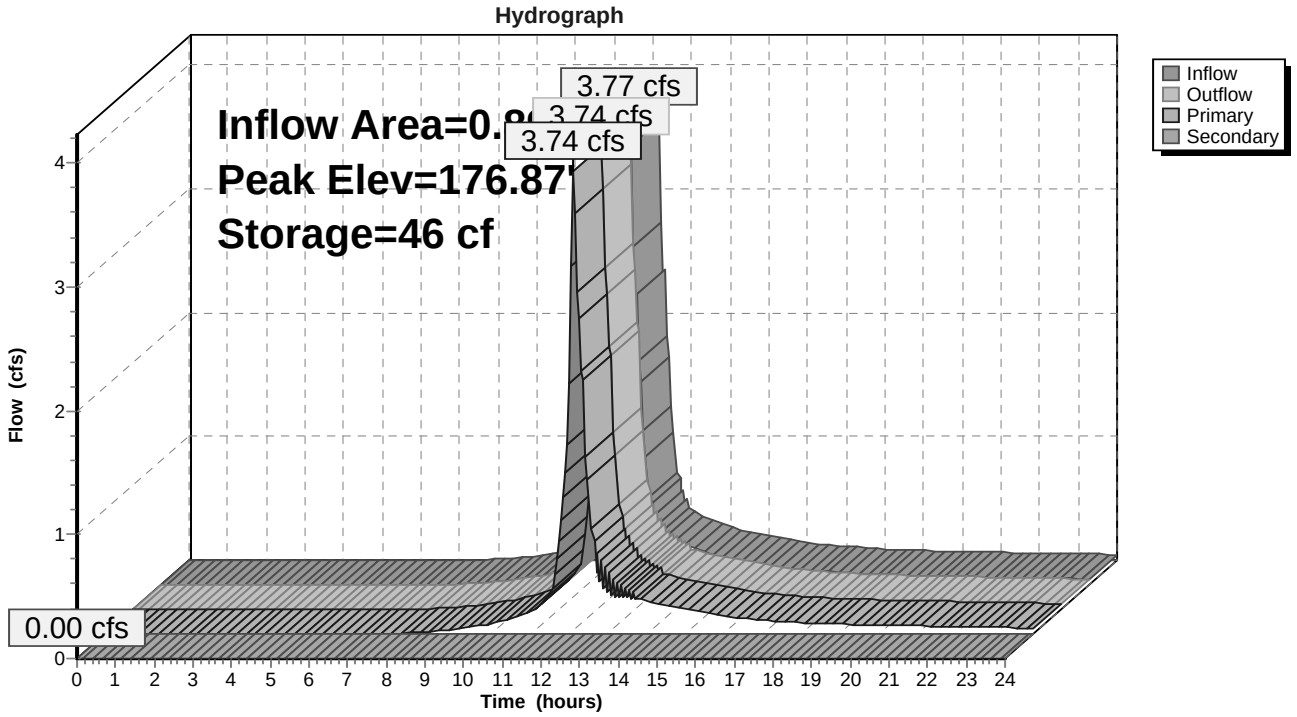
Volume	Invert	Avail.Storage	Storage Description
#1	173.21'	62 cf	**4.00'D x 4.92'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.21'	**12.0" Round 12" RCP** L= 208.7' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 173.21' / 168.55' S= 0.0223 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	178.12'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.05 cfs @ 12.11 hrs HW=174.93' TW=174.17' (Dynamic Tailwater)
1=12" RCP (Outlet Controls 2.05 cfs @ 2.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.21' TW=171.40' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 9P: CB #3203



Summary for Pond 10P: CB #7322

[93] Warning: Storage range exceeded by 0.52'
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=13)

Inflow Area = 0.571 ac, 62.08% Impervious, Inflow Depth > 3.91" for 25YR-24HR event
Inflow = 2.54 cfs @ 12.10 hrs, Volume= 0.186 af
Outflow = 2.55 cfs @ 12.09 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
Primary = 2.55 cfs @ 12.09 hrs, Volume= 0.178 af
Secondary = 1.86 cfs @ 12.20 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 174.67' @ 12.19 hrs Surf.Area= 13 sf Storage= 35 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (822.8 - 822.7)

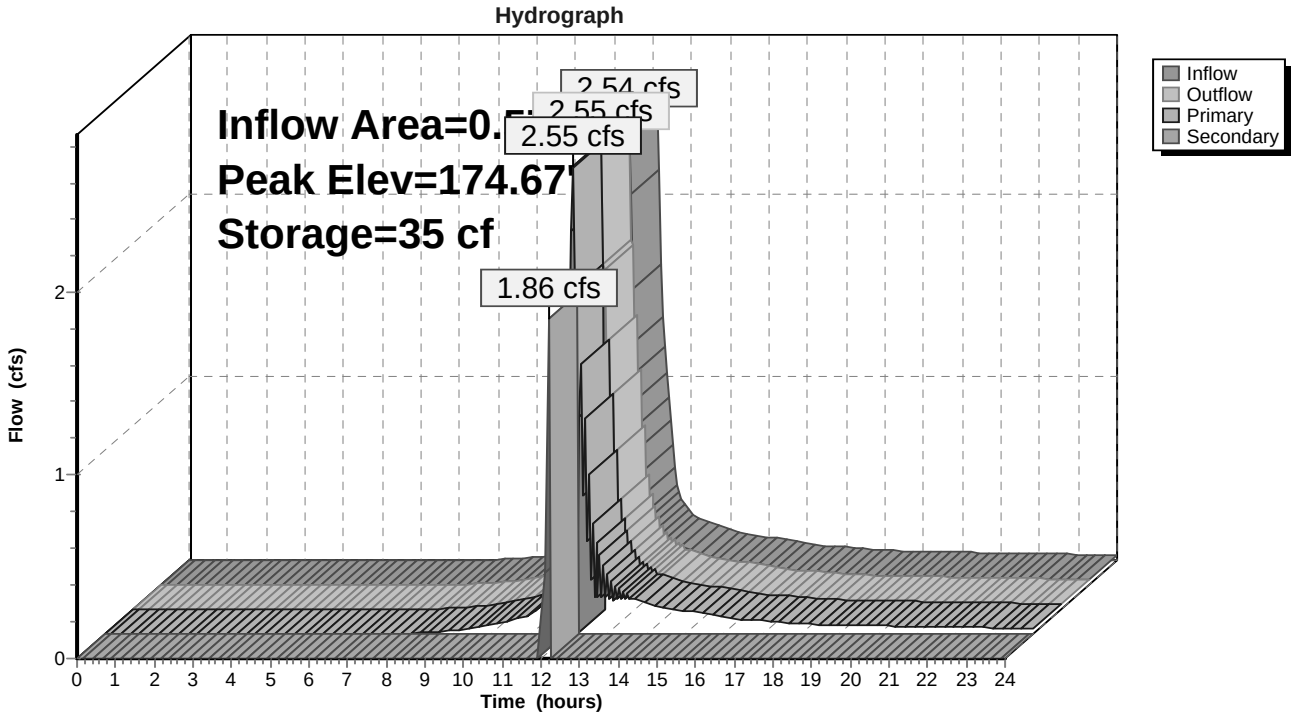
Volume	Invert	Avail.Storage	Storage Description
#1	171.40'	35 cf	**4.00'D x 2.75'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	171.40'	**12.0" Round 12" RCP** L= 1.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 171.40' / 170.45' S= 0.9500 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	174.14'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=172.33' TW=173.44' (Dynamic Tailwater)
1=12" RCP (Controls 0.00 cfs)

Secondary OutFlow Max=1.86 cfs @ 12.20 hrs HW=174.64' TW=169.66' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 1.86 cfs @ 1.85 fps)

Pond 10P: CB #7322



Summary for Pond 11P: CB #7321

[93] Warning: Storage range exceeded by 0.34'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=100)

Inflow Area = 0.104 ac,100.00% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 0.69 cfs @ 12.09 hrs, Volume= 0.058 af
Outflow = 0.58 cfs @ 12.06 hrs, Volume= 0.057 af, Atten= 16%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.06 hrs, Volume= 0.055 af
Secondary = 0.50 cfs @ 12.15 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 173.31' @ 12.17 hrs Surf.Area= 13 sf Storage= 73 cf

Plug-Flow detention time= 6.3 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 3.5 min (746.3 - 742.8)

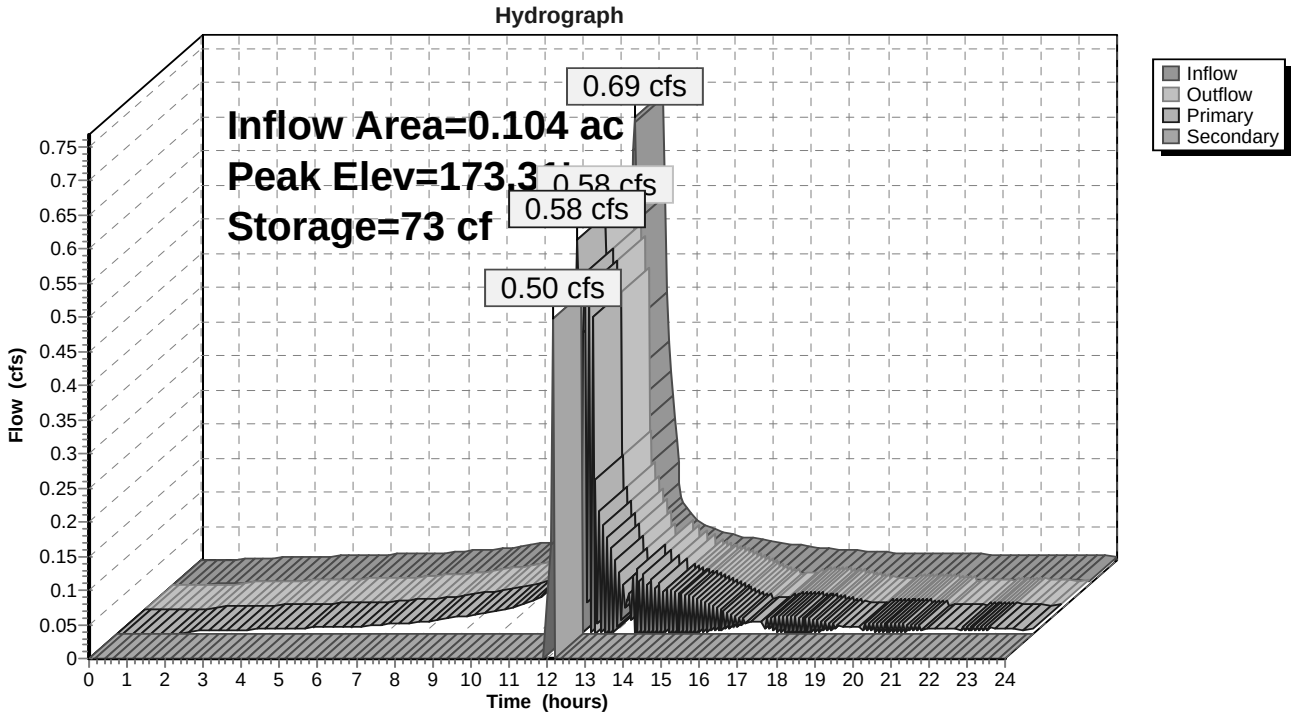
Volume	Invert	Avail.Storage	Storage Description
#1	167.17'	73 cf	**4.00'D x 5.80'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.86'	**12.0" Round 12" RCP** L= 25.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.17' / 167.86' S= -0.0267 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	172.96'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 12.06 hrs HW=169.70' TW=171.54' (Dynamic Tailwater)
1=12" RCP (Controls 0.00 cfs)

Secondary OutFlow Max=0.50 cfs @ 12.15 hrs HW=173.17' TW=169.77' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.50 cfs @ 1.17 fps)

Pond 11P: CB #7321



Summary for Pond 101P: Rain Garden #101

[80] Warning: Exceeded Pond D01P by 0.08' @ 12.15 hrs (1.61 cfs 0.100 af)

Inflow Area = 0.723 ac, 63.89% Impervious, Inflow Depth > 4.97" for 25YR-24HR event
Inflow = 3.56 cfs @ 12.09 hrs, Volume= 0.299 af
Outflow = 0.55 cfs @ 12.59 hrs, Volume= 0.213 af, Atten= 84%, Lag= 30.3 min
Primary = 0.55 cfs @ 12.59 hrs, Volume= 0.213 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.34' @ 12.59 hrs Surf.Area= 804 sf Storage= 6,489 cf
Flood Elev= 168.50' Surf.Area= 804 sf Storage= 10,297 cf

Plug-Flow detention time= 212.5 min calculated for 0.213 af (71% of inflow)
Center-of-Mass det. time= 114.4 min (876.8 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	322 cf	**Stone (Irregular)** Listed below (Recalc) -Impervious 804 cf Overall x 40.0% Voids
#2	162.00'	241 cf	**BioMedia (Irregular)** Listed below (Recalc) 1,206 cf Overall x 20.0% Voids
#3	163.50'	9,655 cf	**Open Water (Irregular)** Listed below (Recalc) -Impervious
#4	160.90'	80 cf	**4.00'D x 6.35'H 4' Structure**-Impervious
		10,297 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.00	804	122.6	0	0	804
162.00	804	122.6	804	804	927

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	804	122.6	0	0	804
163.50	804	122.6	1,206	1,206	988

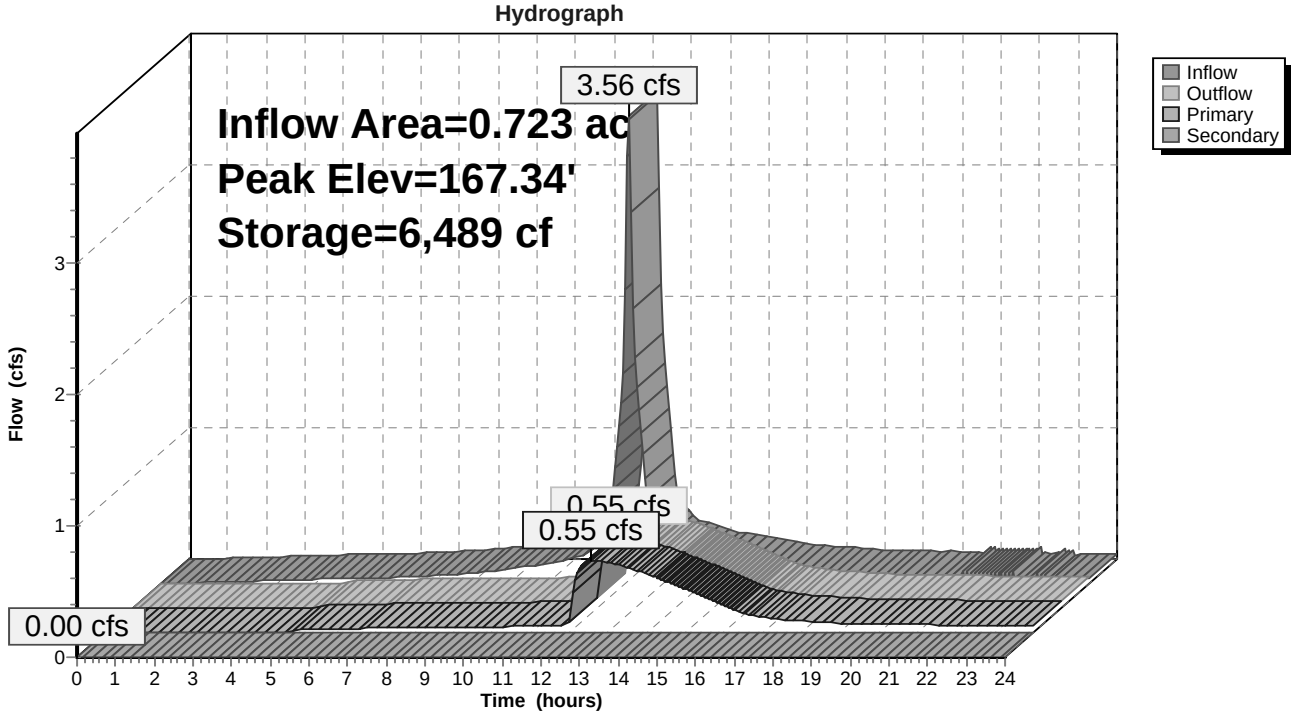
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.50	804	122.6	0	0	804
164.00	931	129.4	433	433	954
165.00	1,296	172.0	1,108	1,542	1,987
166.00	1,663	195.8	1,476	3,018	2,707
167.00	2,338	401.2	1,991	5,008	12,470
168.00	3,363	427.7	2,835	7,843	14,267
168.50	3,888	436.2	1,811	9,655	14,890

Device	Routing	Invert	Outlet Devices
#1	Primary	160.90'	**15.0" Round 15" HDPE N-12** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.90' / 160.40' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	161.00'	**1.0" Vert. 1" Orifice** C= 0.600
#3	Device 1	166.15'	**3.0" Vert. 3" Orifice (2) X 2.00** C= 0.600
#4	Device 1	167.90'	**48.0" Horiz. Top Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	168.00'	**10.0' long x 8.0' breadth E-Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#6	Device 2	162.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.55 cfs @ 12.59 hrs HW=167.34' TW=159.61' (Dynamic Tailwater)
- **1=15" HDPE N-12** (Passes 0.55 cfs of 14.24 cfs potential flow)
  - **2=1" Orifice** (Orifice Controls 0.07 cfs @ 12.08 fps)
    - **6=Exfiltration** (Passes 0.07 cfs of 0.19 cfs potential flow)
  - **3=3" Orifice (2)** (Orifice Controls 0.49 cfs @ 4.96 fps)
  - **4=Top Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=160.90' TW=161.00' (Dynamic Tailwater)
- **5=E-Spillway** (Controls 0.00 cfs)

Pond 101P: Rain Garden #101



Summary for Pond 102P: Detention Pond #102

Inflow Area = 2.005 ac, 63.09% Impervious, Inflow Depth > 4.26" for 25YR-24HR event
Inflow = 8.51 cfs @ 12.11 hrs, Volume= 0.712 af
Outflow = 6.96 cfs @ 12.18 hrs, Volume= 0.712 af, Atten= 18%, Lag= 4.7 min
Primary = 6.96 cfs @ 12.18 hrs, Volume= 0.712 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 168.90' @ 12.18 hrs Surf.Area= 1,710 sf Storage= 2,597 cf
Flood Elev= 170.00' Surf.Area= 2,414 sf Storage= 4,865 cf

Plug-Flow detention time= 8.0 min calculated for 0.712 af (100% of inflow)
Center-of-Mass det. time= 7.6 min (813.8 - 806.2)

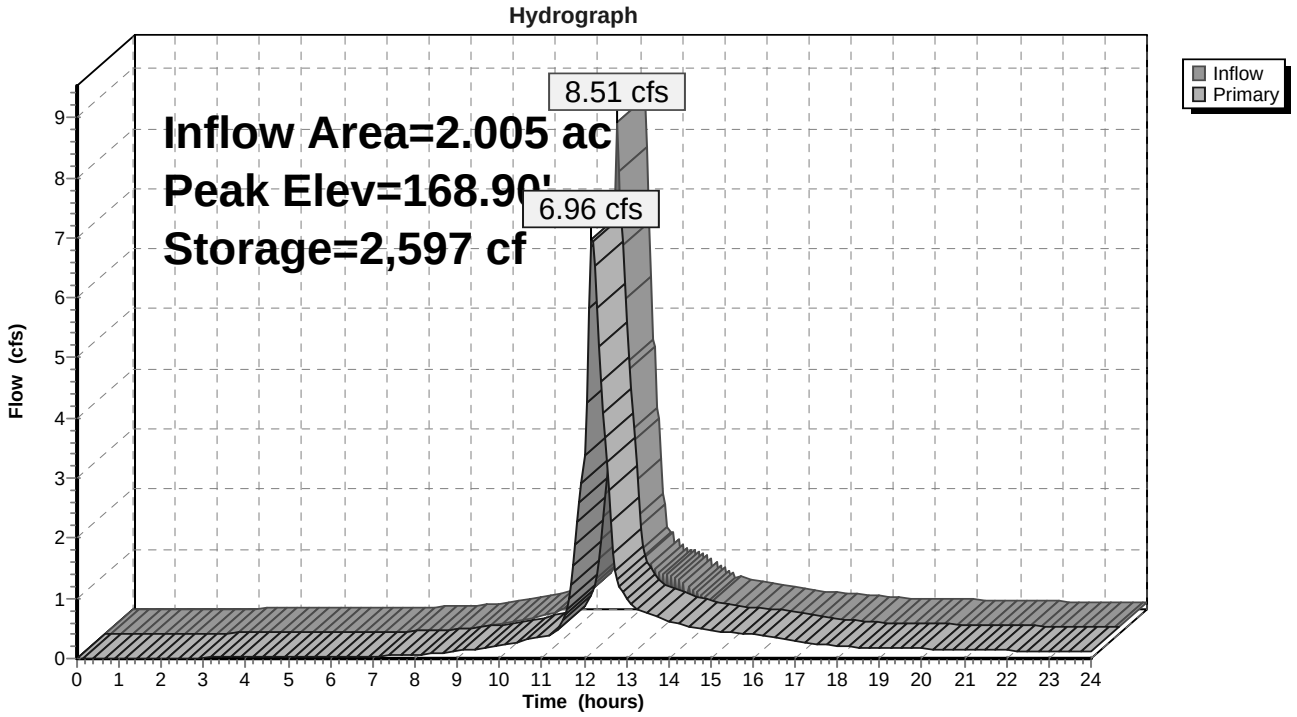
Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	4,865 cf	**Ponding (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
165.75	10	10.0	0	0	10
166.00	208	122.4	22	22	1,194
167.00	613	145.1	393	415	1,696
168.00	1,195	184.2	888	1,303	2,734
169.00	1,776	203.1	1,476	2,779	3,347
170.00	2,414	222.0	2,087	4,865	4,021

Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**15.0" Round 15" HDPE N-12** L= 46.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 165.75' / 163.00' S= 0.0589 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	165.75'	**4.0" Vert. 4" Orifice** C= 0.600
#3	Device 1	167.00'	**8.0" Vert. 8" Orifice (2) X 2.00** C= 0.600
#4	Device 1	168.10'	**12.0" Vert. 12" Orifice** C= 0.600
#5	Device 1	169.75'	**48.0" Horiz. 48" Structure** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.91 cfs @ 12.18 hrs HW=168.89' TW=0.00' (Dynamic Tailwater)
└─**1=15" HDPE N-12** (Passes 6.91 cfs of 9.36 cfs potential flow)
  ├─**2=4" Orifice** (Orifice Controls 0.72 cfs @ 8.30 fps)
  ├─**3=8" Orifice (2)** (Orifice Controls 4.19 cfs @ 6.00 fps)
  ├─**4=12" Orifice** (Orifice Controls 2.00 cfs @ 3.02 fps)
  └─**5=48" Structure** (Controls 0.00 cfs)

Pond 102P: Detention Pond #102



Summary for Pond 4198P: DMH #4198

[93] Warning: Storage range exceeded by 1.38'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=5)
[80] Warning: Exceeded Pond 10P by 1.51' @ 12.10 hrs (4.65 cfs 0.037 af)

Inflow Area = 1.468 ac, 61.24% Impervious, Inflow Depth > 3.91" for 25YR-24HR event
Inflow = 6.26 cfs @ 12.10 hrs, Volume= 0.479 af
Outflow = 6.06 cfs @ 12.11 hrs, Volume= 0.479 af, Atten= 3%, Lag= 0.3 min
Primary = 6.06 cfs @ 12.11 hrs, Volume= 0.479 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 175.43' @ 12.15 hrs Surf.Area= 13 sf Storage= 70 cf

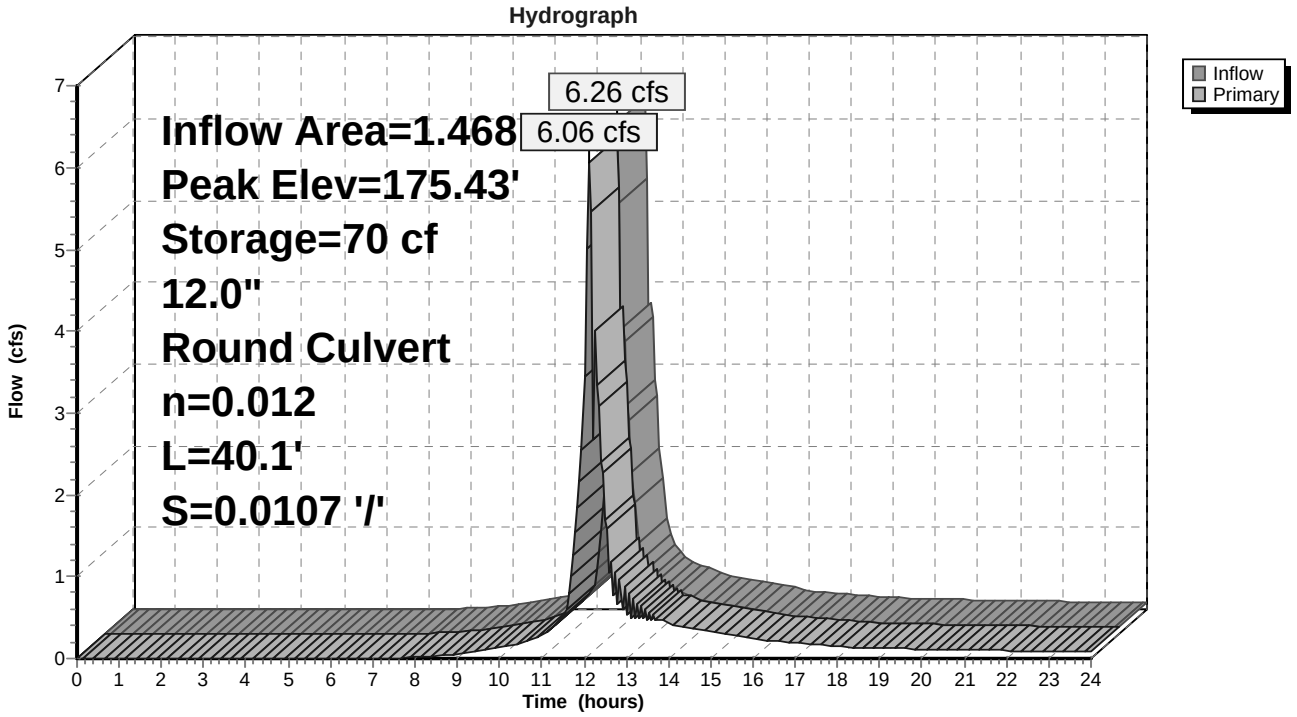
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (822.6 - 822.4)

Volume	Invert	Avail.Storage	Storage Description
#1	168.45'	70 cf	**4.00'D x 5.60'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.45'	**12.0" Round 12" RCP** L= 40.1' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 168.45' / 168.02' S= 0.0107 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.40 cfs @ 12.11 hrs HW=174.08' TW=173.27' (Dynamic Tailwater)
1=12" RCP (Inlet Controls 3.40 cfs @ 4.33 fps)

Pond 4198P: DMH #4198



Summary for Pond 8054P: DMH #8054

[93] Warning: Storage range exceeded by 0.50'
[80] Warning: Exceeded Pond 11P by 2.02' @ 12.10 hrs (5.37 cfs 0.133 af)
[80] Warning: Exceeded Pond 4198P by 0.08' @ 12.05 hrs (1.07 cfs 0.004 af)

Inflow Area = 1.573 ac, 63.82% Impervious, Inflow Depth > 4.07" for 25YR-24HR event
Inflow = 6.53 cfs @ 12.10 hrs, Volume= 0.534 af
Outflow = 6.49 cfs @ 12.10 hrs, Volume= 0.534 af, Atten= 1%, Lag= 0.2 min
Primary = 6.49 cfs @ 12.10 hrs, Volume= 0.534 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 173.46' @ 12.12 hrs Surf.Area= 13 sf Storage= 64 cf

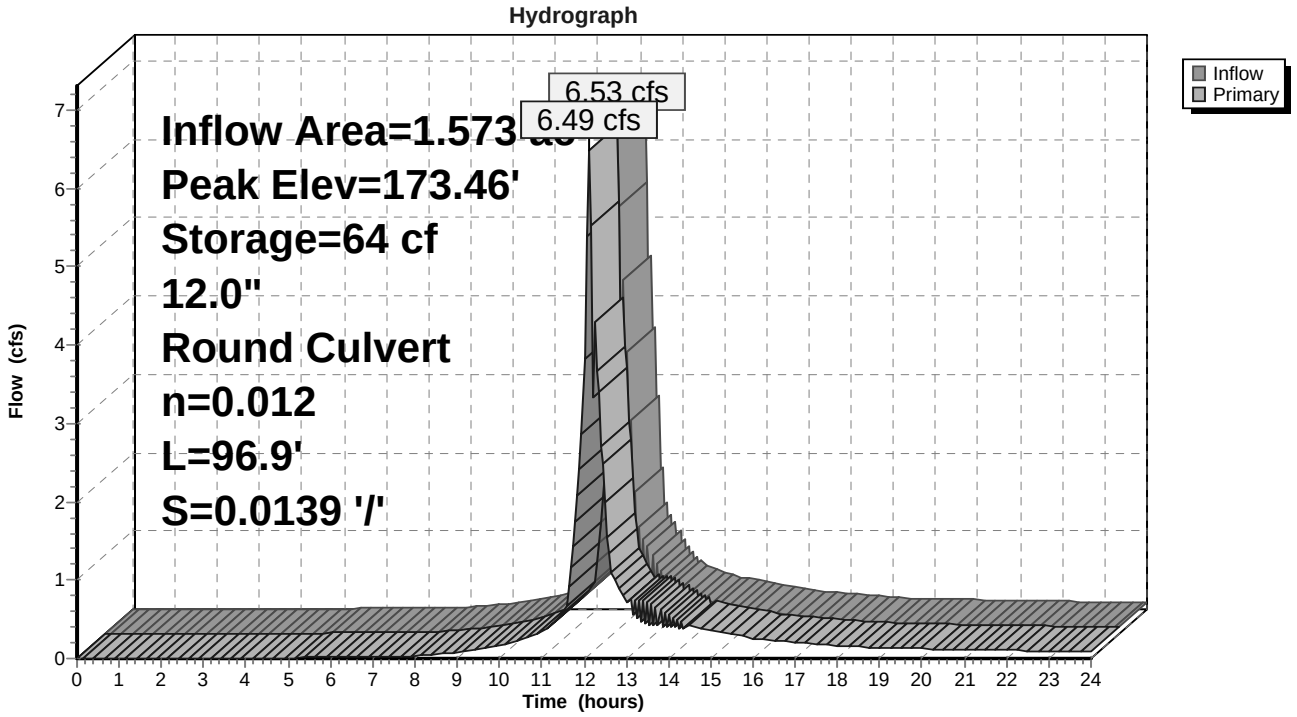
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (814.9 - 814.7)

Volume	Invert	Avail.Storage	Storage Description
#1	167.86'	64 cf	**4.00'D x 5.10'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	167.86'	**12.0" Round 12" RCP** L= 96.9' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 167.86' / 166.51' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.90 cfs @ 12.10 hrs HW=173.32' TW=169.74' (Dynamic Tailwater)
↑**1=12" RCP** (Outlet Controls 5.90 cfs @ 7.51 fps)

Pond 8054P: DMH #8054



Summary for Pond C01P: CB #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=103)

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 0.40 cfs @ 12.09 hrs, Volume= 0.033 af
Outflow = 0.39 cfs @ 12.09 hrs, Volume= 0.033 af, Atten= 2%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.09 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.34' @ 12.74 hrs Surf.Area= 13 sf Storage= 22 cf
Flood Elev= 169.88' Surf.Area= 13 sf Storage= 53 cf

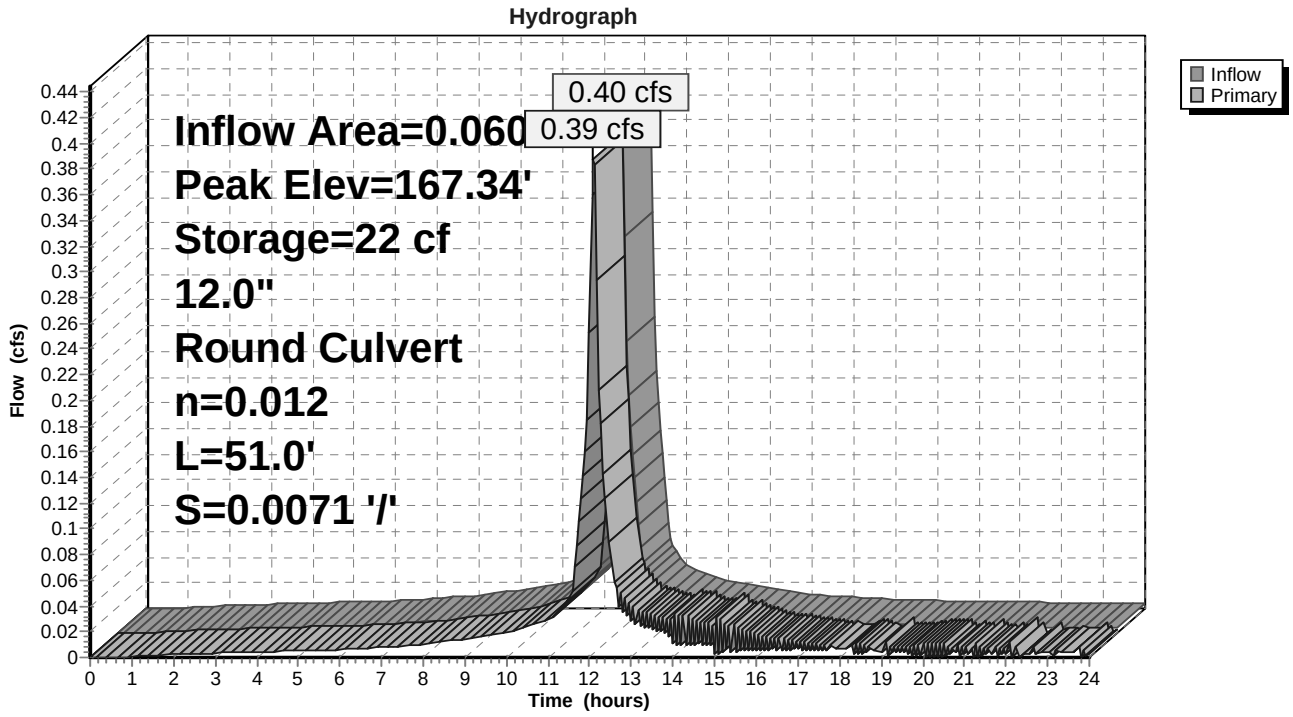
Plug-Flow detention time= 5.7 min calculated for 0.033 af (99% of inflow)
Center-of-Mass det. time= 1.9 min (744.7 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1	165.63'	53 cf	**4.00'D x 4.25'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.63'	**12.0" Round 12" HDPE N-12** L= 51.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 165.63' / 165.27' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=166.15' TW=166.28' (Dynamic Tailwater)
1=12" HDPE N-12 (Controls 0.00 cfs)

Pond C01P: CB #1



Summary for Pond C02P: CB #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=15)
[80] Warning: Exceeded Pond C01P by 0.24' @ 12.15 hrs (1.49 cfs 0.073 af)

Inflow Area =	0.214 ac,100.00% Impervious,	Inflow Depth >	6.60"	for 25YR-24HR event
Inflow =	1.40 cfs @	12.09 hrs, Volume=	0.118 af	
Outflow =	1.38 cfs @	12.09 hrs, Volume=	0.117 af, Atten= 1%, Lag= 0.0 min	
Primary =	1.38 cfs @	12.09 hrs, Volume=	0.117 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.34' @ 12.69 hrs Surf.Area= 13 sf Storage= 27 cf
Flood Elev= 170.05' Surf.Area= 13 sf Storage= 61 cf

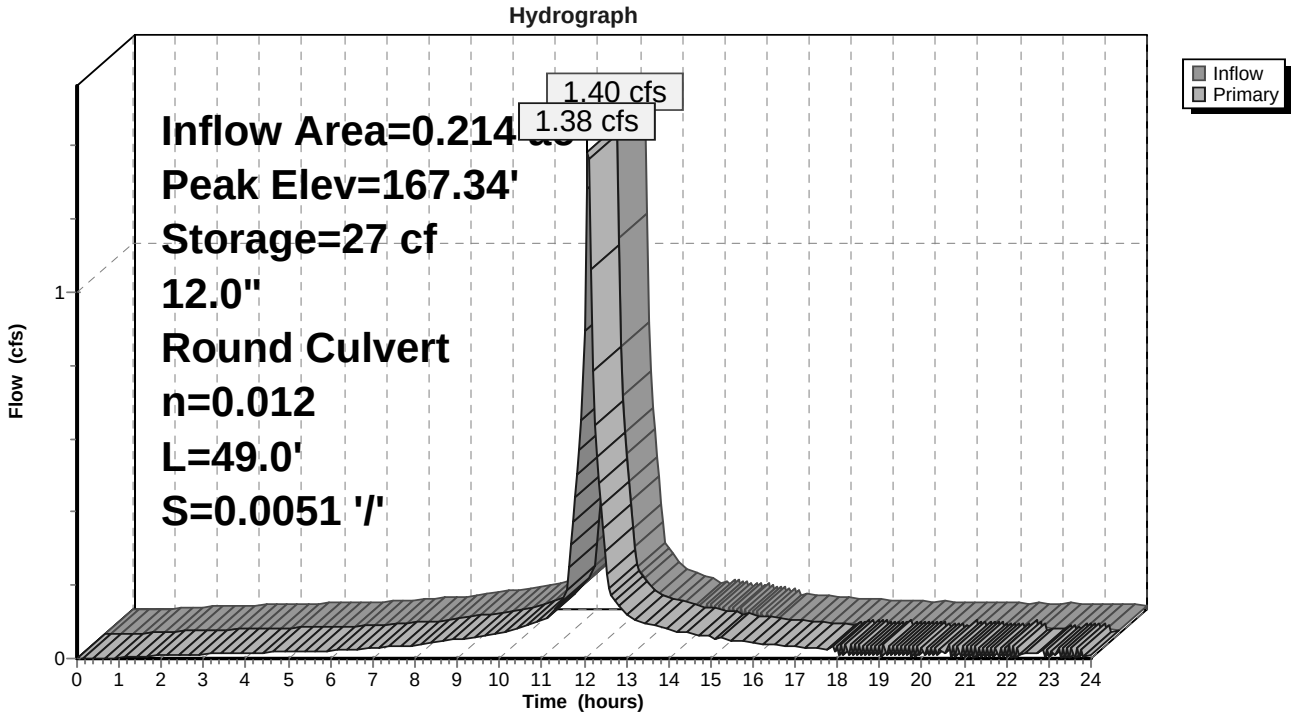
Plug-Flow detention time= 2.4 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (744.1 - 743.4)

Volume	Invert	Avail.Storage	Storage Description
#1	165.17'	61 cf	**4.00'D x 4.88'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.17'	**12.0" Round 12" HDPE N-12** L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 165.17' / 164.92' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=166.28' TW=166.43' (Dynamic Tailwater)
1=12" HDPE N-12 (Controls 0.00 cfs)

Pond C02P: CB #2



Summary for Pond C03P: CB #3

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=29)

Inflow Area = 0.249 ac, 99.54% Impervious, Inflow Depth > 6.61" for 25YR-24HR event
Inflow = 1.63 cfs @ 12.09 hrs, Volume= 0.137 af
Outflow = 1.61 cfs @ 12.09 hrs, Volume= 0.137 af, Atten= 1%, Lag= 0.0 min
Primary = 1.61 cfs @ 12.09 hrs, Volume= 0.137 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.34' @ 12.69 hrs Surf.Area= 13 sf Storage= 27 cf
Flood Elev= 169.45' Surf.Area= 13 sf Storage= 53 cf

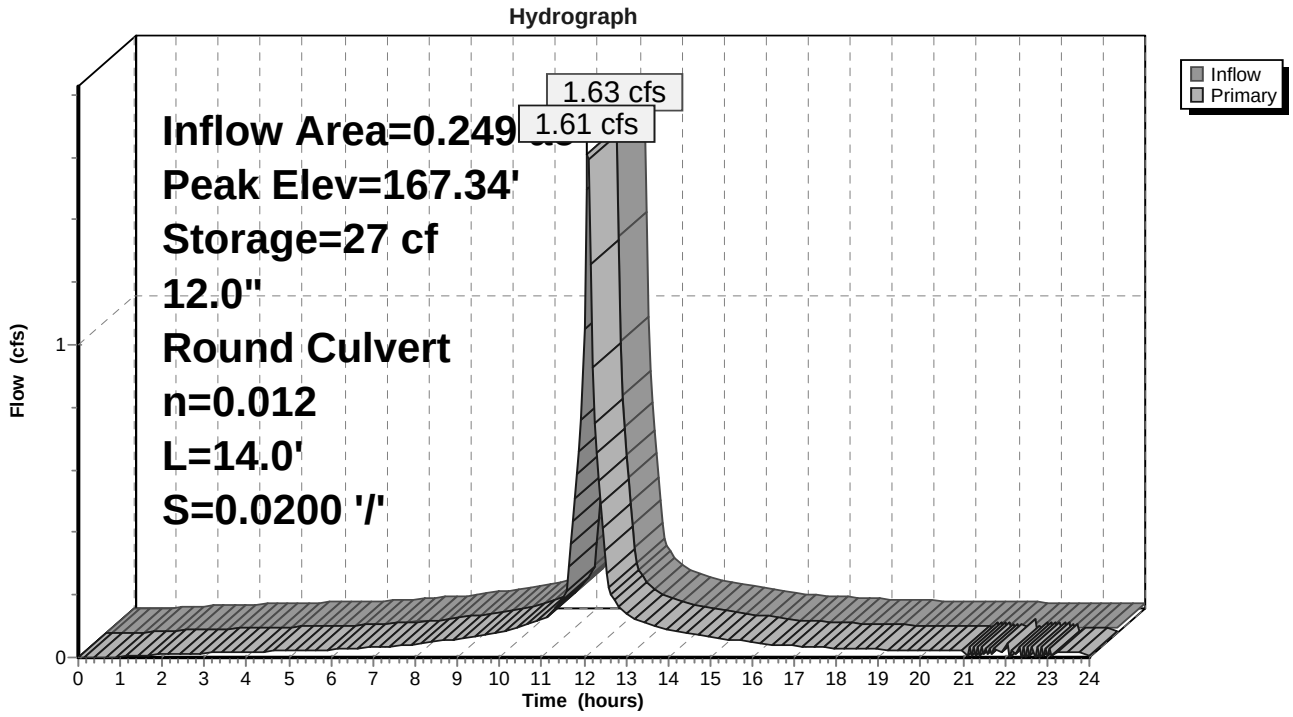
Plug-Flow detention time= 2.0 min calculated for 0.136 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (743.3 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1	165.19'	53 cf	**4.00'D x 4.25'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.20'	**12.0" Round 12" HDPE N-12** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 165.20' / 164.92' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=166.31' TW=166.43' (Dynamic Tailwater)
└**1=12" HDPE N-12** (Controls 0.00 cfs)

Pond C03P: CB #3



Summary for Pond D01P: DMH #1

[80] Warning: Exceeded Pond C02P by 0.17' @ 12.10 hrs (1.57 cfs 0.095 af)
[80] Warning: Exceeded Pond C03P by 0.13' @ 12.10 hrs (1.38 cfs 0.090 af)

Inflow Area = 0.463 ac, 99.75% Impervious, Inflow Depth > 6.59" for 25YR-24HR event
Inflow = 2.99 cfs @ 12.09 hrs, Volume= 0.254 af
Outflow = 2.97 cfs @ 12.09 hrs, Volume= 0.254 af, Atten= 1%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.09 hrs, Volume= 0.254 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.34' @ 12.64 hrs Surf.Area= 13 sf Storage= 34 cf
Flood Elev= 170.15' Surf.Area= 13 sf Storage= 69 cf

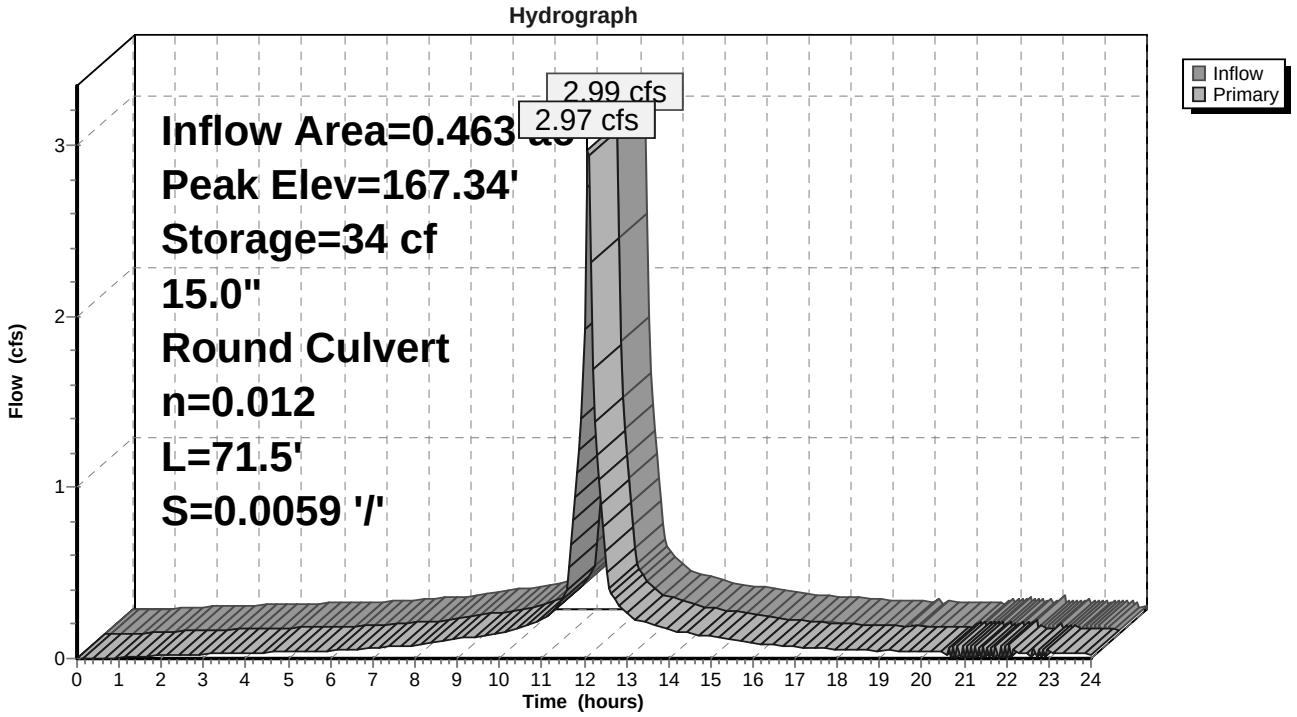
Plug-Flow detention time= 1.6 min calculated for 0.253 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (743.9 - 743.7)

Volume	Invert	Avail.Storage	Storage Description
#1	164.67'	69 cf	**4.00'D x 5.48'H 4' Structure**

Device	Routing	Invert	Outlet Devices
#1	Primary	164.67'	**15.0" Round 15" HDPE N-12** L= 71.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 164.67' / 164.25' S= 0.0059 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=166.43' TW=166.48' (Dynamic Tailwater)
1=15" HDPE N-12 (Controls 0.00 cfs)

Pond D01P: DMH #1



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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>0.49"
Flow Length=326' Tc=10.1 min CN=58 Runoff=0.55 cfs 0.073 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>0.49"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.02 cfs 0.003 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.030 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>2.63"
Tc=6.0 min CN=91 Runoff=0.15 cfs 0.011 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>0.96"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.06 cfs 0.006 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>1.37"
Flow Length=257' Tc=7.9 min CN=75 Runoff=1.15 cfs 0.091 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>1.31"
Flow Length=151' Tc=6.4 min CN=74 Runoff=0.82 cfs 0.062 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.029 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>0.19"
Flow Length=296' Tc=16.0 min CN=49 Runoff=0.05 cfs 0.016 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>1.13"
Tc=6.0 min CN=71 Runoff=0.20 cfs 0.015 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.21 cfs 0.017 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.043 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>3.36"
Tc=6.0 min CN=98 Runoff=0.85 cfs 0.070 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>0.42"
Tc=6.0 min CN=56 Runoff=0.06 cfs 0.009 af

Reach 2R: Reach #2 Avg. Flow Depth=0.10' Max Vel=0.62 fps Inflow=0.78 cfs 0.102 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=0.65 cfs 0.101 af

Reach 100R: Final Reach #100 Inflow=3.32 cfs 0.453 af
Outflow=3.32 cfs 0.453 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.04' Max Vel=0.88 fps Inflow=0.06 cfs 0.070 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=0.06 cfs 0.070 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.00 cfs 0.000 af

Reach 200R: Final Reach #200 Inflow=0.11 cfs 0.009 af
Outflow=0.11 cfs 0.009 af

Pond 1P: Roadside Pond Peak Elev=168.95' Storage=1 cf Inflow=0.55 cfs 0.073 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=0.55 cfs 0.073 af

Pond 2P: CB #7325 Peak Elev=167.45' Storage=7 cf Inflow=0.77 cfs 0.102 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=0.78 cfs 0.102 af

Pond 3P: CB #7323 Peak Elev=168.97' Storage=1 cf Inflow=0.02 cfs 0.003 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=0.02 cfs 0.003 af

Pond 4P: CB #7324 Peak Elev=168.63' Storage=4 cf Inflow=0.38 cfs 0.033 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=0.38 cfs 0.033 af

Pond 5P: CB #7320 Peak Elev=167.85' Storage=9 cf Inflow=0.15 cfs 0.012 af
Primary=0.13 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.012 af

Pond 6P: CB #7319 Peak Elev=167.85' Storage=18 cf Inflow=2.69 cfs 0.218 af
Primary=2.68 cfs 0.218 af Secondary=0.00 cfs 0.000 af Outflow=2.68 cfs 0.218 af

Pond 7P: CB #3201 Peak Elev=174.49' Storage=1 cf Inflow=0.06 cfs 0.006 af
Primary=0.06 cfs 0.006 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.006 af

Pond 8P: CB #3202 Peak Elev=173.86' Storage=3 cf Inflow=0.12 cfs 0.013 af
Primary=0.12 cfs 0.013 af Secondary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.013 af

Pond 9P: CB #3203 Peak Elev=173.80' Storage=7 cf Inflow=1.27 cfs 0.104 af
Primary=1.27 cfs 0.104 af Secondary=0.00 cfs 0.000 af Outflow=1.27 cfs 0.104 af

Pond 10P: CB #7322 Peak Elev=171.86' Storage=6 cf Inflow=0.82 cfs 0.062 af
Primary=0.82 cfs 0.062 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.062 af

Pond 11P: CB #7321 Peak Elev=168.77' Storage=20 cf Inflow=0.36 cfs 0.029 af
Primary=0.34 cfs 0.029 af Secondary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.029 af

Pond 101P: Rain Garden #101 Peak Elev=166.07' Storage=3,768 cf Inflow=1.64 cfs 0.138 af
Primary=0.06 cfs 0.070 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.070 af

Pond 102P: Detention Pond #102 Peak Elev=167.74' Storage=1,018 cf Inflow=3.25 cfs 0.266 af
Outflow=2.72 cfs 0.266 af

Pond 4198P: DMH #4198 Peak Elev=169.29' Storage=11 cf Inflow=2.09 cfs 0.166 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=2.08 cfs 0.166 af

Pond 8054P: DMH #8054 Peak Elev=168.76' Storage=11 cf Inflow=2.42 cfs 0.195 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=2.42 cfs 0.195 af

Pond C01P: CB #1 Peak Elev=166.07' Storage=6 cf Inflow=0.21 cfs 0.017 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.21 cfs 0.017 af

Pond C02P: CB #2 Peak Elev=166.07' Storage=11 cf Inflow=0.73 cfs 0.060 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=0.73 cfs 0.060 af

Pond C03P: CB #3 Peak Elev=166.07' Storage=11 cf Inflow=0.85 cfs 0.070 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=0.85 cfs 0.070 af

Pond D01P: DMH #1 Peak Elev=166.07' Storage=18 cf Inflow=1.58 cfs 0.129 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=1.59 cfs 0.129 af

Total Runoff Area = 5.659 ac Runoff Volume = 0.532 af Average Runoff Depth = 1.13"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>1.40"
Flow Length=326' Tc=10.1 min CN=58 Runoff=2.28 cfs 0.210 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.043 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>1.40"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.10 cfs 0.008 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.046 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.019 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>4.39"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.018 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>2.18"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.15 cfs 0.014 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>2.79"
Flow Length=257' Tc=7.9 min CN=75 Runoff=2.41 cfs 0.185 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>2.70"
Flow Length=151' Tc=6.4 min CN=74 Runoff=1.75 cfs 0.128 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.045 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=296' Tc=16.0 min CN=49 Runoff=0.47 cfs 0.067 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>2.44"
Tc=6.0 min CN=71 Runoff=0.45 cfs 0.033 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.026 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=0.80 cfs 0.066 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>5.18"
Tc=6.0 min CN=98 Runoff=1.29 cfs 0.107 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>1.26"
Tc=6.0 min CN=56 Runoff=0.33 cfs 0.027 af

Reach 2R: Reach #2 Avg. Flow Depth=0.18' Max Vel=0.91 fps Inflow=2.66 cfs 0.253 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=2.38 cfs 0.252 af

Reach 100R: Final Reach #100 Inflow=7.81 cfs 0.970 af
Outflow=7.81 cfs 0.970 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.09' Max Vel=1.55 fps Inflow=0.38 cfs 0.144 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=0.38 cfs 0.144 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.00 cfs 0.000 af

Reach 200R: Final Reach #200 Inflow=0.17 cfs 0.014 af
Outflow=0.17 cfs 0.014 af

Pond 1P: Roadside Pond Peak Elev=169.44' Storage=10 cf Inflow=2.28 cfs 0.210 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=2.27 cfs 0.210 af

Pond 2P: CB #7325 Peak Elev=168.12' Storage=15 cf Inflow=2.66 cfs 0.253 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=2.66 cfs 0.253 af

Pond 3P: CB #7323 Peak Elev=169.05' Storage=2 cf Inflow=0.10 cfs 0.008 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=0.10 cfs 0.008 af

Pond 4P: CB #7324 Peak Elev=168.73' Storage=5 cf Inflow=0.64 cfs 0.054 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=0.64 cfs 0.054 af

Pond 5P: CB #7320 Peak Elev=168.90' Storage=22 cf Inflow=0.22 cfs 0.019 af
Primary=0.19 cfs 0.019 af Secondary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.019 af

Pond 6P: CB #7319 Peak Elev=168.90' Storage=31 cf Inflow=5.10 cfs 0.420 af
Primary=5.08 cfs 0.420 af Secondary=0.00 cfs 0.000 af Outflow=5.08 cfs 0.420 af

Pond 7P: CB #3201 Peak Elev=174.56' Storage=2 cf Inflow=0.15 cfs 0.014 af
Primary=0.15 cfs 0.014 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.014 af

Pond 8P: CB #3202 Peak Elev=174.20' Storage=7 cf Inflow=0.24 cfs 0.024 af
Primary=0.24 cfs 0.024 af Secondary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.024 af

Pond 9P: CB #3203 Peak Elev=174.18' Storage=12 cf Inflow=2.63 cfs 0.209 af
Primary=2.63 cfs 0.209 af Secondary=0.00 cfs 0.000 af Outflow=2.63 cfs 0.209 af

Pond 10P: CB #7322 Peak Elev=172.12' Storage=9 cf Inflow=1.75 cfs 0.128 af
Primary=1.75 cfs 0.128 af Secondary=0.00 cfs 0.000 af Outflow=1.75 cfs 0.128 af

Pond 11P: CB #7321 Peak Elev=170.65' Storage=44 cf Inflow=0.54 cfs 0.045 af
Primary=0.50 cfs 0.045 af Secondary=0.00 cfs 0.000 af Outflow=0.50 cfs 0.045 af

Pond 101P: Rain Garden #101 Peak Elev=166.72' Storage=5,021 cf Inflow=2.69 cfs 0.226 af
Primary=0.38 cfs 0.144 af Secondary=0.00 cfs 0.000 af Outflow=0.38 cfs 0.144 af

Pond 102P: Detention Pond #102 Peak Elev=168.49' Storage=1,948 cf Inflow=6.15 cfs 0.506 af
Outflow=4.87 cfs 0.506 af

Pond 4198P: DMH #4198 Peak Elev=171.61' Storage=40 cf Inflow=4.37 cfs 0.338 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=4.29 cfs 0.338 af

Pond 8054P: DMH #8054 Peak Elev=170.64' Storage=35 cf Inflow=4.76 cfs 0.383 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=4.68 cfs 0.383 af

Pond C01P: CB #1 Peak Elev=166.73' Storage=14 cf Inflow=0.31 cfs 0.026 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.31 cfs 0.026 af

Pond C02P: CB #2 Peak Elev=166.73' Storage=20 cf Inflow=1.11 cfs 0.092 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=1.10 cfs 0.092 af

Pond C03P: CB #3 Peak Elev=166.73' Storage=19 cf Inflow=1.29 cfs 0.107 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=1.28 cfs 0.107 af

Pond D01P: DMH #1 Peak Elev=166.72' Storage=26 cf Inflow=2.38 cfs 0.199 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=2.37 cfs 0.199 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.069 af Average Runoff Depth = 2.27"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>2.30"
Flow Length=326' Tc=10.1 min CN=58 Runoff=3.98 cfs 0.344 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>2.30"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.17 cfs 0.014 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.70 cfs 0.058 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.024 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>5.79"
Tc=6.0 min CN=91 Runoff=0.31 cfs 0.024 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>3.28"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.23 cfs 0.021 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>4.01"
Flow Length=257' Tc=7.9 min CN=75 Runoff=3.46 cfs 0.266 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>3.91"
Flow Length=151' Tc=6.4 min CN=74 Runoff=2.54 cfs 0.186 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>1.49"
Flow Length=296' Tc=16.0 min CN=49 Runoff=1.08 cfs 0.125 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>3.59"
Tc=6.0 min CN=71 Runoff=0.66 cfs 0.048 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.033 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=1.01 cfs 0.085 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>6.61"
Tc=6.0 min CN=98 Runoff=1.63 cfs 0.137 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>2.12"
Tc=6.0 min CN=56 Runoff=0.60 cfs 0.046 af

Reach 2R: Reach #2 Avg. Flow Depth=0.24' Max Vel=1.08 fps Inflow=4.38 cfs 0.399 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=4.10 cfs 0.398 af

Reach 100R: Final Reach #100 Inflow=12.47 cfs 1.447 af
Outflow=12.47 cfs 1.447 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.11' Max Vel=1.74 fps Inflow=0.55 cfs 0.213 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=0.55 cfs 0.213 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.00 cfs 0.000 af

Reach 200R: Final Reach #200 Inflow=0.22 cfs 0.018 af
Outflow=0.22 cfs 0.018 af

Pond 1P: Roadside Pond Peak Elev=170.15' Storage=62 cf Inflow=3.98 cfs 0.344 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=3.92 cfs 0.344 af

Pond 2P: CB #7325 Peak Elev=168.93' Storage=25 cf Inflow=4.39 cfs 0.400 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=4.38 cfs 0.399 af

Pond 3P: CB #7323 Peak Elev=169.67' Storage=10 cf Inflow=1.99 cfs 0.022 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=1.92 cfs 0.022 af

Pond 4P: CB #7324 Peak Elev=169.33' Storage=13 cf Inflow=2.31 cfs 0.080 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=2.26 cfs 0.080 af

Pond 5P: CB #7320 Peak Elev=169.92' Storage=35 cf Inflow=0.72 cfs 0.026 af
Primary=0.67 cfs 0.026 af Secondary=0.00 cfs 0.000 af Outflow=0.67 cfs 0.026 af

Pond 6P: CB #7319 Peak Elev=169.91' Storage=43 cf Inflow=7.04 cfs 0.584 af
Primary=7.01 cfs 0.584 af Secondary=0.00 cfs 0.000 af Outflow=7.01 cfs 0.584 af

Pond 7P: CB #3201 Peak Elev=176.85' Storage=31 cf Inflow=0.23 cfs 0.021 af
Primary=0.44 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.021 af

Pond 8P: CB #3202 Peak Elev=176.87' Storage=41 cf Inflow=0.49 cfs 0.035 af
Primary=0.57 cfs 0.035 af Secondary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.035 af

Pond 9P: CB #3203 Peak Elev=176.87' Storage=46 cf Inflow=3.77 cfs 0.301 af
Primary=3.74 cfs 0.301 af Secondary=0.00 cfs 0.000 af Outflow=3.74 cfs 0.301 af

Pond 10P: CB #7322 Peak Elev=174.67' Storage=35 cf Inflow=2.54 cfs 0.186 af
Primary=2.55 cfs 0.178 af Secondary=1.86 cfs 0.008 af Outflow=2.55 cfs 0.186 af

Pond 11P: CB #7321 Peak Elev=173.31' Storage=73 cf Inflow=0.69 cfs 0.058 af
Primary=0.58 cfs 0.055 af Secondary=0.50 cfs 0.002 af Outflow=0.58 cfs 0.057 af

Pond 101P: Rain Garden #101 Peak Elev=167.34' Storage=6,489 cf Inflow=3.56 cfs 0.299 af
Primary=0.55 cfs 0.213 af Secondary=0.00 cfs 0.000 af Outflow=0.55 cfs 0.213 af

Pond 102P: Detention Pond #102 Peak Elev=168.90' Storage=2,597 cf Inflow=8.51 cfs 0.712 af
Outflow=6.96 cfs 0.712 af

Pond 4198P: DMH #4198 Peak Elev=175.43' Storage=70 cf Inflow=6.26 cfs 0.479 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=6.06 cfs 0.479 af

Pond 8054P: DMH #8054 Peak Elev=173.46' Storage=64 cf Inflow=6.53 cfs 0.534 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=6.49 cfs 0.534 af

Pond C01P: CB #1 Peak Elev=167.34' Storage=22 cf Inflow=0.40 cfs 0.033 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.39 cfs 0.033 af

Pond C02P: CB #2 Peak Elev=167.34' Storage=27 cf Inflow=1.40 cfs 0.118 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=1.38 cfs 0.117 af

Pond C03P: CB #3 Peak Elev=167.34' Storage=27 cf Inflow=1.63 cfs 0.137 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=1.61 cfs 0.137 af

Pond D01P: DMH #1 Peak Elev=167.34' Storage=34 cf Inflow=2.99 cfs 0.254 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=2.97 cfs 0.254 af

Total Runoff Area = 5.659 ac Runoff Volume = 1.555 af Average Runoff Depth = 3.30"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>3.24"
Flow Length=326' Tc=10.1 min CN=58 Runoff=5.75 cfs 0.484 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.79 cfs 0.066 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>3.24"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.25 cfs 0.019 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.83 cfs 0.070 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>7.10"
Tc=6.0 min CN=91 Runoff=0.38 cfs 0.030 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>4.38"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.31 cfs 0.028 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.016 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>5.20"
Flow Length=257' Tc=7.9 min CN=75 Runoff=4.47 cfs 0.345 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>5.08"
Flow Length=151' Tc=6.4 min CN=74 Runoff=3.29 cfs 0.242 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.82 cfs 0.069 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>2.24"
Flow Length=296' Tc=16.0 min CN=49 Runoff=1.75 cfs 0.188 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.26 cfs 0.022 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>4.73"
Tc=6.0 min CN=71 Runoff=0.87 cfs 0.063 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.040 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=1.21 cfs 0.102 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>7.94"
Tc=6.0 min CN=98 Runoff=1.95 cfs 0.164 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>3.02"
Tc=6.0 min CN=56 Runoff=0.88 cfs 0.065 af

Reach 2R: Reach #2 Avg. Flow Depth=0.26' Max Vel=1.16 fps Inflow=5.26 cfs 0.550 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=5.20 cfs 0.548 af

Reach 100R: Final Reach #100 Inflow=15.96 cfs 1.923 af
Outflow=15.96 cfs 1.923 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.11' Max Vel=1.84 fps Inflow=0.66 cfs 0.281 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=0.66 cfs 0.281 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.00 cfs 0.000 af

Reach 200R: Final Reach #200 Inflow=0.73 cfs 0.025 af
Outflow=0.73 cfs 0.025 af

Pond 1P: Roadside Pond Peak Elev=171.09' Storage=449 cf Inflow=5.75 cfs 0.484 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=4.86 cfs 0.484 af

Pond 2P: CB #7325 Peak Elev=169.43' Storage=32 cf Inflow=5.29 cfs 0.550 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=5.26 cfs 0.550 af

Pond 3P: CB #7323 Peak Elev=171.68' Storage=35 cf Inflow=5.48 cfs 0.050 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=5.22 cfs 0.050 af

Pond 4P: CB #7324 Peak Elev=171.18' Storage=36 cf Inflow=5.85 cfs 0.120 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=5.61 cfs 0.120 af

Pond 5P: CB #7320 Peak Elev=170.84' Storage=44 cf Inflow=1.15 cfs 0.034 af
Primary=0.89 cfs 0.033 af Secondary=0.46 cfs 0.002 af Outflow=1.12 cfs 0.034 af

Pond 6P: CB #7319 Peak Elev=170.81' Storage=52 cf Inflow=9.38 cfs 0.726 af
Primary=8.95 cfs 0.724 af Secondary=0.43 cfs 0.002 af Outflow=9.34 cfs 0.726 af

Pond 7P: CB #3201 Peak Elev=178.70' Storage=35 cf Inflow=0.31 cfs 0.028 af
Primary=0.73 cfs 0.027 af Secondary=0.52 cfs 0.002 af Outflow=0.73 cfs 0.029 af

Pond 8P: CB #3202 Peak Elev=178.75' Storage=57 cf Inflow=0.79 cfs 0.045 af
Primary=0.73 cfs 0.044 af Secondary=0.19 cfs 0.001 af Outflow=0.74 cfs 0.045 af

Pond 9P: CB #3203 Peak Elev=178.75' Storage=62 cf Inflow=4.82 cfs 0.389 af
Primary=4.62 cfs 0.379 af Secondary=2.24 cfs 0.010 af Outflow=4.57 cfs 0.389 af

Pond 10P: CB #7322 Peak Elev=175.14' Storage=35 cf Inflow=5.01 cfs 0.252 af
Primary=3.25 cfs 0.221 af Secondary=5.24 cfs 0.031 af Outflow=5.21 cfs 0.252 af

Pond 11P: CB #7321 Peak Elev=173.49' Storage=73 cf Inflow=0.82 cfs 0.069 af
Primary=0.67 cfs 0.063 af Secondary=0.86 cfs 0.006 af Outflow=0.82 cfs 0.069 af

Pond 101P: Rain Garden #101 Peak Elev=167.86' Storage=8,029 cf Inflow=4.41 cfs 0.370 af
Primary=0.66 cfs 0.281 af Secondary=0.00 cfs 0.000 af Outflow=0.66 cfs 0.281 af

Pond 102P: Detention Pond #102 Peak Elev=169.27' Storage=3,272 cf Inflow=10.70 cfs 0.907 af
Outflow=8.53 cfs 0.907 af

Pond 4198P: DMH #4198 Peak Elev=177.99' Storage=70 cf Inflow=7.83 cfs 0.600 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=7.99 cfs 0.600 af

Pond 8054P: DMH #8054 Peak Elev=176.28' Storage=64 cf Inflow=8.14 cfs 0.663 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=8.24 cfs 0.663 af

Pond C01P: CB #1 Peak Elev=167.87' Storage=28 cf Inflow=0.47 cfs 0.040 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.45 cfs 0.040 af

Pond C02P: CB #2 Peak Elev=167.87' Storage=34 cf Inflow=1.65 cfs 0.141 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=1.63 cfs 0.141 af

Pond C03P: CB #3 Peak Elev=167.87' Storage=34 cf Inflow=1.95 cfs 0.164 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=1.92 cfs 0.164 af

Pond D01P: DMH #1 Peak Elev=167.87' Storage=40 cf Inflow=3.55 cfs 0.305 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=3.53 cfs 0.305 af

Total Runoff Area = 5.659 ac Runoff Volume = 2.042 af Average Runoff Depth = 4.33"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

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

Subcatchment 1S: Quality Way North Runoff Area=78,168 sf 37.94% Impervious Runoff Depth>4.43"
Flow Length=326' Tc=10.1 min CN=58 Runoff=7.98 cfs 0.663 af

Subcatchment 2S: Quality Way SW Runoff Area=4,365 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.079 af

Subcatchment 3S: Quality Way Int. Runoff Area=3,147 sf 34.19% Impervious Runoff Depth>4.44"
Flow Length=163' Tc=8.1 min CN=58 Runoff=0.34 cfs 0.027 af

Subcatchment 4S: Quality Way SE Runoff Area=4,615 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.99 cfs 0.084 af

Subcatchment 5S: Venture Drive East Runoff Area=1,877 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.034 af

Subcatchment 6S: Venture Drive Int. Runoff Area=2,203 sf 88.56% Impervious Runoff Depth>8.66"
Tc=6.0 min CN=91 Runoff=0.46 cfs 0.036 af

Subcatchment 7S: Forward Merch Runoff Area=3,403 sf 53.78% Impervious Runoff Depth>5.74"
Flow Length=57' Slope=0.0176 '/' Tc=13.6 min CN=68 Runoff=0.41 cfs 0.037 af

Subcatchment 8S: Ventur Drive FM Runoff Area=1,031 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.019 af

Subcatchment 9S: Certified Driveway Runoff Area=34,665 sf 60.23% Impervious Runoff Depth>6.65"
Flow Length=257' Tc=7.9 min CN=75 Runoff=5.68 cfs 0.441 af

Subcatchment 10S: Certified Parking Lot Runoff Area=24,868 sf 62.08% Impervious Runoff Depth>6.52"
Flow Length=151' Tc=6.4 min CN=74 Runoff=4.19 cfs 0.310 af

Subcatchment 11S: Venture Drive NE Runoff Area=4,551 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.98 cfs 0.083 af

Subcatchment 12S: Remainder of Existing Runoff Area=43,693 sf 0.00% Impervious Runoff Depth>3.25"
Flow Length=296' Tc=16.0 min CN=49 Runoff=2.66 cfs 0.271 af

Subcatchment 13S: Venture Drive Runoff Area=1,436 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.026 af

Subcatchment 20S: Subcatchment #20 Runoff Area=6,987 sf 26.61% Impervious Runoff Depth>6.13"
Tc=6.0 min CN=71 Runoff=1.13 cfs 0.082 af

Subcatchment 21S: Subcatchment #21 Runoff Area=2,635 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=0.57 cfs 0.048 af

Subcatchment 22S: Subcatchment #22 Runoff Area=6,695 sf 100.00% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=1.44 cfs 0.122 af

Subcatchment 23S: Subcatchment #23 Runoff Area=10,833 sf 99.54% Impervious Runoff Depth>9.51"
Tc=6.0 min CN=98 Runoff=2.33 cfs 0.197 af

Subcatchment 24S: Area Around Pond Runoff Area=11,318 sf 0.00% Impervious Runoff Depth>4.17"
Tc=6.0 min CN=56 Runoff=1.23 cfs 0.090 af

Reach 2R: Reach #2 Avg. Flow Depth=0.28' Max Vel=1.20 fps Inflow=5.90 cfs 0.742 af
n=0.080 L=288.7' S=0.0399 '/' Capacity=20.81 cfs Outflow=5.81 cfs 0.740 af

Reach 100R: Final Reach #100 Inflow=20.48 cfs 2.513 af
Outflow=20.48 cfs 2.513 af

Reach 101aR: Overland Flow to Avg. Flow Depth=0.21' Max Vel=2.75 fps Inflow=2.43 cfs 0.364 af
n=0.065 L=20.0' S=0.2000 '/' Capacity=38.38 cfs Outflow=2.44 cfs 0.364 af

Reach 101bR: Overland Flow to Avg. Flow Depth=0.07' Max Vel=0.40 fps Inflow=0.08 cfs 0.001 af
n=0.065 L=52.0' S=0.0192 '/' Capacity=5.06 cfs Outflow=0.07 cfs 0.001 af

Reach 200R: Final Reach #200 Inflow=1.55 cfs 0.042 af
Outflow=1.55 cfs 0.042 af

Pond 1P: Roadside Pond Peak Elev=171.86' Storage=1,613 cf Inflow=7.98 cfs 0.663 af
12.0" Round Culvert n=0.012 L=42.3' S=0.0288 '/' Outflow=5.45 cfs 0.663 af

Pond 2P: CB #7325 Peak Elev=169.86' Storage=37 cf Inflow=5.92 cfs 0.742 af
12.0" Round Culvert n=0.012 L=32.7' S=0.0037 '/' Outflow=5.90 cfs 0.742 af

Pond 3P: CB #7323 Peak Elev=178.26' Storage=40 cf Inflow=8.81 cfs 0.110 af
12.0" Round Culvert n=0.012 L=24.4' S=0.0193 '/' Outflow=8.99 cfs 0.111 af

Pond 4P: CB #7324 Peak Elev=175.76' Storage=47 cf Inflow=9.85 cfs 0.195 af
12.0" Round Culvert n=0.012 L=36.3' S=0.0152 '/' Outflow=10.09 cfs 0.195 af

Pond 5P: CB #7320 Peak Elev=170.93' Storage=44 cf Inflow=1.56 cfs 0.042 af
Primary=0.63 cfs 0.036 af Secondary=0.88 cfs 0.006 af Outflow=1.49 cfs 0.042 af

Pond 6P: CB #7319 Peak Elev=171.10' Storage=52 cf Inflow=9.91 cfs 0.871 af
Primary=8.99 cfs 0.861 af Secondary=1.37 cfs 0.010 af Outflow=9.83 cfs 0.871 af

Pond 7P: CB #3201 Peak Elev=179.22' Storage=35 cf Inflow=0.41 cfs 0.037 af
Primary=0.66 cfs 0.033 af Secondary=0.61 cfs 0.004 af Outflow=0.68 cfs 0.038 af

Pond 8P: CB #3202 Peak Elev=179.22' Storage=57 cf Inflow=0.81 cfs 0.056 af
Primary=0.67 cfs 0.053 af Secondary=0.51 cfs 0.004 af Outflow=0.68 cfs 0.056 af

Pond 9P: CB #3203 Peak Elev=179.22' Storage=62 cf Inflow=5.92 cfs 0.497 af
Primary=5.28 cfs 0.461 af Secondary=4.41 cfs 0.037 af Outflow=6.06 cfs 0.497 af

Pond 10P: CB #7322 Peak Elev=175.57' Storage=35 cf Inflow=8.18 cfs 0.347 af
Primary=3.67 cfs 0.263 af Secondary=8.47 cfs 0.083 af Outflow=8.03 cfs 0.347 af

Pond 11P: CB #7321 Peak Elev=173.39' Storage=73 cf Inflow=0.98 cfs 0.083 af
Primary=0.87 cfs 0.075 af Secondary=1.16 cfs 0.008 af Outflow=1.16 cfs 0.083 af

Pond 101P: Rain Garden #101 Peak Elev=168.02' Storage=8,558 cf Inflow=5.45 cfs 0.456 af
Primary=2.43 cfs 0.364 af Secondary=0.08 cfs 0.001 af Outflow=2.51 cfs 0.365 af

Pond 102P: Detention Pond #102 Peak Elev=169.77' Storage=4,317 cf Inflow=14.18 cfs 1.137 af
Outflow=10.18 cfs 1.136 af

Pond 4198P: DMH #4198 Peak Elev=179.13' Storage=70 cf Inflow=8.33 cfs 0.724 af
12.0" Round Culvert n=0.012 L=40.1' S=0.0107 '/' Outflow=8.34 cfs 0.724 af

Pond 8054P: DMH #8054 Peak Elev=178.13' Storage=64 cf Inflow=9.07 cfs 0.799 af
12.0" Round Culvert n=0.012 L=96.9' S=0.0139 '/' Outflow=9.23 cfs 0.799 af

Pond C01P: CB #1 Peak Elev=168.15' Storage=32 cf Inflow=0.57 cfs 0.048 af
12.0" Round Culvert n=0.012 L=51.0' S=0.0071 '/' Outflow=0.53 cfs 0.048 af

Pond C02P: CB #2 Peak Elev=168.15' Storage=37 cf Inflow=1.97 cfs 0.170 af
12.0" Round Culvert n=0.012 L=49.0' S=0.0051 '/' Outflow=1.94 cfs 0.169 af

Pond C03P: CB #3 Peak Elev=168.16' Storage=37 cf Inflow=2.33 cfs 0.197 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0200 '/' Outflow=2.30 cfs 0.197 af

Pond D01P: DMH #1 Peak Elev=168.11' Storage=43 cf Inflow=4.24 cfs 0.366 af
15.0" Round Culvert n=0.012 L=71.5' S=0.0059 '/' Outflow=4.22 cfs 0.366 af

Total Runoff Area = 5.659 ac Runoff Volume = 2.651 af Average Runoff Depth = 5.62"
55.10% Pervious = 3.118 ac 44.90% Impervious = 2.541 ac

Appendix III - Calculations, Charts, & Graphs

Extreme Precipitation Tables
Rip Rap Calculations
AoT Stormwater Treatment Spreadsheets
NCRS USDA Web-soil Map
Site Specific Soils Map & Report
Stormwater System Management: Inspection & Maintenance Manual & Plan Watershed Report Card, 303(d) List, & ORW List
Ksat New Hampshire Manual
Filtrexx Specifications Sheets

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.911 degrees West
Latitude	43.223 degrees North
Elevation	0 feet
Date/Time	Tue, 19 Jul 2022 09:17:31 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	1.99	2.59	2.86	**1yr**	2.29	2.75	3.15	3.88	4.44	**1yr**
2yr	0.32	0.49	0.61	0.80	1.01	1.28	**2yr**	0.87	1.17	1.50	1.91	2.44	3.13	3.49	**2yr**	2.77	3.36	3.85	4.59	5.22	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.06	3.95	4.47	**5yr**	3.50	4.30	4.92	5.78	6.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.82	3.64	4.71	5.39	**10yr**	4.17	5.18	5.93	6.90	7.75	**10yr**
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.69	3.52	4.58	5.96	6.91	**25yr**	5.27	6.64	7.58	8.71	9.72	**25yr**
50yr	0.52	0.83	1.06	1.48	2.00	2.66	**50yr**	1.73	2.45	3.18	4.17	5.46	7.11	8.34	**50yr**	6.29	8.02	9.14	10.40	11.54	**50yr**
100yr	0.58	0.94	1.21	1.71	2.32	3.12	**100yr**	2.01	2.88	3.74	4.94	6.49	8.49	10.07	**100yr**	7.52	9.68	11.02	12.42	13.71	**100yr**
200yr	0.64	1.05	1.36	1.96	2.71	3.67	**200yr**	2.33	3.39	4.42	5.87	7.74	10.15	12.16	**200yr**	8.98	11.70	13.29	14.83	16.29	**200yr**
500yr	0.76	1.25	1.63	2.36	3.31	4.54	**500yr**	2.86	4.21	5.50	7.35	9.74	12.85	15.62	**500yr**	11.37	15.02	17.03	18.78	20.48	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.92	1.25	1.54	2.05	2.46	**1yr**	1.82	2.36	2.94	3.42	4.10	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.15	1.36	1.82	2.35	3.05	3.39	**2yr**	2.70	3.26	3.74	4.46	5.08	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.14	2.77	3.69	4.11	**5yr**	3.26	3.95	4.59	5.39	6.09	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.81	2.44	3.12	4.24	4.77	**10yr**	3.75	4.58	5.30	6.21	6.97	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.84	3.64	5.08	5.76	**25yr**	4.50	5.54	6.47	7.50	8.35	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.19	**50yr**	1.52	2.14	2.36	3.20	4.08	5.83	6.64	**50yr**	5.16	6.39	7.51	8.63	9.55	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.51	**100yr**	1.74	2.45	2.65	3.58	4.55	6.69	7.65	**100yr**	5.92	7.35	8.72	9.94	10.90	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.87	**200yr**	1.98	2.81	2.96	4.02	5.07	7.66	8.80	**200yr**	6.78	8.46	10.12	11.45	12.46	**200yr**
500yr	0.70	1.04	1.33	1.94	2.75	3.46	**500yr**	2.38	3.39	3.44	4.67	5.87	9.13	10.59	**500yr**	8.08	10.18	12.32	13.81	14.81	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.23	1.73	2.20	2.82	3.07	**1yr**	2.49	2.95	3.37	4.17	4.74	**1yr**
2yr	0.33	0.51	0.62	0.84	1.04	1.24	**2yr**	0.90	1.22	1.47	1.95	2.51	3.24	3.61	**2yr**	2.86	3.47	3.98	4.73	5.39	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.54	1.85	2.49	3.19	4.21	4.83	**5yr**	3.73	4.64	5.27	6.20	6.96	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.91	**10yr**	1.35	1.87	2.22	3.03	3.84	5.18	6.02	**10yr**	4.58	5.79	6.63	7.60	8.47	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.46	**25yr**	1.70	2.41	2.87	3.94	4.94	6.81	8.08	**25yr**	6.03	7.77	8.86	10.01	11.03	**25yr**
50yr	0.64	0.97	1.21	1.75	2.35	2.97	**50yr**	2.03	2.90	3.48	4.80	5.99	8.37	10.12	**50yr**	7.41	9.73	11.07	12.30	13.48	**50yr**
100yr	0.75	1.13	1.41	2.04	2.80	3.58	**100yr**	2.42	3.50	4.22	5.87	7.28	10.30	12.68	**100yr**	9.12	12.19	13.81	15.14	16.48	**100yr**
200yr	0.87	1.30	1.65	2.39	3.33	4.34	**200yr**	2.88	4.24	5.13	7.18	8.84	12.71	15.90	**200yr**	11.25	15.29	17.25	18.63	20.18	**200yr**
500yr	1.06	1.58	2.03	2.95	4.19	5.56	**500yr**	3.62	5.44	6.62	9.38	11.45	16.80	21.45	**500yr**	14.87	20.62	23.17	24.55	26.40	**500yr**

RIP RAP CALCULATIONS

21-134

Quality & Venture

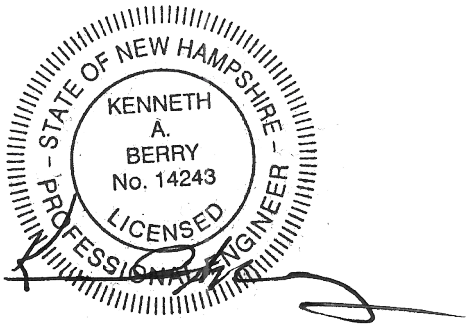
Dover, NH

Berry Surveying & Engineering

335 Second Crown Point Road

Barrington, NH

1-Apr-25



Rip Rap equations were obtained from the *Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.* Rip Rap was sized for the 25 year storm event. (Some d50 sizes and T values have been modified)

TAILWATER < HALF THE Do

La = (1.8 x Q) / Do 1.5 + (7 x Do) Q = Peak Flow & Do is Pipe Diameter

W = La + 3*Do or defined channel width

d50 = (0.02 x Q4/3) / (Tw x Do) Tw = Tailwater Depth

T = Largest Stone Size x 1.5

Culvert or Catch Basin	Tailwater (Feet) Tw	Discharge (C.F.S.) Q	Diameter of Pipe Do	Length of Rip Rap La (feet)	Width of Rip Rap W (feet)	d50-Stone Rip Rap d50(ft.)	Actual Size	Thickness
15" HDPE (Pond #101P)	0.25	0.55	1.25	9.3	13.0	0.03	0.50	1.20
15" HDPE (Pond #102P)	0.25	6.96	1.25	15.4	19.2	0.80	1.00	2.40

TAILWATER > HALF THE Do

La = (3.0 x Q) / Do 3/2 + (7 x Do) Q = Peak Flow & Do is Pipe Diameter

W = 0.4La + 3*Do or defined channel width

d50 = (0.02 x Q4/3) / (Tw x Do) Tw = Tailwater Depth

T = Largest Stone Size x 1.5

Culvert or Catch Basin	Tailwater (Feet) Tw	Discharge (C.F.S.) Q	Diameter of Pipe Do	Length of Rip Rap La (feet)	Width of Rip Rap W (feet)	d50-Stone Rip Rap d50(ft.)	Actual Size	Thickness
12" RCP (Pond #4P)	1.12	0.35	1.25	9.3	7.5	0.00	0.50	1.20
15" RCP (Pond #6P)	2.65	7.01	1.25	20.0	11.7	0.08	0.50	1.20
15" HDPE (Pond #D01P)	3.09	2.97	1.25	13.5	9.2	0.02	0.50	1.20

Please note that the designer chose to use the 25 Year Event for the dimensional calculations.

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d50 Size =	0.5	Feet	6	Inches
% of Weight Smaller Than the Given d50 Size		Size of Stone (Inches) From		To
100%		9		12
85%		8		11
50%		6		9
15%		2		3

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d50 Size =	1	Feet	12	Inches
% of Weight Smaller Than the Given d50 Size		Size of Stone (Inches) From		To
100%		18		24
85%		16		22
50%		12		18
15%		4		6

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

0.41	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
-	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.05	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.37	inches	Rd = Weighted groundwater recharge depth	
0.1689	ac-in	GRV = AI * Rd	
613	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

See drainage narrative for discussion on GRV

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Rain Garden #101 (101P)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.72	ac	A = Area draining to the practice	
0.46	ac	A_I = Impervious area draining to the practice	
0.64	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.63	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.45	ac-in	WQV= 1" x Rv x A	
1,640	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
410	cf	25% x WQV (check calc for sediment forebay volume)	
1,230	cf	75% x WQV (check calc for surface sand filter volume)	
Deep Sump		Method of Pretreatment? (not required for clean or roof runoff)	
N/A	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
164.86	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.05	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
18.23	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
162.00	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
161.00	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
158.75	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
156.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
6.00	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.25	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
167.86	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
168.50	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
3,569	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	P-101	Note what sheet in the plan set contains the filter course specification	
2.0	:1	Pond side slopes	**≥ 3:1**
Sheet	P-101	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Summary for Pond 101P: Rain Garden #101

[80] Warning: Exceeded Pond D01P by 0.09' @ 11.95 hrs (1.79 cfs 0.065 af)

Inflow Area = 0.723 ac, 63.89% Impervious, Inflow Depth > 6.15" for 50YR-24HR event
Inflow = 4.41 cfs @ 12.09 hrs, Volume= 0.370 af
Outflow = 0.66 cfs @ 12.60 hrs, Volume= 0.281 af, Atten= 85%, Lag= 30.8 min
Primary = 0.66 cfs @ 12.60 hrs, Volume= 0.281 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 167.86' @ 12.60 hrs Surf.Area= 804 sf Storage= 8,029 cf
Flood Elev= 168.50' Surf.Area= 804 sf Storage= 10,297 cf

Plug-Flow detention time= 204.2 min calculated for 0.280 af (76% of inflow)
Center-of-Mass det. time= 116.1 min (877.7 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	322 cf	**Stone (Irregular)** Listed below (Recalc) -Impervious 804 cf Overall x 40.0% Voids
#2	162.00'	241 cf	**BioMedia (Irregular)** Listed below (Recalc) 1,206 cf Overall x 20.0% Voids
#3	163.50'	9,655 cf	**Open Water (Irregular)** Listed below (Recalc) -Impervious
#4	160.90'	80 cf	**4.00'D x 6.35'H 4' Structure**-Impervious
		10,297 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.00	804	122.6	0	0	804
162.00	804	122.6	804	804	927

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	804	122.6	0	0	804
163.50	804	122.6	1,206	1,206	988

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.50	804	122.6	0	0	804
164.00	931	129.4	433	433	954
165.00	1,296	172.0	1,108	1,542	1,987
166.00	1,663	195.8	1,476	3,018	2,707
167.00	2,338	401.2	1,991	5,008	12,470
168.00	3,363	427.7	2,835	7,843	14,267
168.50	3,888	436.2	1,811	9,655	14,890

Device	Routing	Invert	Outlet Devices
#1	Primary	160.90'	**15.0" Round 15" HDPE N-12** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 160.90' / 160.40' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	161.00'	**1.0" Vert. 1" Orifice** C= 0.600
#3	Device 1	166.15'	**3.0" Vert. 3" Orifice (2) X 2.00** C= 0.600
#4	Device 1	167.90'	**48.0" Horiz. Top Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	168.00'	**10.0' long x 8.0' breadth E-Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#6	Device 2	162.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.66 cfs @ 12.60 hrs HW=167.86' TW=159.61' (Dynamic Tailwater)
- **1=15" HDPE N-12** (Passes 0.66 cfs of 14.87 cfs potential flow)
  - **2=1" Orifice** (Orifice Controls 0.07 cfs @ 12.57 fps)
    - **6=Exfiltration** (Passes 0.07 cfs of 0.19 cfs potential flow)
  - **3=3" Orifice (2)** (Orifice Controls 0.60 cfs @ 6.06 fps)
  - **4=Top Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=160.90' TW=161.00' (Dynamic Tailwater)
- **5=E-Spillway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 101P: Rain Garden #101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
160.90	0	0
161.00	0	1
161.10	0	35
161.20	0	68
161.30	0	102
161.40	0	135
161.50	0	168
161.60	0	202
161.70	0	235
161.80	0	269
161.90	0	302
162.00	804	335
162.10	804	353
162.20	804	370
162.30	804	387
162.40	804	405
162.50	804	422
162.60	804	439
162.70	804	457
162.80	804	474
162.90	804	491
163.00	804	509
163.10	804	526
163.20	804	543
163.30	804	561
163.40	804	578
163.50	**804**	595
163.60	804	678
163.70	804	764
163.80	804	852
163.90	804	942
164.00	804	1,035
164.10	804	1,131
164.20	804	1,231
164.30	804	1,334
164.40	804	1,440
164.50	804	1,550
164.60	804	1,664
164.70	804	1,781
164.80	804	1,902
164.90	804	2,027
165.00	804	2,156
165.10	804	2,289
165.20	804	2,425
165.30	804	2,564
165.40	804	2,708
165.50	804	2,854
165.60	804	3,005
165.70	804	3,159
165.80	804	3,317
165.90	804	3,479
166.00	804	3,644
166.10	804	3,815
166.20	804	3,992
166.30	804	4,175
166.40	804	4,365
166.50	804	4,562
166.60	804	4,765
166.70	804	4,975
166.80	804	5,192
166.90	804	5,417
167.00	804	5,648
167.10	804	5,888
167.20	804	6,137
167.30	804	6,395
167.40	804	6,663
167.50	804	6,940
167.60	804	7,228
167.70	804	7,527
167.80	804	7,836
167.90	804	8,155
168.00	804	8,486
168.10	804	8,827
168.20	804	9,179
168.30	804	9,541
168.40	804	9,914
168.50	804	**10,297**

WQV = 1,640 CF
WQV Elev: = 164.86

Stage-Discharge for Pond 101P: Rain Garden #101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
160.90	0.00	0.00	0.00
161.00	0.00	0.00	0.00
161.10	0.00	0.00	0.00
161.20	0.00	0.00	0.00
161.30	0.00	0.00	0.00
161.40	0.00	0.00	0.00
161.50	0.00	0.00	0.00
161.60	0.00	0.00	0.00
161.70	0.00	0.00	0.00
161.80	0.00	0.00	0.00
161.90	0.00	0.00	0.00
162.00	0.03	0.03	0.00
162.10	0.03	0.03	0.00
162.20	0.03	0.03	0.00
162.30	0.03	0.03	0.00
162.40	0.03	0.03	0.00
162.50	0.03	0.03	0.00
162.60	0.03	0.03	0.00
162.70	0.03	0.03	0.00
162.80	0.03	0.03	0.00
162.90	0.04	0.04	0.00
163.00	0.04	0.04	0.00
163.10	0.04	0.04	0.00
163.20	0.04	0.04	0.00
163.30	0.04	0.04	0.00
163.40	0.04	0.04	0.00
163.50	0.04	0.04	0.00
163.60	0.04	0.04	0.00
163.70	0.04	0.04	0.00
163.80	0.04	0.04	0.00
163.90	0.04	0.04	0.00
164.00	0.05	0.05	0.00
164.10	0.05	0.05	0.00
164.20	0.05	0.05	0.00
164.30	0.05	0.05	0.00
164.40	0.05	0.05	0.00
164.50	0.05	0.05	0.00
164.60	0.05	0.05	0.00
164.70	0.05	0.05	0.00
164.80	0.05	0.05	0.00
164.90	0.05	0.05	0.00
165.00	0.05	0.05	0.00
165.10	0.05	0.05	0.00
165.20	0.05	0.05	0.00
165.30	0.05	0.05	0.00
165.40	0.05	0.05	0.00
165.50	0.06	0.06	0.00
165.60	0.06	0.06	0.00
165.70	0.06	0.06	0.00
165.80	0.06	0.06	0.00
165.90	0.06	0.06	0.00
166.00	0.06	0.06	0.00
166.10	0.06	0.06	0.00
166.20	0.07	0.07	0.00
166.30	0.14	0.14	0.00
166.40	0.23	0.23	0.00
166.50	0.29	0.29	0.00
166.60	0.33	0.33	0.00
166.70	0.37	0.37	0.00
166.80	0.41	0.41	0.00
166.90	0.44	0.44	0.00
167.00	0.47	0.47	0.00
167.10	0.49	0.49	0.00
167.20	0.52	0.52	0.00
167.30	0.54	0.54	0.00
167.40	0.57	0.57	0.00
167.50	0.59	0.59	0.00
167.60	0.61	0.61	0.00
167.70	0.63	0.63	0.00
167.80	0.65	0.65	0.00
167.90	0.67	0.67	0.00
168.00	1.99	1.99	0.00
168.10	5.15	4.38	0.77
168.20	9.65	7.48	2.17
168.30	15.22	11.14	4.08
168.40	21.71	15.29	6.43
168.50	**24.87**	**15.61**	**9.26**

WQV Elev: = 164.86
WQV Discharge = 0.05 CFS

Stage-Area-Storage for Pond 101P: Rain Garden #101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
160.90	0	0
161.00	0	1
161.10	0	35
161.20	0	68
161.30	0	102
161.40	0	135
161.50	0	168
161.60	0	202
161.70	0	235
161.80	0	269
161.90	0	302
162.00	804	335
162.10	804	353
162.20	804	370
162.30	804	387
162.40	804	405
162.50	804	422
162.60	804	439
162.70	804	457
162.80	804	474
162.90	804	491
163.00	804	509
163.10	804	526
163.20	804	543
163.30	804	561
163.40	804	578
163.50	**804**	595
163.60	804	678
163.70	804	764
163.80	804	852
163.90	804	942
164.00	804	1,035
164.10	804	1,131
164.20	804	1,231
164.30	804	1,334
164.40	804	1,440
164.50	804	1,550
164.60	804	1,664
164.70	804	1,781
164.80	804	1,902
164.90	804	2,027
165.00	804	2,156
165.10	804	2,289
165.20	804	2,425
165.30	804	2,564
165.40	804	2,708
165.50	804	2,854
165.60	804	3,005
165.70	804	3,159
165.80	804	3,317
165.90	804	3,479
166.00	804	3,644
166.10	804	3,815
166.20	804	3,992
166.30	804	4,175
166.40	804	4,365
166.50	804	4,562
166.60	804	4,765
166.70	804	4,975
166.80	804	5,192
166.90	804	5,417
167.00	804	5,648
167.10	804	5,888
167.20	804	6,137
167.30	804	6,395
167.40	804	6,663
167.50	804	6,940
167.60	804	7,228
167.70	804	7,527
167.80	804	7,836
167.90	804	8,155
168.00	804	8,486
168.10	804	8,827
168.20	804	9,179
168.30	804	9,541
168.40	804	9,914
168.50	804	**10,297**

Lowest Outlet = 166.15'
3,904 CF - 335 CF = 3,569 CF

Summary for Pond 102P: Detention Pond #102

[80] Warning: Exceeded Pond 4P by 0.09' @ 12.45 hrs (0.09 cfs 0.001 af)

Inflow Area = 2.005 ac, 63.09% Impervious, Inflow Depth > 5.43" for 50YR-24HR event
Inflow = 10.70 cfs @ 12.10 hrs, Volume= 0.907 af
Outflow = 8.53 cfs @ 12.19 hrs, Volume= 0.907 af, Atten= 20%, Lag= 5.4 min
Primary = 8.53 cfs @ 12.19 hrs, Volume= 0.907 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 169.27' @ 12.19 hrs Surf.Area= 1,936 sf Storage= 3,272 cf
Flood Elev= 170.00' Surf.Area= 2,414 sf Storage= 4,865 cf

Plug-Flow detention time= 8.1 min calculated for 0.905 af (100% of inflow)
Center-of-Mass det. time= 7.7 min (808.9 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	4,865 cf	**Ponding (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
165.75	10	10.0	0	0	10
166.00	208	122.4	22	22	1,194
167.00	613	145.1	393	415	1,696
168.00	1,195	184.2	888	1,303	2,734
169.00	1,776	203.1	1,476	2,779	3,347
170.00	2,414	222.0	2,087	4,865	4,021

Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**15.0" Round 15" HDPE N-12** L= 46.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 165.75' / 163.00' S= 0.0589 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	165.75'	**4.0" Vert. 4" Orifice** C= 0.600
#3	Device 1	167.00'	**8.0" Vert. 8" Orifice (2) X 2.00** C= 0.600
#4	Device 1	168.10'	**12.0" Vert. 12" Orifice** C= 0.600
#5	Device 1	169.75'	**48.0" Horiz. 48" Structure** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.50 cfs @ 12.19 hrs HW=169.26' TW=0.00' (Dynamic Tailwater)
└─**1=15" HDPE N-12** (Passes 8.50 cfs of 10.03 cfs potential flow)
  ├─**2=4" Orifice** (Orifice Controls 0.77 cfs @ 8.80 fps)
  ├─**3=8" Orifice (2)** (Orifice Controls 4.66 cfs @ 6.68 fps)
  ├─**4=12" Orifice** (Orifice Controls 3.07 cfs @ 3.90 fps)
  └─**5=48" Structure** (Controls 0.00 cfs)

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Strafford County, New Hampshire



August 9, 2021

Preface

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

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

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

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

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

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

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Strafford County, New Hampshire.....13
EaB—Elmwood fine sandy loam, 3 to 8 percent slopes.....13
GlB—Gloucester fine sandy loam, 3 to 8 percent slopes.....14
GsC—Gloucester very stony fine sandy loam, 8 to 15 percent slopes.....15
HcB—Hollis-Charlton fine sandy loams, 3 to 8 percent slopes.....16
ScA—Scantic silt loam, 0 to 3 percent slopes.....17
ScB—Scantic silt loam, 3 to 8 percent slopes.....19
References.....21

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N 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 1:20,000.

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: Strafford County, New Hampshire
Survey Area Data: Version 20, May 29, 2020

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—Sep 9, 2017

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
EaB	Elmwood fine sandy loam, 3 to 8 percent slopes	3.7	26.3%
GlB	Gloucester fine sandy loam, 3 to 8 percent slopes	0.4	2.5%
GsC	Gloucester very stony fine sandy loam, 8 to 15 percent slopes	8.3	59.2%
HcB	Hollis-Charlton fine sandy loams, 3 to 8 percent slopes	0.0	0.1%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.6	4.5%
ScB	Scantic silt loam, 3 to 8 percent slopes	1.0	7.4%
Totals for Area of Interest		**13.9**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

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

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

Strafford County, New Hampshire

EaB—Elmwood fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d71
Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 120 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Elmwood

Setting

Parent material: Glaciomarine

Typical profile

H1 - 0 to 16 inches: fine sandy loam
H2 - 16 to 20 inches: fine sandy loam
H3 - 20 to 43 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F144AY018NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Not named

Percent of map unit: 10 percent
Hydric soil rating: No

Deerfield

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

GIB—Gloucester fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d73
Elevation: 70 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Gloucester

Setting

Parent material: Till

Typical profile

H1 - 0 to 14 inches: fine sandy loam
H2 - 14 to 28 inches: very gravelly loamy sand
H3 - 28 to 40 inches: very gravelly coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY032NH - Dry Till Uplands
Hydric soil rating: No

Minor Components

Not named pan

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

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

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

GsC—Gloucester very stony fine sandy loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9d76
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

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

Description of Gloucester

Setting
Parent material: Till

Typical profile
H1 - 0 to 14 inches: very stony fine sandy loam
H2 - 14 to 28 inches: very gravelly loamy sand
H3 - 28 to 40 inches: very gravelly coarse sand

Properties and qualities
Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

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

Minor Components

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

Not named
Percent of map unit: 5 percent
Hydric soil rating: No

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

HcB—Hollis-Charlton fine sandy loams, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9d7j
Elevation: 0 to 1,020 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 120 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition
Hollis and similar soils: 55 percent
Charlton and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Parent material: Till

Typical profile
H1 - 0 to 14 inches: fine sandy loam
H2 - 14 to 18 inches: bedrock

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Charlton

Setting

Parent material: Till

Typical profile

H1 - 0 to 13 inches: fine sandy loam
H2 - 13 to 36 inches: fine sandy loam
H3 - 36 to 40 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Not named

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

Buxton

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

ScA—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9d8s

Elevation: 0 to 260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Scantic

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 23 inches: silty clay loam
H3 - 23 to 40 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Not named wet

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Biddeford

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Swanton

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

ScB—Scantic silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d8t
Elevation: 0 to 260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Scantic

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 23 inches: silty clay loam
H3 - 23 to 40 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Swanton

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Not named wet

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Buxton

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

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John P. Hayes III CSS, CWS,
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603-205-4396
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7/11/22

Christopher Berry
Berry Surveying and Engineering
335 Second Crown Point Road
Barrington NH 03825

Job # 21-035

7/8/22
Site Specific Soil Survey
Map D Lot 11-5
Quality Way Dover NH

Dear Chris,

This letter report presents the findings of a Site Specific Soil Survey conducted on the referenced property by John P. Hayes III on July 8, 2022. The soil survey was conducted in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standard For New Hampshire and Vermont, Version 5.0, December 2017, Special Publication # 3, published by the Society of Soil Scientist of Northern New England.

The property that is subject of the soil survey is located on the on the south side of Quality Way, and the west side of Venture Drive, in Dover NH. The pacel is approximately 2 acres in size. The plans used for these soil maps are a 20 scale plan, where 1 inch equals 20 feet, with one foot contours.

The purpose of the soil survey is to provide the client with soils information for urban and suburban or rural land planning. Soil characteristics on the property were evaluated through observation of numerous test pits, and hand auger probes conducted throughout the property. Slope phases were determined with the use of the topography provided on the plan. The Site-specific Soil Map Units identified are taken from the New Hampshire State-Wide Numerical Soils Legend, Issue #10 January 2011, and are briefly described below. Official Series Descriptions (OSD) for each of these soil series are enclosed with this report. The soil map units comply with the Range In Characteristics described in the OSD. Any limiting enclusions on the site, do not exceed 15 percent of any of the soil map units. Dissimilar inclusions, if any, are noted above. Limits of the Site Specific mapping units are highlighted on the plan. The Hydrological Soil Groups for each of the soil series was determined using SSSNNE Publication No. 5 Ksat Values for New Hampshire Soils September 2009. Limits of the Site Specific mapping units are highlighted on the plan.

Soil parent materials on this site include Glacial Till and Glaciolacustrine deposits. Portions of the soil map with the map unit denominator P and VP, are poorly drained, and very poorly drained soils respectively. The portions of the soil map that are identified with the map unit Hg/Rk, are a Hollis/Gloucester soil complex that is shallow to ledge, with varing depths to ledge that are less than 40 in in depth. Portions of the soil map,with the map lable 500, contain disturbed soils that have been excavated and/or regraded, that are loamy in texture, underlain with a layer of silt loam. Portions of the soil map with the map lable 600/P, contain disturbed soils have textures of loam and silt loam, that have been excavated down to, or near the water table. A Disturbed Soil Mapping Unit Supplement for New Hampshire DES AoT Site Specific Soil Maps, is also included. This supplement explains the additional information given about each of the disturbed soil map units that are present on the site.

MAP UNIT #	SOIL TAXANOMIC NAME	SLOPES	HYDRO LOGIC SOIL GROUP	DESCRIPTION
Be VP (State No. 134)	**Maybid**	**A**	**D**	The Maybid series consists of very deep, very poorly drained soils formed in lacustrine or marine sediments. These soil are located on the southeastern of th parcel. These soils are deep to bedrock. The saturated hydraulic conductivity is moderately high or high in the surface layer and very low to moderately high in the subsoil and substratum. Some inclusions of poorly drained Scitico soils may be present, but are less than 10 percent of the map unit. These soils are permanantly saturated.
Ea (State No. 238)	**Elmridge (very stony)**	**A B C D**	**C**	The Elmridge series consists of very deep, moderately well drained soils formed in loamy over clayey sediments.These soils are found throughout the upland portion of the parcel. These soils are deep to bedrock, and very stony. The saturated hydraulic conductivity is high in the upper loamy horizons and low to moderately high in the underlying clayey horizons. Some inclusions of Excessively drained Gloucester, or somewhat poorly drained Boxford may be present, but are less than 10 percent of the map units of the mapped areas. Estimated seasonal high water tables in these soils on site range from 16 to 36 inches.
Gs (State No. 111)	**Gloucester (very stony)**	**B C**	**A**	The Gloucester series consists of very deep, somewhat excessively drained soils formed in sandy till. These soils are found on the northern side of the parcel, near Quality Way. These soils are deep to bedrock, and are very stony.Thre saturated hydraulic conductivity in these soils is high or very high. Some inclusions of moderately well drained Elmridge soils may be present but are less than 10 percent of map units of the mapped areas. Estimated seasonal high water tables in these soils on site range from 38 to 56 inches.

MAP UNIT #	SOIL TAXANOMIC NAME	SLOPES	HYDRO LOGIC SOIL GROUP	DESCRIPTION
Hg Rk (State No. 121)	**Hollis-Gloucester complex (very rocky)**	**C**	**D/A**	The Hollis series consists of well drained and somewhat excessively drained soils formed in a thin mantle of till. They are shallow to bedrock. They are nearly level to very steep upland soils on bedrock-controlled hills and ridges. Saturated hydraulic conductivity is moderately high or high.The Gloucester series consists of very deep, somewhat excessively drained soils formed in sandy till. These soils are deep to bedrock, and are very stony.Thre saturated hydraulic conductivity in these soils is high or very high. This soil complex is located in the central portion of the lot. The estimated percentage of the Hollis soil component in the comlplex is 80%. The estimated percentage of Gloucester soil in the complex is 20%. The Hollis component of the complex is shallow to ledge, and has no estimated seasonal high water table. Estimated seasonal high water tables in the Glocester component of the complex ranges from 38 to 50 inches.
Sc P (State No. 233)	**Scitico**	**A B**	**C**	The Scitico series consists of very deep, poorly drained soils formed in silty and clayey sediments.These soil are located on the southeastern of th parcel. They are are deep to bedrock. Saturated hydraulic conductivity is moderately high or high in the upper portion of the profile, and low or moderately slow in the substratum. Some inclusions of very poorly drained Maybid, and somewhat poorly drained soils Boxford soils may be present, but are less than 10 percent of the map unit. Estimated seasonal high water tables in these soils on site are less than 10 inches.
500 (decdc)	**Udorthents loamy**	**A B C D E**	**C**	Udorthents are disturbed soils that have been excavated and/or regraded and are loamy in texture. These disturbed soils are located on the south and east edges of the parcel, adjacent to Venture Drive and Quality Way. of the mapped area. These disturbed soils are mostly derrived mostly from the Elmwood soil series, and are moderately well drained. The soils are deep to bedrock. The saturated hydralic conductivity of this soil is moderately high in the upper portion, and moderately low in the firm substratum. Estimated seasonal high water tables in these soils range from 18 to 36 inches.

MAP UNIT #	SOIL TAXANOMIC NAME	SLOPES	HYDRO LOGIC SOIL GROUP	DESCRIPTION
600 P (fecdc)	**Endoaquents loamy**	**B**	**C**	Endoaquents are disturbed soils that have been excavated down to, or near the water table. Soil material is typically sandy loam, loam or silt loam These disturbed soils are located on the southeast corner of the parcel ia an excaveted drainage swale, that is adjacent to the intersection of Venture Drive and Quality way. These disturbed soils are mostly derrived mostly from substratum of the the Elmwood soil series, and are poorly drained. The soils are deep to bedrock. The saturated hydralic conductivity of this soil is moderately high in the upper portion, and moderately low in the firm substratum. Estimated seasonal high water tables in these soils is less than 10 inches.

Slope Phases

Alpha Slope Symbol	Range
A	0 – 3%
B	3 – 8%
C	8 – 15%
D	15 – 25%
E	25 – 50%
F	> 50%

I trust that this Soil Survey and report meet your current planning needs. Please do not hesitate to contact me if you have any questions.

Sincerely:



John P. Hayes III CSS, CWS

TEST PIT DATA:

TEST PIT #1
0–6 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
38–68 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 68"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #2
0–5 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
5–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
38–65 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 65"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #3
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–18 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
18–30 2.5Y 5/4 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
30–55 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 30"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 55"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #4
0–6 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
24–40 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
40–60 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 40"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 60"
REFUSAL @ N/A
P = 6 MIN/IN

TEST PIT #5
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM, GRANULAR, FRIABLE
38–64 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 64"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #6
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–30 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
E.S.H.W.T. @ N/A
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 30"
REFUSAL @ 30"
P = 10 MIN/IN

TEST PIT #7
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM, GRANULAR, FRIABLE
38–64 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 64"
REFUSAL @ N/A
P = 10 MIN/IN

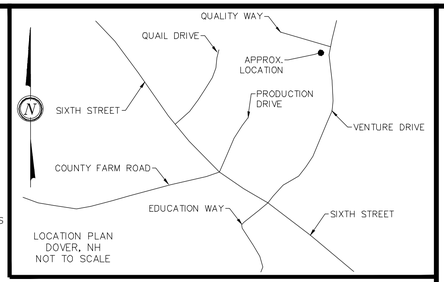
TEST PIT #8
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
E.S.H.W.T. @ N/A
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 24"
REFUSAL @ 24"
P = 10 MIN/IN

TEST PIT #9
0–5 10YR 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
5–12 2.5Y 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
12–45 5Y 5/2 OLIVE GRAY SILT LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 12"
RESTRICTIVE LAYER @ 12"
GROUND WATER @ N/A
TERMINATED @ 45"
REFUSAL @ N/A
P = 18 MIN/IN

TEST PIT #10
0–5 10YR 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
5–14 2.5Y 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
14–45 5Y 5/2 OLIVE GRAY SILT LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 14"
RESTRICTIVE LAYER @ 14"
GROUND WATER @ N/A
TERMINATED @ 45"
REFUSAL @ N/A
P = 18 MIN/IN

EXISTING LEGEND:

- STONE BOUND (FND)
- STEEL STAKE (FND)
- TEST PIT
- EXISTING DRAIN LINE
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING TREELINE
- NRCS SOIL LINE/LABEL
- POORLY DRAINED WETLANDS
- 50' WETLAND BUFFER
- SOIL LINE
- LIMIT OF SOIL SURVEY
- 448A SOIL SERIES
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
- TYP. FOUND
- FND TYPICAL



LOCATION PLAN
DOVER, NH
NOT TO SCALE



NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11–5
B.) TAX MAP D, LOT 11–5SND

3.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

4.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PREFORMED BY BERRY SURVEYING AND ENGINEERING IN 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 IN 10,000.

5.) VERTICAL DATUM IS BASED ON USGS NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83 NH STATE PLANE COORDINATES. COORDINATES GATHERED FROM CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

6.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING ANALYZED SITE SPECIFIC SOIL CONDITIONS OF THE SITE.

SITE SPECIFIC SOILS LEGEND

SYMBOL	SLOPES	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
Be	A	MAYBID	D
238	A,B,C,D	ELMRIDGE (VERY STONY)	C
Gs	B,C	GLOUCESTER (VERY STONY)	A
Hg	C	HOLLIS–GLOUCESTER COMPLEX (VERY ROCKY)	A/D
Sc	A,B	SCITICO	C
500	A,B,C,D,E	UDORTHENTS	C
600	B	ENDOAQUENTS	C

SLOPE: A = 0–3% B = 3–8% C = 8–15% D = 15–25% E = 25–50% F = 50%+

DENOMINATOR: /VP = VERY POORLY DRAINED /P = POORLY DRAINED
/Rk = VERY ROCKY

STATE OF NEW HAMPSHIRE — DEIDRA L. BENJAMIN — No. 295 — CERTIFIED WETLAND SCIENTIST

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE — JOHN P. HAYES III — No. 087 — LICENSED LAND SURVEYOR

JOHN P. HAYES, III CSS #87

WETLAND NOTE:

WETLANDS WERE DELINEATED BY DEIDRA L. BENJAMIN, CWS, IN THE SUMMER OF 2021 USING THE FOLLOWING CRITERIA:

1. USACE. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. VERSION 2.0. U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER. 2012. VICKSBURG, MS.

2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

SITE SPECIFIC SOILS MAP
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11–5 & 11–5SND

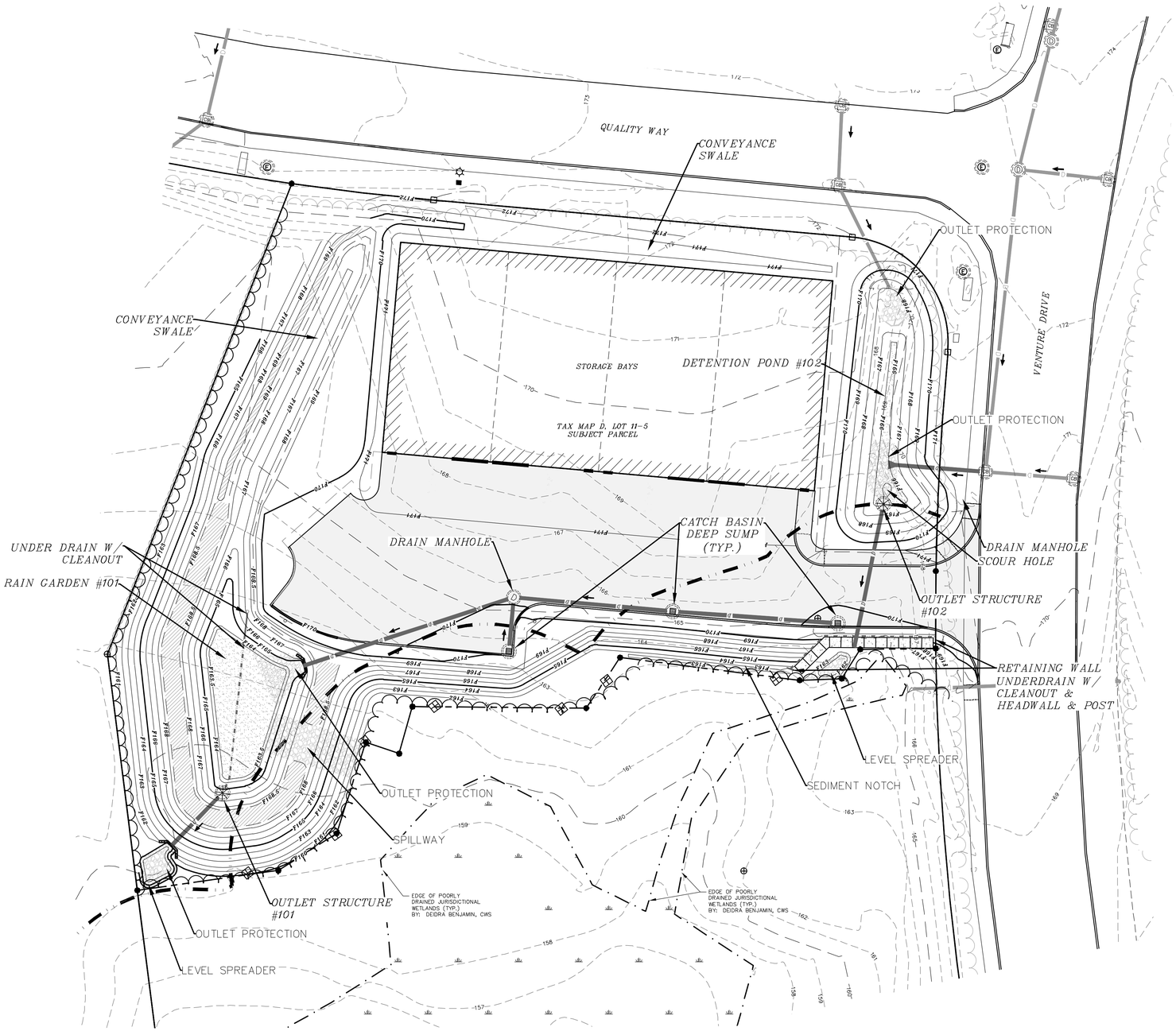
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 60 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE — No. 805 — KENNETH A. BERRY — LAND SURVEYOR — SIGNATURE

SHEET 3 OF 26

NOT FOR CONSTRUCTION



NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS TO DEMONSTRATE THE DRAINAGE INFRASTRUCTURE THAT REQUIRES PERIODIC INSPECTION AND MAINTENANCE. IT IS TO ACCOMPANY A DOCUMENT ENTITLED "STORMWATER SYSTEM MANAGEMENT: INSPECTION AND MAINTENANCE MANUAL" PUBLISHED BY BERRY SURVEYING & ENGINEERING ON THE SAME DATE.

6.) 11x17" PLANS ARE TWICE THE PUBLISHED SCALE.

LEGEND:

- PROPOSED DRAIN MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- PROPOSED STORMWATER BMP OUTLET STRUCTURE
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- EXISTING DRAINAGE LINE
- PROPOSED DRAINAGE LINE
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

INSPECTION & MAINTENANCE PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14241
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

P1

BIORETENTION FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Bioretention Filter Media Option A			
ASTM C-33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5

3/8" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
1/2"	100
3/8"	95 – 100
# 4	22 – 55
# 8	0 – 10

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

1-1/2" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1-1/2"	90 – 100
1"	20 – 55
1/2"	0 –15
3/8"	0 –5

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

NOTES

1. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL BIORETENTION FILTER MEDIA SHALL BE AS SHOWN ABOVE. "BIO MEDIA" MEANS BIORETENTION FILTER MADIA.
3. COMPACTION IS NOT TO OCCUR IN THE RAIN GARDEN AREAS PRIOR TO CONSTRUCTION. SCARIFICATION REQUIRED IN THE EVENT COMPACTION TAKES PLACE.
4. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
6. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

1 SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 0.25 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.

2 PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.

3 AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.

4 VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

DESIGN REFERENCES

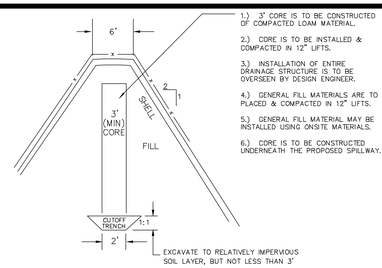
1 UNH STORMWATER CENTER
2 NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

RAIN GARDEN MIX

THE GRASS THAT IS PLANTED WITHIN A RAIN GARDEN BIO-FILTRATION SYSTEM WITHIN THE BIO-MEDIA MUST CONSIST OF A COMBINATION OF WARM SEASON GRASS SEED AND COLD SEASON GRASS SEED IN ORDER FOR THE GRASS TO START GROWING FOR STABILIZATION AND CONTINUE GROWING IN THE SANDY WELL-DRAINED ENVIRONMENT. PLANTING SPECIFICATION WILL MEET THE REQUIREMENTS AS OUTLINED IN "VEGETATION NEW HAMPSHIRE SAND AND GRAVEL PITS" MIX 1 (WARM SEASON GRASSES) (15 LBS/AC) AND INCLUDE ANNUAL AND PERENNIAL RYE GRASS SEED (15 LBS/AC); THE NEW ENGLAND NATIVE WARM SEASON GRASS MIX (23 LBS/AC) BY NEW ENGLAND WETLAND PLANTS, INC.; RAIN GARDEN MIX 180 (15 LBS/AC & 15 LBS/AC OF RYE) / RAIN GARDEN GRASS MIX 180-1 (20 LBS/AC & 10 LBS/AC OF RYE) BY ERNST CONSERVATION SEEDS; OR APPROVED EQUAL.

P2

LOW PERMEABILITY MATERIAL GRADATION	
SIEVE SIZE	% PASSING BY WEIGHT
#4	95 – 100
#40	60 – 95
#100	40 – 60
#200	25 – 45



EXCAVATE TO RELATIVELY IMPERVIOUS SOIL LAYER, BUT NOT LESS THAN 3'

1.) 3" CORE IS TO BE CONSTRUCTED OF COMPACTED LOAM MATERIAL.

2.) CORE IS TO BE INSTALLED & COMPACTED IN 12" LIFTS.

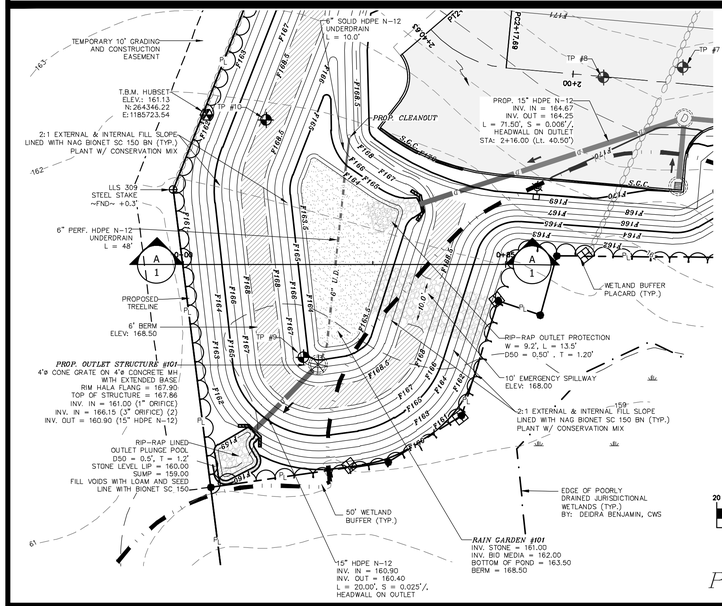
3.) INSTALLATION OF ENTIRE DRAINAGE STRUCTURE IS TO BE OVERSEEN BY DESIGN ENGINEER.

4.) GENERAL FILL MATERIALS ARE TO PLACED & COMPACTED IN 12" LIFTS.

5.) GENERAL FILL MATERIAL MAY BE INSTALLED USING ONSITE MATERIALS.

6.) CORE IS TO BE CONSTRUCTED UNDERNEATH THE PROPOSED SPILLWAY.

P3



PLAN VIEW RAIN GARDEN #101

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CONSTRUCTION SEQUENCE NOTE:

EROSION, SEDIMENT AND RETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

BIOMEDIA SURFACE PROTECTION NOTE:

SEE EROSION AND SEDIMENT CONTROL PLAN
IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PROTECT THE BIOMEDIA SURFACE FROM SEDIMENTATION CAUSED BY EROSION ON THE SIDE SLOPES.

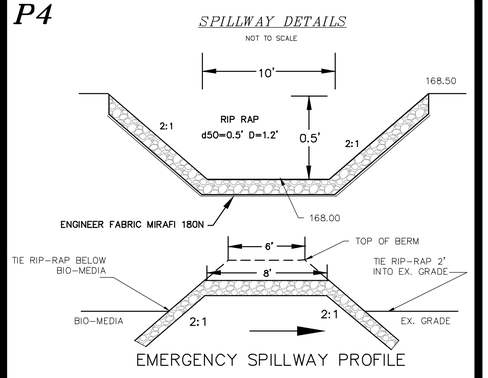
STABILIZATION NOTE:

SEE NOTE #6, SHEET E-102, DETAIL E-18 SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.

SECTION OF RAIN GARDEN #101

TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET 6	INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE		SIZE OF STONE (INCHES) FROM	TO
100%		9	12
85%		8	11
50%		6	9
15%		2	3

P4



EMERGENCY SPILLWAY PROFILE

P5

Rain Garden Grass Mix - ERNMX-180-1

	Botanical Name	Common Name	Price/Lb
40.40 %	*Schizachyrium scoparium, Fort Indiantown Gap-PA Ecotype*	Little Bluestem, Fort Indiantown Gap-PA Ecotype	14.66
20.00 %	*Carex lurida/stricta, PA Ecotype*	Fox Sedge, PA Ecotype	31.20
20.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	10.46
9.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	22.27
5.50 %	*Panicum rigidulum, PA Ecotype*	Redtop Panicgrass, PA Ecotype	72.00
4.00 %	*Chasmanthium latifolium, WV Ecotype*	River Oats, WV Ecotype	96.00
0.50 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	96.00
0.30 %	*Juncus effusus*	Soft Rush	48.00
0.30 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	48.00
100.00 %		**Mix Price/Lb Bulk:**	**$24.82**

Seeding Rate: 15 lb per acre with a cover crop. For sites that drain within 24 hours of a rain event: use one of the following cover crops:Oats (1 Jan to 31 Jul; 30 lbs/acre), Japanese Millet (1 May to 31 Aug; 10 lbs/acre), or grain rye (1 Aug to 31 Dec; 30 lbs/acre).

NOTE: TO BE USED FOR RAIN GARDENS

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

P-101

DOVER FILE #

REVISION	DATE	DESCRIPTION

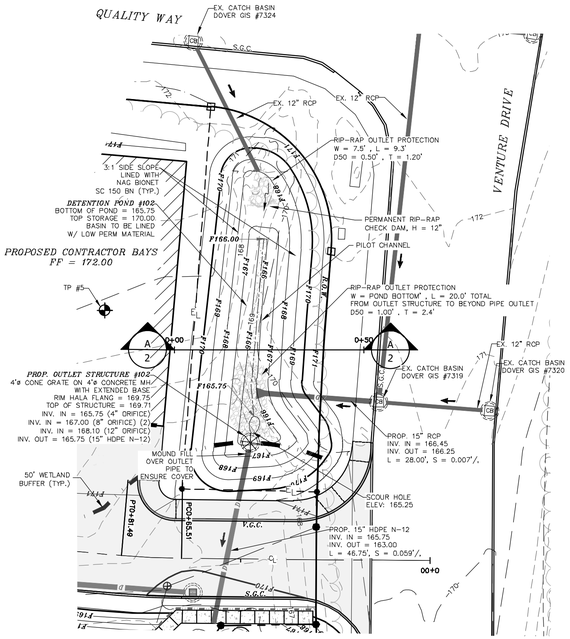
RAIN GARDEN #101
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

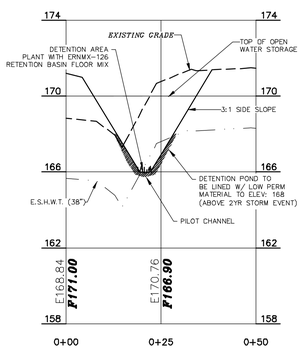
SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

NOT FOR CONSTRUCTION



PLAN VIEW DETENTION POND #102



SECTION OF DETENTION POND #102

NOTES

1. DO NOT PLACE THE DETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF WATER FROM EXCAVATIONS) TO THE DETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
3. DETENTION AREA TO BE PLANTED WITH ERNMX-126 RETENTION BASIN FLOOR MIX.

MAINTENANCE REQUIREMENTS

1 SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 0.25 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.

2 PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.

3 VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

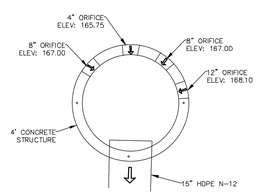
DESIGN REFERENCES

1 UNH STORMWATER CENTER
2 NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

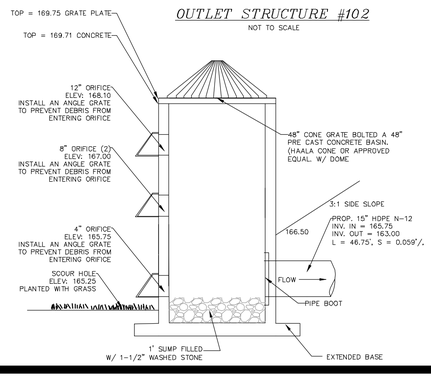
CONSTRUCTION SEQUENCE NOTE:
EROSION, SEDIMENT AND DETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

STABILIZATION NOTE:
SEE NOTE #6, SHEET E-102, DETAIL E-18
SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.

TOP VIEW
NOT TO SCALE



OUTLET STRUCTURE #102
NOT TO SCALE



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

VERTICAL SCALE: 1" = 4'

Retention Basin Floor Mix - Low Maintenance - ERNMX-126

	Botanical Name	Common Name	Price/Lb
20.00 %	*Panicum clandestinum, 'Tioga*	Deertongue, 'Tioga	22.08
20.00 %	*Paccinellia distans, 'Fults*	Alkaligrass, 'Fults	4.56
18.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	9.96
15.00 %	*Agrostis stolonifera, 'Penncross'*	Creeping Bentgrass, 'Penncross'	14.40
15.00 %	*Poa palustris*	Fowl Bluegrass	36.80
10.00 %	*Carex lurida/crinita, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
1.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	81.60
1.00 %	*Juncus effusus*	Soft Rush	48.00
100.00 %		**Mix Price/Lb Bulk:**	**$15.98**

Seeding Rate: 20-40 lbs per acre, or 0.5-1 lb/1,000 sq ft with a cover crop. For a cover crop use one of the following: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre), or barnyard grass (1 May to 31 Aug; 10 lbs/acre).

NOTE: TO BE USED FOR DETENTION POND

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

The hardy inexpensive grass and grass-like species are ideal for retention basins that may have high salt inflows and where mowing may be required. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

P-102

DOVER FILE #

REVISION	DATE	DESCRIPTION

DETENTION POND #102
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY & SURVEYING ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14240
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com

Inspection and Maintenance Manual

Stormwater System Management

Quality Way

Prepared for

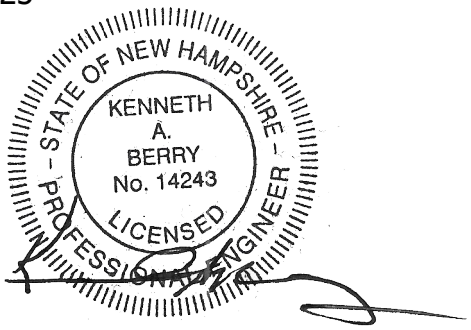
JSR, LLC
17 Fosters Drive
Dover, NH 03820

Land of

JSR, LLC
17 Fosters Drive
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Prepared By

Berry Surveying & Engineering
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603-332-2863



File Number
DB2021-134

April 1, 2025

Stormwater System Operation and Maintenance Plan

And

Inspection and Maintenance Manual

Table of Contents

Introduction w/ Practice Inventory ..... Page 2

Catch Basins ..... Page 4

Rain Garden / Bioretention Systems ..... Page 4

Detention Pond ..... Page 5

Retaining Wall Underdrain w/ Cleanouts ..... Page 6

Outlet Protection/Level Spreader/Sediment Notch ..... Page 6

Stabilization for Long Term Cover ..... Page 6

Street Sweeping ..... Page 7

Snow Removal & Winter Maintenance ..... Page 8

Control of Invasive Species ..... Page 8

Annual Report ..... Page 9

Inspection & Maintenance Manual Checklist ..... Page 10

Inspection & Maintenance Log Sheet ..... Page 13

Deicing Log Sheet ..... Page 14

Owner Certification ..... Page 15

Site Plan Attached – 1 Page
Control of Invasive Plants, NH Department of Agriculture Attached – 4 Pages
NHDES Green SnoPro Utilization Chart

Introduction

The Best Management Practices (BMP) described in this manual are specified in more detail within the plan set giving design details and specifications. The New Hampshire Stormwater Manual, Volume 2, Post-Construction Best Management Practices Selection & Design (December 2008, NHDES & US EPA) is included by reference to this manual. Additional details, construction specifications, and example drawings are provided within this reference. (http://des.nh.gov/organization/divisions/water/stormwater/)

The BMP's are covered below in the general order in which the storm water flows. Each BMP has a description and maintenance consideration listed. A Check List table is proved after the narrative to summarize the maintenance responsibilities and schedule. A Log Form is also provided for the owner's use.

For details regarding the design of the Storm Water System see also Drainage Analysis & Sediment and Erosion Control Plan also published by Berry Surveying & Engineering originally dated April 1, 2025, as revised. See also plan set completed for JSR, LLC. originally dated April 1, 2025, as revised.

JSR, LLC. is responsible for the Stormwater System Operation and Maintenance. A significant step in this responsibility is the Inspection and Maintenance of each component of the system. Ongoing, semi-annual, and annual inspection and maintenance requirement are documented below and must be taken seriously. Failure of any component of the system can result in surface water run-off ponding and/or freezing in the roadway and parking lots, leaving the developed site untreated, and/or causing violations to issued permits. The owner must maintain, and have available, plans of the Stormwater System in order to properly inspect and maintain the system. (Reduced copies attached.) JSR, LLC, as the owner / operator, is responsible to ensure that any subsequent owner or subcontractor has copies of the Log Form and Annual Report records and fully understands the responsibilities of this plan. The grantor owner will ensure this document is provided to the grantee owner by duplicating the Ownership Responsibility Sheet which is found toward the back of this document, which will be maintained with the Inspection & Maintenance Logs, provided to the City of Dover, Community Services, DPW, Engineering Department, with the Annual Report.

The owner of Tax Map D, Lots 11-5 & 11-5SND, JSR, LLC, is proposing to the construction of a commercial building as well as a driveway connecting Venture Drive and Quality Way with associated parking. There is a rain garden, detention pond, and deep sump catch basins proposed to manage the surface water runoff.

The following drainage features will all require periodic inspections and maintenance based on this manual in addition to deep sump catch basins throughout with photo documentation:

Deep Sump Catch Basins #1-3

Drain Manhole

Conveyance Swales with Check Dams

Rain Garden #101 w/ Under-drains & orifice cap assembly, outlet structure, and emergency spillway.

Detention Pond #102 w/ outlet structure and stage discharge orifice system

Level Spreader

Sediment Notch toe of slope in wetland buffer

Retaining wall underdrain and cleanout

Catch Basins and Drain Manholes

Design Intent: There are three proposed catch basins with deep sumps and one drain manhole on the property.

Description: Deep Sump Catch Basins are used throughout the site as a pretreatment measure to remove sediment and debris from storm water runoff. Deep Sump Catch Basins will be designed with a sump that is four times the depth of the discharge culvert and a minimum of four feet. All pretreatment deep sump catch basins will have an outlet pipe hood which extends one-foot below the outlet invert and will include a hood vent. During construction the catch basins will be protected by inlet protection per the approved construction plans. The practice of street sweeping on a bi-annual basis will help reduce maintenance of these deep sumps.

Maintenance Considerations: Sediment must be removed from Deep Sump Catch Basins and Deep Sump Manholes on a regular basis, at least twice a year and more often if the sumps become half-full. Inspections should be conducted periodically. At a minimum they should be cleaned after snow-melt and after leaf-drop. Damaged outlet hoods must be replaced. It is recommended that a vacuum truck be utilized as contrasted to a clam-shell method to avoid damage to the hood. Hydrocarbons found to be floating in the basin should be removed by skimming, absorbent materials, or other method. Disposal of all material, sediment, and debris must be done in accordance with state and federal regulations. Culvert pipes will be inspected to ensure that surface water runoff is capable of leaving the structures.

Bio-Retention System (Rain-Garden)

Description: A bioretention system (sometimes referred to as a "rain garden") is a type of filtration BMP designed to collect and filter moderate amounts of stormwater runoff using conditioned planting soil beds, gravel beds and vegetation within shallow depressions. The bioretention system may be designed with an underdrain, to collect treated water and convey it to discharge, or it may be designed to infiltrate the treated water directly to the subsoil. Bioretention cells are capable of reducing sediment, nutrients, oil and grease, and trace metals. Bioretention systems should be sited in close proximity to the origin of the stormwater runoff to be treated. The use of vegetation allows these systems to blend in with other landscaping features. See SWM Volume 2, 4-3.4c, Treatment Practices, Bio-Retention System, page 110.

Construction Considerations: After the stone and bio-media has been installed, Filtrexx Silt Soxx or approved equal, will be installed at the toe of slope intersection between the berm and bio-media and will remain until the slopes of the berm are stable.

Maintenance Considerations: Systems should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection. Pretreatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually. Trash and debris should be removed at each inspection. At least once annually, system should be inspected for drawdown time. If bioretention system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore filtration function or infiltration function (as applicable), including but not limited to removal of accumulated sediments or reconstruction of the filter media. Vegetation should be inspected at least annually, and maintained in healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species. 2:1 side slopes will be weed whacked with clippings removed from the stormwater BMP after each maintenance event. The rain garden is equipped with an underdrain and end cap assembly which will need to be routinely inspected for obstructions. This is located within the outlet structure provided. The bolts for the cone grate may need to be removed to allow for maintenance of the structure.

Detention Ponds

Description: Detention Ponds are also constructed ponds with the purpose of detaining runoff but not necessarily for infiltration purposes. Stormwater runoff is controlled by the outlet structure, containing a series of orifices in the structure face, referred to as a stage-discharge-system. These orifices are protected by angle grates and a cone grate is located at the top of the outlet structure. Construction specifications are included in the plan set and New Hampshire Stormwater Manual, Volume 2, Section 4-6, Conveyance Practices, 2. Detention Basins.

Maintenance Considerations:
Detention Ponds should be inspected at least twice annually and following any rainfall event exceeding 2.5 inches in a twenty-four-hour period. Maintenance rehabilitation will be conducted as warranted by each inspection. Trash and debris will be removed at each inspection.

Any pilot channel within the detention pond and the sump in front of the primary discharge need to be maintained and kept clear of vegetated material.

Also on an annual basis the vegetation should be inspected to ensure healthy condition. Invasive species need to be removed along with dead or diseased vegetation.

Retaining Wall Underdrain w/ Cleanouts

Description: The retaining wall on-site is provided with an underdrain at the back of the wall, with a cleanout on the uphill end, that discharges to daylight. This underdrain will be provided with its own headwall or be connected to a larger headwall (See I&M Plan).

Maintenance Considerations: The exit of the culvert pipes should be cleaned of any trash and sediment build-up. Riprap outlet protection shall not prevent the outlet from being free flowing, as applicable. The culvert should be clear to let collected water pass through the culvert unobstructed. The headwall should be inspected for erosion and destabilization, with repairs made as required. The underdrains will require yearly jetting to ensure full operation.

Outlet Protection/Level Spreaders/Sediment Notch

Description: Outlet Protection consists of a riprap apron or preformed scour hole that is designed to provide velocity reduction of the surface water run-off that is leaving a culvert. The design is dependent on the culvert size, soil conditions, velocity, and quantity of the run-off. There are to be no bend or curves at the intersection of the conduit and apron. Level spreaders are intended to provide a level lip where surface water runoff is allowed to continue downhill closer to sheet flow. The level lip is to be constructed as level as possible for the entire length.

Maintenance Considerations: The riprap outlet protection will be inspected annually for damage, which must be corrected immediately. Any sediment buildup will be removed and disposed of correctly. Sediment and subsequent vegetation will build up in the Level Spreader. This material will be cleaned out along with any gross solids and disposed of properly. (See invasive species below) Any rip rap that has been displaced from the original construction will be repaired, especially recreating the level lip.

Stabilization for Long Term Cover

Vegetated Stabilization – Original Planting

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutter's property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification and on Sheet E-102 using seeding mixture C, as follows:

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.

Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

Conservation Mix

Virginia Wild Rye	Native	FACW-
Little Bluestem	Native	FACU
Big Bluestem	Native	FAC
Red Fescue	Native	FACU
Switch Grass	Native	FAC
Partridge Pea	Native	FACU
Showy Tick Trefoil	Native	FAC
Butterfly Milkweed	Native	NI
Beggar Ticks	Native	FACW
Purple Joe Pye Weed	Native	FAC
Black Eyed Susan	Native	FACU-
Total	**25**	**0.57**

Conservation Mix to be provided by New England Wetland Plants, Inc., Amherst, MA as outline in their New England Conservation / Wildlife Mix or approved equal. Mix to be applied at a rate of 25 lbs. per acre or one-lb. per 1750 square feet. Ratio of seed is proprietary and substitutions are not allowed.

Conservation Mix will used to stabilize all 2:1 slopes and all land area disturbed within the wetland buffer.

Maintenance Considerations: Permanent seeded areas for long-term cover will be inspected on a periodic basis looking for signs of growth loss or erosion. Any areas found to be damaged will be repaired and replanted to reestablish the growth. The grass should be mowed at least twice per year and any dead material removed. Any woody growth that becomes established will need to be cut and removed.

Long-term maintenance of the land cover is critical and must be maintained at least 85% grass / vegetation coverage, must be inspected for concentrated flow, rills, and channels; and must be repaired as necessary to prevent erosion.

Street Sweeping

Description:
Street sweeping is a pollution prevention practice that removes sediment, debris and trash that accumulates along streets and roads from winter sanding practices and everyday use. Street sweeping is often performed to improve aesthetics and to reduce the export of sand to the drainage network and receiving waters. In addition to

sediment, debris and trash, other pollutants that may be minimized through street sweeping include some nutrients, oxygen-demanding substances and trace metals. See SWM Volume 2, 4-2, Source Control BMPS, Street Sweeping, page 52.
Maintenance Considerations: Inspect and maintain street sweeping equipment in accordance with manufacturer's recommendations.

Snow Removal & Winter Maintenance

Description: Drainage and stormwater systems need to be maintained during the winter months so that surface water runoff from a rain storm do not become a impounded and become an icing problem. Catch basins must remain viable and where sheet flow is a design factor, the edge of pavement and should to be maintained so that runoff can leave the pavement area. Sand and salt should be used at the rate that prevents sedimentation problems or excess salt deposited but yet enough to allow for protection for pedestrians and vehicles.

Maintenance Considerations: Catch basins are required to be kept viable by removing snow that is block surface water runoff from entering the structure. The edge of pavement where surface water sheet flow is designed to leave the paved area, the edge of pavement and shoulder need to be plowed to allow runoff to leave the pavement. Snow is to be piled in designated areas and removed from the site when the on-site storage locations have been exceeded. At the end of the winter season, sediment is to be swept from the paved surfaces and removed from the drainage system. (Sumps if provided, sediment forebays, swale lines.) (See catch basin and drainage pipe maintenance.) NHDES offers training (Green SnowPro Certification) for contractors and owners. https://www.des.nh.gov/land/roads/road-salt-reduction/green-snowpro-certification Please find attached NHDES Green SnoPro Utilization Chart which is required to be used.

Control of Invasive Plants

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;

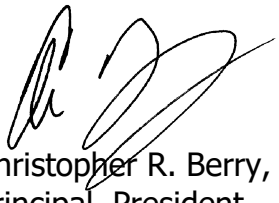
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.

Annual Report

Description: The owner is responsible to keep an **I & M Activity Log** that documents inspection, maintenance and repairs to the storm water management system, and a **Deicing Log** to track the amount and type of deicing material applied to the site. The original owner is responsible to ensure that any subsequent owner (s) have copies of the Stormwater System Operation and Maintenance Plan & Inspection and Maintenance Manual, copies of past logs and check lists. This includes any owner association for potential condominium conversion of the property. The Annual Report will be prepared and submitted to the City of Dover, Community Services, Engineering Department with copies of both logs and check lists no later than December 15th of each year and made available to NHDES upon request. Upon an ownership change, the Annual Report will include the Transfer of Ownership Responsibility Forms duplicated from the form found below.

The plans that accompanies this manual includes a plan sheet, "Inspection & Maintenance Plan". JSR, LLC will also maintain a complete set of the approved original design plans.

Respectfully
BERRY SURVEYING & ENGINEERING



Christopher R. Berry, SIT 567
Principal, President



Kenneth A. Berry PE, LLS,
CPSWQ, CPESC, CESSWI
Principal, VP – Technical Operations

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Checklist

Quality Way – Dover, NH
JSR, LLC
17 Fosters Drive
Dover, NH 03820

☑	Date	BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
		Pavement Sweeping	Three Times Per Year	N/A	N/A
		Litter/Trash Removal	Routinely	Inspect dumpsters, outdoor waste receptacles area, and yard areas.	Parcel will be free of litter/trash.
		Deicing Agents	N/A	N/A	Use salt as the primary agent for roadway safety during winter.
		Invasive Species	Two times per year.	Inspect for Invasive Species	Remove and dispose invasive species.
		Closed Drainage System:			
		Drainage Pipes	1 time per 2 years	Check for sediment accumulation & clogging.	Less than 2" sediment depth

☑	Date	BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
		Deep Sump Catch Basins	2 times per year	Check for sediment accumulation & clogging.	Sediment accumulated to a depth of 2 feet.
		Rain Garden /Detention Pond	2 times per year	Check for sediment and debris accumulation buildup.	Remove sediment & debris when required. Remove Invasive Species
		Rain Garden	Annually	72-Hour drawdown time evaluation and vegetation evaluation. Underdrain flushing.	Remove dead & diseased vegetation along with all debris, take corrective measures of filtration media if required. Flush underdrain clean-outs with a hose.
		Riprap Outlet Protection/Sediment Notch	Annually	Check for sediment buildup and structure damage.	Remove excess sediment and repair damage.
		Retaining Wall Under Drains	2 times per year	Check for sediment and debris accumulation buildup. Ensure viability.	Remove sediment & debris when required. Remove Invasive Species. Jet drainage lines as required.
		Winter Maintenance	Ongoing	Remove snow as directed.	Ongoing

		Post Winter Maintenance	Annually	Remove excess sand, gross solids, and repair vegetation and plantings	Parcel will be free of excess sand, litter/trash.
		Annual Report	1 time per year	Submit Annual Report to Dover Engineering Dept. and kept on file by the owner.	Report to be submitted on or before December 15th each year.

Inspection Check List: Page 3

The following drainage features will all require periodic inspections and maintenance based on this manual in addition to deep sump catch basins throughout with photo documentation:

Deep Sump Catch Basins #1-3

Drain Manhole

Conveyance Swales with Check Dams

Rain Garden #101 w/ Under-drains & orifice cap assembly, outlet structure, and emergency spillway.

Detention Pond #102 w/ outlet structure and stage discharge orifice system

Level Spreader

Sediment Notch toe of slope in wetland buffer

Retaining wall underdrain and cleanout

Inspection Notes:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Log Form

Quality Way – Dover, NH
JSR, LLC
17 Fosters Drive
Dover, NH 03820

BMP / System	Date Inspected	Inspector	Cleaning/Repair (List Items & Comments)	Repair Date	Performed By:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Deicing Log Form

Quality Way – Dover, NH
JSR, LLC
17 Fosters Drive
Dover, NH 03820

Date	Amount Applied	Performed By:	Date	Amount Applied	Performed By:

STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN CERTIFICATION

Owner	Responsibility
Name: JSR, LLC Robinson Whitten Address: 17 Fosters Drive Dover, NH 03820 Telephone: 978-979-2170 (cell) Email: rswhit10@gmail.com	The owner is responsible for the conduct of all construction activities, and ultimate compliance with all the provisions of the Stormwater System Operation & Maintenance Plan and the implementation of the Inspection and Maintenance Manual.

OWNER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: _____

Printed Name:

Representing:

Quality Way – Dover, NH
JSR, LLC
17 Fosters Drive
Dover, NH 03820

Robinson Whitten
978-979-2170 (cell)
rswhit10@gmail.com

Pavement Temp. (°F) and Trend (↑ ↓)	Weather Condition	Maintenance Actions	Application Rate (lbs/per 1000 sq.ft.)			
			Salt Prewetted/Pretreated with salt brine	Salt Prewetted/Pretreated with other blends	Dry salt	Winter sand
>30 ↑	Snow	Plow, treat intersections only				Not recommended
	Frz. Rain	Apply chemical				Not recommended
30 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				Not recommended
25 - 30 ↑	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				Not recommended
25 - 30 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
20 - 25 ↑	Snow or frz. Rain	Plow and Apply chemical				3.25 for frz. Rain
20 - 25 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
15 - 20 ↑	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
15 - 20 ↓	Snow or Frz. Rain	Plow and apply chemical				3.25 for frz. Rain
0 to 15 ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended		Not recommended	5.0 and spot-treat as needed
< 0	Snow	Plow, treat with blends, sand hazardous areas	Not recommended		Not recommended	5.0 and spot-treat as needed

Table 19. Application Rates for Deicing

These rates & table format are based on road application guidelines (Mn Snow & Ice Control Field Handbook, Manual 2005-1). Develop your own application rates by adjusting your current rates incrementally downward toward these guidelines. Where temperature categories overlap, select the rate most applicable to your situation.

Control of Invasive Plants

New Hampshire
Department of Agriculture,
Markets & Food
Douglas Cygan
603-271-3488
doug.cygan@agr.nh.gov

This guide lists garden plants and weeds which are already causing significant changes to natural areas in the Mid-Atlantic. **Measures for controlling each species are indicated by number, e.g., (3), in the text with a full explanation at the end of this article.** Click on the word Control: to jump to that section. Then click your "back" button to return to the text. Following each section suggested alternative plants are given. These alternatives are native plants, well adapted and needing little care, attractive to birds and butterflies, and an important part of the food web for our indigenous species.

INVASIVE TREES

NORWAY MAPLE (*Acer platanoides*) has large leaves similar to sugar maple. To easily confirm that the plant is Norway maple, break off a leaf and if it's truly Norway maple it will exude milky white sap. Fall foliage is yellow. (Exception: cultivars such as 'Crimson King,' which have red leaves in spring or summer, may have red autumn leaves.) The leaves turn color late, usually in late October after native trees have dropped their foliage. This tree suppresses growth of grass, garden plants, and forest understory beneath it, at least as far as the drip-line. Its wind-borne seeds can germinate and grow in deep shade. The presence of young Norway maples in our woodlands is increasing.

Control: (1); (7), (8), (9), or (10); (11) in mid-October to early November, before the leaves turn color.

TREE OF HEAVEN (*Ailanthus altissima*), is incredibly tough and can grow in the poorest conditions. It produces huge quantities of wind-borne seeds, grows rapidly, and secretes a toxin that kills other plants. Its long compound leaves, with 11-25 lance-shaped leaflets, smell like peanut butter or burnt coffee when crushed. Once established, this tree cannot be removed by mechanical means alone.

Control: (1) - seedlings only. Herbicide - use Garlon 3a (9) with no more than a 1" gap between cuts, or (10); plus (11) on re-growth. Or paint bottom 12" of bark with Garlon 4 Ultra (in February or March to protect surrounding plants). USE MAXIMUM STRENGTH SPECIFIED ON LABEL for all herbicide applications on Ailanthus. Glyphosate is not effective against Ailanthus.

INVASIVE SHRUBS

AUTUMN OLIVE (*Eleagnus umbellata*): Formerly recommended for erosion control and wildlife value, these have proved highly invasive and diminish the overall quality of wildlife habitat.

Control: (1) - up to 4" diameter trunks; (7) or (10) or bury stump. Do not mow.

MULTIFLORA ROSE (*Rosa multiflora*), formerly recommended for erosion control, hedges, and wildlife habitat, becomes a huge shrub that chokes out all other vegetation and is too dense for many species of birds to nest in, though a few favor it. In shade, it grows up trees like a vine. It is covered with white flowers in June. (Our native roses have fewer flowers, mostly pink.) Distinguish multiflora by its size, and by the presence of very hard, curved thorns, and a fringed edge to the leaf stalk.

Control: (1) - pull seedlings, dig out larger plants at least 6" from the crown and 6" down; (4) on extensive infestations; (10) or (11). It may remain green in winter, so herbicide may *applied when other plants are dormant. For foliar application, mix Rodeo with extra sticker-spreader, or use Roundup Sure Shot Foam on small plants.*

BUSH HONEYSUCKLES (*Lonicera spp.*), including Belle, Amur, Morrow's, and Tatarian honeysuckle. (In our region, assume that any honeysuckle is exotic unless it is a scarlet-flowered vine). Bush honeysuckles create denser shade than native shrubs, reducing plant diversity and eliminating nest sites for many forest interior species.
Control: (2) on ornamentals; (1); on shady sites only, brush cut in early spring and again in early fall (3); (4) during the growing season; (7); or (10) late in the growing season.

BLUNT-LEAVED PRIVET (*Ligustrum* obtusifolium). *Control:* (1); (7) or (10); or trim off all flowers. Do not cut back or mow.

BURNING BUSH, WINGED EUONYMUS (*Euonymus alatus*), identified by wide, corky wings on the branches.
Control: (1); (7) or (10); or trim off all flowers.

JAPANESE BARBERRY (*Berberis thunbergii*), and all cultivars and varieties.
Control: (1); (7) or (10); or trim off all flowers.

INVASIVE WOODY VINES

All of these vines shade out the shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle. DO NOT PLANT NEXT TO OPEN SPACE.

JAPANESE HONEYSUCKLE (*Lonicera japonica*), including Hall's honeysuckle, has gold-and-white flowers with a heavenly scent and sweet nectar in June. This is probably the familiar honeysuckle of your childhood. It is a rampant grower that spirals around trees, often strangling them.
Control: (1); (3); (10); (11) in fall or early spring when native vegetation is dormant. Plan to re-treat repeatedly.

ORIENTAL BITTERSWEET (*Celastrus orbiculatus*) has almost completely displaced American bittersweet (*C. scandens*). The Asian plant has its flowers and bright orange seed capsules in clusters all along the stem, while the native species bears them only at the branch tips.
Control: (1); keep ornamental plants cut back, remove all fruits as soon as they open, and bag or burn fruits; to eradicate use Garlon 3a (10).

JAPANESE KNOTWEED, MEXICAN BAMBOO (*Polygonum cuspidatum*) can grow in shade. The stems have knotty joints, reminiscent of bamboo. It grows 6-10' tall and has large pointed oval or triangular leaves.
Control: Cut at least 3 times each growing season and/or treat with Rodeo (10) or (11). In gardens, heavy mulch or dense shade may kill it.

INVASIVE HERBACEOUS PLANTS

GARLIC MUSTARD (*Alliaria petiolata*, *A. officinalis*), a white-flowered biennial with rough, scalloped leaves (kidney-, heart- or arrow-shaped), recognizable by the smell of garlic and taste of mustard when its leaves are crushed. (The odor fades by fall.)
Control: Pull before it flowers in spring (1), removing crown and roots. Tamp down soil afterwards. Once it has flowered, cut (2), being careful not to scatter seed, then bag and burn or send to the landfill. (11) may be appropriate in some settings.

JAPANESE STILT GRASS (*Microstegium vimineum*) can be identified by its lime-green color and a line of silvery hairs down the middle of the 2-3" long blade. It tolerates sun or dense shade and quickly invades areas left bare or disturbed by tilling or flooding. An annual grass, it builds up a large seed bank in the soil.

Control: Easily pulled in early to mid-summer (1) - be sure to pull before it goes to seed. If seeds have formed, bag and burn or send to landfill. Mowing weekly or when it has just begun to flower may prevent it from setting seed (3). Use glyphosate (11) or herbicidal soap (less effective) on large infestations. Follow up with (5) in spring.

MILE-A-MINUTE VINE, DEVIL'S TAIL TEARTHUMB (*Polygonum perfoliatum*), a rapidly growing annual vine with triangular leaves, barbed stems, and turquoise berries in August which are spread by birds. It quickly covers and shades out herbaceous plants.
Control: same as for stilt grass.

SPOTTED KNAPWEED (*Centaurea maculosa*), a biennial with thistle-like flowers.
Control: Do NOT pull (1) unless the plant is young and the ground is very soft - the tap root will break off and produce several new plants. Wear sturdy gloves. (2); (6); (10) or (11).

CONTROL MEASURES

(1) PULL seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs.
(2) DEADHEAD to prevent spread of seeds of invasive plants. Cut off seeds or fruits before they ripen. Bag, and burn or send to a landfill.
(3) MOW or CUTTING at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year.
(4) CONTROLLED BURNING during the spring, repeated over several years, allows native vegetation to compete more effectively with the invasive species. This requires a permit. Spot treatment with glyphosate in late fall can be used to make this method more effective.
(5) Use a CORN-BASED PRE-EMERGENCE HERBICIDE on annual weeds. This product is also an organic fertilizer, i.e., it can stimulate growth of existing plants, including weeds, so it is appropriate for lawns and gardens but may not be appropriate in woodlands.
(6) In lawns, SPOT TREAT with BROAD-LEAF WEEDKILLER. Good lawn-care practices (test soil; use lime and fertilizer only when soil test shows a need; mow high and frequently; leave clippings on lawn) reduce weed infestations.
(7) CUT DOWN the tree. Grind out the stump, or clip off re-growth.
(8) GIRDLE tree: cut through the bark and growing layer (cambium) all around the trunk, about 6" above the ground. Girdling is most effective in spring when the sap is rising, and from middle to late summer when the tree is sending down food to the roots. Clip off sucker sprouts.
(9) FRILL: Using a machete, hatchet or similar device, hack scars (several holes in larger trees) downward into the cambium layer, and squirt in glyphosate (or triclopyr if recommended in text above). Follow label directions for Injection and Frill Applications. This is most effective from middle to late summer. Clip off any sucker sprouts or treat with glyphosate.
(10) CUT STEM / CUT STUMP WITH GLYPHOSATE (or triclopyr if specified above). Follow label directions for Cut Stump Application. Clip off sucker sprouts or paint with glyphosate. See Note on Herbicides.
(11) FOLIAR SPRAY WITH GLYPHOSATE herbicide (see Note on Herbicides). Use a backpack or garden sprayer or mist blower, following label directions. Avoid overspray and/or dripping onto non-target plants, because glyphosate kills most plants except moss. If it rolls off waxy or grass-like foliage, use additional sticker-spreader. Deciduous trees, shrubs, and perennials move nutrients down to the roots in late summer. Glyphosate is particularly effective at this time and when plants have just gone out of flowering. Several invasive species retain their foliage after native plants have lost theirs, and resume growth earlier in spring than most natives. This allows you to treat them without harming the natives. However, the plant must be actively growing for the herbicide to work. Retreatments may be necessary the following year if suckering occurs or the plant hasn't been entirely killed.

NOTE ON HERBICIDES: It is highly recommended that small populations try to be controlled using non-chemical methods wherever feasible. However, for large infestations, and for a few plants specified above, herbicide use is essential. Apply herbicides carefully to avoid non-target plants, glyphosate is the least environmentally damaging herbicide in most cases. Add food coloring for visibility, and a soap-based sticker such as Cide-Kick. Glyphosate is ineffective on some

plants; for these, triclopyr (Garlon) may be indicated. When using herbicides, read the entire label and observe all precautions listed, including proper disposal. If in doubt, call your local Cooperative Extension Service.

Welcome to New Hampshire's Watershed Report Cards built from the 2024, 305(b)/303(d)

Each Watershed Report Card covers a single 12-digit Hydrologic Unit Code (HUC12), on average a 34 square mile area. Each Watershed Report Card has three components;

1. REPORT CARD - A one page card that summarizes the overall use support for Aquatic Life Integrity, Primary Contact (i.e. Swimming), and Secondary Contact (i.e. Boating) Designated Uses on every Assessment Unit ID (AUID) within the HUC12.
2. HUC 12 MAP - A map of the watershed with abbreviated labels for each AUID within the HUC12.
3. ASSESSMENT DETAILS - Anywhere from one to forty pages with the detailed assessment information for each and every AUID in the Report Card and Map.

How are the Surface Water Quality Assessment determinations made?

All readily available data with reliable Quality Assurance/Quality Control is used in the biennial surface water quality assessments. For a full understanding of how the Surface Water Quality Standards (Env-Wq 1700) are translated into surface water quality assessments we urge the reader to review the 2024 Consolidated Assessment and Listing Methodology (CALM).

Where can I find more advanced mapping resources?

GIS files are available by assessment cycle at the NHDES FTP site.

I'd like to see the more raw water quality data?

The web mapping tool allows you to download the data used in the assessment of the primary contact and aquatic life designated uses by clicking on the "Data Access Waterbody Data (Aquatic Life and Swimming Uses)" link for any assessment unit.

How are assessments coded in the report card?

Assessment outcomes are displayed on a color scale as well as an alpha numeric scale that provides additional distinctions for the designated use and parameter level assessments as outlined in the table below.

Category	Description	Severe	Poor	Likely Bad	No Data	Likely Good	Marginal	Good
		Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Not Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good
Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4A	Does not Meet Standards; TMDL* Completed	4A-P	4A-M or 4A-T					
Category 4B	Does not Meet Standards; Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
Category 4C	Does not Meet Standards; Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	Does not Meet Standards; TMDL* Needed	5-P	5-M or 5-T					
Category 5R	Does not Meet Standards; An EPA-approved alternative plan has been completed	5R-P	5R-M					

* TMDL stands for Total Maximum Daily Load studies

Watershed 305(b) Assessment Summary Report:

Assessment Cycle: 2024

HUC 12: 010600030608

HUC 12 Name: Lower Cocheco River

(Locator map on next page only applies to this HUC12)

Good	Meets water quality standards/thresholds by a relatively large margin.
Marginal	Meets water quality standards/thresholds but only marginally.
Likely Good	Limited data available, however, the data that is available suggests that the parameter is Potentially Attaining Standards (PAS).
No Current Data	Insufficient information to make an assessment decision.
Likely Bad	Limited data available, however, the data that is available suggests that the parameter is Potentially Not Supporting (PNS) water quality standards.
Poor	Not meeting water quality standards/thresholds. The impairment is marginal.
Severe	Not meeting water quality standards/thresholds. The impairment is more severe and causes poor water quality.

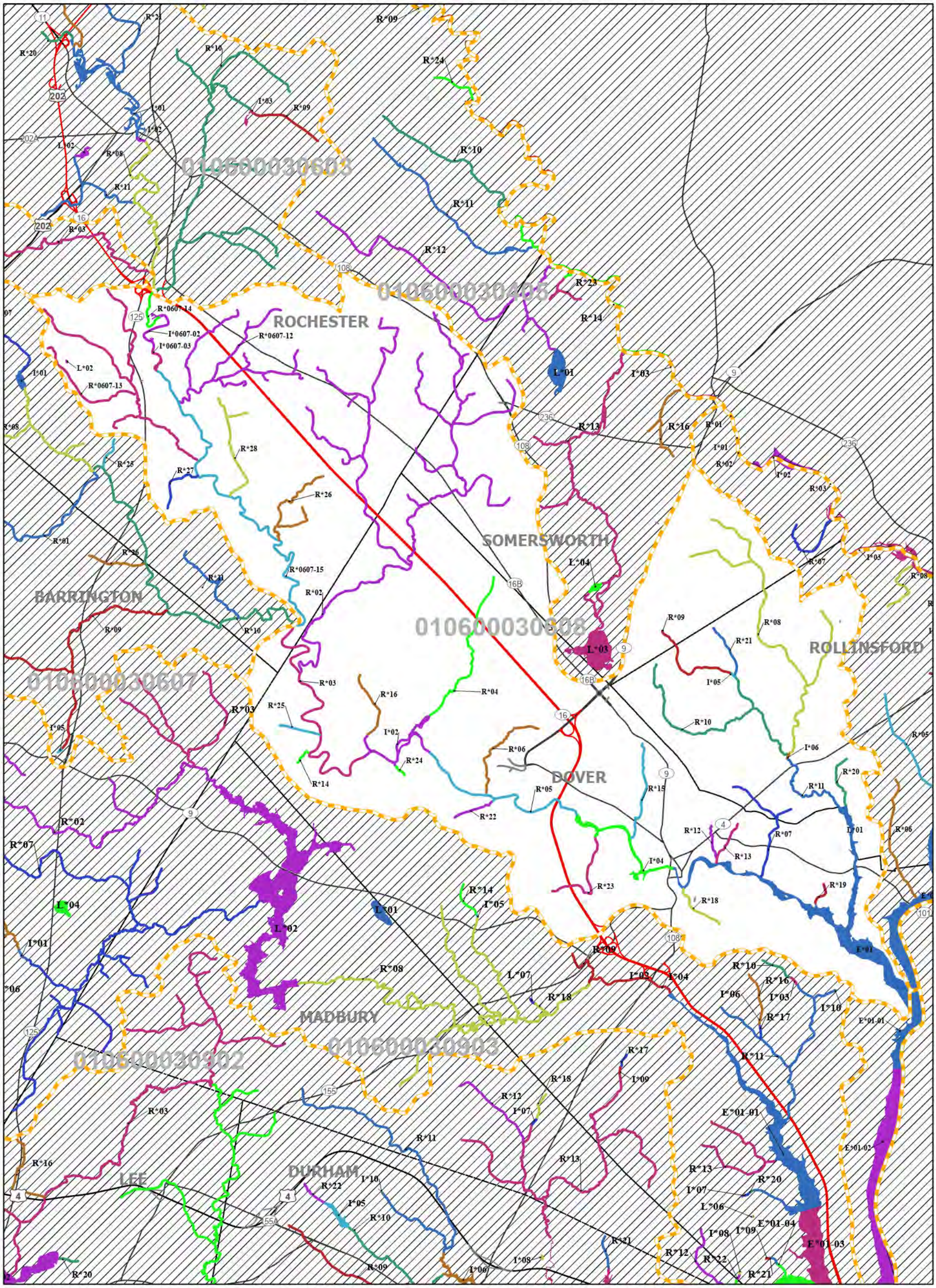





Assessment Unit ID	Map Label	Assessment Unit Name	Aquatic Life	Fish Consump.	Swimming	Boating
NHEST600030608-01	E*01	Cocheco River		5-M	5-P	4A-M
NHIMP600030607-02	I*0607-02	Cocheco River - Gonic Dam Pond	5-M	4A-M	4A-P	2-G
NHIMP600030607-03	I*0607-03	Cocheco River - Mill Pond Dam	3-PNS	4A-M	3-ND	3-ND
NHIMP600030608-02	I*02	Cocheco River - Watson Waldron Dam	5-M	4A-M	3-ND	3-ND
NHIMP600030608-04	I*04	Cocheco River - Central Ave Dam	5-M	4A-M	3-PAS	3-ND
NHIMP600030608-05	I*05	Conservation Pond Dam	3-ND	4A-M	3-ND	3-ND
NHIMP600030608-06	I*06	Fresh Creek - Farm Pond	3-ND	4A-M	3-ND	3-ND
NHLAK600030608-01	L*01	Fresh Creek Pond	5-M	4A-M	4A-P	3-ND
NHLAK600030608-02	L*02	Unnamed Pond	3-ND	4A-M	3-ND	3-ND
NHRIV600030607-12	R*0607-12	Unnamed Tributary - To Cocheco River	3-ND	4A-M	3-ND	3-ND
NHRIV600030607-13	R*0607-13	Unnamed Brook - To Cocheco River	3-ND	4A-M	3-ND	3-ND

NHRIV600030607-14	R*0607-14	Cocheco River	3-ND	4A-M	3-ND	3-ND
NHRIV600030607-15	R*0607-15	Cocheco River	5-M	4A-M	3-ND	3-ND
NHRIV600030608-02	R*02	Blackwater Brook-Clark Brook	3-ND	4A-M	4A-P	3-ND
NHRIV600030608-03	R*03	Cocheco River - Unnamed Brook	5-M	4A-M	4A-M	3-ND
NHRIV600030608-04	R*04	Reyners Brook	3-ND	4A-M	4A-P	3-ND
NHRIV600030608-05	R*05	Cocheco River	5-M	4A-M	4A-M	3-ND
NHRIV600030608-06	R*06	Indian Brook	5-P	4A-M	4A-P	3-ND
NHRIV600030608-07	R*07	Emerson Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-08	R*08	Fresh Creek - Twombly Brook	5-P	4A-M	4A-M	3-ND
NHRIV600030608-09	R*09	Unnamed Brook - Rollins Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-10	R*10	Rollins Brook	5-P	4A-M	4A-P	3-ND
NHRIV600030608-11	R*11	Fresh Creek	3-PNS	4A-M	4A-P	4A-M
NHRIV600030608-12	R*12	Unnamed Tributary - To Cocheco River (Dover (Downstream Of Portland Ave))	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-13	R*13	Unnamed Tributary - To Cocheco River - (Dover (Upstream Of Atlantic Ave))	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-14	R*14	Unnamed Trib. To Cocheco River, Dover (From Landfill)	5-M	4A-M	3-ND	3-ND
NHRIV600030608-15	R*15	Berry Brook	5-M	4A-M	4A-P	3-ND
NHRIV600030608-16	R*16	Jackson Brook	3-ND	4A-M	4A-P	3-ND
NHRIV600030608-18	R*18	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-19	R*19	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-20	R*20	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-21	R*21	Unnamed Brook - To Rollins Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-22	R*22	Horn Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-23	R*23	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-24	R*24	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-25	R*25	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-26	R*26	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-27	R*27	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030608-28	R*28	Unnamed Brook	3-ND	4A-M	3-ND	3-ND

AUIDs For HUC12: 010600030608 - Lower Cocheco River



Assessment Unit IDs are derived from the HUC12 they reside within. The labels have been shortened on this map for presentation purposes.
Example: the Label "L*03" in HUC12 = 010700060201 represents AUID = "NHLAK700060201-03"
In rare cases where an AUID extends beyond the boundary of a single HUC12, additional portions of the end of the HUC 12 number have also been replaced.

S:\WD-Watershed\WQ_Planning\305b_303d\2024\Report_Cards\HUC12_maps

Assessment Unit ID: NHRIV600030608-05
Assessment Unit Name: Cocheco River
Town(s) Primary Town is Listed First: Dover

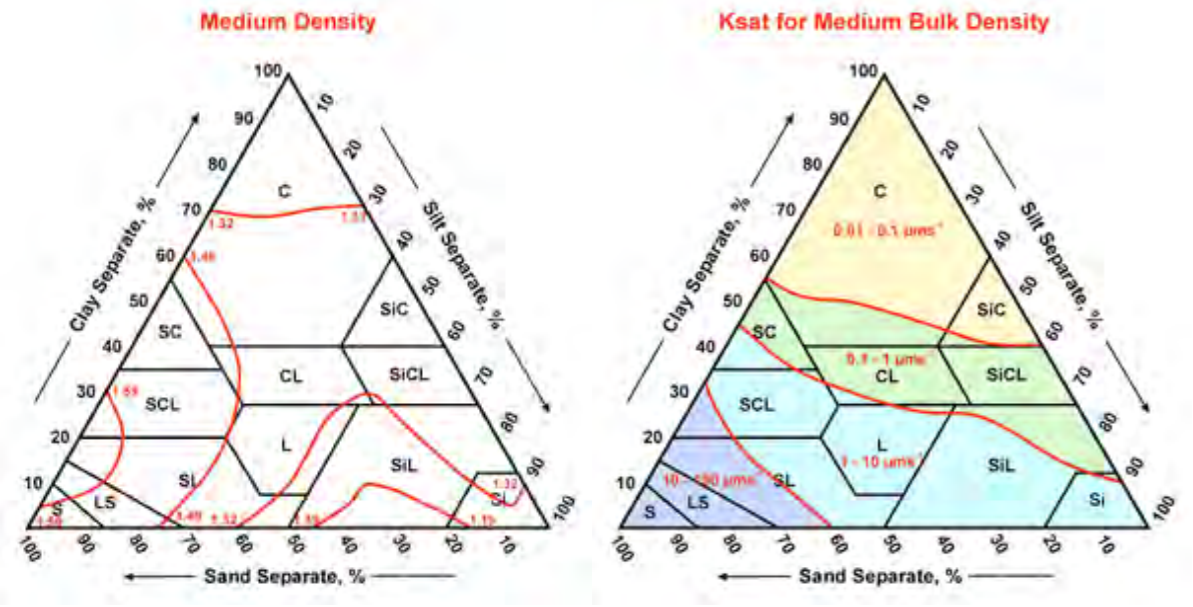
Size: 2.06 MILES
Assessment Unit Category: 5-M
Beach: N

2024, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Designated Use Description	Desig. Use Category	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category	TMDL Priority
Aquatic Life Integrity	5-M	ALUMINUM	N	1999	1999	3-ND	
		AMMONIA (TOTAL)	N	2005	2000	3-ND	
		ARSENIC	N	2004	N/A	3-ND	
		CADMIUM	N	1999	1999	3-ND	
		CHLORIDE	N	2013	N/A	3-ND	
		COPPER	N	1999	N/A	3-ND	
		DISSOLVED OXYGEN SATURATION	N	2013	N/A	3-ND	
		IRON	N	2004	N/A	3-ND	
		LEAD	N	1999	1999	3-ND	
		OXYGEN, DISSOLVED	N	2013	N/A	3-ND	
		PH	N	2013	2009	5-M	LOW
		PHOSPHORUS (TOTAL)	N	2013	NLV	3-ND	
		TURBIDITY	N	2013	N/A	3-ND	
		ZINC	N	1999	N/A	3-ND	
Fish Consumption	4A-M	ARSENIC	N	2004	2004	3-ND	
		COPPER	N	1999	N/A	3-ND	

Good	Marginal	Likely Good	No Current Data	Likely Bad	Poor	Severe
Meets water quality standards/thresholds by a relatively large margin.	Meets water quality standards/thresholds but only marginally.	Limited data available. The data that is available suggests that the parameter is Potentially Attaining Standards (PAS)	Insufficient information to make an assessment decision.	Limited data available The data that is available suggests that the parameter is Potentially Not Supporting (PNS) water quality standards.	Not meeting water quality standards/thresholds. The impairment is marginal.	Not meeting water quality standards/thresholds The impairment is more severe and causes poor water quality.

K_{sat} VALUES
FOR
NEW HAMPSHIRE SOILS
(Including Hydrologic and DES Soil Lot Sizing Groups)



From: Guide for Estimating Ksat from Soil Properties (**Exhibit 618-9**). (http://soils.usda.gov/technical/handbook/contents/part618ex.html)

Sponsored by the Society of Soil Scientists of Northern New England
SSSNNE Special Publication No. 5
September, 2009

K_{sat} VALUES FOR NEW HAMPSHIRE SOILS

ABOUT THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND

The Society of Soil Scientists of Northern New England (SSSNNE) is a non-profit professional organization of soil scientists, both in the private and public sectors, which is dedicated to the advancement of soil science. The Society fosters the profession of soil classification, mapping and interpretation, and encourages the dissemination of information concerning soil science. With the intent of contributing to the general human welfare, the Society seeks to educate the public on the wise use of soils and the associated natural resources.

INTRODUCTION

The publication "K_{sat} Values for New Hampshire Soils" is designed to assist soil scientists, engineers, and other professionals by assembling tables of existing data for all soil series currently on the state soil legend with regard to K_{sat} values and hydrologic groupings (Hyd.Grp.). The need for this information has become more important since the adoption by the New Hampshire Department of Environmental Services of the revised Alteration of Terrain rules for stormwater management. Additional information has been provided for each soil series with regard to landform, temperature regime (Temp.), soil textures, NHDES Soil Lot Size Groupings (Group), whether the soil is a Spodosol (Spodosol?) and other information which will be valuable to a variety of soil information users.

The data for each soil series has been sorted 3 ways for ease of searching:

Table A-Sorted by Numerical Legend
Table B-Sorted by Soil Series Name
Table C-Sorted by NHDES Soil Group for Establishing Lot Size

The report represents cumulative efforts by private soil scientists and NHDES staff with assistance from the USDA Natural Resource Conservation Service.

Comments or inquires on the information in this publication may be directed to the Board of Directors at the following address:

Society of Soil Scientists
of Northern New England
PO Box 76
Durham, NH 03824

SATURATED HYDRAULIC CONDUCTIVITY (K_{SAT})

K_{sat} refers to the ease with which pores in a saturated soil transmit water. The estimates presented here are expressed in terms of inches per hour (NRCS official data presents K_{sat} in both micrometers per second and inches per hour). K_{sat} values are based on soil characteristics observed in the field, particularly structure, consistence, porosity, and texture. (USDA NRCS, Web Soil Survey)

Saturated flow occurs when the soil water pressure is positive; that is, when the soil matric potential is zero (satiated wet condition). In most soils this situation takes place when about 95 percent of the total pore space is filled with water. The remaining 5 percent is filled with entrapped air. Saturated hydraulic conductivity cannot be used to describe water movement under unsaturated conditions. (Soil Survey Manual, 1993)

It is commonly known that soil features (and thus data) for a certain soil series name may be slightly different from one county soil survey to the next and the range in characteristics (via the Typical Pedon) may be slightly different. For example – a Marlow soil (series) in Carroll County may have a higher sand content in its B horizon as opposed to a Marlow soil (series) in Coos County; resulting in a slightly different Ksat range for the B horizon.

The K_{sat} data for this publication was obtained from the USDA-NRCS Soil Data Mart using the Typical Pedon from the county that best reflected the soil and/or had the most acres of that soil. This data is presented in B and C horizons only as it is assumed that the topsoil (A or A_p horizon) will be removed in typical construction practices.

References:

Web Soil Survey. *Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.*

Soil Data Mart. *http://soildatamart.nrcs.usda.gov/.*

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.*

HYDROLOGIC SOIL GROUPS

Hydrologic group is a group of soils having the same runoff potential under similar storm and cover conditions.

Hydrologic groups are used in equations that estimate runoff from rainfall. These estimates are needed for solving hydrologic problems that arise in planning stormwater management, watershed protection, and flood-prevention projects and for planning or designing structures for the use, control, and disposal of water.

Classifications assigned to soils were based on the use of rainfall-runoff data from small watersheds and infiltrometer plots. From these data, relationships between soil properties and hydrologic groups were established. Assignment of soils to hydrologic groups is based on the relationship between soil properties and hydrologic groups. Wetness characteristics, permeability after prolonged wetting, and depth to very slowly permeable layers are properties that assist in estimating hydrologic groups. Minimum annual steady ponded infiltration rate for a bare ground surface determines the hydrologic soil groups.

Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. (The influence of ground cover is treated independently, not in hydrologic soil groups.).

The soils in the United States are placed into four groups, A, B, C, and D, and three dual classes, *A/D, B/D,* and *C/D.* In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

Group A- Saturated hydraulic conductivity is very high or in the upper half of high and internal free water occurrence is very deep. Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Some soils having loamy sand, sandy loam, loam or silt loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group A are as follows. The saturated hydraulic conductivity of all soil layers exceeds 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer are in group A if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 10 micrometers per second (1.42 inches per hour).

Group B- Saturated hydraulic conductivity is in the lower half of high or in the upper half of moderately high and free water occurrence is deep or very deep. Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group B are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] ranges from 10.0 micrometers per second (1.42 inches per hour) to 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer or water table are in group B if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 4.0 micrometers per second (0.57 inches per hour) but is less than 10.0 micrometers per second (1.42 inches per hour).

Group C- Saturated hydraulic conductivity is in the lower half of moderately high or in the upper half of moderately low and internal free water occurrence is deeper than shallow. Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay and less than 50 percent sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group C are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] is between 1.0 micrometers per second (0.14 inches per hour) and 10.0 micrometers per second (1.42 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a restriction or water table are in group C if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 0.40 micrometers per second (0.06 inches per hour) but is less than 4.0 micrometers per second (0.57 inches per hour). .

Group D- Saturated hydraulic conductivity is below the upper half of moderately low, and/or internal free water occurrence is shallow or very shallow and transitory through permanent. Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas, they also have high shrink-swell potential. All soils with a depth to a water impermeable layer less than 50 centimeters [20 inches] and all soils with a water table within 60 centimeters [24 inches] of the surface are in this group, although some may have a dual classification, as described in the next section, if they can be adequately drained. The limits on the physical diagnostic characteristics of group D are as follows. For soils with a water impermeable layer at a depth between 50 centimeters and 100 centimeters [20 and 40 inches], the saturated hydraulic conductivity in the least transmissive soil layer is less than or equal to 1.0 micrometers per second (0.14 inches per hour). For soils that are deeper than 100 centimeters [40 inches] to a restriction or water table, the saturated hydraulic

conductivity of all soil layers within 100 centimeters [40 inches] of the surface is less than or equal to 0.40 micrometers per second (0.06 inches per hour).

Dual hydrologic soil groups-Certain wet soils are placed in group D based solely on the presence of a water table within 60 centimeters [24 inches] of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. If these soils can be adequately drained, then they are assigned to dual hydrologic soil groups *(A/D, B/D,* and *C/D)* based on their saturated hydraulic conductivity and the water table depth when drained. The first letter applies to the drained condition and the second to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high water table is kept at least 60 centimeters [24 inches] below the surface in a soil where it would be higher in a natural state.

References:

National Engineering Handbook, Natural Resource Conservation Service, U.S. Department of Agriculture.

Soil Data Mart. *http://soildatamart.nrcs.usda.gov/*.

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 18.*

TABLE A

NUMERICAL LEGEND

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Lim	3	0.6	2.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Hadley	8	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Merrimac	10	2.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Gloucester	11	6.0	20.0	6.00	20.0	A	1	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Hinckley	12	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Colton, gravelly	21	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Colton	22	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Masardis	23	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Agawam	24	6.0	20.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Groveton	27	0.6	2.0	0.60	6.0	B	2	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Madawaska	28	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Hartland	31	0.6	2.0	0.20	2.0	B	2	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Boxford	32	0.1	0.2	0.00	0.2	C	3	Silt and Clay Deposits	mesic	fine	no	silty clay loam
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Champlain	35	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	gravelly sand	no	
Adams	36	6.0	20.0	20.00	99.0	A	1	Outwash and Stream Terraces	frigid	sandy	yes	
Melrose	37	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Eldridge	38	6.0	20.0	0.06	0.6	C	3	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Millis	39					C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Canton	42	2.0	6.0	6.00	20.0	B	2	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Montauk	44	0.6	6.0	0.06	0.6	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Henniker	46	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Madawaska, aquentic	48	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Hermon	55	2.0	20.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Becket	56	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Charlton	62	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Berkshire	72	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Marlow	76	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Hollis	86	0.6	6.0	0.60	6.0	C/D	4	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Chatfield	89	0.6	6.0	0.60	6.0	B	4	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Hogback	91	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Lyman	92	2.0	6.0	2.00	6.0	A/D	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Sunday	102	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Winooski	103	0.6	6.0	0.60	6.0	B	3	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Hadley	108	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand, occ flooded
Limerick	109	0.6	2.0	0.60	2.0	C	5	Flood Plain (Bottom Land)	mesic	silty	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Finch	116					C	3	Outwash and Stream Terraces	frigid	sandy	yes	cemented (ortstein)
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand
Telos	123	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Chesuncook	126	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Allagash	127	0.6	2.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy	yes	loamy over sandy
Elliottsville	128	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	20 to 40 in. deep
Hitchcock	130	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam to silt in C
Burnham	131	0.2	6.0	0.02	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over silt
Dartmouth	132	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	thin strata silty clay loam
Monson	133	0.6	2.0	0.60	2.0	D	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	less than 20 in. deep
Maybid	134	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	mesic	fine	no	silt over clay
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Monadnock	142	0.6	2.0	2.00	6.0	B	2	Loose till, sandy textures	frigid	loamy over sandy, sandy-skeletal	yes	gravelly loamy sand in C
Acton	146	2.0	20.0	2.00	20.0	B	3	Loose till, sandy textures	mesic	sandy-skeletal	no	cobbly loamy sand
Vassalboro	150					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Canterbury	166	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Sunapee	168	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	
Waskish	195					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Sunday	202	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Fryeburg	208	0.6	2.0	2.00	6.0	B	2	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Charles	209	0.6	100.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	silty	no	
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Boscawen	220	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	no	loamy cap
Bemis	224	0.6	0.2	0.00	0.2	C	5	Firm, platy, loamy till	cryic	loamy	no	
Bice	226	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	no	sandy loam
Lanesboro	228	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	channery silt loam in Cd
Poocham	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Buxton	232	0.1	0.6	0.00	0.2	C	3	Silt and Clay Deposits	frigid	fine	no	silty clay
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Biddeford	234	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	frigid	fine	no	organic over clay
Buckland	237	0.6	2.0	0.06	0.2	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Elmridge	238	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	loamy over clayey	no	
Brayton	240	0.6	2.0	0.06	0.6	C	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Lyme	246	0.6	6.0	0.60	6.0	C	5	Loose till, sandy textures	frigid	loamy	no	
Millsite	251	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	no	20 to 40 in. deep
Macomber	252	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Lombard	259	0.6	6.0	2.00	20.0	C/D	2	Weathered bedrock, phyllite	frigid	loamy	no	very channery
Sunapee var	269	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	frigid dystrudept
Chatfield Var.	289	0.6	6.0	0.60	6.0	B	3	Loose till, bedrock	mesic	loamy	no	mwd to swpd
Greenwood	295					A/D	6	Organic Materials - Freshwater	frigid	hemic	no	deep organic
Catden	296					A/D	6	Organic Materials - Freshwater	mesic	sapric	no	deep organic
Lovewell	307	0.6	2.0	0.60	2.0	B	3	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Deerfield	313	6.0	20.0	20.00	100.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	single grain in C

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Mashpee	315	6.0	20.0	6.00	20.0	B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Bernardston	330	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Elmwood	338	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Cardigan	357	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	20 to 40 in. deep
Kearsarge	359	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	less than 20 in. deep
Dutchess	366	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	mesic	loamy	no	very channery
Dixfield	378	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Timakwa	393			6.00	100.0	D	6	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Chocorua	395			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Ipswich	397					D	6	Tidal Flat	mesic	hemic/sapric	no	deep organic
Suncook	402	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Metallak	404	6.0	100.0	6.00	100.0	B	3	Flood Plain (Bottom Land)	frigid	loamy over sandy	no	sandy or sandy-skeletal
Medomak	406	0.6	2.0	0.60	2.0	D	6	Flood Plain (Bottom Land)	frigid	silty	no	organic over silt
Haven	410	0.6	2.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Duane	413	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	cemented (ortstein)
Moosilauke	414	6.0	20.0	6.00	20.0	C	5	Loose till, sandy textures	frigid	sandy	no	
Grange	433	0.6	2.0	0.60	2.0	C	5	Outwash and Stream Terraces	frigid	co. loamy over sandy (skeletal)	no	
Swanton	438	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Chichester	442	0.6	2.0	2.00	6.0	B		Loose till, sandy textures	frigid	loamy over sandy	no	loamy over loamy sand
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Metacomet	458	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Gilmanton	478	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	fine sandy loam in Cd
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Abenaki	501	0.6	2.0	6.00	99.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy-skeletal	no	loamy over gravelly
Cohas	505	0.6	2.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	co. loamy over sandy (skeletal)	no	
Hoosic	510	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	slate, loamy cap
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Leicester	514	0.6	6.0	0.60	20.0	C	5	Loose till, loamy textures	mesic	loamy	no	
Au Gres	516					B	5	Outwash and Stream Terraces	frigid	sandy	yes	single grain, loose
Machias	520	2.0	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy or sandy-skeletal	yes	strata sand/gravel in C
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Caesar	526	20.0	100.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	coarse sand	no	
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Belgrade	532	0.6	2.0	0.06	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	strata of fine sand
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Binghamville	534	0.2	2.0	0.06	0.2	D	5	Terraces and glacial lake plains	mesic	silty	no	
Suffield	536	0.6	2.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Walpole	546	2.0	6.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Howland	566	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	silt loam, platy in Cd
Monarda	569	0.2	2.0	0.02	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Bangor	572	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Dixmont	578	0.6	2.0	0.60	2.0	C	3	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam, platy in C
Cabot	589	0.6	2.0	0.06	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Westbrook	597			0.00	2.0	D	6	Tidal Flat	mesic	loamy	no	organic over loam
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Croghan	613	20.0	100.0	20.00	100.0	B	3	Outwash and Stream Terraces	frigid	sandy	yes	single grain in C
Kinsman	614	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Salmon	630	0.6	2.0	0.60	2.0	B	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Canaan	663	2.0	20.0	2.00	20.0	C	4	Weathered Bedrock Till	frigid	loamy-skeletal	yes	less than 20 in. deep
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Surplus	669	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Glebe	671	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	cryic	loamy	yes	20 to 40 in. deep
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Ricker	674	2.0	6.0	2.00	6.0	A	4	Organic over bedrock (up to 4" of mineral)	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Houghtonville	795	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	cobbly fine sandy loam
Matunuck	797			20.00	100.0	D	6	Tidal Flat	mesic	sandy	no	organic over sand
Meadowsedge	894					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Bucksport	895					D	6	Organic Materials - Freshwater	frigid	sapric	no	deep organic
Colonel	927	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	loam in Cd
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Wonsqueak	995			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Glover	NA	0.6	2.0	0.60	2	D	4	Friable till, silty, schist & phyllite	frigid	loamy	no	less than 20 in. deep

no longer recognized
organic materials

TABLE B

SOIL SERIES

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Abenaki	501	0.6	2.0	6.00	99.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy-skeletal	no	loamy over gravelly
Acton	146	2.0	20.0	2.00	20.0	B	3	Loose till, sandy textures	mesic	sandy-skeletal	no	cobbly loamy sand
Adams	36	6.0	20.0	20.00	99.0	A	1	Outwash and Stream Terraces	frigid	sandy	yes	
Agawam	24	6.0	20.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Allagash	127	0.6	2.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy	yes	loamy over sandy
Au Gres	516					B	5	Outwash and Stream Terraces	frigid	sandy	yes	single grain, loose
Bangor	572	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam
Becket	56	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Belgrade	532	0.6	2.0	0.06	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	strata of fine sand
Bemis	224	0.6	0.2	0.00	0.2	C	5	Firm, platy, loamy till	cryic	loamy	no	
Berkshire	72	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Bernardston	330	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Bice	226	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	no	sandy loam
Biddeford	234	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	frigid	fine	no	organic over clay
Binghamville	534	0.2	2.0	0.06	0.2	D	5	Terraces and glacial lake plains	mesic	silty	no	
Boscawen	220	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	no	loamy cap
Boxford	32	0.1	0.2	0.00	0.2	C	3	Silt and Clay Deposits	mesic	fine	no	silty clay loam
Brayton	240	0.6	2.0	0.06	0.6	C	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Buckland	237	0.6	2.0	0.06	0.2	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Bucksport	895					D	6	Organic Materials - Freshwater	frigid	sapric	no	deep organic
Burnham	131	0.2	6.0	0.02	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over silt
Buxton	232	0.1	0.6	0.00	0.2	C	3	Silt and Clay Deposits	frigid	fine	no	silty clay
Cabot	589	0.6	2.0	0.06	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Caesar	526	20.0	100.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	coarse sand	no	
Canaan	663	2.0	20.0	2.00	20.0	C	4	Weathered Bedrock Till	frigid	loamy-skeletal	yes	less than 20 in. deep
Canterbury	166	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Canton	42	2.0	6.0	6.00	20.0	B	2	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Cardigan	357	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	20 to 40 in. deep
Catden	296					A/D	6	Organic Materials - Freshwater	mesic	sapric	no	deep organic
Champlain	35	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	gravelly sand	no	
Charles	209	0.6	100.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	silty	no	
Charlton	62	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Chatfield	89	0.6	6.0	0.60	6.0	B	4	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Chatfield Var.	289	0.6	6.0	0.60	6.0	B	3	Loose till, bedrock	mesic	loamy	no	mwd to swpd
Chesuncook	126	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Chichester	442	0.6	2.0	2.00	6.0	B		Loose till, sandy textures	frigid	loamy over sandy	no	loamy over loamy sand
Chocorua	395			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Cohas	505	0.6	2.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	co. loamy over sandy (skeletal)	no	
Colonel	927	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	loam in Cd
Colton	22	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Colton, gravelly	21	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Croghan	613	20.0	100.0	20.00	100.0	B	3	Outwash and Stream Terraces	frigid	sandy	yes	single grain in C
Dartmouth	132	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	thin strata silty clay loam
Deerfield	313	6.0	20.0	20.00	100.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	single grain in C
Dixfield	378	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Dixmont	578	0.6	2.0	0.60	2.0	C	3	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam, platy in C
Duane	413	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	cemented (ortstein)
Dutchess	366	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	mesic	loamy	no	very channery
Eldridge	38	6.0	20.0	0.06	0.6	C	3	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Elliottsville	128	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	20 to 40 in. deep
Elmridge	238	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	loamy over clayey	no	
Elmwood	338	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	
Finch	116					C	3	Outwash and Stream Terraces	frigid	sandy	yes	cemented (ortstein)

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Fryeburg	208	0.6	2.0	2.00	6.0	B	2	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Gilmanton	478	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	fine sandy loam in Cd
Glebe	671	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	cryic	loamy	yes	20 to 40 in. deep
Gloucester	11	6.0	20.0	6.00	20.0	A	1	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Glover	NA	0.6	2.0	0.60	2	D	4	Friable till, silty, schist & phyllite	frigid	loamy	no	less than 20 in. deep
Grange	433	0.6	2.0	0.60	2.0	C	5	Outwash and Stream Terraces	frigid	co. loamy over sandy (skeletal)	no	
Greenwood	295					A/D	6	Organic Materials - Freshwater	frigid	hemic	no	deep organic
Groveton	27	0.6	2.0	0.60	6.0	B	2	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Hadley	8	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Hadley	108	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand, occ flooded
Hartland	31	0.6	2.0	0.20	2.0	B	2	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Haven	410	0.6	2.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Henniker	46	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Hermon	55	2.0	20.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Hinckley	12	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Hitchcock	130	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam to silt in C
Hogback	91	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Hollis	86	0.6	6.0	0.60	6.0	C/D	4	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Hoosic	510	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	slate, loamy cap
Houghtonville	795	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	cobbly fine sandy loam
Howland	566	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	silt loam, platy in Cd
Ipswich	397					D	6	Tidal Flat	mesic	hemic/sapric	no	deep organic
Kearsarge	359	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	less than 20 in. deep
Kinsman	614	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Lanesboro	228	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	channery silt loam in Cd
Leicester	514	0.6	6.0	0.60	20.0	C	5	Loose till, loamy textures	mesic	loamy	no	
Lim	3	0.6	2.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Limerick	109	0.6	2.0	0.60	2.0	C	5	Flood Plain (Bottom Land)	mesic	silty	no	
Lombard	259	0.6	6.0	2.00	20.0	C/D	2	Weathered bedrock, phyllite	frigid	loamy	no	very channery
Lovewell	307	0.6	2.0	0.60	2.0	B	3	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Lyman	92	2.0	6.0	2.00	6.0	A/D	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Lyme	246	0.6	6.0	0.60	6.0	C	5	Loose till, sandy textures	frigid	loamy	no	
Machias	520	2.0	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy or sandy-skeletal	yes	strata sand/gravel in C
Macomber	252	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Madawaska	28	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Madawaska, aquer	48	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Marlow	76	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Masardis	23	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Mashpee	315	6.0	20.0	6.00	20.0	B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Matunuck	797			20.00	100.0	D	6	Tidal Flat	mesic	sandy	no	organic over sand
Maybid	134	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	mesic	fine	no	silt over clay
Meadowsedge	894					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Medomak	406	0.6	2.0	0.60	2.0	D	6	Flood Plain (Bottom Land)	frigid	silty	no	organic over silt
Melrose	37	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Merrimac	10	2.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Metacomet	458	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Metallak	404	6.0	100.0	6.00	100.0	B	3	Flood Plain (Bottom Land)	frigid	loamy over sandy	no	sandy or sandy-skeletal
Millis	39					C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Millsite	251	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	no	20 to 40 in. deep
Monadnock	142	0.6	2.0	2.00	6.0	B	2	Loose till, sandy textures	frigid	oamy over sandy, sandy-skeleta	yes	gravelly loamy sand in C
Monarda	569	0.2	2.0	0.02	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Monson	133	0.6	2.0	0.60	2.0	D	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	less than 20 in. deep
Montauk	44	0.6	6.0	0.06	0.6	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Moosilauke	414	6.0	20.0	6.00	20.0	C	5	Loose till, sandy textures	frigid	sandy	no	

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Poocham	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Ricker	674	2.0	6.0	2.00	6.0	A	4	rganic over bedrock (up to 4" of minera	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Salmon	630	0.6	2.0	0.60	2.0	B	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Suffield	536	0.6	2.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Sunapee	168	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	
Sunapee var	269	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	frigid dystrudept
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Suncook	402	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Sunday	102	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Sunday	202	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Surplus	669	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Swanton	438	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Telos	123	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Timakwa	393			6.00	100.0	D	6	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Vassalboro	150					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Walpole	546	2.0	6.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Waskish	195					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Westbrook	597			0.00	2.0	D	6	Tidal Flat	mesic	loamy	no	organic over loam
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Winooski	103	0.6	6.0	0.60	6.0	B	3	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Wonsqueak	995			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep

no longer recognized
organic materials

TABLE C

NHDES SOIL GROUPINGS

Soil Series	number	NHDES Soil Group	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Adams	36	1	6.0	20.0	20.00	99.0	A	Outwash and Stream Terraces	frigid	sandy	yes	
Boscawen	220	1	6.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	frigid	sandy-skeletal	no	loamy cap
Caesar	526	1	20.0	100.0	20.00	100.0	A	Outwash and Stream Terraces	mesic	coarse sand	no	
Champlain	35	1	6.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	frigid	gravelly sand	no	
Colton	22	1	6.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Colton, gravelly	21	1	6.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Gloucester	11	1	6.0	20.0	6.00	20.0	A	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Hermon	55	1	2.0	20.0	6.00	20.0	A	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Hinckley	12	1	6.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Hoosic	510	1	2.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	mesic	sandy-skeletal	no	slate, loamy cap
Masardis	23	1	6.0	20.0	6.00	20.0	A	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Merrimac	10	1	2.0	20.0	6.00	20.0	A	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Quonset	310	1	2.0	20.0	20.00	100.0	A	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Redstone	665	1	2.0	6.0	6.00	20.0	A	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Success	154	1	2.0	6.0	6.00	20.0	A	Sandy Till	frigid	sandy-skeletal	yes	cemented
Suncook	2	1	6.0	20.0	6.00	20.0	A	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Suncook	402	1	6.0	20.0	6.00	20.0	A	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Sunday	102	1	6.0	20.0	6.00	20.0	A	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Sunday	202	1	6.0	20.0	6.00	20.0	A	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Warwick	210	1	2.0	6.0	20.00	100.0	A	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Windsor	26	1	6.0	20.0	6.00	20.0	A	Outwash and Stream Terraces	mesic	sandy	no	
Abenaki	501	2	0.6	2.0	6.00	99.0	B	Outwash and Stream Terraces	frigid	loamy over sandy-skeletal	no	loamy over gravelly
Agawam	24	2	6.0	20.0	20.00	100.0	B	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Allagash	127	2	0.6	2.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	loamy over sandy	yes	loamy over sandy
Bangor	572	2	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam
Berkshire	72	2	0.6	6.0	0.60	6.0	B	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Bice	226	2	0.6	6.0	0.60	6.0	B	Loose till, loamy textures	frigid	loamy	no	sandy loam
Canton	42	2	2.0	6.0	6.00	20.0	B	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Charlton	62	2	0.6	6.0	0.60	6.0	B	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Dutchess	366	2	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	mesic	loamy	no	very channery
Fryeburg	208	2	0.6	2.0	2.00	6.0	B	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Groveton	27	2	0.6	2.0	0.60	6.0	B	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Hadley	8	2	0.6	2.0	0.60	6.0	B	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Hadley	108	2	0.6	2.0	0.60	6.0	B	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand, occ flooded
Hartland	31	2	0.6	2.0	0.20	2.0	B	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Haven	410	2	0.6	2.0	20.00	100.0	B	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Houghtonville	795	2	0.6	6.0	0.60	6.0	B	Loose till, loamy textures	frigid	loamy	yes	cobbly fine sandy loam
Lombard	259	2	0.6	6.0	2.00	20.0	C/D	Weathered bedrock, phyllite	frigid	loamy	no	very channery
Monadnock	142	2	0.6	2.0	2.00	6.0	B	Loose till, sandy textures	frigid	oamy over sandy, sandy-skeleta	yes	gravelly loamy sand in C
Occum	1	2	0.6	2.0	6.00	20.0	B	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Ondawa	101	2	0.6	6.0	6.00	20.0	B	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Ondawa	201	2	0.6	6.0	6.00	20.0	B	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Salmon	630	2	0.6	2.0	0.60	2.0	B	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Stetson	523	2	0.6	6.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Unadilla	30	2	0.6	2.0	2.00	20.0	B	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Chichester	442	2	0.6	2.0	2.00	6.0	B	Loose till, sandy textures	frigid	loamy over sandy	no	loamy over loamy sand
Acton	146	3	2.0	20.0	2.00	20.0	B	Loose till, sandy textures	mesic	sandy-skeletal	no	cobbly loamy sand
Becket	56	3	0.6	2.0	0.06	0.6	C	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Belgrade	532	3	0.6	2.0	0.06	2.0	B	Terraces and glacial lake plains	mesic	silty	no	strata of fine sand
Bernardston	330	3	0.6	2.0	0.06	0.2	C	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Boxford	32	3	0.1	0.2	0.00	0.2	C	Silt and Clay Deposits	mesic	fine	no	silty clay loam

Soil Series	number	NHDES Soil Group	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Buckland	237	3	0.6	2.0	0.06	0.2	C	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Buxton	232	3	0.1	0.6	0.00	0.2	C	Silt and Clay Deposits	frigid	fine	no	silty clay
Canterbury	166	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Chatfield Var.	289	3	0.6	6.0	0.60	6.0	B	Loose till, bedrock	mesic	loamy	no	mwd to swpd
Chesuncook	126	3	0.6	2.0	0.02	0.2	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Colonel	927	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	yes	loam in Cd
Croghan	613	3	20.0	100.0	20.00	100.0	B	Outwash and Stream Terraces	frigid	sandy	yes	single grain in C
Dartmouth	132	3	0.6	2.0	0.06	0.6	B	Terraces and glacial lake plains	mesic	silty	no	thin strata silty clay loam
Deerfield	313	3	6.0	20.0	20.00	100.0	B	Outwash and Stream Terraces	mesic	sandy	no	single grain in C
Dixfield	378	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Dixmont	578	3	0.6	2.0	0.60	2.0	C	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam, platy in C
Duane	413	3	6.0	20.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	cemented (ortstein)
Eldridge	38	3	6.0	20.0	0.06	0.6	C	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Elmridge	238	3	2.0	6.0	0.00	0.2	C	Sandy/loamy over silt/clay	mesic	loamy over clayey	no	
Elmwood	338	3	2.0	6.0	0.00	0.2	C	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	
Finch	116	3					C	Outwash and Stream Terraces	frigid	sandy	yes	cemented (ortstein)
Gilmanton	478	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	no	fine sandy loam in Cd
Henniker	46	3	0.6	2.0	0.06	0.6	C	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Hitchcock	130	3	0.6	2.0	0.06	0.6	B	Terraces and glacial lake plains	mesic	silty	no	silt loam to silt in C
Howland	566	3	0.6	2.0	0.06	0.2	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	silt loam, platy in Cd
Lanesboro	228	3	0.6	2.0	0.06	0.2	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	channery silt loam in Cd
Lovewell	307	3	0.6	2.0	0.60	2.0	B	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Machias	520	3	2.0	6.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	sandy or sandy-skeletal	yes	strata sand/gravel in C
Madawaska	28	3	0.6	2.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Madawaska, aquer	48	3	0.6	2.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Marlow	76	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Melrose	37	3	2.0	6.0	0.00	0.2	C	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Metacomet	458	3	0.6	2.0	0.06	0.6	C	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Metallak	404	3	6.0	100.0	6.00	100.0	B	Flood Plain (Bottom Land)	frigid	loamy over sandy	no	sandy or sandy-skeletal
Millis	39	3					C	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Montauk	44	3	0.6	6.0	0.06	0.6	C	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Mundal	610	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Newfields	444	3	0.6	2.0	0.60	2.0	B	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Nicholville	632	3	0.6	2.0	0.60	2.0	C	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Ninigret	513	3	0.6	6.0	6.00	20.0	B	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Paxton	66	3	0.6	2.0	0.00	0.2	C	Firm, platy, loamy till	mesic	loamy	no	
Peru	78	3	0.6	2.0	0.06	0.6	C	Firm, platy, loamy till	frigid	loamy	yes	
Pittstown	334	3	0.6	2.0	0.06	0.2	C	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Plaisted	563	3	0.6	2.0	0.06	0.6	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Podunk	104	3	0.6	6.0	6.00	20.0	B	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Poocham	230	3	0.6	2.0	0.20	2.0	B	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Pootatuck	4	3	0.6	6.0	6.00	20.0	B	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Scio	531	3	0.6	2.0	0.60	2.0	B	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Scituate	448	3	0.6	2.0	0.06	0.2	C	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Sheepscot	14	3	6.0	20.0	6.00	20.0	B	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Sisk	667	3	0.6	2.0	0.00	0.6	C	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Skerry	558	3	0.6	2.0	0.06	0.6	C	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Sudbury	118	3	2.0	6.0	2.00	20.0	B	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand
Suffield	536	3	0.6	2.0	0.00	0.2	C	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Sunapee	168	3	0.6	2.0	0.60	6.0	B	Loose till, loamy textures	frigid	loamy	yes	
Sunapee var	269	3	0.6	2.0	0.60	6.0	B	Loose till, loamy textures	frigid	loamy	yes	frigid dystrudept
Surplus	669	3	0.6	2.0	0.00	0.6	C	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Sutton	68	3	0.6	6.0	0.60	6.0	B	Loose till, loamy textures	mesic	loamy	no	
Telos	123	3	0.6	2.0	0.02	0.2	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd

Soil Series	number	NHDES Soil Group	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Waumbeck	58	3	2.0	20.0	6.00	20.0	B	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Winooski	103	3	0.6	6.0	0.60	6.0	B	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Woodbridge	29	3	0.6	2.0	0.00	0.6	C	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Winooski	9	3	0.6	6.0	0.60	6.0	B	Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Canaan	663	4	2.0	20.0	2.00	20.0	C	Weathered Bedrock Till	frigid	loamy-skeletal	yes	less than 20 in. deep
Cardigan	357	4	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	mesic	loamy	no	20 to 40 in. deep
Chatfield	89	4	0.6	6.0	0.60	6.0	B	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Elliottsville	128	4	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	frigid	loamy	yes	20 to 40 in. deep
Glebe	671	4	2.0	6.0	2.00	6.0	C	Loose till, bedrock	cryic	loamy	yes	20 to 40 in. deep
Glover	NA	4	0.6	2.0	0.60	2	D	Friable till, silty, schist & phyllite	frigid	loamy	no	less than 20 in. deep
Hogback	91	4	2.0	6.0	2.00	6.0	C	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Hollis	86	4	0.6	6.0	0.60	6.0	C/D	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Kearsarge	359	4	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	mesic	loamy	no	less than 20 in. deep
Lyman	92	4	2.0	6.0	2.00	6.0	A/D	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Macomber	252	4	0.6	2.0	0.60	2.0	C	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Millsite	251	4	0.6	6.0	0.60	6.0	C	Loose till, bedrock	frigid	loamy	no	20 to 40 in. deep
Monson	133	4	0.6	2.0	0.60	2.0	D	Friable till, silty, schist & phyllite	frigid	loamy	yes	less than 20 in. deep
Pennichuck	460	4	0.6	2.0	0.60	2.0	B	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Rawsonville	98	4	0.6	6.0	0.60	6.0	C	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Ricker	674	4	2.0	6.0	2.00	6.0	A	rganic over bedrock (up to 4" of minera	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Saddleback	673	4	0.6	2.0	0.60	2.0	C/D	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Shapleigh	136	4					C/D	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Thorndike	84	4	0.6	2.0	0.60	2.0	C/D	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Tunbridge	99	4	0.6	6.0	0.60	6.0	C	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Winnecook	88	4	0.6	2.0	0.60	2.0	C	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Woodstock	93	4	2.0	6.0	2.00	6.0	C/D	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep
Au Gres	516	5					B	Outwash and Stream Terraces	frigid	sandy	yes	single grain, loose
Bemis	224	5	0.6	0.2	0.00	0.2	C	Firm, platy, loamy till	cryic	loamy	no	
Binghamville	534	5	0.2	2.0	0.06	0.2	D	Terraces and glacial lake plains	mesic	silty	no	
Brayton	240	5	0.6	2.0	0.06	0.6	C	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Cabot	589	5	0.6	2.0	0.06	0.2	D	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Charles	209	5	0.6	100.0	0.60	100.0	C	Flood Plain (Bottom Land)	frigid	silty	no	
Cohas	505	5	0.6	2.0	0.60	100.0	C	Flood Plain (Bottom Land)	frigid	co. loamy over sandy (skeletal)	no	
Grange	433	5	0.6	2.0	0.60	2.0	C	Outwash and Stream Terraces	frigid	co. loamy over sandy (skeletal)	no	
Kinsman	614	5	6.0	20.0	6.00	20.0	C	Outwash and Stream Terraces	frigid	sandy	yes	
Leicester	514	5	0.6	6.0	0.60	20.0	C	Loose till, loamy textures	mesic	loamy	no	
Lim	3	5	0.6	2.0	6.00	20.0	C	Flood Plain (Bottom Land)	mesic	loamy	no	
Limerick	109	5	0.6	2.0	0.60	2.0	C	Flood Plain (Bottom Land)	mesic	silty	no	
Lyme	246	5	0.6	6.0	0.60	6.0	C	Loose till, sandy textures	frigid	loamy	no	
Mashpee	315	5	6.0	20.0	6.00	20.0	B	Outwash and Stream Terraces	mesic	sandy	yes	
Monarda	569	5	0.2	2.0	0.02	0.2	D	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Moosilauke	414	5	6.0	20.0	6.00	20.0	C	Loose till, sandy textures	frigid	sandy	no	
Naumburg	214	5	6.0	20.0	6.00	20.0	C	Outwash and Stream Terraces	frigid	sandy	yes	
Pemi	633	5	0.6	2.0	0.06	0.6	C	Terraces and glacial lake plains	frigid	silty	no	
Pillsbury	646	5	0.6	2.0	0.06	0.2	C	Firm, platy, loamy till	frigid	silty	no	
Pipestone	314	5					B	Outwash and Stream Terraces	mesic	sandy	yes	
Raynham	533	5	0.2	2.0	0.06	0.2	C	Terraces and glacial lake plains	mesic	silty	no	
Raypol	540	5	0.6	2.0	6.00	100.0	D	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Ridgebury	656	5	0.6	6.0	0.00	0.2	C	Firm, platy, loamy till	mesic	loamy	no	
Rippowam	5	5	0.6	6.0	6.00	20.0	C	Flood Plain (Bottom Land)	mesic	loamy	no	
Roundabout	333	5	0.2	2.0	0.06	0.6	C	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Rumney	105	5	0.6	6.0	6.00	20.0	C	Flood Plain (Bottom Land)	frigid	loamy	no	

Soil Series	number	NHDES Soil Group	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Saugatuck	16	5	0.06	0.2	6.00	20.0	C	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Scantic	233	5	0.0	0.2	0.00	0.2	D	Silt and Clay Deposits	frigid	fine	no	
Scitico	33	5	0.0	0.2	0.00	0.2	C	Silt and Clay Deposits	mesic	fine	no	
Shaker	439	5	2.0	6.0	0.00	0.2	C	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Squamscott	538	5	6.0	20.0	0.06	0.6	C	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Stissing	340	5	0.6	2.0	0.06	0.2	C	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Swanton	438	5	2.0	6.0	0.00	0.2	C	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Walpole	546	5	2.0	6.0	6.00	20.0	C	Outwash and Stream Terraces	mesic	sandy	no	
Wareham	34	5	6.0	20.0	6.00	20.0	C	Outwash and Stream Terraces	mesic	sandy	no	
Biddeford	234	6	0.0	0.2	0.00	0.2	D	Silt and Clay Deposits	frigid	fine	no	organic over clay
Bucksport	895	6					D	Organic Materials - Freshwater	frigid	sapric	no	deep organic
Burnham	131	6	0.2	6.0	0.02	0.2	D	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over silt
Catden	296	6					A/D	Organic Materials - Freshwater	mesic	sapric	no	deep organic
Chocorua	395	6			6.00	20.0	D	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Greenwood	295	6					A/D	Organic Materials - Freshwater	frigid	hemic	no	deep organic
Ipswich	397	6					D	Tidal Flat	mesic	hemic/sapric	no	deep organic
Matunuck	797	6			20.00	100.0	D	Tidal Flat	mesic	sandy	no	organic over sand
Maybid	134	6	0.0	0.2	0.00	0.2	D	Silt and Clay Deposits	mesic	fine	no	silt over clay
Meadowsedge	894	6					D	Organic Materials - Freshwater	frigid	peat	no	deep organic
Medomak	406	6	0.6	2.0	0.60	2.0	D	Flood Plain (Bottom Land)	frigid	silty	no	organic over silt
Natchaug	496	6			0.20	2.0	D	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Ossipee	495	6			0.20	2.0	D	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Pawcatuck	497	6			20.00	100.0	D	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Peacham	549	6	0.6	2.0	0.00	0.2	D	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Pondicherry	992	6			6.00	20.0	D	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Saco	6	6	0.6	2.0	6.00	20.0	D	Flood Plain (Bottom Land)	mesic	silty	no	strata
Scarboro	115	6	6.0	20.0	6.00	20.0	D	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Searsport	15	6	6.0	20.0	6.00	20.0	D	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Timakwa	393	6			6.00	100.0	D	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Vassalboro	150	6					D	Organic Materials - Freshwater	frigid	peat	no	deep organic
Waskish	195	6					D	Organic Materials - Freshwater	frigid	peat	no	deep organic
Westbrook	597	6			0.00	2.0	D	Tidal Flat	mesic	loamy	no	organic over loam
Whitman	49	6	0.0	0.2	0.00	0.2	D	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Wonsqueak	995	6			0.20	2.0	D	Organic Materials - Freshwater	frigid	loamy	no	organic over loam

no longer recognized organic materials denotes break betweenSoil Group

Sorted by DES Soil Group for Establishing Lot Size
K_{sat} B and C horizons
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SWPPP Cut Sheet:

Filtrexx® Sediment Control

Sediment & Perimeter Control Technology

PURPOSE & DESCRIPTION

Filtrexx® Sediment control is a three-dimensional tubular sediment control and storm water runoff filtration device typically used for **perimeter control** of sediment and other soluble pollutants (such as phosphorus and petroleum hydrocarbons), on and around construction activities.

APPLICATION

Filtrexx® Sediment control is to be installed down slope of any disturbed area requiring erosion and sediment control and filtration of soluble pollutants from runoff. Sediment control is effective when installed perpendicular to sheet or low concentrated flow. Acceptable applications include:

- Site perimeters
- Above and below disturbed areas subject to sheet runoff, interrill and rill erosion
- Above and below exposed and erodable slopes
- Around area drains or inlets located in a 'sump'
- On compacted soils where trenching of silt fence is difficult or impossible
- Around sensitive trees where trenching of silt fence is not beneficial for tree survival or may unnecessarily disturb established vegetation.
- On frozen ground where trenching of silt fence is impossible.
- On paved surfaces where trenching of silt fence is impossible.

INSTALLATION

1. Sediment control used for perimeter control of sediment and soluble pollutants in storm runoff shall meet Filtrexx® Soxx™ Material Specifications and use Certified Filtrexx® FilterMedia™.
2. Contractor is required to be Filtrexx® Certified™, or use pre-filled Filtrexx® Sediment control products manufactured by a Filtrexx® Certified Manufacturer™ as determined by Filtrexx® International, LLC (440-926-2607 or visit www.filtrexx.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application. Look for the Filtrexx® Certified™ Seal.
3. Sediment control will be placed at locations indicated on plans as directed by the Engineer.
4. Sediment control should be installed parallel to the base of the slope or other disturbed area. In extreme conditions (i.e., 2:1 slopes), a second Sediment control shall be constructed at the top of the slope.
5. Effective Soxx™ height in the field should be as follows: 8" Diameter Sediment control = 6.5" high, 12" Diameter Sediment control = 9.5" high, 18" Diameter SiltSoxx™ = 14.5" high, 24" Diameter Sediment control = 19" high.
6. Stakes shall be installed through the middle of the Sediment control on 10 ft (3m) centers, using 2 in (50mm) by 2 in (50mm) by 3 ft (1m) hard wood stakes. In the event staking is not possible, i.e., when Sediment control is used on pavement, heavy concrete blocks shall be used behind the Sediment control to help stabilize during rainfall/runoff events.
7. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
8. Loose compost may be backfilled along the upslope side of the Sediment control, filling the seam between the soil surface and the device, improving filtration and sediment retention.
9. If the Sediment control is to be left as a permanent filter or part of the natural landscape, it may be seeded at time of installation for

establishment of permanent vegetation. The Engineer will specify seed requirements.

10. Filtrexx® Sediment control is not to be used in perennial, ephemeral, or intermittent streams.

See design drawing schematic for correct Filtrexx® Sediment control installation (Figure 1.1).

INSPECTION AND MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Sediment control should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional Sediment control may be required to reduce effective slope length or sediment removal may be necessary. Sediment control shall be inspected until area above has been permanently stabilized and construction activity has ceased

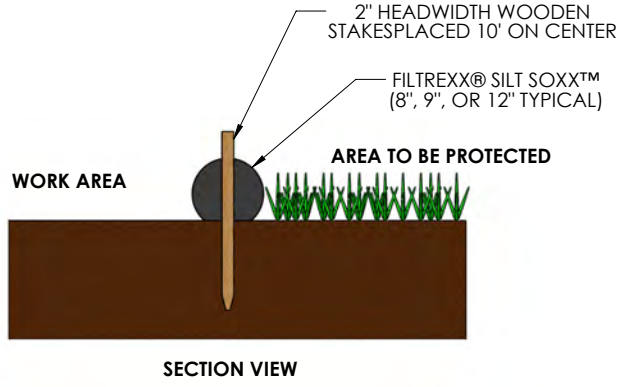
1. The Contractor shall maintain the Sediment control in a functional condition at all times and it shall be routinely inspected.
2. If the Sediment control has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of the Sediment control when accumulation has reached 1/2 of the effective height of the Sediment control, or as directed by the Engineer. Alternatively, a new Sediment control can be placed on top of and slightly behind the original one creating more sediment storage capacity without soil disturbance.
4. Sediment control shall be maintained until disturbed area above the device has been permanently stabilized and construction activity has ceased.
5. The FilterMedia™ will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.
6. For long-term sediment and pollution control applications, Sediment control can be seeded at the time of installation to create a vegetative filtering system for prolonged and increased filtration of sediment and soluble pollutants (contained vegetative filter strip). The appropriate seed mix shall be determined by the Engineer.

Slope Percent	Maximum Slope Length Above Sediment Control in Feet (meters)*				
	8 in (200 mm) Sediment control	12 in (300 mm) Sediment control	18 in (450 mm) Sediment control	24 in (600mm) Sediment control	32 in (800mm) Sediment control
	6.5 in (160 mm)**	9.5 in (240 mm) **	14.5 in (360 mm) **	19 in (480 mm) **	26 in (650 mm) **
2 (or less)	600 (180)	750 (225)	1000 (300)	1300 (400)	1650 (500)
5	400 (120)	500 (150)	550 (165)	650 (200)	750 (225)
10	200 (60)	250 (75)	300 (90)	400 (120)	500 (150)
15	140 (40)	170 (50)	200 (60)	325 (100)	450 (140)
20	100 (30)	125 (38)	140 (42)	260 (80)	400 (120)
25	80 (24)	100 (30)	110 (33)	200 (60)	275 (85)
30	60 (18)	75 (23)	90 (27)	130 (40)	200 (60)
35	60 (18)	75 (23)	80 (24)	115 (35)	150 (45)
40	60 (18)	75 (23)	80 (24)	100 (30)	125 (38)
45	40 (12)	50 (15)	60 (18)	80 (24)	100 (30)
50	40 (12)	50 (15)	55 (17)	65 (20)	75 (23)

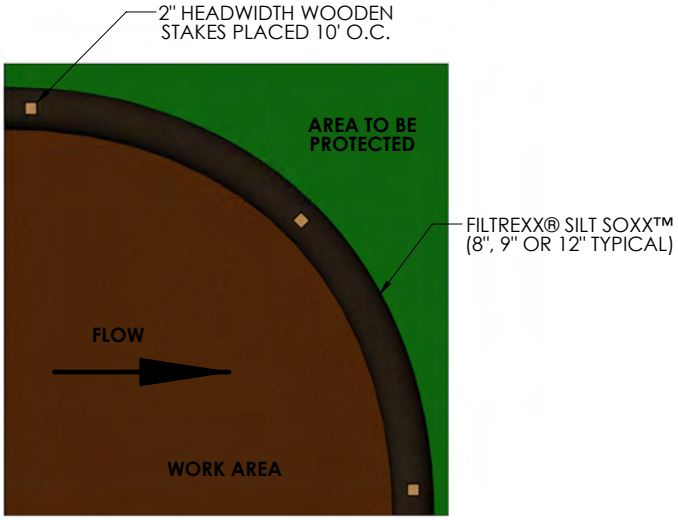
* Based on a failure point of 36 in (0.9 m) super silt fence (wire reinforced) at 1000 ft (303 m) of slope, watershed width equivalent to receiving length of sediment control device, 1 in/ 24 hr (25 mm/24 hr) rain event.

** Effective height of Sediment control after installation and with constant head from runoff as determined by Ohio State University.

FILTREXX® SILT SOXX™

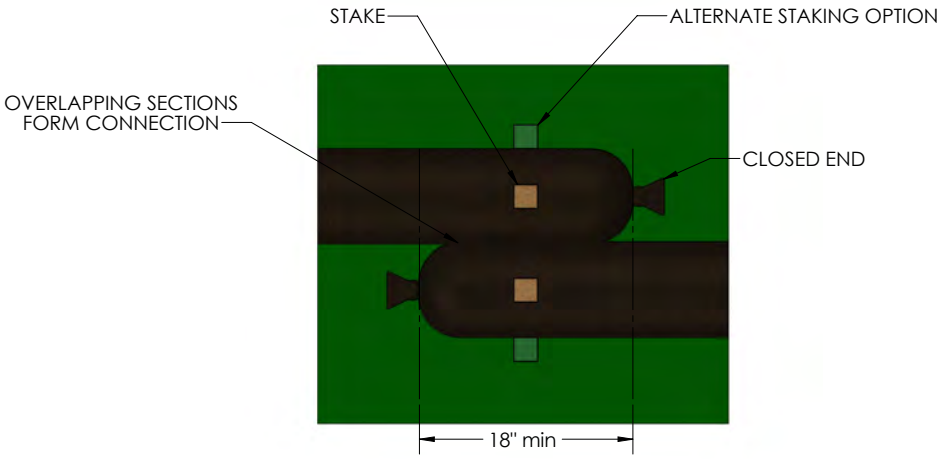


SECTION VIEW

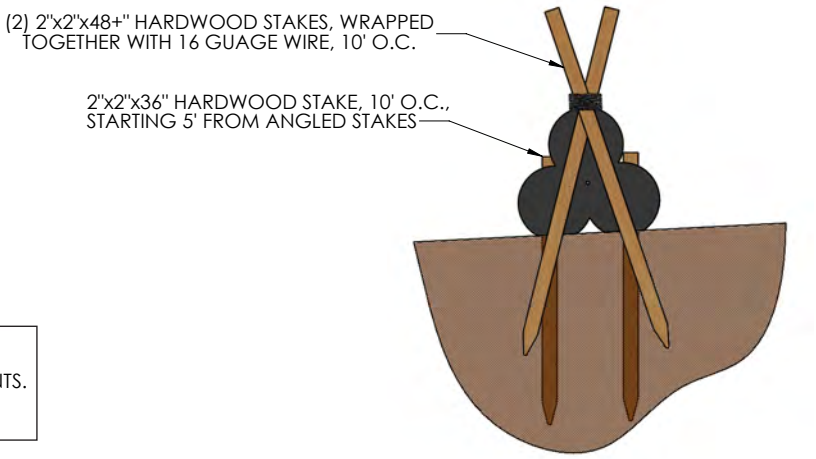


TOP VIEW

COMPOST SOCK CONNECTION/ATTACHMENT DETAIL



FILTREXX® PYRAMID STAKING DETAIL



NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILT SOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

SWPPP Cut Sheet:

Filtrexx® Inlet Protection

Sediment & Perimeter Control Technology

PURPOSE & DESCRIPTION

Filtrexx® Inlet protection is a three-dimensional tubular sediment control and storm water runoff filtration device typically used for storm drain **inlet protection** of sediment and soluble pollutants (such as phosphorus and petroleum hydrocarbons) on and around construction activities.

APPLICATION

Drain inlets are located in areas that receive runoff from surrounding lands, often exposed and disturbed soils, and are located at a low point, or in a sump. Inlet protection used around drain inlets (or *Drain* Inlet protection) should completely enclose the circumference of the drain and where possible should not be placed on a grade or slope. Inlet protection used around drain inlets should never be the only form of site sediment control and should be accompanied by erosion control/slope stabilization practices, such as Slope protection or rolled erosion control blankets (RECB). Inlet protection should never be placed where they divert runoff flow from the drain inlet, or on top of the inlet, which can cause flooding. Under high runoff and sediment loading conditions placement of 1-2 in (25-50 mm) diameter rock (AASHTO #2) may be placed around the outer circumference of the Inlet protection up to ½ the height of the Inlet protection. This will slow runoff velocity as it contacts the Inlet protection and will reduce sediment build-up and clogging of the Inlet protection.

Curb inlets are generally located on paved surfaces and are designed to rapidly drain storm runoff from roadways to prevent flooding that poses a hazard to vehicular traffic. Inlet protection devices should be placed in a manner which intercepts runoff prior to entering the inlet, but does not block or divert runoff from the inlet. To prevent diversion of runoff, Inlet protection used around curbs (or *Curb* Inlet protection) should be used in low points, or sumps, and minor slopes or grades. Inlet protection should never be placed in or on the curb inlet drain, or placed in a manner than obstructs vehicular traffic. Inlet protection height should be at least 1 in (25 mm) lower than top of curb inlet to allow for overflow into the drain and not over the curb. Maximum sediment removal efficiency occurs when minor ponding exists behind Inlet protection but should never lead to flooding.

Curb sediment containment systems are used to reduce the sediment and pollutant load flowing to a curb inlet. They are generally placed on paved surfaces perpendicular to runoff flow and should be lower than the height of the curb. Curb sediment containment systems should never cause flooding or placed where they are a hazard to vehicular traffic. Inlet protection used for curb sediment containment (or *Curb Sediment Containment* Inlet protection) can be placed on a grade but should never be placed directly upslope from curb inlet where it may inadvertently divert runoff from entering curb inlet.

INSTALLATION

1. Inlet protection used for inlet protection to reduce sediment and soluble pollutants entering storm drains shall meet Filtrexx® FilterSoxx™ Material Specifications and use Certified Filtrexx® FilterMedia™.
2. Contractor is required to be a Filtrexx® Certified™ Installer as determined by Filtrexx® International, LLC (440-926-2607 or visit web site at Filtrexx.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application (current list of installers can be found at www.filtrexx.com). Look for the Filtrexx® Certified™ Installer Seal.

3. Filtrexx® Inlet protection shall be placed at locations indicated on plans as directed by the Engineer. Inlet protection should be installed in a pattern that allows complete protection of the inlet area.
4. Installation of curb Inlet protection will ensure a minimal overlap of at least 1 ft (300mm) on either side of the opening being protected. The Inlet protection will be anchored to the soil behind the curb using staples, stakes or other devices capable of holding the Inlet protection in place.
5. Standard Inlet protection for curb inlet protection and curb sediment containment will use 8 in (200mm) diameter Inlet protection, and drain inlets on soil will use 12 in (300mm) or 18 in (450mm) diameter Inlet protection. In severe flow situations, larger Inlet protection may be specified by the Engineer. During curb installation, Inlet protection shall be compacted to be slightly shorter than curb height.
6. If Inlet protection becomes clogged with debris and sediment, they shall be maintained so as to assure proper drainage and water flow into the storm drain. In severe storm events, overflow of the Inlet protection may be acceptable in order to keep the area from flooding.
7. Curb and drain Inlet protection shall be positioned so as to provide a permeable physical barrier to the drain itself, allowing sediment to collect on the outside of the Inlet protection.
8. For drains and inlets that have only curb cuts, without street grates, a spacer is required in order to keep the Inlet protection away from the drain opening. This spacer should be a hog wire screen bent to overlap the grate opening and keep the sock from falling into the opening. Use at least one spacer for every 4 ft (1.2m) of curb drain opening. The wire grid also prevents other floatable waste from passing over the Inlet protection.
9. Stakes shall be installed through the middle of the drain Inlet protection on 5 ft (1.5m) centers, using 2 in (50mm) x 2 in (50mm) x 3 ft (1m) wood stakes.
10. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.

INSPECTION AND MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Inlet protection should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional Inlet protection may be required or sediment removal may be necessary. Inlet protection shall be inspected until contributing drainage area has been permanently stabilized and construction activity has ceased

1. The Contractor shall maintain the Inlet protection in a functional condition at all times and it shall be routinely inspected.
2. If the Inlet protection has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of the Inlet protection when accumulation has reached 1/2 of the effective height of the Inlet protection, or as directed by the Engineer. Alternatively, for drain Inlet protection a new Soxx™ may be placed on top of the original increasing the sediment storage capacity without soil disturbance.
4. Inlet protection shall be maintained until disturbed area above or around the device has been permanently stabilized and construction activity has ceased.
5. Regular maintenance includes lifting the Inlet protection and cleaning around and under them as sediment collects.
6. The FilterMedia™ will be removed from paved areas or dispersed on site soil or behind curb once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.

Table 2.4 Spacing for Curb Sediment Containment Systems.

Grade (%)	Spacing (ft)	Spacing (mm)
0.5	100	30
1.0	50	15
2.0	25	8
3.0	16	5
4.0	13	4
5.0	10	3

Source: Fifield, 2001.

Figure 2.1. Engineering Design Drawing for Curb and Drain Inlet Protection

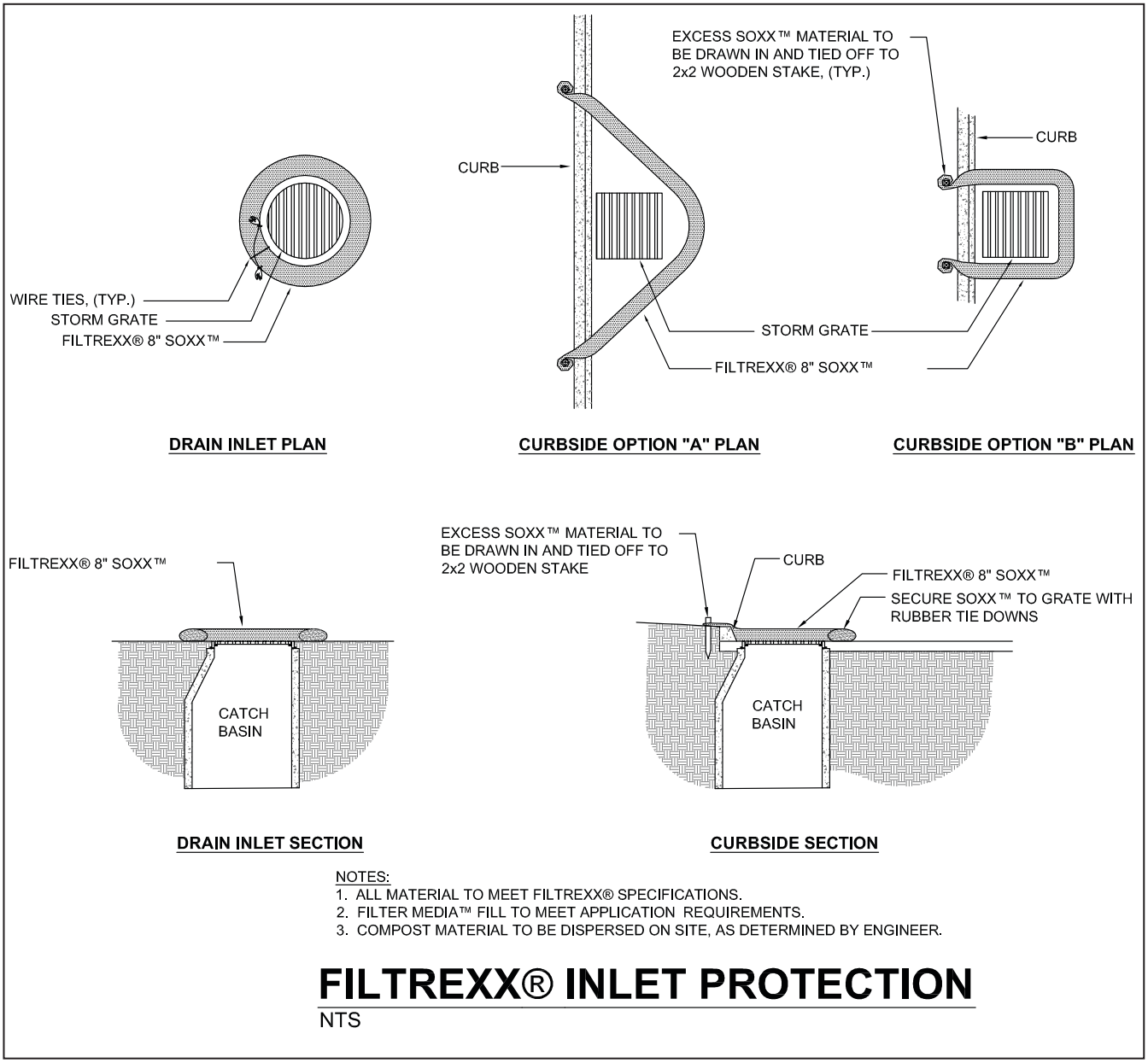
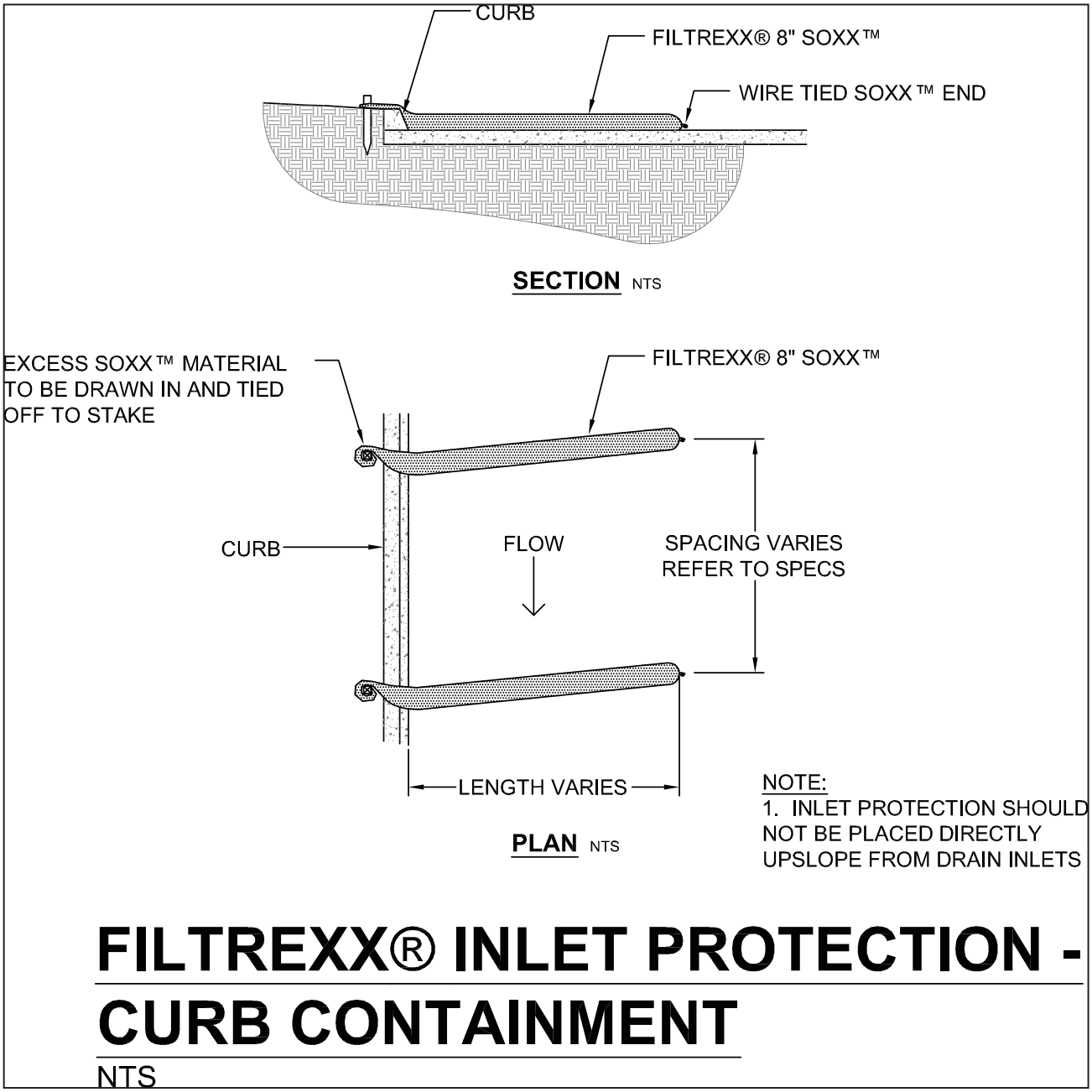


Figure 2.2. Engineering Design Drawing for Curb Sediment Containment Inlet Protection



SOILS & DEWATERING:

Gs	*GLOUCESTER*	*FINE SANDY LOAM*	*K= 0.17*
Hg	*HOLLIS-GLOUCESTER COMPLEX*	*FINE SANDY LOAM*	*K= 0.20*
238	*ELMRIDGE*	*SILT LOAM*	*K= 0.32*
500/600	*ELMWOOD*	*SILT LOAM*	*K= 0.32*

SEE SITE SPECIFIC SOILS MAP (SSSM)
ERODIBILITY FACTOR – K, CPESC MANUAL, ENVIROCERT INTERNATIONAL INC. & ROCKINGHAM COUNTY SOIL SURVEY, ROCKWEB SOIL ATTRIBUTES.

CONTRACTOR TO BE AWARE OF THE SOIL PROFILES AND ENSURE THAT PROPER EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TAKEN AT ALL TIMES. ANY DEWATERING REQUIREMENTS IN NEW HAMPSHIRE REQUIRE SPECIAL PROVISIONS IN ACCORDANCE WITH THE "CLARIFICATION OF SECTION 9.1.2 (STATE OF NEW HAMPSHIRE CONDITIONS) AND OTHER NH SPECIFIC INFORMATION FOR THE U.S. EPA 2012 NPDES CONSTRUCTION GENERAL PERMIT (CGP)" DATED MAY 3, 2012 INCLUDED IN THE SWPPP.

COVER MANAGEMENT DURING CONSTRUCTION FOR EXPOSED SOIL WILL INCLUDE HAY / STRAW APPLIED AT A RATE OF 2.0 TONS PER ACRE, TEMPORARY SEEDING OF ANNUAL RYE GRASS, AND PERMANENT SEEDING AT THE EARLIES OPPORTUNITY. SEE ADDITIONAL REQUIREMENT FOR STABILIZATION ON THE EROSION AND SEDIMENT CONTROL DETAIL SHEETS, E-101 AND E-102.

THE CONSTRUCTION SCHEDULE WILL BE MANAGED SO THAT ALL STORMWATER STRUCTURES WILL BE BUILT AND STABILIZED PRIOR TO RECEIVNG SURFACE WATER RUNOFF. CONTRACTOR TO BE RESPONSIBLE FOR ALL DIVERSIONS DURING CONSTRUCTION AND FOR INTERIM SEDIMENT AND EROSION CONTROL MEASURES.

CONSTRUCTION SEQUENCE NOTE:

EROSION, SEDIMENT AND DETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

BIOMEDIA SURFACE PROTECTION NOTE:

SEE EROSION AND SEDIMENT CONTROL PLAN
IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PROTECT THE BIOMEDIA SURFACE FROM SEDIMENTATION CAUSED BY EROSION ON THE SIDE SLOPES.

STABILIZATION NOTE:

SEE NOTE #6, SHEET E-102, DETAIL E-18
SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.

LEGEND:

- 3/4" REBAR W/ ID CAP ~TBS~
- GRANITE BOUND ~FND~
- STEEL STAKE ~FND~
- EXISTING/PROPOSED CATCH BASIN W/ STRUCTURE
- PROPOSED STORMWATER BMP OUTLET STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING DRAINAGE LINE
- PROPOSED DRAINAGE LINE
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM
- SILT FENCE / EROSION MIX BERM
- FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- PERIMETER CONTROL
- RAIN GARDEN BIO-MEDIA PROTECTION
- PERIMETER CONTROL
- RESIDENTIAL/ROADWAY CONSTRUCTION
- LIMIT OF PROJECT DISTURBANCE

GENERAL NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE EROSION AND SEDIMENT CONTROL DETAILS.

EROSION & EROSION CONTROL NOTES:

1.) CONTRACTOR IS TO INSTALL A CONSTRUCTION ENTRANCE PRIOR TO EARTH DISTURBING ACTIVITIES, UTILIZING 3" ANGULAR STONE UNDERLAID WITH ENGINEER FABRIC.

2.) CONTRACTOR IS RESPONSIBLE FOR SWEEPING THE PARKING LOT, SIDEWALKS AND ROADWAY, TO ENSURE THAT NO SEDIMENT IS BEING TRACKED ONTO KNOX MARSH ROAD OR THE SURROUNDING ROADWAYS.

3.) CONTRACTOR IS RESPONSIBLE FOR CLEANING AND MAINTAINING THE INLET PROTECTION ONCE INSTALLED.

4.) FUGITIVE DUST IS TO BE CONTROLLED THROUGHOUT THE CONSTRUCTION PROCESS IN ACCORDANCE WITH ENV-A 1000.

5.) CONTRACTOR IS TO MEET THE REQUIREMENTS SPECIFIED IN RSA 430:51-57 AND AGR 3800, RELATING TO INVASIVE SPECIES.

6.) CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE WATER QUALITY FROM ANY RUN OFF DURING THE CONSTRUCTION PROCESS, IN ACCORDANCE WITH ENV-WQ 1507, IN ORDER TO PREVENT VIOLATIONS OF THE STORM WATER QUALITY STANDARDS.

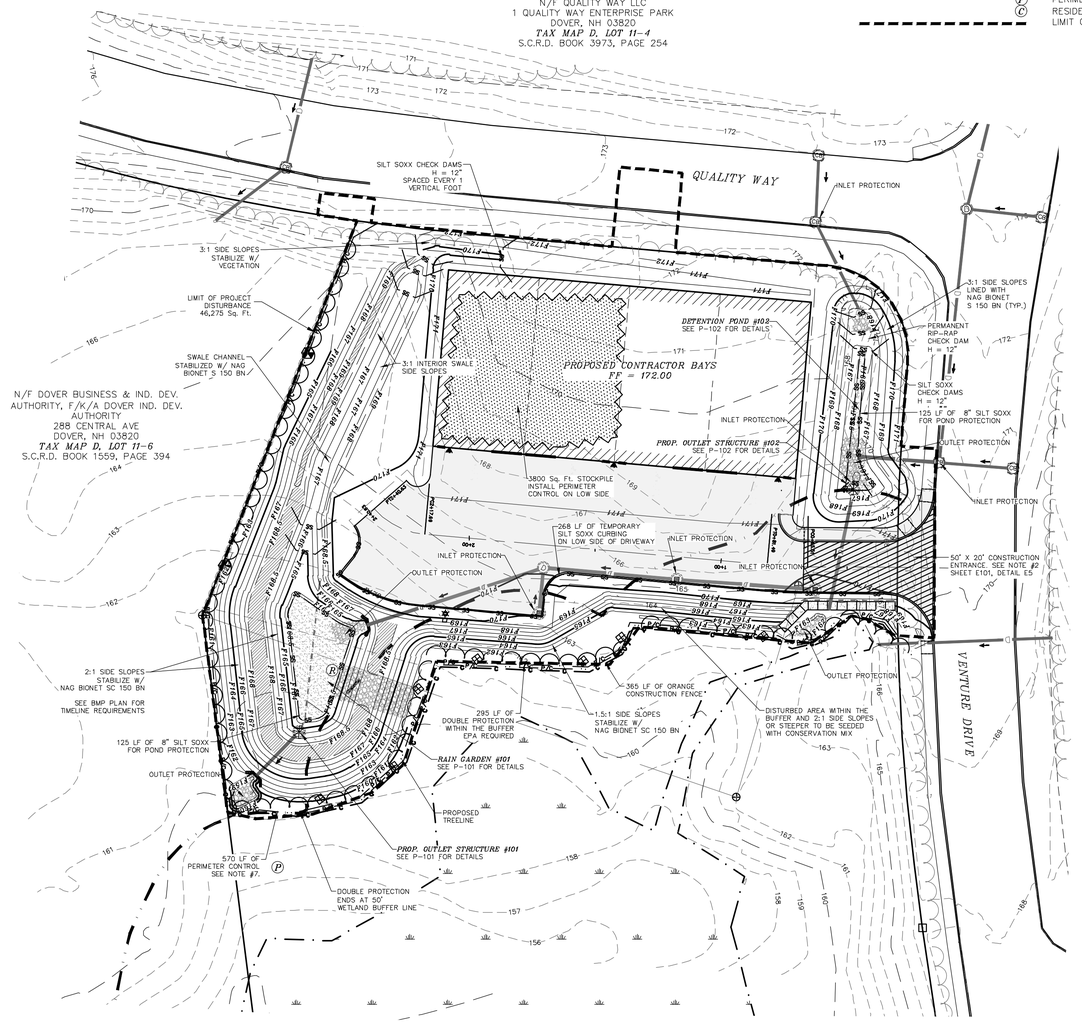
7.) CONTRACTOR AY USE SILT FENCE, SILT SOXX OR MULCH BERM FOR PERIMETER CONTROL. SPECIFIC PRACTICES MAY BE SPECIFIED, SEE PLAN. THE CONTRACTOR IS NOT TO EXPAND CONSTRUCTION BEYOND THE STAKED OUT LIMITS OF DISTURBANCE.

8.) ALL STORAGE FACILITIES FOR FUEL, CHEMICALS, CHEMICAL OR INDUSTRIAL WASTES, AND BIODEGRADABLE RAW MATERIALS SHALL MEET THE REGULATIONS OF THE NHDES, INCLUDING BUT NOT LIMITED TO THOSE INVOLVING UNDERGROUND STORAGE TANKS, ABOVE GROUND STORAGE TANKS, HAZARDOUS WASTE AND BEST MANAGEMENT PRACTICES FOR GROUND WATER PROTECTION (PART ENV-WQ 401).

9.) ALL DEVELOPMENT MUST COMPLY WITH THE EPA PHASE II STORMWATER RULES AND THE CITY'S MS4 PERMIT, AS AMENDED.

10.) CITY OF DOVER: IN ACCORDANCE WITH SITE PLAN REVIEW REGULATIONS (153-14) THE FOLLOWING STORMWATER MEASURES ARE REQUIRED.

A.) ALL PROPOSED BMPs WILL CONFORM TO THE NH STORMWATER MANUAL VOLUME 3.
B.) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY COMMUNITY SERVICE.
C.) TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN SEVEN CALENDAR DAYS FOR EXPOSED SOILS AREAS THAT ARE WITHIN ONE HUNDRED FEET OF A SURFACE WATER BODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.
D.) ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL STABILIZATION IS ACCOMPLISHED. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 CALENDAR DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
E.) COMMUNITY SERVICES DEPARTMENT OR THEIR DESIGNATED AGENT SHALL HAVE ACCESS TO THE SITE TO COMPLETE ROUTINE INSPECTIONS AND SHALL BE NOTIFIED 24-HOURS PRIOR TO INSTALLATION OF A STORMWATER BMP IN ORDER TO SCHEDULE AN INSPECTION, DURING NORMAL WORKING HOURS. THE PLANNING BOARD OR COMMUNITY SERVICES MAY REQUIRE THE DESIGN ENGINEER AND/OR AN INDEPENDENT, THIRD-PARTY INSPECTION AND OVERSIGHT OF THE CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES AND EROSION AND SEDIMENT CONTROL AT THEIR DISCRETION. THE OWNER / APPLICANT IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH INSPECTIONS.
F.) ALL SWPPP/SWMP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORMWATER INSPECTOR (CESSWI), OR A CERTIFIED PROFESSIONAL IN STORMWATER QUALITY (CPSWQ). INSPECTION REPORTS WILL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.
G.) THE OWNER IS ULTIMATELY RESPONSIBLE FOR THE INSTALLATION, CONSTRUCTION, INSPECTION, AND DISPOSITION OF ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES REQUIRED BY THE PROVISIONS OF THESE REGULATIONS.
H.) STORMWATER MANAGEMENT PLAN (SWMP) SUBMITTAL REQUIREMENTS. AT THE DISCRETION OF THE PLANNING BOARD OR COMMUNITY SERVICES DEPARTMENT, A TECHNICAL REVIEW BY AN INDEPENDENT THIRD PARTY MAY BE REQUIRED OF ANY SWMP PREPARED UNDER THESE REGULATIONS. SUCH A REVIEW SHALL BE PERFORMED BY A QUALIFIED PROFESSIONAL CONSULTANT AND THE EXPENSE OF WHICH SHALL BE THE FULL RESPONSIBILITY OF THE OWNER/APPLICANT.



GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

EROSION AND SEDIMENT CONTROL PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 30 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 12443 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

COMMERCIAL SITE PLAN
FOR
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5 SND

TABLE OF CONTENTS:

SHEET 1 ~ NEIGHBORHOOD PLAN
SHEET 2 ~ EXISTING CONDITIONS PLAN
SHEET 3 ~ SITE SPECIFIC SOILS MAP
SHEET 4 ~ LOT LINE REVISION PLAN
SHEET 5 ~ EASEMENT PLAN
SHEET 6 ~ SITE PLAN
SHEET 7 ~ GRADING PLAN & PROFILE
SHEET 8 ~ P-101 RAIN GARDEN DETAILS
SHEET 9 ~ P-102 DETENTION POND DETAILS
SHEET 10 ~ EROSION & SEDIMENT CONTROL PLAN
SHEET 11 ~ UTILITY PLAN
SHEET 12 ~ CROSS SECTIONS
SHEET 13 ~ LANDSCAPING PLAN
SHEET 14 ~ LIGHTING PLAN
SHEET 15 ~ SIGHT DISTANCE VENTURE DRIVE
SHEET 16 ~ E101-EROSION & SEDIMENT DETAILS
SHEET 17 ~ E102-EROSION & SEDIMENT DETAILS
SHEET 18 ~ D101-DRAINAGE DETAILS
SHEET 19 ~ D102-DRAINAGE DETAILS
SHEET 20 ~ C101-CONSTRUCTION DETAILS
SHEET 21 ~ C102-CONSTRUCTION DETAILS
SHEET 22 ~ U101-UTILITY DETAILS
SHEET 23 ~ U102-UTILITY DETAILS
SHEET 24 ~ L101-LANDSCAPING DETAILS
SHEET 25 ~ W101-WILDLIFE IDENTIFICATION PLAN
SHEET 26 ~ DOVER FIRE TRUCK TURNING TEMPLATE

NOTE:

BERRY SURVEYING & ENGINEERING HAS PREPARED AN INSPECTION & MAINTENANCE MANUAL AS PART OF THIS PROJECTS DOCUMENTATION. ALL USERS ARE BOUND TO THIS DOCUMENT AS PART OF THE APPROVAL OF THE PLANNING BOARD. COPIES OF THE YEARLY INSPECTIONS ARE TO BE DELIVERED TO THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT.

SURVEYOR OF RECORD: KENNETH A. BERRY, PE, LLS
CPSWQ, CPESC, CESSWI
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825
(603) 332-2863

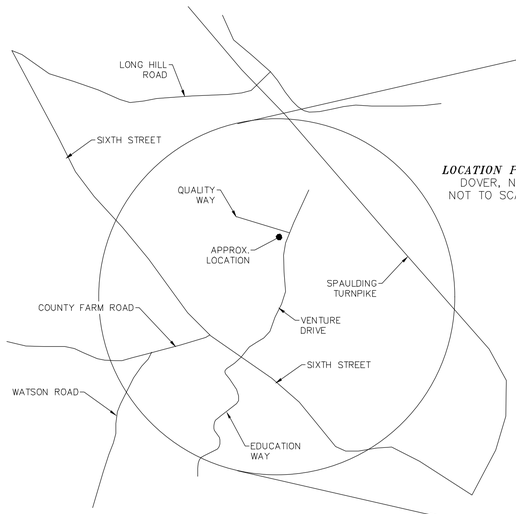
ENGINEER OF RECORD: KENNETH A. BERRY, PE, LLS
CPSWQ, CPESC, CESSWI
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825
(603) 332-2863

SOIL SCIENTIST: JOHN P. HAYES, III, CSS, CWS
7 LIMESTONE WAY
NORTH HAMPTON, NH 03862

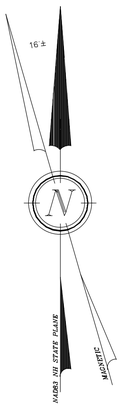
WETLAND SCIENTIST: DEIDRA L. BENJAMIN, CWS
100 LEAVITT ROAD
PITTSFIELD, NH 03263

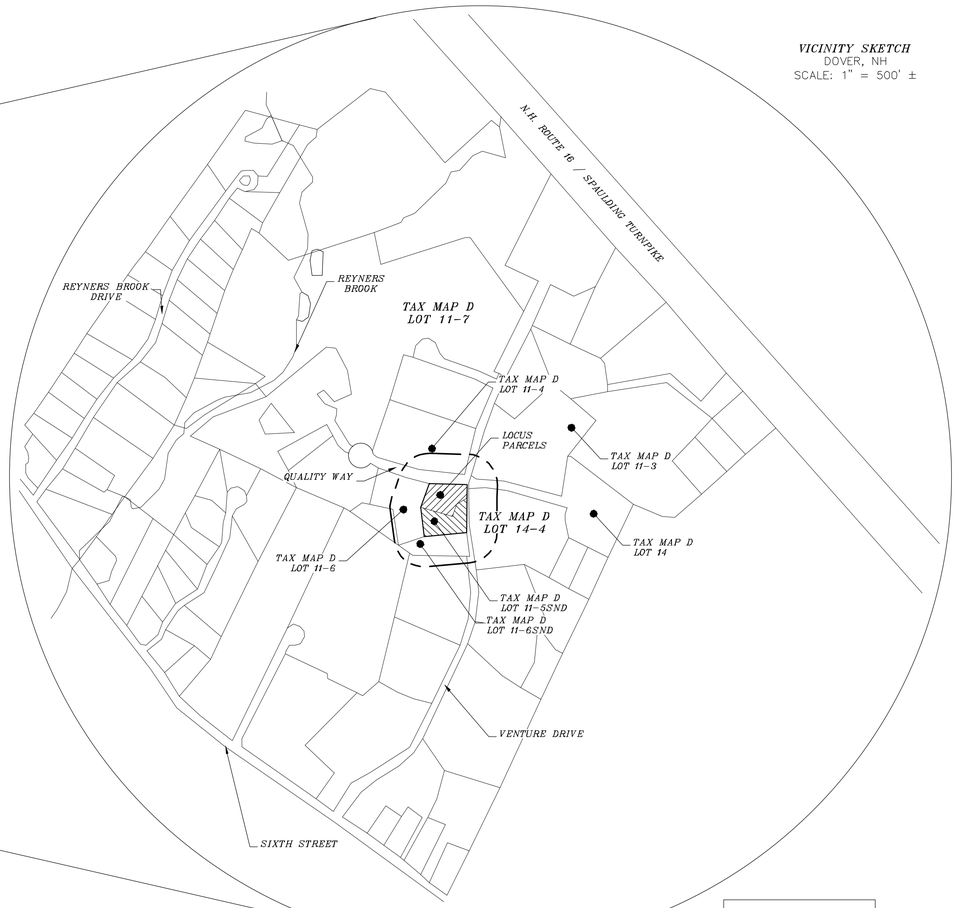
OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820



LOCATION PLAN
DOVER, NH
NOT TO SCALE





VICINITY SKETCH
DOVER, NH
SCALE: 1" = 500' ±

WHETHER OR NOT OTHERWISE EXPRESSLY RECITED ON THIS SITE PLAN, THE SITE PLAN APPROVAL GRANTED IS CONDITIONED ON FAITHFUL AND DILIGENT ADHERENCE BY THE OWNER/SUBDIVIDER/DEVELOPER OF ALL TERMS, CONDITIONS, PROVISIONS AND SPECIFICATIONS OF THE CITY OF DOVER LAND SITE PLAN REGULATIONS AS AMENDED OR AS MAY LATER BE AMENDED, IN EFFECT ON THE DATE OF APPROVAL, UNLESS OR EXCEPT INSOFAR AS EXPRESSLY WAIVED, IN ANY PARTICULAR, BELOW. NON – ADHERENCE MAY RESULT IN A REVOCATION OF APPROVAL. ANY VARIATION FROM THE APPROVED PLAN WILL REQUIRE A RESUBMISSION FOR SITE PLAN APPROVAL.

REQUIRED PERMITS:

1.) LOCAL SITE PLAN APPROVAL
2.) LOCAL CONDITIONAL USE PERMIT (BUFFERS) (P22-56/SITE-2022-0005)
3.) US EPA NOTICE OF INTENT / SWPPP
4.) NHDES SEWER DISCHARGE PERMIT: D2023-301

GENERAL PLAN SET NOTES:

1.) 11x17" PLANS ARE TWICE THE PUBLISHED SCALE.

2.) ALL PLANS ARE CONSIDERED TO BE NOT FOR CONSTRUCTION UNLESS THEY CONTAIN THE APPROVAL STAMP OF THE CITY OF DOVER.

APPROVED DOVER

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 805 KENNETH A. BERRY SIGNATURE

DOVER FILE #

REVISION	DATE	DESCRIPTION

COMMERCIAL SITE PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

ABBREVIATION LEGEND:

E.O.P.	EDGE OF PAVEMENT
V.G.C.	VERTICAL GRANITE CURB
S.G.C.	SLOPED GRANITE CURB
BITUM.	BITUMINOUS
E.S.H.W.T	ESTIMATE SEASONAL HIGH WATER TABLE
TYP.	TYPICAL
U.G.E	UNDER GROUND ELECTRIC / UTILITY
CLDI	CONCRETE LINED DUCTILE IRON
DI	DUCTILE IRON
F.P.	FIRE PROTECTION
U.D.	UNDER DRAIN
C.O.	CLEAN OUT
INV.	INVERT
ELEV.	ELEVATION
HDPE	HIGH DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE PIPE
RECB	ROLLED EROSION CONTROL BLANKET
F.G.	FINISHED GRADE
E.G.	EXISTING GRADE
E.T.W.	EDGE OF TRAVELED WAY
T.B.R.	TO BE REMOVED
PL	PROPERTY LINE
EL	EASEMENT LINE
CL	CENTER LINE
CF	CUBIC FEET
P.C.	POINT OF CURVATURE
P.T.	POINT OF TANGENCY
P.V.C.	POINT OF VERTICAL CURVE
P.V.I.	POINT OF VERTICAL INTERSECTION
P.V.T.	POINT OF VERTICAL TANGENCY
EX.	EXISTING
PROP.	PROPOSED
STA.	STATION
BMP	BEST MANAGEMENT PRACTICE
'/.	FEET / FEET
TP	TEST PIT

{ | SSL ( ) ~ {SIZE} SINGLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ | DSL ( ) ~ {SIZE} DOUBLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ | SSB ( ) ~ {SIZE} SINGLE SOLID W/ BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ SBL ( ) ~ {SIZE} SINGLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ | DBL ( ) ~ {SIZE} DOUBLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)

LEGEND:

- 3/4" REBAR W/ ID CAP ~TBS~
- GRANITE BOUND ~FND~
- STEEL STAKE ~FND~
- SIGNAGE
- UTILITY POLE
- TEST PIT
- EXISTING SEWER MANHOLE W/ STRUCTURE
- EXISTING/PROPOSED DRAIN MANHOLE W/ STRUCTURE
- EXISTING/PROPOSED CATCH BASIN W/ STRUCTURE
- PROPOSED STORMWATER BMP OUTLET STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- 176 — CONTOUR MINOR, EXISTING
- 175 — CONTOUR MAJOR, EXISTING
- P176 — CONTOUR MINOR, PROPOSED
- P175 — CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING GAS LINE
- PROPOSED WATER MAIN
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED GAS LINE
- UNDERGROUND UTILITY
- GV — GATE VALVE
- FIRE HYDRANT
- GAS VALVE
- PROPOSED LIGHT TYPE "A" MOUNTED ON POLE
- PROPOSED LIGHT TYPE "B" MOUNTED ON STRUCTURE
- EXISTING LIGHT TYPE "C" MOUNTED ON POLE
- E175.31 — EXISTING SPOT GRADE
- F175.31 — PROPOSED SPOT GRADE
- FLOW ARROW
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM
- SNOW STORAGE
- SF / SS / C / P/C — SILT FENCE / EROSION MIX BERM
- FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- PERIMETER CONTROL
- R — RAIN GARDEN BIO-MEDIA PROTECTION
- P — PERIMETER CONTROL
- C — ROADWAY CONSTRUCTION
- LIMIT OF PROJECT DISTURBANCE
- NRCS SOIL DELINEATION
- WdA — SOIL TYPE
- WETLAND BUFFER PLACARD
- CONDITIONAL USE PERMIT (CUP) AREA

GIS SKETCH
DOVER, NH
SCALE: 1" = 100' ±



SIGN ID NUMBER	SIGN SIZE (WIDTH x HEIGHT)	SIGN	TEXT DIMENSIONS	NO. OF SIGNS	BACKGROUND	LEGEND	BORDER	POST SIZE & QUANTITY
R1-1	30"x30"	STOP	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT – FHWA	1	RED	WHITE	WHITE	SQUARE (1)
R7-8	12"x18"	RESERVED PARKING	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT – FHWA	1	WHITE	GREEN W/ WHITE SYMBOL ON BLUE	RED	SQUARE (1)
R7-8a	12"x6"	VAN ACCESSIBLE	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT – FHWA	1	WHITE	GREEN	GREEN	SQUARE (0)
CUSTOM	18"x12"	NO OUTDOOR EQUIPMENT OR MATERIAL STORAGE ALLOWED	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT – FHWA	1	WHITE	BLACK	BLACK	SQUARE (1)

ABUTTERS WITHIN 200':

N/F TERRACE HOSPITALITY LLC
30 APPLEVALE DRIVE
DOVER, NH 03820
TAX MAP D, LOT 11-6
S.C.R.D. BOOK 5186, PAGE 526

N/F DOVER BUSINESS & IND. DEV. AUTHORITY
F/K/A DOVER IND. DEV. AUTHORITY
288 CENTRAL AVE.
DOVER, NH 03820
TAX MAP D, LOT 11-6-SND
S.C.R.D. BOOK 1559, PAGE 394

N/F WEAVE FILTRATION LLC
100 TRI CITY ROAD, UNIT 117
SOMERSWORTH, NH 03878
TAX MAP D, LOT 11-7-SN1
S.C.R.D. BOOK 5094, PAGE 750

ABUTTERS WITHIN 200' CONT.:

N/F QUALITY WAY LLC
5 DANIELS STREET, APT 2
SALEM, MA 01970-5214
TAX MAP D, LOT 11-4
S.C.R.D. BOOK 3973, PAGE 254

N/F 111 VENTURE DRIVE LLC
P.O. BOX 790
BURLINGTON, VT 055402
TAX MAP D, LOT 11-3
S.C.R.D. BOOK 5181, PAGE 624

N/F DOVER BUSINESS & IND. DEV. AUTHORITY
288 CENTRAL AVE.
DOVER, NH 03820
TAX MAP D, LOT 14
S.C.R.D. BOOK 4368, PAGE 691

N/F VYGON CORPORATION,
ADVANCED MEDICAL INC,
2750 MORRIS ROAD #A200
LANSDALE, PA 19446-6083
TAX MAP D, LOT 14-4
S.C.R.D. BOOK 1951, PAGE 542

ABUTTERS WITHIN 200' CONT.:

N/F 46 VENTURE DRIVE PROPERTIES LLC.
910 DAY HILL ROAD
WINDSOR, CT 06095
TAX MAP D, LOT 11-2
S.C.R.D. BOOK 4731, PAGE 267

N/F SARNIA PROPERTIES INC.
1 HAVEN COURT
PORTSMOUTH, NH 03801
TAX MAP D, LOT 13-3
S.C.R.D. BOOK 4850, PAGE 405

DOVER FILE #

REVISION	DATE	DESCRIPTION

NEIGHBORHOOD PLAN
OF
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 805 — KENNETH A. BERRY — SIGNATURE

STATE OF NEW HAMPSHIRE — KENNETH A. BERRY — No. 14243 — LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

PLAN REFERENCES:

1.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-91

2.) "LOT LINE ADJUST PLAN PREPARED FOR WHITE ENTERPRISES AND DOVER INDUSTRIAL DEVELOPMENT AUTHORITY LONGHILL ROAD, DOVER, NH" BY: MCENEANEY SURVEY ASSOCIATES DATED: JULY 3, 1991 S.C.R.D. PLAN 39-38

3.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-92

4.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY VENTURE DRIVE DOVER, NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: AUGUST 4, 1994 S.C.R.D. PLAN # 45-32

5.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP H, LOT NO. 11-1 VENTURE DRIVE DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: FEBRUARY 25, 2005 S.C.R.D. PLAN # 79-87

PLAN REFERENCES:

6.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-99

7.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-100

8.) "LOT LINE ADJUSTMENT AND SUBDIVISION PLAN OF LAND PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: JUNE 12, 2006 S.C.R.D. PLAN 86-73

STRUCTURES TABLE:

SMH #4349
RIM = 172.22
INV. IN = 156.80 (*SMH #4350*)
INV. OUT = 156.75 (*SMH #4157*)

SMH #4350
RIM = 175.23
INV. IN = 157.61 (*SMH #4351*)
INV. OUT = 157.57 (*SMH #4149*)

SMH #4157
RIM = 172.67
INV. IN = 156.27 (*SMH #4349*)
INV. IN = 156.17 (*SMH #4158*)
INV. OUT = 156.07 (*SMH #4156*)

DMH #4198
RIM = 174.05
INV. IN = 170.45 (*CB #7322*)
INV. IN = 168.55 (*CB #3203*)
INV. OUT = 168.45 (*DMH #8054*)

DMH #8054
RIM = 172.96
INV. IN = 168.02 (*DMH #4198*)
INV. IN = 167.86 (*CB #7321*)
INV. OUT = 167.86 (*CB #7319*)

CB #7325
RIM = 174.60
INV. IN = 167.36
INV. OUT = 166.90

CB #7323
RIM = 172.10
INV. OUT = 168.90 (*CB #7324*)

CB #7324
RIM = 172.08
INV. IN = 168.43 (*CB #7323*)
INV. OUT = 168.33

CB #7322
RIM = 174.15
INV. OUT = 171.40 (*DMH #4198*)

CB #7321
RIM = 172.97
INV. OUT = 167.17 (*DMH #8054*)

CB #3201
RIM = 177.17
INV. IN = 174.47
INV. OUT = 174.37 (*CB #3202*)

CB #3202
RIM = 178.15
INV. IN = 173.93 (*CB #3201*)
INV. OUT = 173.61 (*CB #3203*)

CB #3203
RIM = 178.13
INV. IN = 175.15
INV. IN = 173.31 (*CB #3202*)
INV. OUT = 173.21 (*DMH #4198*)

CB #7320
RIM = 170.63
INV. OUT = 167.11 (*CB #7319*)

CB #7319
RIM = 170.61
INV. IN = 166.51 (*DMH #8054*)
INV. IN = 166.51 (*CB #7320*)
INV. OUT = 166.45

SOIL DATA:

EaB ~ ELMWOOD FINE SANDY LOAM, 3 TO 8% SLOPES
GsC ~ GLOUCESTER VERY STONY FINE SANDY LOAM, 8 TO 15% SLOPES
ScB ~ SCANTIC SILT LOAM, 3 TO 8% SLOPES

SEE USDA / NRCS WEBSOIL

DEIDRA L.BENJAMIN, CWS

STATE OF NEW HAMPSHIRE · DEIDRA L. BENJAMIN · No. 295 · CERTIFIED WETLAND SCIENTIST

WETLAND NOTE:

WETLANDS WERE DELINEATED BY DEIDRA L. BENJAMIN, CWS, IN THE SUMMER OF 2021 USING THE FOLLOWING CRITERIA:

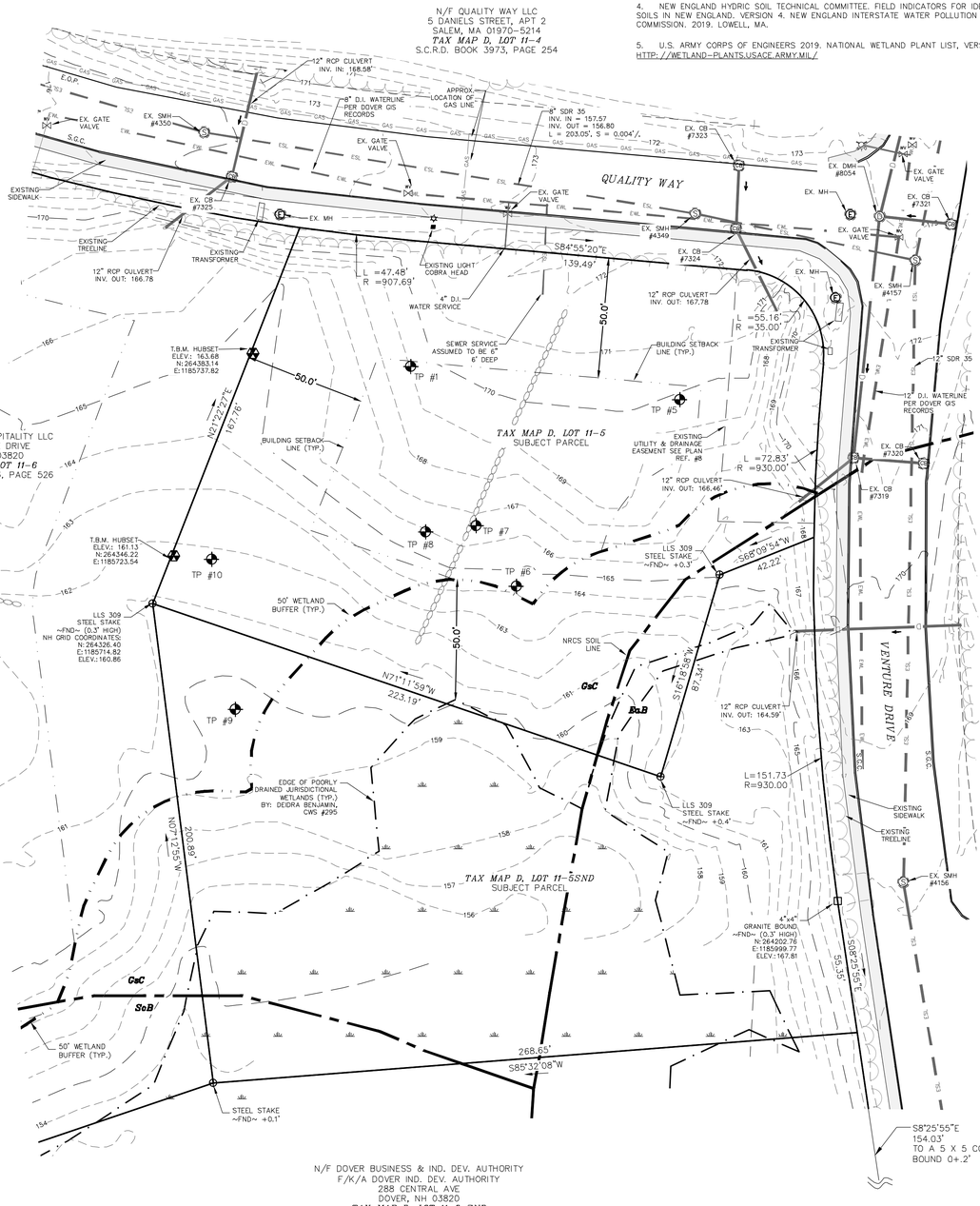
1. USACE. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. VERSION 2.0. U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER. 2012. VICKSBURG, MS.

2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

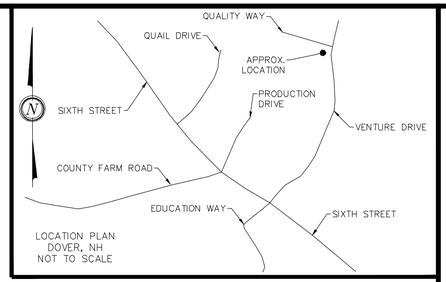


N/F TERRACE HOSPITALITY LLC
30 APPLEVALE DRIVE
DOVER, NH 03820
TAX MAP D, LOT 11-6
S.C.R.D. BOOK 5186, PAGE 526

N/F DOVER BUSINESS & IND. DEV. AUTHORITY
F/K/A DOVER IND. DEV. AUTHORITY
288 CENTRAL AVE
DOVER, NH 03820
TAX MAP D, LOT 11-6 SND
S.C.R.D. BOOK 1559, PAGE 394

N/F 111 VENTURE DRIVE LLC
P.O. BOX 790
BURLINGTON, VT 055402
TAX MAP D, LOT 11-3
S.C.R.D. BOOK 5181, PAGE 624

N/F VYGON CORPORATION, ADVANCED MEDICAL INC.
2750 MORRIS ROAD #A200
LANSDALE, PA 19446-6083
TAX MAP D, LOT 11-4
S.C.R.D. BOOK 1951, PAGE 542



LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820
APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) ZONING: IT – INNOVATIVE TECHNOLOGY
SETBACKS
FRONT ~ 50'
SIDE ~ 50'
REAR ~ 50'
MIN. LOT SIZE: 2 ACRES
MIN. FRONTAGE: 200'
MAX. LOT COVERAGE: 33%
MAX. BUILDING HEIGHT: 55'

6.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING BOUNDARIES AND CONDITIONS OF TAX MAP D, LOT 11-5 & 11-5SND LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN AUGUST 2021.

7.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN. FLOOD HAZARD REF: FEMA, COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

8.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

9.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST OF 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

10.) TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED IN AUGUST 2021.

11.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

EXISTING LEGEND:

- STONE BOUND (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- SINGLE POST SIGN
- TEMPORARY BENCHMARK
- TEST PIT
- CURB STOP
- GATE VALVE
- FIRE HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- STONE WALL
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN LINE
- OVERHEAD UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING TREELINE
- NRCS SOIL LINE/LABEL
- POORLY DRAINED WETLANDS
- 50' WETLAND BUFFER

FND FOUND
TYP TYPICAL
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

EXISTING CONDITIONS PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 30 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 805 · KENNETH A. BERRY · SIGNATURE

NOT FOR CONSTRUCTION

TEST PIT DATA:

TEST PIT #1
0–6 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
38–68 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 68"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #2
0–5 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
5–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
38–65 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 65"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #3
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–18 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
18–30 2.5Y 5/4 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
30–55 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 30"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 55"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #4
0–6 10YR 3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
24–40 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND, GRANULAR, FRIABLE
40–60 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY LOAMY SAND WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 40"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 60"
REFUSAL @ N/A
P = 6 MIN/IN

TEST PIT #5
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM, GRANULAR, FRIABLE
38–64 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 64"
REFUSAL @ N/A
P = 10 MIN/IN

TEST PIT #6
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–30 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
E.S.H.W.T. @ N/A
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 30"
REFUSAL @ 30"
P = 10 MIN/IN

TEST PIT #7
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
22–38 2.5Y 5/4 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM, GRANULAR, FRIABLE
38–64 2.5Y 5/3 LIGHT OLIVE BROWN, GRAVELLY FINE SANDY LOAM WITH REDOX. FEAT. PRESENT, MASSIVE, FRIABLE
E.S.H.W.T. @ 38"
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 64"
REFUSAL @ N/A
P = 10 MIN/IN

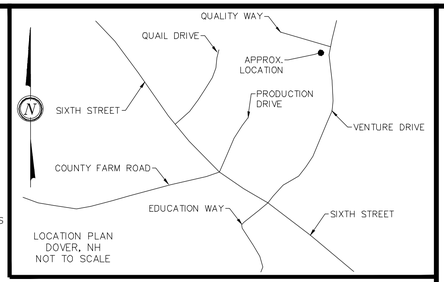
TEST PIT #8
0–6 10YR 3/2 VERY DARK GRAYISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 10YR 5/6 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
E.S.H.W.T. @ N/A
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 24"
REFUSAL @ 24"
P = 10 MIN/IN

TEST PIT #9
0–5 10YR 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
5–12 2.5Y 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
12–45 5Y 5/2 OLIVE GRAY SILT LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 12"
RESTRICTIVE LAYER @ 12"
GROUND WATER @ N/A
TERMINATED @ 45"
REFUSAL @ N/A
P = 18 MIN/IN

TEST PIT #10
0–5 10YR 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
5–14 2.5Y 4/2 DARK GRAYISH BROWN, SILT LOAM, GRANULAR, FRIABLE
14–45 5Y 5/2 OLIVE GRAY SILT LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 14"
RESTRICTIVE LAYER @ 14"
GROUND WATER @ N/A
TERMINATED @ 45"
REFUSAL @ N/A
P = 18 MIN/IN

EXISTING LEGEND:

- STONE BOUND (FND)
- STEEL STAKE (FND)
- TEST PIT
- EXISTING DRAIN LINE
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING TREELINE
- NRCS SOIL LINE/LABEL
- POORLY DRAINED WETLANDS
- 50' WETLAND BUFFER
- SOIL LINE
- LIMIT OF SOIL SURVEY
- 448A SOIL SERIES
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
- TYP. FOUND
- FND TYPICAL



LOCATION PLAN
DOVER, NH
NOT TO SCALE



NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11–5
B.) TAX MAP D, LOT 11–5SND

3.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

4.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PREFORMED BY BERRY SURVEYING AND ENGINEERING IN 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 IN 10,000.

5.) VERTICAL DATUM IS BASED ON USGS NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83 NH STATE PLANE COORDINATES. COORDINATES GATHERED FROM CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

6.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING ANALYZED SITE SPECIFIC SOIL CONDITIONS OF THE SITE.

SITE SPECIFIC SOILS LEGEND

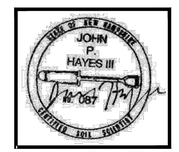
SYMBOL	SLOPES	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
Be	A	MAYBID	D
238	A,B,C,D	ELMRIDGE (VERY STONY)	C
Gs	B,C	GLOUCESTER (VERY STONY)	A
Hg	C	HOLLIS–GLOUCESTER COMPLEX (VERY ROCKY)	A/D
Sc	A,B	SCITICO	C
500	A,B,C,D,E	UDORTHENTS	C
600	B	ENDOAQUENTS	C

SLOPE: A = 0–3% B = 3–8% C = 8–15% D = 15–25% E = 25–50% F = 50%+

DENOMINATOR: /VP = VERY POORLY DRAINED /P = POORLY DRAINED
/Rk = VERY ROCKY



DEIDRA BENJAMIN, CWS #295



JOHN P. HAYES, III CSS #87

WETLAND NOTE:

WETLANDS WERE DELINEATED BY DEIDRA L. BENJAMIN, CWS, IN THE SUMMER OF 2021 USING THE FOLLOWING CRITERIA:

1. USACE. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. VERSION 2.0. U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER. 2012. VICKSBURG, MS.

2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

SITE SPECIFIC SOILS MAP
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11–5 & 11–5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 60 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE No. 805 KENNETH A. BERRY LICENSED LAND SURVEYOR
SIGNATURE

SHEET 3 OF 26

NOT FOR CONSTRUCTION

DEIDRA L.BENJAMIN, CWS

STATE OF NEW HAMPSHIRE
DEIDRA L BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

WETLAND NOTE:

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2. USACE. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. ENVIRONMENTAL LABORATORY. 1987. VICKSBURG, MS.

3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

PLAN REFERENCES:

1.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-91

2.) "LOT LINE ADJUST PLAN PREPARED FOR WHITE ENTERPRISES AND DOVER INDUSTRIAL DEVELOPMENT AUTHORITY LONGHILL ROAD, DOVER, NH" BY: MCENEANEY SURVEY ASSOCIATES DATED: JULY 3, 1991 S.C.R.D. PLAN 39-38

3.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-92

4.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY VENTURE DRIVE DOVER, NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: AUGUST 4, 1994 S.C.R.D. PLAN # 45-32

5.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP H, LOT NO. 11-1 VENTURE DRIVE DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: FEBRUARY 25, 2005 S.C.R.D. PLAN # 79-87

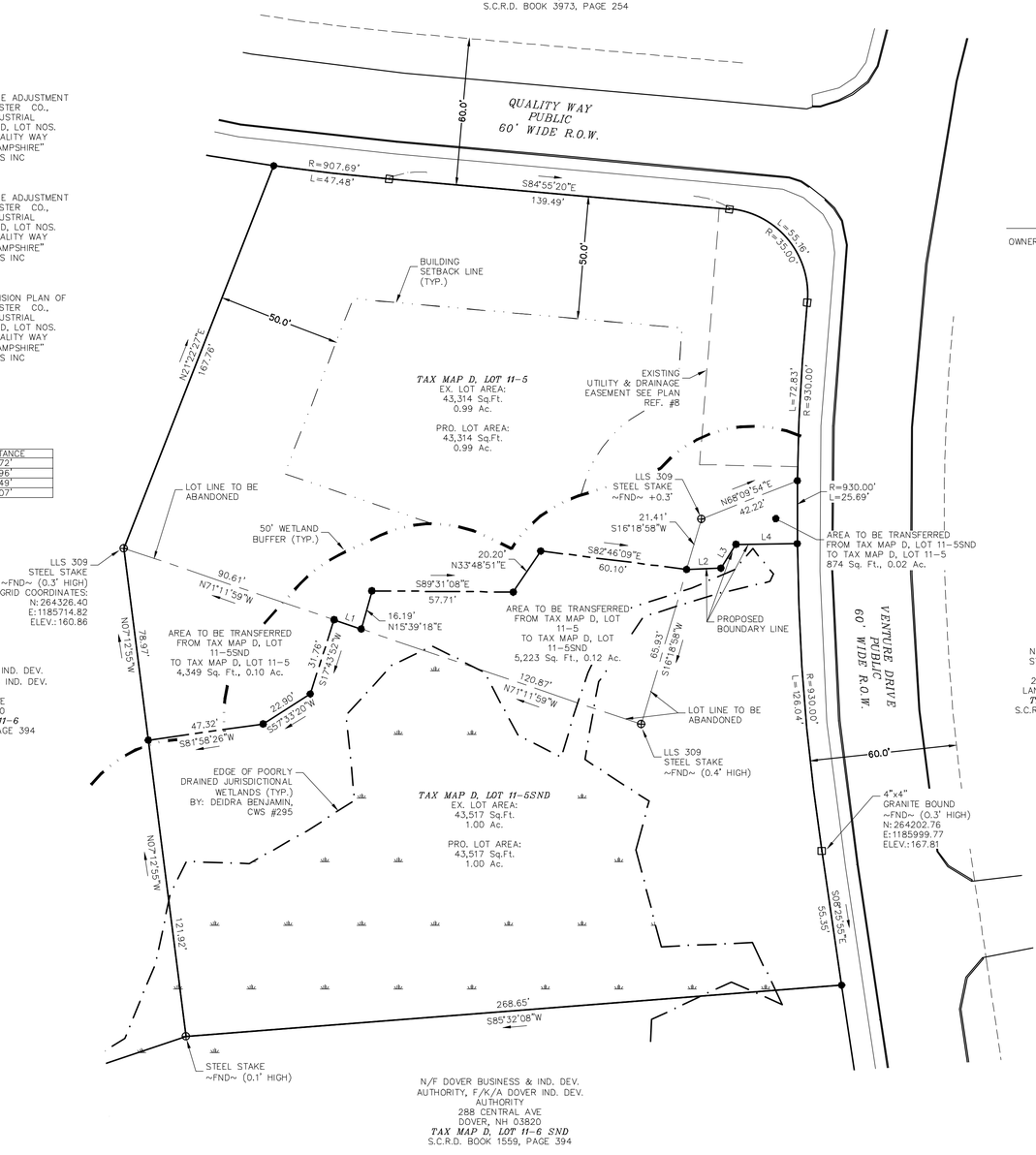
PLAN REFERENCES:

6.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-99

7.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-100

8.) "LOT LINE ADJUSTMENT AND SUBDIVISION PLAN OF LAND PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: JUNE 12, 2006 S.C.R.D. PLAN 86-73

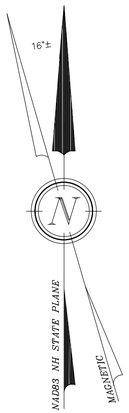
LINE	BEARING	DISTANCE
L1	N71°11'59"W	11.72'
L2	N87°42'08"E	13.96'
L3	N32°16'10"E	11.49'
L4	N89°20'00"E	25.07'



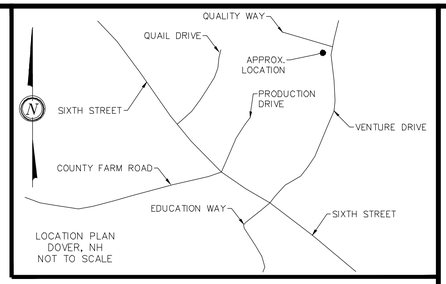
LEGEND:

- ● 3/4" REBAR W/ ID CAP ~TBS~
- ⊡ GRANITE BOUND ~FND OR TBS~
- ⊕ STEEL STAKE ~FND~
- PROPOSED BOUNDARY LINE
- LOT LINE TO BE ABANDONED
- BUILDING SETBACK LINE
- POORLY DRAINED WETLANDS
- 50' WETLAND BUFFER

FND FOUND
TYP TYPICAL
TBS TO BE SET
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS



OWNER



NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

A.) TAX MAP D, LOT 11-5

B.) EXISTING LOT AREA: 43,314 Sq.Ft., 0.99 Ac.
PROPOSED LOT AREA: 43,314 Sq.Ft., 0.99 Ac.

C.) S.C.R.D. BOOK 4980, PAGE 632

2.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

A.) TAX MAP D, LOT 11-5SND

B.) EXISTING LOT AREA: 43,517 Sq.Ft., 1.00 Ac.
PROPOSED LOT AREA: 43,517 Sq.Ft., 1.00 Ac.

C.) S.C.R.D. BOOK 4980, PAGE 63

3.) ZONING: IT - INNOVATIVE TECHNOLOGY
SETBACKS
FRONT ~ 50'
SIDE ~ 50'
REAR ~ 50'
MIN. LOT SIZE: 2 ACRES
MIN. FRONTAGE: 200'
MAX. LOT COVERAGE: 33%
MAX. BUILDING HEIGHT: 55'

4.) THE INTENT OF THIS PLAN IS TO REVISE THE BOUNDARY LINES OF TAX MAP D, LOT 11-5 & 11-5SND. THIS IS AN EQUAL LAND SWAP AND BOTH LOTS WILL HAVE THE SAME LOT AREA AS THE EXISTING.

5.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

6.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

7.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST OF 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

8.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

9.) AN EASEMENT IS PROVIDED TO THE CITY TO MAINTAIN THE POTABLE DRINKING WATER QUALITY THROUGH THE HYDRANT FLUSHING PROGRAM, WHICH INCLUDES PROVIDING ACCESS TO THE WATER CURB BOXES.

10.) PRIOR TO ANY DEEDING PROOF OF CONSERVATION COMMISSION APPROVAL, CITY COUNCIL APPROVAL, AND NH CHARITABLE TRUST DIRECTOR APPROVAL IS TO BE PROVIDED TO THE PLANNING DEPARTMENT.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DOVER APPROVAL

I CERTIFY THAT THIS PLAT EXCEEDS THE MINIMUM REQUIREMENT FOR ACCURACY AND COMPLETENESS OF THE STATE OF N.H. AND THE CITY OF DOVER, N.H. -1:10,000-

KENNETH A. BERRY L.L.S. 805 DATE

DOVER FILE #

REVISION	DATE	DESCRIPTION

LOT LINE REVISION
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 30 FT.
DATE : APRIL 1, 2025
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STATE OF NEW HAMPSHIRE
No. 805
KENNETH A. BERRY
LICENSED LAND SURVEYOR
SIGNATURE

NOT FOR CONSTRUCTION

DEIDRA L.BENJAMIN, CWS

STATE OF NEW HAMPSHIRE
DEIDRA L BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

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3. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2018. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2. L.M. VASILAS, G.W. HURT, AND J.F. BERKOWITZ (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.

4. NEW ENGLAND HYDRIC SOIL TECHNICAL COMMITTEE. FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND. VERSION 4. NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. 2019. LOWELL, MA.

5. U.S. ARMY CORPS OF ENGINEERS 2019. NATIONAL WETLAND PLANT LIST, VERSION 3.3. HTTP://WETLAND-PLANTS.USACE.ARMY.MIL/

PLAN REFERENCES:

1.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-91

2.) "LOT LINE ADJUST PLAN PREPARED FOR WHITE ENTERPRISES AND DOVER INDUSTRIAL DEVELOPMENT AUTHORITY LONGHILL ROAD, DOVER, NH" BY: MCENEANEY SURVEY ASSOCIATES DATED: JULY 3, 1991 S.C.R.D. PLAN 39-38

3.) "SUBDIVISION PLAN DOVER INDUSTRIAL DEVELOPMENT AUTHORITY SIXTH STREET / LONG HILL ROAD EXT. DOVER, NEW HAMPSHIRE" BY: TERRASCAN ENGINEERS SURVEYORS DATED: JANUARY 17, 1992 S.C.R.D. PLAN 41-92

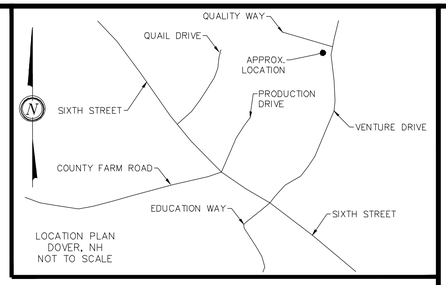
4.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY VENTURE DRIVE DOVER, NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: AUGUST 4, 1994 S.C.R.D. PLAN # 45-32

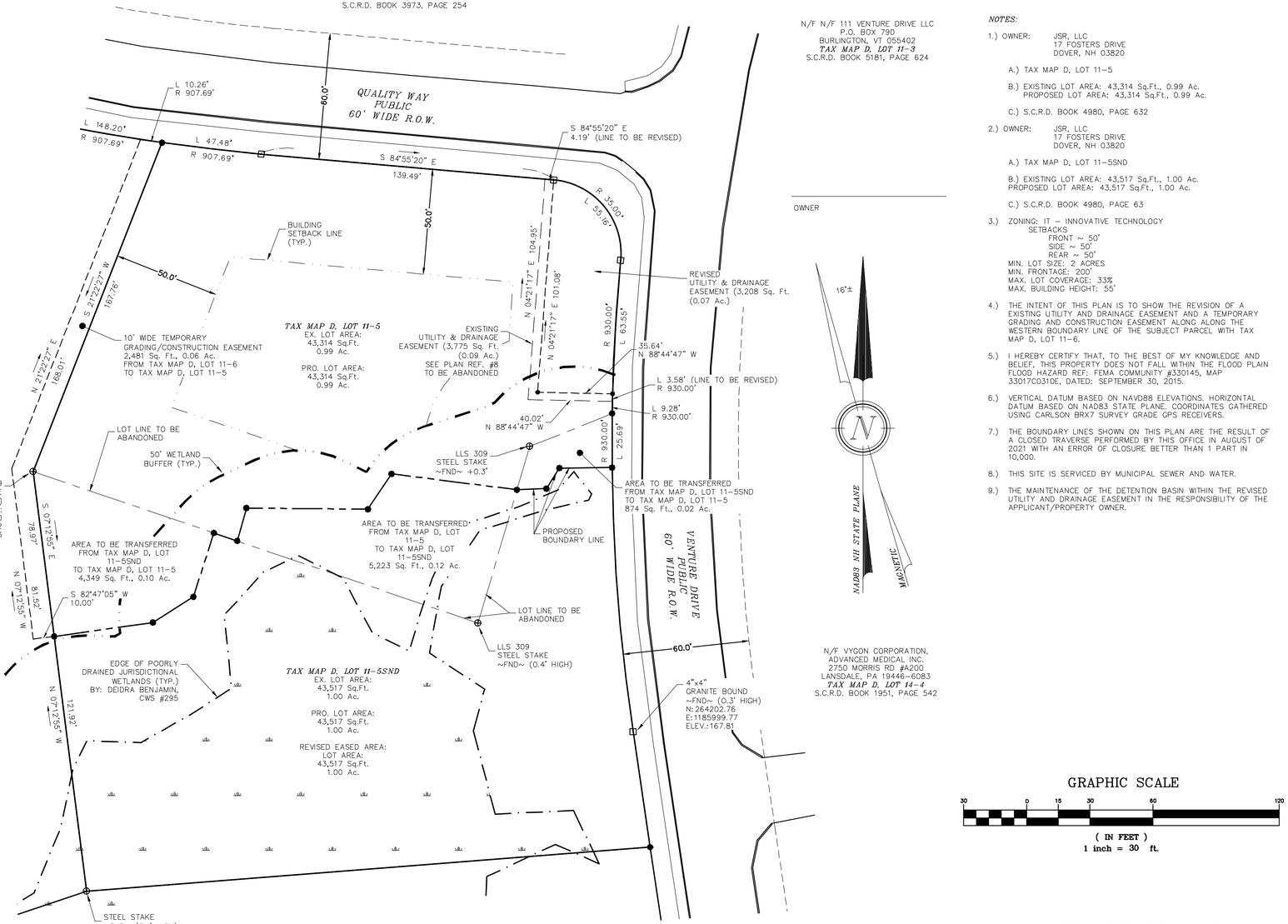
5.) "SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP H, LOT NO. 11-1 VENTURE DRIVE DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC. DATED: FEBRUARY 25, 2005 S.C.R.D. PLAN # 79-87

6.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-99

7.) "AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: FEBRUARY 14, 2006 S.C.R.D. PLAN 85-100

8.) "LOT LINE ADJUSTMENT AND SUBDIVISION PLAN OF LAND PREPARED FOR GEORGE J. FOSTER CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY TAX MAP D, LOT NOS. 9A & 11-1 VENTURE DRIVE AND QUALITY WAY DOVER, STRAFFORD COUNTY NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES INC DATED: JUNE 12, 2006 S.C.R.D. PLAN 86-73





LEGEND:

- ● 3/4" REBAR W/ ID CAP ~TBS~
- ● 1/2" EASEMENT REBAR W/ ID CAP ~TBS~
- ⊡ GRANITE BOUND ~FND OR TBS~
- ⊕ STEEL STAKE ~FND~
- PROPOSED BOUNDARY LINE
- LOT LINE TO BE ABANDONED
- EXISTING EASEMENT LINE TO BE ABANDONED
- EASEMENT LINE
- BUILDING SETBACK LINE
- POORLY DRAINED WETLANDS
- 50' WETLAND BUFFER

FND FOUND
TYP TYPICAL
TBS TO BE SET
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

A.) TAX MAP D, LOT 11-5

B.) EXISTING LOT AREA: 43,314 Sq.Ft., 0.99 Ac.
PROPOSED LOT AREA: 43,314 Sq.Ft., 0.99 Ac.

C.) S.C.R.D. BOOK 4980, PAGE 632

2.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

A.) TAX MAP D, LOT 11-5SND

B.) EXISTING LOT AREA: 43,517 Sq.Ft., 1.00 Ac.
PROPOSED LOT AREA: 43,517 Sq.Ft., 1.00 Ac.

C.) S.C.R.D. BOOK 4980, PAGE 63

3.) ZONING: IT – INNOVATIVE TECHNOLOGY
SETBACKS
FRONT ~ 50'
SIDE ~ 50'
REAR ~ 50'
MIN. LOT SIZE: 2 ACRES
MIN. FRONTAGE: 200'
MAX. LOT COVERAGE: 33%
MAX. BUILDING HEIGHT: 55'

4.) THE INTENT OF THIS PLAN IS TO SHOW THE REVISION OF A EXISTING UTILITY AND DRAINAGE EASEMENT AND A TEMPORARY GRADING AND CONSTRUCTION EASEMENT ALONG ALONG THE WESTERN BOUNDARY LINE OF THE SUBJECT PARCEL WITH TAX MAP D, LOT 11-6.

5.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

6.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

7.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST OF 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

8.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

9.) THE MAINTENANCE OF THE DETENTION BASIN WITHIN THE REVISED UTILITY AND DRAINAGE EASEMENT IN THE RESPONSIBILITY OF THE APPLICANT/PROPERTY OWNER.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

KENNETH A. BERRY L.L.S. 805 DATE

DOVER FILE #

REVISION	DATE	DESCRIPTION

EASEMENT PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 30 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE
No. 805
KENNETH A. BERRY
LICENSED LAND SURVEYOR
SIGNATURE

NOT FOR CONSTRUCTION

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) ZONING: IT – INNOVATIVE TECHNOLOGY

SETBACKS	PROVIDED ORIGINAL TDR
FRONT ~ 50'	15.0'
SIDE ~ 50'	40.1' & 40.9'
REAR ~ 50'	50.0'
MIN. LOT SIZE: 2 ACRES	0.99 Ac.
MIN. FRONTAGE: 200'	267.48'
MAX. LOT COVERAGE: 33%	23.27%
MAX. BUILDING HEIGHT: 55'	31'±

6.) THE INTENT OF THIS PLAN IS TO SHOW THE DETAIL SITE DESIGN FOR FOUR CONTRACTOR STORAGE / OFFICE SPACE. THE BUILDING IS PROPOSED TO BE STEEL FRAME AND IS CURRENTLY ASSUMED TO NOT NEED A FIRE SUPPRESSION SYSTEM. FURTHER DETAILS ARE TO BE WORKED OUT WITH THE OWNER AND INSPECTION SERVICES.

NOTES CONTINUED:

7.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330145, MAP 33017C0330E, DATED: SEPTEMBER 30, 2015.

8.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE, COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

9.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST OF 2021 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

10.) LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE:
NONE

11.) WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, CERTIFIED WETLANDS SCIENTIST, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, IN AUGUST OF 2021.

12.) AS-BUILT PLANS OF THE SITE PLAN SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILTS ARE REQUIRED REGARDLESS OF OWNERSHIP OF ROAD. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.

13.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.

14.) THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.

NOTES CONTINUED:

15.) ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

16.) ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.

17.) ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS. (NOT APPLICABLE)

18.) A LETTER OF CREDIT FOR THE COST OF RE-VEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS. THE PROPOSED PROJECT WILL CONSIST OF ONE PHASE AND WILL DISTURB 46,275 Sq.Ft. 1.06 Ac.

19.) A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

20.) SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY 7 AM-6 PM, NO SUNDAY HOURS OR FEDERAL HOLIDAYS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE DIRECTOR OF PLANNING AND COMMUNITY DEVELOPMENT.

NOTES CONTINUED:

21.) BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

22.) THE FOLLOWING FEDERAL AND STATE PERMITS OR UTILITY ORDERS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
NHDES SEWER DISCHARGE PERMIT: D2023-301

23.) COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

24.) ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES. THE TWO WALLS ONSITE ARE TO BE DESIGNED BY OTHERS, TYPICALLY THE BLOCK MANUFACTURE, AND REVIEWED AND APPROVE BY THE DESIGN ENGINEER AS WELL AS THE CITY ENGINEER.

25.) ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

26.) APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL. https://www.unh.edu/unhsc/ptapp

NOTES CONTINUED:

27.) THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.

28.) FIRE DEPARTMENT ACCESS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.

29.) EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.

30.) A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.

31.) APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

32.) THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM IF REQUIRED BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

33.) SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE IF REQUIRED.

34.) FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES IF REQUIRED.

35.) THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5. 1 ADA VAN SPACE IS REQUIRED AND PROVIDED WITH 2% THROUGH THE SPACE AND AISLE.
WALKS ARE DESIGNED AT 5% OR LESS AND PROVIDE A CLEAR PATH OF 5' AT ALL TIMES. THE ACCESSIBLE ROUTE FROM THE ADA SPACES IS ACROSS THE DRIVE AISLE, UP THE WALK AND INTO THE BUILDING.

36.) EXISTING BUILDING IMPERVIOUS AREA: 0 Sq. Ft. (0%)
EXISTING PAVED/GRAVEL IMPERVIOUS AREA: 0 Sq. Ft. (0%)
TOTAL EXISTING IMPERVIOUS COVER IS 0 Sq. Ft. (0%)
PROPOSED BUILDING IMPERVIOUS AREA: 10,080 Sq. Ft. (23.27%)
PROPOSED PAVED IMPERVIOUS AREA: 9,717 Sq. Ft. (22.44%)
TOTAL PROPOSED IMPERVIOUS COVER IS 23,520 Sq. Ft. (45.71%)

37.) DUE TO THE OCCUPANCY TYPE FOR THE BUILDING, A DUMPSTER ON SITE IS NOT REQUIRED.

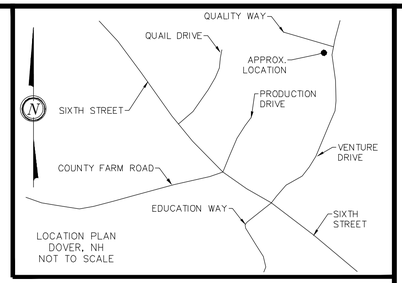
38.) MUNICIPAL SIDEWALK TO REMAIN OPERATIONAL AT ALL TIMES AND SHALL HAVE A 5' WIDTH MINIMUM IN FINAL CONDITION. SIDEWALK TO BE RECONSTRUCTED ALONG SUBJECT PARCEL FRONTAGE.

39.) THE CLOSEST FIRE HYDRANT IS AT THE OPPOSITE CORNER OF VENTURE AVE. AND QUALITY WAY WHICH IS 240'± FROM THE SOUTHERN CORNER OF THE PROPOSED BUILDING AND 84'± FROM THE NORTH EASTERLY CORNER OF THE PROPOSED BUILDING.

40.) THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50' CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY. SEE PLACARDS TO BE PLACED AS WELL AS CONSTRUCTION FENCING AND DOUBLE ROW SILTATION PROTECTION REQUIREMENTS ON THE E&S PLANS.

41.) NO OUTDOOR STORAGE OF EQUIPMENT OR MATERIALS IS ALLOWED.

42.) THE CITY OF DOVER HAS A BLANKET EASEMENT OVER THE WATER SYSTEM TO ENSURE POTABLE WATER QUALITY IS AVAILABLE AND TO ENSURE EACH DEVICE IS AVAILABLE FOR FLUSHING AND INSPECTION. PRIVATE UTILITIES ARE THE RESPONSIBILITY OF THE LAND OWNER.



LOCATION PLAN
DOVER, NH
NOT TO SCALE

TRANSFER OF DEVELOPMENT RIGHTS REQUEST (INDUSTRIAL):
REDUCTION OF THE IT FRONT SETBACK FROM 50' TO 15'
REDUCTION OF THE IT SIDE SETBACK FROM 50' TO 40.1'

CONDITIONAL USE PERMIT (P22-56/SITE-2022-0005):
WETLANDS BUFFER IMPACT: 7,935 Sq.Ft.

PARKING REQUIREMENTS:

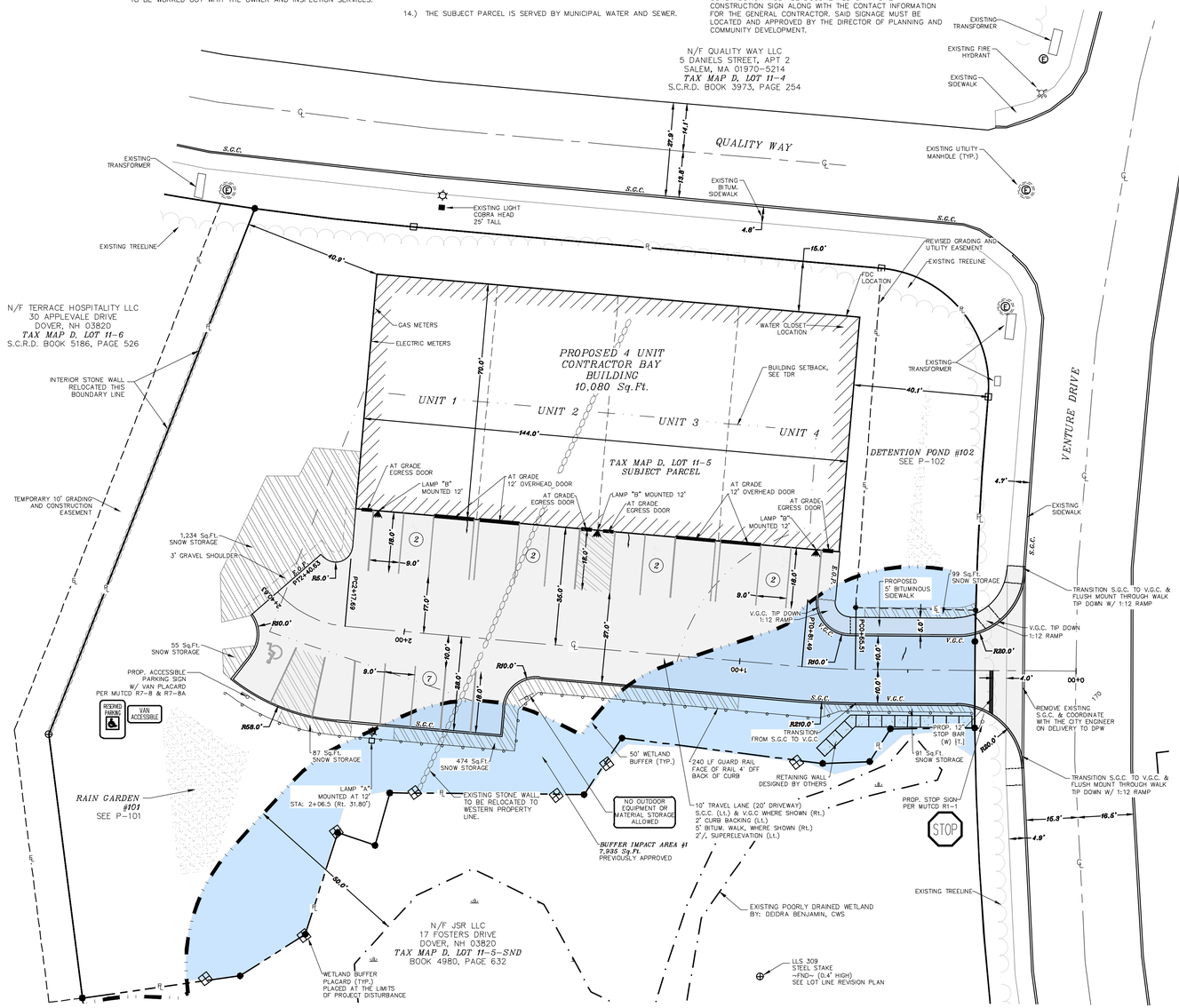
- CHAPTER 153-14D NO USE PRESCRIBED
- ITE LAND USE CODE 110 & 140 CONSULTED
  - 1.1-1.3 PEAK SPACES NEEDED PER 1,000 GFA
  - 14 SPACES REQUIRED

TOTAL PROPOSED = 14 SPACES

SNOW STORAGE CALCULATION:

- STORAGE CALCULATION (6:1 RATIO USED)
  - PLOWABLE AREA = 10,321 Sq.Ft. / 6 = 1,721 Sq.Ft. (INCLUDES OFF-SITE ENTRANCE)
  - 2,040 Sq.Ft. PROVIDED FOR SNOW STORAGE

SNOW TO BE REMOVED TO AN APPROVED OFF-SITE LOCATION WHEN DESIGNATED LOCATIONS ARE FULL



LEGEND:

- 3/4" REBAR W/ ID CAP ~TBS~
- GRANITE BOUND ~FND~
- STEEL STAKE ~FND~
- SIGNAGE
- WETLAND BUFFER PLACARD
- E101 / E6 — DETAIL SHEET / DETAIL
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- CENTER LINE
- PROPOSED LIGHT TYPE "A" MOUNTED ON POLE
- PROPOSED LIGHT TYPE "B" MOUNTED ON STRUCTURE
- EXISTING LIGHT TYPE "C" MOUNTED ON POLE
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- SNOW STORAGE
- CONDITIONAL USE PERMIT (CUP) AREA

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

APPROVED DOVER

DOVER FILE #

REVISION	DATE	DESCRIPTION

NON-RESIDENTIAL SITE PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

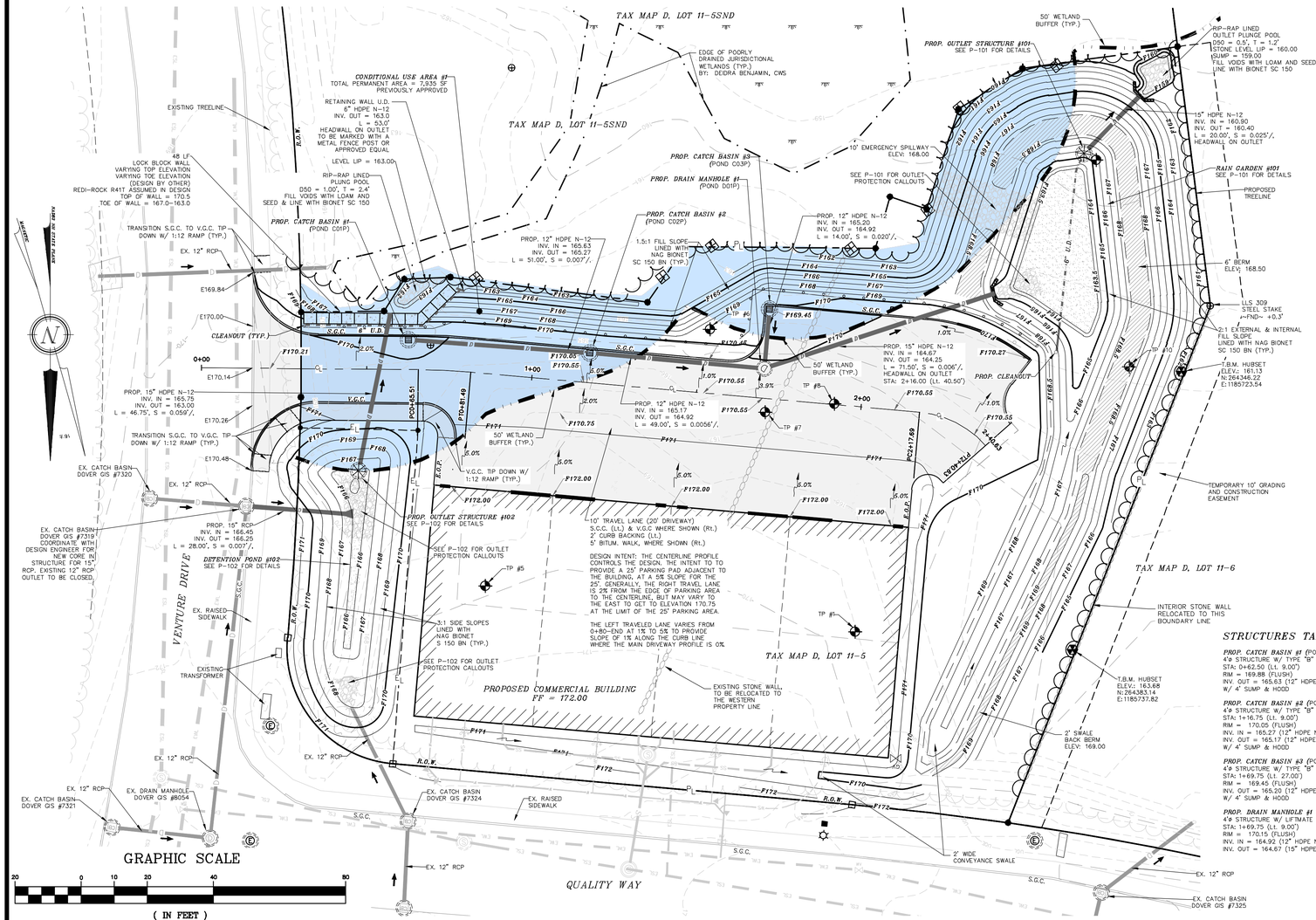
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

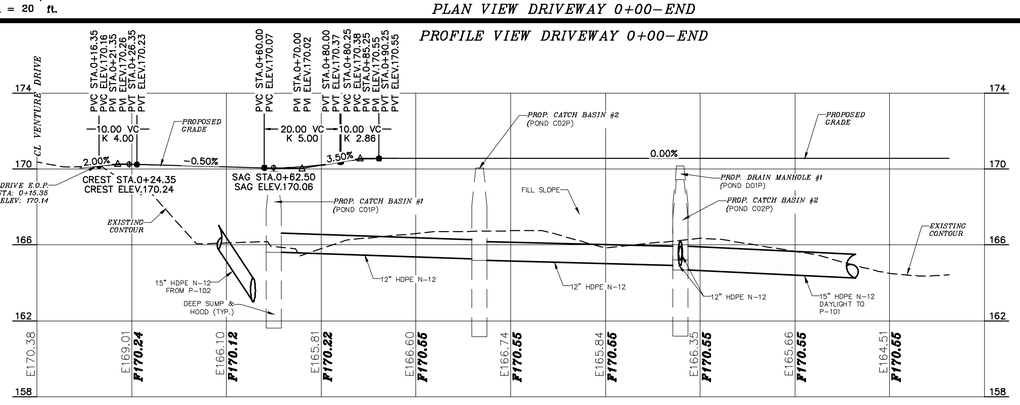
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED
PROFESSIONAL ENGINEER

SHEET 6 OF 26

NOT FOR CONSTRUCTION



PLAN VIEW DRIVEWAY 0+00–END



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.
VERTICAL SCALE: 1" = 4'

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS SHOW THE GRADING AND DRAINAGE DESIGN FOR THE PROPOSED DEVELOPMENT.

6.) THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS DATED 2016. CURRENT STANDARD PLANS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

7.) CONTRACTOR SHALL TAKE SPECIAL CARE IN NOT DISTURBING EXISTING MONUMENTS BOUNDS, AND OR BENCHMARKS WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION

8.) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE EXACTLY AND TO PRESERVE ANY AND ALL UNDERGROUND UTILITIES CALL "DIG-SAFE" 1-888-DIGSAFE (344-7233) AT LEAST 72 HOURS BEFORE COMMENCING CONSTRUCTION

9.) WHERE AN EXISTING UNDERGROUND UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

10.) THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

11.) AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. LIMIT OF GRADING SHOULD NOT BE EXPANDED WITHOUT CONSULTING THE DESIGN ENGINEER. SEE ALSO E&SC PLAN.

12.) THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS, OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE & RESET" (R & R).

13.) ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED SHALL HAVE LOAM PLACED AND SEEDED. THE LOAM SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHALL BE PLACED FLUSH WITH THE TOP OF THE ADJACENT CURB, EDGING, BERM OR PAVEMENT SURFACE.

14.) ALL ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE DESIGN ENGINEER IS TO BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY. TEMPORARY BENCHMARKS (T.B.M.) ARE TO BE PROVIDED BY THE DESIGN ENGINEER.

15.) PROJECT DISTURBANCE: 46,275 Sq. Ft. (1.06 Ac.) NOTE THAT THE PROJECT IS SUBJECT TO THE EPA NPDES PHASE II. THE NOTICE OF INTENT (NOI) MUST BE FILED ALONG WITH A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). WEEKLY INSPECTIONS WILL BE CONDUCTED BY THE DESIGN ENGINEER OR AFTER A STORM EVENT OF GREATER THAN 0.25".

16.) UPON FINAL COMPLETION AND 85% STABILIZATION THE DRAINAGE SYSTEM IS TO BE CLEANED OF ALL DEBRIS TO INCLUDE THE PUMPING OF THE BASIN SUMPS. SEE SHEET E102, DETAIL E18 FOR DEFINITION OF STABLE.

17.) ALL DRAINAGE PIPE IS TO BE HDPE N-12. INDIVIDUAL PIPE SIZES ARE SPECIFIED, RECYCLED PIPE IS APPROVED FOR PROJECT SITE. RECYCLED HDPE PIPE "GREEN PIPE" IS ACCEPTABLE FOR THIS PROJECT SITE.

18.) ALL BASINS AND DRAINS ARE TO HAVE BOOTS INSTALLED ON ALL INLETS AND OUTLETS.

19.) A LETTER OF CREDIT FOR THE COST OF RE-VEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS, AS MAY BE APPLICABLE.

20.) A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND DOVER CITY STAFF SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

21.) WRITTEN DIMENSION ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR IS TO CONFIRM ALL ELEVATIONS. CONFLICTS WILL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

22.) COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH CITY OF DOVER CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

23.) SEE DETAILS CONCERNING SITE LAYOUT, DRAINAGE, UTILITY, AND SEDIMENT AND EROSION CONTROLS.

24.) SIDEWALK TO REMAIN USABLE AT ALL TIMES DURING RECONSTRUCTION PROCESS.

25.) BASINS ARE TO HAVE NH STANDARD FRAMES AND GRATES MADE IN NORTH AMERICA. GRATES ARE TO BE INSTALLED BINDER FLUSH PRIOR TO BASE PAVE. UPON PROJECT COMPLETION FRAMES AND GRATES ARE TO BE CUT AND RIM RAISED TO FINAL PAVEMENT SURFACE. THIS IS TO ENSURE STORMWATER ENTERS THE SYSTEM AS DESIGN DURING THE INTERIM CONSTRUCTION PERIOD.

STRUCTURES TABLE:

PROP. CATCH BASIN #1 (POND C01P)
4'ø STRUCTURE W/ TYPE "B" GRATE
STA: 0+62.50 (Lt. 9.00')
RIM = 169.88 (FLUSH)
INV. OUT = 165.63 (12" HDPE N-12)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #2 (POND C02P)
4'ø STRUCTURE W/ TYPE "B" GRATE
STA: 1+16.75 (Lt. 9.00')
RIM = 170.05 (FLUSH)
INV. IN = 165.27 (12" HDPE N-12)
INV. OUT = 165.17 (12" HDPE N-12)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #3 (POND C03P)
4'ø STRUCTURE W/ TYPE "B" GRATE
STA: 1+69.75 (Lt. 27.00')
RIM = 169.45 (FLUSH)
INV. OUT = 165.20 (12" HDPE N-12)
W/ 4' SUMP & HOOD

PROP. DRAIN MANHOLE #1 (POND D01P)
4'ø STRUCTURE W/ LIFTMATE R-1743-LM RIM
STA: 1+69.75 (Lt. 9.00')
RIM = 170.15 (FLUSH)
INV. IN = 164.92 (12" HDPE N-12) (2)
INV. OUT = 164.67 (15" HDPE N-12)

LEGEND:

- PROPOSED DRAIN MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- PROPOSED STORMWATER BMP OUTLET STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- CONTOUR MINOR, EXISTING (176)
- CONTOUR MAJOR, EXISTING (175)
- CONTOUR MINOR, PROPOSED (F176)
- CONTOUR MAJOR, PROPOSED (F175)
- CENTER LINE
- EXISTING WATER MAIN (EW)
- EXISTING SEWER LINE (ES)
- EXISTING DRAINAGE LINE (D)
- PROPOSED WATER MAIN (W)
- PROPOSED SEWER LINE (S)
- PROPOSED DRAINAGE LINE (D)
- E175.31 — EXISTING SPOT GRADE
- F175.31 — PROPOSED SPOT GRADE
- FLOW ARROW
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM
- CONDITIONAL USE PERMIT (CUP) AREA
- TEST PIT

DOVER FILE #

REVISION	DATE	DESCRIPTION

GRADING PLAN & PROFILE
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

P1

BIORETENTION FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Bioretention Filter Media Option A			
ASTM C-33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5

3/8" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
1/2"	100
3/8"	95 – 100
# 4	22 – 55
# 8	0 – 10

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

1-1/2" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1-1/2"	90 – 100
1"	20 – 55
1/2"	0 –15
3/8"	0 –5

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

NOTES

1. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL BIORETENTION FILTER MEDIA SHALL BE AS SHOWN ABOVE. "BIO MEDIA" MEANS BIORETENTION FILTER MADIA.
3. COMPACTION IS NOT TO OCCUR IN THE RAIN GARDEN AREAS PRIOR TO CONSTRUCTION. SCARIFICATION REQUIRED IN THE EVENT COMPACTION TAKES PLACE.
4. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
6. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

1 SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 0.25 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.

2 PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.

3 AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.

4 VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

DESIGN REFERENCES

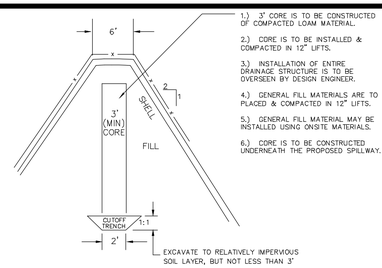
1 UNH STORMWATER CENTER
2 NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

RAIN GARDEN MIX

THE GRASS THAT IS PLANTED WITHIN A RAIN GARDEN BIO-FILTRATION SYSTEM WITHIN THE BIO-MEDIA MUST CONSIST OF A COMBINATION OF WARM SEASON GRASS SEED AND COLD SEASON GRASS SEED IN ORDER FOR THE GRASS TO START GROWING FOR STABILIZATION AND CONTINUE GROWING IN THE SANDY WELL-DRAINED ENVIRONMENT. PLANTING SPECIFICATION WILL MEET THE REQUIREMENTS AS OUTLINED IN "VEGETATION NEW HAMPSHIRE SAND AND GRAVEL PITS" MIX 1 (WARM SEASON GRASSES) (15 LBS/AC) AND INCLUDE ANNUAL AND PERENNIAL RYE GRASS SEED (15 LBS/AC); THE NEW ENGLAND NATIVE WARM SEASON GRASS MIX (23 LBS/AC) BY NEW ENGLAND WETLAND PLANTS, INC.; RAIN GARDEN MIX 180 (15 LBS/AC & 15 LBS/AC OF RYE) / RAIN GARDEN GRASS MIX 180-1 (20 LBS/AC & 10 LBS/AC OF RYE) BY ERNST CONSERVATION SEEDS; OR APPROVED EQUAL.

P2

LOW PERMEABILITY MATERIAL GRADATION	
SIEVE SIZE	% PASSING BY WEIGHT
#4	95 – 100
#40	60 – 95
#100	40 – 60
#200	25 – 45



1.) 3" CORE IS TO BE CONSTRUCTED OF COMPACTED LOAM MATERIAL.

2.) CORE IS TO BE INSTALLED & COMPACTED IN 12" LIFTS.

3.) INSTALLATION OF ENTIRE DRAINAGE STRUCTURE IS TO BE OVERSEEN BY DESIGN ENGINEER.

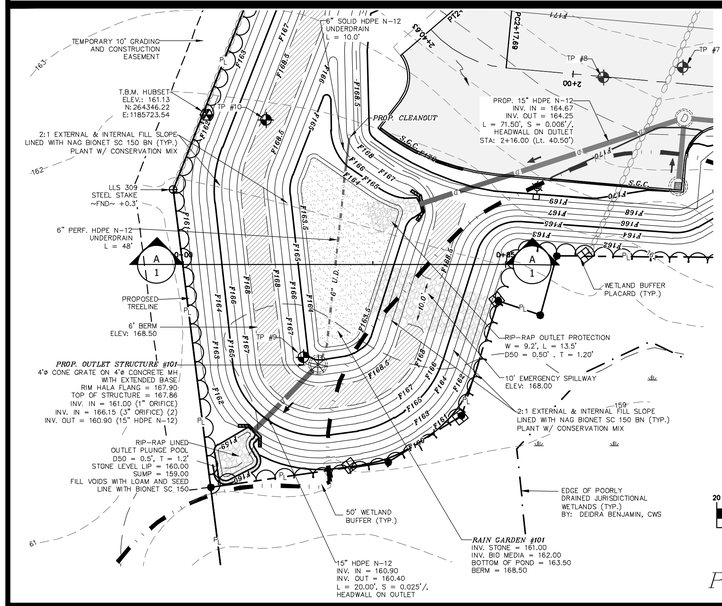
4.) GENERAL FILL MATERIALS ARE TO PLACED & COMPACTED IN 12" LIFTS.

5.) GENERAL FILL MATERIAL MAY BE INSTALLED USING ONSITE MATERIALS.

6.) CORE IS TO BE CONSTRUCTED UNDERNEATH THE PROPOSED SPILLWAY.

EXCAVATE TO RELATIVELY IMPERVIOUS SOIL LAYER, BUT NOT LESS THAN 3'

P3



PLAN VIEW RAIN GARDEN #101

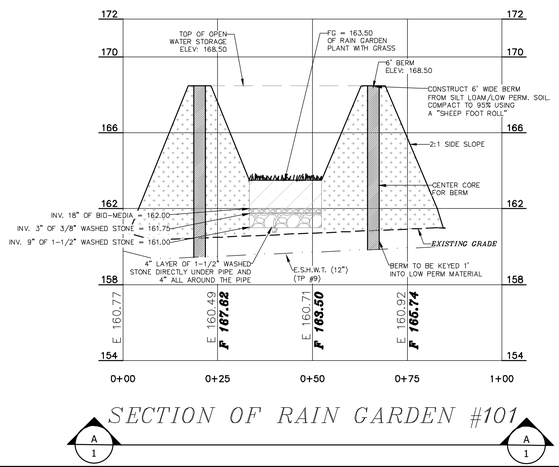
CONSTRUCTION SEQUENCE NOTE:
EROSION, SEDIMENT AND RETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

BIOMEDIA SURFACE PROTECTION NOTE:
SEE EROSION AND SEDIMENT CONTROL PLAN
IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PROTECT THE BIOMEDIA SURFACE FROM SEDIMENTATION CAUSED BY EROSION ON THE SIDE SLOPES.

STABILIZATION NOTE:
SEE NOTE #6, SHEET E-102, DETAIL E-18
SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.



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



SECTION OF RAIN GARDEN #101

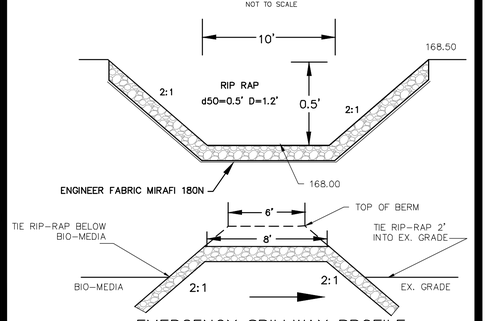
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

VERTICAL SCALE: 1" = 4'

TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE= 0.5	FEET 6	INCHES	
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO	
100%	9	12	
85%	8	11	
50%	6	9	
15%	2	3	

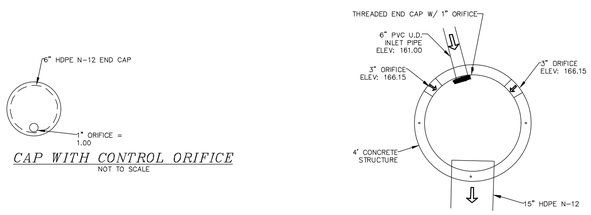
P4

SPILLWAY DETAILS
NOT TO SCALE



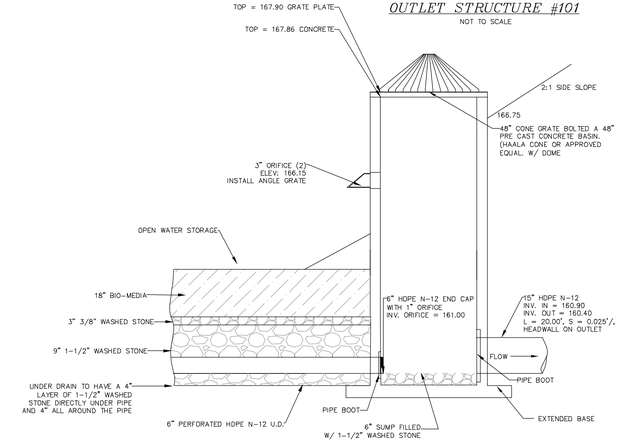
EMERGENCY SPILLWAY PROFILE

TOP VIEW
NOT TO SCALE



CAP WITH CONTROL ORIFICE
NOT TO SCALE

OUTLET STRUCTURE #101
NOT TO SCALE



P5

Rain Garden Grass Mix - ERNMX-180-1

	Botanical Name	Common Name	Price/Lb
40.40 %	*Schizachyrium scoparium, Fort Indianstown Gap-PA Ecotype*	Little Bluestem, Fort Indianstown Gap-PA Ecotype	14.66
20.00 %	*Carex lurida/bebbii, PA Ecotype*	Fox Sedge, PA Ecotype	31.20
20.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	10.46
9.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	22.27
5.50 %	*Panicum rigidulum, PA Ecotype*	Redtop Panicgrass, PA Ecotype	72.00
4.00 %	*Chasmanthium latifolium, WV Ecotype*	River Oats, WV Ecotype	96.00
0.50 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	96.00
0.30 %	*Juncus effusus*	Soft Rush	48.00
0.30 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	48.00
100.00 %		**Mix Price/Lb Bulk:**	**$24.82**

Seeding Rate: 15 lb per acre with a cover crop. For sites that drain within 24 hours of a rain event: use one of the following cover crops:Oats (1 Jan to 31 Jul; 30 lbs/acre), Japanese Millet (1 May to 31 Aug; 10 lbs/acre), or grain rye (1 Aug to 31 Dec; 30 lbs/acre).

NOTE: TO BE USED FOR RAIN GARDENS

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

P-101

DOVER FILE #

REVISION	DATE	DESCRIPTION

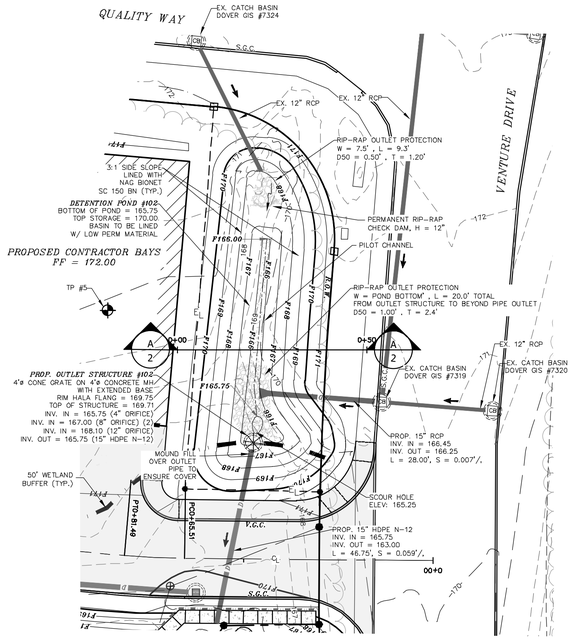
RAIN GARDEN #101
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

NOT FOR CONSTRUCTION



NOTES

1. DO NOT PLACE THE DETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF WATER FROM EXCAVATIONS) TO THE DETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
3. DETENTION AREA TO BE PLANTED WITH ERNMX-126 RETENTION BASIN FLOOR MIX.

MAINTENANCE REQUIREMENTS

1 SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 0.25 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.

2 PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.

3 VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

DESIGN REFERENCES

1 UNH STORMWATER CENTER
2 NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

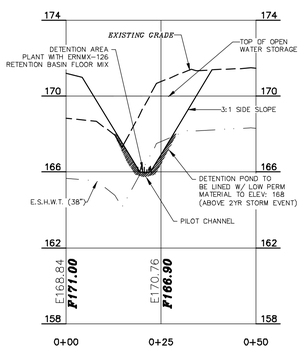
CONSTRUCTION SEQUENCE NOTE:
EROSION, SEDIMENT AND DETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

STABILIZATION NOTE:
SEE NOTE #6, SHEET E-102, DETAIL E-18
SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.



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

PLAN VIEW DETENTION POND #102



SECTION OF DETENTION POND #102

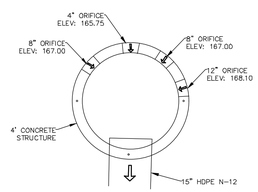
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

VERTICAL SCALE: 1" = 4'

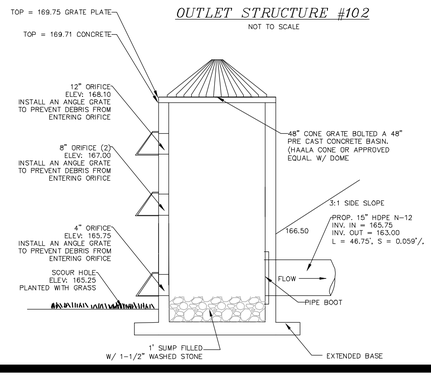
LOW PERMEABILITY MATERIAL GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
#4	95 - 100
#40	60 - 95
#100	40 - 60
#200	25 - 45

TOP VIEW
NOT TO SCALE



OUTLET STRUCTURE #102
NOT TO SCALE



Retention Basin Floor Mix - Low Maintenance - ERNMX-126

	Botanical Name	Common Name	Price/Lb
20.00 %	*Panicum clandestinum, 'Tioga*	Deertongue, 'Tioga	22.08
20.00 %	*Koeleria cristata, Flats*	Alkaligrass, Flats	4.56
18.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	9.96
15.00 %	*Agrostis stolonifera, 'Penncross'*	Creeping Bentgrass, 'Penncross'	14.40
15.00 %	*Poa palustris*	Fowl Bluegrass	36.80
10.00 %	*Carex lurida/crinita, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
1.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	81.60
1.00 %	*Juncus effusus*	Soft Rush	48.00
100.00 %		**Mix Price/Lb Bulk:**	**$15.98**

Seeding Rate: 20-40 lbs per acre, or 0.5-1 lb/1,000 sq ft with a cover crop. For a cover crop use one of the following: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre), or barnyard grass (1 May to 31 Aug; 10 lbs/acre).

NOTE: TO BE USED FOR DETENTION POND

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

The hardy inexpensive grass and grass-like species are ideal for retention basins that may have high salt inflows and where mowing may be required. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

P-102

DOVER FILE #

	REVISION	DATE	DESCRIPTION

DETENTION POND #102
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY & SURVEYING ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

SOILS & DEWATERING:

Gs	*GLOUCESTER*	*FINE SANDY LOAM*	*K= 0.17*
Hg	*HOLLIS-GLOUCESTER COMPLEX*	*FINE SANDY LOAM*	*K= 0.20*
238	*ELMRIDGE*	*SILT LOAM*	*K= 0.32*
500/600	*ELMWOOD*	*SILT LOAM*	*K= 0.32*

SEE SITE SPECIFIC SOILS MAP (SSSM)
ERODIBILITY FACTOR – K, CPESC MANUAL, ENVIROCERT INTERNATIONAL INC. & ROCKINGHAM COUNTTY SOIL SURVEY, ROCKWEB SOIL ATTRIBUTES.

CONTRACTOR TO BE AWARE OF THE SOIL PROFILES AND ENSURE THAT PROPER EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TAKEN AT ALL TIMES. ANY DEWATERING REQUIREMENTS IN NEW HAMPSHIRE REQUIRE SPECIAL PROVISIONS IN ACCORDANCE WITH THE "CLARIFICATION OF SECTION 9.1.2 (STATE OF NEW HAMPSHIRE CONDITIONS) AND OTHER NH SPECIFIC INFORMATION FOR THE U.S. EPA 2022 NPDES CONSTRUCTION GENERAL PERMIT (CGP)" DATED FEBRUARY 17, 2022 INCLUDED IN THE SWPPP.

COVER MANAGEMENT DURING CONSTRUCTION FOR EXPOSED SOIL WILL INCLUDE HAY / STRAW APPLIED AT A RATE OF 2.0 TONS PER ACRE, TEMPORARY SEEDING OF ANNUAL RYE GRASS, AND PERMANENT SEEDING AT THE EARLIEST OPPORTUNITY. SEE ADDITIONAL REQUIREMENT FOR STABILIZATION ON THE EROSION AND SEDIMENT CONTROL DETAIL SHEETS, E-101 AND E-102.

THE CONSTRUCTION SCHEDULE WILL BE MANAGED SO THAT ALL STORMWATER STRUCTURES WILL BE BUILT AND STABILIZED PRIOR TO RECEIVING SURFACE WATER RUNOFF. CONTRACTOR TO BE RESPONSIBLE FOR ALL DIVERSIONS DURING CONSTRUCTION AND FOR INTERIM SEDIMENT AND EROSION CONTROL MEASURES.

CONSTRUCTION SEQUENCE NOTE:

EROSION, SEDIMENT AND DETENTION CONTROL FACILITIES SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED. SWALES CONVEYING RUNOFF TO STORMWATER BMPs WILL BE CONSTRUCTED AND PUT INTO SERVICE ONCE THE RECEIVING STORMWATER BMP IS STABILIZED. SEE DETAIL E17, SHEET E-101 FOR FULL CONSTRUCTION SEQUENCE.

BIOMEDIA SURFACE PROTECTION NOTE:

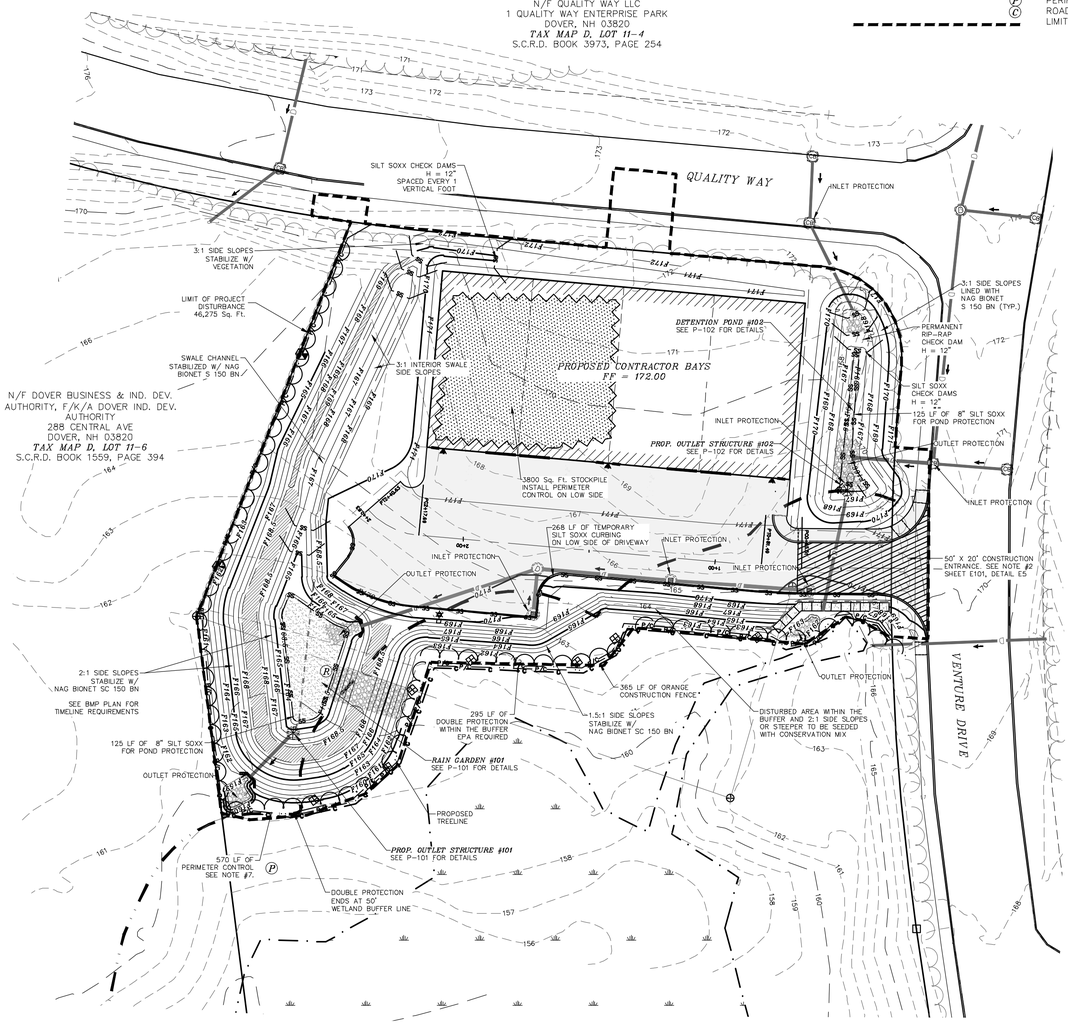
SEE EROSION AND SEDIMENT CONTROL PLAN
IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PROTECT THE BIOMEDIA SURFACE FROM SEDIMENTATION CAUSED BY EROSION ON THE SIDE SLOPES.

STABILIZATION NOTE:

SEE NOTE #6, SHEET E-102, DETAIL E-18
SIDE SLOPES ARE TO BE STABILIZED WITHIN THREE WORKING DAY UPON COMPLETION OF FINAL GRADE.

LEGEND:

- 3/4" REBAR W/ ID CAP ~TBS~
- GRANITE BOUND ~FND~
- STEEL STAKE ~FND~
- EXISTING/PROPOSED CATCH BASIN W/ STRUCTURE
- PROPOSED STORMWATER BMP OUTLET STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING DRAINAGE LINE
- PROPOSED DRAINAGE LINE
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- BERM
- SILT FENCE / EROSION MIX BERM
- FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- PERIMETER CONTROL
- RAIN GARDEN BIO-MEDIA PROTECTION
- PERIMETER CONTROL
- ROADWAY CONSTRUCTION
- LIMIT OF PROJECT DISTURBANCE



GENERAL NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE EROSION AND SEDIMENT CONTROL DETAILS.

EROSION & EROSION CONTROL NOTES:

1.) CONTRACTOR IS TO INSTALL A CONSTRUCTION ENTRANCE PRIOR TO EARTH DISTURBING ACTIVITIES, UTILIZING 3" ANGULAR STONE UNDERLAID WITH ENGINEER FABRIC.

2.) CONTRACTOR IS RESPONSIBLE FOR SWEEPING THE PARKING LOT, SIDEWALKS AND ROADWAY, TO ENSURE THAT NO SEDIMENT IS BEING TRACKED ONTO KNOX MARSH ROAD OR THE SURROUNDING ROADWAYS.

3.) CONTRACTOR IS RESPONSIBLE FOR CLEANING AND MAINTAINING THE INLET PROTECTION ONCE INSTALLED.

4.) FUGITIVE DUST IS TO BE CONTROLLED THROUGHOUT THE CONSTRUCTION PROCESS IN ACCORDANCE WITH ENV-A 1000.

5.) CONTRACTOR IS TO MEET THE REQUIREMENTS SPECIFIED IN RSA 430:51-57 AND AGR 3800, RELATING TO INVASIVE SPECIES.

6.) CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE WATER QUALITY FROM ANY RUN OFF DURING THE CONSTRUCTION PROCESS, IN ACCORDANCE WITH ENV-WQ 1507, IN ORDER TO PREVENT VIOLATIONS OF THE STORM WATER QUALITY STANDARDS.

7.) CONTRACTOR AY USE SILT FENCE, SILT SOXX OR MULCH BERM FOR PERIMETER CONTROL. SPECIFIC PRACTICES MAY BE SPECIFIED, SEE PLAN. THE CONTRACTOR IS NOT TO EXPAND CONSTRUCTION BEYOND THE STAKED OUT LIMITS OF DISTURBANCE.

8.) ALL STORAGE FACILITIES FOR FUEL, CHEMICALS, CHEMICAL OR INDUSTRIAL WASTES, AND BIODEGRADABLE RAW MATERIALS SHALL MEET THE REGULATIONS OF THE NHDES, INCLUDING BUT NOT LIMITED TO THOSE INVOLVING UNDERGROUND STORAGE TANKS, ABOVE GROUND STORAGE TANKS, HAZARDOUS WASTE AND BEST MANAGEMENT PRACTICES FOR GROUND WATER PROTECTION (PART ENV-WQ 401).

9.) ALL DEVELOPMENT MUST COMPLY WITH THE EPA PHASE II STORMWATER RULES AND THE CITY'S MS4 PERMIT, AS AMENDED.

10.) CITY OF DOVER: IN ACCORDANCE WITH SITE PLAN REVIEW REGULATIONS (153-14) THE FOLLOWING STORMWATER MEASURES ARE REQUIRED.

- A.) ALL PROPOSED BMPs WILL CONFORM TO THE NH STORMWATER MANUAL VOLUME 3.
- B.) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY COMMUNITY SERVICE.
- C.) TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN SEVEN CALENDAR DAYS FOR EXPOSED SOILS AREAS THAT ARE WITHIN ONE HUNDRED FEET OF A SURFACE WATER BODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.
- D.) ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL STABILIZATION IS ACCOMPLISHED. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 CALENDAR DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
- E.) COMMUNITY SERVICES DEPARTMENT OR THEIR DESIGNATED AGENT SHALL HAVE ACCESS TO THE SITE TO COMPLETE ROUTINE INSPECTIONS AND SHALL BE NOTIFIED 24-HOURS PRIOR TO INSTALLATION OF A STORMWATER BMP IN ORDER TO SCHEDULE AN INSPECTION, DURING NORMAL WORKING HOURS.
- F.) THE PLANNING BOARD OR COMMUNITY SERVICES MAY REQUIRE THE DESIGN ENGINEER AND/OR AN INDEPENDENT, THIRD-PARTY INSPECTION AND OVERSIGHT OF THE CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES AND EROSION AND SEDIMENT CONTROL AT THEIR DISCRETION. THE OWNER / APPLICANT IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH INSPECTIONS.
- G.) ALL SWPPP/SWMP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORMWATER INSPECTOR (CESSWI), OR A CERTIFIED PROFESSIONAL IN STORMWATER QUALITY (CPSWQ). INSPECTION REPORTS WILL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.
- H.) THE OWNER IS ULTIMATELY RESPONSIBLE FOR THE INSTALLATION, CONSTRUCTION, INSPECTION, AND DISPOSITION OF ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES REQUIRED BY THE PROVISIONS OF THESE REGULATIONS.
- I.) STORMWATER MANAGEMENT PLAN (SWMP) SUBMITTAL REQUIREMENTS. AT THE DISCRETION OF THE PLANNING BOARD OR COMMUNITY SERVICES DEPARTMENT, A TECHNICAL REVIEW BY AN INDEPENDENT THIRD PARTY MAY BE REQUIRED OF ANY SWMP PREPARED UNDER THESE REGULATIONS. SUCH A REVIEW SHALL BE PERFORMED BY A QUALIFIED PROFESSIONAL CONSULTANT AND THE EXPENSE OF WHICH SHALL BE THE FULL RESPONSIBILITY OF THE OWNER/APPLICANT.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

EROSION AND SEDIMENT CONTROL PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

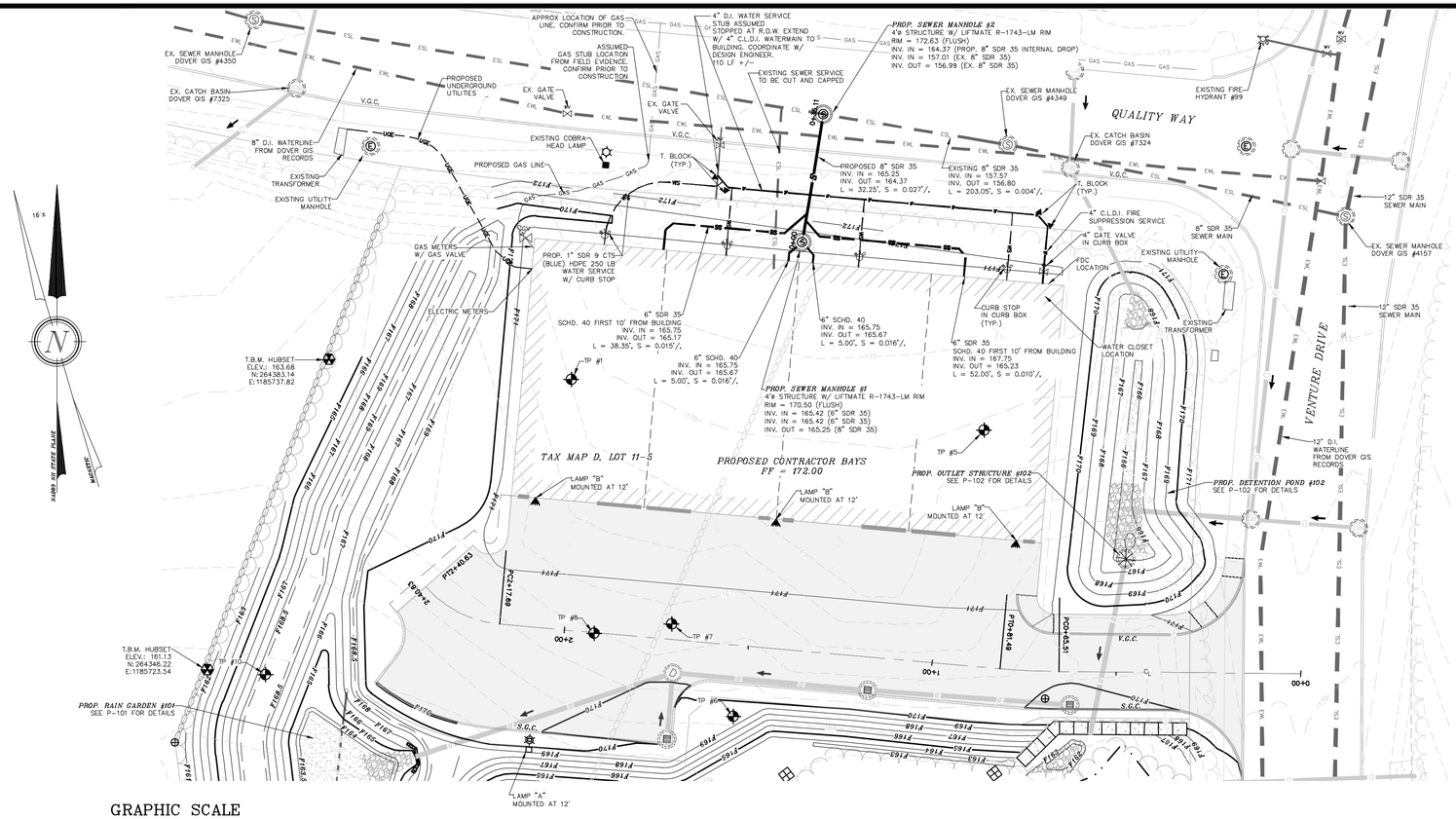
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 30 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

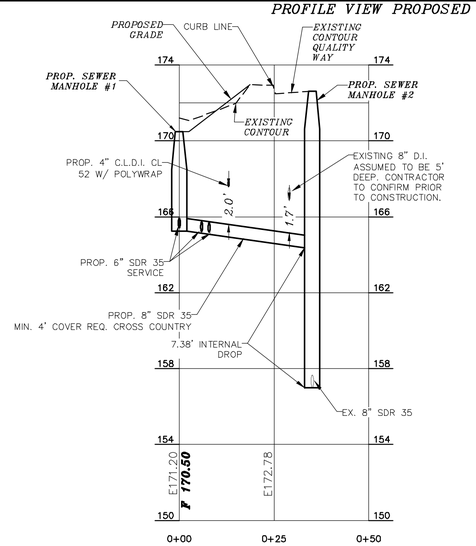
SHEET 10 OF 26

NOT FOR CONSTRUCTION



PLAN VIEW PROPOSED SEWER LINE

PROFILE VIEW PROPOSED SEWER LINE



GRAPHIC SCALE

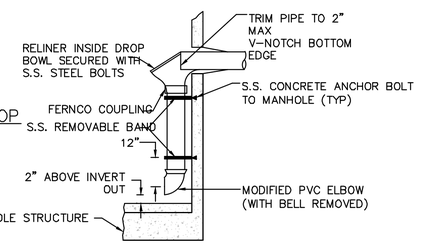
20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

VERTICAL SCALE: 1" = 4'

INTERNAL DROP



NOTES:

1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
2. IF DROP IS FOR AN EXISTING MANHOLE, REWORK SHELF TO FORM NEW CHANNEL FOR NEW DROP CONNECTIONS.
3. BRICK INVERT NOT SHOWN ON DETAIL.

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS TO PROVIDE UTILITY & ENGINEERING DETAILS OF THE PROPOSED SITE DEVELOPMENT OF TAX MAP D, LOT 11-5.

6.) SEE EROSION & SEDIMENT CONTROL PLANS FOR DETAILS ON PERIMETER CONTROL (MULCH BERM / FENCE / SILT SOXX).

7.) BS&E IS TO PROVIDE ADDITIONAL BENCHMARKS PRIOR TO CONSTRUCTION.

8.) EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS.

LEGEND:

- PROPOSED LIGHT TYPE "A" MOUNTED ON POLE
- PROPOSED LIGHT TYPE "B" MOUNTED ON STRUCTURE
- EXISTING/PROPOSED SEWER MANHOLE W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING GAS LINE
- PROPOSED WATER MAIN
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED GAS LINE
- UNDERGROUND UTILITY
- GATE VALVE
- FIRE HYDRANT
- GAS VALVE

UTILITY NOTES:

1.) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVE AND BELOW GROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITY CONFLICTS SHOULD BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.

2.) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3.) PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES, TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOGF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAGFIC IN SENSITIVE AREAS, AND MAINTAINING AN EGFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL MEETING THE ENGINEERS SPECIFIC RECOMMENDED CRITERIA.

4.) IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER (NOT ALLOWED IN CITY R.O.W.), EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATION. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.

5.) PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION. VOIDS BETWEEN STONES AND CLUMPS OF MATERIAL SHALL BE FILLED WITH FINE MATERIALS.

6.) FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES AND THE DOVER DPW.

7.) CONTRACTOR TO CONTACT DOVER DPW A MINIMUM OF TWO WEEKS PRIOR TO ANY CONSTRUCTION TO COORDINATE ALL WORK CONCERNING INSTALLATION OF ANY PROPOSED WATER LINE IMPROVEMENTS.

8.) ALL WATER MAIN AND SERVICE INSTALLATIONS SHALL CONFORM TO CITY OF DOVER STANDARDS. ALL HIGHWAY CONSTRUCTION WILL MEET THE CITY OF DOVER STANDARDS.

9.) CONTRACTOR SHALL COORDINATE ALL ELECTRICAL INSTALLATIONS WITH EVERSOURCE AT (800) 662-7764. ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL. A 48-HOUR MINIMUM NOTICE IS REQUIRED.

10.) CONTRACTOR SHALL COORDINATE ALL TELECOMMUNICATIONS INSTALLATIONS WITH FAIRPOINT COMMUNICATIONS AT (603) 427-5525.

11.) CONTRACTOR SHALL COORDINATE ALL CABLE INSTALLATIONS WITH COMCAST.

12.) CURB BOXES SHOULD BE PLACED IN THE LAWN AREA, OR IF PLACED IN PAVEMENT, A ROAD BOX IS REQUIRED.

13.) SEE EXISTING CONDITIONS PLAN FOR DATUM. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS.

14.) MINIMUM SLOPE FOR ALL SEWER SERVICE CONNECTIONS IS TO BE NO LESS THAN 0.02 FT/FT.

15.) ALL SEWER INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF NHDES & DOVER DPW SEWER DIVISION STANDARDS. ALL PVC SEWER PIPE IS TO CONFORM WITH ENV-WQ 704.05 (c)-(e) FOR SDR 35 GRAVITY SEWER PIPE AND CONFORM WITH ASTM D3034. PVC JOINT SEALS SHALL CONFORM WITH ASTM D3121.

16.) CONTRACTOR TO TRANSFER TEMPORARY BENCHMARK TO A SUITABLE BENCHMARK TO CONTROL CONSTRUCTION. ANY ELEVATION DISCREPANCIES ARE TO BE REPORTED TO THE THE DESIGN ENGINEER IMMEDIATELY.

17.) ALL SEWER AND WATER CROSSINGS ARE TO MAINTAIN A 1.5' OF SEPARATION.

18.) THERE IS TO BE A MINIMUM OF 4' COVER OVER THE SEWER SERVICE AND 5' COVER OVER THE WATER SERVICE. THE CONTRACTOR IS TO REVIEW THE PROPOSED COVER ON UTILITIES AT THE ONSET OF THE PROJECT ONCE THE UTILITY ELEVATIONS ARE ESTABLISHED BEYOND THE CURRENT DESIGN ASSUMPTIONS. IF ADJUSTMENTS ARE NEEDED THE DESIGN ENGINEER IS TO BE NOTIFIED IMMEDIATELY FOR CONSULTATION WITH THE CITY OF DOVER ENGINEERING DEPARTMENT.

19.) THE WATER SERVICE SHALL BE TESTED IN ACCORDANCE WITH CITY OF DOVER STANDARDS.

20.) CLEANOUTS ARE PROPOSED INTERNAL TO THE BUILDING IN THE EVENT CLEANING IS NEEDED OF THE END LINES. CLEANOUTS ARE NOT PERMITTED OUTSIDE THE BUILDING IN THE CITY OF DOVER.

DOVER FILE #

REVISION	DATE	DESCRIPTION

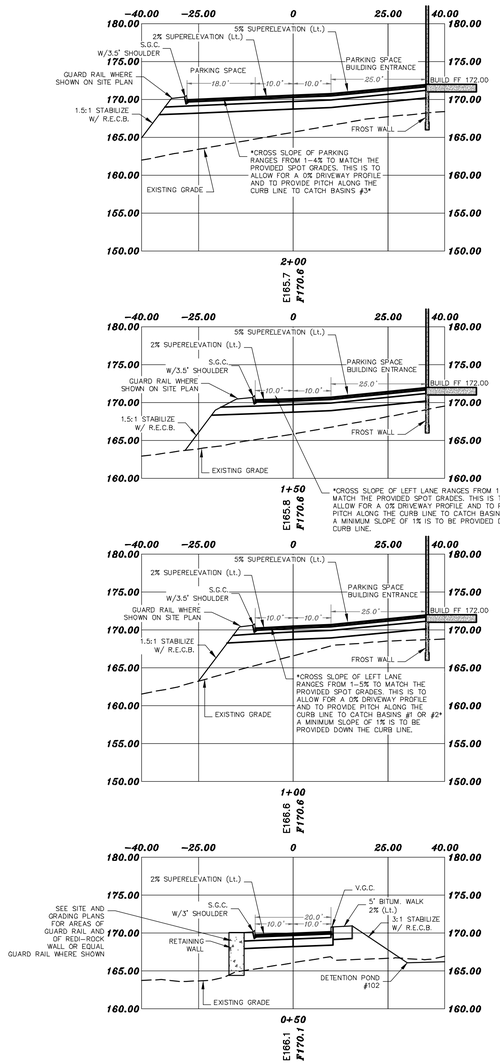
UTILITY PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Vertical Scale 1 INCH = 10 FT.

DOVER FILE #

REVISION	DATE	DESCRIPTION

CROSS SECTIONS 0+50 – 2+00
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE - KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

LEGEND:

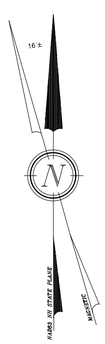
TREES:

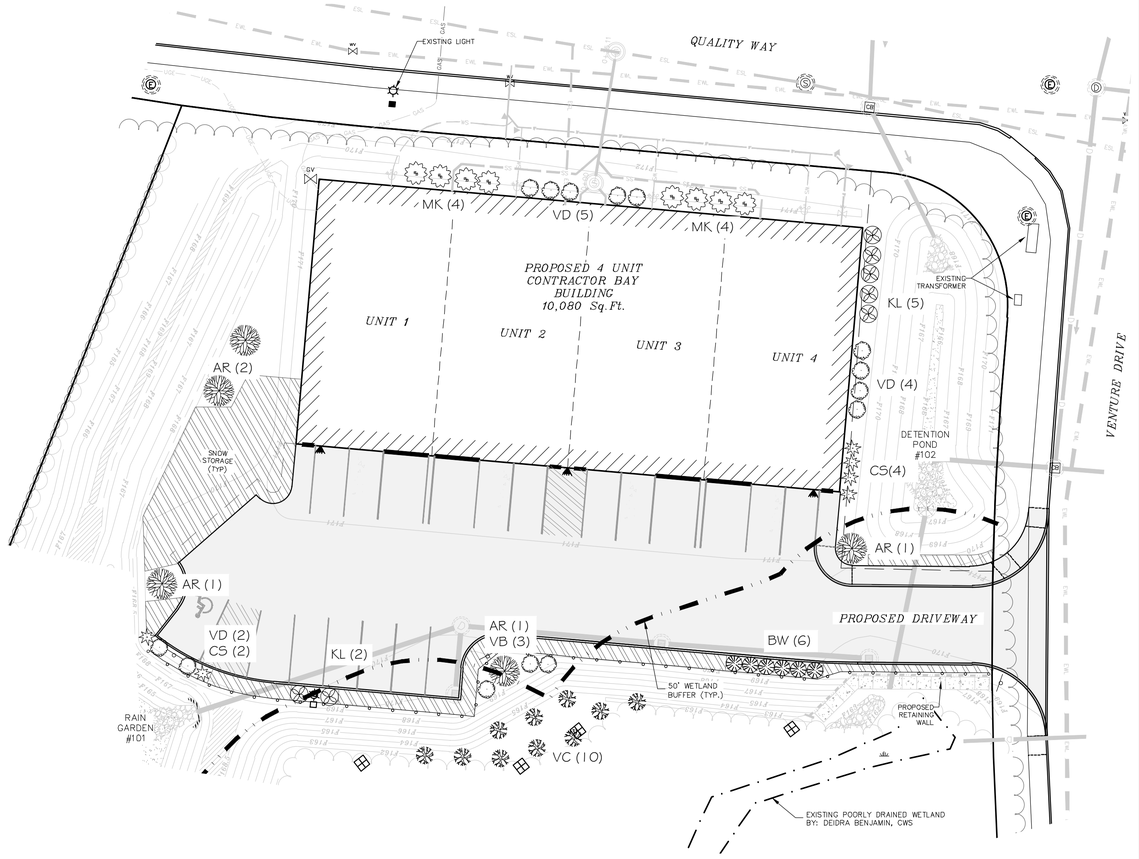
AR – RED MAPLE

BUSHES:

VD – BLUE MUFFIN VIBURNUM
CS – WINTER FLAME DOGWOOD
VC – HIGH BUSH BLUEBERRY
BW – BOXWOOD
MK – MISS KIM LILAC
KL – MOUNTAIN LAUREL

SEE NEIGHBORHOOD SHEET (SHEET #1) FOR DRAINAGE & UTILITY SYMBOLS





GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1. CALL DIG SAFE PRIOR TO BEGINNING WORK. (1-888-344-7233). THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF THE SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER OR GENERAL CONTRACTOR.
2. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING.
3. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS. VARIATIONS IN QUANTITIES ARE TO BE APPROVED BY THE DESIGN ENGINEER.
4. PROVIDED SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.
5. ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN
6. ALL PLANT MATERIALS SHALL BE FREE FROM INSECTS AND DISEASE.
7. ALL PLANTINGS SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM OWNER.
8. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING AND NEWLY PLANTED TREES AND SHRUBS DURING THE CONSTRUCTION PROCESS. WHERE REQUIRED, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING (SNOW OR EQUAL) AROUND EXISTING TREES AND SHRUBS THAT COULD BE IMPACTED BY THE CONSTRUCTION PROCESS. STORAGE OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS, SNOW STORAGE AND OR VEHICLE PARKING SHALL NOT BE PERMITTED WITHIN THE DRIP LINE OF TREES OR TWENTY FEET WHICH EVER IS GREATER.
10. NEW PLANTINGS SHALL BE INSTALLED PER PROJECT DRAWINGS AND SPECIFICATION THAT INCLUDE FERTILIZATION AND MULCHING AS REQUIRED.
11. ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.
13. MAINTENANCE OF NEW PLANTINGS AND LAWNS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND OR LANDSCAPE SUBCONTRACTOR UNTIL ACCEPTANCE BY THE OWNER. RESPONSIBILITIES SHALL INCLUDE WATERING WEEDING AND MOWING AS NECESSARY. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, REPLACEMENT MATERIAL SHALL BE GUARANTEED FOR AND ADDITIONAL YEAR FROM TIME OF INSTALLATION.
14. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES DURING THE CONSTRUCTION PHASE AND UNTIL ALL AREAS HAVE BEEN STABILIZED AND ACCEPTED BY THE OWNER. THE GENERAL CONTRACTOR SHALL PROVIDE WEEKLY INSPECTIONS OF EROSION MEASURE AND IMMEDIATELY AFTER STORM EVENTS AND REPAIR AS NECESSARY.
15. THE GENERAL CONTRACTOR AND OR THE LANDSCAPE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL THREE GUYING MATERIAL ONCE PLANT MATERIAL HAS BEEN ESTABLISHED. (MINIMUM OF ONE GROWING SEASON). ALL TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVED ONCE STABILIZATION OF DISTURBANCE HAS BEEN ACCEPTED BY OWNER.
16. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM OF TWO MOWNGS FOR ALL TURF AREAS OR UNTIL ACCEPTANCE BY THE OWNER. A MINIMUM UNIFORM 75% CATCH OF TURF IS REQUIRED FOR ACCEPTANCE.
17. ALL PLANTINGS SHALL BE WATERED REGULARLY DURING THEIR FIRST YEAR AND MAINTAINED PERMANENTLY IN GOOD GROWING CONDITION AS AN EFFECTIVE VISUAL SCREEN.
18. SHRUBS OR TREES WHICH DIE SHALL BE REPLACED WITHIN ONE GROWING SEASON WITH NEW SHRUBS OR TREES TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE LANDSCAPING REQUIREMENTS.
19. ALL REQUIRED LANDSCAPING SHALL BE INSTALLED BEFORE OCCUPANCY, OR WITHIN SIX MONTHS IF OCCUPANCY OCCURS DURING WINTER CONDITIONS.
20. TREES ARE TO BE 6' TALL AT PLANTING.
21. ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITIONS (AMERICAN ASSOCIATION OF NURSERYMEN, INC.)
22. 4" AGED PINEBARK MULCH AND A WEED BARRIER (TY-PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUND COVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.
23. PLANT-PIT BACK-FILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 2 PARTS OF DEHYDRATED COW MANURE. SLOW RELEASE FERTILIZER SHALL BE APPLIED AS PER MANUFACTURERS RECOMMENDATIONS. USE EXISTING ON-SITE TOPSOIL AS PART OF BACK FILL WHEN AVAILABLE.
24. ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED OR SOD AS INDICATED ON PLANS.
25. TOPSOIL WILL BE TESTED FOR FERTILIZATION REQUIREMENTS, AND SLOW RELEASE ENVIRONMENTALLY FRIENDLY FERTILIZER WILL BE APPLIED AT THE RECOMMENDED RATES.
26. ALL DISTURBED WETLAND BUFFER AREAS, EXCEPT FOR AREAS THAT ARE PART OF THE DRAINAGE SYSTEM, ARE TO BE RESEEDED WITH A CONSERVATION SEED MIX AND ONLY MOWED TWICE PER YEAR.
27. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER.
28. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ONGOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
29. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
30. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NO LESS THAN ONE FULL YEAR FROM THE TIME OF INSTALLATION. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE OWNER IN WRITING OR OTHERWISE FORFEIT HIS CLAIM.
31. BY THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAS DIED, THAT HAS LOST NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESS PRUNING OR INADEQUATE OR IMPROPER CARE, OR IS, IN THE OPINION OF THE OWNER, IN UNHEALTHY OR UNSIGHTLY CONDITION.
32. THE CONTRACTOR IS TO USE TEMPORARY MEASURES FOR WATERING PLANTS DURING THE ESTABLISHMENT PERIOD. INCLUDING CONNECTING TEMPORARY HOSES TO THE STRUCTURE WATER SUPPLY LINE AND UTILIZING SPRINKLERS UNTIL 85% GROWTH OCCURS.

PLANTING NOTES

1. CONTRACTOR SHALL OBTAIN APPROVAL FROM L.A. PRIOR TO PURCHASING &/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
2. CONSTRUCTION ACCESS WILL BE AS DIRECTED BY L.A. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ACCESS ROUTE AND ALL AREAS DISTURBED BY PLANTING OPERATIONS UPON COMPLETION OF CONSTRUCTION OPERATIONS, AT NO ADDITIONAL COST TO THE OWNER.
3. LAYOUT OF ALL PLANTING BEDS AND LOCATION OF PLANTS TO BE APPROVED BY L.A. ON SITE PRIOR TO CONSTRUCTION AND INSTALLATION.
4. CONTRACTOR TO REMOVE ALL DEBRIS GENERATED BY PLANT INSTALLATION. DEBRIS TO BE DISPOSED OF IN A LEGAL MANNER.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED TO BE IN GOOD, HEALTHY & FLOURISHING CONDITION FOR ONE YEAR FROM THE DATE OF FINAL INSTALLATION APPROVAL BY L.A. CONTRACTOR SHALL REPLACE, WITHOUT COST TO OWNER, AND AS SOON AS WEATHER CONDITIONS PERMIT, ALL DEAD AND NON-FLOURISHING PLANTS AS DETERMINED BY THE L.A. REPLACEMENT PLANTS SHALL BE BE GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY L.A.
6. ALL BEDS TO BE MULCHED WITH 3" DEPTH SHREDDED BARK MULCH UNLESS NOTED OTHERWISE.
7. CONTRACTOR TO PROVIDE NECESSARY TEMPORARY IRRIGATION IF NEEDED BASED ON TIME OF YEAR THE PROJECT IS IMPLEMENTED.
8. ALL PLANT MATERIAL TO COMPLY WITH THE CITY OF DOVER'S SITE REVIEW REGULATIONS, 149-14(G), SUCH THAT THERE SHALL BE DECIDUOUS SHADE TREES PLANTED 40 FEET O.C. ALONG THE PERIMTERE OF THE PARKING LOTS AND SHRUBS PLANTED 5 FEET O.C. WITHIN THE PERIMETER BUFFER. SEE PLANT LIST FOR SPECIES AND SIZE OF PLANTS.

TEMPORARY WATERING NOTES

1. CONTRACTOR IS RESPONSIBLE FOR MAKING SURE ALL PLANT MATERIAL HAS ADEQUATE WATER DURING THE ESTABLISHMENT PERIOD.
2. THE USE OF GATOR BAGS, SOAKER HOSE, HAND WATERING AND OTHER TECHNIQUES SHOULD BE USED TO ASSURE PROPER HYDRATION OF THE PLANTINGS IS MAINTAINED.
3. TEMPORARY IRRIGATION SYSTEMS CAN BE SET UP TO ASSIST IN WATERING ACTIVITIES.

PLANTING SCHEDULE
Venture Drive & Quality Way
Botanical Name/ Common Name

	Size	Qty	Label
Trees			
Acer Rubrum / Red maple	3" Cal.	5	AR
Shrubs			
Viburnum dentatum 'Blue Muffin' / Blue Muffin Viburnum	3 Gal.	14	VD
Cornus sanguina 'Winter Flame' / Winter Flame Dogwood Red Twig or Yellow Twig	2 Gal.	6	CS
Vaccinium corymbosum / High Bush Bluberry	2 Gal.	10	VC
Buxus / Boxwood	2 Gal.	6	BW
Syringa patula 'Miss Kim' / Miss Kim Lilac	2-3' B&B	8	MK
Kalmia latifolia / Mountain Laurel	2 Gal.	7	KL

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General Plant Maintenance Guide

General Plant Bed Maintenance:

- All plant maintenance should be performed by a qualified horticulturalist or licensed arborist. Cleaning the dead material out of the planting bed in the fall helps keep litter from building up around the plants and in some cases killing the plants. Watering the first year during dry periods will help get the plants established. Mulching every year is not necessary. Raking the old mulch and turning it over is all that is needed. When necessary only install one inch of mulch and do not place the mulch closer than 3" to the trunks or stems of woody plants.

Trees

- The first year watering during dry periods will be necessary.
- 3" inches of mulch maybe used. The mulch should be kept 3 inches from the trunk.
- Fertilizing is not necessary for the first year. Fertilizing in subsequent years only when and if the foliage is looking weak.
- Fertilization should occur prior to Mat 31st or after trees have dropped their leaves for the year.
- Prune dead wood once a year.
- Depending on the amount of compaction the bed area receives, deep root aeration may be needed over time

Woody Shrubs

- The first year watering during dry periods will be necessary.
- 3" inches of mulch maybe used. The mulch should be kept 3 inches from the stems.
- Fertilizing is not necessary for the first year. Fertilizing in subsequent years only when and if the foliage is looking weak.
- Fertilization should occur prior to Mat 31st or after shrubs have dropped their leaves or gone dormant for the year.
- Prune dead wood once a year.

Grasses

- Grasses only need to be clipped back at the end of the growing season and all the clippings removed from the area.
- Do not over mulch. Too much mulch will prohibit the grass from developing into a strong clump.

Perennials

- All perennials need to be pruned back after the first or second hard frost. A two-step method; first dead head all the flower heads and let drop to the ground for re-seeding. Second cut the stems back to 3" above the ground and remove the stem and leaf litter and place in compost. Do not over mulch. Too much mulch will prohibit the growth and development
- Fertilizing perennials once in the spring with a low phosphate fertilizer will help the plants to get started in the spring.

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311 kast hill road
hopkinton, nh 03229
603. 491. 2322
terrainplanning.com

VENTURE DRIVE & QUALITY WAY

Site Location:
Venture Drive & Quality Way
Dover, NH
Tax Map: D
Lots: 11-5 & 11-5SND

Prepared For:
Berry Surveying & Engineering
335 Second Crown Point Rd
Barrington, NH 03825

LANDSCAPE PLAN

DATE: April 1, 2025

SCALE: 1" = 20'

PROJECT #: DB 21-134

Drawn By: JB

Checked By: ERB

REVISIONS: DATE:
Issued for Client Review

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L - 01

LICENSED LANDSCAPE ARCHITECT ERIC R. BUCK 078 STATE OF NEW HAMPSHIRE

NOT FOR CONSTRUCTION

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED LIGHTING PLAN FOR THE PROPOSED DEVELOPMENT.

6.) LAMP "A" WILL BE MOUNTED 12 ABOVE GRADE.
LAMP "B" ARE WALL MOUNTED 12' ABOVE EXTERIOR GRADE OF THE STRUCTURE.
LAMP "C" IS THE COBRA HEAD LAMP ALONG QUALITY WAY AND IS MODELED FOR USE IN DETERMINING NEED AND IMPACT OF LIGHTING. NO CONSTRUCTION REQUIRED.

7.) SEE CONSTRUCTION DETAILS FOR LIGHT CUT SHEETS.

8.) EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.

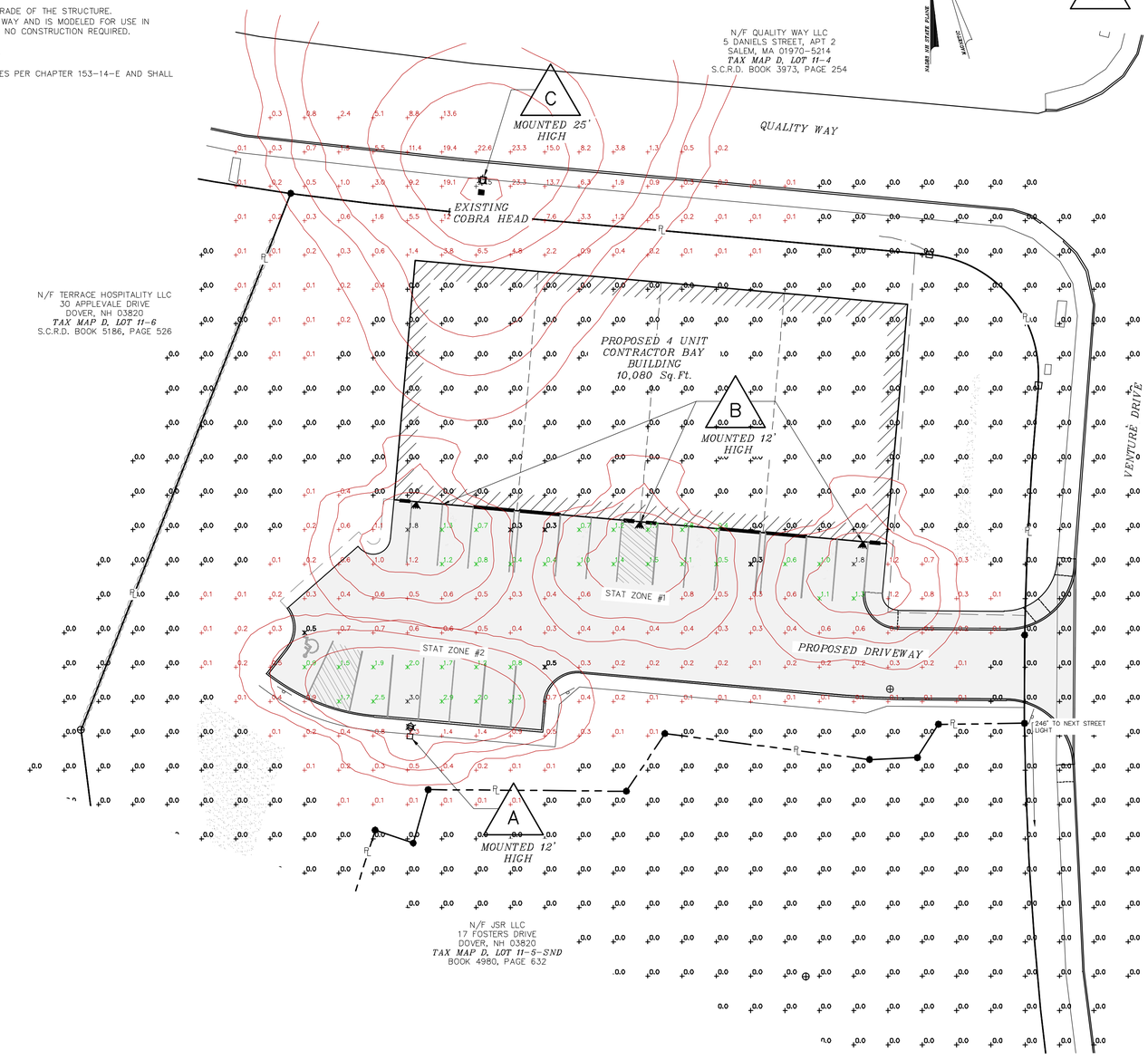
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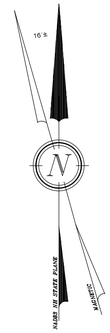
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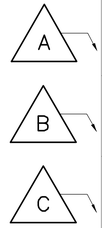
(IN FEET)
1 inch = 20 ft.

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Stat Zone #1	+	0.9 fc	1.8 fc	0.3 fc	6.0:1	3.0:1
Stat Zone #2	+	1.6 fc	3.0 fc	0.5 fc	6.0:1	3.2:1

Schedule									
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
	A	1	Lithonia Lighting	DSXO LED P1 30K 70CRI, T2M	D-Series Size 0 Area Luminaire P1 Performance Package 3000K CCT 70 CRI, Type 2 Medium	1	4545	1	33.21
	B	3	Lithonia Lighting	WDGE2 LED P2 30K 70CRI TFTM	WDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 70CRI, TYPE FORWARD THROW MEDIUM OPTIC	1	2127	1	18.9815
	C	1	Lithonia Lighting	HLA LED P3 50K TFTM MVOLT R90	HIGH LUMEN AREA, PERFORMANCE PACKAGE 3, 5000 K, FORWARD THROW MEDIUM, 120-277V, RIGHT ROTATED OPTICS	1	59055	1	598
			EXISTING						







DOVER FILE #

REVISION	DATE	DESCRIPTION

LIGHTING PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
Licensed
PROFESSIONAL ENGINEER

SHEET 14 OF 26

NOT FOR CONSTRUCTION

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
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3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

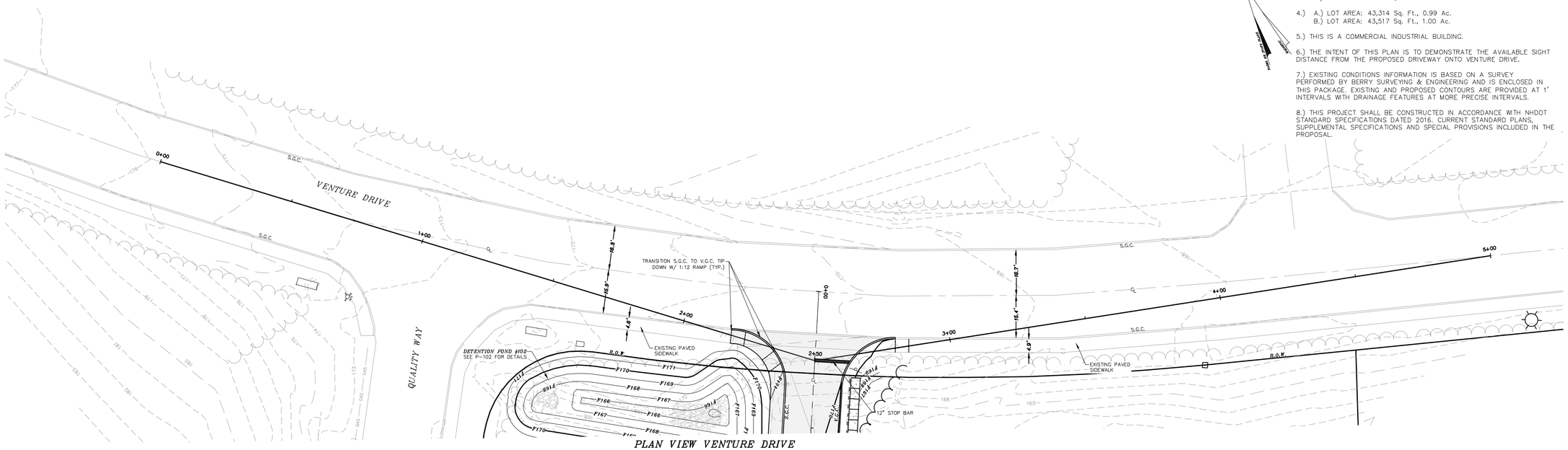
4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) THIS IS A COMMERCIAL INDUSTRIAL BUILDING.

6.) THE INTENT OF THIS PLAN IS TO DEMONSTRATE THE AVAILABLE SIGHT DISTANCE FROM THE PROPOSED DRIVEWAY ONTO VENTURE DRIVE.

7.) EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY PERFORMED BY BERRY SURVEYING & ENGINEERING AND IS ENCLOSED IN THIS PACKAGE. EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

8.) THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS DATED 2016. CURRENT STANDARD PLANS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.



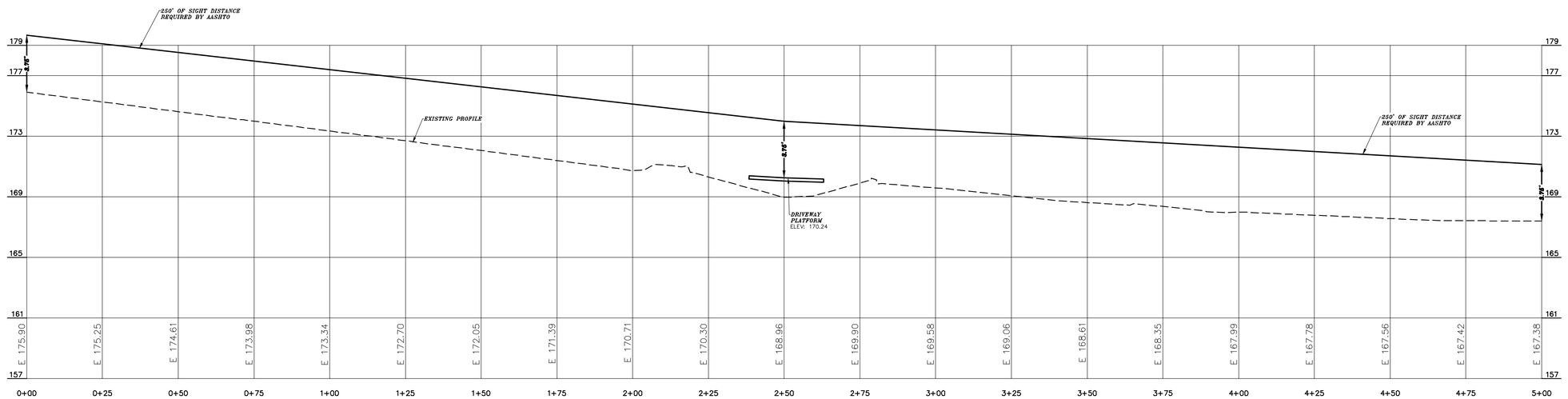
PLAN VIEW VENTURE DRIVE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
VERTICAL SCALE: 1" = 4'

PROFILE VIEW SIGHT LINE



HWY-2

DOVER FILE #

REVISION	DATE	DESCRIPTION

ACCESS PLAN VENTURE DRIVE
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

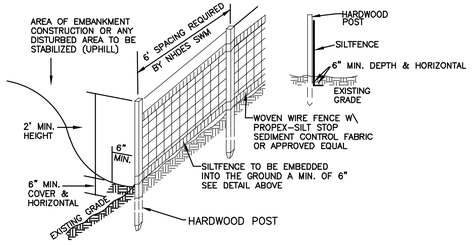
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

E1



SILT FENCE CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES AND FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP MID AND BOTTOM SECTIONS AND BE EMBEDDED INTO GROUND A MINIMUM OF 8" THE FENCE POSTS SHALL BE A MINIMUM 48" LONG, SPACED A MAXIMUM 6' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND PROPERLY DISPOSED OF. SEE MAINTENANCE NOTE BELOW. REMOVAL OF SEDIMENT REQUIRED AT A DEPTH OF 6-INCHES.
4. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
5. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER.
6. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND RE-VEGETATED.
7. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, SILT FENCE, PAGE 90.

SILT FENCE MAINTENANCE

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH SIX-INCHES IN DEPTH.
4. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

SILT FENCE DETAIL
NOT TO SCALE

E2

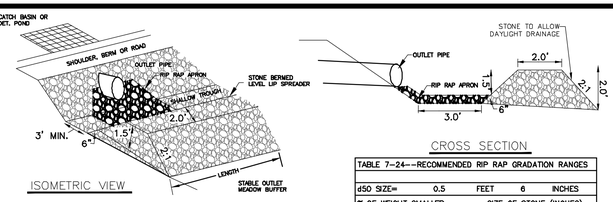
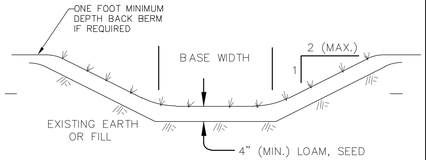


TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9		12
85%	8		11
50%	6		9
15%	2		3

1. CONSTRUCT THE LEVEL SPREADER LIP ON A 0% GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
2. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
3. THE ENTIRE LEVEL LIP AREA SHALL BE PROTECTED BY PLACING EXCELSIOR ENFORCER MATTING BENEATH THE STONE. EACH STRIP SHALL OVERLAP BY AT LEAST SIX INCHES.
4. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
5. MAINTENANCE: THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND THE DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHOULD BE REMOVED. IF STONE REMOVAL HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED.
6. REFERENCE IS MADE TO NHDES SWM VOL. 2, 4-6, STONE BERM LEVEL SPREADERS, PAGE 162

STONE BERM LEVEL SPREADER
NOT TO SCALE

E3



GRASS SWALE
NOT TO SCALE

INSPECT ANNUALLY FOR EROSION, SEDIMENT ACCUMULATIONS, VEGETATION LOSS, & INVASIVE SPECIES. REPAIR AS NECESSARY.

MOW GRASS ANNUALLY TO A DEPTH OF 4".

INSTALL STABILIZATION MATTING DURING CONSTRUCATION

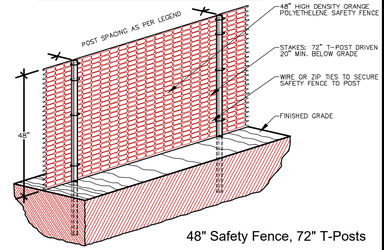
TO BE CONSTRUCTED IAW NH SWM #2 CHAPTER 4, #5 TREATMENT SWALES, PAGE 123.

E4

CONSTRUCTION SAFETY FENCE
NOT TO SCALE

LEGEND

SAF12	48" ORANGE FENCE, 12 FEET O.C.
SAF11	48" ORANGE FENCE, 11 FEET O.C..
SAF10	48" ORANGE FENCE, 10 FEET O.C.
SAF9	48" ORANGE FENCE, 9 FEET O.C.
SAF8	48" ORANGE FENCE, 8 FEET O.C..
SAF7	48" ORANGE FENCE, 7 FEET O.C.
SAF6	48" ORANGE FENCE, 6 FEET O.C.



48" Safety Fence, 72" T-Posts

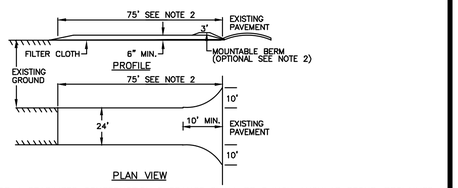
1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
4. SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS.
5. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

DOVER FILE #

REVISION	DATE	DESCRIPTION

E5

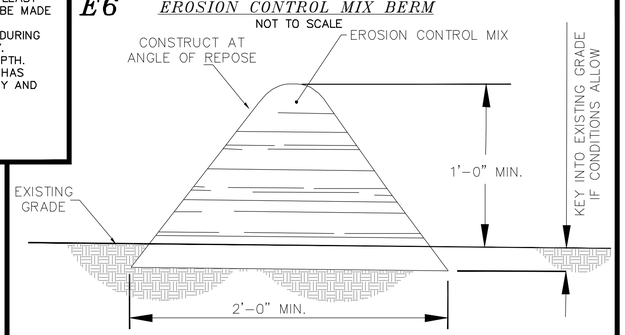
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH ANGULAR STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT WITH ENGINEERED FABRIC.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY CONSTRUCTION EXIT, PAGE 124.

E6

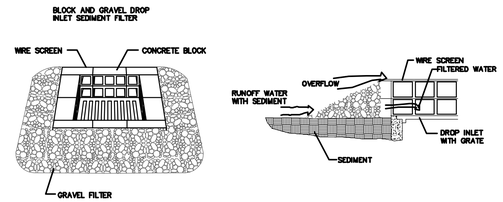
EROSION CONTROL MIX BERM
NOT TO SCALE



EROSION CONTROL MIX BERMS SHALL BE USED ONLY AS FOLLOWS:

1. BERMS SHALL BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY ABOVE THE BERM.
2. THE BERMS SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE.
3. THE BERMS SHALL BE INSTALLED ON SLOPES LESS THAN 5%.
4. SUBJECT TO (E), BELOW, THE MIX SHALL HAVE AN ORGANIC PORTION BETWEEN 80 AND 100%, DRY WEIGHT BASIS, AND BE FIBROUS AND ELONGATED SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, COMPOSED BARK, OR EQUIVALENT MANUFACTURED PRODUCTS.
5. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS SHALL NOT BE USED AS ORGANIC MATERIAL.
6. THE MIX SHALL NOT CONTAIN SILTS, CLAY, OR FINE SANDS.
7. THE MIX SHALL HAVE A PARTICLE SIZE BY WEIGHT OF 70 TO 85% PASSING A 6-INCH SCREEN AND A MAXIMUM OF 85% PASSING THE 0.75-INCH SCREEN.
8. THE MIX PH SHALL BE BETWEEN 5.0 AND 8.0.
9. THE BERM SHALL BE AT LEAST 12 INCHES HIGH AND AT LEAST 2 FEET WIDE.
10. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, EROSION CONTROL MIX BERMS, PAGE 106.

E7



MAINTENANCE

ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER
NOT TO SCALE

TO BE USED IN ALL AREAS WHERE THERE WILL BE NO TRAFFIC.

TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY STORM DRAIN INLET PROTECTION, PAGE 118.

E8

TEMPORARY EROSION CONTROL MEASURES

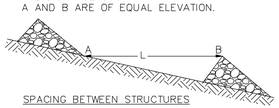
1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS SHALL BE RETURNED TO ORIGINAL GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 4" OF LOAM AND SEEDED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. (SEE SEED SPECIFICATIONS THIS SHEET)
4. ALL DISTURBED AREAS WILL BE RESTABILIZED WITHIN 45 DAYS. AT ANY ONE TIME, NO MORE THAN 5 ACRES, (217,800 Sq. Ft.) WILL BE DISTURBED.
5. SILT FENCES AND PERIMETER BARRIERS SHALL BE INSPECTED PERIODICALLY AND AFTER EVERY RAIN DURING THE LIFE OF THE PROJECT. ALL DAMAGED AREAS SHALL BE REPAIRED, SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
6. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
7. PER THE EPA CGP REQUIREMENTS THERE WILL BE REPORTS OF THE EROSION CONTROL INSPECTIONS IAW SWPPP PREPARED BY BS&E. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER 0.25" OR GREATER RAIN EVENT.
8. DITCHES, SWALES, AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
9. DO NOT TRAFFIC EXPOSED SOIL SURFACES WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEM.
10. DRIVEWAYS AND CUT AND FILL SPLOPES MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINAL GRADE.
11. STABILIZATION MEANS:
    - 11.1. A MINIMUM OF 85% OF VEGETATIVE COVER HAS BEEN ESTABLISHED.
    - 11.2. A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED, OR
    - 11.3. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
12. THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
13. THE NHDES STORMWATER MANUAL, IN THREE VOLUMES, DATED DECEMBER 2008, IS A PART OF THIS PLAN SET AND THE MORE RESTRICTIVE WILL GOVERN. (NH SWM)

EROSION & SEDIMENT CONTROL DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

E9

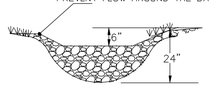
STONE CHECK DAM
NOT TO SCALE

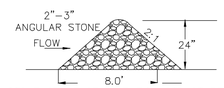
THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.



SPACING BETWEEN STRUCTURES

NOTE: KEY STONE INTO CHANNEL BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIUM OF 18" TO PREVENT FLOW AROUND THE DAM.

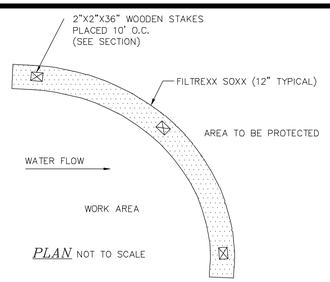




STONE GRADE STABILIZATION STRUCTURE

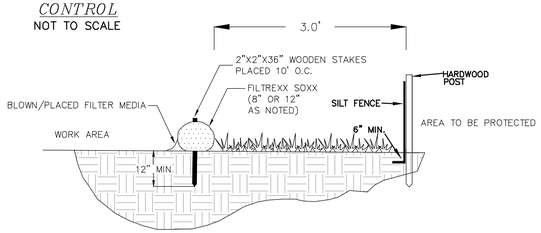
1.) CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH.
2.) THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM SHOULD BE LESS THEN ONE ACRE.
3.) THE MAXIMUM HEIGHT OF THE DAM SHOULD BE TWO FEET.
4.) THE CENTER OF THE DAM SHOULD BE AT LEAST SIX INCHES LOWER THAN THE OUTER EDGES.
5.) THE MAXIMUM SPACING IS AS SHOWN ON THE PROJECT SITE PLANS.
6.) CHECK DAMS WILL NOT BE USED IN A FLOWING STREAM.
7.) TEMPORARY CHECK DAMS WILL BE REMOVED ONCE THE SWALE OR DITCH IS DETERMINED STABLE.
8.) TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY CHECK DAMS, PAGE 114.

E10



PLAN NOT TO SCALE

FILTREXX SEDIMENT CONTROL
NOT TO SCALE



NOTES

1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIRMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. SILTSOXX MAY BE USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
5. SILTSOXX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIRMENTS OF THE SPECIFIC APPLICATION.
6. FILTREXX SOXX IS A REGISTERED TRADEMARK OF FILTREXXIN TERNATIONAL, LLC.
7. SILT FENCE IS NOT A SUBSTITUTION FOR SILT SOXX AND ANY EQUAL SUBSTITUTION TO BE APPROVED.
8. TO BE CONSTRUCTED IAW FILTREXX, SECTION 1:EROSION & SEDIMENT CONTROL (PAGE 323) - CONSTRUCTION ACTIVITIES, SWPPP CUT SHEET: FILTREXX SEDIMENT CONTROL

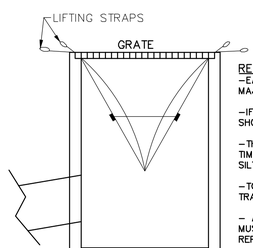
Filtrexx International, LLC
35481 Grafton Eastern Rd | Grafton, Oh 44044
440-926-2607 | fax: 440-926-4021
WWW.FILTREXX.COM
OR APPROVED EQUAL

NOTE: FOR AREAS REQUIRING DOUBLE PERIMETER CONTROL WITHIN 50' OF JURISDICTIONAL WETLANDS AND NOT FOR ALL SILT SOXX APPLICATIONS.

DOUBLE PERIMETER PROTECTION CAN BE ANY COMBINATION OF THE PRACTICES OF SILT FENCE, SILT SOXX, OR EROSION CONTROL MULCH BERM.

SECTION NOT TO SCALE

E11



RECOMMENDED MAINTENANCE SCHEDULE

-EACH SILTSACK SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT, AND MUST BE MAINTAINED.

-IF THERE HAVE BEEN NO MAJOR EVENTS, SILTSACK SHOULD BE INSPECTED EVERY 2-3 WEEKS.

-THE RESTRAINT CORD SHOULD BE VISIBLE AT ALL TIMES. IF CORD IS COVERED WITH SEDIMENT, THE SILTSACK SHOULD BE EMPTIED.

-TO BE USED IN ALL AREAS WHERE THERE WILL BE TRAFFIC.

- ARE SUBJECT TO DAMAGE BY SNOW PLOWS, AND MUST BE INSPECTED AFTER ANY SNOW EVENT AND REPLACED AS REQUIRED.

TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY STORM DRAIN INLET PROTECTION, PAGE 118.

SILTSACK DETAIL
NOT TO SCALE

E-101

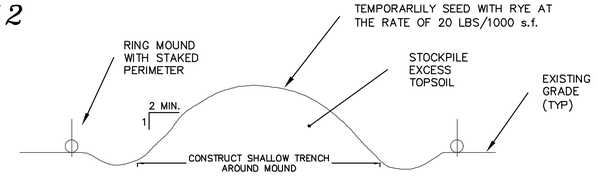
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

NOT FOR CONSTRUCTION

E12



TO BE CONSTRUCTED IAW NH SWM #3 4–1 EROSION CONTROL PRACTICES, SOIL STOCKPILE PRACTICES, PAGE 46.

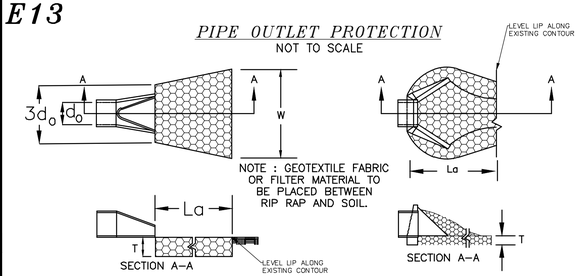
TOPSOIL STOCKPILE MOUND

NOT TO SCALE

E13

PIPE OUTLET PROTECTION

NOT TO SCALE



PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

PIPE OUTLET TO WELL–DEFINED CHANNEL

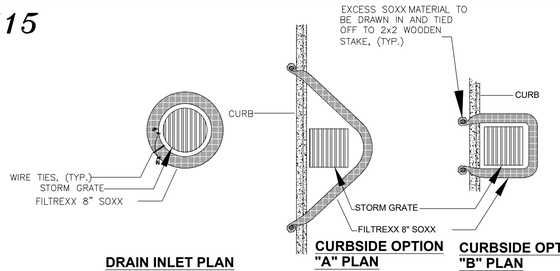
PIPE OUTLET PROTECTION CONSTRUCTION SPECIFICATIONS

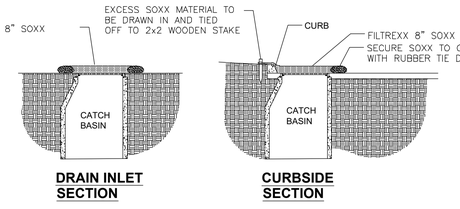
1. THE SUB GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS. SPECIFIED GRADATION.
2. THE ROCK OR GRAVEL USED FOR FILTER OF RIP RAP SHALL CONFORM TO NHDOT SECTION 583.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. TO BE CONSTRUCTED IAW NH SWM #2 4–6 CONVEYANCE PRACTICES, 6. OUTLET PROTECTION, PAGE 172.

E14

TABLE 7–24––RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9		12
85%	8		11
50%	6		9
15%	2		3

E15





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

FILTREXX INLET PROTECTION

NOT TO SCALE

E16

NOTE: THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

NOTE: Temporary seed mix for stabilization of turf shall be winter rye or oats at a rate of 2.5 lbs. per 1000 s.f. and shall be placed prior to OCT. 15, if permanent seeding not yet complete.

SEEDING GUIDE

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	FAIR	GOOD	GOOD	EXCELLENT
PLAY AREAS AND athletic FIELDS (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	F	FAIR	EXCELLENT	EXCELLENT	2/
	G	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH–PM–24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE 7–36.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

RECOMMENDED

SEEDING RATES

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH	15	1.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
C. TALL FESCUE	24	0.55
CREEPING RED FESCUE	24	0.55
BIRDS FOOT TREFOIL	REMOVED	REMOVED
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREEPING RED FESCUE 1/	30	1.15
KENTUCKY BLUEGRASS 1/	70	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

*

New England Conservation/Wildlife Mix		
Botanical Name	Common Name	Indicator
Elymus virginicus	Virgina Wild Rye	FACW-
Schizachyrium scoparium	Little Bluestem	FACU
Andropogon gerardii	Big Bluestem	FAC
Festuca rubra	Red Fescue	FACU
Sorghastrum nutans	Indian Grass	UPL
Panicum virgatum	Switch Grass	FAC
Chamaecrista fasciculata	Partridge Pea	FACU
Desmodium canadense	Shown Tick Trefoil	FAC
Asclepias tuberosa	Butterfly Milkweed	NI
Bidens frondosa	Beggas Ticks	FACW
Eupatorium purpureum (Eutrochium maculatum)	Purple Joe Pye Weed	FAC
Recheckia hirta	Black Eyed Susan	FACU-
Aster pilosus (Symphyotrichum pilosum)	Heath (or Hairy) Aster	UPL
Solidago juncea	Early Goldenrod	

SEEDING SPECIFICATIONS

1. GRADING AND SHAPING
   A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED.
   WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. SEEDBED PREPARATION
   A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEED BED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. ESTABLISHING A STAND
   A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING
   AND INCORPORATED INTO THE SOIL KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE,
   THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
   AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100LBS. PER 1,000 SQ.FT.
   NITROGEN(N), 50LBS. PER ACRE OR 1.1LBS. PER 1,000 SQ.FT.
   PHOSPHATE(P2O5), 100LBS. PER ACRE OR 2.2LBS. PER 1,000 SQ.FT.
   POTASH(K2O), 100LBS. PER ACRE OR 2.2LBS. PER 1,000 SQ.FT.
   (NOTE: THIS IS THE EQUIVALENT OF 500LBS. PER ACRE OF 10–20–20 FERTILIZER OR 1,000LBS. PER ACRE OF 5–10–10.)
   B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
   C. REFER TO TABLE(G–E1 THIS SHEET) FOR APPROPRIATE SEED MIXTURES AND TABLE(H–E1 THIS SHEET) FOR RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT TREFOIL, AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT.
   D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.
4. MULCH
   A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
   B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90LBS PER 1000 S.F.
5. MAINTENANCE TO ESTABLISH A STAND
   A. PLANTED AREA SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
   B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIAL STAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
   C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.
6. TO BE CONSTRUCTED IAW NH SWM #3 4–1 EROSION CONTROL PRACTICES, PERMANENT VEGETATION, PAGE 60.

E17 *CONSTRUCTION SEQUENCE:*

1.) CUT AND REMOVE TREES IN CONSTRUCTION AREA ONLY AS REQUIRED, RELOCATE ANY PROJECT T.B.M.

2.) CONSTRUCT AND/OR INSTALL TEMPORARY AND PERMANENT SEDIMENT EROSION AND DETENTION CONTROL FACILITIES AS SPECIFIED. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY THE COMMUNITY SERVICES DEPARTMENT.

3.) EROSION, SEDIMENT AND DETENTION CONTROL FACILITY SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS.

4.) CLEAR, CUT AND DISPOSE OF DEBRIS IN APPROVED FACILITY

5.) CONSTRUCT TEMPORARY CULVERTS AS REQUIRED, OR DIRECTED

6.) CONSTRUCT ROADWAYS FOR ACCESS TO DESIRED CONSTRUCTION AREAS. ALL ROADS SHALL BE STABILIZED IMMEDIATELY. DO NOT PLACE POROUS PAVEMENT WEARING COURSE INTO SERVICE UNTIL EXTERIOR BUILDING CONSTRUCTION IN COMPLETE. REMOVE ANY DIRT FROM CONVENTIONAL PAVEMENT BASE COURSE AND POROUS PAVEMENT BASE COURSE BEFORE APPLICATION OF POROUS PAVEMENT WEARING COURSE. DUMPSTERS SHALL NOT BE LOCATED ON POROUS PAVEMENT. REMOVE ANY EXCESS OVERFLOW PAVEMENT FROM THE PAVING OF THE CONVENTION PAVEMENT AND BITUMINOUS SIDEWALKS FROM THE POROUS SURFACE IF OVERFLOW OCCURS.

7.) START BUILDING CONSTRUCTION AND INSTALL PERIMETER FENCE WHERE SHOWN.

8.) INSTALL PIPE AND CONSTRUCTION ASSOCIATED APPURTENANCES AS REQUIRED OR DIRECTED. ALL DISTURBED AREAS SHALL STABILIZED IMMEDIATELY AFTER GRADING.

9.) BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES AND DISTURBED AREAS SHALL BE SEEDED OR MULCHED AS REQUIRED, OR DIRECTED. NO AREA IS ALLOWED TO BE DISTURBED FOR A LENGTH OF TIME THAT EXCEEDS 45 DAYS BEFORE BEING STABILIZED. DAILY, OR AS REQUIRED. ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADES. ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADES.

10.) CONSTRUCT TEMPORARY BERMS, DRAINS DITCHES, SILT FENCES, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.

11.) INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. ALL SWPPP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORM WATER INSPECTOR (CESSW), OR A CERTIFIED PROFESSIONAL IN STORM WATER QUALITY (CPSWQ). INSPECTION REPORTS SHALL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.

12.) COMPLETE PERMANENT SEEDING AND LANDSCAPING.

13.) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE ESTABLISHED THEMSELVES AND SITE IMPROVEMENTS ARE COMPLETE.

14.) SMOOTH AND REVEGETATE ALL DISTURBED AREAS.

15.) FINISH PAVING ALL ROADWAYS.

E18 *DEFINITION OF STABLE:*

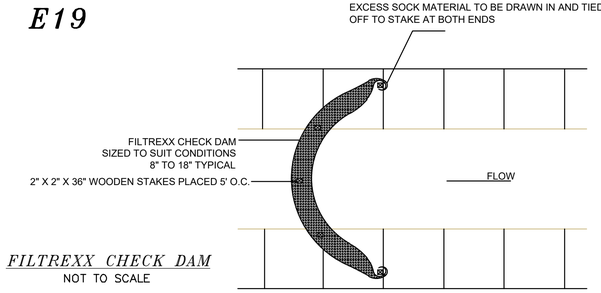
PER ENV–WQ 1500 ALTERATION OF TERRAIN

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
2. A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED..
3. A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIP–RAP HAS BEEN INSTALLED.
4. OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ADDITION STABILIZATION NOTES:

5. HAY MULCH OR OTHER APPROVED METHODS SHALL BE USED TO CONTROL EROSION OF NEWLY GRADED AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS AFTER THEIR CONSTRUCTION.
6. DISTURBED SOIL AREAS SHALL BE EITHER TEMPORARILY OR PERMANENTLY STABILIZED. IN AREAS WHERE FINAL GRADING HAS NOT OCCURRED, TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN SEVEN (7) CALENDAR DAYS FOR EXPOSED SOIL AREAS THAT ARE WITHIN ONE HUNDRED (100) FEET OF A SURFACE WATER BODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE (3) CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.

E19

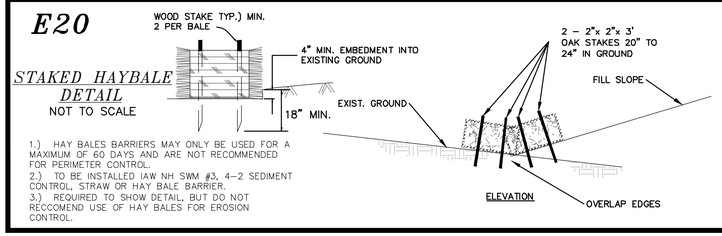


FILTREXX CHECK DAM

NOT TO SCALE

NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. CHECK DAM SHOULD BE USED IN AREAS THAT DRAIN 1 ACRE OR LESS.
3. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
4. CHECK DAM CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
5. CONTRACTOR IS REQUIRED TO BE A FILTREXX CERTIFIED INSTALLER.

E20

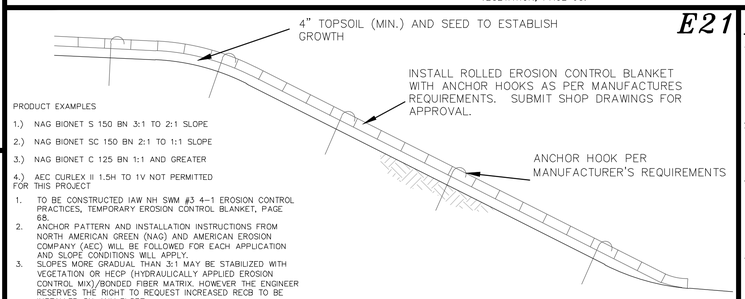


STAKED HAYBALE DETAIL

NOT TO SCALE

1.) HAY BALES BARRIERS MAY ONLY BE USED FOR A MAXIMUM OF 60 DAYS AND ARE NOT RECOMMENDED FOR PERIMETER CONTROL.
2.) TO BE INSTALLED IAW NH SWM #3, 4–2 SEDIMENT CONTROL, STRAW OR HAY BALE BARRIER.
3.) REQUIRED TO SHOW DETAIL, BUT DO NOT RECCOMEND USE OF HAY BALES FOR EROSION CONTROL.

E21



PRODUCT EXAMPLES

1.) NAG BIONET S 150 BN 3:1 TO 2:1 SLOPE

2.) NAG BIONET SC 150 BN 2:1 TO 1:1 SLOPE

3.) NAG BIONET C 125 BN 1:1 AND GREATER

4.) AEC CURLEX II 1.5H TO 1V NOT PERMITTED FOR THIS PROJECT

1. TO BE CONSTRUCTED IAW NH SWM #3 4–1 EROSION CONTROL PRACTICES, TEMPORARY EROSION CONTROL BLANKET, PAGE 68.
2. ANCHOR PATTERN AND INSTALLATION INSTRUCTIONS FROM NORTH AMERICAN GREEN (NAG) AND AMERICAN EROSION COMPANY (AEC) WILL BE FOLLOWED FOR EACH APPLICATION AND SLOPE CONDITIONS WILL APPLY.
3. SLOPES MORE GRADUAL THAN 3:1 MAY BE STABILIZED WITH VEGETATION OR HECP (HYDRAULICALLY APPLIED EROSION CONTROL MIX)/BONDED FIBER MATRIX. HOWEVER THE ENGINEER RESERVES THE RIGHT TO REQUEST INCREASED RECB TO BE INSTALLED ON ANY SLOPE.
4. ALL RECB IS TO CONSIST OF ALL NATURAL MATERIAL WITH NO SYNTHETIC COMPONENTS (NO PHOTO BIODEGRADABLE NETTING)

ROLLED EROSION CONTROL BLANKET (RECB) SLOPE STABILIZATION DETAIL

NOT TO SCALE

E22 *WINTER STABILIZATION NOTES (Env–Wq 1505.06)*

1. ALL DISTURBED AREAS THAT DO NOT HAVE AT LEAST 85% VEGETATIVE COVERAGE PRIOR TO OCTOBER 15TH SHALL BE STABILIZED BY APPLYING MULCH AT A RATE OF 3–4 TONS PER ACRE. ALL SIDE SLOPES, STEEPER THAN 4:1, THAT ARE NOT DIRECTED TO SWALES OR DETENTION BASINS, SHALL BE LINED WITH BIODEGRADABLE/PHOTODEGRADABLE "JUTE MATTING" (EXCELSIOR'S CURLEX II OR EQUAL). ALL OTHER SLOPES SHALL BE MULCHED AND TACKED AT A RATE OF 3–4 TONS PER ACRE. THE APPLICATION OF MULCH AND/OR JUTE MATTING SHALL NOT OCCUR OVER EXISTING SNOW COVER. IF THE SITE IS ACTIVE AFTER OCTOBER 15TH, ANY SNOW THAT ACCUMULATES ON DISTURBED AREAS SHALL BE REMOVED. PRIOR TO SPRING THAW ALL AREAS WILL BE STABILIZED, AS DIRECTED ABOVE.

2. ALL SWALES THAT DO NOT HAVE FULLY ESTABLISHED VEGETATION SHALL BE EITHER LINED WITH TEMPORARY JUTE MATTING OR TEMPORARY STONE CHECK DAMS (APPROPRIATELY SPACED). STONE CHECK DAMS WILL BE MAINTAINED THROUGHOUT THE WINTER MONTHS. IF THE SWALES ARE TO BE MATTED WITH PERMANENT LINERS OR RIPRAP WITH ENGINEERING FABRIC, THIS SHALL BE COMPLETED PRIOR TO WINTER SHUTDOWN OR AS SOON AS THEY ARE PROPERLY GRADED AND SHAPED.

3. PRIOR TO OCT. 15TH ALL ROADWAY AND PARKING AREAS SHALL BE BROUGHT UP TO AND THROUGH THE BANK RUN GRAVEL APPLICATION. IF THESE AREAS' ELEVATIONS ARE PROPOSED TO REMAIN BELOW THE PROPOSED SUBGRADE ELEVATION, THE SUBGRADE MATERIAL SHALL BE ROUGHLY CROWNED AND A 3" LAYER OF CRUSHED GRAVEL SHALL BE PLACED AND COMPACTED. THIS WILL ALLOW THE SUBGRADE TO SHED RUNOFF AND WILL REDUCE ROADWAY EROSION. THIS CRUSHED GRAVEL DOES NOT HAVE TO CONFORM TO NH DOT 304.3, BUT SHALL HAVE BETWEEN 15–25% PASSING THE #200 SIEVE AND THE LARGEST STONE SIZE SHALL BE 2". IF THE SITE IS ACTIVE AFTER OCTOBER 15TH, ANY ACCUMULATED SNOW SHALL BE REMOVED FROM ALL ROADWAY AND PARKING AREAS.

4. AFTER OCTOBER 15TH, THE END OF NEW HAMPSHIRE'S AVERAGE GROWING SEASON, NO ADDITIONAL LOAM SHALL BE SPREAD ON SIDE SLOPES AND SWALES. THE STOCKPILES THAT WILL BE LEFT UNDISTURBED UNTIL SPRING SHALL BE SEEDED BY THIS DATE. AFTER OCTOBER 15TH, ANY NEW OR DISTURBED PILES SHALL BE MULCHED AT A RATE OF 3–4 TONS PER ACRE. ALL STOCKPILES THAT WILL REMAIN THROUGHOUT THE WINTER SHALL BE SURROUNDED WITH SILT FENCING.

5. ENV–WQ 1505.06 COLD WEATHER SITE STABILIZATION (B)(1) LIMITS ARE OF EXPOSURE TO ONE ACRE OF UNSTABILIZED SOIL WITHOUT OBTAINING A WAIVER AND WINTER CONSTRUCTION PLAN.

E–102

DOVER FILE #

REVISION	DATE	DESCRIPTION

EROSION & SEDIMENT CONTROL DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11–5 & 11–5SND

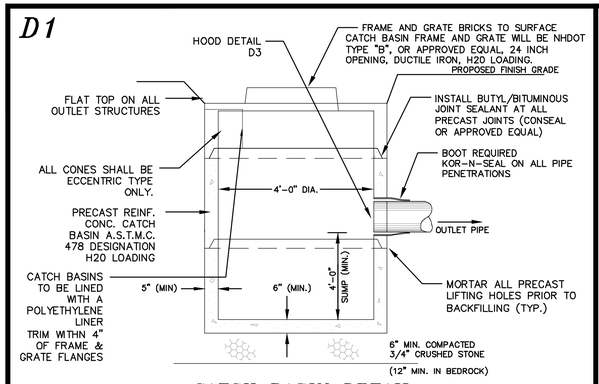
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

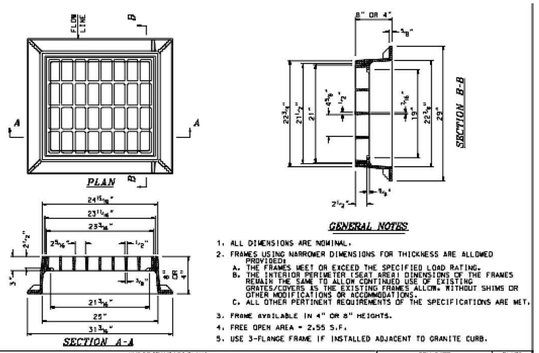
D1



CATCH BASIN DETAIL

NOT TO SCALE

D2



NHDOT STANDARD PLANS

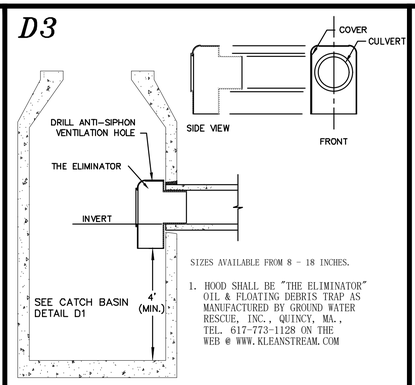
TYPE "B" GRATE & FRAME

REV. DATE	PLATE
04-16-2010	2
08-14-2015	STANDARD DR-1

CATCH BASIN GRATE

NOT TO SCALE

D3



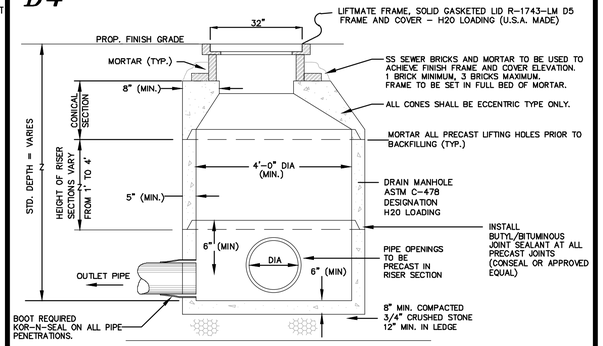
SIZES AVAILABLE FROM 8 - 18 INCHES.

1. HOOD SHALL BE "THE ELIMINATOR" OIL & FLOATING DEBRIS TRAP AS MANUFACTURED BY GROUND WATER RESCUE, INC., QUINCY, MA., TEL. 617-773-1128 ON THE WEB @ WWW.KLEANSTREAM.COM

CATCH BASIN HOOD DETAIL

NOT TO SCALE

D4



PRECAST DRAIN MANHOLE DETAIL

NOT TO SCALE

D5

R-1743-LM

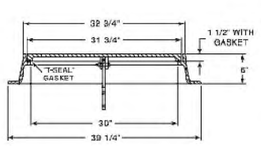
LiftMate Frame, Solid Gasketed Lid

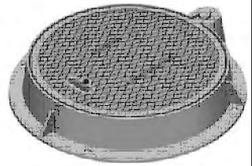
Heavy Duty

Furnished with four 1" anchor holes on 36-7/8" diameter bolt circle.

Hinge plug available for self-seal application.

See p. 13 for LiftMate information.



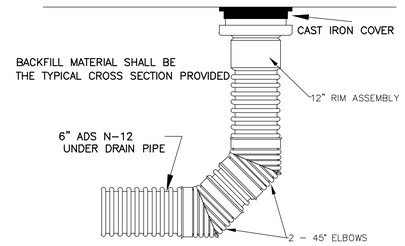


DRAIN MANHOLE FRAME AND GRATE WILL BE LIFTMATE R-1743-LM, OR APPROVED EQUAL, 32 INCH OPENING, CAST IRON, H20 LOADING.

DRAIN MANHOLE COVER DETAIL

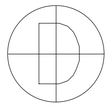
NOT TO SCALE

D6



ADS N-12 INLINE DRAIN

NOT TO SCALE USED FOR CLEANOUTS



12" CAST IRON COVER

NOT TO SCALE

CASTINGS ARE RATED FOR H20 WHEEL LOAD TRAFFIC

PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT

D7

CONE GRATE

NOT TO SCALE

NOTE:
MUST BE HAALA INDUSTRIES INC. OR EQUAL.

Cone Grates Top Mount



CG12TM
Part No. CG12TM

Save Trees

Top Mount Cone Grates are designed to mount on the top of round manhole inlet or outlet structures to keep debris from entering the storm water system. Top mount cone grates are easy to install and allow for at grade manhole installations but can be used in a variety of applications. Grates 96" and larger are made as a two piece, bolt together design.

- Plate and bar hybrid design is both clean and cost effective
- Made from 1/2" plate with 3/4" or 1" round bars depending on grate size
- Anti vortex plate can be added upon request
- Hinged and lockable access doors can be added upon request
- Galvanized steel construction. Can be made from aluminum or stainless steel.

D8

ANGLE GRATE

NOT TO SCALE

NOTE:
MUST BE HAALA INDUSTRIES INC. OR EQUAL.

Angle Grates For Manholes



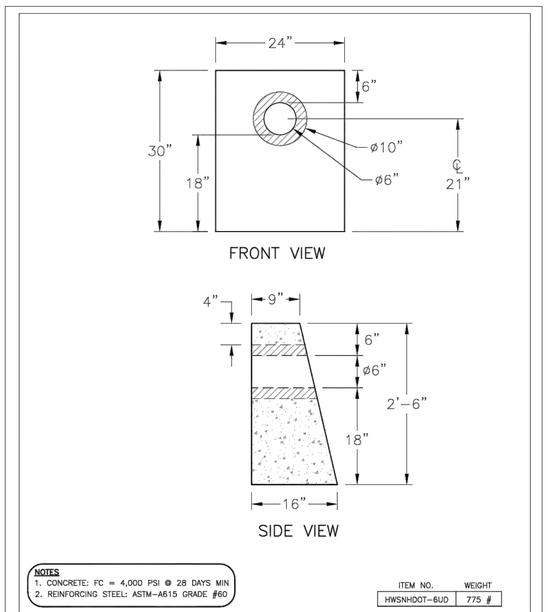
AG0808-58
Part No. AG0808-58

Save Trees

Angle Grates are designed to cover inlet orifices and prevent small to medium debris from passing through. The top angled design helps to minimize the amount of debris that settles on top after the water receeds. All grates are made from plate for a clean and smooth contact surface.

- Plate design for a clean appearance
- Standard 2" openings (other sizes can be made)
- Angled top/front plate to maximize debris deflection
- Mounting flanges on 3 sides allows grate to be mounted at floor level inverts
- Galvanized steel construction. Can be made from aluminum or stainless steel.

D9



NOTES
1. CONCRETE: FC = 4,000 PSI @ 28 DAYS MIN
2. REINFORCING STEEL: ASTM-A615 GRADE #60

ITEM NO.	WEIGHT
HWSNHDOT-6UD	775 #

SHEA CONCRETE PRODUCTS — New England's Premier Precaster
800-695-7432 (SHEA)
www.sheaconcrete.com
773 Salem Street-Wilmington, MA 153 Cranberry Hwy-Rochester, MA
87 Haverhill Road-Amesbury, MA 160 Old Turnpike Rd-Nottingham, NH
Mail to: PO Box 520-Wilmington, MA 01887

N.H. DOT
6" UNDERDRAIN HEADWALL

Page:
Drafter: MB
Revisions:
Date: 10.27.15
DWG: 6IN PIPE US MODIF

Specifications subject to change without notice

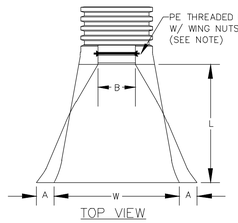
UNDERDRAIN HEADWALL

NOT TO SCALE

D10

PART No.	PIPE SIZE	A	B(MAX)	H	L	W
1510-NP	15" 375 mm	6.5" 165 mm	10" 254 mm	6.5" 165 mm	25" 635 mm	29" 735 mm
1810-NP	18" 450 mm	7.5" 190 mm	15" 380 mm	6.5" 165 mm	32" 812 mm	35" 890 mm
2410-NP	24" 600 mm	7.5" 190 mm	18" 450 mm	6.5" 165 mm	36" 900 mm	45" 1140 mm
3010-NP	30" 750 mm	10.5" 266 mm	N/A	7.0" 178 mm	53" 1345 mm	68" 1725 mm
3610-NP	36" 900 mm	10.5" 266 mm	N/A	7.0" 178 mm	53" 1345 mm	68" 1725 mm

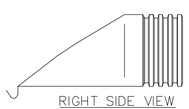
NOTE: PE THREADED ROD W/ WING NUTS PROVIDED FOR END SECTIONS 15"-24". 30" & 36" END SECTIONS TO BE WELDED PER MANUFACTURER'S RECOMMENDATIONS.



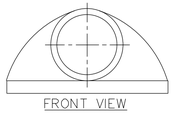
TOP VIEW

ADS N-12 FLARED END SECTIONS

NOT TO SCALE (ALL DIMENSIONS ARE NOMINAL)



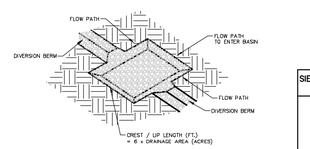
RIGHT SIDE VIEW



FRONT VIEW

D11

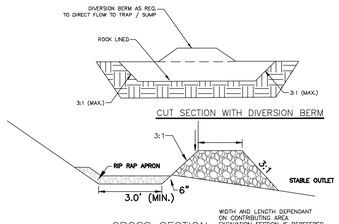
1. TRAP TO BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.



ISOMETRIC VIEW

STONE LINED SEDIMENT TRAP

NOT TO SCALE



SIEVE DESIGNATION	SIZE OF STONE (INCHES)
100%	12
84-100%	6
68-83%	3
42-55%	1
8-12%	NO. 4

REFERENCE IS MADE TO A LONG TERM MAINTENANCE MANUAL PREPARED BY BERRY SURVEYING & ENGINEERING, WHICH IS ON FILE AT THE CITY OF DOVER PLANNING DEPARTMENT, AND CAN BE FOUND AT THE OFFICE OF BERRY SURVEYING & ENGINEERING. (603) 332-2863

D-101

DOVER FILE #

REVISION	DATE	DESCRIPTION

DRAINAGE DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

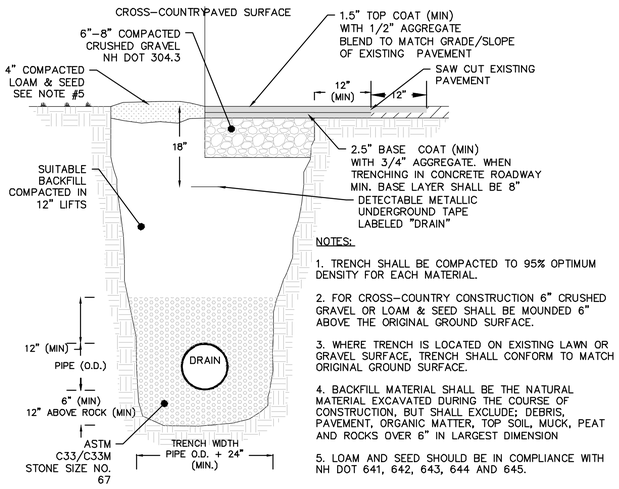
AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE — KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER

SHEET 18 OF 26

NOT FOR CONSTRUCTION

D12



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.

2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.

3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.

4. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION

5. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

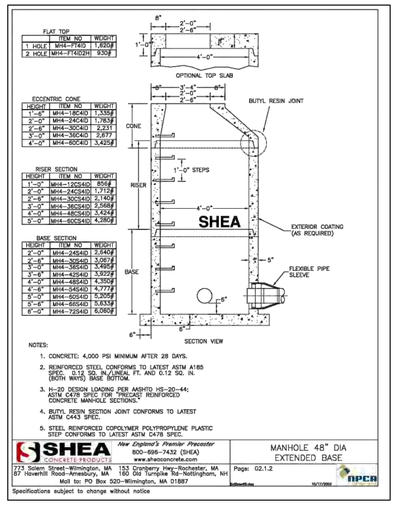
TYPICAL DRAIN PIPE TRENCH

NOT TO SCALE

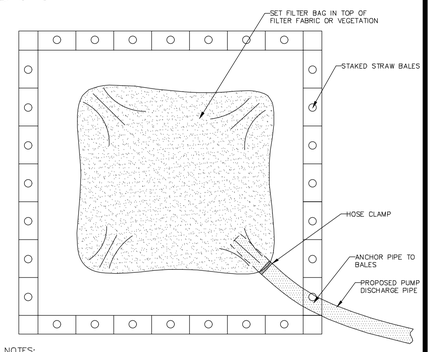
D13

48" MANHOLE ROUND EXTENDED BASE

NOT TO SCALE



D14



NOTES:

1.) ENSURE DISCHARGE POINT IS STABILIZED WITH VEGETATION OR PROPER EROSION AND SEDIMENT CONTROL PRACTICES.

2.) USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.

3.) TO BE PLACED AT AN UPLAND LOCATION THAT WILL ALLOW WATER TO DRAIN INTO THE GROUND.

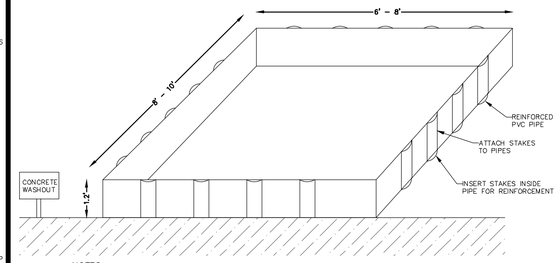
4.) SIZE OF DE-WATERING AREA TO BE 10' X 10', ADJUST SIZE DEPENDING ON VOLUME AND USE.

5.) ADDITIONAL BALES MAY BE USED TO INCREASE RETENTION AND FILTERING.

DE-WATERING BASIN

NOT TO SCALE

D15



NOTES:

1.) CONCRETE WASHOUT SHALL BE INSTALLED PRIOR TO ANY CONCRETE POURS.

2.) SIGNS SHALL BE INSTILLED TO CLEARLY INDICATE WHERE THE LOCATION OF THE WASHOUT AREA IS.

3.) CONTRACTOR IS IRRESPONSIBLE TO MAINTAIN AND REPLACE WASHOUT AREA AS NEEDED.

4.) RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

5.) DO NOT WASH CONCRETE TRUCKS OUT INTO DRAINAGE AREAS, SWALES, STREETS OR UNDISTURBED AREAS.

6.) WASHOUT AREA SHALL BE PLACED AWAY FROM DRAINAGE FEATURES AND OUTSIDE AND WETLAND BUFFERS.

CONCRETE WASHOUT

NOT TO SCALE

DOVER FILE #

REVISION	DATE	DESCRIPTION

DRAINAGE DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

AS NOTED
DATE : APRIL 1, 2025
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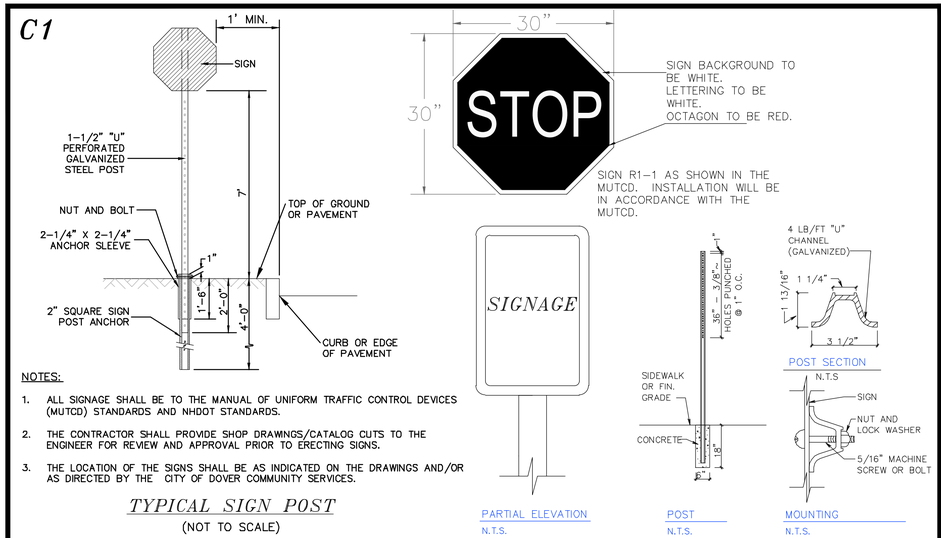
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED
PROFESSIONAL ENGINEER

D-102

SHEET 19 OF 26

NOT FOR CONSTRUCTION

C1



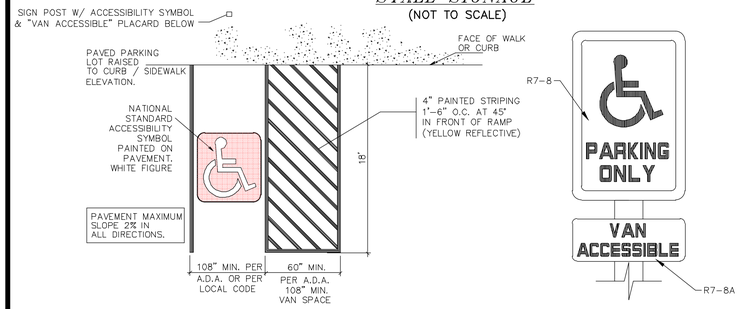
NOTES:

1. ALL SIGNAGE SHALL BE TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND NHDOT STANDARDS.
2. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS/CATALOG CUTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ERECTING SIGNS.
3. THE LOCATION OF THE SIGNS SHALL BE AS INDICATED ON THE DRAWINGS AND/OR AS DIRECTED BY THE CITY OF DOVER COMMUNITY SERVICES.

TYPICAL SIGN POST
(NOT TO SCALE)

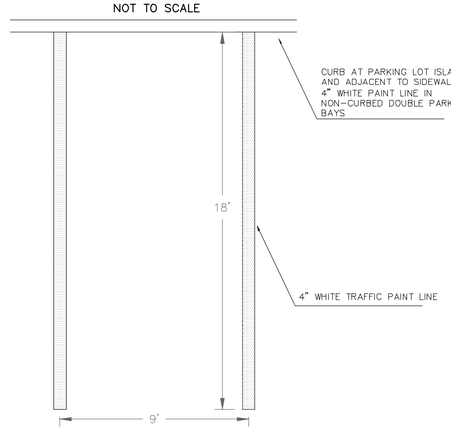
C2

ACCESSIBLE PARKING STALL SIGNAGE
(NOT TO SCALE)



C3

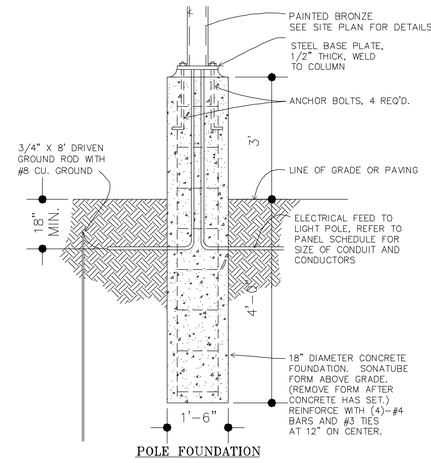
PARKING SPACE DETAIL
NOT TO SCALE



NOTES:

1.) PROVIDE TWO COATS OF PAINT ON ALL PARKING LINES.
2.) SEE PROPOSED SITE PLANS FOR LOCATION OF PARKING SPACES.
3.) PAINTED SPACES ONLY WHERE MARKED ON SITE PLAN

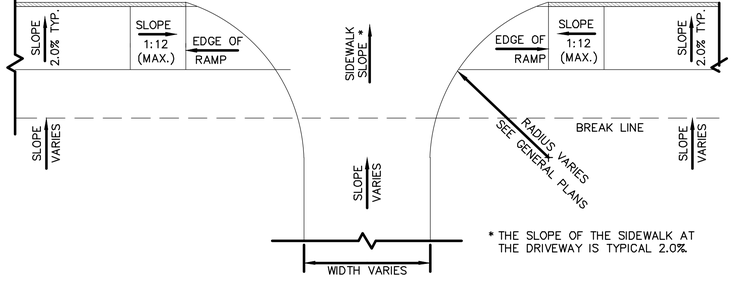
C4



POLE FOUNDATION

LIGHT BASE DETAIL
NOT TO SCALE

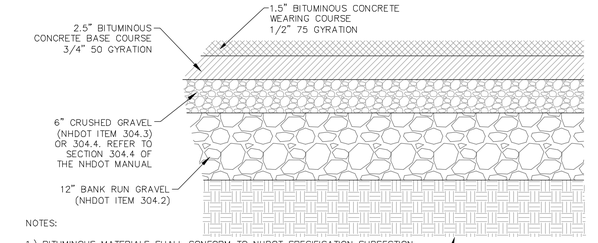
C5



* THE SLOPE OF THE SIDEWALK AT THE DRIVEWAY IS TYPICAL 2.0%

PLAN VIEW (DRIVEWAY & SIDEWALK)
NOT TO SCALE

C6



NOTES:

1.) BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SUBSECTION 401.3.6.

2.) PAVEMENT BASE COURSE AGGEGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.3 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.

3.) PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOFROLLED AND COMPABED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY. FOR NEW CONSTRUCTION AREAS ONLY. IN EXISTING PAVEMENT AREAS THE CONTRACTOR IS TO ENSURE THE BASE MATERIAL IS SUITABLE TO THE OWNER FOR RE-PAVING

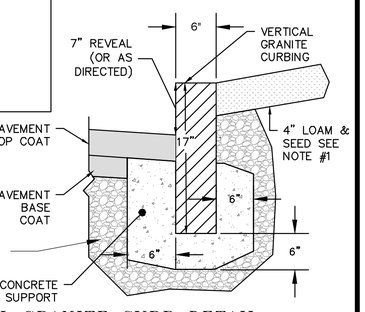
BITUMINOUS CONCRETE PAVEMENT SECTION (NON-POROUS)
NOT TO SCALE

C7

RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' – 28'	4'
29' – 35'	5'
36' – 42'	6'
43' – 49'	7'
50' – 56'	8'
57' – 60'	9'
OVER 60'	10'

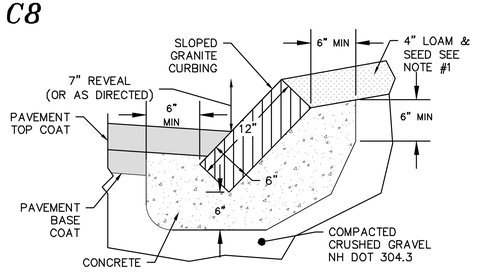
NOTES:

1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.



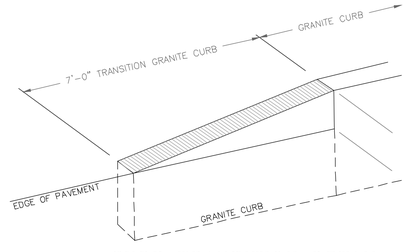
VERTICAL GRANITE CURB DETAIL
NOT TO SCALE

C8



SLOPE GRANITE CURB DETAIL
NOT TO SCALE

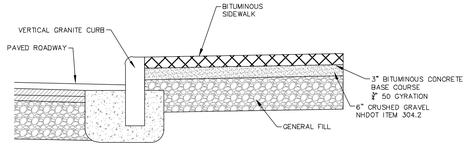
C9



CURB TRANSITION DETAIL
NOT TO SCALE

TO BE USED FOR TRANSITION FROM GRANITE CURB TO EDGE OF PAVEMENT

C10



BITUMINOUS SIDEWALK RAISED
NOT TO SCALE

C-101

DOVER FILE #

REVISION	DATE	DESCRIPTION

CONSTRUCTION DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

C11

See Redi-Rock.com for Detailed Section Drawings of Each Condition Shown in the Design Charts

NOTES:

1.) USE THE 41" BOTTOM BLOCK TO INSTALL THE FIRST COURSE. NOTE EMBEDMENT REQUIREMENT. COURSE DEPTH IS 1.5'

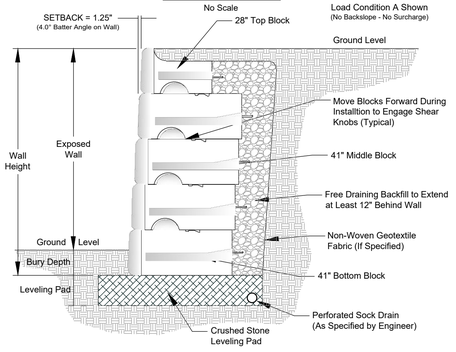
3.) USE 41" MIDDLE BLOCK FOR MIDDLE ROWS, APPROXIMATELY 7 COURSES DEPENDING ON WALL HEIGHT.

4.) USE 41" TOP BLOCK ALONG TOP OF WALL. NOTE WALL DROPS ARE TO BE FULL BLOCK DEPTHS.

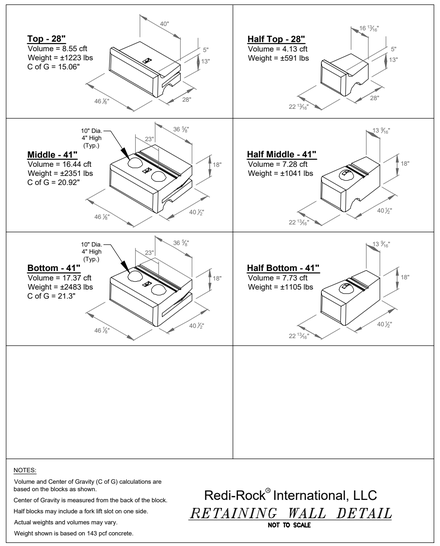
5.) USE 41" HALF BLOCKS FOR RADIAL TURNS AND END SECTIONS.

6.) THE WALL MANUFACTURER TYPICALLY PROVIDES WALL PROFILE AND BLOCK COUNT TO THE CONTRACTOR AS REQUIRED FOR CONSTRUCTION. THIS IS TO BE REVIEWED BY BOTH DPW AND DESIGN ENGINEER FOR CORRELATION WITH PROJECT SITE PLANS AND IS TO BE DESIGNED AND STAMPED BY A STRUCTURAL ENGINEER (OTHERS).

Typical Gravity Wall with 41" Blocks



41" SERIES BLOCKS



NOTES:
Volume and Center of Gravity (C of G) calculations are based on the blocks as shown.
Center of Gravity is measured from the back of the block.
Half blocks may include a fork lift slot on one side.
Actual weights and volumes may vary.
Weight shown is based on 143 pcf concrete.

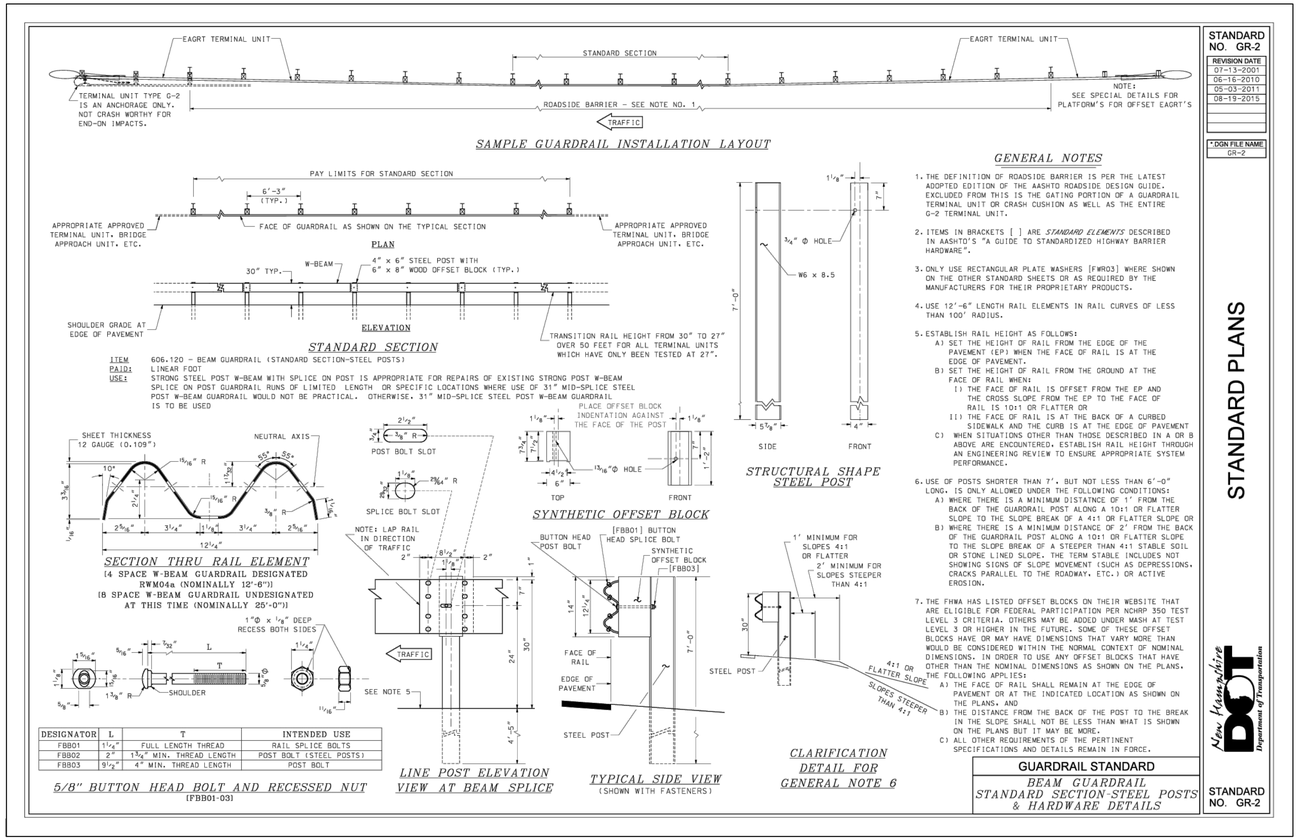
Redi-Rock® International, LLC

RETAINING WALL DETAIL

NOT TO SCALE

NOTE: RETAINING WALL TO BE DESIGNED BY A LICENSED PROFESSIONAL GEOTECHNICAL/STRUCTURAL ENGINEER.

C12



DESIGNATOR	L	T	INTENDED USE
FBB01	1¼"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1¾" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	9½"	4" MIN. THREAD LENGTH	POST BOLT

GENERAL NOTES

1. THE DEFINITION OF ROADSIDE BARRIER IS PER THE LATEST ADOPTED EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE. EXCLUDED FROM THIS IS THE GATING PORTION OF A GUARDRAIL TERMINAL UNIT OR CRASH CUSHION AS WELL AS THE ENTIRE G-2 TERMINAL UNIT.
2. ITEMS IN BRACKETS [ ] ARE *STANDARD ELEMENTS* DESCRIBED IN AASHTO'S "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE".
3. ONLY USE RECTANGULAR PLATE WASHERS [FWR03] WHERE SHOWN ON THE OTHER STANDARD SHEETS OR AS REQUIRED BY THE MANUFACTURERS FOR THEIR PROPRIETARY PRODUCTS.
4. USE 12'-6" LENGTH RAIL ELEMENTS IN RAIL CURVES OF LESS THAN 100' RADIUS.
5. ESTABLISH RAIL HEIGHT AS FOLLOWS:
   A) SET THE HEIGHT OF RAIL FROM THE EDGE OF THE PAVEMENT (EP) WHEN THE FACE OF RAIL IS AT THE EDGE OF PAVEMENT.
   B) SET THE HEIGHT OF RAIL FROM THE GROUND AT THE FACE OF RAIL WHEN:
      I) THE FACE OF RAIL IS OFFSET FROM THE EP AND THE CROSS SLOPE FROM THE EP TO THE FACE OF RAIL IS 10:1 OR FLATTER OR
      II) THE FACE OF RAIL IS AT THE BACK OF A CURBED SIDEWALK AND THE CURB IS AT THE EDGE OF PAVEMENT
   C) WHEN SITUATIONS OTHER THAN THOSE DESCRIBED IN A OR B ABOVE ARE ENCOUNTERED, ESTABLISH RAIL HEIGHT THROUGH AN ENGINEERING REVIEW TO ENSURE APPROPRIATE SYSTEM PERFORMANCE.
6. USE OF POSTS SHORTER THAN 7', BUT NOT LESS THAN 6'-0" LONG, IS ONLY ALLOWED UNDER THE FOLLOWING CONDITIONS:
   A) WHERE THERE IS A MINIMUM DISTANCE OF 1' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A 4:1 OR FLATTER SLOPE OR
   B) WHERE THERE IS A MINIMUM DISTANCE OF 2' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A STEEPER THAN 4:1 STABLE SOIL OR STONE LINED SLOPE. THE TERM STABLE INCLUDES NOT SHOWING SIGNS OF SLOPE MOVEMENT (SUCH AS DEPRESSIONS, CRACKS PARALLEL TO THE ROADWAY, ETC.) OR ACTIVE EROSION.
7. THE FHWA HAS LISTED OFFSET BLOCKS ON THEIR WEBSITE THAT ARE ELIGIBLE FOR FEDERAL PARTICIPATION PER NCHRP 350 TEST LEVEL 3 CRITERIA. OTHERS MAY BE ADDED UNDER MASH AT TEST LEVEL 3 OR HIGHER IN THE FUTURE. SOME OF THESE OFFSET BLOCKS HAVE OR MAY HAVE DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO USE ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS AS SHOWN ON THE PLANS, THE FOLLOWING APPLIES:
   A) THE FACE OF RAIL SHALL REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED LOCATION AS SHOWN ON THE PLANS. AND
   B) THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE PLANS BUT IT MAY BE MORE.
   C) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

STANDARD NO. GR-2
REVISION DATE
07-13-2001
05-16-2010
05-03-2011
08-19-2015
* DGN FILE NAME
GR-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

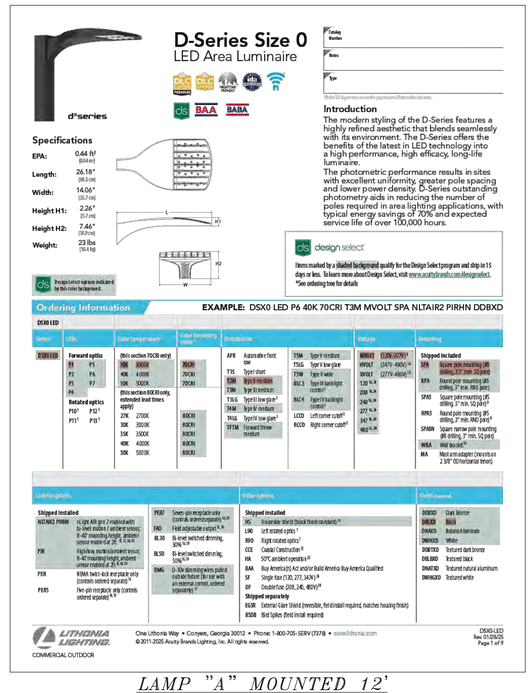
GUARDRAIL STANDARD

BEAM GUARDRAIL STANDARD SECTION-STEEL POSTS & HARDWARE DETAILS

STANDARD NO. GR-2

GUARD RAIL
(NOT TO SCALE)

C13



D-Series Size 0
LED Area Luminaire

d-series

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details

Ordering Information EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

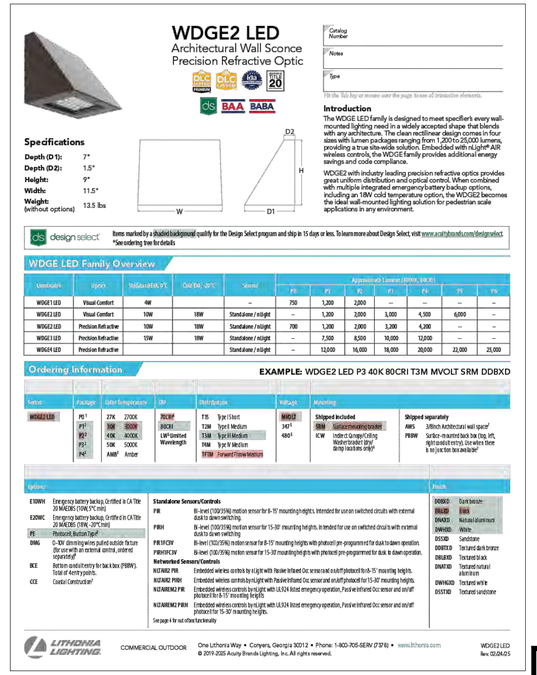
Series	LEDs	Color temperature*	Color Rendering Index*	Distribution	Voltage	Mounting
DSX0 LED	Forward optics: P1 P5, P2 P6, P3 P7, P4. Rotated optics: P10 P12, P11 P13	(this section 70CRI only): 30K 3000K, 40K 4000K, 50K 5000K. (this section 80CRI only, extended lead times apply): 27K 2700K, 30K 3000K, 35K 3500K, 40K 4000K, 50K 5000K	70CRI, 70CRI, 70CRI. 80CRI, 80CRI, 80CRI, 80CRI, 80CRI	AFR Automotive front row. T1S Type I short, T2M Type II medium, T2S Type II medium, T3M Type III medium, T3LG Type III low glare, T4M Type IV medium, T4LG Type IV low glare, TFTM Forward throw medium, T5M Type V medium, T5LG Type V low glare, T5W Type V wide, BLC3 Type III backlight control, BLC4 Type IV backlight control, LCCO Left corner cutoff, RCCO Right corner cutoff	MVOLT (120V-277V), HVOLT (347V-480V), 120 , 208 , 240 , 277 , 347 , 480	Shipped included: SPA Square pole mounting (4) drilling, 3.5" min. SQ pole, RPA Round pole mounting (4) drilling, 3" min. RND pole, SPAO Square pole mounting (4) drilling, 3" min. SQ pole, RPAO Round pole mounting (4) drilling, 3" min. RND pole, SPABW Square narrow pole mounting (4) drilling, 3" min. SQ pole, WBA Wall bracket, MA Mast arm adapter (required for 2 3/8" OD horizontal tenon). Shipped separately: AWS 240mm Architectural wall spacer, PBBW Surface-mounted back box (top, left, right conduit entry). Specify if there is no junction box available.

Controls/options	Other options	Finish
Shipped installed: NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8–40' mounting height, ambient sensor enabled at 25 fc; PIR High/low, motion/ambient sensor, 8–40' mounting height, ambient sensor enabled at 25 fc; PER NEMA twist-lock receptacle only (controls ordered separately); PERS Five-pin receptacle only (controls ordered separately). PEBY Seven-pin receptacle only (controls ordered separately); EAD Field adjustable output; BLSO Bi-level switched dimming, 50%; DMG 0–10V dimming wires pulled outside fixture (for use with an external control, ordered separately); DMG 0–10V dimming wires pulled outside fixture (for use with an external control, ordered separately). Shipped separately: BSGR External Glare Shield (reversible, flat install required, matches housing finish); BSDB Bird Spikes (field install required)	Shipped installed: PE Photocontrol, Button Type; BCE Button-activated entry for back box (PBBW). Total of 4 entry points; CCE Coastal Construction. Standalone Sensors/Controls: PIR Bi-level (100/35%) motion sensor for 8–15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching; PIRH Bi-level (100/35%) motion sensor for 15–30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching; PIR1FC3V Bi-level (100/35%) motion sensor for 8–15' mounting heights with photocell pre-programmed for dusk to dawn operation; PIRH1FC3V Bi-level (100/35%) motion sensor for 15–30' mounting heights with photocell pre-programmed for dusk to dawn operation. Networked Sensors/Controls: NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared Occ sensor and nLight protocol for 8–15' mounting heights; NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared Occ sensor and nLight protocol for 15–30' mounting heights; NLTAIRE2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 8–15' mounting heights; NLTAIRE2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 15–30' mounting heights. See page 4 for out of box functionality	DDBXD Dark bronze, DBLXD Black, DNAXD Natural aluminum, DWHXD White, DSSTD Sandstone, DDBTXD Textured dark bronze, DBLBTXD Textured black, DNATXD Textured natural aluminum, DWHGXD Textured white, DSSTDD Textured sandstone

LITHONIA LIGHTING. COMMERCIAL OUTDOOR One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com ©2011-2025 Acuity Brands Lighting, Inc. All rights reserved. DSX0 LED Rev. 01.09.25 Page 1 of 9

LAMP "A" MOUNTED 12'

C14



WDGE2 LED
Architectural Wall Sconce
Precision Refractive Optic

Specifications

Depth (D1):	7"
Depth (D2):	1.5"
Height:	9"
Width:	11.5"
Weight (without options)	13.5 lbs

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details

WDGE LED Family Overview

Generation	Finish	Total Initial Delivered Lumens	Color Temp.	Voltage	Approximate Lumens (4000K, 70CRI) P5	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		–	750	1,200	2,000	–	–	–	–
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	–	1,200	2,000	3,000	4,500	6,000	–
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	–	–
WDGE3 LED	Precision Refractive	15W	19W	Standalone / nLight	–	2,500	8,500	10,000	12,000	–	–
WDGE4 LED	Precision Refractive			Standalone / nLight	–	12,000	16,000	18,000	20,000	22,000	23,000

Ordering Information EXAMPLE: WDGE2 LED P3 40K 80CRI T3M MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE2 LED	P1 P1, P2 P2, P3 P3, P4 P4	27K 2700K, 30K 3000K, 40K 4000K, 50K 5000K, AMB Amber	70CRI 70CRI, 80CRI 80CRI	T1S Type I Short, T2M Type II Medium, T3M Type III Medium, T4M Type IV Medium, TFTM Forward Throw Medium	347 347, 480 480	Shipped included: SRM Surface mounting bracket, ICW Indoor Canopy Ceiling Mounted Under 10' (temp location only). Shipped separately: AWS 240mm Architectural wall spacer, PBBW Surface-mounted back box (top, left, right conduit entry). Specify if there is no junction box available

Options	Finish
E10WH Emergency battery backup, Certified in CA Title 20 MAE2RS (10W, 5°C min), E20WC Emergency battery backup, Certified in CA Title 20 MAE2RS (10W, -20°C min), PE Photocell, Button Type, DMG 0–10V dimming wires pulled outside fixture (for use with an external control, ordered separately), BCE Button-activated entry for back box (PBBW). Total of 4 entry points, CCE Coastal Construction	Standalone Sensors/Controls: PIR Bi-level (100/35%) motion sensor for 8–15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching, PIRH Bi-level (100/35%) motion sensor for 15–30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching, PIR1FC3V Bi-level (100/35%) motion sensor for 8–15' mounting heights with photocell pre-programmed for dusk to dawn operation, PIRH1FC3V Bi-level (100/35%) motion sensor for 15–30' mounting heights with photocell pre-programmed for dusk to dawn operation. Networked Sensors/Controls: NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared Occ sensor and nLight protocol for 8–15' mounting heights, NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared Occ sensor and nLight protocol for 15–30' mounting heights, NLTAIRE2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 8–15' mounting heights, NLTAIRE2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 15–30' mounting heights. See page 4 for out of box functionality	DDBXD Dark bronze, DBLXD Black, DNAXD Natural aluminum, DWHXD White, DSSTD Sandstone, DDBTXD Textured dark bronze, DBLBTXD Textured black, DNATXD Textured natural aluminum, DWHGXD Textured white, DSSTDD Textured sandstone

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LAMP "B" MOUNTED 12'

DOVER FILE #

REVISION	DATE	DESCRIPTION

CONSTRUCTION DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

C-102

SHEET 21 OF 26

NOT FOR CONSTRUCTION

NOTES ON MANHOLE AND SEWER CONSTRUCTION:

1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING, INCLUDING THE COVER. ALL SMH CONSTRUCTION AND MATERIALS WILL BE IAW ENV.-WQ 704.13 ADOPTED OCTOBER 15, 2014

2) BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE. (IAW ENV.-WQ 704.12 (d))

3) SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.

4) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.

5) GRAVITY SEWER PIPE TESTING WILL BE IN ACCORDANCE WITH ENV.-WQ 704.06 AND MAN HOLE TESTING IAW ENV.-WQ 704.17 DATED OCTOBER 15, 2014.

6) INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. INVERT BRICKS SHALL BE LAID ON EDGE AND THE BASE SECTION SHALL BE FULL. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. (IAW ENV.-WQ 704.13 (a) (9)), MORTAR SHALL CONFORM WITH REQUIREMENTS OF IAW ENV.-WQ 704.13 (c).

   FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER. (IAW ENV.-WQ 704.13 (a) (4-6)) SEWER MAN HOLE COVERS ARE TO BE LIFTMATE R-1743-LM.

7) PER ENV-WQ 704.12(M), MANHOLES MUST BE CAPABLE OF SUPPORTING HS-20 LOADS.

8) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE DOVER DPW, WHICH TYPE SHALL IN GENERAL DEPEND FOR WATERTIGHTNESS UPON A DOUBLE ROW OF AN OVERLAPPING TYPE ELASTOMERIC OR MASTIC-LIKE GASKET. APPROVED ELASTOMERIC SEALANTS ARE: RAM-NEK, KENT SEAL NO. 2, EZ, OR EQUAL.

9) IN CROSS COUNTRY AREAS OUTSIDE OF THE PAVED ROADWAY SURFACE, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE. SEE TYPICAL TRENCH DETAIL ON U10S.

11.) ALL FRAMES AND GRATES ARE TO BE U.S.A. MADE. MANHOLE STEPS ARE REQUIRED IN THIS MUNICIPALITY AND MUST CONFORM TO THE REQUIREMENTS OF ENV-WQ 704.14. STEPS ARE TO BE PLASTIC.

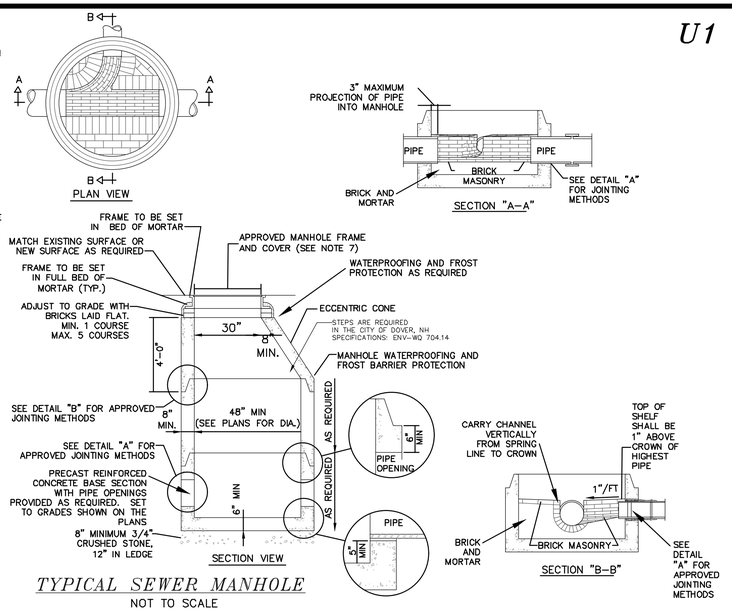
12.) THE CONTRACTOR TO WORK WITH CITY OF DOVER REVIEW ENGINEER AND SEWER DEPARTMENT ON THE MEANS AND METHODS USED TO INSTALL ALL SEWER STRUCTURES.

13.) ANY WORK INVOLVING THE CUTTING INTO THE EXISTING A.C. PIPE SHALL MEET THE REQUIREMENTS OF ENV-A 1800.

14.) THE "CITY OF DOVER, NEW HAMPSHIRE, DEPARTMENT OF COMMUNITY SERVICES, CONSTRUCTION GUIDELINES, PERMITS, RULES, AND REGULATIONS" (DATED MARCH 13, 2018) ARE A PART OF THE CONSTRUCTION DETAILS AND TO BE FOLLOWED.

15.) MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD AND ENV-WQ 704.17.

U1



TYPICAL SEWER MANHOLE
NOT TO SCALE

U2

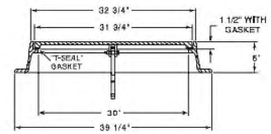
R-1743-LM
LiftMate Frame, Solid Gasketed Lid

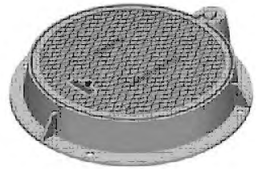
Heavy Duty

Furnished with four 1" anchor holes on 36-7/8" diameter bolt circle.

Hinge plug available for self-seal application.

See p. 13 for LiftMate information.

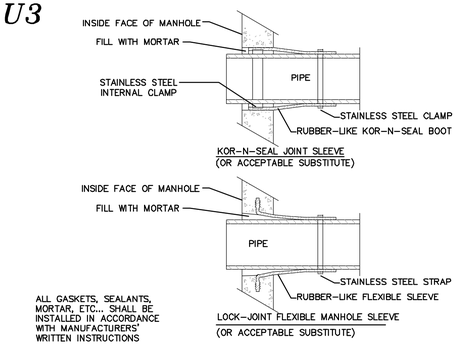




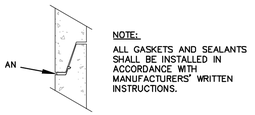
SEWER MANHOLE FRAME AND GRATE WILL BE LIFTMATE R-1743-LM, OR APPROVED EQUAL, 32 INCH OPENING, CAST IRON, H20 LOADING.

SEWER MANHOLE COVER DETAIL
NOT TO SCALE

U3



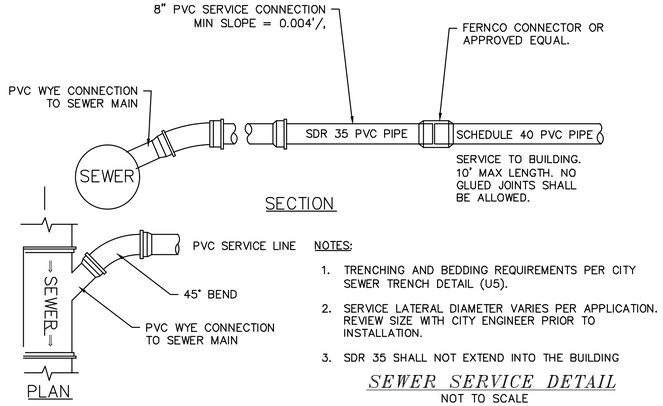
DETAIL "A" - PIPE TO MANHOLE JOINTS
NOT TO SCALE



NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

DETAIL "B" HORIZONTAL JOINTS
NOT TO SCALE

U4

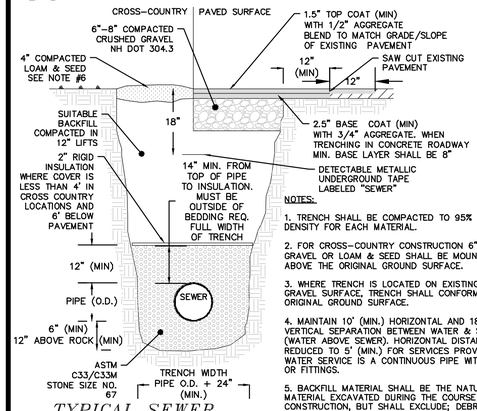


NOTES:

1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (U5).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

SEWER SERVICE DETAIL
NOT TO SCALE

U5



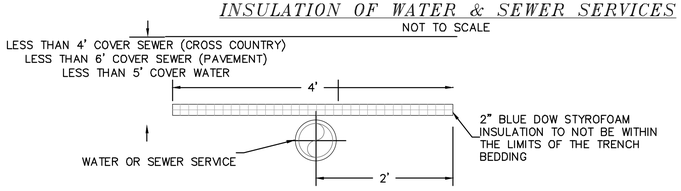
NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
7. SEWER TRENCH INSULATION SHALL NOT BE PLACED WITHIN LIMITS OF BEDDING/BLANKET REQUIREMENT.

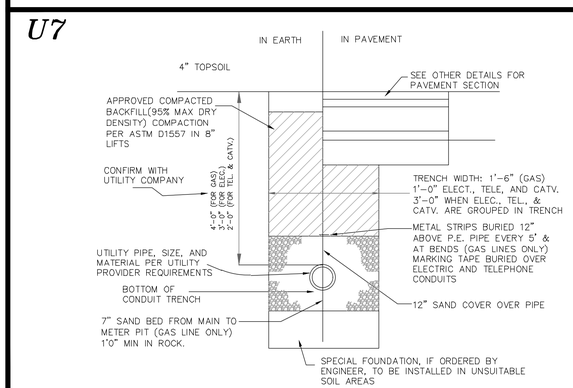
TYPICAL SEWER PIPE TRENCH
NOT TO SCALE

U6

INSULATION OF WATER & SEWER SERVICES
NOT TO SCALE

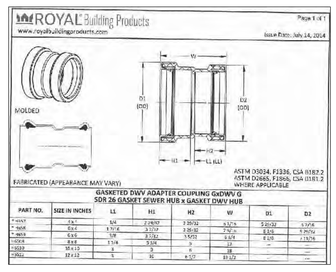


U7



ELECTRICAL, TELEPHONE, AND GAS TRENCH
NOT TO SCALE

U8



COUPLING DETAIL
NOT TO SCALE

DOVER FILE #

REVISION	DATE	DESCRIPTION

UTILITY DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

U-101

SHEET 22 OF 26

NOT FOR CONSTRUCTION

U9

NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.

2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.

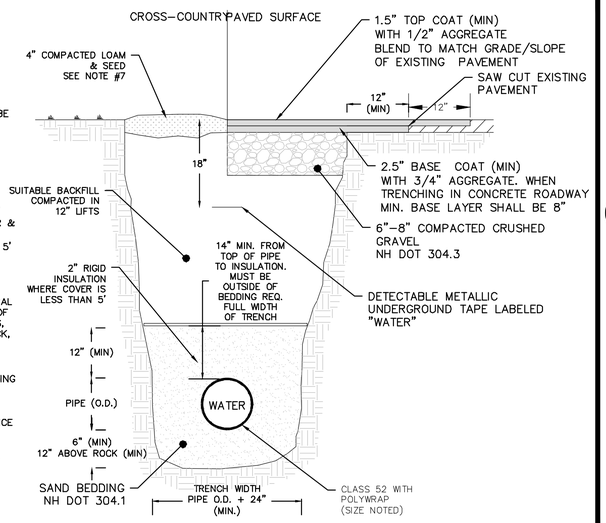
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.

4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION

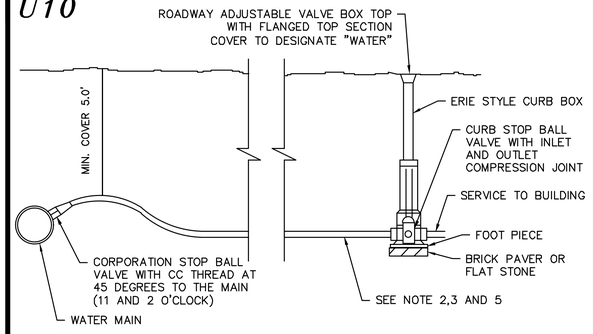
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.

7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.



WATER PIPE TRENCH
NOT TO SCALE

U10



NOTES:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.

2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.

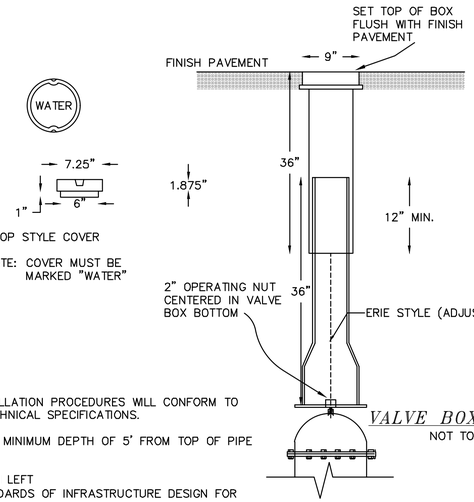
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.

4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE

5. ¾"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

WATER SERVICE CONNECTION
NOT TO SCALE

U11



NOTES:

1.) ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO LOCAL WATER WORKS TECHNICAL SPECIFICATIONS.

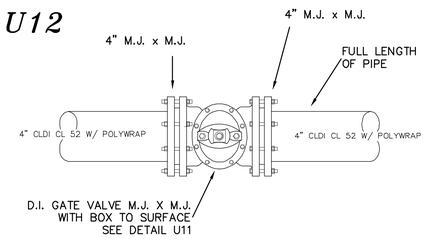
2.) ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

3.) ALL VALVES ARE TO OPEN LEFT

4.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS

VALVE BOX DETAIL
NOT TO SCALE

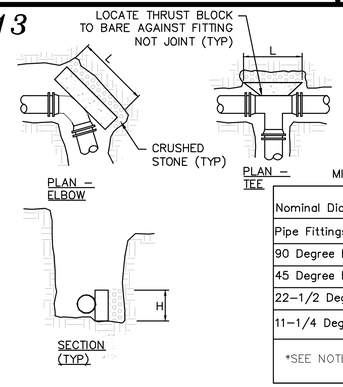
U12



SHUTOFF VALVE DETAIL
NOT TO SCALE

1.) ALL VALVES ARE TO OPEN LEFT
2.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS

U13



THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*

*SEE NOTE 2

System Pressure: 125 psi
Safety Factor: 1.5
Soil Bearing Capacity: 2,000 psf

NOTES:

1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

THRUST BLOCKS

DOVER FILE #

REVISION	DATE	DESCRIPTION

UTILITY DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

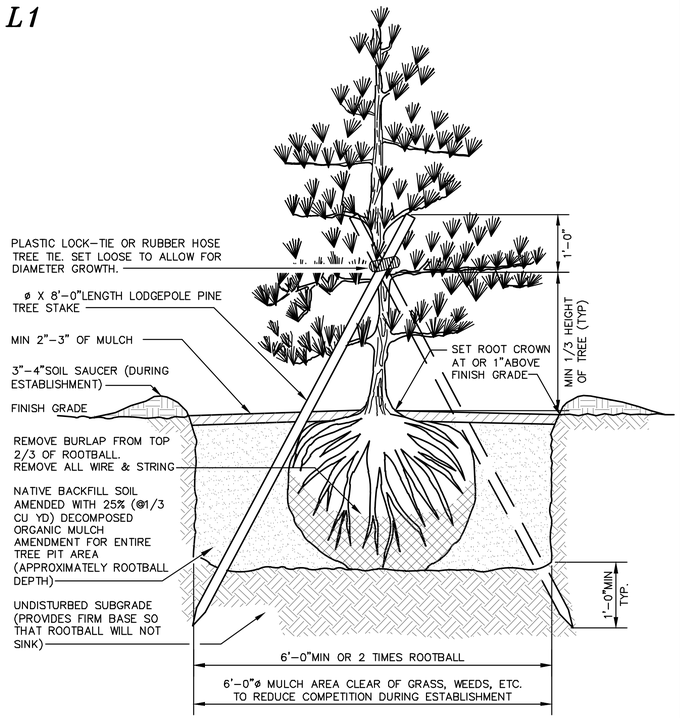
AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

STATE OF NEW HAMPSHIRE - KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER

U-102

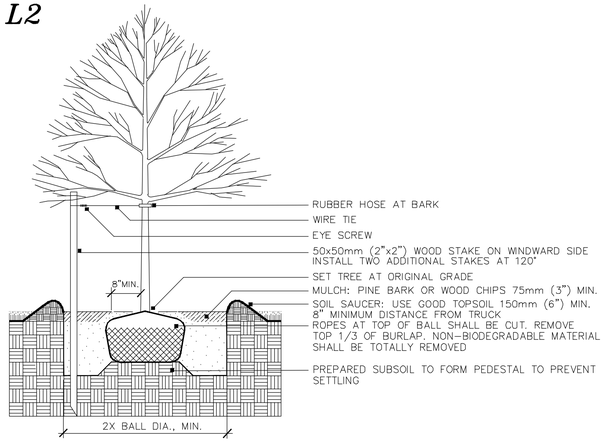
NOT FOR CONSTRUCTION

L1



CONIFEROUS TREE PLANTING

L2



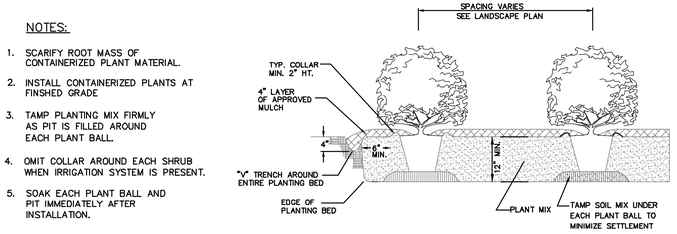
DECIDUOUS TREE PLANTING

NOTE: STAKING TO BE USED IN PARKING ISLANDS AND OTHER CONFINED AREAS AS NECESSARY TO AVOID CONFLICTS WITH PEDESTRIANS

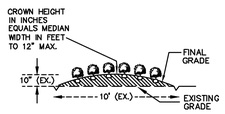
L3

NOTES:

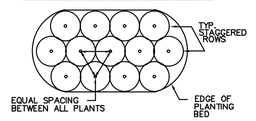
1. SCARIFY ROOT MASS OF CONTAINERIZED PLANT MATERIAL.
2. INSTALL CONTAINERIZED PLANTS AT FINSHED GRADE
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
5. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.



TYPICAL PLANTING BED DETAIL



TYPICAL BED CROWNING

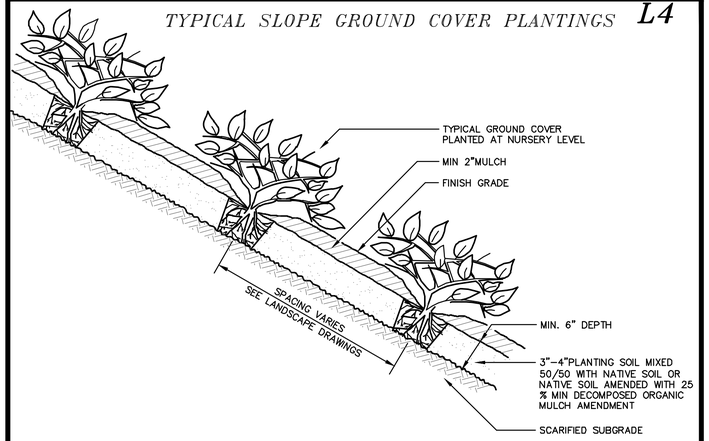


TYPICAL PLANTING BED PLAN

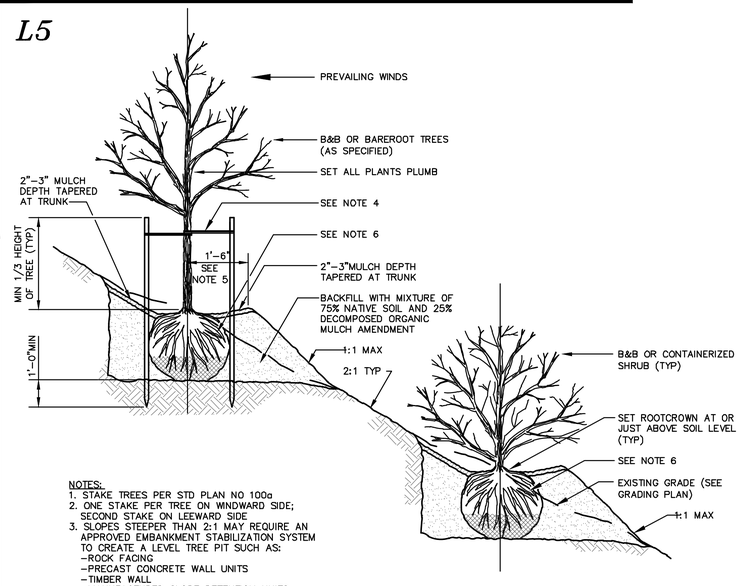
SHRUB & HEDGE PLANTING

L4

TYPICAL SLOPE GROUND COVER PLANTINGS



L5



NOTES:
1. STAKE TREES PER STD PLAN NO 100a
2. ONE STAKE PER TREE ON WINDWARD SIDE; SECOND STAKE ON LEEWARD SIDE
3. SLOPES STEEPER THAN 2:1 MAY REQUIRE AN APPROVED EMBANKMENT STABILIZATION SYSTEM TO CREATE A LEVEL TREE PIT SUCH AS:
   –ROCK FACING
   –PRECAST CONCRETE WALL UNITS
   –TIMBER WALL
   –MANUFACTURED SLOPE RETENTION UNITS
4. CHAINLOCK TREE TIE. LOOP EACH TIE AROUND TREE LOOSELY TO PROVIDE 1" SLACK FOR DIAMETER GROWTH.
5. SHAPE SOIL TO PROVIDE 3' DIAMETER OR ROOTBALL DIAMETER, WHICHEVER IS GREATER, WATERING RING.
6. REMOVE ALL WIRE AND STRING. REMOVE TOP 2/3 OF BURLAP.

TREE PLANTING ON SLOPES

L6

NOTES:

1.) CALL DIG SAFE PRIOR TO BEGINNING WORK. (1–888–344–7233). THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF THE SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER OR GENERAL CONTRACTOR.

2.) CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING. SEE NOTE XXX ON OVERALL SITE PLAN.

3.) PROVIDED SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.

4.) ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

5.) ALL PLANT MATERIALS SHALL BE FREE FROM INSECTS AND DISEASE.

6.) ALL PLANTINGS SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM OWNER.

7.) ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.

8.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING AND NEWLY PLANTED TREES AND SHRUBS DURING THE CONSTRUCTION PROCESS. WHERE REQUIRED, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING (SNOW OR EQUAL) AROUND EXISTING TREES AND SHRUBS THAT COULD BE IMPACTED BY THE CONSTRUCTION PROCESS. STORAGE OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS, SNOW STORAGE AND OR VEHICLE PARKING SHALL NOT BE PERMITTED WITHIN THE DRIP LINE OF TREES OR TWENTY FEET WHICH EVER IS GREATER.

9.) NEW PLANTINGS SHALL BE INSTALLED PER PROJECT DRAWINGS AND SPECIFICATION THAT INCLUDE FERTILIZATION AND MULCHING AS REQUIRED.

10.) ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH.

11.) WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL–ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

12.) MAINTENANCE OF NEW PLANTINGS AND LAWNS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND OR LANDSCAPE SUBCONTRACTOR UNTIL ACCEPTANCE BY THE OWNER. RESPONSIBILITIES SHALL INCLUDE WATERING WEEDING AND MOWING AS NECESSARY. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, REPLACEMENT MATERIAL SHALL BE GUARANTEED FOR AND ADDITIONAL YEAR FROM TIME OF INSTALLATION.

13.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES DURING THE CONSTRUCTION PHASE AND UNTIL ALL AREAS HAVE BEEN STABILIZED AND ACCEPTED BY THE OWNER. THE GENERAL CONTRACTOR SHALL PROVIDE WEEKLY INSPECTIONS OF EROSION MEASURE AND IMMEDIATELY AFTER STORM EVENTS AND REPAIR AS NECESSARY.

14.) THE GENERAL CONTRACTOR AND OR THE LANDSCAPE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL THREE GUYING MATERIAL ONCE PLANT MATERIAL HAS BEEN ESTABLISHED. (MINIMUM OF ONE GROWNG SEASON). ALL TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVED ONCE STABILIZATION OF DISTURBANCE HAS BEEN ACCEPTED BY OWNER.

15.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM OF TWO MOWINGS FOR ALL TURF AREAS OR UNTIL ACCEPTANCE BY THE OWNER. A MINIMUM UNIFORM 75% CATCH OF TURF IS REQUIRED FOR ACCEPTANCE.

16.) ALL PLANTINGS SHALL BE WATERED REGULARLY DURING THEIR FIRST YEAR AND MAINTAINED PERMANENTLY IN GOOD GROWING CONDITION AS AN EFFECTIVE VISUAL SCREEN.

17.) SHRUBS OR TREES WHICH DIE SHALL BE REPLACED WITHIN ONE GROWING SEASON WITH NEW SHRUBS OR TREES TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE LANDSCAPING REQUIREMENTS.

18.) ALL REQUIRED LANDSCAPING SHALL BE INSTALLED BEFORE OCCUPANCY, OR WITHIN SIX MONTHS IF OCCUPANCY OCCURS DURING WINTER CONDITIONS.

19.) TREES ARE TO BE 2–2.5" CALIPER 6" OFF THE ROOT BALL.

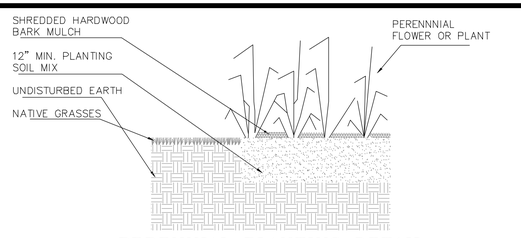
20.) ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITIONS (AMERICAN ASSOCIATION OF NURSERYMEN, INC.)

21.) 4" AGED PINEBARK MULCH AND A WEED BARRIER (TY–PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUND COVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.

22.) PLANT–PIT BACK–FILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 2 PARTS OF DEHYDRATED COW MANURE. SLOW RELEASE FERTILIZER SHALL BE APPLIED AS PER MANUFACTURERS RECOMMENDATIONS. USE EXISTING ON–SITE TOPSOIL AS PART OF BACK FILL WHEN AVAILABLE.

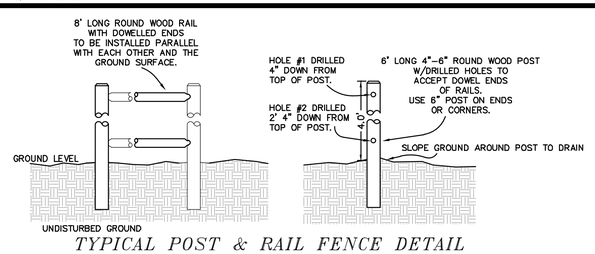
23.) ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED OR SOD AS INDICATED ON PLANS.

L8



PERENNIAL PLANTING DETAIL

L7



TYPICAL POST & RAIL FENCE DETAIL

N.T.S.

DOVER FILE #

REVISION	DATE	DESCRIPTION

LANDSCAPING DETAILS
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11–5 & 11–5SND

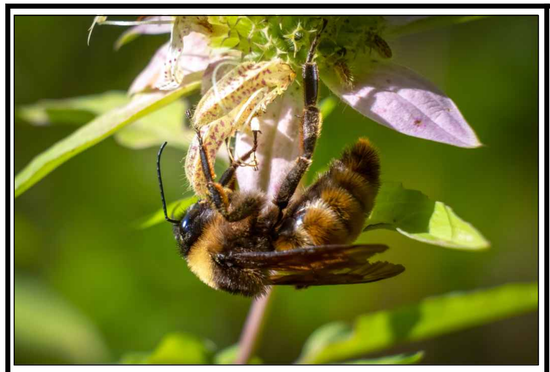
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

AS NOTED
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

L–101

NOT FOR CONSTRUCTION



AMERICAN BUMBLE BEE

IDENTIFICATION/DESCRIPTION:

BOMBUS PENSYLVANICUS IS A LARGE BUMBLE BEE WITH THE QUEEN MEASURING 1 IN, THE WORKER FROM 0.5 IN, AND THE MALE FROM 0.75 IN IN LENGTH. THE QUEEN IS MOSTLY BLACK, INCLUDING THE LEGS, SPURS AND TEGULAE (BASE OF WING). TERGITE 1, OR THE MOST ANTERIOR BACK PORTION OF THE QUEEN IS OFTEN YELLOW ESPECIALLY IN THE MIDDLE. WORKER BEES' MIDDLE TERGITES ARE YELLOW, THE TAIL BLACK, AND FACE LONG. THEIR CHEEKS ARE SLIGHTLY LONGER THAN BROAD, AND THE CLYPEUS (NOSE) HAS LARGE PUNCTURES EXCEPT ON THE MID LINE. THE HAIR ON THE TOP OF THE HEAD IS BLACK, SHORT AND EVEN. MALES HAVE A YELLOW ABDOMEN WITH A BLACK HEAD AND BLACK STRIPING IN THE LOWER THORAX.



BLANDINGS TURTLE

IDENTIFICATION/DESCRIPTION:

A 7– TO 9–INCH TURTLE WITH YELLOW SPECKLES THAT OFTEN RUN TOGETHER TO FORM STREAKS ON THE CARAPACE. EASILY IDENTIFIED WHEN BASKING FROM ITS CHARACTERISTIC YELLOW THROAT AND CHIN.



NORTHERN BLACK RACER

IDENTIFICATION/DESCRIPTION:

A SLENDER BLACK SNAKE MEASURING 36–60 INCHES. BLACK RACERS ARE GLOSSY BLACK ON THE TOP AND BOTTOM WITH A WHITE THROAT AND CHIN. YOUNG RACERS ARE PATTERNED WITH BROWN OR REDDISH PATCHES ON A LIGHTER BASE OF GRAY.



SMOOTH GREEN SNAKE

IDENTIFICATION/DESCRIPTION:

A THIN, SLENDER BRIGHT–GREEN SNAKE MEASURING 10–20 INCHES. THE UNDERSIDE IS WHITE OR A PALE YELLOW.



LITTLE BROWN BAT

IDENTIFICATION/DESCRIPTION:

THE LITTLE BROWN BAT IS A SMALL MAMMAL WITH A BODY LENGTH OF 2 1/2 – 4" AND WEIGHING APPROXIMATELY 1/8 TO 1/2 AN OUNCE. THE WINGSPAN OF LITTLE BROWN BATS RANGE FROM 9 – 11". BATS ARE THE ONLY MAMMALS THAT ENGAGE IN TRULY ACTIVE FLIGHT. AS THEIR NAME SUGGESTS THEY ARE GLOSSY BROWN ABOVE WITH A LIGHTER GRAY COLOR BELOW. THESE BATS CAN LIVE 20 TO 30 YEARS.



NORTHERN LONG–EARED BAT

IDENTIFICATION/DESCRIPTION:

THE NORTHERN LONG–EARED BAT IS A MEDIUM–SIZED BAT WITH A BODY LENGTH OF 3 TO 3.7 INCHES BUT A WINGSPAN OF 9 TO 10 INCHES. THEIR FUR COLOR CAN BE MEDIUM TO DARK BROWN ON THE BACK AND TAWNY TO PALE–BROWN ON THE UNDERSIDE. AS ITS NAME SUGGESTS, THIS BAT IS DISTINGUISHED BY ITS LONG EARS, PARTICULARLY AS COMPARED TO OTHER BATS IN ITS GENUS, MYOTIS



EASTERN SMALL–FOOTED BAT

IDENTIFICATION/DESCRIPTION:

THE EASTERN SMALL–FOOTED BAT HAS BROWNISH FUR, OFTEN WITH A GOLDEN SHEEN, THAT CONTRASTS WITH ITS BLACKISH FACE AND EARS, AND BLACKISH–BROWN WINGS AND TAIL MEMBRANE. IT CAN BE DISTINGUISHED FROM OTHER MYOTIS SPECIES BY ITS BLACK MASK AND SMALL SIZE. THE BODY IS LITTLE MORE THAN 3½ INCHES LONG, INCLUDING A 1½–INCH TAIL. ITS SMALL FEET, WHICH PROVIDE THE COMMON NAME, ARE LESS THAN A HALF–INCH AND ITS WINGSPAN RANGES FROM 8¼ TO 9¾INCHES. THIS SPECIES FLIES SLOWLY AND ERRATICALLY, USUALLY ABOUT ONE TO THREE YARDS ABOVE THE GROUND.



SILVER HAIRED BAT

IDENTIFICATION/DESCRIPTION:

THE SILVER–HAIRED BAT IS A MEDIUM–SIZED BAT WITH VERY DARK FUR TIPPED WITH SILVER OR WHITE. THE WINGS AND TAIL MEMBRANE ARE BLACK. EARS ARE SHORT AND ROUND WITH A SHORT, BLUNT–TIPPED TRAGUS. THE DORSAL SURFACE OF THE TAIL MEMBRANE IS PARTIALLY FURRED AND THE CALCAR LACKS A KEEL



TRI–COLORED BAT

IDENTIFICATION/DESCRIPTION:

THE TRICOLORED BAT, FORMERLY KNOWN AS THE EASTERN PIPISTRELLE (PIPISTRELLUS SUBFLAVUS), IS A SMALL BAT WEIGHING 0.2 TO 0.3 OUNCES (5 TO 8 GR) AND HAS A WINGSPAN OF 8 TO 10 INCHES. THE TERM "TRICOLORED" REFERS TO THE BAT'S YELLOWISHBROWN COAT THAT IS DARK AT THE BASE, YELLOWISH–BROWN IN THE MIDDLE, AND DARK AT THE TIPS. THE WING MEMBRANES ARE BLACKISH, BUT THE FACE AND EARS HAVE A PINKISH COLOR. AN OBVIOUS IDENTIFYING CHARACTERISTIC OF THIS SPECIES IS THE PINK COLOR OF THE SKIN ON THE RADIUS BONE. THE FEET ARE ALSO RELATIVELY LARGE COMPARED TO ITS BODY SIZE.



SPOTTED TURTLE

IDENTIFICATION/DESCRIPTION:

A SMALL 3–5 INCH TURTLE RECOGNIZED BY NUMEROUS YELLOW SPOTS COVERING A DARK CARAPACE. THE NUMBER OF SPOTS IS VARIABLE. SPOTS CAN ALSO BE FOUND ON THE HEAD AND LIMBS.



WOOD TURTLE

IDENTIFICATION/DESCRIPTION:

A 5–8 INCH TURTLE CHARACTERIZED BY ITS HIGHLY SCULPTED SHELL WHERE EACH LARGE SCUTE TAKES AN IRREGULAR PYRAMIDAL SHAPE. THE NECK AND FORELIMBS ARE ORANGE.

DOVER FILE #

DESCRIPTION	DATE	REVISION

WILDLIFE IDENTIFICATION PLAN
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11–5 & 11–5SND

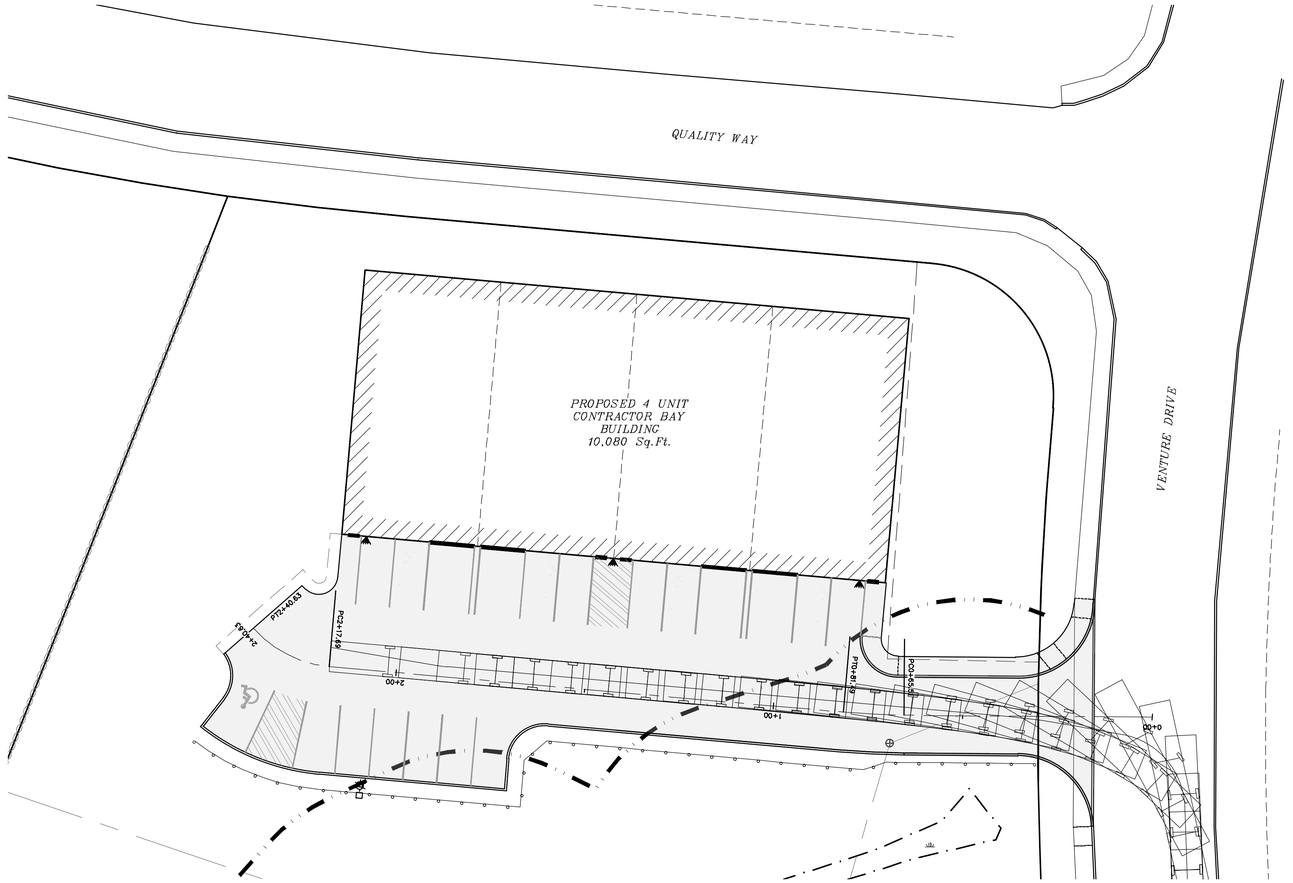
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

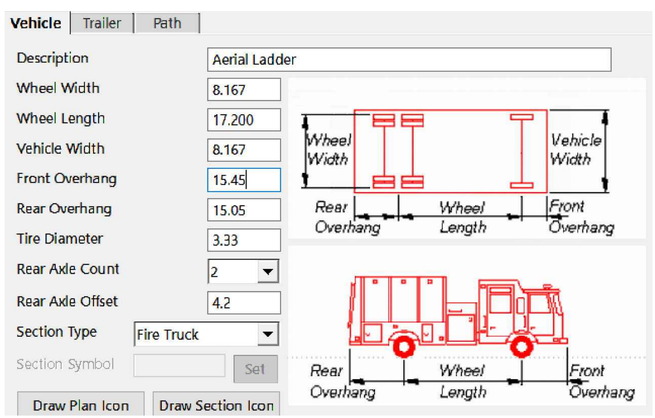
SCALE : NONE
DATE : APRIL 1, 2025
FILE NO. : DB 2021 – 134

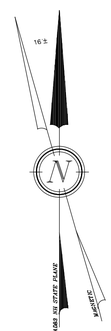
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED
PROFESSIONAL ENGINEER

W–101

NOT FOR CONSTRUCTION







GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

DOVER FIRE TRUCK TURNING TEMPLATE
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 1, 2025
FILE NO. : DB 2021 - 134

KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SHEET 26 OF 26

NOT FOR CONSTRUCTION

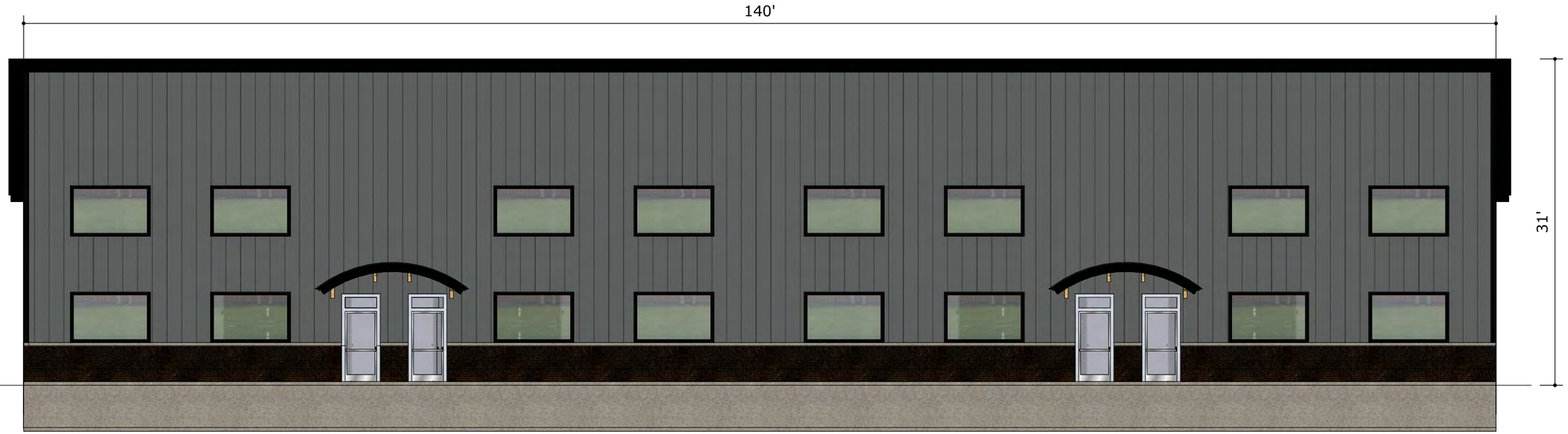












REAR ELEVATION

1"=10'

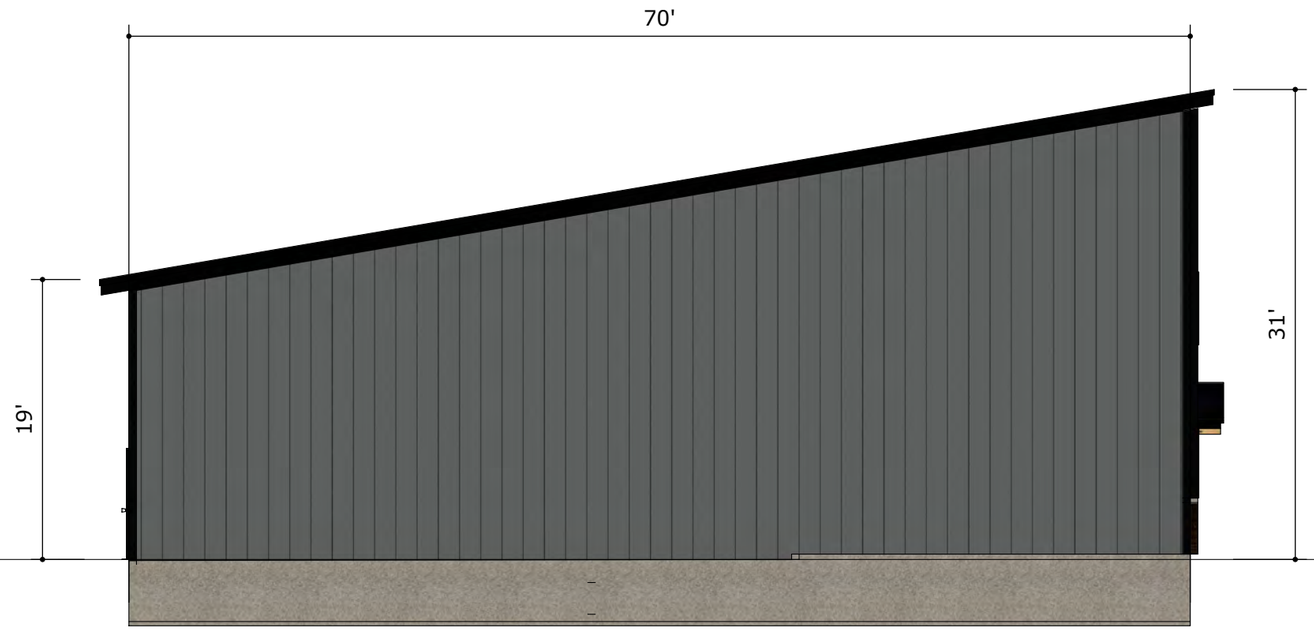
E | 001



FRONT ELEVATION

1"=10'

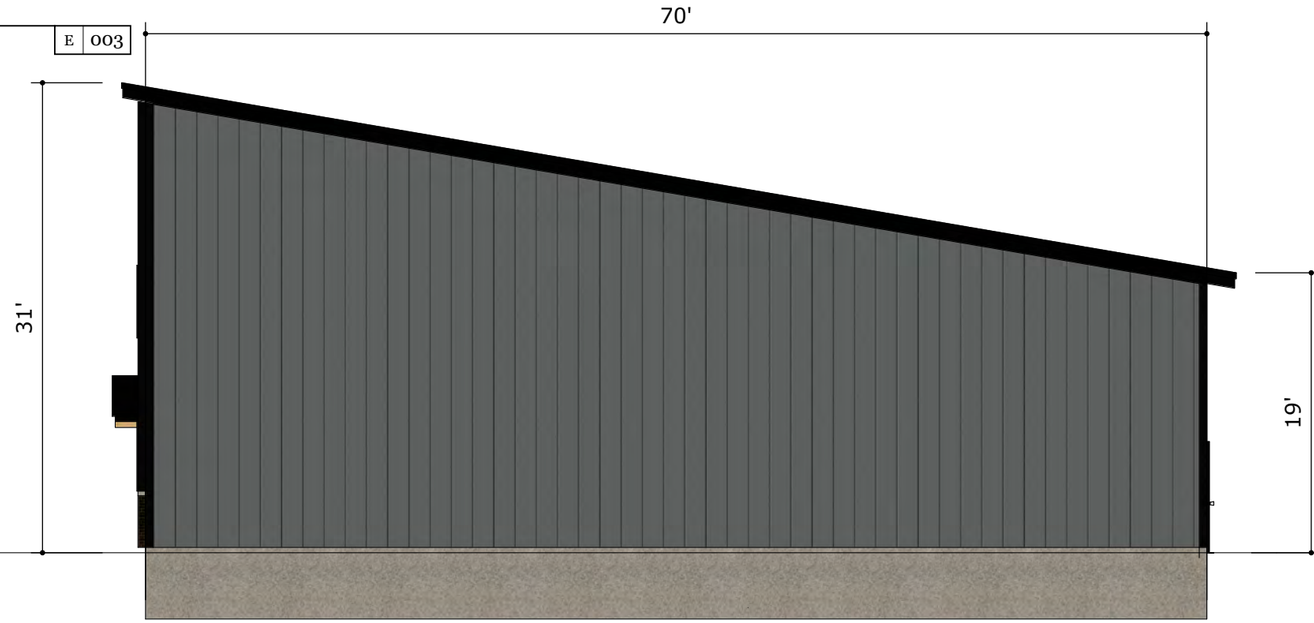
E | 002



RIGHT ELEVATION

1"=10'

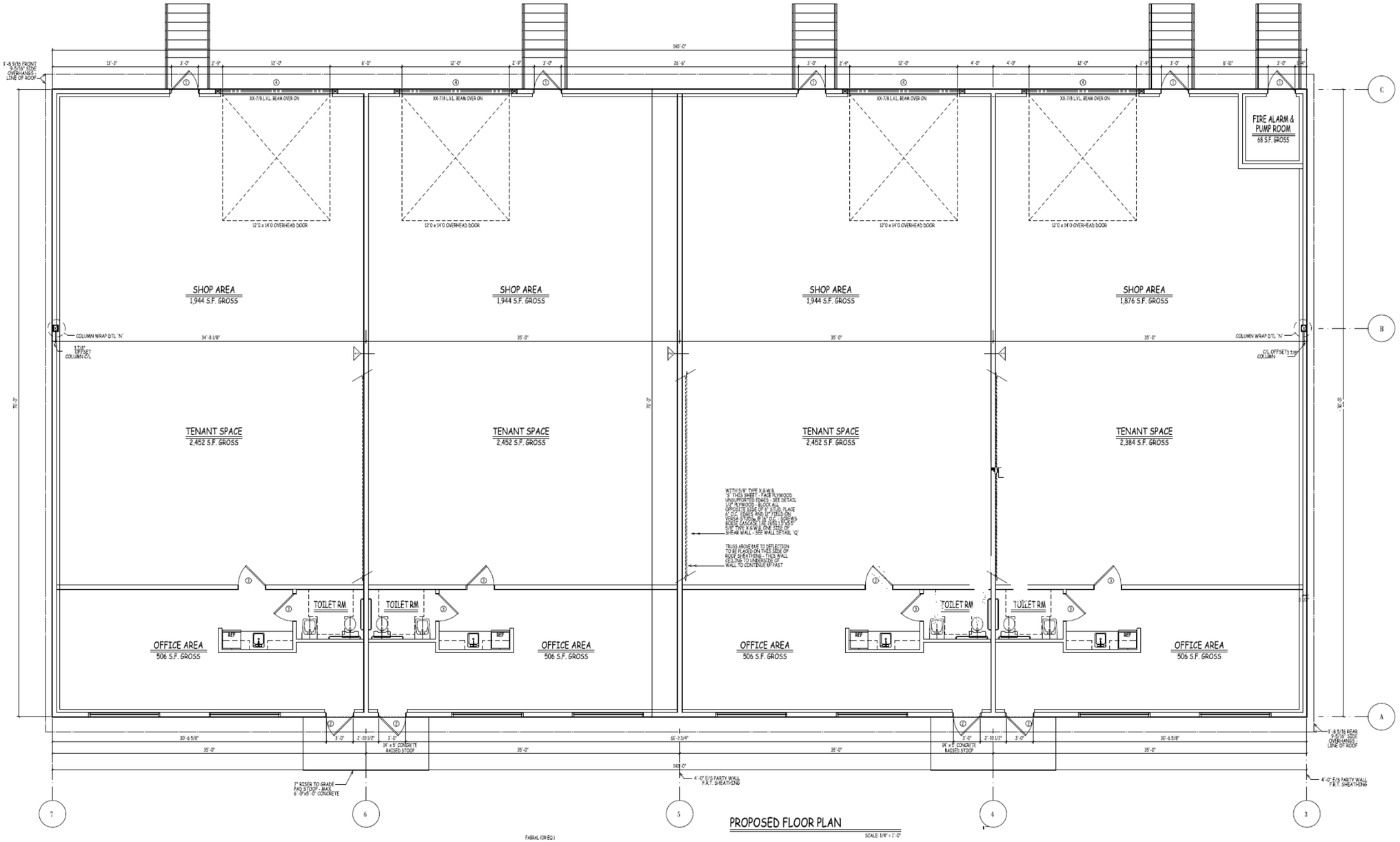
E | 003



LEFT ELEVATION

1"=10'

E | 004

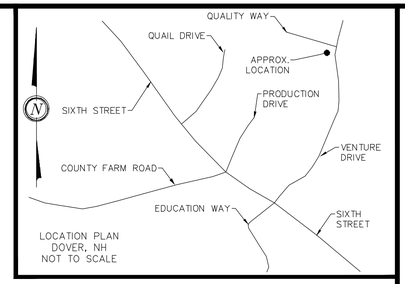


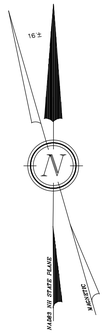
PROPOSED FLOOR PLAN

SCALE: 1/4" = 1'-0"

FABRAL (OR EQ.)







NOTES:

1.) OWNER: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

APPLICANT: JSR, LLC
17 FOSTERS DRIVE
DOVER, NH 03820

2.) A.) TAX MAP D, LOT 11-5
B.) TAX MAP D, LOT 11-5SND

3.) A.) S.C.R.D. BOOK 4980, PAGE 632
B.) S.C.R.D. BOOK 4980, PAGE 632

4.) A.) LOT AREA: 43,314 Sq. Ft., 0.99 Ac.
B.) LOT AREA: 43,517 Sq. Ft., 1.00 Ac.

5.) ZONING: IT – INNOVATIVE TECHNOLOGY

SETBACKS	PROVIDED ORIGINAL TDR
FRONT ~ 50'	15.0'
SIDE ~ 50'	40.1' & 40.9'
REAR ~ 50'	50.0'
MIN. LOT SIZE: 2 ACRES	0.99 Ac.
MIN. FRONTAGE: 200'	267.48'
MIN. LOT COVERAGE: 33%	23.27%
MAX. BUILDING HEIGHT: 55'	31'±

6.) THE INTENT OF THIS PLAN IS TO SHOW A COLOR RENDERING OF THE SITE DESIGN OF TAX MAP D, 11-5 IN THE CITY OF DOVER, N.H.

LEGEND:

- GRANITE BOUND ~FND~
- STEEL STAKE ~FND~
- SIGNAGE
- POORLY DRAINED JURISDICTIONAL WETLAND
- 50' WETLAND BUFFER
- PROPERTY LINE
- PROPOSED BUILDING
- PROPOSED PAVEMENT
- PROPOSED SIDEWALK
- GRASS
- WOODED
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- PROPOSED TREE
- VARIOUS SHRUBS

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER FILE #

REVISION	DATE	DESCRIPTION

COLOR RENDERING
LAND OF
JSR, LLC
VENTURE DRIVE & QUALITY WAY
DOVER, N.H.
TAX MAP D, LOTS 11-5 & 11-5SND

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
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FILE NO. : DB 2021 – 134

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