CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, May 22, 2025**
Meeting Time: **10:30 AM**

1. Site Plan for Dover Development, LLC 80%, Robert V. Paolini, 20%, Assessor's Map 40, Lot 25, zoned C, located at 52 Old Rochester Road. (Proposal is for the construction of three mixed-use structures with a combined total of approximately 7,800 s.f. of commercial space and 44 residential units restricted to HUD Fair Market Rental Rates.) (SITE-2024-0009)
(Related applications regarding Conditional Use Permit, COND-2024-0019, and Transfer of Development Rights, TRAN-2024-0010.)
(This item was previously heard by the Planning Technical Review Committee on August 8, 2024.)

PLAN SNAPSHOT REPORT SITE-2024-0009
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	07/15/2024
Work Class:	New Construction	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Construction of a private roadway known as Blazer Drive with a Commercial building and two residential buildings with a total of 48 1BR units. Supported by 87 parking spaces.

Parcel:	40025-000000	Main	**Address:** 52 Old Rochester Rd Dover, NH	Main	**Zone:** C(Non-Residential - Commercial)

Soil Scientist
John Hayes III
Home: (603) 205-4396
Business: (603) 205-4396
Mobile: (603) 205-4396

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

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

Applicant
Robert Baldwin
Mobile: (603) 983-2373

Owner
Robert Baldwin
Mobile: (603) 986-2373

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

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

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

Plan Custom Fields

Total	0	Total2	0	Total3	36987
Total4	0	Total5	0	Total6	48
Total7	0	Total8	0	Total9	0
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	69	Water Service	Municipal
Recording Number		Sewer Service	Municipal	Total Acres (GIS)	1.72
Deed Book	5013	Total SQFT	74923.2	Deed Page	203
Deed Date	03/02/2022	Proposed Property Use	Construction of a private roadway known as Blazer Drive with a Commercial building and two residential buildings with a total of 48 1BR units. Supported by 87 parking spaces.	Area of Parcel to be Developed (SQFT)	75000
Number of Parking Spaces Existing	18	Number of Parking Spaces Proposed	87	Type of Building to be Built	Timber construction
Estimated Construction Value	6500000.00	Refuse Removal	Private	Is there an existing Conservation Easement?	No
Existing Conservation Easement Details		TotalImpactFeeSDTOD	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	Sub Total Residential	0.00	TotalImpactFeeRIRCTOD	0.00
TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00
TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00	Sub Total Non-Residential	0.00
Total of Impact Fees to be Assessed	0.00				

PLAN SNAPSHOT REPORT (SITE-2024-0009)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Chris_Berry_7/15/2024.jpg	07/15/2024 12:27	Berry, Chris		Uploaded via CSS
2024.08.08_PlanningTechnicalReviewCommittee.Agenda.pdf	07/22/2024 17:13	Blonigen, Rachel		TRC Agenda
2024.08.08_PlanningTechnicalReviewCommittee.52OldRochester_SITE-2024-0009.pdf	09/05/2024 12:25	Blonigen, Rachel		Final TRC Minutes

Note	Created By	Date and Time Created
1. Needs to resubmit for 2nd TRC.- RLB	Rachel Blonigen	10/31/2024 15:36
2. Impervious Paved Area found under COND-2024-0019	Rachel Blonigen	11/07/2024 11:07

Invoice No.	Fee		Fee Amount	Amount Paid
INV-00008655	Planning General Application Fee		$200.00	$200.00
		Total for Invoice INV-00008655	$200.00	$200.00
NOT INVOICED	Planning Residential Fee		$4,800.00	$0.00
	Planning Impervious Paved Area Fee		$2,589.09	$0.00
		Total for Invoice NOT INVOICED	$7,389.09	$0.00
		Grand Total for Plan	**$7,589.09**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	08/08/2024	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	07/22/2024	08/06/2024	08/09/2024	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	07/22/2024	08/19/2024	08/07/2024

Comments: • Plans presented to ZBA in 2023 represented that commercial development would total 7,354 square feet, and this amount was included in the conditions of approval for the requested variance as a minimum commitment. Please revise accordingly.
• Renderings of the commercial building are attractive, and seems well-suited for the uses described or comparable service businesses. No design concerns beyond meeting required square footage.
• Have tenants been identified for all commercial spaces? OBD can assist with locating commercial users and is happy to have a follow-up conversation for this purpose.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	07/22/2024	08/06/2024	08/08/2024

Comments: Project: SITE-2024-0009_52 Old Rochester Road
TRC Meeting: Meeting 1
Reviewer: Jillian Semprini, PE
Checked by: Engineering Staff
General Comment:
- Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf
- Proposed tree clearing is extremely close to property line. Review grading to see if some buffer to abutting property can be provided.
- Since only one water main is proposed into the building, the City will provide only one billable water meter for the entire building.
- Will there be an HOA for the property? If so, please provide the documents for review especially a detailed breakdown of the HOA fees.
- Recommend Applicant contribute to cost of sidewalks along Old Rochester Road along length of property.

Narrative:
- There is mention of a laundromat on the premises. Would this be open to the public or just tenants of the property? The City is currently having an engineering study conducted in the area to address concerns of sewer capacity in the area. A contribution of $500 per unit towards that study is requested to confirm that adequate capacity is available.

Drainage Analysis:
- Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone. Please remove this as an option from the Drainage analysis and O&M documents.
- Geotechnical testing results only shows two infiltration tests were conducted seven years ago. Please clarify how this testing satisfies the criteria recommended by the NHDES for infiltration basin design.

Sheet 2:
- Add note that Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone.
- Porous pavement is excluded from the impervious area coverage calculation. Please identify on the plans, next to the impervious area calculation what the area of porous pavement is.
- Place a note in a bold box that notes that porous pavement shall be maintained in accordance with the site's approved O&M manual in perpetuity. Failure to do so could result in a failure to comply with the Planning Board approvals.

Sheet 6:
- The proposed parking seems inadequate for the housing proposed and the proposed commercial especially when temporary snow storage is used. Please clarify how parking will work on the premises (limits on number of vehicles, parking time limits, etc.).
- Snow storage is proposed behind bituminous curb, transformer and on top of landscaping.
- Recommend providing snow storage at a ratio of 10:1 versus 6:1.
- Recommend moving dumpster to a more centralized location that is more easily accessible by all users and the trash vehicles.
- Storing Snow in treatment basins is not recommended.

Sheet 8:
- Flow arrows conflict with cross-section at station 1+50.
- Infiltration sump is located in a passive recreation and snow storage area. Clarify how the area is intended to be used.
- Underdrain in porous asphalt is shown as 8inch in a 9 inch reservoir course. Recommend pipe have additional bedding to meet manufacturer's recommendations (4" min).
- Provide a detail for a typical infiltration sump.

Sheet 11:
- Call out a foster adapt 6x8 reducer to 4x8 tee.
- The 6x8 reducer needs to have 6" gate foster adapter.
- Rebuild invert of SMH 758.
- 8" sewer into and out of SMH 758 is AC not PVC.
- Show the proposed sewer entering into the existing SMH at a 90-degree angle. Consider adding additional SMHs.
- Add gate valve for the fire services after the domestic service tap.
- Add a curb box for shut offs in paved surfaces. Recommend moving them to non-paved surfaces.

Sheet 15:
- Lighting levels exceed allowable levels at property line.
- Some walkways have lighting levels at 0. Please add lighting.
- Lighting levels around recreation area and benches are at zero. Recommend adding lighting.
- Provide screening to prevent headlights from shining across property lines.

Sheet 16:
- Why are different 85th design speeds used?
- Does the horizontal curve to the north need to be considered?

Sheet 19:
- Confirm that all signs meet MUTCD requirements. Accessible parking signs do not appear compliant.

Sheet 21:
- Underdrain is shown as 6" but 8" underdrain is shown on the plans. Please show various sizes.

Sheet 27:
- Truck movements for Turning South Out of the Site is very far from the curb line. Can the radius be reduced or the vehicle moved closer to the curb to avoid crossing into oncoming traffic?

PLAN SNAPSHOT REPORT (SITE-2024-0009)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	Requires Re-submit	07/22/2024	08/19/2024	08/09/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	07/22/2024	08/06/2024	08/09/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	Requires Re-submit	07/22/2024	08/06/2024	07/26/2024

Comments: 1) Sheet 11 Ensure separate gates for domestic and sprinkler supply lines to all structures.
2) Indicate if there will be gas service, if so indicate type.
3) Indicate if there are exterior mechanical pads or equipment locations.
4) Is there an EV component to the project.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Coordinator	Police	Speidel, Marn	Requires Re-submit	07/22/2024	08/06/2024	08/09/2024

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.2	In Review	05/08/2025	05/21/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	In Review	05/08/2025	06/05/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	In Review	05/08/2025	05/21/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	In Review	05/08/2025	06/05/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	In Review	05/08/2025	05/21/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	In Review	05/08/2025	05/21/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Coordinator	Police	Speidel, Marn	In Review	05/08/2025	05/21/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		07/15/2024 15:37	
Confirm application complete v.1	Generic Action		07/15/2024 15:37
Technical Review Committee Meeting Agenda v.1	Task	07/15/2024 15:37	07/22/2024 17:14
Land Use Plan Technical Review v.1	Receive Submittal	07/22/2024 0:00	08/09/2024 10:01
Land Use Plan Technical Review v.2	Receive Submittal	05/08/2025 0:00	
Technical Review Committee Meeting v.1	Hold Meeting		
Technical Review Committee Meeting v.1	Hold Meeting	07/22/2024 17:13	08/09/2024 10:01
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: Dover Development LLC Telephone # 603-986-2373

Address of Applicant: 242 Central Ave Dover, NH 03820

E-Mail Address: robert@centralfallsrealty.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 52 Old Rochester Rd Dover, NH

Assessor's Map # 40 Lot(s) # 25

Zoning District(s) C Overlay District(s) Secondary Groundwater Recharge

Size of Parcel: 74,997 sq. ft. 1.72 ac. Property Deed: Book 5013 Page: 203

Existing Use of Property: Office w/ 3 BR apartment

SITE PLAN INFORMATION

Describe Proposed Use: Three mixed-use buildings w/ 44 total 1BR units, 7 total commercial units

Area of Parcel to be Developed: 75,000 sq. ft.

If Multi-family Residential: Number of Units 44 & Buildings Proposed 3

If lodging: Number of Units _____ & number of Buildings _____

Number of Parking Spaces: Existing 18 Proposed 79

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

Number of Employees Total: TBD In Maximum Shift: _____

Disposition of Parcel:

Building Footprint 2,984SF Front 5,968SF (2 rear bld) 5,967SF Front sq. ft.

Total Building Area 17,901SF (2 rear bld) sq. ft.

Paved Area 16,304sf sq. ft.

Building Setbacks:

Front Yard 30 ft.

Rear Yard 15 ft.

Side Yard: Right 12 ft. Left 12 ft.

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

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

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 30 units

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

BUILDING INFORMATION

Type of Building to be Built: Please find attached narrative

Height of Building: 29'5" front, 40' rear Finished Floor Elevation: 204.35

Number of Seats (where applicable) _____

Estimated value of construction: 6,500,000 Refuse removal: Public / Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: Please find attached narrative

Justification for waiver request(s) (*attach additional sheets as needed*):
Please find attached narrative

SURVEYOR INFORMATION

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

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

Professional License #: 805 E-mail address: K.berry@berrysurveying.com
crberry@metrocast.net (PM)

ENGINEER INFORMATION

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

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

Professional License #: 14243 E-mail address: K.berry@berrysurveying.com
crberry@metrocast.net (PM)

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 Planning & 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 #_____

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: 3-19-25

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

Signature of Agent: _____ Date: 3-19-25

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: 3-19-25

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: 3-19-25

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: 3-19-25

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

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: Dover Development, LLC File Number: _____

PROJECT TITLE: Mixed Use Site Plan for Dover Development, LLC

PROPERTY LOCATION: 52 Old Rochester Road Tax Map: 40 Lot: 25

	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	N/A	
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	N/A	
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	X	
Erosion and Sedimentation Control Plan	X	
Landscape Operation and Maintenance Plan	X	
Proposed restrictive covenants or homeowners association documents	Will provide	
Dates and permit numbers of all required state and federal permits	Will provide	
If wetland buffer, indicate placards locations, as applicable	N/A	
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 upon request	

REVIEWED BY: _____ DATE_____ TRC DATE_____

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

July 1, 2024/Rev: March 18, 2025

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

Re: Mixed-Use Transfer of Development Rights (TDR) Development Site Plan
Project Narrative
Dover Development, LLC
52 Old Rochester Rd
Tax Map 40, Lot 25
Commercial (C) Zone, Secondary Groundwater Recharge Overlay

Dear Mrs. Benton,

On behalf of our client, Dover Development Group, Berry Surveying & Engineering (BS&E) is submitting a proposed Mixed-Use Transfer of Development Rights Site Plan at 52 Old Rochester Road (Tax Map 40, Lot 25). The project was granted a variance (ZONE-2023-0037) to permit the project as designed and includes the following required elements at the planning board level:

- TDR residential density request to permit the additional 30 units on the project site. Each unit is proposed to be restricted to the published HUD rates for the seacoast area.
- Conditional Use Permit within the Secondary Groundwater Recharge Zone.

Background and General Narrative:

Dover Development Group, LLC, owns the parcels known as 52 Old Rochester Road in Dover, NH (Tax Map 40, Lot 25). This parcel contains 74,997 Sq. Ft. (1.72 Ac.) and is in the Commercial Zone (C) and is located within the Secondary Groundwater Recharge Overlay District. As such the parcel is restricted to a 20% impervious surface coverage requirement as part of the project design, for which a Conditional Use Permit has been applied for as part of the application.

Berry Surveying & Engineering has conducted an on-site survey of the parcels which includes a topographic analysis and wetlands analysis. No wetlands were found on site as determined by Deidra Benjamin, CWS in June of 2022. A soils map was provided by

John P. Hayes CSS. Topographic conditions on site are relatively flat, gradually sloping from the north to the south. The site consists of sandy, excessively well drained soils. The site currently contains two existing structures and an expansive impervious parking array, with the existing impervious being 23.88%. The site was formerly approved for 15 mixed use condo structures, which has since lapsed.

The Proposal:

The proposal includes the following three structures proposed at 52 Old Rochester Road: along Old Rochester Road will be a two-story mixed-use building containing +/- 2,779 Sq. Ft. of unspecified commercial space on the first level (three units) and four one-bedroom units above and two, three-story mixed-use buildings each containing +/- 2,515 Sq. Ft. of unspecified commercial space (2 units) and twenty (20) one-bedroom units, resulting in a total of forty-four (44) one bedroom HUD restricted units. The commercial square footage is currently contemplated for 7 separate uses, but will be subject to change during finalization and fit-up. The project design currently assumed the commercial space is unspecified at this time. This results in a commercial percentage of 18.7% and 81.3% residential, meeting the received variance requirement of 17% commercial and 83% residential.

The site drive is proposed to be named Blazer Drive and provides a serpentine access by the front mixed-use building and between the two rear buildings with a 24' traveled way. Two spur access ways are proposed to the north and south along the rear boundary line and provide a block length of over 500 linear feet in total. Internal landscape islands and parking lot perimeter landscaping are proposed with various site amenities throughout the project site. The zoning board approval included the requirement for an 8' fence in the southwestern corner of the property which is demonstrated on the proposed site plan. Additional stockade fencing is proposed for additional buffering.

The project proposes a raised sidewalk connection from the subject parcel, across to the eastern side of Old Rochester Road, going south towards Strafford Farms Restaurant, providing opportunity for Coast bus access. Given the sight distance considerations to the north of the site, a raised crosswalk (speed table) is proposed in Old Rochester Road to reduce incoming vehicle speeds from the north and south.

Vehicles approaching the crossing from north and south will see three sets of signs: Approximately 175 LF before the crossing are signs MUTCD W17-1 ("SPEED HUMP") & MUTCD W13-1P (15 MPH), approximately 100 LF before the crossing are MUTCD signs W11-2 (Pedestrian Crossing) & MUTCD W16-9P ("AHEAD"), and at the raised cross with

flashing solar LED lights is MUTCD W11-2 (Pedestrian Crossing) & MUTCD W16-7P (down arrow to raised cross walk). The posted speed limit returns to 30 MPH southbound just to the south of Blazer Drive. The posted speed limit to the north returns to 30 MPH approximately 115LF from the crossing.

Water and gravity sewer mains are proposed to be connected from Old Rochester Road. Electric/cable utilities will be taken from a relocated utility pole (PSNH 71/27) located at the entrance of Blazer Drive Old Rochester Road. Water is proposed to be an 8" C.L.D.I. line which runs to a fire hydrant on Blazer Drive. The front mixed-use building is proposed with a dedicated fire suppression line, with individual commercial water services and shared residential service. The rear mixed-use buildings are proposed to be serviced by a 4" fire protection line with a 2" domestic line. An 8" sewer line is proposed from the existing sewer man hole located in Old Rochester Road, with 8" services for each building. Utilities are provided underground throughout the site. Heating and cooling will be done via mini-split/condenser units outside the building.

The site utilizes porous pavement within the parking stalls to capture flow for treatment and infiltration into the transmissive soils. The design requires the roof lines of the building to be guttered and plumbed into the infiltration potions of the pavement sections. There is infiltration basins proposed in the corners of the parking arrays as a level of safety in the event of pavement failure in the future. Sidewalks have been revised to be porous brick pavers to reduce the project impervious percentage. Please find the Drainage Analysis & Erosion and Sediment Control Plan as well as the Infiltration Feasibility Report.

The applicant is applying for an Environmental Conditional Use Permit to contain more than 20% (44.15% proposed) impervious surface within the Secondary Groundwater Recharge Zone. Please find attached Environmental CUP application and narrative for justification and criteria. It is of note that all waiver requests have been withdrawn from the application and the Site Plan is now compliant with the three previous waiver requests.

The project requires the following approvals, with a separate TDR narrative to address the TDR criteria:

- TDR approval to purchase 30 residential units through the TDR program for no fee due to the HUD restriction.
- Site Plan Approval
- Environmental CUP Approval within the Secondary Groundwater Recharge Zone
- NHDES Sewer Discharge Permit

- EPA Notice of Intent (NOI) prior to construction
- It is of note that all waiver requests have been withdrawn from the application.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

Christopher R. Berry, SIT
Principal, President

BERRY SURVEYING & ENGINEERING
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(603) 332-2863 / (603) 335-4623 FAX
www.BerrySurveying.Com

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Dover Development LLC Telephone # 603-986-2373

Address of Applicant: 242 Central Ave Dover, NH 03820

E-Mail Address: robert@centralfallsrealty.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 40 Lot(s) # 25

Address of Property: 52 Old Rochester Rd Dover, NH

Zoning District(s) C Overlay District(s) Secondary Groundwater Recharge

Existing Use of Property: Office w/ 3 BR apartment

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☒ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Please find attached narrative. Proposing 44.15% impervious where 20% is the max within the Secondary Ground Water Recharge Overlay. 23.88% in the existing condition.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Discharge, not submitted,/EPA NOI & SWPPP, Not yet submitted

Name of Professional That Prepared Plans: Kenneth A. Berry, PE, LLS

Address 335 Second Crown Point Road Telephone #: 603-332-2863

Professional License #: PE 14243, LLS 805 E-mail address: K.berry@berrysurveying.com
Crberry@metrocast.net (PM)

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 Property Owner: _____ Date: 3-19-25

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

Signature of Agent: _____ Date: 3-19-25

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: 3-19-25

CITY OF DOVER CONDITIONAL USE
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

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

July 1, 2024/Rev: March 18, 2025

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

Re: Environmental Conditional Use Permit Request
Secondary Groundwater Protection Zone (SGPZ)
Mixed-Use TDR Site Plan (Blazer Drive)
Dover Development, LLC
52 Old Rochester Road
Tax Map 40, Lot 25

Chairperson & Members of the Dover Planning Board:

Mrs. Benton and the Dover Planning Board,

Berry Surveying & Engineering (BS&E,) on behalf of Dover Development Group LLC respectfully requests the City of Dover Planning Board to accept the following Conditional Use Permit:

- More than 20% impervious within the secondary groundwater protection zone.

1. Identification of Conditional Use Permits

The project is proposed to be a Mixed-Use TDR Site Plan which provides for 44 HUD restricted housing units in a site plan format and is in the Commercial (C) Zone. The project is proposing the use of porous parking spaces throughout the project to treat and infiltrate stormwater into the highly transmissive soils on site. The zone allows for a 50% building coverage maximum and no maximum on impervious surface, however the Secondary Groundwater Recharge zone requires a 20% maximum impervious surface coverage. The project is proposing 44.15% impervious surface coverage which is a function of the sites use and the total lot size. The porous pavement is not included in the percentage provided.

The site is designed to capture all the stormwater generated onsite as well as stormwater generated off the site and infiltrate it into the soil either through the porous pavement or small depressed contoured areas in the open areas of the project. Please find corresponding Drainage Analysis & Erosion and Sediment Control Plan, prepared for Dover Development LLC, as well as an Infiltration Feasibility Analysis also prepared

for Dover Development LLC. Given that the site is 23.88% impervious in the existing condition and provides no stormwater considerations, the re-developed site provides an improvement when considering the full treatment and infiltration provided.

Regulations in the zoning ordinance do not allow for more than 20% impervious cover in the secondary groundwater recharge zone. However, Section 170-28.E states that a conditional use permit may be granted by the planning board, given the following standards, as shown below, are met.

Below we show the project's compliance with the standards required to grant a Conditional Use Permit, and we provide justification for its approval.

2. Compliance with the following standards

a) The proposed development plan incorporates a stormwater drainage plan, approved by the Planning Board and prepared by a professional engineer certified to practice in the State of New Hampshire

- **A full drainage analysis was conducted as part of the application. The drainage analysis was designed to be compliant with the City of Dover Chapter 153 regulations. A Site-Specific Soils Survey has been completed along with the application.**

b) The plan shall provide for the retention and percolation within the secondary groundwater protection zone of all development-generated stormwater runoff from a ten-year storm. Furthermore, the stormwater drainage plan shall provide for the removal of oil and gasoline from parking LOT runoff by use of treatment swales, oil/gas separators or other device, prior to retention and percolation of the runoff.

- **While the project does not directly provide mechanical separation or swale type system for stormwater pre-treatment, porous pavement is well documented as being highly effective from hydrocarbon biodegradation (UNH Stormwater Center & University of Washington). In the event of porous pavement failure, several deep sump catch basins are provided in low points of the porous pavement. In the event of failure, the deep sumps and hoods proposed would provide separation of hydrocarbons before infiltration. The porous pavement systems are proposed with 18" of sand filter (as opposed to 12" typically required) as a consideration of the SGPZ. These porous**

pavement systems are designed to infiltrate/treat the 100-year storm event.

3.) Section F Dover Performance Standards

a) Post-development Infiltrations Volumes shall be no greater than predevelopment volumes as determined by use of the Development Review Model as described in Subsection G below.

In the sandy, somewhat excessively drained soils on site, not allowing for an increase in the post development infiltration volume would lead to non-compliance with other sections of the Dover Chapter 153-14 requirements. This section requires all development area to be mitigated by stormwater management systems that result in no increase in the peak rate or volume of stormwater runoff. The proposed development does not rely strictly on infiltration for stormwater treatment, as runoff is filtered through 18" of sand filter in the porous pavement systems prior to infiltrating into the underlying soils. It is the opinion of BS&E that the treatment level provided in the stormwater BMP for the project would meet the intent of this performance standard.

b) Stormwater shall be treated by the use of a stormwater treatment system designed to remove no less than 80% of the annual load of total suspended solids. The removal rate shall be accomplished using best management practices installed in advance of the final infiltration system.
Utilizing the NH Stormwater Manual Pollutant removals information, the following performance can be expected from the permeable pavement that infiltrates the WQV (>75' from surface water):
- *Total Suspended Solids (TSS) reduction of 90%*
- *Total Nitrogen (TN) reduction of 65%*
- *Total Phosphorous (TP) reduction of 65%*

These removal efficiencies meet the performance standard.

c) No stormwater infiltration system shall be located within the 200-day travel time of an existing or proposed municipal well as depicted on the map referenced in Subsection B above. In absence of a defined 200-day-travel-time radius, the applicant shall submit a technical evaluation from a professional engineer, hydrologist or geologist that documents that the proposed discharge is consistent with the stated purposed and intent of this requirement.

As shown on the 1987 Dover Groundwater Protection Zone Map, the secondary zone was considered as a 180-day radius. It is important to consider the differences in stormwater treatment technology today versus when this zone was created. Stormwater treatment was not required in the 1980's for developed impervious areas. Since this time, with the implementation of stormwater treatment devices and the requirements of Dover Chapter 153-14, untreated stormwater discharges are no longer allowed in a development of this scale. The proposal does not strictly rely on infiltration as the method of treatment. As previously mentioned, 18" of sand filter is proposed for treatment (as opposed to 12" typically in porous pavement), before infiltration to the underlying soils. It is the opinion of BS&E that the stormwater treatment device provided is consistent the purpose and intent of this requirement.

BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

Christopher R. Berry
Principal, President

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City of Dover, New Hampshire
TRANSFER OF DEVELOPMENT RIGHTS APPLICATION

[Revision Date: October 1, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Dover Development LLC Telephone # 603-986-2373

Address of Applicant: 242 Central Ave Dover, NH 03820

E-Mail Address: robert@centralfallsrealty.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 40 Lot(s) # 25

Address of Property: 52 Old Rochester Rd Dover, NH

Zoning District(s) C Overlay District(s) Secondary Groundwater Recharge

Existing Use of Property: Office w/ 3 BR apartment

New impervious area (in s.f.): 15,205 Sq. Ft.

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 ☒ Increase by 30 HUD units

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

Please find attached narrative

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Discharge, not submitted,/EPA NOI & SWPPP, Not yet submitted

Name of Professional That Prepared TDR Plans: Kenneth A. Berry, PE, LLS

Address 335 Second Crown Point Road Telephone #: 603-332-2863

Professional License #: PE 14243, LLS 805 E-mail address: K.berry@berrysurveying.com
Crberry@metrocast.net (PM)

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 Property Owner: _____ Date: 3-19-25

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

Signature of Agent: _____ Date: 3-19-25

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: 3-19-25

CITY OF DOVER TRANSFER OF DEVELOPMENT RIGHTS
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
TDR REVIEW SUBMISSION CHECKLIST

[Revision Date: January 5, 2021]

This Transfer of Development Rights Review Submission Checklist is intended to assist the applicant in the planning process of preparing a TDR 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.

If staff indicates the scope of the project requires Technical Review Committee Review, 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 Subdivision/Site plan review requirements. Please refer to the Subdivision/Site Plan Review Regulations for full details.

APPLICANT: Dover Development, LLC File Number: _____

PROJECT TITLE: Blazer Drive

PROPERTY LOCATION: 52 Old Rochester Road Tax Map: 40 Lot: 25

	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. 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 and scale	X	
Name and address of owners and/or applicants	X	
Location and widths of existing & proposed easements & right of ways	X	
Location and width of existing and proposed access/egress ways	X	
Existing and proposed buildings and structure locations and access	X	
Minimum building setbacks or build to lines on all lots	X	
Existing and proposed stormwater infrastructure/direction	X	
Neighborhood plan with unit counts	X	
Proposed landscaping	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 solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	X	
All applicable Dover Common Site Plan/Subdivision notes	X	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	Will provide upon request	

REVIEWED BY: _____ DATE_____ TRC DATE_____

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
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www.BerrySurveying.Com
crberry@metrocast.net
March 18, 2025

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

Re: Mixed-Use Transfer of Development Rights (TDR) Development Site Plan
Transfer of Development Rights Criteria Narrative
Dover Development, LLC
52 Old Rochester Rd
Tax Map 40, Lot 25
Commercial (C) Zone, Secondary Groundwater Recharge Overlay
SITE-2024-0009

Dear Mrs. Benton,

On behalf of our client, Dover Development, LLC, Berry Surveying & Engineering (BS&E) is submitting a proposed Mixed-Use TDR Site Plan at 52 Old Rochester Road. The submission contains one TDR request for additional Unit Density above the 14 allowed by calculation (30, for a total of 44 proposed 1-BR HUD restricted units) and one Environmental CUP request for greater than 20% impervious coverage within the Secondary Groundwater Recharge Overlay. There are no waivers requested as part of this application. This project has received a variance (ZONE-2023-0037) to allow for an allocation of greater than 67% residential units on site (81.3% proposed).

Chapter 170-29.G.(8) lays out the criteria which the Planning Board should consider when determining the appropriateness of the increase in density and intensity on individual project sites. These include:

- *Consistency with the Master Plan.*
- *Compatibility with the land uses on neighboring lot.*
- *Is created on property served by public water and sanitary sewer.*
- *Any relief sought should not be caused by the additional density.*

Consistency with the Master Plan:

A review of the of the Vision Chapter Master plan finds the key pillar of the Distinctly Dover Vision to be *"We are a City with an emerging urban vibrancy, guided by*

intentional growth to create connected neighborhoods, attractive streetscapes, and accessible open space, while maintaining what makes Dover distinct." This vision context has different meanings based on the location within the City of Dover, which is one attribute that makes Dover distinct. The subject parcel is located within the Commercial (C) Zone, it is in close proximity to the Gateway Zone (0.1 miles to the south) and the R-12 zone (abutting to south). The surrounding area contains a diverse stock of land uses and streetscapes, including commercial, retail, and residential along with options for public transportation. The area contains several commercial & retail uses in the vicinity (Middleton Building Supply, Strafford Farms Restaurant, Strafford Appliance Company, Willand Pond Auto Repair, Hair Dimensions Salon & Spa) and several types of residential housing stock, including single family homes to the south, townhouses to the north, and apartments to the east (Winchester Arms).

Despite the diversity of land uses in the vicinity of the parcel between the Commercial Zone, Gateway Zone, & R-12 Zones, the streetscape on Old Rochester Road to the north is defined largely by commercial buildings and large areas of paved parking/ storage areas. To the south, this is similar to an extent towards Strafford Road with the streetscape defined by commercial buildings and large paved areas. South of Strafford Road, the streetscape is defined by modest single-family homes.

The project as proposed provides a vibrant streetscape on the redeveloped site defined by the commercial store front, brick sidewalks, landscaping, and attractive building architectural features with parking located primarily to the rear of the site. The building along Old Rochester Road provides screening for the parking areas to the rear to the site. Sidewalks are provided throughout the inside of the development, and provides a sidewalk/raised speed table across Old Rochester Road. This sidewalk allows for accessibility to the COAST Bus stop in the area and providing connectivity of the project to the surrounding area and recreation/service options in the area along with the NH Route 108 complete streets improvements.



Old Rochester Road looking North



Old Rochester Road looking North



Old Rochester Road looking South



Old Rochester Road looking South

BERRY SURVEYING & ENGINEERING
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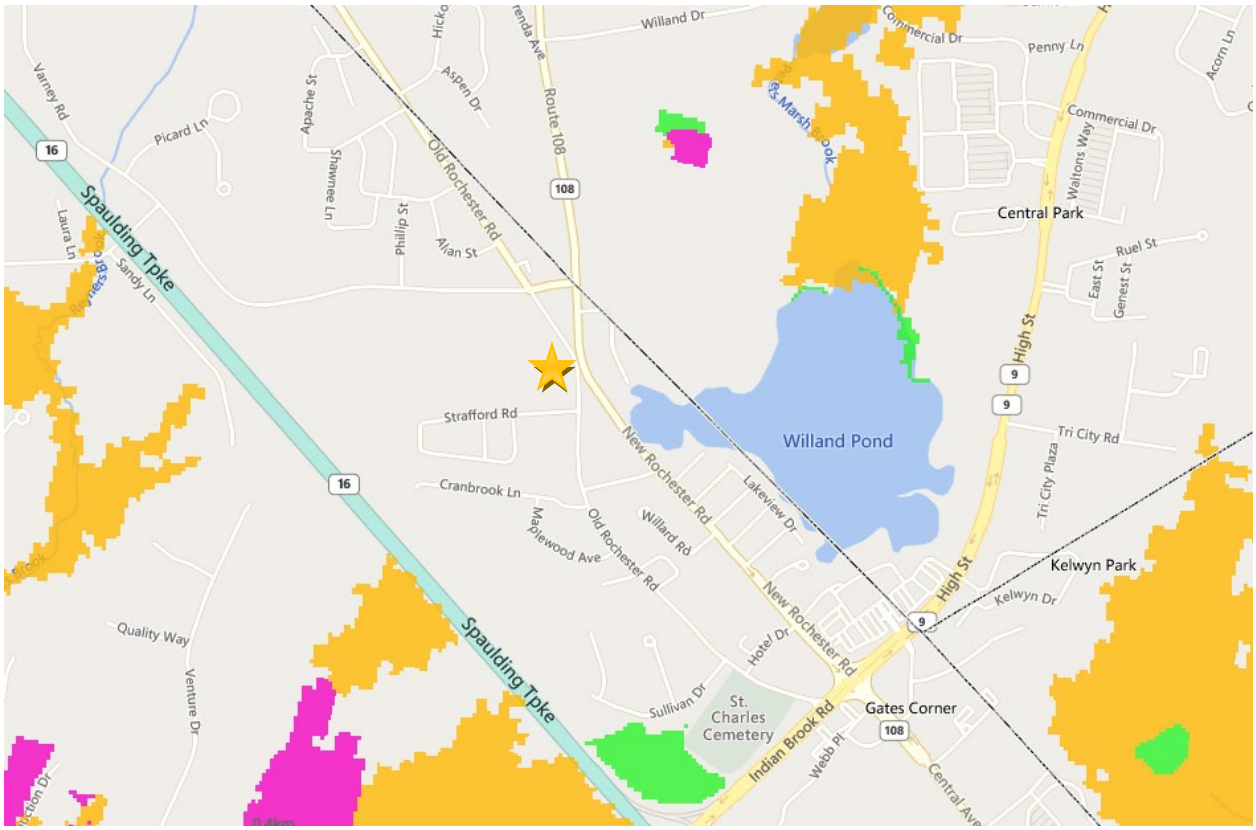
Proposed Streetscape

In review of the Open Space Chapter of the Master Plan we find that there are three priorities noted in the following order:

- *Groundwater quality and quantity*
- *Hazard Mitigation Land*
- *Wildlife habitat*

Within the Commercial Zone, the project is not required to provide open space area. However, it is of note that the City of Dover owns the undeveloped 14.26Ac. parcel to the abutting the subject parcel to the west, which contains the Long Hill Dog Park. The project is also in close proximity to the Willand Pond Trail.

As the chapter points out, not all open spaces are conservation lands. There are areas of the City that should be systematically conserved. The use of the TDR program aids in the funding for these efforts and could be used to further enhance the public use of the existing conserved land. This particular site is not well suited for a conservation effort whereas it is not adjacent to other conserved recourses. In reviewing the 2020 Highest Ranked Wildlife Habitat by Ecological Condition, the existing site is not considered highly ranked for wildlife habitat or supporting landscape.



NH Granit Wildlife Action Plan Habitat Rankings

Ground water quality and quantity ranked highest on the list of priorities for the Chapter. The property is located in a Secondary Ground Water Protection district, which contains highly transmissive soils for groundwater recharge. As such the project design is careful to provide large opportunities for treated re-infiltration of stormwater through building separation, introduction of landscaping materials, disconnection of impervious flow and the construction of porous pavement and porous brick pavers. Impervious areas are routed, filtered/treated, and infiltrated in the porous pavement parking areas on the project. This Best Management Practice (BMP) is designed to treat and infiltrate flows to provide a high-quality groundwater recharge. Due to the project location being within a recourse area, an additional 6" of filter depth (12" to 18" filter thickness) has been added to the design to increase the removal efficiency in the porous pavement. There is no loss of groundwater quality or quantity through these means and methods which have been integrated into the landscape of the project site. The development will represent an improvement to water quality due to the installation of the stormwater best management practices. Especially when considering the nearly 24% impervious (17,909 Sq. Ft., 23.88%) in the existing condition where untreated stormwater runs off

from the site in an unmitigated manner. The site is designed to treat and infiltrate the 100-year storm event, and includes off-site flows from the abutting residential parcel.

Hazard Mitigation is the second priority of the chapter, which in our opinion, affects the entire watershed, not just lands adjacent to water bodies and areas subject to flooding. The effects of incremental, unmanaged growth and development can be seen along waterways. As a direct result, the City of Dover has developed stormwater regulations that address new development and re-development to improve down stream affects from all developments. The project as designed meets these regulations by reducing down stream flows and volumes, and provides a level of stormwater treatment that is greater than what exists onsite in the current condition.

Though not prioritized as a conservation effort, the distinct lack of housing stock of all kinds and specifically modest more affordable housing was discussed as a need within the City of Dover. As the Vision points out, intentional growth is a focus for the community. This is to say that the growth should be intentioned, not haphazard, opportunistic, disconnected, otherwise out of place or of mere convenience for land owners and project developers. This TDR project provides the expansion of an existing, growing, thriving portion of the community. It does so at no cost the core principals of the master plan and aids in providing additional modest housing stock (all residential units 1BR HUD restricted) to an area in which it is well suited. By providing the stock in an area of the city with low conservation goals, while providing current stormwater and groundwater methodologies, the master plan goals area achieved and thus the TDR goals are achieved.

Compatibility with the land uses on neighboring lot

As noted above, the area surrounding the subject parcel is zoned Commercial, Gateway, & R-12. The unit density within the Commercial Zone is 5,000 Sq. Ft./Unit, 4,000 Sq. Ft. per unit within the Gateway Zone and the R-12 allows for development on a 12,000 Sq. Ft. land mass. It is of note that within the Commercial Zone, the mixed-use type buildings are allowed by right, up to three stories tall. This type of development architectural style would be provided on the subject parcel, even without the utilization of the TDR Ordinance. As previously discussed, there is a combination of various commercial, retail, and residential uses surrounding the subject parcel. It is the opinion of BS&E that a mixed-use development as proposed is balanced with the surrounding land uses/intensities. The proposal provides a softer transition from the intense land uses to the north with the purely residential uses to the south, and in so doing offers the opportunity for transitional neighborhood amenities. Currently the residential uses

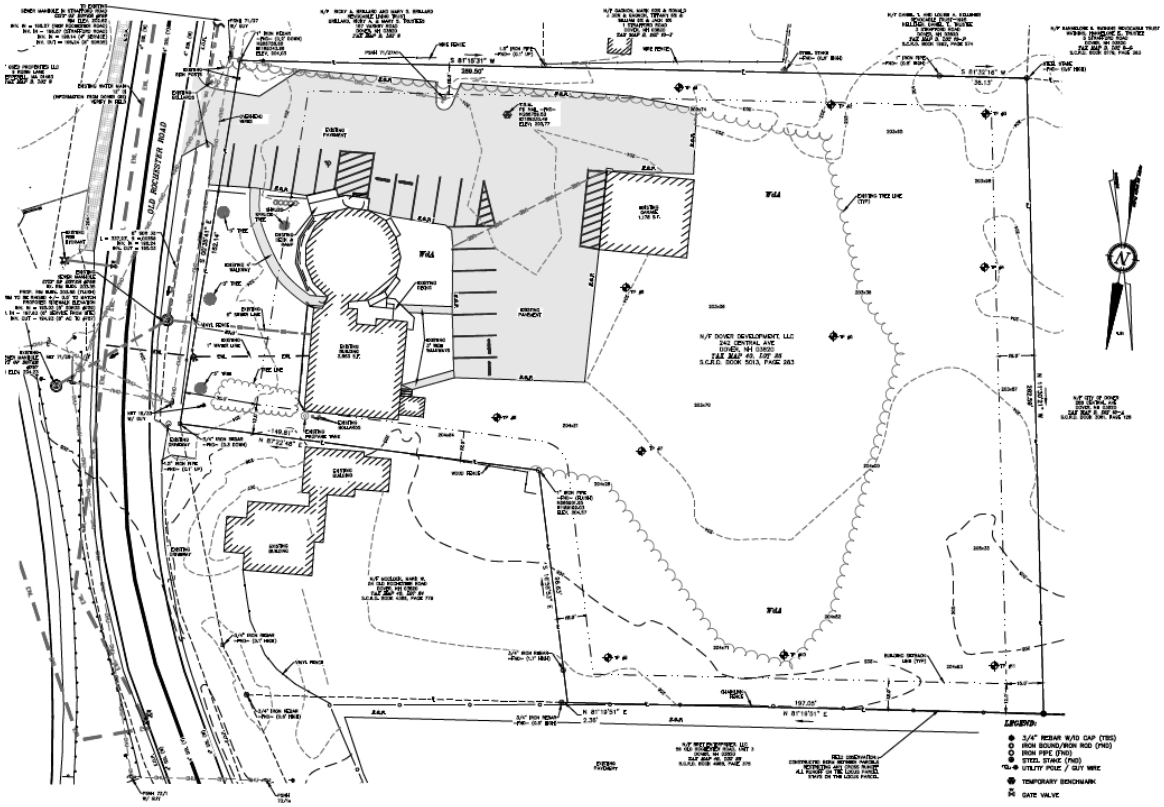
to the south are isolated from commercial uses which are primarily boxier and vehicular centric.

Public Sewer and Water

The project will be serviced by municipal water and sewer and will add sewer utility to the existing home onsite which is currently serviced by an onsite septic system.

Any relief sought should not be caused by the additional density

The project requests one environmental conditional use permit to permit a site impervious coverage that is greater than 20% within the Secondary Groundwater Protection Overlay. In this situation, the request is not driven by the TDR request for additional density, whereas the density is on the second and third floors of the buildings. Mixed-Use buildings such that as are proposed are allowed by right, where the base residential density on the subject parcel would be 14 units. In all likelihood, a redevelopment of this parcel that increases the residential intensity to the allowed 14 units would require a Conditional Use Permit. This can be visualized by looking at the Existing Conditions Plan, which provides 23.88%, or 17,909 Sq. Ft. (0.41Ac.), for the commercial and one-residential unit that exists on site. This is further demonstrated by former approved developments on site. The site building would need to be larger to support the additional units, with additional parking requirements above the number currently provided.



Existing Conditions Plan

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

Christopher R. Berry, SIT
Principal, President

BERRY SURVEYING & ENGINEERING
335 Second Crown Pt. Rd., Barrington, NH 03825
(603) 332-2863 / (603) 335-4623 FAX
www.BerrySurveying.Com

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2024-0009

Application Type:	Site Plan
Applicant(s):	Berry Engineering & Surveying, Dover Development LLC
Owner(s):	Dover Development LLC
Location:	52 Old Rochester Rd. (Tax Map 40, Lot 25)
Date:	August 8, 2024

INTENT: Proposal is to construct one (1) commercial building and two (2) residential buildings with a total of 48, HUD-restricted units. Proposal also includes the construction of a private roadway and 87 parking spaces. *(One (1) related CUP application and TDR Request would also appear before the Planning Board.)*

UNITS PROPOSED: 48 units (all units proposed as HUD-restricted, including 34 TDR units)

AGENDA ITEM #: 1

ACREAGE: 1.72± ac / 74,997± sq. ft.

ZONING DISTRICT: C (Secondary Groundwater Recharge Overlay)

EXISTING LAND USE: Commercial, Office, Residential

PROPOSED LAND USE: Commercial, Residential

SURROUNDING LAND USE: Commercial, Residential

ZBA ACTION: ZONE-2023-0037, Commercial/Residential Ratio

PERMITS REQUIRED: City of Dover CUP, NHDES Sewer Discharge Permit, EPA NOI, and EPA SWPPP

WAIVERS REQUESTED: § 157-31F, Minimum block length, § 153-14E(2)(b), Parking Lot Lighting Uniformity, § 153-14G(3)(a), Perimeter Landscaping Standards

ATTENDANCE:
Donna Benton, Planning
Paul Crouser, Zoning
Jim Maxfield, Inspection Services
Marn Speidel, Police Department
Ken Mavrogeorge, Engineering
Craig Chabot, Fire Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Erin Bassegio, Assistant City Planner
Kevin Poulin, Berry Surveying & Engineering
John O'Neill
Rob Baldwin

Approval of minutes from May 9, 2024 and August 1, 2024:
T. Clark moved to approve the May 9, 2024 and August 1, 2024 minutes. Seconded by J. Burdin. Vote: U/A.

PLAN REVIEW:
Planning:

- Reminder: Impact fees, Water and sewer investment fees
- Variance approved for commercial/residential ratio: 17% commercial/83% residential, minimum 7,354 sf commercial.
    - Revised plan includes ~17% commercial space but below the minimum square footage approved. (Note 13 on sheet 2 incorrectly references 13% commercial/87% residential.)
- Provide letters to serve.
- Since rentals, provide draft lease and property deed restriction.
- Consider 2 bedroom or 3 bedroom units as well?
- Applicant and Owner signature on application?
- Try to reduce amount of relief needed.
- Revise plans to include:
    - Planning file number (SITE-2024-0009)
    - Add permit numbers
    - Owner's signature and all professional stamps and signatures on final submission
    - Revise chain link fence to wood fence for plan sheet consistency.
    - Provide stockade fence around property.
    - Revise dumpster enclosure to stockade fence.
    - Add screening along lot 24.
    - Add note explaining compliance with Chapter 170-15. (Including 150' from existing residential structures, active and passive recreation)

Engineering:

- General Comment:
    - Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf
    - Proposed tree clearing is extremely close to property line. Review grading to see if some buffer to abutting property can be provided.

- Since only one water main is proposed into the building, the City will provide only one billable water meter for the entire building.
- Will there be an HOA for the property? If so, please provide the documents for review especially a detailed breakdown of the HOA fees.
- Recommend Applicant contribute to cost of sidewalks along Old Rochester Road along length of property.

- Narrative:
  - There is mention of a laundromat on the premises. Would this be open to the public or just tenants of the property? The City is currently having an engineering study conducted in the area to address concerns of sewer capacity in the area. A contribution of $500 per unit towards that study is requested to confirm that adequate capacity is available.
- Drainage Analysis:
  - Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone. Please remove this as an option from the Drainage analysis and O&M documents.
  - Geotechnical testing results only shows two infiltration tests were conducted seven years ago. Please clarify how this testing satisfies the criteria recommended by the NHDES for infiltration basin design.
- Sheet 2:
  - Add note that Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone.
  - Porous pavement is excluded from the impervious area coverage calculation. Please identify on the plans, next to the impervious area calculation what the area of porous pavement is.
  - Place a note in a bold box that notes that porous pavement shall be maintained in accordance with the site's approved O&M manual in perpetuity. Failure to do so could result in a failure to comply with the Planning Board approvals.
- Sheet 6:
  - The proposed parking seems inadequate for the housing proposed and the proposed commercial especially when temporary snow storage is used. Please clarify how parking will work on the premises (limits on number of vehicles, parking time limits, etc.).
  - Snow storage is proposed behind bituminous curb, transformer and on top of landscaping.
  - Recommend providing snow storage at a ratio of 10:1 versus 6:1.
  - Recommend moving dumpster to a more centralized location that is more easily accessible by all users and the trash vehicles.
  - Storing Snow in treatment basins is not recommended.
- Sheet 8:
  - Flow arrows conflict with cross-section at station 1+50.
  - Infiltration sump is located in a passive recreation and snow storage area. Clarify how the area is intended to be used.
  - Underdrain in porous asphalt is shown as 8inch in a 9 inch reservoir course. Recommend pipe have additional bedding to meet manufacturer's recommendations (4" min).
  - Provide a detail for a typical infiltration sump.
- Sheet 11:
  - Call out a foster adapt 6x8 reducer to 4x8 tee.
  - The 6x8 reducer needs to have 6" gate foster adapter.
  - Rebuild invert of SMH 758.
  - 8" sewer into and out of SMH 758 is AC not PVC.
  - Show the proposed sewer entering into the existing SMH at a 90-degree angle. Consider adding additional SMHs.
  - Add gate valve for the fire services after the domestic service tap.
  - Add a curb box for shut offs in paved surfaces. Recommend moving them to non-paved surfaces.
- Sheet 15:
  - Lighting levels exceed allowable levels at property line.
  - Some walkways have lighting levels at 0. Please add lighting.

- Lighting levels around recreation area and benches are at zero. Recommend adding lighting.
- Provide screening to prevent headlights from shining across property lines.

- Sheet 16:
  - Why are different 85th design speeds used?
  - Does the horizontal curve to the north need to be considered?
- Sheet 19:
  - Confirm that all signs meet MUTCD requirements. Accessible parking signs do not appear compliant.
- Sheet 21:
  - Underdrain is shown as 6" but 8" underdrain is shown on the plans. Please show various sizes.
- Sheet 27:
  - Truck movements for Turning South Out of the Site is very far from the curb line. Can the radius be reduced or the vehicle moved closer to the curb to avoid crossing into oncoming traffic?

Police:

- Relocate benches / barrels (2 locations of concern) where better protected from head-in parking vehicles
- Traffic Impact Analysis, p. 13: provide supporting data for Existing Vehicle Speeds assumption - particularly for the southbound direction where the available sight distance is substantially limited. This will require traffic counts placed at the proposed driveway location. The Police Department's historical data (from a point about 1,700' south of proposed driveway) indicates Old Rochester Road southbound 85th percentile speed at 42 mph, which would put you well below the AASHTO standard for available sight distance.
- There is a "Blind Driveway" sign on the southbound approach that was placed for this existing driveway. This is not mentioned in the Traffic Impact Analysis.

Inspection Services:

- Sheet 11 Ensure separate gates for domestic and sprinkler supply lines to all structures.
- Indicate if there will be gas service, if so indicate type.
- Indicate if there are exterior mechanical pads or equipment locations.
- Confirm ADA access to EV chargers.

Fire Department:

- No comments or concerns with the proposed plan.

Business Development:

- Plans presented to ZBA in 2023 represented that commercial development would total 7,354 square feet, and this amount was included in the conditions of approval for the requested variance as a minimum commitment. Please revise accordingly.
- Renderings of the commercial building are attractive, and seems well-suited for the uses described or comparable service businesses. No design concerns beyond meeting required square footage.
- Have tenants been identified for all commercial spaces? OBD can assist with locating commercial users and is happy to have a follow-up conversation for this purpose.

Planning Board:

- Elaborate on lighting wavier hardship.
- Provide TDR narrative.

Next Steps: Revise plans per comments above and resubmit for second TRC.

Adjournment: K. Mavrogeorge moved to adjourn the meeting at 11:04 a.m. Seconded by T. Clark. Vote: U/A

BERRY SURVEYING & ENGINEERING
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Barrington, NH 03825
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March 18, 2025

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

Re: Site Plan Review
TRC #1 Response Letter
Dover Development LLC
Old Rochester Rd
Tax Map 40, Lot 25
Dover File #SITE-2024-0009

Based on comments from the Technical Review Committee Minutes from August 8, 2024, we respectfully submit the following comments and revisions. Our comments are in **bold**.

PLANNING COMMENTS

1. Reminder: Impact fees, Water & Sewer investment fees
   Applicant acknowledges fees will be required.

2. Variance approved for commercial/residential ratio 17%commercial/83% residential, minimum 7,354 sf commercial.

   a. Revised plan includes ~17% commercial space but below the minimum square footage approved. (Note 13 on sheet 2 incorrectly references 13% commercial/ 87% residential.)
      Please find revised Site Plan all three buildings containing commercial space on the first level of the buildings.

3. For rent? Draft lease and deed restriction to be provided?
   Units will be rented. Please find attached draft lease and deed restriction.

4. Consider 2 bedroom or 3 bedroom units as well?
   The applicant is looking to only provide 1-bedroom units as a way to make the project work financially with the HUD restrictions on the units.
5. Mark all parking spaces that will be used for snow storage.

The Site Plan has been revised to not require parking spaces be used for snow storage.

6. Confirm this meets the Secondary Groundwater requirements
   A Conditional Use Permit application has been provided for greater than 20% impervious in the Secondary Groundwater Protection Zone.

7. Applicant and Owner signature on application?
   Please find application package with applicant and owner signatures.

8. Try to reduce the amount of relief needed.
   The Site Plan has been revised to remove all three previous waiver requests. Waivers are no longer requested to the Site Plan or Subdivision Regulations for the project.

9. Revise plans to include:

   a. Planning file number (SITE 2024-0009)
      This has been added to the title block.

   b. Add permit numbers
      Permit numbers will be added to the Cover & Notes sheet when obtained.

   c. Owner's signature and all professional stamps and signatures on final submission.
      All required signatures will be provided for the final submission.

ENGINEERING COMMENTS

1. General Comments:
   a. Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover website on the Engineering page.
      Applicant acknowledges comment.

   b. Proposed tree clearing is extremely close to property line. Review grading to see if some buffer to abutting property can be provided.

Parking lot has been moved 5' away from the western property line, with perimeter plantings now proposed around the parking lot in accordance with the Site Plan Regulations.

c. Since only one water main is proposed into the building, the City will provide only one billable water meter for the entire building.
Applicant acknowledges this, some revisions have been made to the water utilities.

d. Will there be an HOA for the property? If so, please provide the documents for review especially a detailed breakdown of the HOA fees.
There will not be an HOA for the property as the units will be managed as rentals.

e. Recommend Applicant contribute to cost of sidewalks along Old Rochester Road along length of property.
Per meeting with City Staff, the applicant is proposing a sidewalk withing the Old Rochester Road right of way. This sidewalk is proposed in the northerly direction to a point at the limit of the subject parcel. This is approximately at the point of curvature in the street. At this location the application is proposing a mid-block raised walk with RRFB's. The applicant is prosing to extend and re-built sidewalks in the southerly direction on the eastern side of Old Rochester Road.
A previous discussion included reviewing sidewalks in the northerly direction to the Long Hill intersection however after review it was determined that based on the project style could not financially be accomplished.

2. Narrative:
   a. There is mention of a laundromat on the premises. Would this be open to the public or just tenants of the property? The City is currently having an engineering study conducted in the area to address concerns of sewer capacity in the area. A contribution of $500 per unit towards that study is requested to confirm that adequate capacity is available.
   The laundry mat has been removed from the project. The applicant proposes contributing $200/unit towards sewerage improvements off-site due to the units being proposed as HUD units.

3. Drainage Analysis:
    a. Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone. Please remove this as an option from the Drainage analysis and O&M documents.
    This has been added to the required documentation.

    b. Geotechnical testing results only shows two infiltration tests were conducted seven years ago. Please clarify how this testing satisfies the criteria recommended by the NHDES for infiltration basin design.
    The drainage analysis has been revised to utilize infiltration rate methods as prescribed in Env-Wq 1500.

4. Sheet 2:
    a. Add note that Calcium Chloride shall not be used for dust control as this is within the Secondary Groundwater Protection Zone.
    This has been added as Erosion & Sediment Control Note #4, sheet #2.

    b. Porous pavement is excluded from the impervious area coverage calculation. Please identify on the plans, next to the impervious area calculation what the area of porous pavement is.
    This is now addressed as Site Plan note #44 & #50, sheet #2.

    c. Place a note in bold box that notes that porous pavement shall be maintained in accordance with the site's approved O&M manual in perpetuity. Failure to do so could result in a failure to comply with the Planning Board approvals.
    This is shown as note #50, sheet #2.

5. Sheet 6:
    a. The proposed parking seems inadequate for the housing proposed and the proposed commercial especially when temporary snow storage is used. Please clarify how parking will work on the premises (limits on number of vehicles, parking time limits etc.)
    The site plan has been revised to modify the number of parking spaces, numbers of units, and to provide snow storage around the site without the use of temporary removal spaces.

    b. Snow storage is proposed behind bituminous curb, transformer and on top of landscaping.

Snow storage has been revised along with the Site Plan. Snow storage is provided in areas along the parking lanes and sidewalks, with three larger push/storage areas.

c. Recommend providing snow storage at a ratio of 10:1 versus 6:1.
Snow storage has been revised on the site plan to a ratio better than 6:1 without the need for temporary snow storage spaces.

d. Recommend moving dumpster to a more centralized location that is more easily accessible by all users and the trash vehicles.
The dumpster has been relocated to the central part of the site.

e. Storing Snow in treatment basins is not recommended.
The infiltration locations around the site are not considered as stormwater treatment. An effort has been made around the site to remove snow storage where possible from sump areas.

6. Sheet 8:
   a. Flow arrows conflict with cross-section at station 1+50
   The cross section at 1+50 has been corrected.

   b. Infiltration sump is located in a passive recreation and snow storage area. Clarify how the area is intended to be used.
   The passive recreation area to the south has been relocated away from the infiltration sump. The passive recreation area to the north is located within the infiltration sump. The sump is 6" deep and is sloped at 10:1, allowing for the used of the area during normal conditions for passive recreation. With the very well-drained on-site soils, this area will not pond water for much time after a storm event.

   c. Underdrain in porous asphalt is shown as 8 inch in a 9 inch reservoir course. Recommend pipe have additional bedding to meet manufacturer's recommendations (4" min).
   This has been added to the structure table callouts on sheets #9 & #10.

   d. Provide a detail for a typical infiltration sump.
   A detail is now provided as Detail D10, sheet D-101.

7. Sheet 11:
    a. Call out a foster adapt 6x8 reducer to 4x8 tee.
    This callout has been added to sheet #12.

    b. The 6x8 reducer needs to have 6" gate foster adapter.
    This callout has been added to sheet #12.

    c. Rebuild invert of SMH 758
    This is now called out on sheet #12.

    d. 8" sewer into and out of SMH 758 is AC not PVC
    This has been corrected on sheet #12 and the E Plan, sheet #3.

    e. Show the proposed sewer entering into the existing SMH at a 90-degree angle. Consider adding additional SMH's.
    The angle of connection has been revised to 90 degrees and another sewer manhole added to the line. Please find sheet #12.

    f. Add gate valve for the fire services after the domestic service tap.
    Gate valves have been added for the fire services after the domestic tap. Please find sheet #12.

    g. Add curb box for shut offs in paved surfaces. Recommend moving them to non-paved surfaces.
    Detail Sheet U102, U11 shows a valve box detail for paved surfaces. Items have been moved to non-paved surfaces where feasible. Please find sheet #12.

8. Sheet 15:
    a. Lighting levels exceed allowable levels at property line.
    Please find revised lighting plan, sheet #16.

    b. Some walkways have lighting levels at 0. Please add lighting.
    Please find revised lighting plan, sheet #16.

    c. Lighting levels around recreation area and benches are at zero. Recommend adding lighting.
    Please find revised lighting plan, sheet #16.

d. Provide screening to prevent headlights from shining across property lines.
Landscaping screening and fences are provided around the parking lot.

9. Sheet 16:
   a. Why are different 85th design speeds used?
   Per meeting with staff, a raised cross walk with associated signage package is proposed to utilize a design speed of 30MPH for vehicles traveling south.

   b. Does the horizontal curve to the north need to be considered?
   Please see above response.

10. Sheet 19:
    a. Confirm that all signs meet MUTCD requirements. Accessible parking signs do not appear compliant.
    The construction detail C2, sheet C101 has been revised to match the project plans.

11. Sheet 21:
    a. Underdrain is shown as 6" but 8" underdrain is shown on the plans. Please show various sizes.
    This has been revised. Please find detail D5, sheet #22.

12. Sheet 27:
    a. Truck movements for Turning South Out of the Site is very far from the curb line. Can the radius be reduced or the vehicle moved closer to the curb to avoid crossing into oncoming traffic?
    Please find revised vehicle movement templates, sheets #28 & 29.

POLICE DEPARTMENT COMMENTS

1. Relocate benches/barrels (2 locations of concern) where better protected from head-in parking vehicles.
   These two locations have been revised by relocating the benches behind landscaped islands. Please find sheet #6.

a. Traffic Impact Analysis, p.13: provide supporting data for Existing Vehicle Speeds assumption – particularly for the southbound direction where the available sight distance is substantially limited. This will require traffic counts placed at the proposed driveway location. The Police Department's historical data (from a point about 1,700' south of proposed driveway) indicates Old Rochester Road southbound 85th percentile speed at 42 mph, which would put you well below the AASHTO standard for available sight distance.
Per staff meeting, a raised cross walk with associated signage package is proposed to utilize a design speed of 30MPH for vehicles traveling south. Further discussion is provided within the traffic analysis.

b. There is a "Blind Driveway" sign on the southbound approach that was placed for this existing driveway. This is not mentioned in the Traffic Impact Analysis.
Please find this mentioned in the revised Traffic Impact Analysis.

INSPECTION SERVICES COMMENTS

1. Sheet 11 Ensure separate gates for domestic and sprinkler supply lines to all structures.
A gate valve has been added after the domestic tap for all three buildings. Please find sheet #12.

2. Indicate if there will be gas service, if so indicate type.
The site will not be serviced by gas.

3. Indicate if there are exterior mechanical pads or equipment locations.
Concrete pads for exterior mechanicals are shown on the Utility Plan, sheet #12.

4. Is there an EV component to the project?
The EV Charging stations are provided from station 2+15-2+50, shown on sheet #6.

BUSINESS DEVELOPMENT COMMENTS

1. Plans presented to ZBA in 2023 represented that commercial development would total 7,354 square feet, and this amount was included in the conditions of

approval for the requested variance as a minimum commitment. Please revise accordingly.
The Site Plan has been revised to add commercial units in the first levels of all three buildings.

2. Renderings of the commercial building are attractive, and seems well-suited for the uses described or comparable service businesses. No design concerns beyond meeting required squared footage.
Applicant appreciates the comment.

3. Have tenant been identified for all commercial spaces? OBD can assist with locating commercial users and is happy to have a follow-up conversation for this purpose.
The applicant has not identified commercial users at this time and could be interested in follow up conversations with OBD regarding this.

Respectfully,
BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Design Engineer

Kenneth A. Berry, PE, LLS
VP – Technical Operations
Engineer of Record

Christopher R. Berry, SIT
Principal, President

BERRY SURVEYING & ENGINEERING
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TRANSFER OF DEVELOPMENT RIGHTS (TDR) DEED RESTRICTION

THIS DEED RESTRICTION is made and entered into this ___ day of _____, 20, by [PROPERTY OWNER NAME], hereinafter referred to as the "Grantor," in favor of the City of Dover, hereinafter referred to as the "Grantee."

RECITALS

WHEREAS, Grantor is the owner of certain real property located at [Address/Description of Property], more particularly described in Exhibit A attached hereto and incorporated herein by reference (the "Property");

WHEREAS, the Grantor has voluntarily chosen to transfer certain development rights associated with the Property in accordance with the applicable Transfer of Development Rights (TDR) program administered by the City of Dover;

WHEREAS, in consideration for such transfer and in furtherance of community planning goals, it is the intention of the Grantor to impose certain restrictions upon the use of the Property to restrict a percentage of the total units in the project to a maximum rent set by the HUD Fair Market Rate.

NOW, THEREFORE, the Grantor hereby declares and agrees that the Property shall be held, sold, transferred, and conveyed subject to the following restriction, which shall run with the land and be binding upon all successors and assigns.

DEED RESTRICTION TERMS

Affordable Housing Restriction: A portion of the rental units at the property located at [Address] shall be restricted to affordable housing for a period of [Number] years. Specifically, [Percentage]% of the total number of rental units shall be subject to this restriction. These restricted units shall be rented at a monthly rent that does not exceed the Fair Market Rent (FMR) established by the U.S. Department of Housing and Urban Development (HUD) for [Specific Area or FMR Area] for the respective unit type. FMR shall be determined annually based on HUD's published FMR data. The FMR for each unit type shall be determined based on the number of bedrooms in the unit. The Owner shall maintain records of the FMR used and rents charged for the restricted units. This restriction shall be enforceable by any interested party.

Enforcement: The City of Dover, or its successors and assigns, shall have the right to enforce this restriction by proceedings at law or in equity, including, but not limited to, seeking injunctive relief and specific performance. The failure of the City of Dover to enforce this restriction at any time shall not be deemed a waiver of its right to enforce this restriction at a later time.

Release from Restriction: In the event that the current or future owner of the Property desires to be released from this deed restriction or seeks to modify its terms, the owner must consult with the City of Dover and follow all applicable procedures as may be required by local zoning, land use regulations, or the TDR program. Any request for release or modification must be formally reviewed and approved by

the City of Dover, and the owner must comply with any applicable conditions or procedures as determined by the city.

Term of Restriction: This restriction shall run with the land and shall be binding upon the Grantor, the Grantor's heirs, successors, and assigns, and all future owners of the Property in perpetuity, unless otherwise modified or released by written agreement between the City of Dover and the then-owner of the Property, in accordance with applicable laws and regulations.

Severability: If any provision of this restriction is found to be invalid or unenforceable, such provision shall not affect the validity or enforceability of the remaining provisions, which shall remain in full force and effect.

Recording: This deed restriction shall be recorded in the land records of [County/City], and all future deeds or other legal instruments conveying any interest in the Property shall reference this deed restriction.

IN WITNESS WHEREOF, the Grantor has executed this Transfer of Development Rights Deed Restriction on the date first written above.

Grantor:

[Grantor Name]

[Grantor Address]

Grantee (City of Dover):

[Grantee Name]

[Grantee Title/Position]

[Grantee Address]

STATE OF [STATE], COUNTY OF [COUNTY]

On this ___ day of _____, 20, before me personally appeared [Grantor Name], to me known to be the individual(s) described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

Notary Public

My Commission Expires: _____

Central Falls Realty

242 Central Avenue • Dover, NH 03820
(603) 742-2121

1. Residency and Financials

1.1 PARTIES AND OCCUPANTS

This Lease Contract is between you, the undersigned resident(s):

<<Tenants (Financially Responsible)>>

and us, the owner/agent:

<<Owner Name(s)>>

You've agreed to rent the property located at

<<Unit Address>>

for use as a private residence only. The terms "you" and "your" refer to all residents listed above. The terms "we," "us," and "our" refer to the owner/agent listed.

The apartment will be occupied exclusively by the resident(s) listed above. The Owner/Agent must approve unauthorized occupants living in the premises for longer than 7 consecutive days.

1.2 LEASE DURATION

The terms of this tenancy shall commence on **<<Lease Start Date>>** and end on **<<Lease End Date>>**.and thereafter, shall be month-to-month on the same terms and conditions as stated herein, save any changes made pursuant to law, until terminated. Tenants must give a 30 days written notice prior the 1st of the final month they wish to vacate premises.

1.3 RENTS AND CHARGES

You shall pay **<<Monthly Rent>>** per month for rent. The first month's rent and/or prorated rent amount of **<<Prorated Rent>>** shall be due prior to move-in.

Lease payment shall be in the form of check or money order, be made payable to , **<<Owner Name(s)>>**mailed to or dropped off at 242 Central Avenue, Dover, NH 03820, which may be changed from time to time by Landlord. Rental payments may also be made online through your tenant portal. **Please include your name and unit number in the memo line of your check.**

Every month thereafter, you must pay your rent on or before the 1st day of each month with 5 days of grace period. The following late fees will apply for payments made after the grace period:

Late fee rule: **<<Late Fee Rule>>**

Late fee will be charged on the 5th of each month if rent payment is not received by or before the 4th.

A charge of $50 will apply for every returned check or rejected electronic payment plus the amount of any fees charged to the Owner/Agent by any financial institution as a result of the check not being honored, plus any applicable late fee charges. If you don't pay rent on time, you'll be delinquent and all remedies under this Lease Contract will be authorized.

We may change the terms of this lease in accordance with applicable law, including rent increases and other modifications to the terms of the contract.

HUD FAIR MARKET RENT

This unit must be rented at or below Fair Market Rent levels set forth by HUD each year.

1.4 SECURITY DEPOSIT

The total security deposit at the time of execution of this Lease Contract for all residents in the apartment is **<<Security Deposit Charges>>**, due on or before the date this Lease Contract is signed. We will hold the security deposit for the term of the tenancy and, upon termination of the tenancy, reserve the right to use the security deposit, or portions thereof, to cover any charges related to your, performance of this Lease Contract, including, but not limited to, cleaning, repair of damages, unpaid rent, late fees, and returned check fees.

All rugs and carpets furnished by landlord are to be professionally shampooed prior to vacating unit.

1.5 UTILITIES

Landlord shall be responsible for the following utilities:

Landscaping, Snow Removal, Trash, Cold Water and Sewer.

Tenants are responsible for the following utilities:

Cable/ Internet, Electricity

You'll pay for all other utilities, related deposits, and any charges, fees, or services on such utilities. We do not guarantee or warrant that there will be no interruption of utility service. You shall contact the utility service provider in the event of an interruption of service. If your electricity is ever interrupted, you must use only battery-operated lighting.

TENANTS MUST CALL ALL UTILITIES BELOW TO OPEN AN ACCOUNT WITHIN TWO DAYS OF OCCUPANCY.

- Electricity: Eversource (800) 662-7764
- Cable / Internet: Comcast/XFinity (800) 934-6489

If utilities are not switched over within 5 days from move in a $50.00 fine

1.6 INSURANCE

We do not maintain insurance to cover your personal belongings or personal injury. You assume all liability for personal injury, property damage or loss, and insurable risk. We urge you to get your own insurance for losses to your personal property or injuries due to theft, fire, water damage, pipe leaks and the like.

Additionally, you are required to purchase personal liability insurance. Failure to maintain personal liability insurance is an incurable breach of this Lease Contract and may result in the termination of tenancy and eviction and/or any other remedies as provided by this Lease Contract or state law.

1.7 KEYS AND LOCKS

You will be provided the following keys:

Front door , mailbox

All deadlocks, keys, window latches, doorknobs and any additional device required by local government ordinance, will be in working order when you move in.

You shall be liable for the entire cost all of key and lock replacements. You shall not change the locks or add a deadbolt lock without our written consent.

All keys must be returned to us when you vacate the unit. You will be charged for the cost of new locks and keys that are not returned.

Lock-outs will incur a Re-Entry fee of $25 per incident.

By initialing below, you acknowledge and agree to the terms in Section 1.

X_____
Initial Here

2. Policies and Procedures

2.1 COMMUNITY POLICIES OR RULES

You and all guests and occupants must comply with any written community rules and policies, including instructions for care of our property. Any rules are considered part of this Lease Contract. We may make reasonable changes to written rules, effective immediately, if distributed and applicable to all units in the community.

2.2 RESIDENT SAFETY AND PROPERTY LOSS

You and all occupants and guests must exercise due care for your own and others' safety and security, especially in the use of smoke detectors, keyed deadbolt locks, keyless deadbolts, window latches, and other security or safety devices. You agree to make every effort to abide by the rules and guidelines in this Lease Contact.

Casualty Loss

We're not liable to any resident, guest, or occupant for personal injury or damage or loss of personal property from any cause, including but not limited to: fire, smoke, rain, flood, water and pipe leaks, hail, ice, snow, lightning, wind, explosions, earthquake, interruption of utilities, theft, or vandalism unless otherwise required by law.

Smoke Detectors

The Unit is equipped with smoke and carbon monoxide detectors in accordance with state or local government regulations. You must immediately report smoke-detector malfunctions to us. Neither you nor others may disable smoke detectors. You will be liable to others and us for any loss, damage, or fines from fire, smoke, or water if that condition arises from disabling or damaging the smoke detector or from your failure to replace a dead battery or report malfunctions to us.

Safety and Crime Free

You or any guest or resident under your control, should not engage in any criminal activity in your unit or community.

In case of emergency, fire, accident, smoke or suspected criminal activity, dial 911 or call emergency personnel. You should then contact our representative. Unless otherwise provided by law, we're not liable to you or any guests or occupants for injury, damage, or loss to person or property caused by criminal conduct of other persons, including theft, burglary, assault, vandalism, or other crimes.

2.3 PARKING

Tenants shall be assigned 1 parking spaces to be used for parking.

You will park on the property at your own risk. We may regulate the time, manner, and place of parking cars, trucks, motorcycles, bicycles, boats, trailers, and recreational vehicles by anyone. We may have unauthorized or illegally parked vehicles towed under an appropriate statute. Vehicles are prohibited from parking on the premises if they are inoperable, have no current license, take up more than one parking space, are parked in a marked handicap space without proper handicap insignia, block other vehicles from existing, are parked in a space not dedicated to parking, including, but not limited to, grass, sidewalks, patio, and fire lanes.

2.4 PETS

Tenant is authorized to keep the following pets upon premises:

<<Pet Information>>

Tenant shall be charged a non refundable pet fee of $50.00 per dog, limit to one per unit with authorization.

Pets (including mammals, reptiles, birds, fish, and insects) are allowed only if we have so authorized in writing. You must remove an illegal animal within 24 hours of notice from us, or you will be considered in default of this Lease Contract. We will authorize a service animal for a disabled person. We may require a written statement from a qualified professional, verifying the need for the service animal.

If you or any guest or occupant violates animal restrictions (with or without your knowledge), you'll be subject to charges, damages, eviction, and other remedies provided in this Lease Contract. If an animal has been in the apartment at any time during your term of occupancy (with or without our consent), we'll charge you for de-fleaing, deodorizing, and shampooing.

2.5 LEASE CANCELATION

Lease Breakage Clause

Tenant shall give written notice to Agency of intent to "break lease". Upon receipt of intent, Agency shall begin securing replacement tenants. Tenant shall be responsible for lease and utility payments until the date of replacement tenants move in. Tenants are responsible for lease breakage/re-leasing fee in the amount of ¾ of a full months rent.

Central Falls Realty Home Ownership Clause

Tenants who enter into a buyer agency agreement and purchase a home with Central Falls Realty may break their lease at any time without penalty. Please reach out to Central Falls Realty to start the search for your new home today.

By initialing below, you acknowledge and agree to the terms in Section 2.

X_____
Initial Here

3. Responsibilities

3.1 CONDITION OF PREMISES AND ALTERATIONS

You accept the apartment, fixtures, and furniture as is, except for conditions materially affecting the health or safety of ordinary persons. We disclaim all implied warranties. You shall maintain the premises in good, clean and tenantable condition throughout the tenancy. You agree not to alter, damage, or remove our property, including alarm systems, smoke detectors, furniture, telephone and cable TV wiring, screens, locks, and security devices. You may not paint or make any permanent alteration without our written consent.

All parties acknowledge the unit will be painted. Rolled fresh paint throughout walls

3.2 REQUESTS, REPAIRS, MALFUNCTIONS

Maintenance requests to be made online through your tenant portal.

Maintenance Emergency Contact: Jared #603-312-5901 Ian: 603-534-3066

You shall report any damage or problem immediately upon discovery or you may be held responsible for the cost. You must promptly notify us in writing of: water leaks; electrical problems; malfunctioning lights; broken or missing locks or latches; and other conditions that pose a hazard to the property, or your health, or safety. We will respond in accordance with state law and the Lease Contract to repair or remedy the situation, as necessary. We may turn off equipment and interrupt utilities as needed to avoid property damage or to perform work.

3.3 RIGHT OF ENTRY AND INSPECTIONS

We have the right to enter the premises at all reasonable hours, with proper notice, for the purpose of inspection, responding to your request, making repairs and/or preventative maintenance, pest control, showing to prospective residents, buyers, loan officers or insurance agents, and for any emergency situations that may arise.

3.4 MOVE-OUT

You will give us a written notice with your intent to vacate 30 (thirty) days prior to the date of expiration of the Lease Contract. In such notice, you will include your forwarding address.

Surrender, abandonment, and eviction ends your right of possession for all purposes and gives us the immediate right to: clean up, make repairs in, and relet the apartment; determine any security deposit deductions; and remove property left in the apartment. Surrender, abandonment, and eviction affect your rights to property left in the apartment. Surrender, abandonment, and eviction do not affect our mitigation obligations.

Cleaning

You must thoroughly clean the unit, including doors, windows, furniture, bathrooms, kitchen appliances, patios, balconies, garages, carports, and storage rooms. If you don't clean adequately, you'll be liable for reasonable cleaning charges.

Charges

You'll be liable for the following charges, if applicable: unpaid rent; unpaid utilities; unreimbursed service charges; repairs or other damages, excluding ordinary wear and tear; replacement cost of our property that was in or attached to the apartment and is missing; unreturned keys; missing or burned-out light bulbs; removing or rekeying unauthorized security devices or alarm systems; agreed reletting charges; packing, removing, or storing property removed or stored; removing illegally parked vehicles; animal-related charges; government fees or fines against us for violation (by you, your occupant, or guest) of local ordinances relating to smoke detectors, false alarms, recycling, or other matters; late-payment and returned-check charges, plus attorney's fees, court costs, and filing fees actually paid; and other sums due under this Lease Contract.

Deposit Refund

We'll mail to you at your last known address your security-deposit refund (less lawful deductions) and an itemized accounting of any deductions no later than 30 (thirty) days after the Lease Contract termination and delivery of possession to us.

By initialing below, you acknowledge and agree to the terms in Section 3.

X_____
Initial Here

4. General Clauses

4.1 RELEASE FROM LEASE CONTRACT

Unless you're entitled to terminate this Lease Contract, you won't be released from this Lease Contract for any reason, including, but not limited to, voluntary or involuntary school withdrawal or transfer, voluntary or involuntary job transfer, marriage, separation, divorce, reconciliation, loss of co-residents, loss of employment, bad health, or death.

Military Personnel Clause

You may terminate the Lease Contract if you enlist or are drafted or commissioned and on active duty in the Armed Forces of the United States. You must give us written notice of termination, 30 (thirty) days prior to the termination date. You must provide us proof that you qualify for this limited exception.

Replacements and Subletting

Replacing a resident, subletting, or assignment is allowed exclusively with our written consent.

If we approve a replacement resident, at our option, the replacement resident must sign this Lease Contract with or without an increase in the total security deposit; or the remaining and replacement residents must sign an entirely new Lease Contract.

4.2 DEFAULT BY RESIDENT

You'll be in default if you or any guest or occupant violates any terms of this Lease Contract including but not limited to the following violations: failure to pay rent or other amounts that you owe when due; you or any guest or occupant violates the apartment rules, or fire, safety, health, or criminal laws, or engages in dangerous behavior, regardless of whether or where arrest or conviction occurs; you abandon the apartment; you give incorrect or false answers in rental application or you provide false or fraudulent documentation requested by us; you or any occupant is arrested, convicted, or given deferred adjudication for a felony offense; any illegal drugs or paraphernalia are found in your apartment; you or any guest or occupant engages in any prohibited conduct; or you or any occupant, in bad faith, makes an invalid complaint to an official or employee of a utility company or the government. If you are in default for any reason, we may file a suit for Lease Contract termination after giving you fourteen (14) days written notice of Lease Contract termination. Such notice will state that your Lease Contract will terminate fourteen (14) days of your receipt of the notice, unless the breach is remedied within the fourteen (14) day period.

Holdover

You or any occupant, invitee or guest must not hold over beyond the date contained in your move-out notice to vacate (or beyond a different move-out dated agreed to by the parties in writing). If a holdover occurs, then we shall be entitled for damages for the hold-over period plus any expenses incurred due to the breach of this condition of the Lease Contract.

Other Remedies

If your rent is delinquent, you immediately forfeit all rights to occupy the apartment any longer, and if you have not vacated the unit by the date specified in the Lease Contract termination notice, you are guilty of a misdemeanor. Each day of your unlawful presence in the apartment constitutes a separate offense. We may report unpaid amounts to credit agencies. Upon your default and early move-out, you will pay us any amounts stated to be rental discounts, in addition to other sums due. Upon your default, we have all other legal remedies, including suit for Lease Contract termination, possession, damages, rent, and all other monies due. We may turn any returned checks over to law enforcement officials for prosecution according to law.

4.3 CONTRACT TERMINATION AND DISPUTE

This Lease Contract may only be amended, waived, or terminated by our representatives in writing. Any oral promises, representations or agreements by our representatives shall not be considered legally binding. No action or omission of our representative will be considered a waiver of any subsequent violation, default, or time or place of performance. Our not enforcing or belatedly enforcing written notice requirement, rental due dates, acceleration, liens, or other rights isn't a waiver under any circumstances.

Waiver of Jury Trial

To minimize legal expenses and, to the extent allowed by law, you and we agree that a trial of any lawsuit based on statute common law, and/or related to this Lease Contract shall be to a judge and not a jury.

Force Majeure

We shall be excused from performance of obligations if we are prevented from fulfilling such obligations by an act of God, strikes, epidemics, war, acts of terrorism, riots, or other occurrence, which is beyond our control.

By initialing below, you acknowledge and agree to the terms in Section 4.

X_____
Initial Here

5. Sign and Accept

5.1 ACCEPTANCE OF LEASE

This is a legally binding document. By typing your name, you are consenting to use electronic means to (i) sign this contract (ii) accept lease agreement and addenda. You will receive a printed contract for your records.

X _____
Lessee

_____
Date Signed

X _____
Lessor

_____
Date Signed

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

DRAINAGE ANALYSIS
&
EROSION AND SEDIMENT CONTROL PLAN

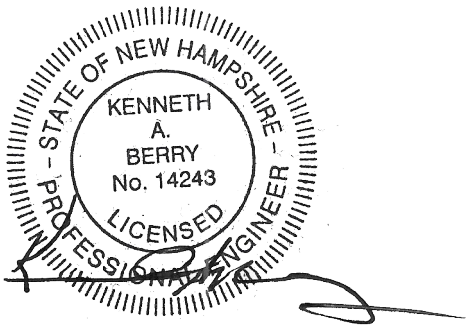
52 OLD ROCHESTER ROAD, DOVER, NH 03820
TAX MAP 40, LOT 25

Prepared for:

Dover Development, LLC
242 Central Avenue
DOVER, NH 03820

Land of

Dover Development, LLC
242 Central Avenue
DOVER, NH 03820



Prepared By

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
603-332-2863

File Number
DB2022-075

July 1, 2024
Revised: March 18, 2025

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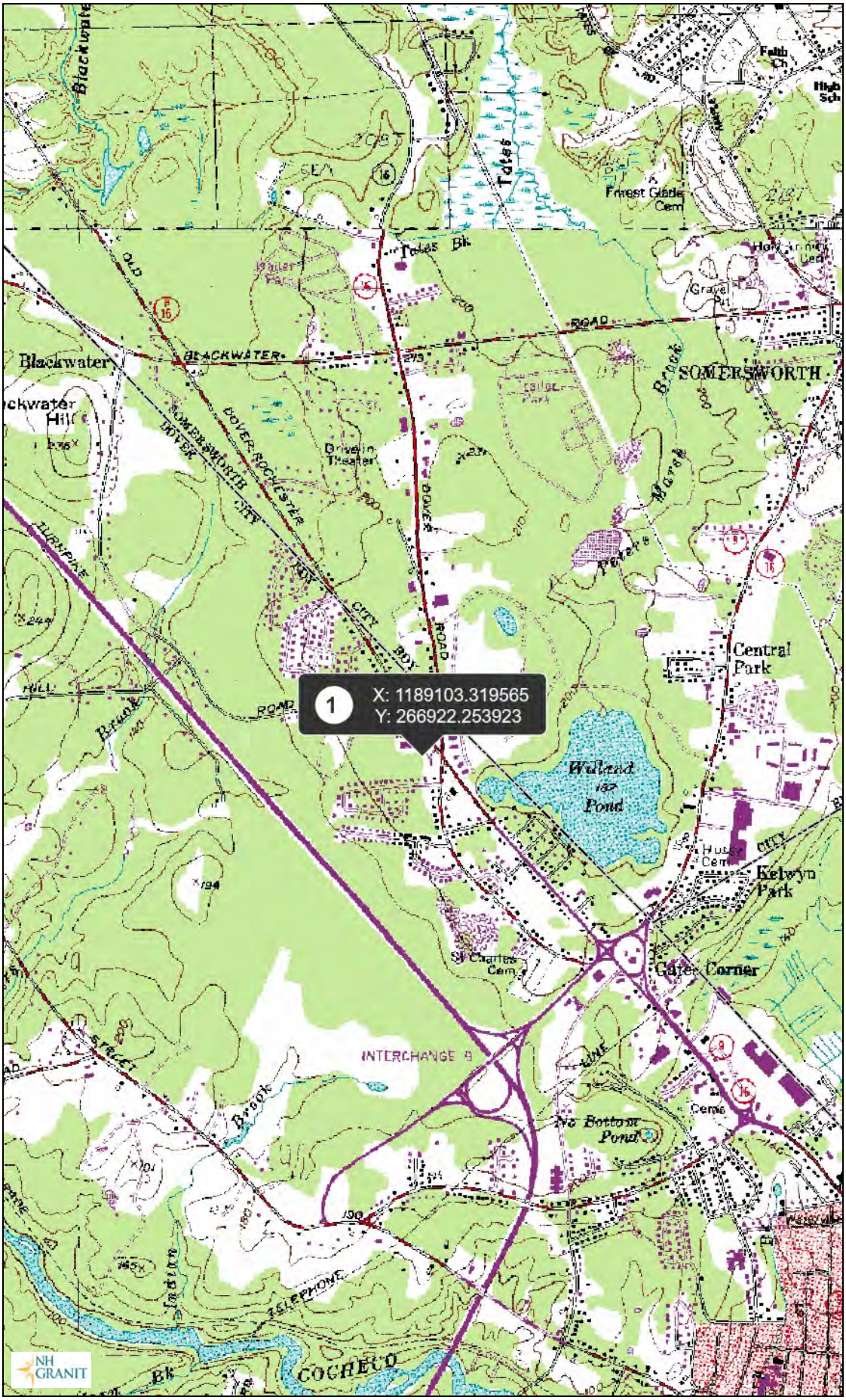
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25 Yr-24 Hr. Full Summary
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Stormwater System Management: Inspection & Maintenance Manual & Plan
Watershed Report Card, 303(d) List, & ORW List
Filtrexx Construction Specifications

Enclosed: W-1 Sheet Existing Conditions Watershed Plan Sheet 1
W-2 Sheet Post Construction Watershed Plan Sheet 2
Erosion and Sediment Control Plan

Map by NH GRANIT



Legend

- State
- County
- City/Town

Map Scale

1: 24,000

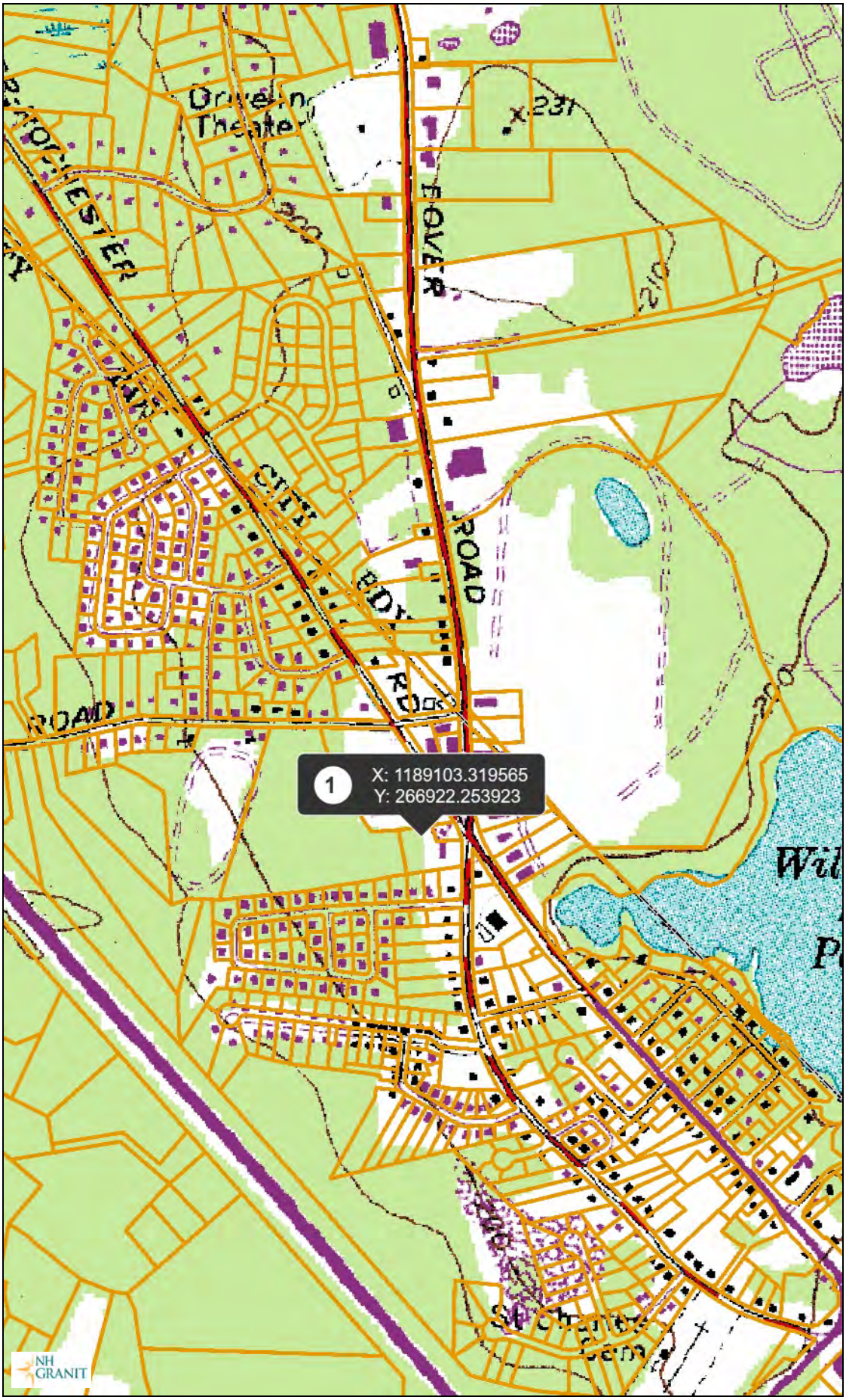
© NH GRANIT, www.granit.unh.edu

Map Generated: 5/5/2023

Notes



Map by NH GRANIT



Legend

- Parcels
- State
- County
- City/Town

Map Scale

1: 10,000

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Map Generated: 5/5/2023

Notes



DESIGN METHOD OBJECTIVES

The owner of Tax Map 40, Lot 25 Dover Development, LLC, is proposing the construction of three mixed-use buildings for total of 44 residential units and 7 commercial units located off of a proposed roadway known as Blazer Drive. The property is currently occupied by a business, apartment, and parking facilities. There is also a detached garage.

An Existing and Proposed Conditions analysis was conducted for the purpose of estimating the peak rate of stormwater run-off from the property and subsequently designing adequate mitigation of drainage. There are two existing 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.) 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. The analysis was conducted using data for; 2 Yr – 24 Hr (3.61”), 10 Yr – 24 Hr (5.43”), 25 Yr -24 Hr (6.85”), 50 Yr – 24 Hr (8.19”), and 100 YR-24 Hr (9.78”) 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 Plan

The existing property consists of one parcel, with an existing business, house and detached garage, and consists of 1.72 acres. There are two subcatchments each flowing to separate off-site nonpoint final reaches. The combined area of the subcatchments and total analysis area being 2.30. There were no wetlands identified on the site. The current use is supported by municipal water and sewer. The grounds consist of landscaping, parking and access area, open lawn area and woods. It appears that the majority of the existing parcel has been disturbed at times in the past. Abutting property to the west and north are hydraulically isolated from the locus parcel. To the north is a constructed berm adjacent to their parking lot and fence. To the west the properties are so flat that there

is no runoff movement across the property line. The two points of discharge, one at the street and one along the property line, are to the south.

The soil mapping off site was based on USDA / NRCS Websoil and is all Windsor Loamy Sand with slopes between 0 to 3 percent. (WdA). Onsite soils were mapped by John P. Hayes III, CSS #87 and shown on the Site Specific Soils Map and included report.

The onsite soils are solely comprised of Merrimac (10), which is classified as Hydrologic Soil Group (HSG) A with a portion of that soil being Udorthents derived from Merrimac (400). See Site Specific Soils Report prepared by John P. Hayes III. Off-site soils consist of WdA – Windsor loamy sand, which is classified as Hydrologic Soil Group A, based on the USDA, NRCS Websoil.

Wetland Investigation: The project site was reviewed for Wetlands by Deidra L. Benjamin, CWS based on the following standards. 1. Regional supplement to the Corps of Engineers Wetland Delineation Manual, Northcentral and Northeast Region, (Version 2.0) dated January 2012, by U.S. Army Corps of Engineers 2. Field Indicators of Hydric Soils in the United States, A Guide For Identifying and Delineating Hydric Soils, Version 8.0 United States Department of Agriculture dated in 2016. 3. National Weland Plan List (Current Version). No wetlands were found on site

Soil Investigation: The soils were analyzed by John P. Hayes III, CSS and his report is included with this narrative. Dated November 29, 2022 and amended December 5, 2022. The Site Specific Soil Survey (S.S.S.S.) was conducted in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standard for New Hampshire and Vermont, Special Publication #3, Version 7.0 dated July 2021 published by the Society of Soil Scientist of Northern New England. Site-Specific Soil Map Units identified are taken from the New Hampshire State-Wide Numerical Soils Legend, Issue #10, Dated January 2011. The Hydrological Soil Groups for each of the soil series was determined using SSSNNE Publication No. 5, Ksat Values for New Hampshire soils, dated September 2009. Erodibility (K) values were determined by BS&E based on the EnviroCert International Inc. CPESC Manual and other USDA / NRCS Public documents and Websoil. Eleven test pits were conducted by John P. Hayes III, and located by a survey field crew utilizing RTK / GPS oriented to the boundary survey traverse.

Watershed Investigation: The surface water runoff from the two subcatchments eventually discharge to two separate watersheds: Dover MS4, Willand Pond, and the Middle Salmon Falls River to the east, and Indian Brook and the Lower Cocheco River to the west. See Attached Watershed Report Cards.

Receiving Waters: **Willand Pond** (NHLAK600030405-03) Impaired by
Mercury, TMDL #33883, New England Regional Mercury TMDL
Escherichia coli, 58 NH Bacteria Impaired Waters, TMDL #40665
Dissolved oxygen saturation, Non-ORW, Low Priority 2017
Non-Native Aquatic Plants, Non-ORW

Other flow regime alterations, Non-ORW
Oxygen, Dissolved, Non-ORW, Low Priority, 2017
pH, Non-ORW, Low Priority, 2017

Receiving Waters: **Indian Brook** (NHRIV600030608-06) Impaired by
Mercury, TMDL #33883, New England Regional Mercury TMDL
Escherichia coli, NH Statewide Bacteria Impaired Waters TMDL #39272
Chloride, Non-ORW

Final Reach #100:

Subcatchment #1 consists of the frontage of the parcel, draining generally to the south along the right of way, over the property line to a point discharge reach analyzed as **Final Reach #100**. The discharge from this point would drain to a Dover Municipal Catch Basin #3490, MS4, which then discharges under Old Rochester Road, New Rochester Road and into Willand Pond.

Final Reach #200:

Subcatchment #2 is made up of the majority of the analysis area including most of lot 25 and abutting lot 24 where the surface water runoff drains generally to the southern property line, a non-point reach is analyzed as **Final Reach #200**. Any surface water runoff from this discharge would pass through the Spaulding Turnpike drainage system and potentially into the Indian Brook and Lower Cochecho River.

2.0 Proposed Conditions Analysis:

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

The proposed conditions analysis consists of nineteen new subcatchments in addition to the two existing subcatchments which still drain directly to the two final analysis points preserved from the existing analysis.

The stormwater from the proposed site is treated in incremental Low Impact Development (LID) stormwater practices, including porous pavement with infiltration. The project also includes porous brick paver sidewalks and infiltration sumps. The paver sidewalks have not been modeled in the proposal; with the assumption the sidewalks drain to the adjacent porous pavement area. This provides an additional factor of safety to the stormwater design. The infiltration sumps are modeled and are referred to in Section 2.0.

Final Reach #100:

Subcatchment #1 is comprised of the remainder of the frontage of the parcel reduced in size. The Time of Concentration is similar to the existing conditions but reduced in time by a small factor. Runoff still flows to **Final Reach #100** as in the existing analysis.

Final Reach #200:

Subcatchment #2 encompasses the small remaining land area between the southern side of the development area and the southern property line. The amount of runoff which leaves the site is considerably decreased at all events due to the decrease in size of the subcatchment. The southern property line is preserved as **Final Reach #200**.

Site Drainage:

The drive aisle is proposed to be conventional pavement and all of the parking spaces are proposed to be porous pavement. Each of the parking areas are modeled separately as a subcatchment (**Subcatchments 21-28**) and a pond (**Ponds 201-208**). The roof sections of the three buildings are modelled separately (**Subcatchments 21a-28a**) and routed to the corresponding pond. **Ponds 101-105P** are small Infiltration Sumps located within grassed areas throughout the development. **Subcatchments 11-15** are the land area draining to those ponds respectively. These ponds are sized to completely infiltrate the 50YR storm-event runoff while minimizing impact on the topography of the proposed development.

Subcatchment #11 consists of the land area between **Subcatchments #24 & #25** and extending along the northern portion of the western property line. This subcatchment contributes runoff to **Infiltration Sump #101 (Pond 101P)** situated in the grassed area between **Ponds #204 & #205**.

Subcatchment #12 is comprised of the land area on the northern and eastern sides of the northernmost building and extends to the northern and eastern property lines abutting lot 24. Runoff drains inward to **Infiltration Sump #102 (Pond 102P).**

Subcatchment #13 is largely made up of offsite land on and surrounding Lot 24 extending southwest from Old Rochester Road onto the locus parcel along the southern property line of Lot 24. Runoff flows general southwest to **Infiltration Sump #103 (Pond 103P)** located near the property line and overflows to **Porous Pavement #208 (208P)** during the 100 year storm event.

Subcatchment #14 encompasses a small portion of land between the commercial building and the easternmost and northern property lines. Runoff flows in an easterly direction to **Infiltration Sump #104 (Pond 104P)** and overflows to **Porous Pavement #208 (208P)** during the 100 year storm event.

Subcatchment #15 consists of a small land area behind the southern building extending north along the rear portion of the southeast corner of the building and northeast to the proposed sidewalk. Runoff flows generally south and southwest to **Infiltration Sump #105 (Pond 105P)** and overflows to **Final Reach #200** during the 100-year storm event.

Subcatchments #21 & #21a encompass the outer side of the first turn in Blazer Drive and the parking area and sidewalk near the northeast corner of the southern building as well as that corner of the building. Runoff is directed toward the porous paved parking area (**Pond #201P**) where it is treated and infiltrated.

Subcatchments #22 & #22a are comprised of the paved roadway, porous paved parking area, and landscaped walkway in front of the southern building as well as the roof area of the northeast portion of the building. Runoff is directed toward the porous paved parking area (**Pond #202P**) where it is treated and infiltrated.

Subcatchments #23 & #23a are made up of the porous parking area and sidewalk along the west side of the southern building as well as the western side of the roof building. Runoff is directed toward the porous parking area (**Pond #203P**) where it is treated and infiltrated.

Subcatchments #24 & #25 encompass the paved drive aisle and porous parking areas south and north of **Subcatchment #11** respectively. Each subcatchment is graded to the west to direct runoff to its respective porous parking area (**Ponds #204P & #205P**) where runoff is treated and infiltrated.

Subcatchments #26 & #26a consist of the porous parking area and sidewalk along the west side of the northern building as well as the northern side of the roof of the building. Runoff is directed toward the porous parking area (**Pond #206P**) where it is treated and infiltrated.

Subcatchment #27 is comprised of the northern portion of Blazer Drive including the porous parking area to the east and the landscaped walkway areas in front of the northern building. **Subcatchments #27a** is the front portion of the northern building roof area. Runoff is directed to the porous parking area along Blazer Drive where it is treated and infiltrated.

Subcatchment #28 is comprised of the eastern portion of Blazer Drive including the porous parking area to the south and the landscaped walkway areas adjacent to the commercial building. **Subcatchment #28a** is the commercial building roof area. Runoff is directed to the porous parking area along Blazer Drive where it is treated and infiltrated.

Summary

The Porous Parking Areas capture the majority of the runoff from the proposed drive aisles, parking areas, and roof area. This runoff is infiltrated after treatment through the filter course of the pavement. The Infiltration Sumps capture and infiltrate the majority of the balance of the site. The peak rate of runoff and volume of runoff are reduced in the five storm events, at both final reaches, comparing pre-conditions to post-conditions.

3.0a Stormwater Treatment:

Surface water runoff from the development area is being treated by porous pavement w/ infiltration. Time of Concentration for porous pavement practices is a standard 800 minutes direct entry when using a 41 inch base course according to UNH Stormwater Center. In these practices we are using a 30 inch base course, resulting in a scaling of the Tc. in proportion to the course thickness of 585 minutes, then apply a factor of safety of two (2). We have determined a 293 minute time of concentration is proportionately appropriate. Water Quality Volume calculations based on the Alteration of Terrain model are included in Appendix 3 for the modeled practices.

3.0b Stormwater Infiltration:

Groundwater recharge volume requirements are satisfied by the five Infiltration Sumps (Ponds #101-#105), the eight porous pavement areas (Ponds #201-#208), and porous brick pavers. See Infiltration Feasibility Study also prepared by Berry Surveying & Engineering and published on the same day. An infiltration rate of 3 inches per hour has been used in the drainage analysis utilizing infiltration rates provided from the KSat NH Manual.

3.1 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	0.53	1.14	1.65	2.14	2.74
	Proposed	0.36	0.70	0.97	1.23	1.54
Final Reach #200	Existing	0.02	0.42	1.11	1.97	3.16
	Proposed	0.00	0.01	0.03	0.05	0.18

ANALYSIS COMPONENT: VOLUME (Acre Feet)

		2 Yr	10 Yr	25 Yr	50 Yr	100 Yr
Final Reach #100	Existing	0.053	0.110	0.158	0.206	0.265
	Proposed	0.031	0.060	0.085	0.108	0.137
Final Reach #200	Existing	0.015	0.087	0.174	0.274	0.411
	Proposed	0.000	0.001	0.003	0.004	0.009

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 and Volume 3, Erosion and Sediment Controls During Construction (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. 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 Inspection & Maintenance Manual which has been written specifically for this project and available to the owner.

As this proposed site redevelopment disturbs greater than one acre of land, a Notice of Intent is required to be submitted to the US EPA. This project will 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.

4.1 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 SiltSoxx (or approved equal), and Erosion Control Mix Berm. It is noted that the City of Dover prefers the mulch berms, as well as the Filtrexx product.

4.2 Porous Asphalt Pavement & Infiltration Bed

Description: Permeable pavement consists of a porous surface, base, and sub-base materials which allow penetration of runoff through the surface into underlying soils. The surface materials for permeable pavement can consist of paving blocks or grids, pervious asphalt, or pervious concrete. These materials are installed on a base which serves as a filter course between the pavement surface and the underlying sub-base

material. The sub-base material typically comprises a layer of crushed stone that not only supports the overlying pavement structure, but also serves as a reservoir to store runoff that penetrates the pavement surface until it can percolate into the ground. See SWM Volume 2, 4-3.4e, Treatment Practices, Permeable Pavement, page 118.

Construction Considerations: All other construction activities should be completed before the sub-base and pavement layers are added to the proposed porous pavement areas to avoid the tracking of material onto the porous pavement. Any material tracked must be vacuumed from the pavement. Prior to the placing of reservoir material, a practice bottom inspection by the Design Engineer after the base has been scarified. The first load of stone for the reservoir will be inspected.

Maintenance Considerations: Provision of signs is required (noted on site plan), to indicate locations of permeable pavements and the applicability of special maintenance measures. No winter sanding of permeable pavements is permitted. Minimize application of salt for ice control. Never reseal or repave with impermeable materials. Inspect annually for pavement deterioration or spalling. Monitor periodically to ensure that the pavement surface drains effectively after storms. For porous asphalt and concrete, clean periodically (2-4 times per year) using a vacuum sweeper. Power washing may be required prior to vacuum sweeping, to dislodge trapped particles. For interlocking paving stones, periodically add joint material to replace lost material. For seeded grid systems, periodic reseeding of grass pavers to fill in bare spots. Major clogging may necessitate replacement of pavement surface, and possibly filter course and sub-base course. See the Stormwater Management Inspection and Maintenance Manual for more details.

4.3 In-Ground Infiltration Basin (Sumps)

Description: Infiltration sumps are impoundments designed to temporarily store runoff, allowing all or a portion of the water to infiltrate into the ground. An infiltration sump is designed to completely drain between storm events. In a properly sited and designed infiltration basin, water quality treatment is provided by runoff pollutants binding to soil particles beneath the basin as water percolates into the subsurface. Biological and chemical processes occurring in the soil also contribute to the breakdown of pollutants. Infiltrated water is used by plants to support growth or it is recharged to the underlying groundwater.

Maintenance Considerations: Removal of debris from inlet and outlet structures. Removal of accumulated sediment. Inspection and repair of outlet structures and appurtenances. Inspection of infiltration components 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. Periodic mowing of embankments. Removal of woody vegetation from embankments. Inspection and repair of embankments and spillways. If an infiltration 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 infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration trench.

4.4 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		
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 be used to stabilize all 2:1 slopes.

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.

4.5 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 can be applied. **Calcium chloride shall not be used for dust control as this property is within the Secondary Groundwater Protection Zone.**

4.6 Inlet Protection / Storm Drain Inlets

Storm drain inlet protection will be installed per the Erosion & Sediment Control Details as a sediment barrier installed around a storm drain inlet, catch basin, or curb inlet to reduce sediment intrusion into a system after it has been constructed and existing catch basins. These are to be constructed in accordance with the Erosion & Sediment Control Details, Sheet E-101 and maintained after every rain event.

At a minimum, you must comply with following (EPA CGP Part 2.1.2.9.b) “Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.”

It is vital in the construction of this site that the existing MS4 drainage system not be impacted by sediment. See also sediment track out below.

4.7 Sediment Track-Out / Stabilized Construction Entrance / Exit

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-inch angular aggregate with engineering fabric underlaid, 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 Construction Details Plan. The Construction Exit will be maintained in a condition that will prevent tracking of sediment onto the public highway. When the control pad becomes ineffective, the stone should be removed along with the collected soil material, regraded on site, and stabilized. A plan view and profile are shown on the Construction Details Plan in E-101 Erosion & Sediment Control Details.

Off-site Vehicle Tracking: A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept every other week or as necessary to remove any excess mud, dirt or rock tracked from the site. After the binder pavement has been placed, any construction activity that causes the tracking of sediments will also result in street sweeping / vacuuming. Pavement should be swept prior to surface pavement and periodically to remove materials. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

At a minimum, you must provide for maintenance that meets the following (EPA CGP Part 2.1.2.3.d) "Where sediment has been tracked-out from your site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water."

4.8 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 from 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 Part 2.1.2.4d) "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."

4.9 Dewatering Practices

Dewatering practices are not known to be required on this site. If during construction this becomes required, an addendum will be published specific for the requirements. As a general rule, ground water that needs to be removed from an excavation will be pumped to a sediment basin or a storm drain inlet prior to discharge from the site. (See Stormwater Pollution Prevention Plan (SWPPP))

At a minimum, you must comply with following (EPA CGP Part 2.1.3.4) "With backwash water, either haul it away for disposal or return it to the beginning of the treatment

process; and replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications."

Regarding dewatering practices in the State of New Hampshire, specifically see Construction General Permit Section 9.1.2 NHR12000 State of New Hampshire and "Clarification of Section 9.1.2 … and other New Hampshire specific information for the U.S. EPA 2012 NPDES Construction General Permit (CGP), May 3, 2012"

Please be advised that should dewatering become required, the EPA CGP 2022 requires daily inspections, monitoring, and reporting quarterly to the agency.

4.10 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).

4.11 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 required. 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. Construct Infiltration Sumps and stabilize 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 (CESSWI), 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.

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)

4.13 Inspection and Maintenance Schedule

Sediment control measures will be inspected during and after storm events to ensure that the practice still has integrity and is not allowing sediment to pass. Depending on SWPPP criteria, all controls will be inspected once every 7 days and after storm events. Inspection reports must be submitted to City of Dover Community Services Department. Sediment build-up in swales will be removed if it is deeper than six inches. See also Stormwater System Operation: Inspection & Maintenance Manual published separately also by Berry Surveying & Engineering. See also Storm Water Pollution Prevention Plan (SWPPP) and / or Stormwater Management Plan (SWMP) developed in accordance with EPA NPDES or City of Dover requirements.

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 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 project specific notes, E&SC Plan, 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. There are no wetlands located on the site.

[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 Porous Pavement and Infiltration Sump designs. 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 the note added to E&SC Plan, Note 8, regarding storage facilities. Prior to construction, a Stormwater Pollution Prevention Plan (SWPPP) 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 by the use of porous pavement.

[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 porous pavement with infiltration for treatment. The amount of untreated impervious surface has been decreased significantly in the proposal.

(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.

The following guidance has been utilized from the Pollutant Removal Efficiencies published by the UNH Stormwater Center BMP Performance Curves (2023):

***Porous (Permeable) Pavement >75' from surface water**:*

- *Total Suspended Solids (TSS) reduction of 97%*
- *Total Nitrogen (TN) reduction of 79%*
- *Total Phosphorous (TP) reduction of 78%*

[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 3.3 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 3.3 of this document, for this demonstration at all final reach.

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

An Infiltration Feasibility Study is attached as a separate document within the drainage binder. The infiltration rate is determined via methodology from Env-Wq 1504.14.

[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. The single grassed conveyance swale has a minimum grassed contributing area.

[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. It has been determined by topographic survey and on-site observations that with minor exception, off-site runoff does not enter onto the locus parcel.

[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 4.4 Vegetative Stabilization, of this narrative, for BMP plantings and stabilization seeding descriptions. The applicant is following USDA NRCS seeding recommendations.

(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 has been met with the proposed design.

[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 Erosion & Sediment Control Plan, 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. See Erosion & Sediment Control Plans, 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. See Erosion & Sediment Control Plan, 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 constrained by the property lines and development objectives. Low Impact Development practices have been implemented and landscaping steps proposed to mitigate the level of development. See also Erosion & Sediment Control Plan Note #10C.

[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.

[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.

Please find Erosion & Sediment Control Plans, Note #10B.

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

No wetlands exist on the subject parcel.

[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.

Please find Erosion & Sediment Control Plan. There is no surface water body within 100' of the site.

[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.

Please find Erosion & Sediment Control Plan, Note #10d, 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.

Please see Erosion and Sediment Control Plan, Note #10D, 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. See Erosion and Sediment Control Plan, Note #7.

(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. See Erosion and Sediment Control Plan, Note 10E.

[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.

See Erosion & Sediment Control Plan, Note #10E.

[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.

See Erosion & Sediment Control Plan, Note #10E.

[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.

See Erosion & Sediment Control Plan, Note 10G.

[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.

See Erosion & Sediment Control Plan, Note 10H.

(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. This is noted on the Erosion & Sediment Control Plan, note 10I.

[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 4.4 and 4.11.

[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 porous pavement BMPs 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 4.11 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, steep slopes, or other sensitive natural areas that would require a 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 #4) 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 #4).

[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.

The following guidance has been utilized from the Pollutant Removal Efficiencies published by the UNH Stormwater Center BMP Performance Curves (2023):

***Porous (Permeable) Pavement >75' from surface water**:*

- *Total Suspended Solids (TSS) reduction of 97%*
- *Total Nitrogen (TN) reduction of 79%*
- *Total Phosphorous (TP) reduction of 78%*

Given that the porous pavement will not have underdrains and the areas draining to the porous pavement will not discharge any runoff off site, these estimates seem conservative

[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 seven porous pavement areas with infiltration.

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

Porous Pavement and infiltration sumps BMPs are 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 demonstrating compliance with the 2-100YR 24Hr storm events, Section 3.1. The descriptions of subcatchments, ponds, and final Reaches are in Section 2.

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

Please see the attached Infiltration Feasibility Study. Discussion on Infiltration Rates is provided is section 3.0b.

[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.

There is no increase in post-development runoff volume due to the infiltration capabilities of the proposed porous pavement.

[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 4.14 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.

(g) 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 Plans 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 #29 of project specific notes, sheet #2.

5.0 CONCLUSION

Peak rates of runoff flow and volume are reduced in the post-construction analysis / condition, as compared to the pre-construction peak rates of runoff flow at **Final Reach #100 and Final Reach #200** due to the installation of LID devices. This reduction occurs during the 2 Yr, 10 Yr, 25 Yr, 50 Yr, and 100 Yr/24 Hour extreme storm events due to the infiltration of the porous pavement treatment, and the infiltration sumps. 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 2-100 year, 24-hour post-development storm volumes have not increased over the pre-development volume at both final reaches.

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 (80,150 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 operation in accordance with 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
Principal - President

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

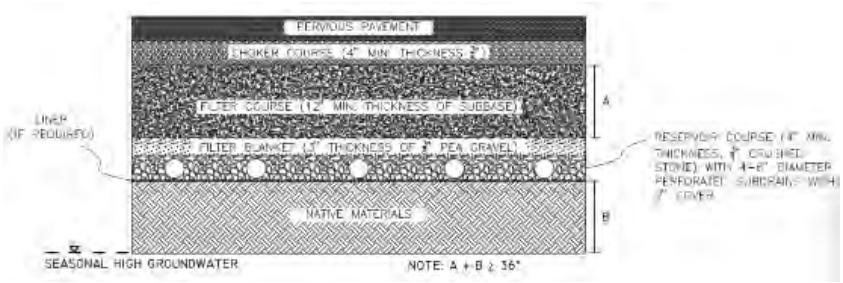
Kevin R. Poulin, PE
Design Engineer

Porous Pavement Factsheet

Porous Pavement consists of a porous surface, base, and sub-base materials which allow penetration of runoff through the surface into underlying soils. The surface materials for porous pavements can consist of paving blocks or grids, pervious asphalt, or pervious concrete. These materials are installed on a base which serves as a filter course between the pavement surface and the underlying sub-base material. The sub-base material typically comprises a layer of crushed stone that not only supports the overlying pavement structure, but also serves as a reservoir to store runoff that penetrates the pavement surface until it can percolate into the ground. General design specifications for porous pavement systems are provided in the most recent version of *The New Hampshire Stormwater Manual, Volume 2: Post-Construction Best Management Practices Selection and Design*.

Sample Design

Profile View



Examples images from the *New Hampshire Stormwater Manual, Volume 2*, p. 120

Pollutant Export Rate by Land Use[1]

Source Category by Land Use	Land Surface Cover	P Load Export Rate[1] (lbs./acre/year)	N Load Export Rate[2] (lbs./acre/year)
Commercial (COM) and Industrial (IND)	Directly connected impervious	1.78	15
Multi-Family (MFR) and High-Density Residential (HDR)	Directly connected impervious	2.32	14.1
Medium-Density Residential (MDR)	Directly connected impervious	1.96	14.1
Low-Density Residential (LDR) - "Rural"	Directly connected impervious	1.52	14.1

[1] From NH Small MS4 General Permit, Appendix F

General Equations

Physical Storage Capacity: Depth of Runoff * Drainage Area
Cost: Physical Storage Capacity * Cost Index * Adjustment Factor[1]
Yearly Pollutant Removal: Pollutant Load Export Rate * Drainage Area * Efficiency

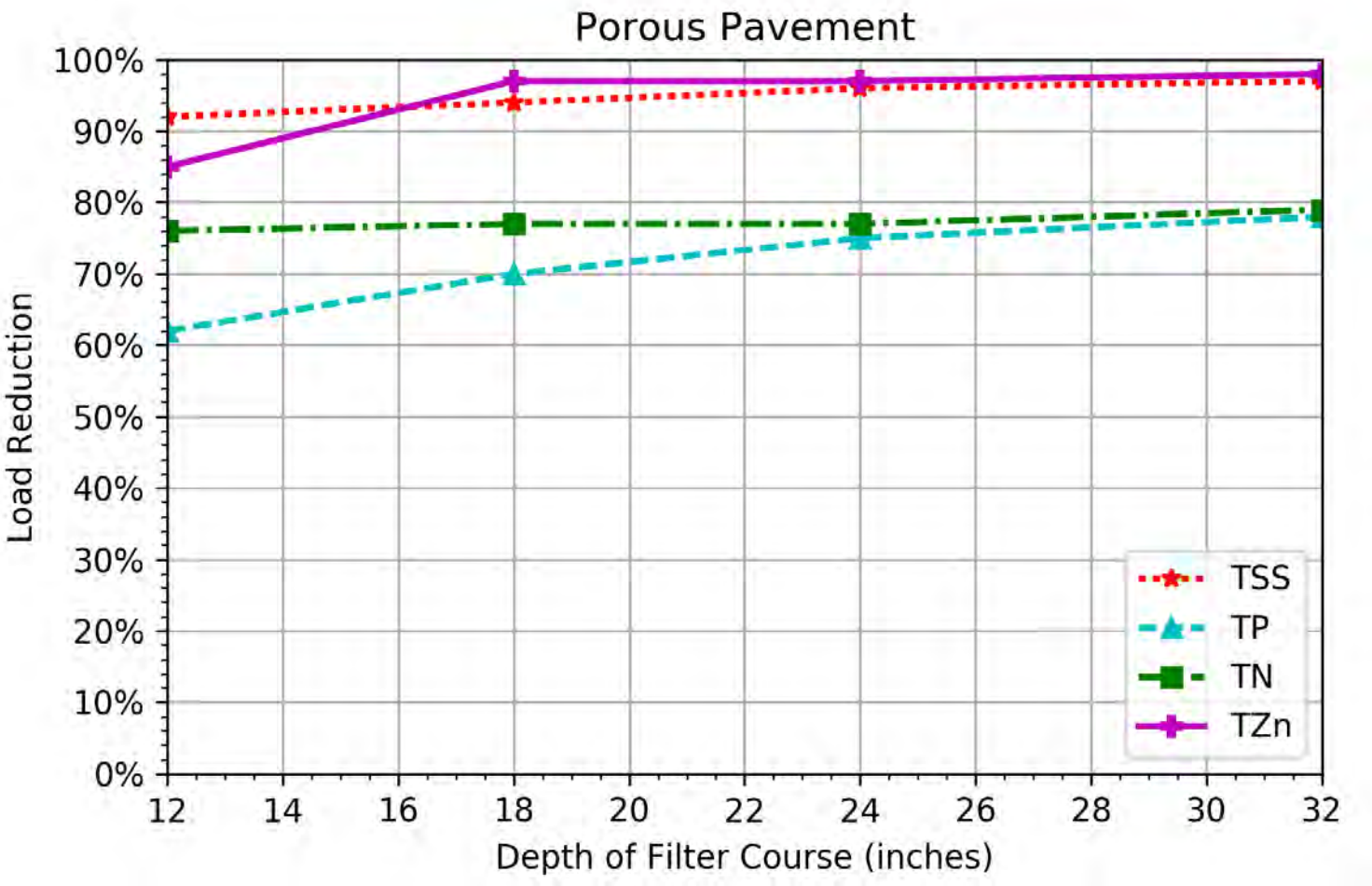
Cost (2023)[1,2]

	Materials and Installation Cost ($/ft^3)		Design Cost ($/ft^3)		Total Cost ($/ft^3)	
	Porous Asphalt	Porous Concrete	Porous Asphalt	Porous Concrete	Porous Asphalt	Porous Concrete
Rural	4.13	14.03	2.22	7.55	6.35	21.58
Mixed	8.26	28.05	4.45	15.11	12.70	43.16
Urban	12.38	42.08	6.67	22.66	19.05	64.74

[1] EPA Memorandum "Methodology for developing cost estimates for Opti-Tool." Februrary 20, 2016
[2] Converted from 2010 to 2023 dollars using U.S. Department of Labor (USDOL). (2012). Bureau of Labor Statistics consumer price index inflation calculator. http://www.bls.gov/data/inflation_calculator.htm

Prepared By:
University of New Hampshire
Stormwater Center
Durham, NH
www.unh.edu/unhsc
February 2023

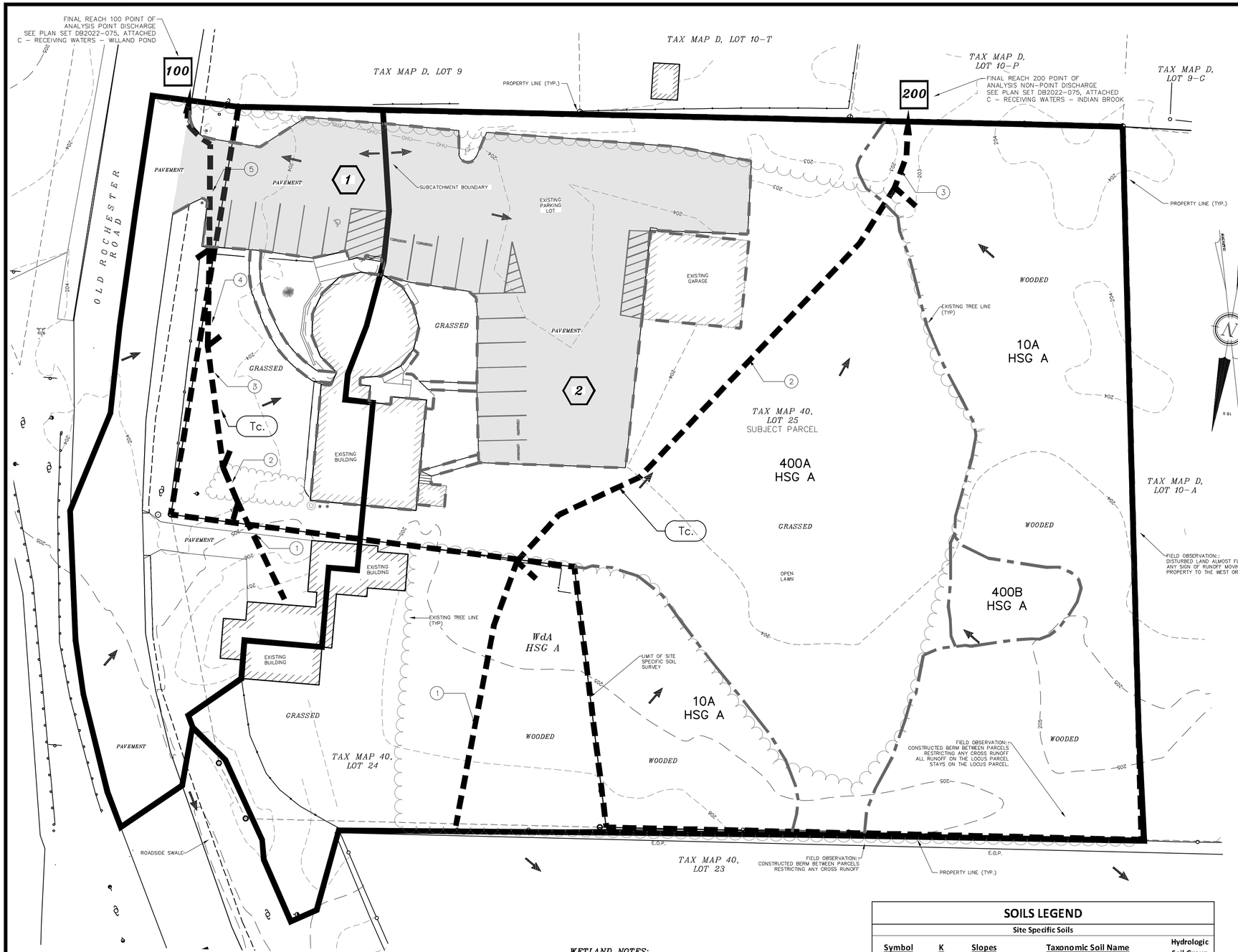
BMP Performance Curve for Porous Pavement

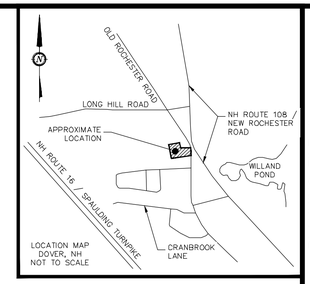


Porous Pavement BMP Performance Table				
BMP Capacity: Depth of Filter Course Area (inches)	12	18	24	32
Cumulative TSS Phosphorus Load Reduction	92%	94%	96%	97%
Cumulative Phosphorus Load Reduction	62%	70%	75%	78%
Cumulative Nitrogen Load Reduction	76%	77%	77%	79%
Cumulative Zinc Phosphorus Load Reduction	85%	97%	97%	98%

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





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT GROUP, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING DRAINAGE WATERSHED CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN SUMMER OF 2022.

6.) 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:

- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- LIMIT OF SITE SPECIFIC SOIL SURVEY MAPPING
- SOIL LINE
- 10A — SOIL SERIES
- NRCS SOIL LINE
- WdA — NRCS SOIL LABEL
- LIMIT OF WATERSHED/SUBCATCHMENT
- TIME OF CONCENTRATION PATH
- FLOW REACH
- S.C.R.D. — STRAFFORD COUNTY REGISTRY OF DEEDS
- TYP. — TYPICAL
- FND — FOUND
- TBR — TO BE REMOVED
- FLOW ARROW

SYMBOLS LEGEND:

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

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

OFF-SITE SOILS:

WdA – WINDSOR, LOAMY SAND 0 – 3% SLOPES

SEE: USDA-NRCS WEBSOIL

SOILS LEGEND

Site Specific Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
10		A	Merrimac	A
400		A,B	Udorthents	A

NRCS Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
Wd		A	Windsor Loamy Sand	A

Slopes: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25- 50% F = 50%+
Denominators: /P = Poorly Drained /VP = Very Poorly Drained /Rk = Rocky

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN. IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

STATE OF NEW HAMPSHIRE — JOHN P. HAYES III — 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

PLANNING FILE #

REVISION	DATE	DESCRIPTION

SWPPP EPA SITE MAP (EXISTING)

W-1 EXISTING WATERSHED CONDITIONS PLAN

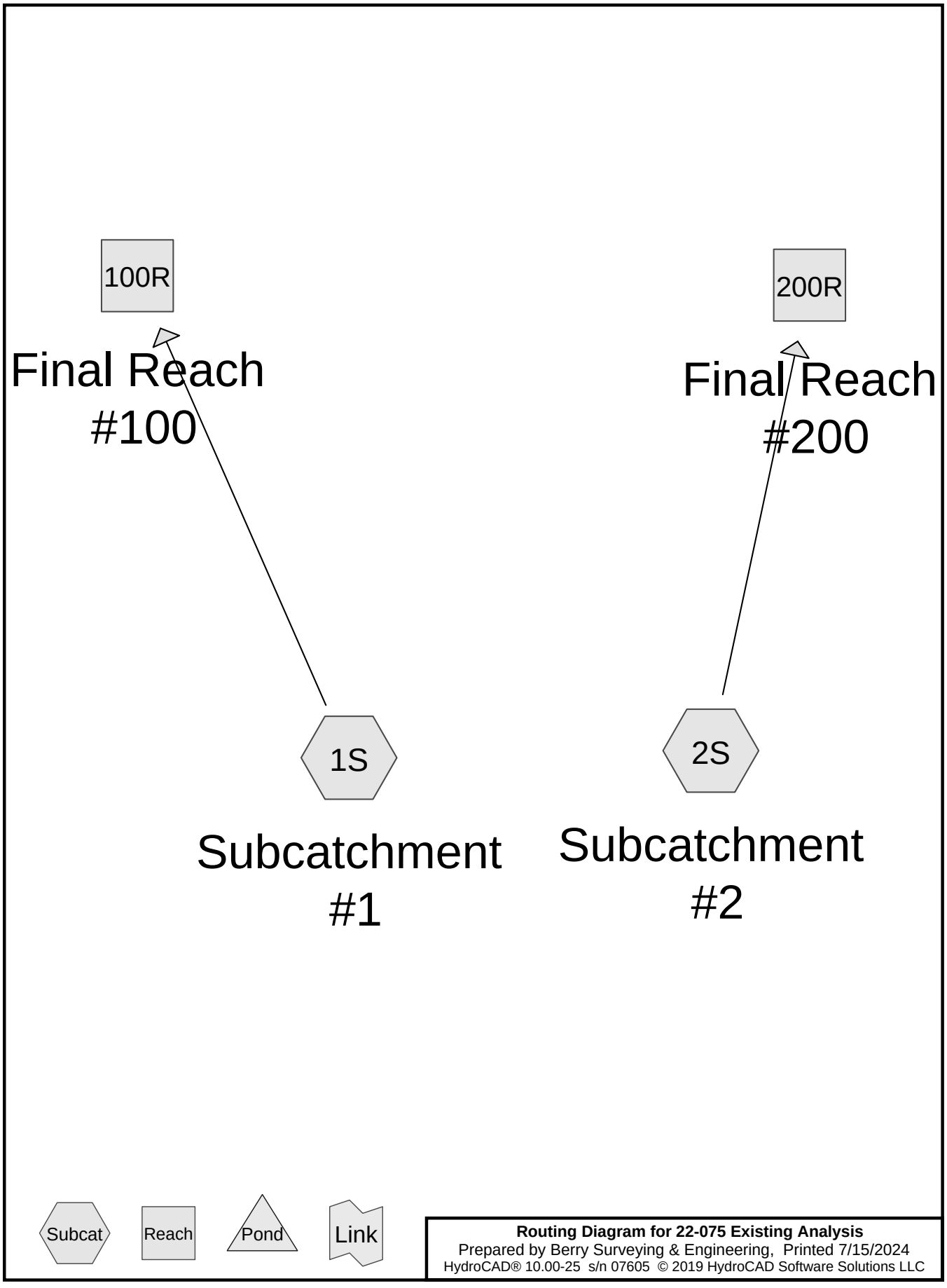
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE — KENNETH A. BERRY — No. 14042 — LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



Routing Diagram for 22-075 Existing Analysis
Prepared by Berry Surveying & Engineering, Printed 7/15/2024
HydroCAD® 10.00-25 s/n 07605 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.898	39	>75% Grass cover, Good, HSG A (1S, 2S)
0.013	96	Gravel surface, HSG A (1S)
0.453	98	Paved parking, HSG A (1S, 2S)
0.125	98	Roofs, HSG A (1S, 2S)
0.804	30	Woods, Good, HSG A (1S, 2S)
2.293	**51**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.293	HSG A	1S, 2S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.293		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.898	0.000	0.000	0.000	0.000	0.898	>75% Grass cover, Good	1S, 2S
0.013	0.000	0.000	0.000	0.000	0.013	Gravel surface	1S
0.453	0.000	0.000	0.000	0.000	0.453	Paved parking	1S, 2S
0.125	0.000	0.000	0.000	0.000	0.125	Roofs	1S, 2S
0.804	0.000	0.000	0.000	0.000	0.804	Woods, Good	1S, 2S
2.293	**0.000**	**0.000**	**0.000**	**0.000**	**2.293**	**TOTAL AREA**	

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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>3.90"
Flow Length=191' Tc=15.9 min CN=74 Runoff=1.65 cfs 0.158 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>1.16"
Flow Length=320' Tc=26.8 min CN=45 Runoff=1.11 cfs 0.174 af

Reach 100R: Final Reach #100 Inflow=1.65 cfs 0.158 af
Outflow=1.65 cfs 0.158 af

Reach 200R: Final Reach #200 Inflow=1.11 cfs 0.174 af
Outflow=1.11 cfs 0.174 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.332 af Average Runoff Depth = 1.74"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 ac

Summary for Subcatchment 1S: Subcatchment #1

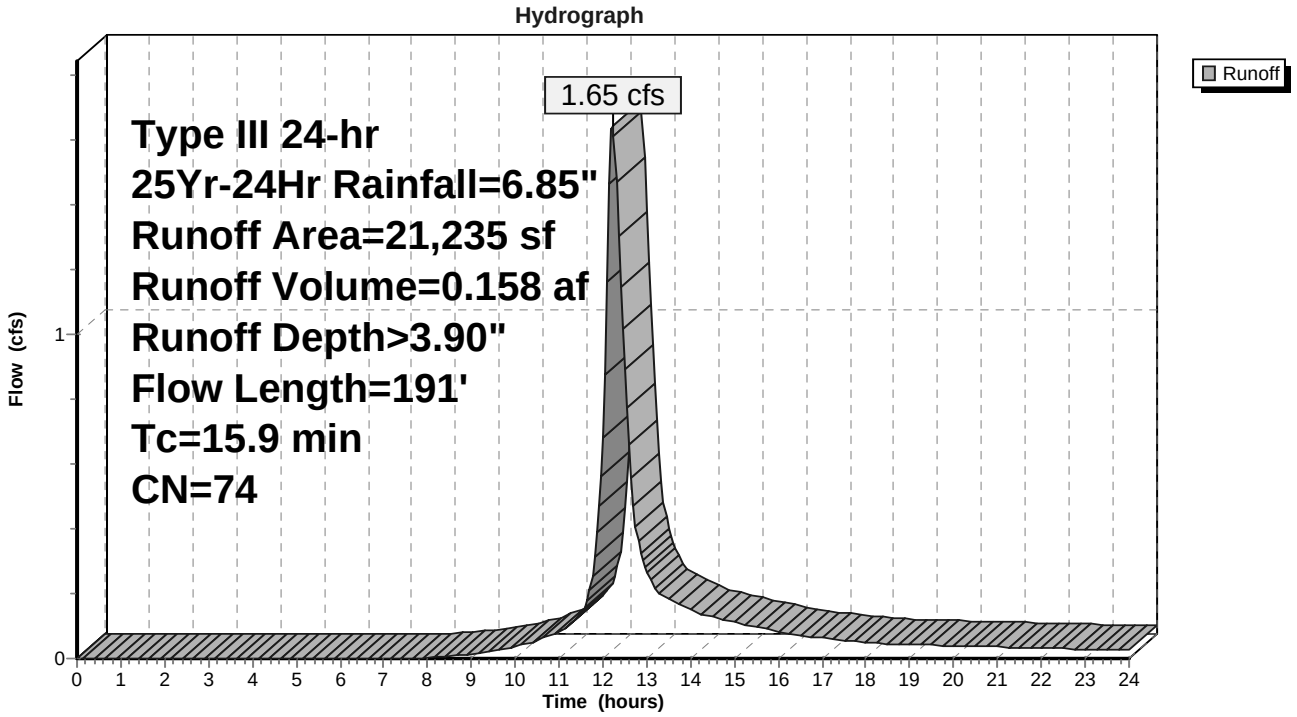
Runoff = 1.65 cfs @ 12.22 hrs, Volume= 0.158 af, Depth> 3.90"

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
2,200	98	Roofs, HSG A
8,120	39	>75% Grass cover, Good, HSG A
9,871	98	Paved parking, HSG A
461	30	Woods, Good, HSG A
583	96	Gravel surface, HSG A
21,235	74	Weighted Average
9,164		43.16% Pervious Area
12,071		56.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.0750	0.26		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.61"
2.5	14	0.0720	0.09		**Sheet Flow, Segment 2** Woods: Light underbrush n= 0.400 P2= 3.61"
9.4	45	0.0100	0.08		**Sheet Flow, Segment 3** Grass: Dense n= 0.240 P2= 3.61"
0.9	36	0.0100	0.70		**Shallow Concentrated Flow, Segment 4** Short Grass Pasture Kv= 7.0 fps
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, Segment 5** Paved Kv= 20.3 fps
15.9	191	Total			

Subcatchment 1S: Subcatchment #1



Summary for Subcatchment 2S: Subcatchment #2

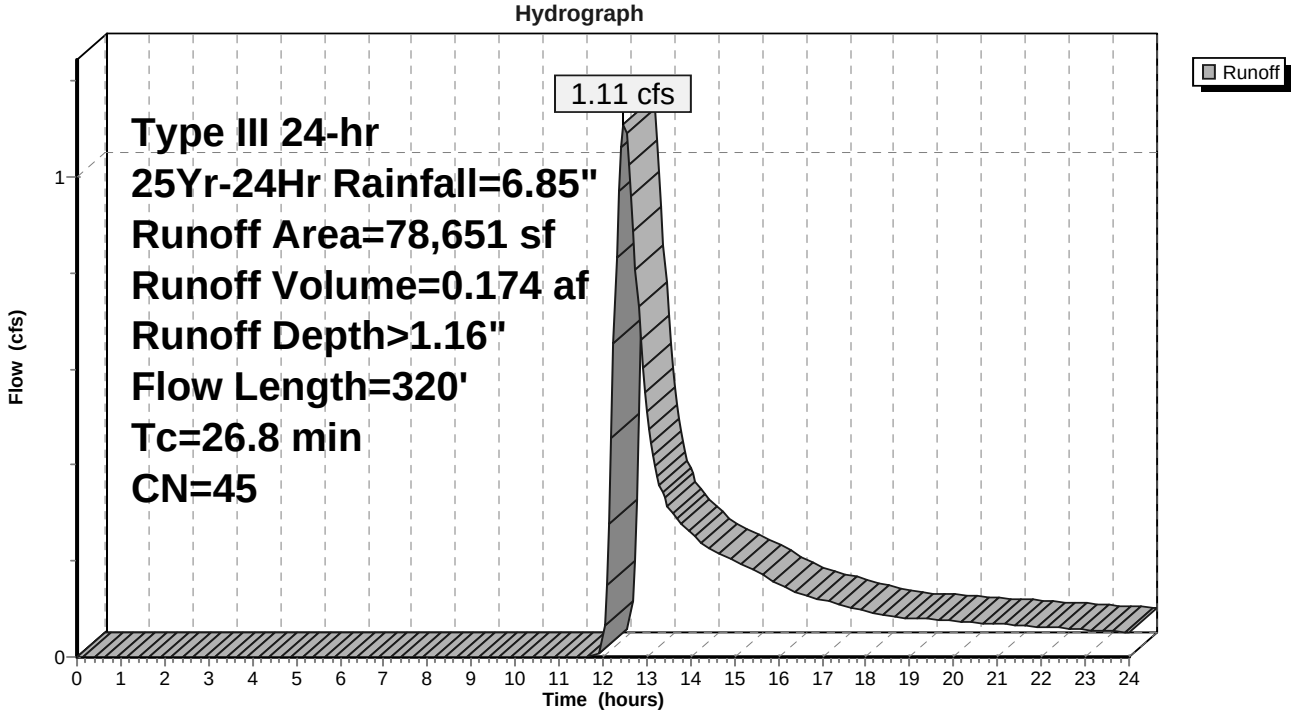
Runoff = 1.11 cfs @ 12.48 hrs, Volume= 0.174 af, Depth> 1.16"

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
3,258	98	Roofs, HSG A
30,983	39	>75% Grass cover, Good, HSG A
9,851	98	Paved parking, HSG A
34,559	30	Woods, Good, HSG A
78,651	45	Weighted Average
65,542		83.33% Pervious Area
13,109		16.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0175	0.08		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.61"
5.0	198	0.0088	0.66		**Shallow Concentrated Flow, Segment 2** Short Grass Pasture Kv= 7.0 fps
0.5	22	0.0111	0.74		**Shallow Concentrated Flow, Segment 3** Short Grass Pasture Kv= 7.0 fps
26.8	320	Total			

Subcatchment 2S: Subcatchment #2



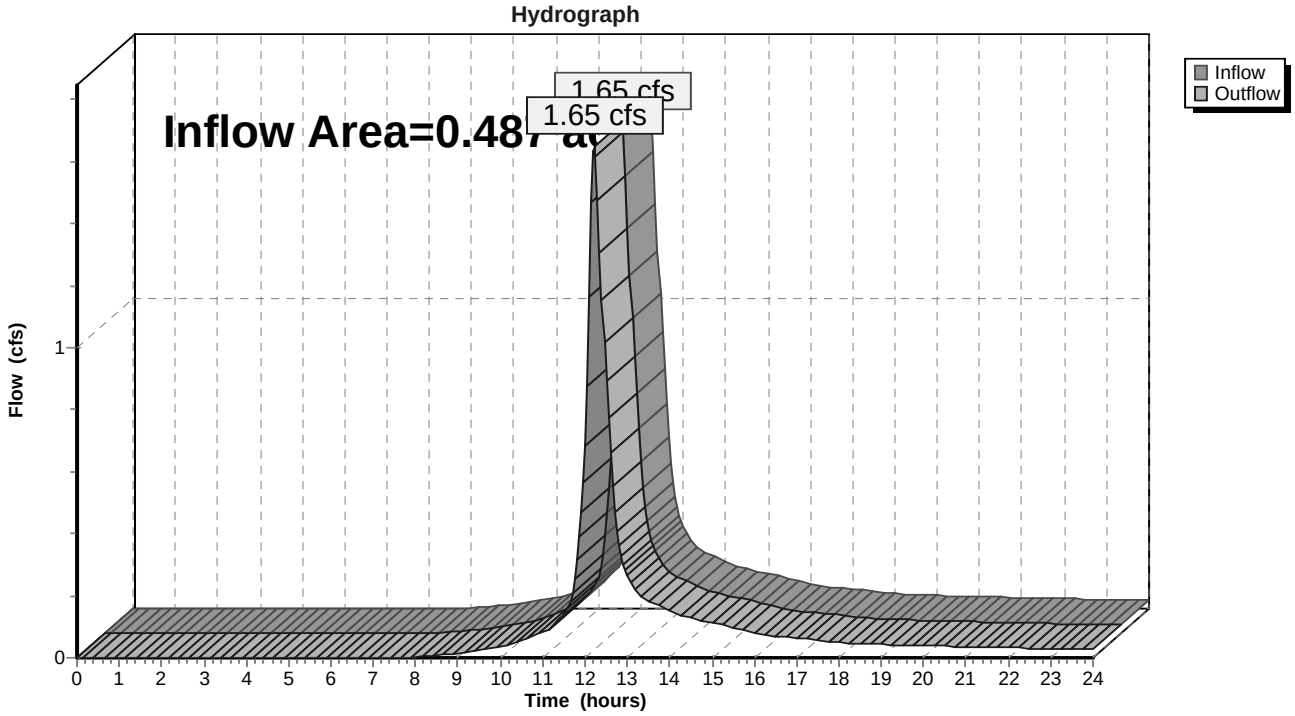
Summary for Reach 100R: Final Reach #100

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

Inflow Area = 0.487 ac, 56.84% Impervious, Inflow Depth > 3.90" for 25Yr-24Hr event
Inflow = 1.65 cfs @ 12.22 hrs, Volume= 0.158 af
Outflow = 1.65 cfs @ 12.22 hrs, Volume= 0.158 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



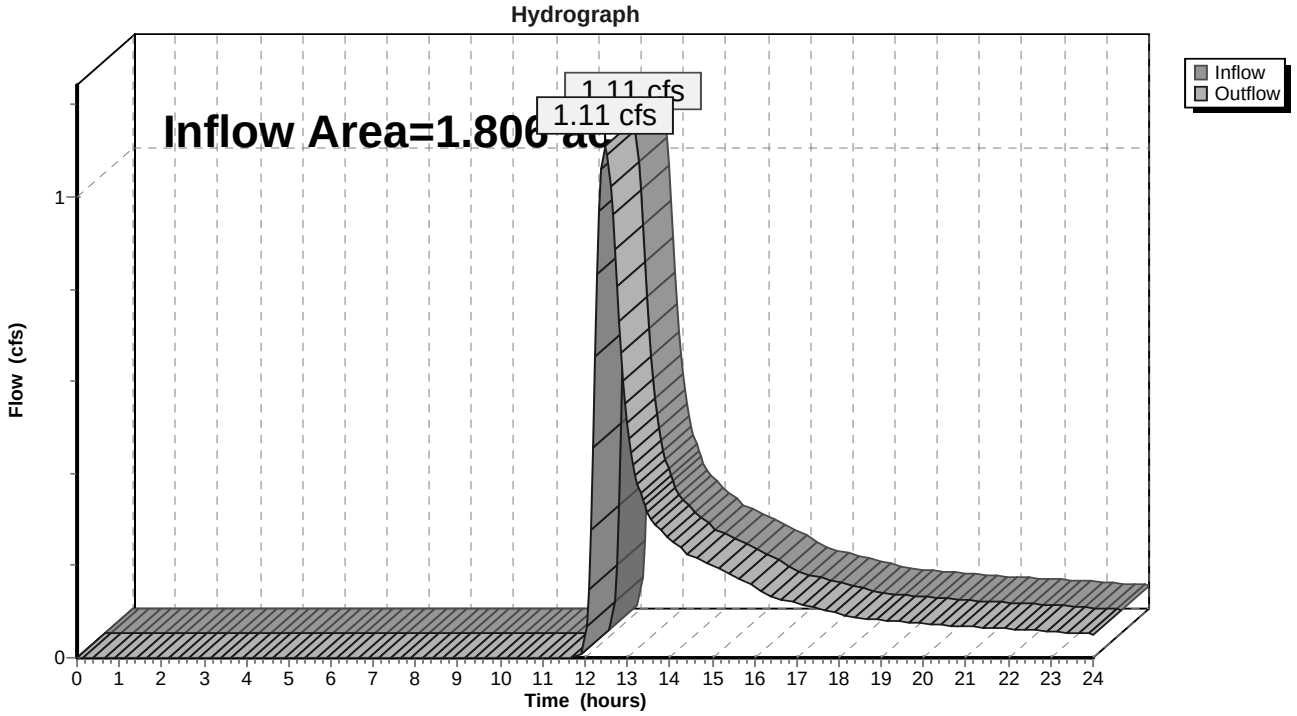
Summary for Reach 200R: Final Reach #200

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

Inflow Area = 1.806 ac, 16.67% Impervious, Inflow Depth > 1.16" for 25Yr-24Hr event
Inflow = 1.11 cfs @ 12.48 hrs, Volume= 0.174 af
Outflow = 1.11 cfs @ 12.48 hrs, Volume= 0.174 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



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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>1.31"
Flow Length=191' Tc=15.9 min CN=74 Runoff=0.53 cfs 0.053 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>0.10"
Flow Length=320' Tc=26.8 min CN=45 Runoff=0.02 cfs 0.015 af

Reach 100R: Final Reach #100 Inflow=0.53 cfs 0.053 af
Outflow=0.53 cfs 0.053 af

Reach 200R: Final Reach #200 Inflow=0.02 cfs 0.015 af
Outflow=0.02 cfs 0.015 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.068 af Average Runoff Depth = 0.36"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>2.70"
Flow Length=191' Tc=15.9 min CN=74 Runoff=1.14 cfs 0.110 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>0.58"
Flow Length=320' Tc=26.8 min CN=45 Runoff=0.42 cfs 0.087 af

Reach 100R: Final Reach #100 Inflow=1.14 cfs 0.110 af
Outflow=1.14 cfs 0.110 af

Reach 200R: Final Reach #200 Inflow=0.42 cfs 0.087 af
Outflow=0.42 cfs 0.087 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.197 af Average Runoff Depth = 1.03"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>3.90"
Flow Length=191' Tc=15.9 min CN=74 Runoff=1.65 cfs 0.158 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>1.16"
Flow Length=320' Tc=26.8 min CN=45 Runoff=1.11 cfs 0.174 af

Reach 100R: Final Reach #100 Inflow=1.65 cfs 0.158 af
Outflow=1.65 cfs 0.158 af

Reach 200R: Final Reach #200 Inflow=1.11 cfs 0.174 af
Outflow=1.11 cfs 0.174 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.332 af Average Runoff Depth = 1.74"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>5.08"
Flow Length=191' Tc=15.9 min CN=74 Runoff=2.14 cfs 0.206 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>1.82"
Flow Length=320' Tc=26.8 min CN=45 Runoff=1.97 cfs 0.274 af

Reach 100R: Final Reach #100 Inflow=2.14 cfs 0.206 af
Outflow=2.14 cfs 0.206 af

Reach 200R: Final Reach #200 Inflow=1.97 cfs 0.274 af
Outflow=1.97 cfs 0.274 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.481 af Average Runoff Depth = 2.52"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 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: Subcatchment #1 Runoff Area=21,235 sf 56.84% Impervious Runoff Depth>6.53"
Flow Length=191' Tc=15.9 min CN=74 Runoff=2.74 cfs 0.265 af

Subcatchment 2S: Subcatchment #2 Runoff Area=78,651 sf 16.67% Impervious Runoff Depth>2.73"
Flow Length=320' Tc=26.8 min CN=45 Runoff=3.16 cfs 0.411 af

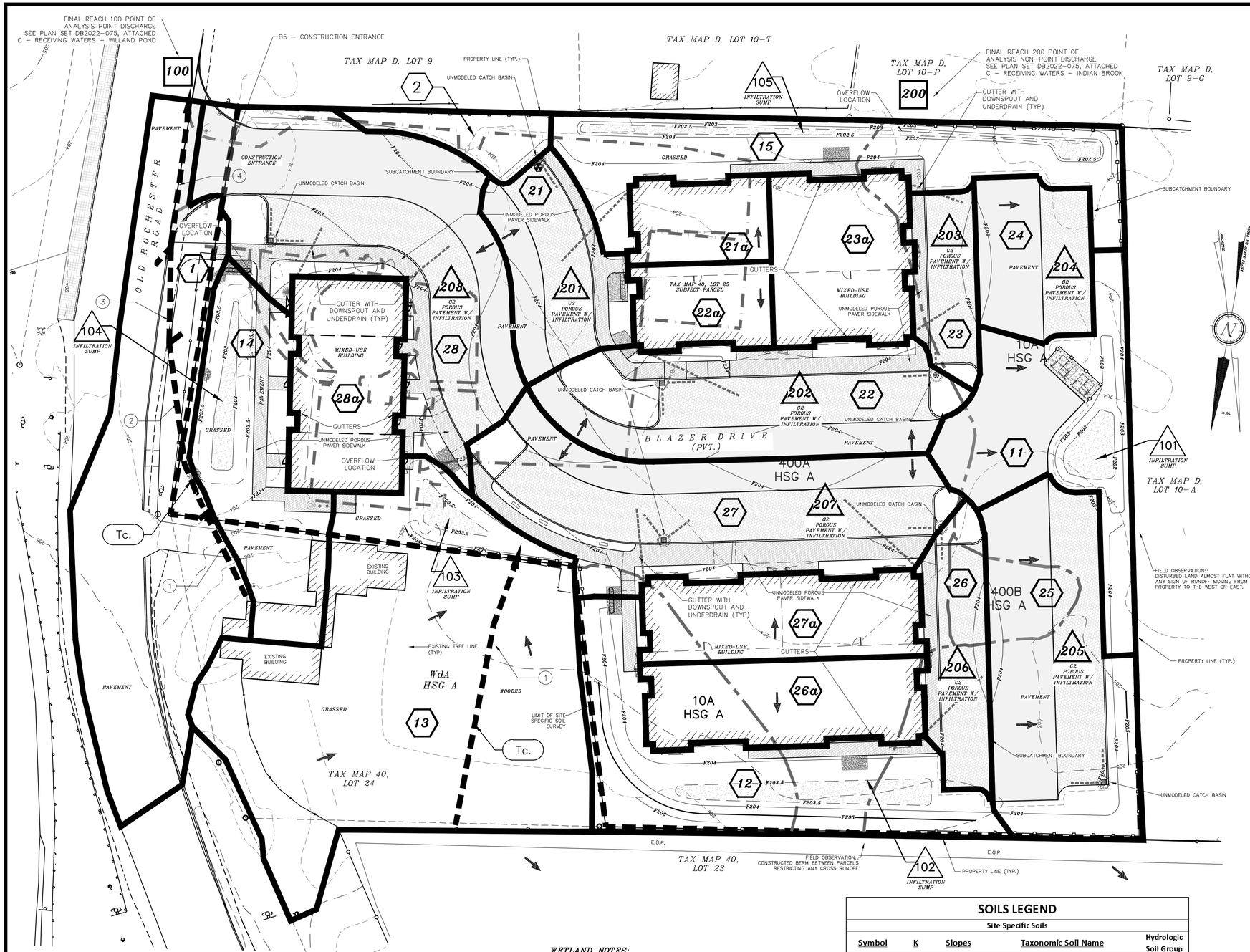
Reach 100R: Final Reach #100 Inflow=2.74 cfs 0.265 af
Outflow=2.74 cfs 0.265 af

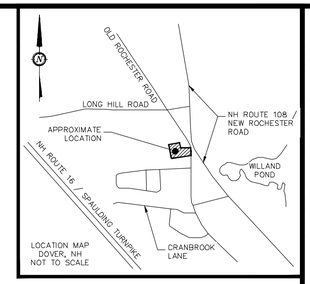
Reach 200R: Final Reach #200 Inflow=3.16 cfs 0.411 af
Outflow=3.16 cfs 0.411 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.676 af Average Runoff Depth = 3.54"
74.79% Pervious = 1.715 ac 25.21% Impervious = 0.578 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. Ponds Only





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED DRAINAGE WATERSHED CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., BASED ON THE PROPOSED SITE AND GRADING PLAN.

6.) 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:

- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- LIMIT OF SITE SPECIFIC SOIL SURVEY MAPPING
- SOIL LINE
- SOIL SERIES
- NRCS SOIL LINE
- NRCS SOIL LABEL
- LIMIT OF WATERSHED/SUBCATCHMENT
- TIME OF CONCENTRATION PATH
- FLOW REACH
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
- TYP. TYPICAL
- FND FOUND
- TBR TO BE REMOVED
- CATCH BASIN W/ STRUCTURE
- POROUS PAVEMENT
- BITUMINOUS CONCRETE
- POROUS BRICK PAVERS
- INFILTRATION SUMP
- FLOW ARROW

OFF-SITE SOILS:

WdA - WINDSOR, LOAMY SAND 0 - 3% SLOPES

SEE: USDA-NRCS WEBSOIL

SYMBOLS LEGEND:

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

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES (CONT.):

6.) 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

STATE OF NEW HAMPSHIRE JOHN P. HAYES III SOIL SCIENTIST

JOHN P. HAYES, III CSS #87

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

DEIDRA BENJAMIN, CWS #295

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN. IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

SOILS LEGEND

Site Specific Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
10		A	Merrimac	A
400		A,B	Udorthents	A

NRCS Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
Wd		A	Windsor Loamy Sand	A

Slopes: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25- 50% F = 50%+
Denominators: /P = Poorly Drained /VP = Very Poorly Drained /Rk = Rocky

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

SWPPP EPA SITE MAP (PROPOSED)

W-2 PROPOSED WATERSHED CONDITIONS PLAN

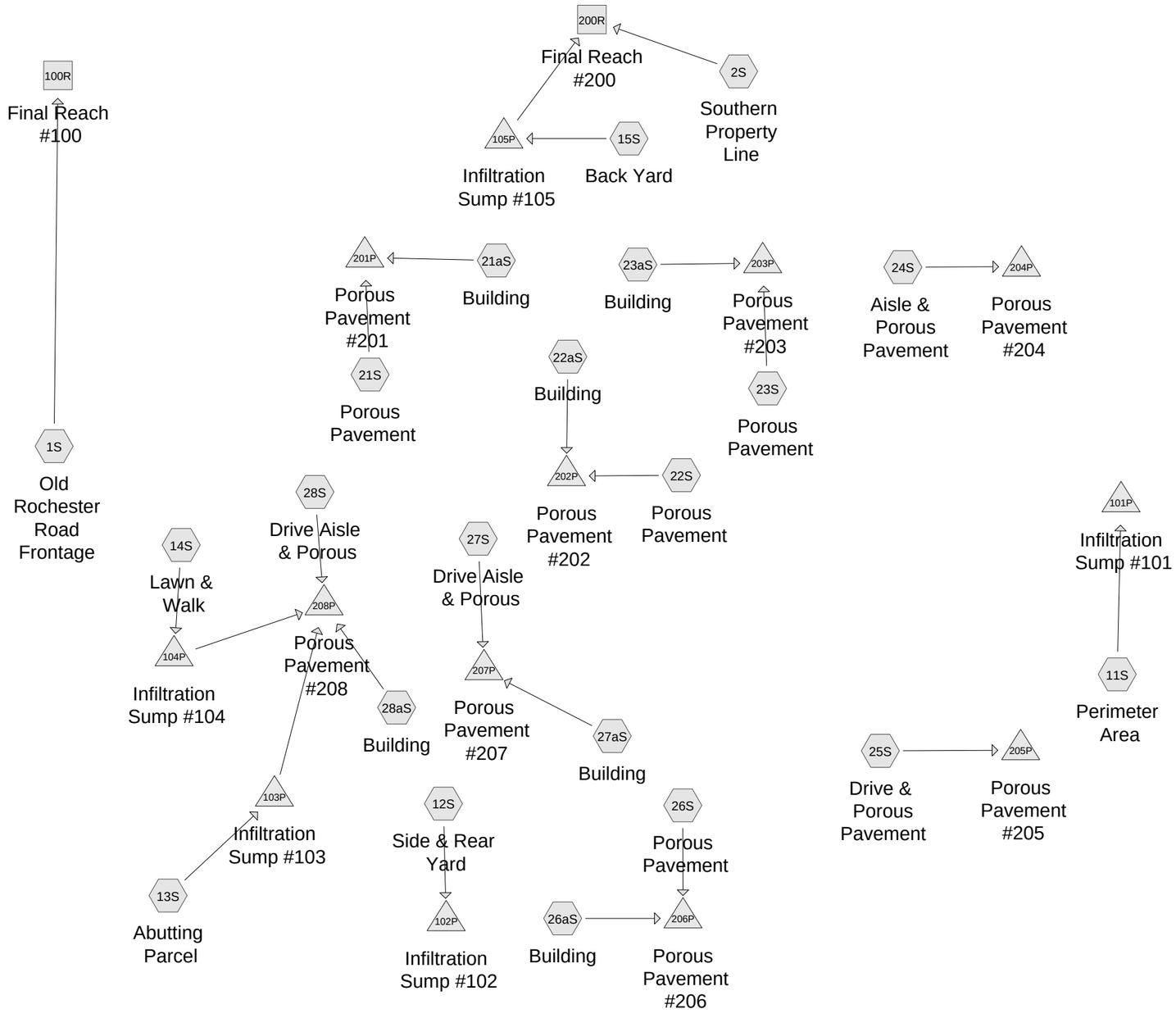
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE KENNETH A. BERRY No. 7437 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



Routing Diagram for 22-075 Proposed Analysis, Revised 03/18/25

Prepared by Berry Surveying & Engineering, Printed 3/14/2025

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

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.715	39	>75% Grass cover, Good, HSG A (1S, 2S, 11S, 12S, 13S, 14S, 15S, 21S, 22S, 23S, 25S, 26S, 27S, 28S)
0.021	96	Gravel surface, HSG A (1S, 2S, 11S, 12S, 15S, 25S, 28S)
0.972	98	Paved parking, HSG A (1S, 11S, 12S, 13S, 14S, 15S, 21S, 22S, 23S, 24S, 25S, 26S, 27S, 28S)
0.422	98	Roofs, HSG A (1S, 12S, 13S, 14S, 15S, 21aS, 21S, 22aS, 22S, 23aS, 23S, 26aS, 26S, 27aS, 27S, 28aS, 28S)
0.164	30	Woods, Good, HSG A (12S, 13S)
2.293	**75**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.293	HSG A	1S, 2S, 11S, 12S, 13S, 14S, 15S, 21aS, 21S, 22aS, 22S, 23aS, 23S, 24S, 25S, 26aS, 26S, 27aS, 27S, 28aS, 28S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.293		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.715	0.000	0.000	0.000	0.000	0.715	>75% Grass cover, Good	1S, 2S, 11S, 12S, 13S, 14S, 15S, 21S, 22S, 23S, 25S, 26S, 27S, 28S
0.021	0.000	0.000	0.000	0.000	0.021	Gravel surface	1S, 2S, 11S, 12S, 15S, 25S, 28S
0.972	0.000	0.000	0.000	0.000	0.972	Paved parking	1S, 11S, 12S, 13S, 14S, 15S, 21S, 22S, 23S, 24S, 25S, 26S, 27S, 28S
0.422	0.000	0.000	0.000	0.000	0.422	Roofs	1S, 12S, 13S, 14S, 15S, 21aS, 21S, 22aS, 22S, 23aS, 23S, 26aS, 26S, 27aS, 27S, 28aS, 28S

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.164	0.000	0.000	0.000	0.000	0.164	Woods, Good	12S, 13S
2.293	**0.000**	**0.000**	**0.000**	**0.000**	**2.293**	**TOTAL AREA**	

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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>4.44"
Flow Length=184' Tc=12.0 min CN=79 Runoff=0.97 cfs 0.085 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>1.33"
Tc=6.0 min CN=47 Runoff=0.03 cfs 0.003 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>3.39"
Tc=6.0 min CN=69 Runoff=0.43 cfs 0.031 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>1.09"
Tc=6.0 min CN=44 Runoff=0.12 cfs 0.012 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>0.71"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.10 cfs 0.020 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>2.88"
Tc=6.0 min CN=64 Runoff=0.33 cfs 0.025 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>1.17"
Tc=6.0 min CN=45 Runoff=0.12 cfs 0.012 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.019 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>5.85"
Tc=293.0 min CN=95 Runoff=0.06 cfs 0.033 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.019 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>4.83"
Tc=293.0 min CN=86 Runoff=0.11 cfs 0.054 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>5.62"
Tc=293.0 min CN=93 Runoff=0.03 cfs 0.017 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.029 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>4.72"
Tc=293.0 min CN=85 Runoff=0.11 cfs 0.056 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>5.50"
Tc=293.0 min CN=92 Runoff=0.05 cfs 0.024 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>5.28"
Tc=293.0 min CN=90 Runoff=0.15 cfs 0.077 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.039 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>5.28"
Tc=293.0 min CN=90 Runoff=0.17 cfs 0.087 af

Reach 100R: Final Reach #100 Inflow=0.97 cfs 0.085 af
Outflow=0.97 cfs 0.085 af

Reach 200R: Final Reach #200 Inflow=0.03 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 101P: Infiltration Sump #101 Peak Elev=202.92' Storage=504 cf Inflow=0.43 cfs 0.031 af
Outflow=0.05 cfs 0.031 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.57' Storage=52 cf Inflow=0.12 cfs 0.012 af
Outflow=0.06 cfs 0.012 af

Pond 103P: Infiltration Sump #103 Peak Elev=203.85' Storage=139 cf Inflow=0.10 cfs 0.020 af
Discarded=0.04 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.020 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.47' Storage=315 cf Inflow=0.33 cfs 0.025 af
Discarded=0.07 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.024 af

Pond 105P: Infiltration Sump #105 Peak Elev=202.67' Storage=86 cf Inflow=0.12 cfs 0.012 af
Discarded=0.04 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.012 af

Pond 201P: Porous Pavement #201 Peak Elev=200.17' Storage=36 cf Inflow=0.10 cfs 0.052 af
Outflow=0.09 cfs 0.052 af

Pond 202P: Porous Pavement #202 Peak Elev=200.35' Storage=120 cf Inflow=0.14 cfs 0.073 af
Outflow=0.12 cfs 0.073 af

Pond 203P: Porous Pavement #203 Peak Elev=200.75' Storage=172 cf Inflow=0.10 cfs 0.055 af
Outflow=0.08 cfs 0.055 af

Pond 204P: Porous Pavement #204 Peak Elev=199.98' Storage=9 cf Inflow=0.05 cfs 0.029 af
Outflow=0.05 cfs 0.029 af

Pond 205P: Porous Pavement #205 Peak Elev=199.79' Storage=19 cf Inflow=0.11 cfs 0.056 af
Outflow=0.11 cfs 0.056 af

Pond 206P: Porous Pavement #206 Peak Elev=200.31' Storage=38 cf Inflow=0.12 cfs 0.062 af
Outflow=0.11 cfs 0.062 af

Pond 207P: Porous Pavement #207 Peak Elev=200.29' Storage=124 cf Inflow=0.22 cfs 0.115 af
Outflow=0.20 cfs 0.115 af

Pond 208P: Porous Pavement #208 Peak Elev=199.98' Storage=609 cf Inflow=0.24 cfs 0.125 af
Outflow=0.17 cfs 0.125 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.754 af Average Runoff Depth = 3.94"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 ac

Summary for Subcatchment 1S: Old Rochester Road Frontage

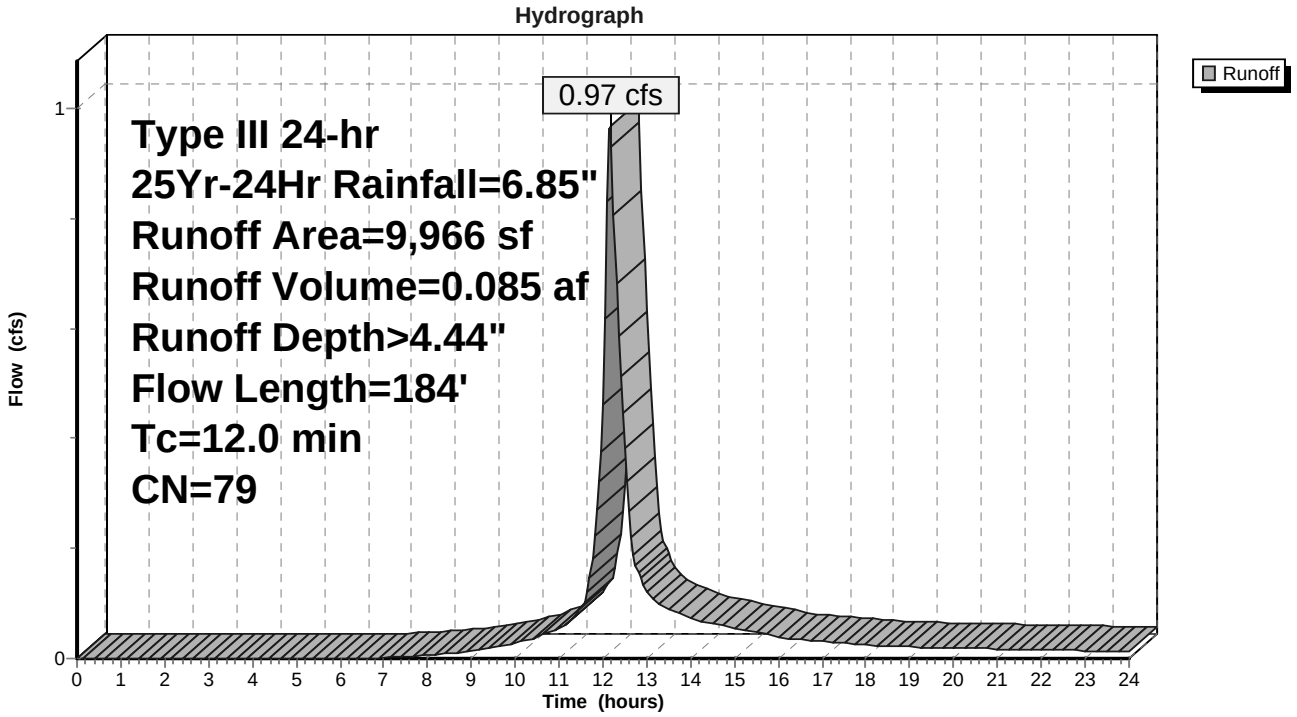
Runoff = 0.97 cfs @ 12.17 hrs, Volume= 0.085 af, Depth> 4.44"

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
93	98	Roofs, HSG A
3,134	39	>75% Grass cover, Good, HSG A
6,510	98	Paved parking, HSG A
229	96	Gravel surface, HSG A
9,966	79	Weighted Average
3,363		33.74% Pervious Area
6,603		66.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	34	0.0910	0.27		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.61"
9.1	62	0.0080	0.11		**Sheet Flow, Segment 2** Grass: Short n= 0.150 P2= 3.61"
0.4	36	0.0100	1.61		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
0.4	52	0.0100	2.03		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
12.0	184	Total			

Subcatchment 1S: Old Rochester Road Frontage



Summary for Subcatchment 2S: Southern Property Line

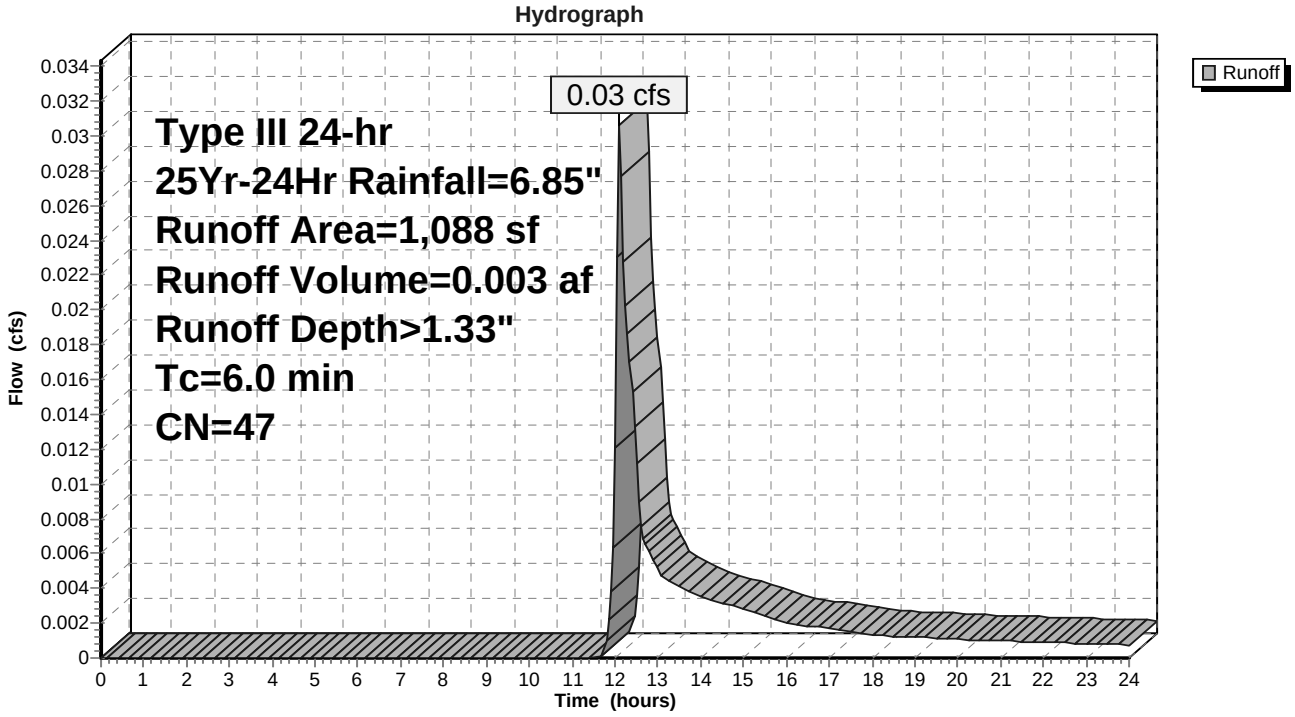
Runoff = 0.03 cfs @ 12.11 hrs, Volume= 0.003 af, Depth> 1.33"

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

Area (sf)	CN	Description
943	39	>75% Grass cover, Good, HSG A
145	96	Gravel surface, HSG A
1,088	47	Weighted Average
1,088		100.00% Pervious Area

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

Subcatchment 2S: Southern Property Line



Summary for Subcatchment 11S: Perimeter Area

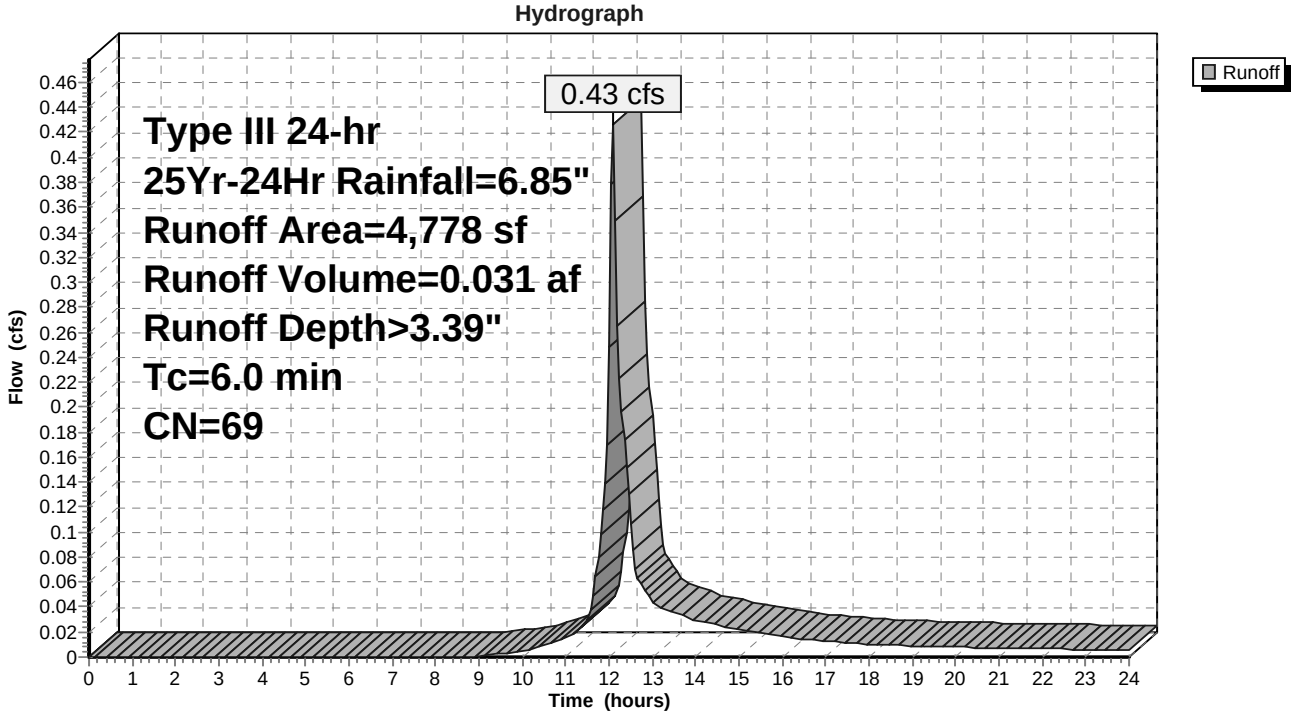
Runoff = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 3.39"

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
2,351	39	>75% Grass cover, Good, HSG A
2,278	98	Paved parking, HSG A
149	96	Gravel surface, HSG A
4,778	69	Weighted Average
2,500		52.32% Pervious Area
2,278		47.68% Impervious Area

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

Subcatchment 11S: Perimeter Area



Summary for Subcatchment 12S: Side & Rear Yard

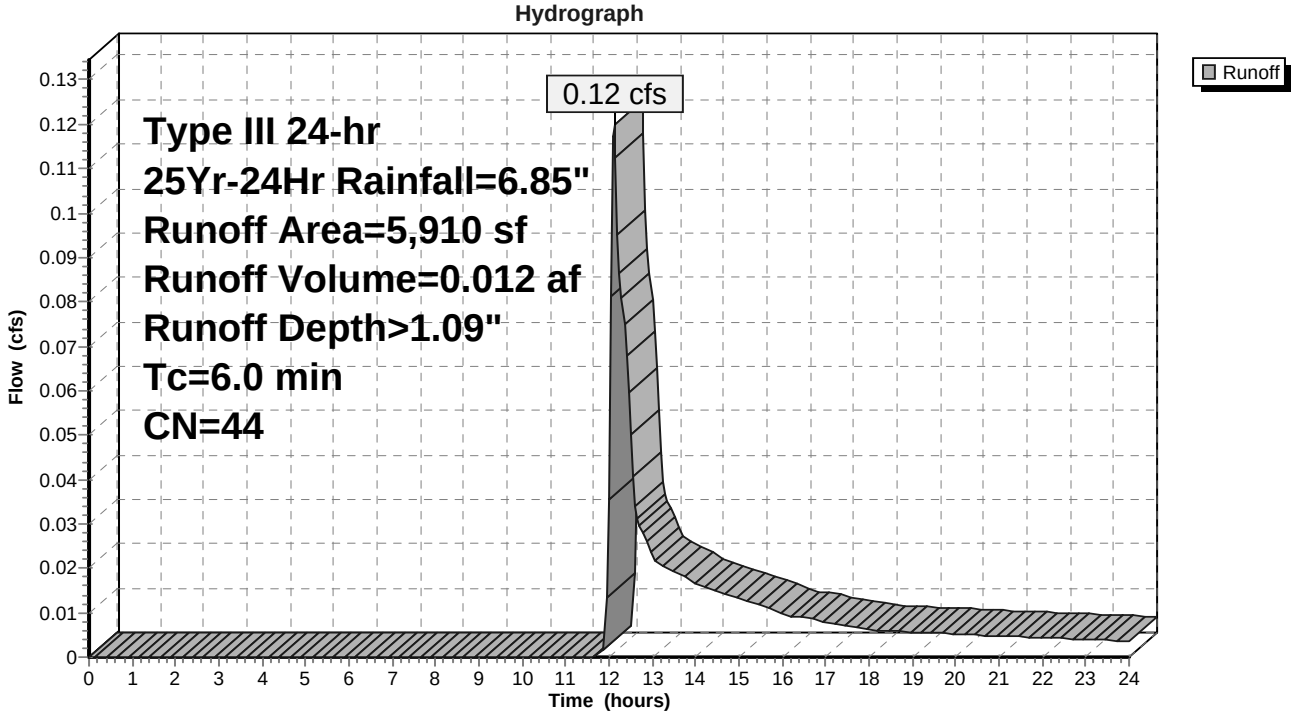
Runoff = 0.12 cfs @ 12.12 hrs, Volume= 0.012 af, Depth> 1.09"

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
108	98	Roofs, HSG A
4,635	39	>75% Grass cover, Good, HSG A
421	98	Paved parking, HSG A
673	30	Woods, Good, HSG A
73	96	Gravel surface, HSG A
5,910	44	Weighted Average
5,381		91.05% Pervious Area
529		8.95% Impervious Area

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

Subcatchment 12S: Side & Rear Yard



Summary for Subcatchment 13S: Abutting Parcel

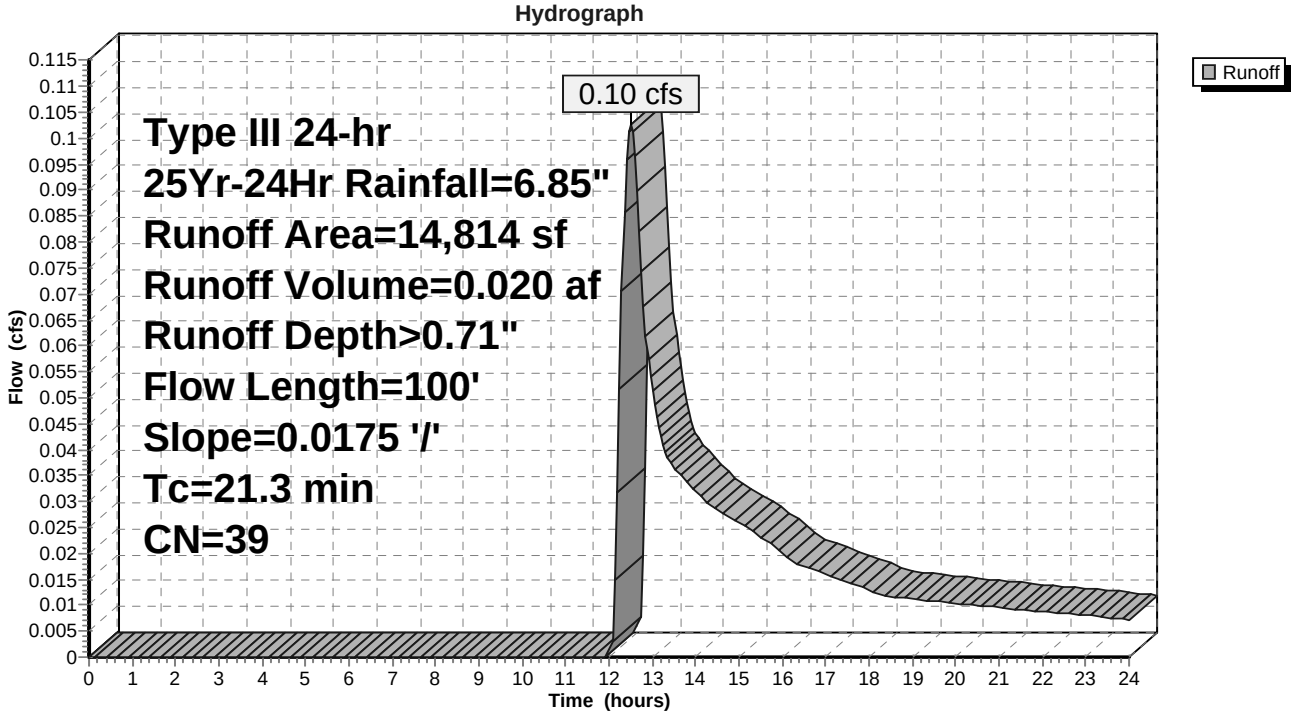
Runoff = 0.10 cfs @ 12.50 hrs, Volume= 0.020 af, Depth> 0.71"

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
73	98	Paved parking, HSG A
7,240	39	>75% Grass cover, Good, HSG A
6,472	30	Woods, Good, HSG A
1,029	98	Roofs, HSG A
14,814	39	Weighted Average
13,712		92.56% Pervious Area
1,102		7.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	100	0.0175	0.08		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.61"

Subcatchment 13S: Abutting Parcel



Summary for Subcatchment 14S: Lawn & Walk

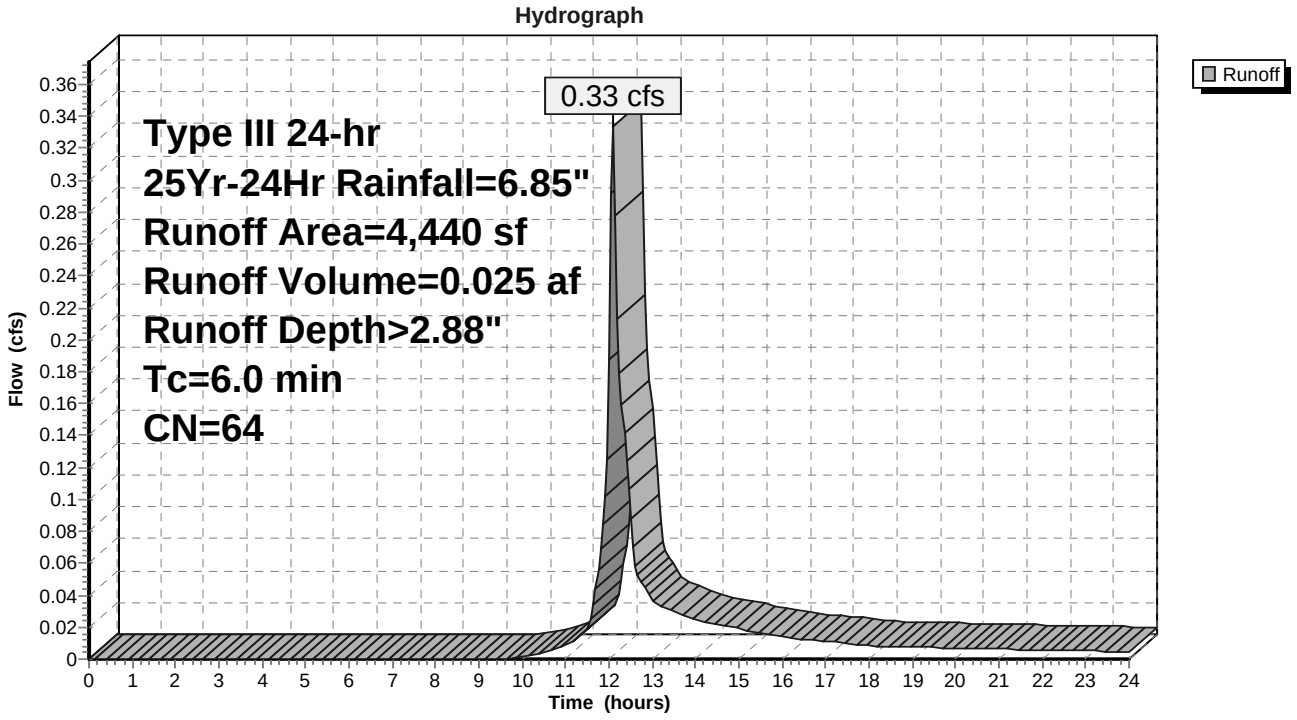
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.025 af, Depth> 2.88"

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
2,588	39	>75% Grass cover, Good, HSG A
1,299	98	Paved parking, HSG A
553	98	Roofs, HSG A
4,440	64	Weighted Average
2,588		58.29% Pervious Area
1,852		41.71% Impervious Area

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

Subcatchment 14S: Lawn & Walk



Summary for Subcatchment 15S: Back Yard

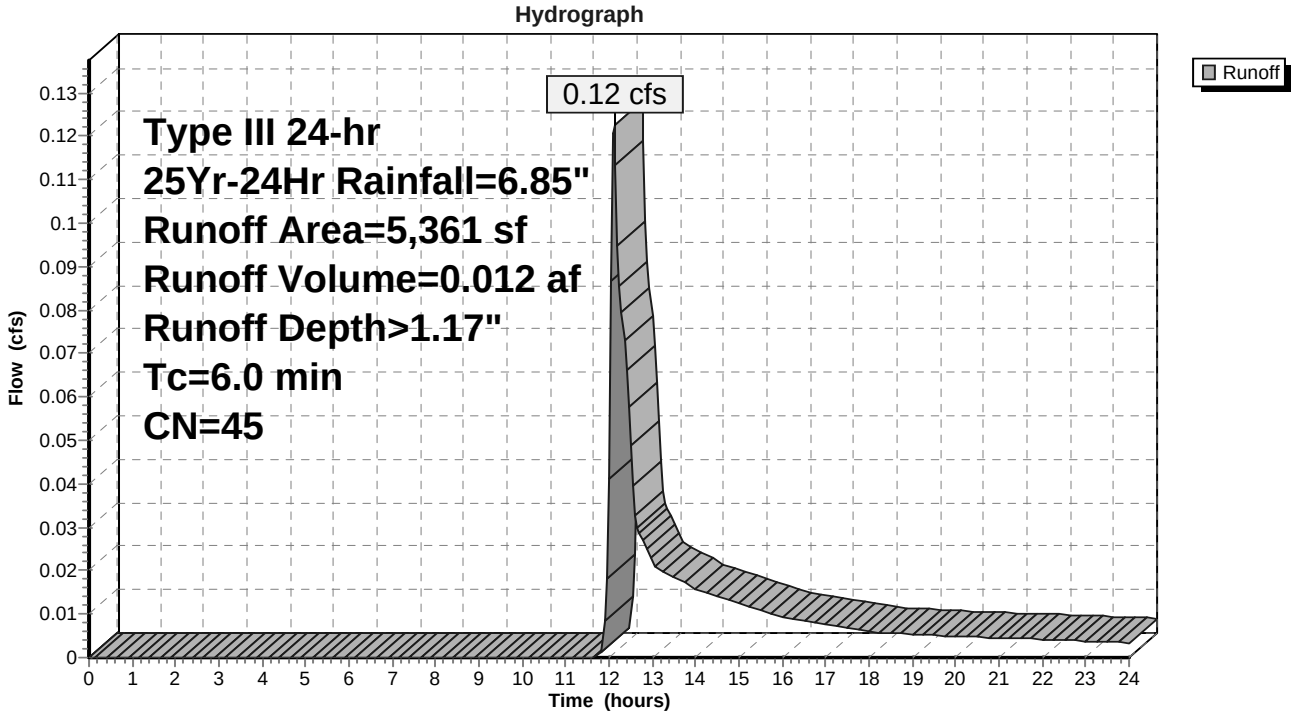
Runoff = 0.12 cfs @ 12.12 hrs, Volume= 0.012 af, Depth> 1.17"

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
107	98	Roofs, HSG A
4,783	39	>75% Grass cover, Good, HSG A
336	98	Paved parking, HSG A
135	96	Gravel surface, HSG A
5,361	45	Weighted Average
4,918		91.74% Pervious Area
443		8.26% Impervious Area

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

Subcatchment 15S: Back Yard



Summary for Subcatchment 21aS: Building

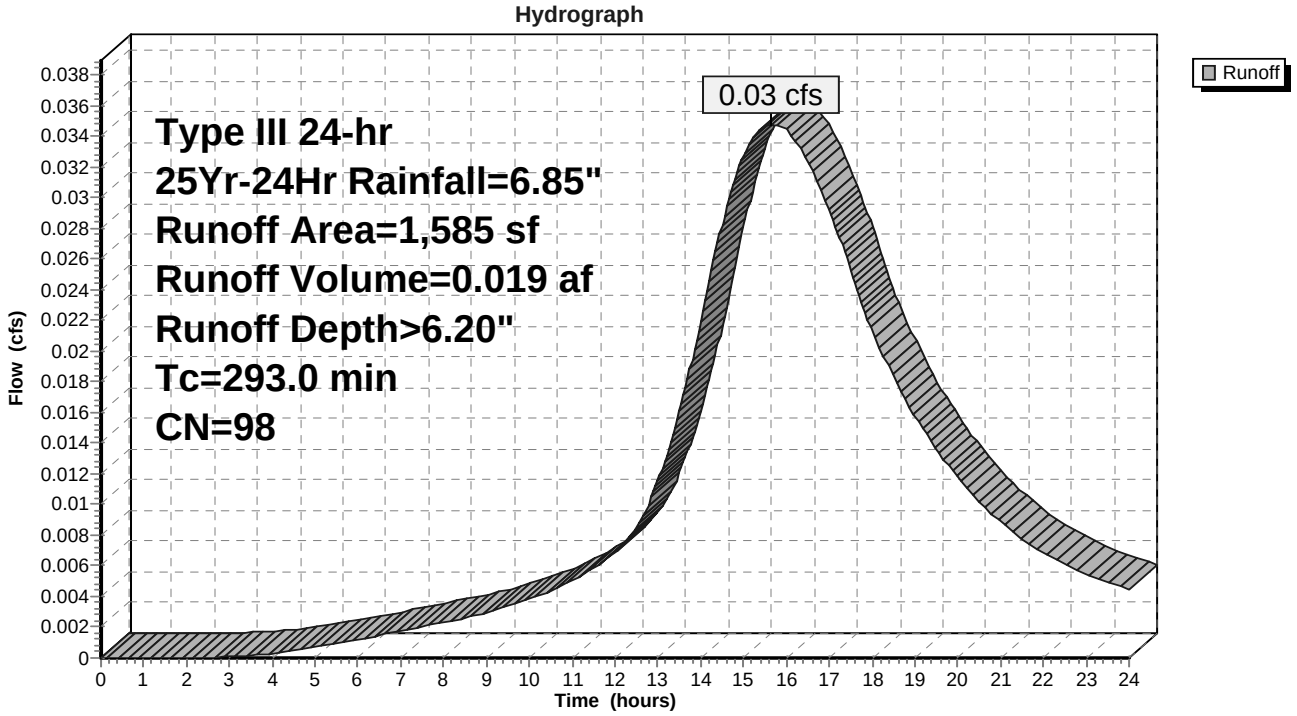
Runoff = 0.03 cfs @ 15.66 hrs, Volume= 0.019 af, Depth> 6.20"

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
1,585	98	Roofs, HSG A
1,585		100.00% Impervious Area

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

Subcatchment 21aS: Building



Summary for Subcatchment 21S: Porous Pavement

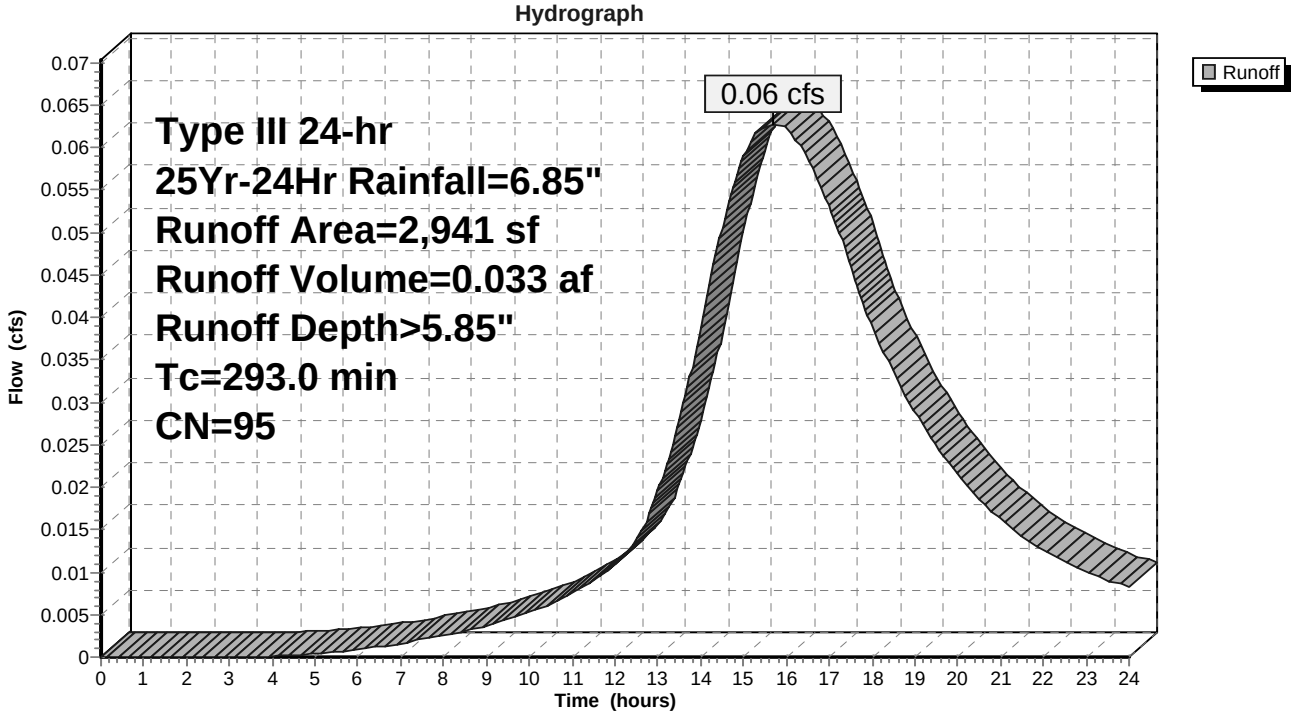
Runoff = 0.06 cfs @ 15.67 hrs, Volume= 0.033 af, Depth> 5.85"

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
34	98	Roofs, HSG A
162	39	>75% Grass cover, Good, HSG A
2,745	98	Paved parking, HSG A
2,941	95	Weighted Average
162		5.51% Pervious Area
2,779		94.49% Impervious Area

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

Subcatchment 21S: Porous Pavement



Summary for Subcatchment 22aS: Building

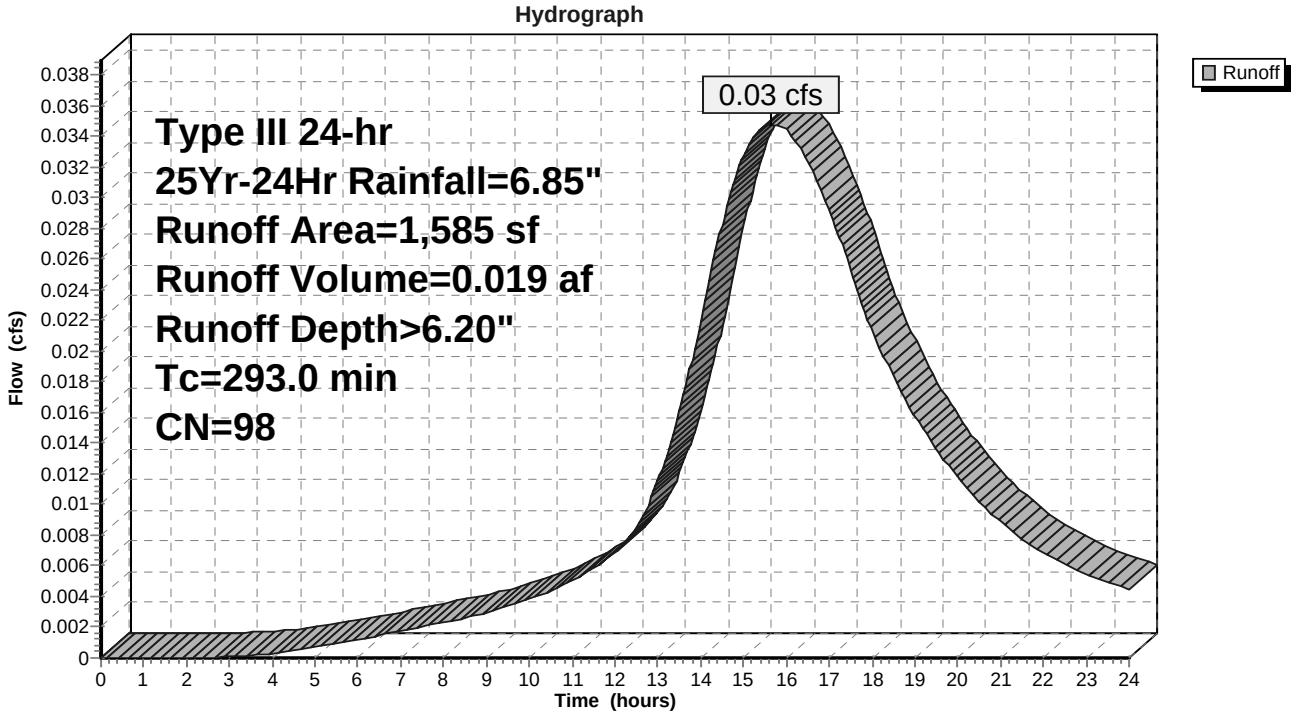
Runoff = 0.03 cfs @ 15.66 hrs, Volume= 0.019 af, Depth> 6.20"

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
1,585	98	Roofs, HSG A
1,585		100.00% Impervious Area

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

Subcatchment 22aS: Building



Summary for Subcatchment 22S: Porous Pavement

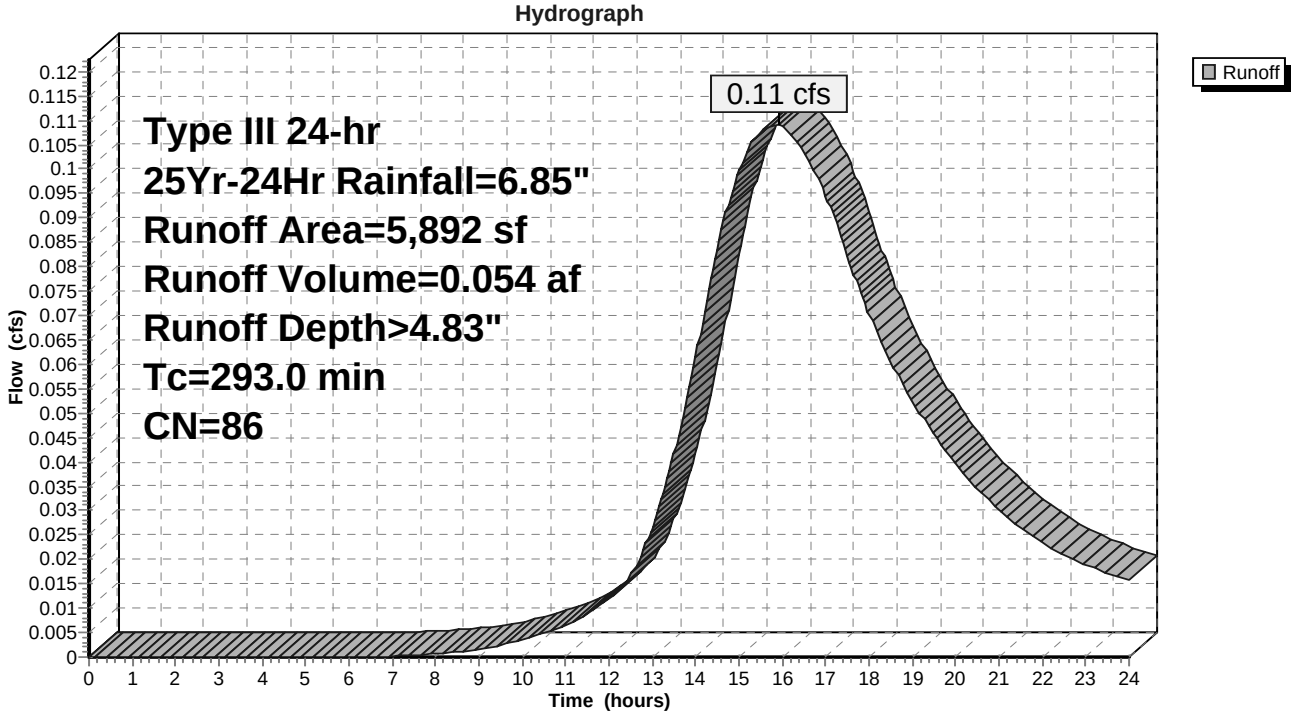
Runoff = 0.11 cfs @ 15.93 hrs, Volume= 0.054 af, Depth> 4.83"

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
196	98	Roofs, HSG A
1,178	39	>75% Grass cover, Good, HSG A
4,518	98	Paved parking, HSG A
5,892	86	Weighted Average
1,178		19.99% Pervious Area
4,714		80.01% Impervious Area

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

Subcatchment 22S: Porous Pavement



Summary for Subcatchment 23aS: Building

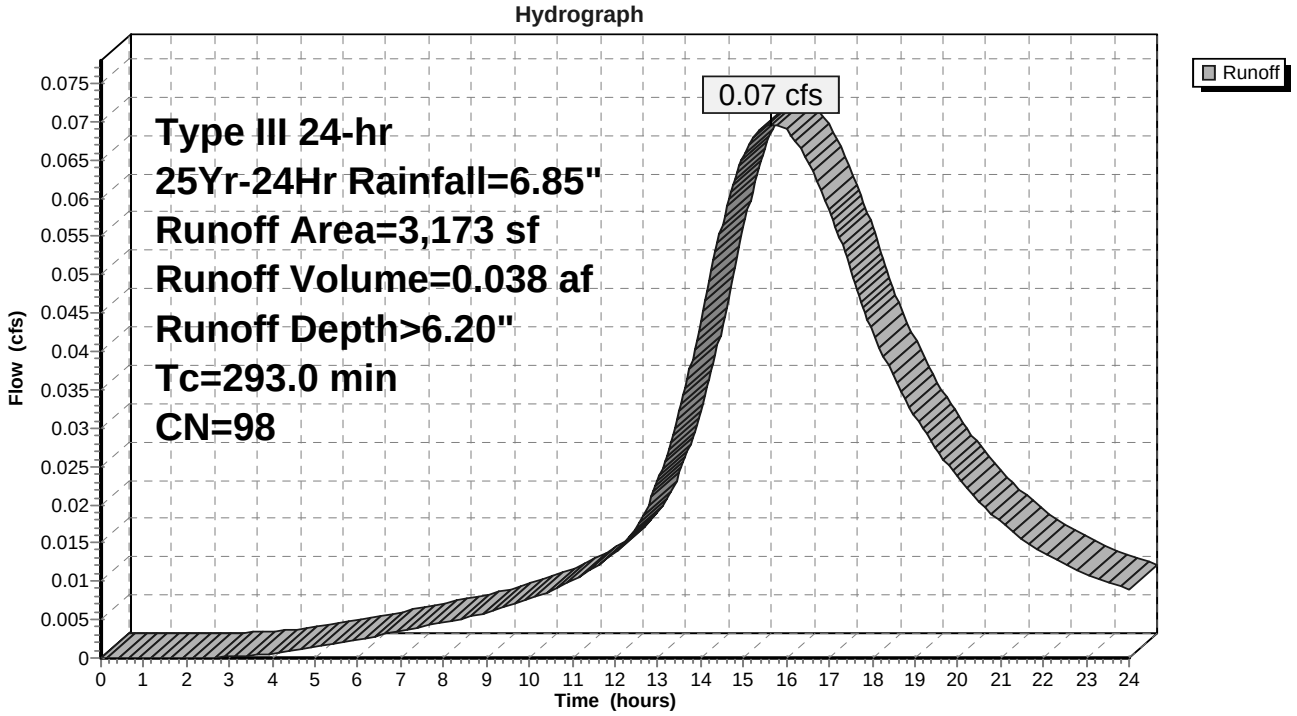
Runoff = 0.07 cfs @ 15.66 hrs, Volume= 0.038 af, Depth> 6.20"

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
3,173	98	Roofs, HSG A
3,173		100.00% Impervious Area

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

Subcatchment 23aS: Building



Summary for Subcatchment 23S: Porous Pavement

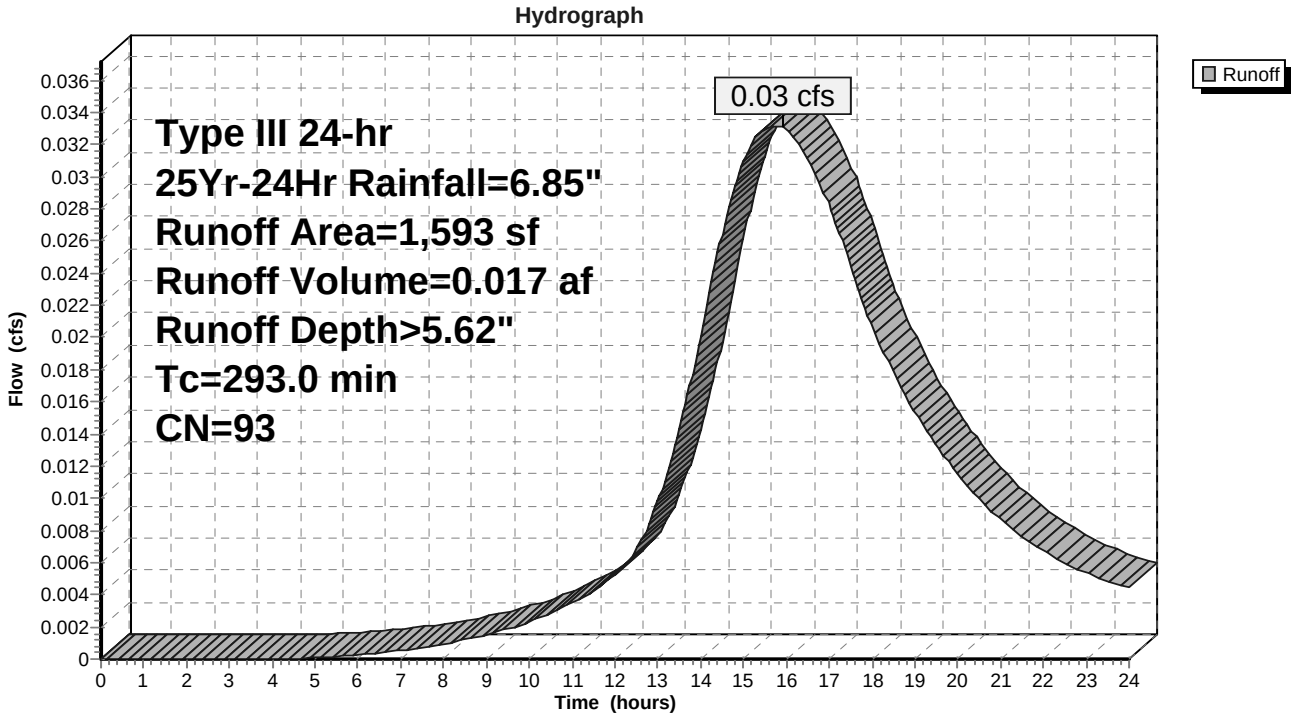
Runoff = 0.03 cfs @ 15.90 hrs, Volume= 0.017 af, Depth> 5.62"

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
35	98	Roofs, HSG A
128	39	>75% Grass cover, Good, HSG A
1,430	98	Paved parking, HSG A
1,593	93	Weighted Average
128		8.04% Pervious Area
1,465		91.96% Impervious Area

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

Subcatchment 23S: Porous Pavement



Summary for Subcatchment 24S: Aisle & Porous Pavement

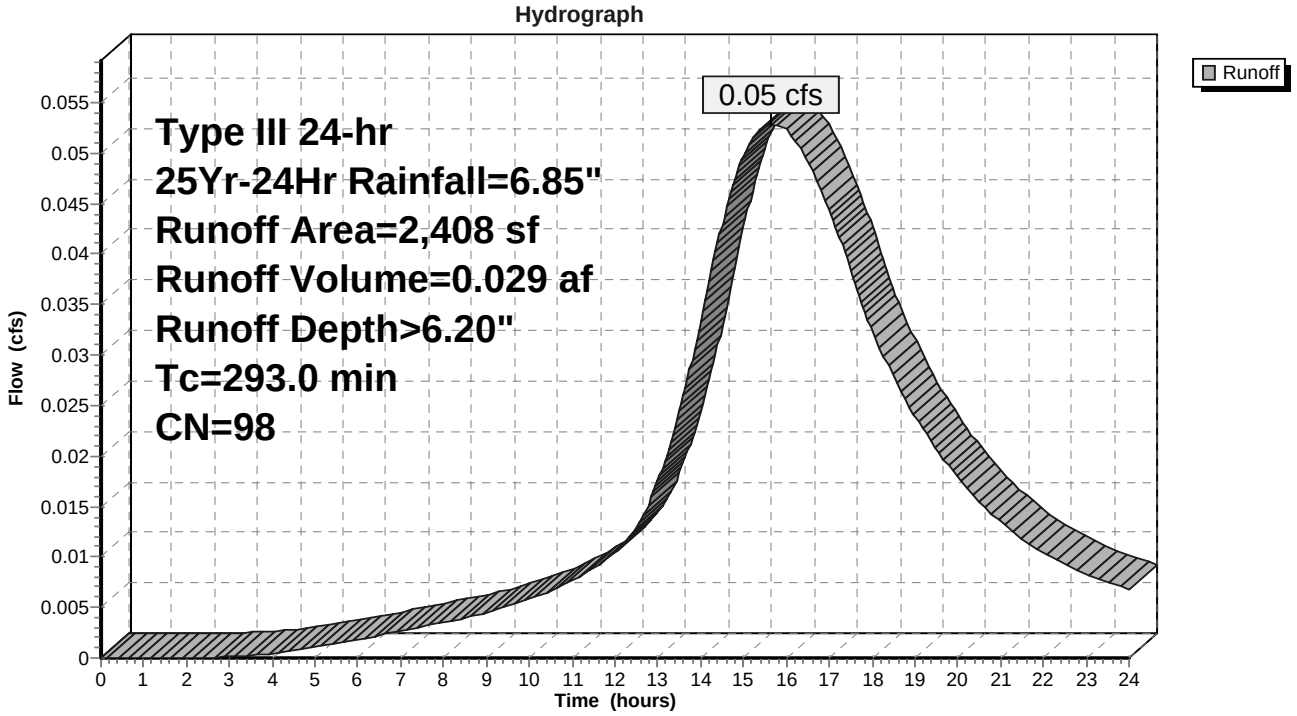
Runoff = 0.05 cfs @ 15.66 hrs, Volume= 0.029 af, Depth> 6.20"

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
2,408	98	Paved parking, HSG A
2,408		100.00% Impervious Area

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

Subcatchment 24S: Aisle & Porous Pavement



Summary for Subcatchment 25S: Drive & Porous Pavement

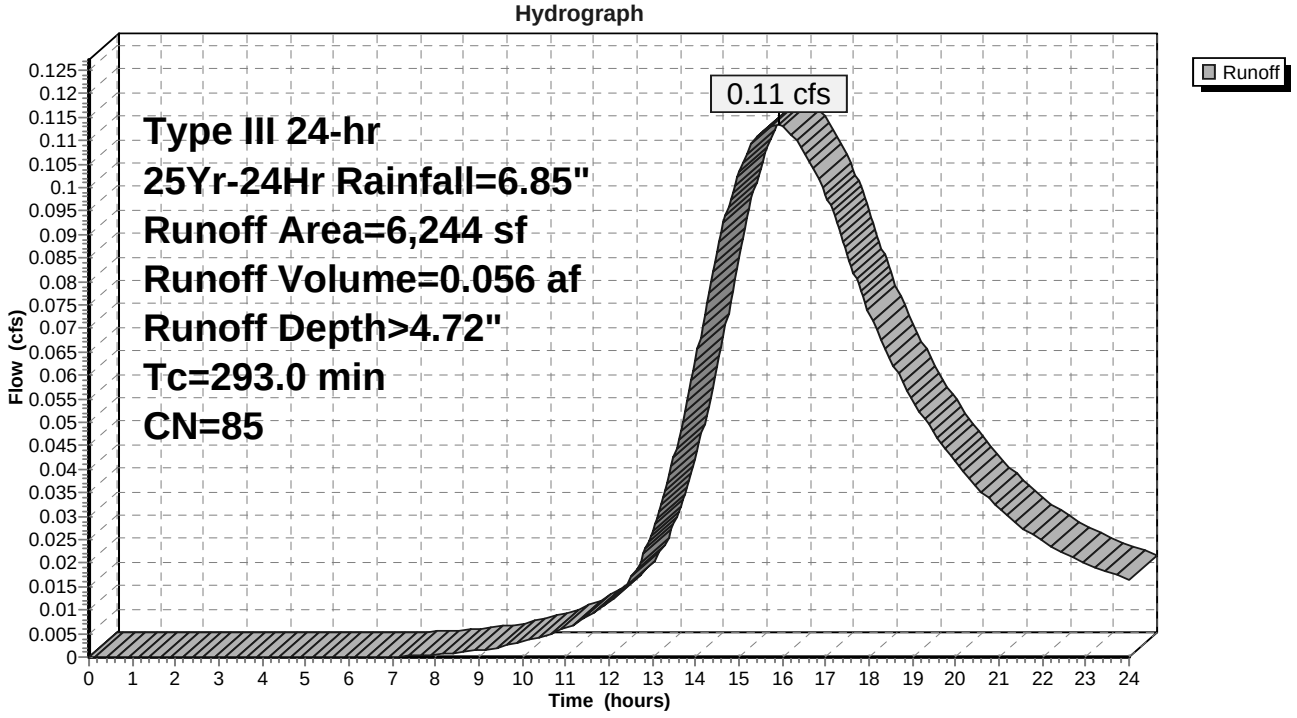
Runoff = 0.11 cfs @ 15.93 hrs, Volume= 0.056 af, Depth> 4.72"

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
1,422	39	>75% Grass cover, Good, HSG A
4,730	98	Paved parking, HSG A
92	96	Gravel surface, HSG A
6,244	85	Weighted Average
1,514		24.25% Pervious Area
4,730		75.75% Impervious Area

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

Subcatchment 25S: Drive & Porous Pavement



Summary for Subcatchment 26aS: Building

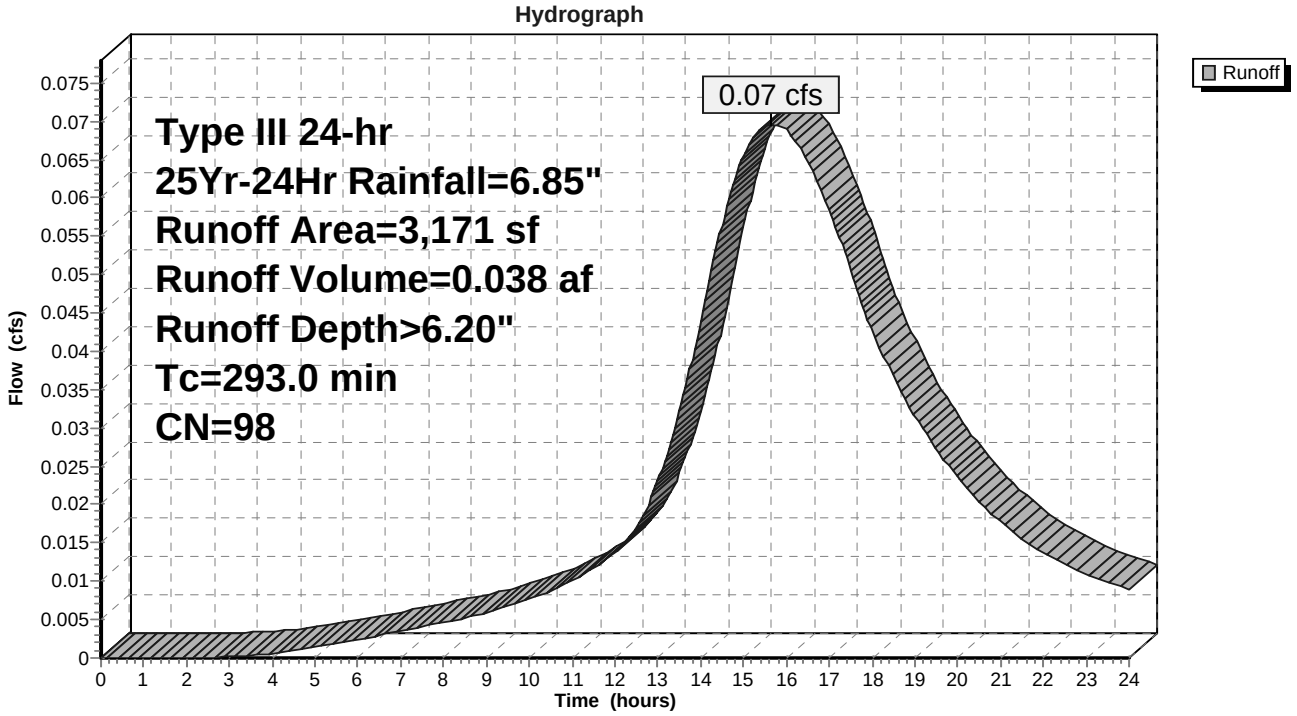
Runoff = 0.07 cfs @ 15.66 hrs, Volume= 0.038 af, Depth> 6.20"

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
3,171	98	Roofs, HSG A
3,171		100.00% Impervious Area

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

Subcatchment 26aS: Building



Summary for Subcatchment 26S: Porous Pavement

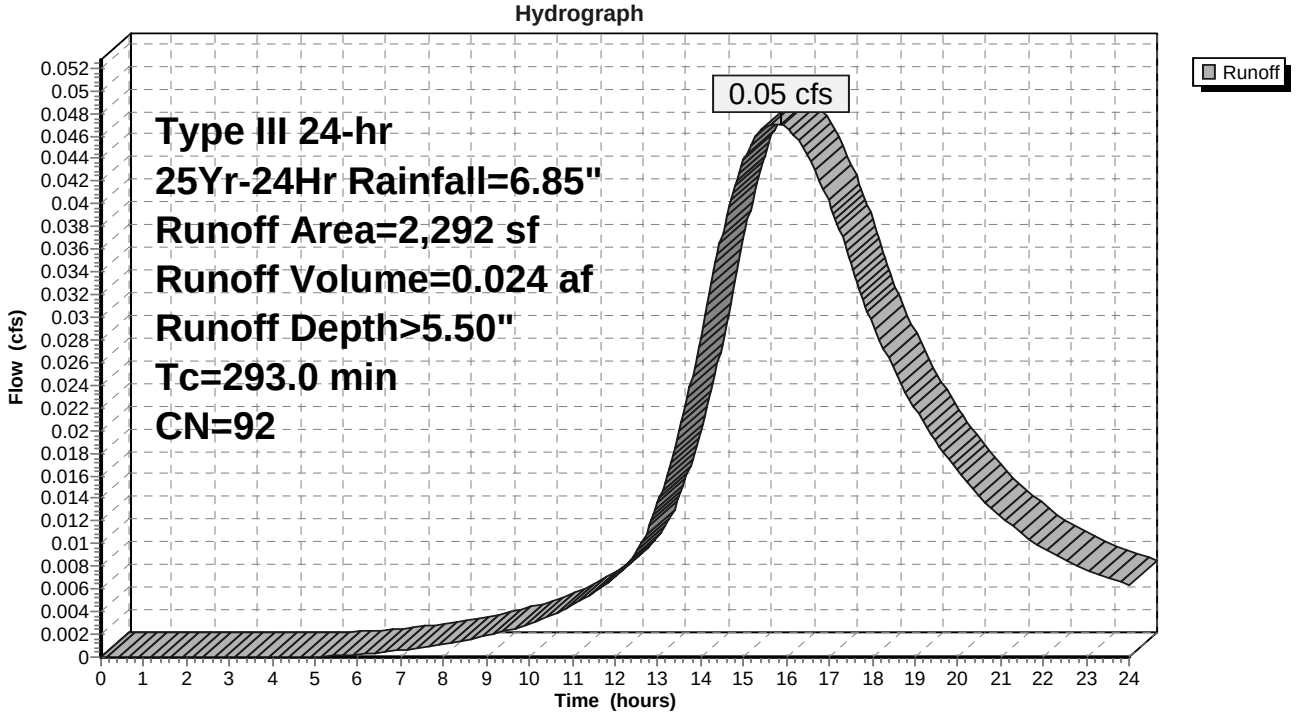
Runoff = 0.05 cfs @ 15.90 hrs, Volume= 0.024 af, Depth> 5.50"

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

Area (sf)	CN	Description
38	98	Roofs, HSG A
242	39	>75% Grass cover, Good, HSG A
2,012	98	Paved parking, HSG A
2,292	92	Weighted Average
242		10.56% Pervious Area
2,050		89.44% Impervious Area

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

Subcatchment 26S: Porous Pavement



Summary for Subcatchment 27aS: Building

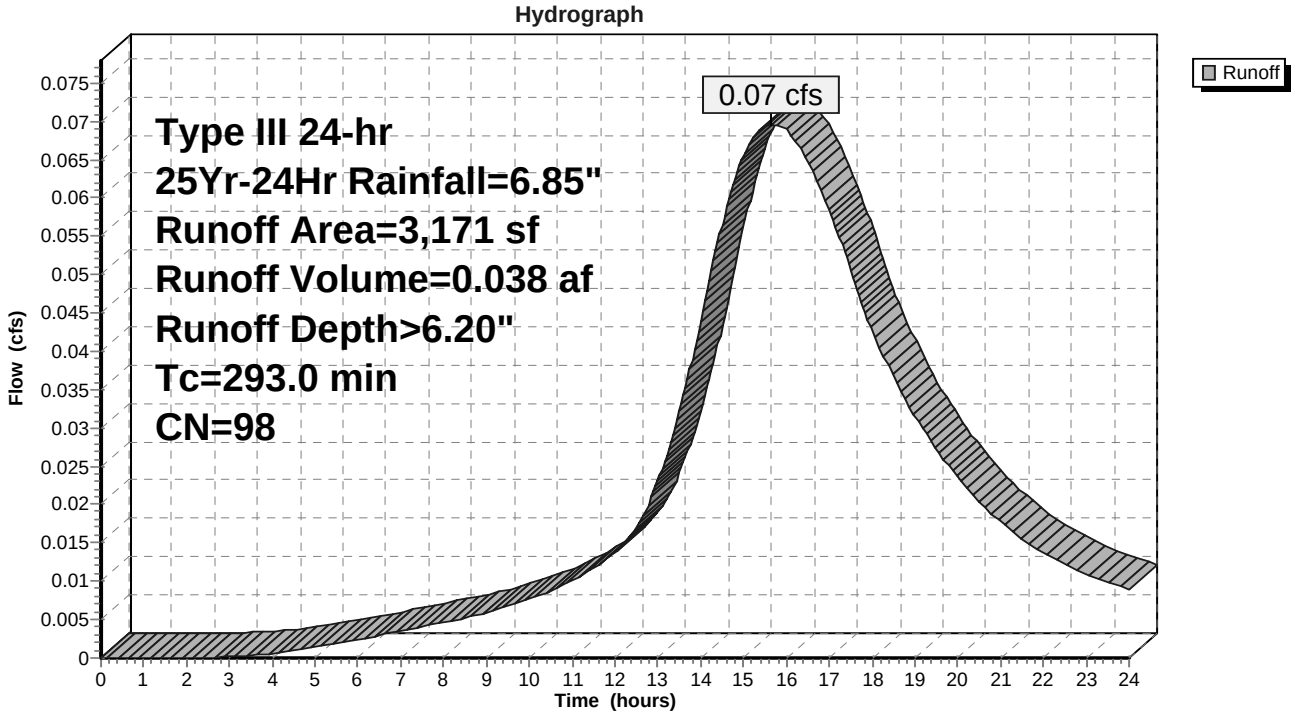
Runoff = 0.07 cfs @ 15.66 hrs, Volume= 0.038 af, Depth> 6.20"

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
3,171	98	Roofs, HSG A
3,171		100.00% Impervious Area

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

Subcatchment 27aS: Building



Summary for Subcatchment 27S: Drive Aisle & Porous

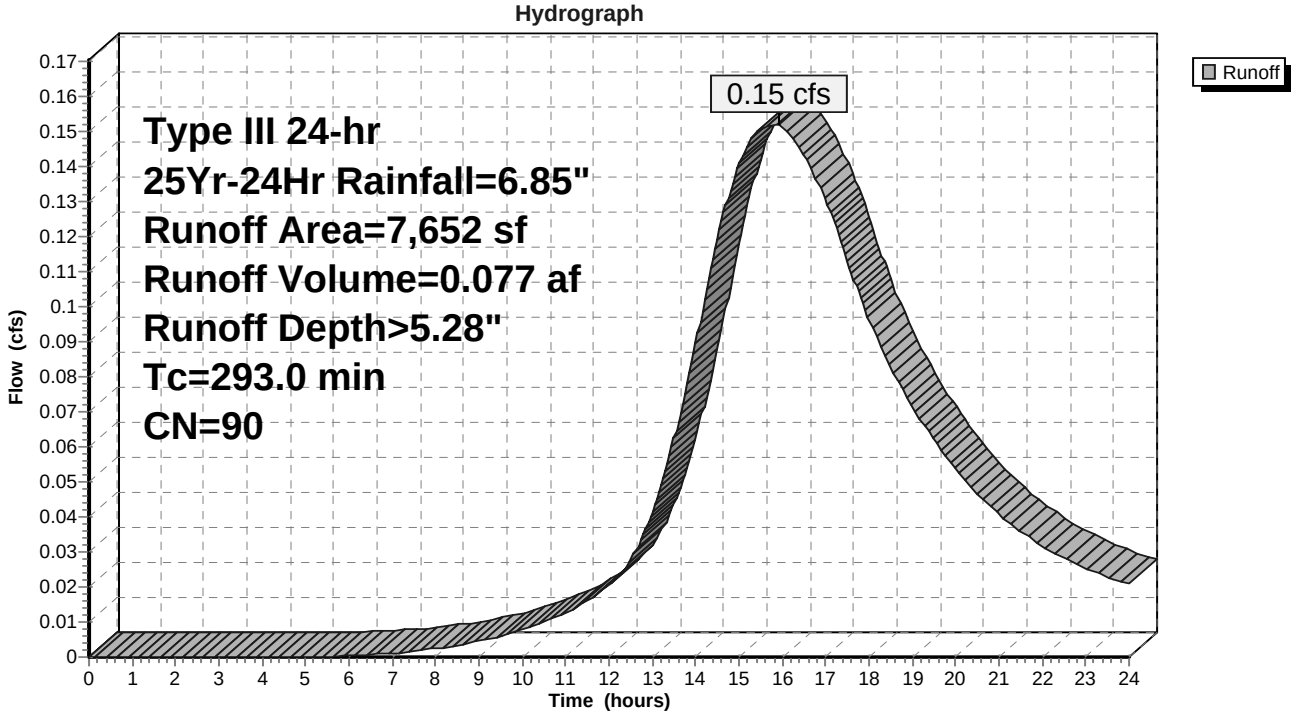
Runoff = 0.15 cfs @ 15.92 hrs, Volume= 0.077 af, Depth> 5.28"

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
196	98	Roofs, HSG A
1,093	39	>75% Grass cover, Good, HSG A
6,363	98	Paved parking, HSG A
7,652	90	Weighted Average
1,093		14.28% Pervious Area
6,559		85.72% Impervious Area

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

Subcatchment 27S: Drive Aisle & Porous



Summary for Subcatchment 28aS: Building

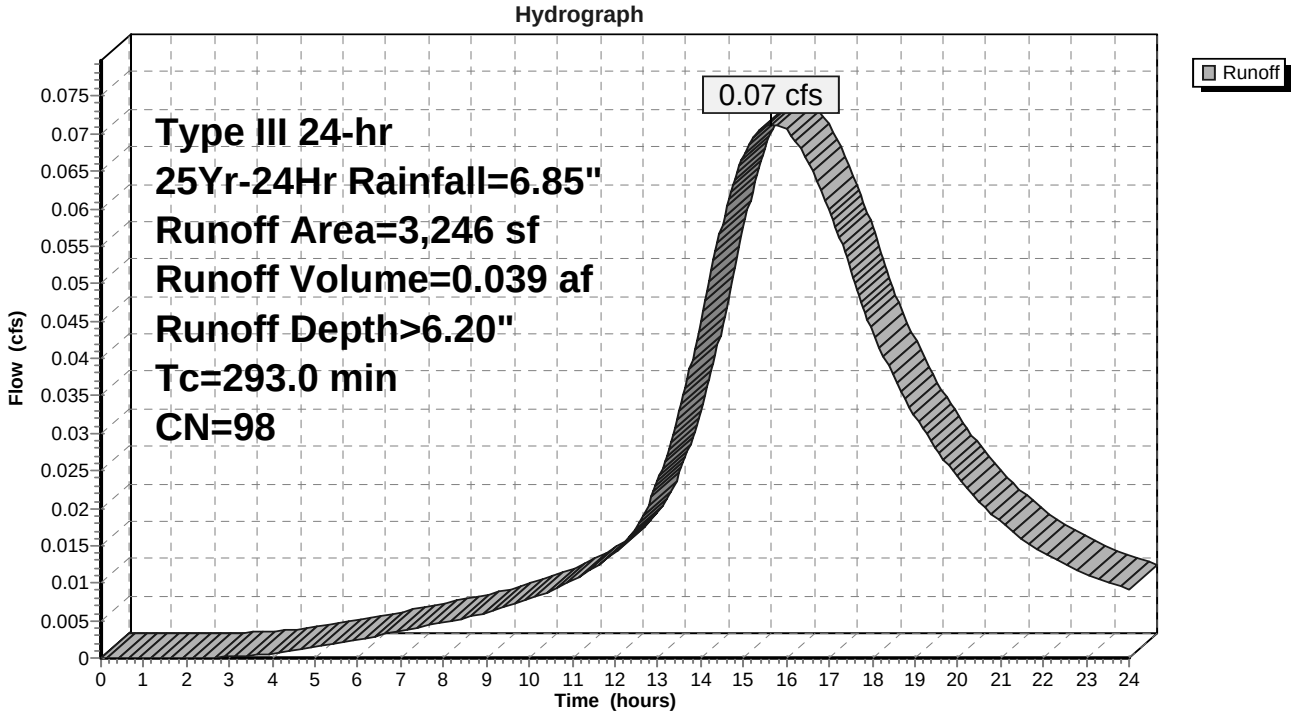
Runoff = 0.07 cfs @ 15.66 hrs, Volume= 0.039 af, Depth> 6.20"

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
3,246	98	Roofs, HSG A
3,246		100.00% Impervious Area

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

Subcatchment 28aS: Building



Summary for Subcatchment 28S: Drive Aisle & Porous

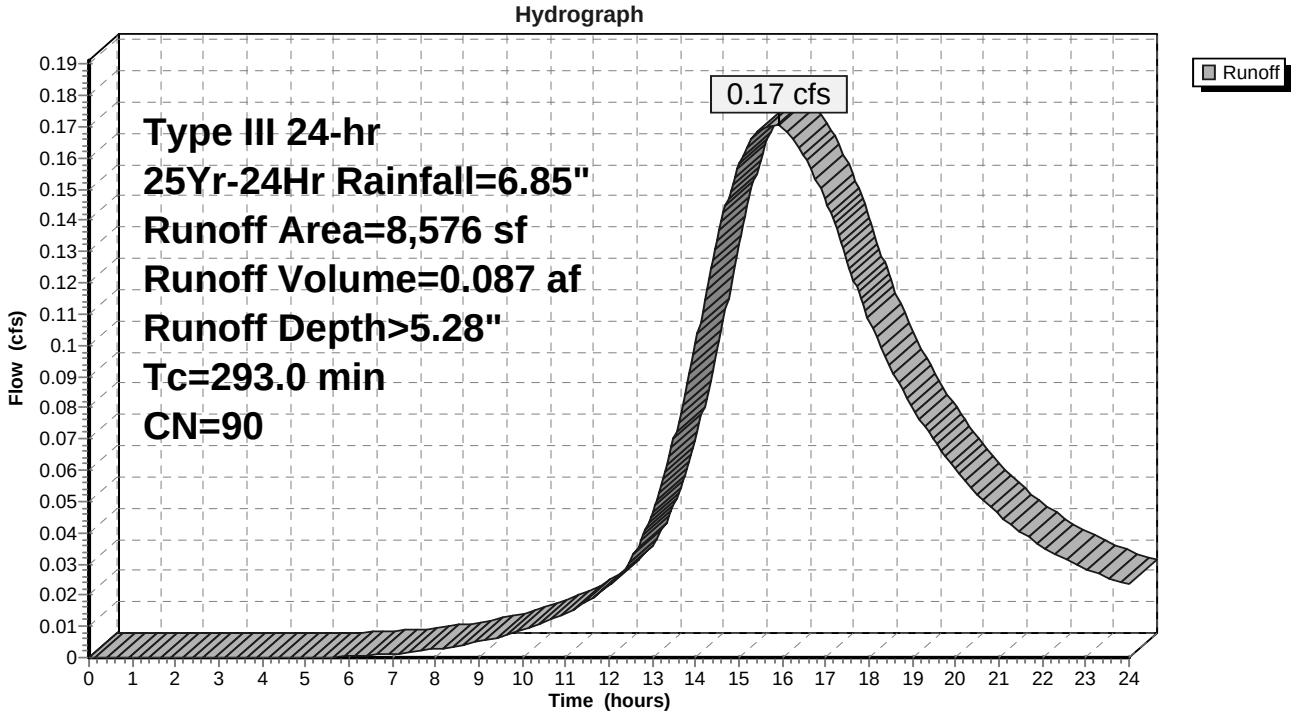
Runoff = 0.17 cfs @ 15.92 hrs, Volume= 0.087 af, Depth> 5.28"

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
1,227	39	>75% Grass cover, Good, HSG A
7,205	98	Paved parking, HSG A
85	96	Gravel surface, HSG A
59	98	Roofs, HSG A
8,576	90	Weighted Average
1,312		15.30% Pervious Area
7,264		84.70% Impervious Area

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

Subcatchment 28S: Drive Aisle & Porous



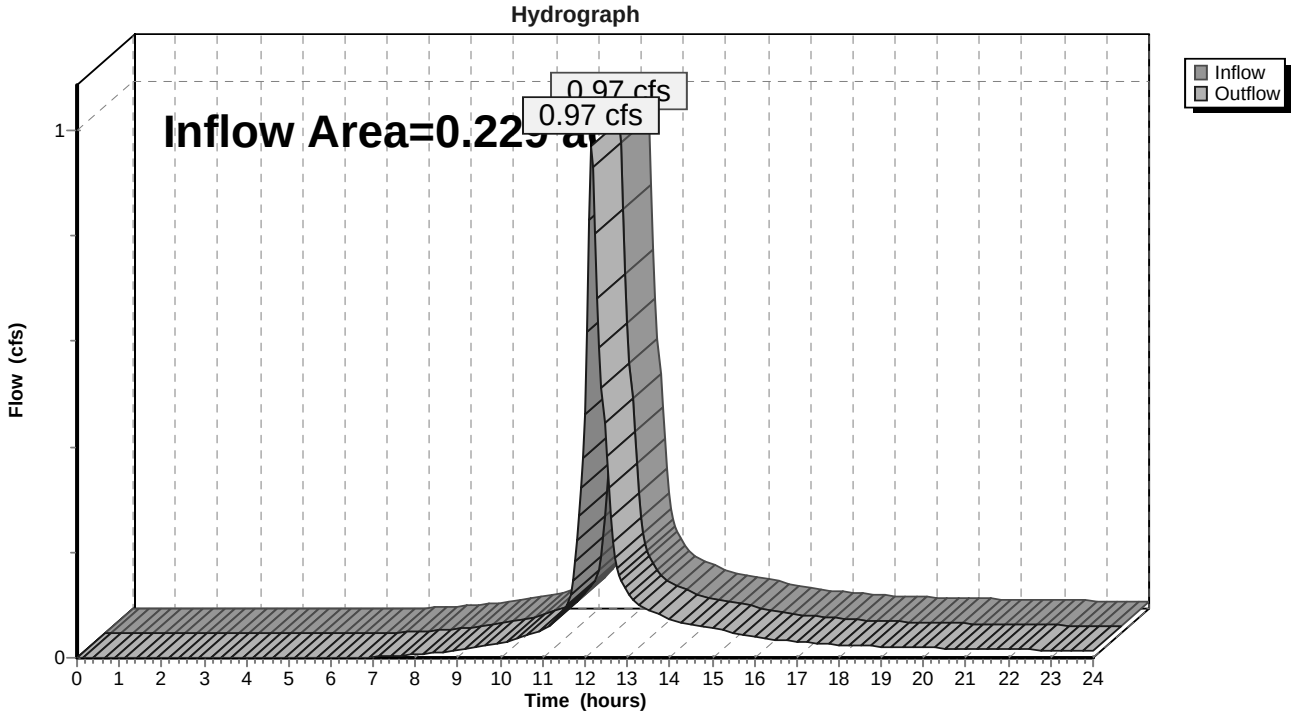
Summary for Reach 100R: Final Reach #100

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

Inflow Area = 0.229 ac, 66.26% Impervious, Inflow Depth > 4.44" for 25Yr-24Hr event
Inflow = 0.97 cfs @ 12.17 hrs, Volume= 0.085 af
Outflow = 0.97 cfs @ 12.17 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

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

Reach 100R: Final Reach #100



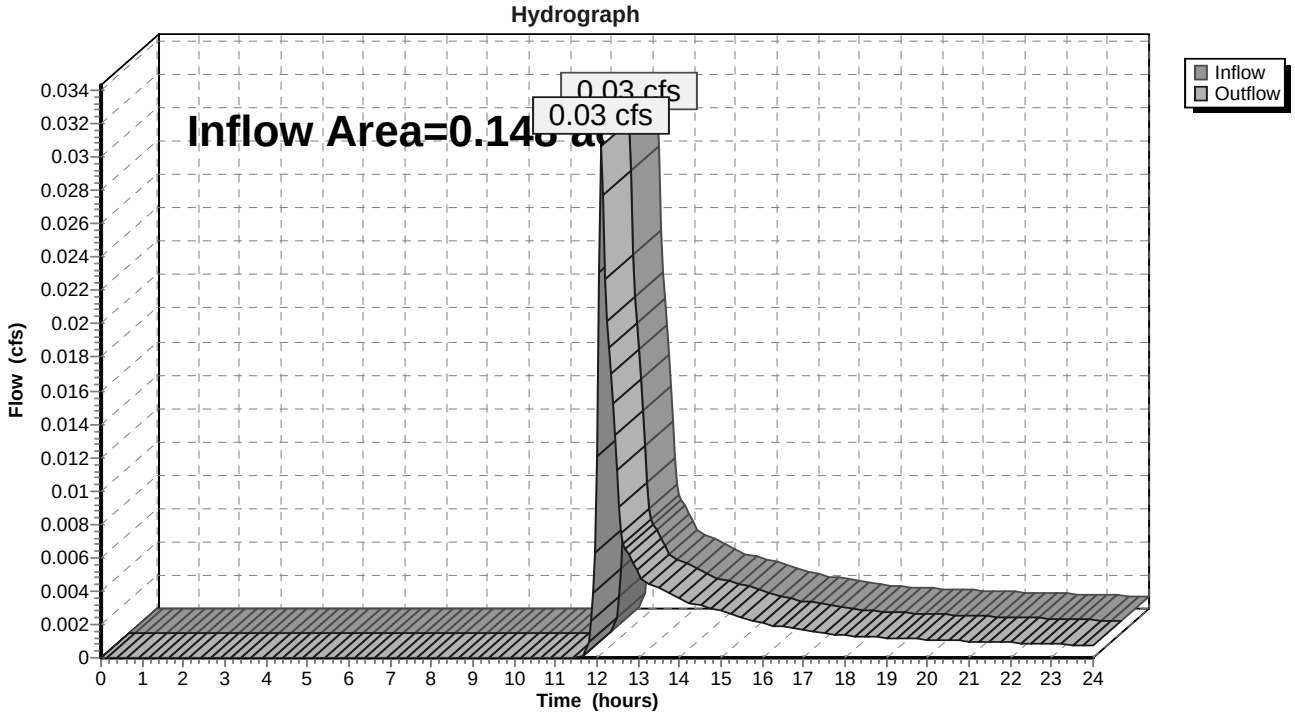
Summary for Reach 200R: Final Reach #200

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

Inflow Area = 0.148 ac, 6.87% Impervious, Inflow Depth > 0.22" for 25Yr-24Hr event
Inflow = 0.03 cfs @ 12.11 hrs, Volume= 0.003 af
Outflow = 0.03 cfs @ 12.11 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

Reach 200R: Final Reach #200



Summary for Pond 101P: Infiltration Sump #101

Inflow Area = 0.110 ac, 47.68% Impervious, Inflow Depth > 3.39" for 25Yr-24Hr event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af
Outflow = 0.05 cfs @ 12.83 hrs, Volume= 0.031 af, Atten= 87%, Lag= 44.0 min
Discarded = 0.05 cfs @ 12.83 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 202.92' @ 12.83 hrs Surf.Area= 771 sf Storage= 504 cf
Flood Elev= 203.50' Surf.Area= 1,086 sf Storage= 1,044 cf

Plug-Flow detention time= 93.3 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (926.2 - 833.5)

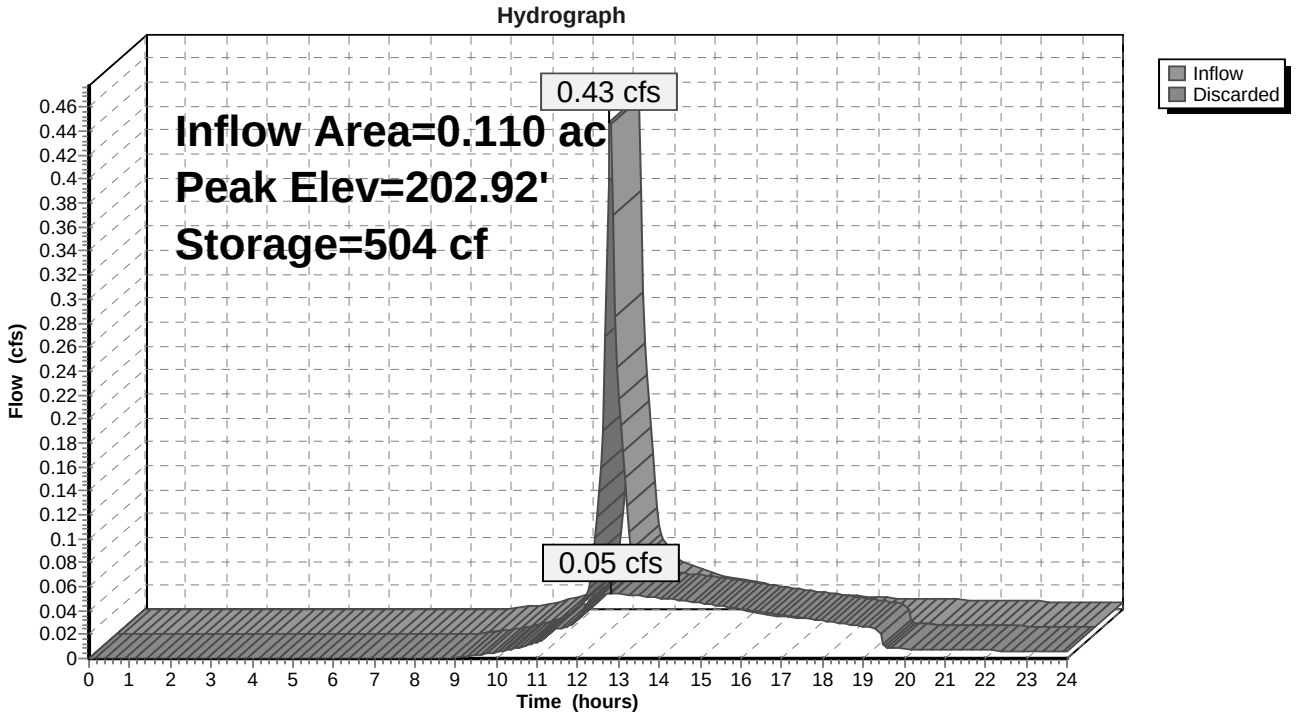
Volume	Invert	Avail.Storage	Storage Description
#1	202.00'	1,044 cf	**Infiltration Area (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.00	355	73.8	0	0	355
203.00	817	173.5	570	570	2,321
203.50	1,086	182.9	474	1,044	2,602

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.00'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.05 cfs @ 12.83 hrs HW=202.92' (Free Discharge)
1=3in/hr Infiltration (Exfiltration Controls 0.05 cfs)

Pond 101P: Infiltration Sump #101



Summary for Pond 102P: Infiltration Sump #102

Inflow Area = 0.136 ac, 8.95% Impervious, Inflow Depth > 1.09" for 25Yr-24Hr event
Inflow = 0.12 cfs @ 12.12 hrs, Volume= 0.012 af
Outflow = 0.06 cfs @ 12.45 hrs, Volume= 0.012 af, Atten= 51%, Lag= 19.9 min
Discarded = 0.06 cfs @ 12.45 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 203.57' @ 12.45 hrs Surf.Area= 852 sf Storage= 52 cf
Flood Elev= 204.00' Surf.Area= 2,135 sf Storage= 678 cf

Plug-Flow detention time= 4.4 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (909.2 - 905.1)

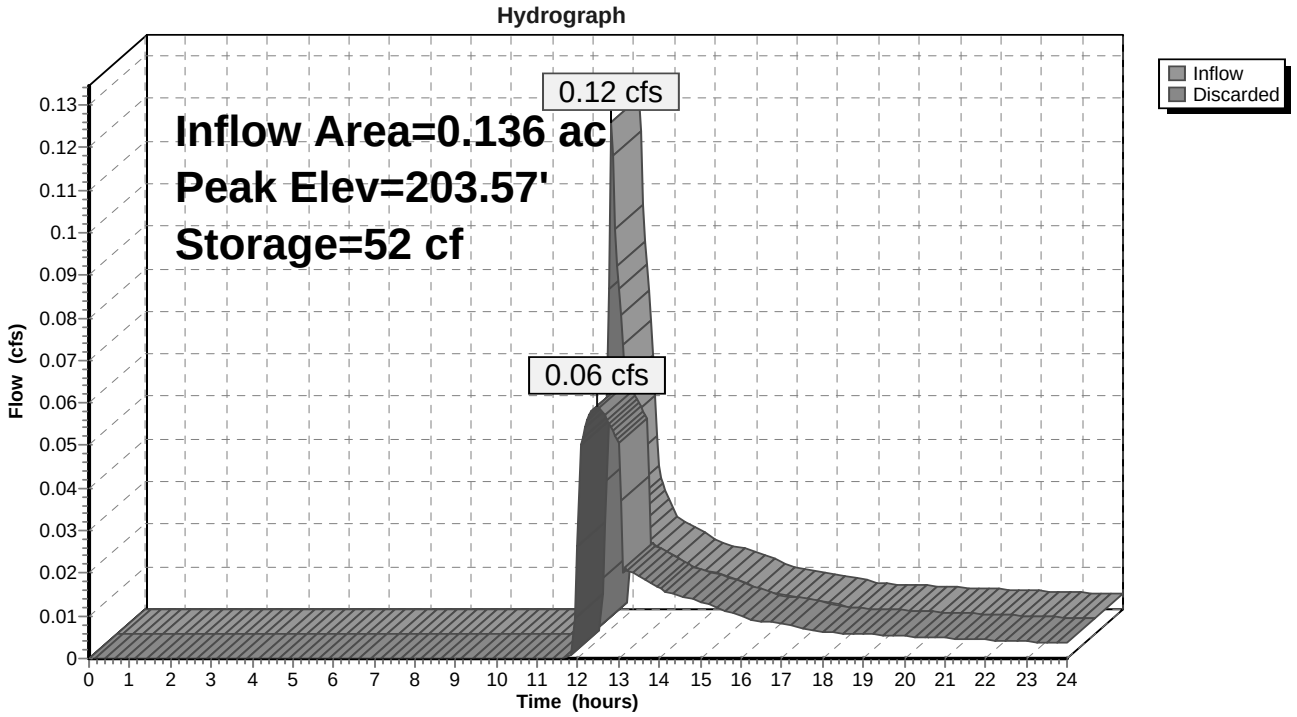
Volume	Invert	Avail.Storage	Storage Description
#1	203.50'	678 cf	**Infiltration Area (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
203.50	707	199.4	0	0	707
204.00	2,135	369.2	678	678	8,391

Device	Routing	Invert	Outlet Devices
#1	Discarded	203.50'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 12.45 hrs HW=203.57' (Free Discharge)
↑—**1=3in/hr Infiltration** (Exfiltration Controls 0.06 cfs)

Pond 102P: Infiltration Sump #102



Summary for Pond 103P: Infiltration Sump #103

Inflow Area = 0.340 ac, 7.44% Impervious, Inflow Depth > 0.71" for 25Yr-24Hr event
Inflow = 0.10 cfs @ 12.50 hrs, Volume= 0.020 af
Outflow = 0.04 cfs @ 13.23 hrs, Volume= 0.020 af, Atten= 60%, Lag= 43.7 min
Discarded = 0.04 cfs @ 13.23 hrs, Volume= 0.020 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 203.85' @ 13.23 hrs Surf.Area= 599 sf Storage= 139 cf
Flood Elev= 204.25' Surf.Area= 1,002 sf Storage= 467 cf

Plug-Flow detention time= 32.5 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 31.8 min (975.8 - 944.0)

Volume	Invert	Avail.Storage	Storage Description
#1	203.50'	718 cf	**Infiltration Area (Irregular)** Listed below (Recalc)

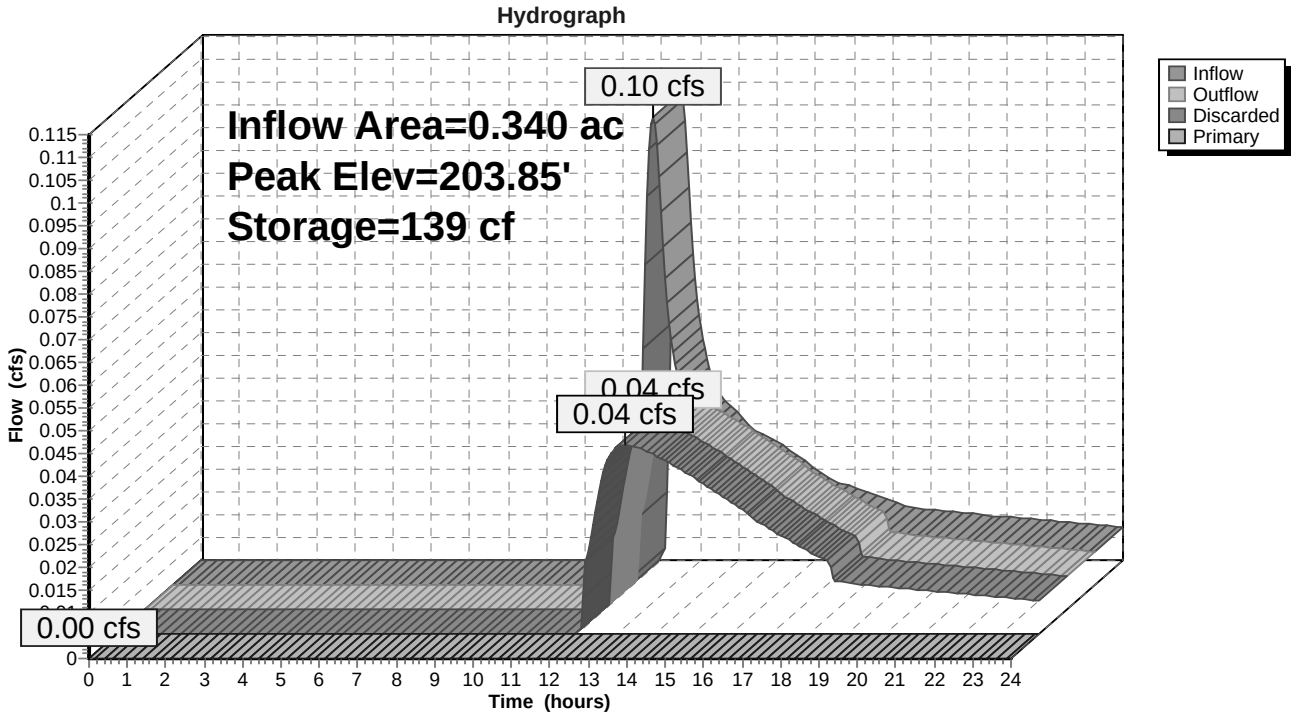
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
203.50	218	72.8	0	0	218
204.00	809	150.2	241	241	1,593
204.25	1,002	158.1	226	467	1,790
204.50	1,002	158.1	251	718	1,830

Device	Routing	Invert	Outlet Devices
#1	Discarded	203.50'	**3.000 in/hr 3in/hr Infiltration over Surface area**
#2	Primary	204.25'	**5.0' long x 15.0' breadth Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.04 cfs @ 13.23 hrs HW=203.85' (Free Discharge)
↑—**1=3in/hr Infiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=203.50' (Free Discharge)
↑—**2=Spillway** (Controls 0.00 cfs)

Pond 103P: Infiltration Sump #103



Summary for Pond 104P: Infiltration Sump #104

Inflow Area = 0.102 ac, 41.71% Impervious, Inflow Depth > 2.88" for 25Yr-24Hr event
Inflow = 0.33 cfs @ 12.10 hrs, Volume= 0.025 af
Outflow = 0.07 cfs @ 12.54 hrs, Volume= 0.024 af, Atten= 78%, Lag= 26.9 min
Discarded = 0.07 cfs @ 12.54 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 203.47' @ 12.54 hrs Surf.Area= 1,059 sf Storage= 315 cf
Flood Elev= 203.75' Surf.Area= 1,462 sf Storage= 671 cf

Plug-Flow detention time= 38.1 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 37.6 min (882.4 - 844.7)

Volume	Invert	Avail.Storage	Storage Description
#1	203.00'	1,037 cf	**Infiltration Area (Irregular)** Listed below (Recalc)

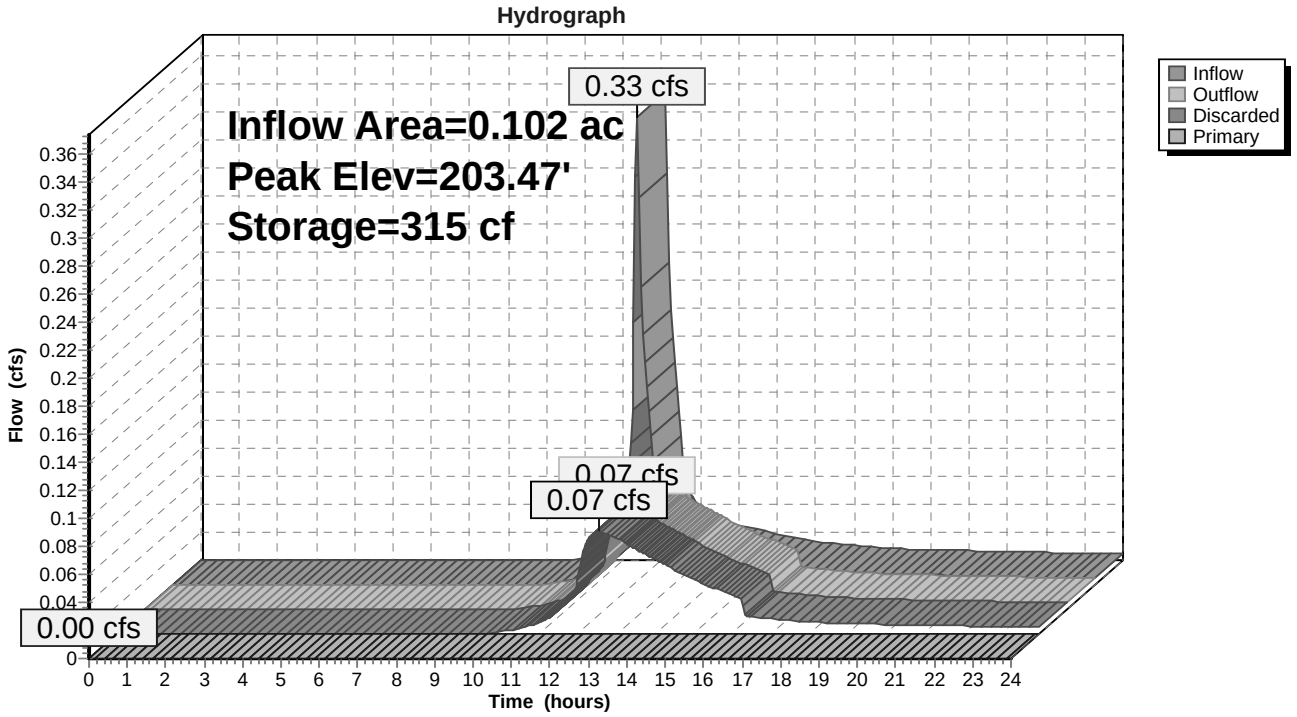
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
203.00	351	132.4	0	0	351
203.50	1,120	168.7	350	350	1,224
203.75	1,462	182.1	322	671	1,601
204.00	1,462	182.1	366	1,037	1,646

Device	Routing	Invert	Outlet Devices
#1	Discarded	203.00'	**3.000 in/hr 3in/hr Infiltration over Surface area**
#2	Primary	203.75'	**5.0' long x 18.0' breadth Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.07 cfs @ 12.54 hrs HW=203.47' (Free Discharge)
↑—**1=3in/hr Infiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=203.00' (Free Discharge)
↑—**2=Spillway** (Controls 0.00 cfs)

Pond 104P: Infiltration Sump #104



Summary for Pond 105P: Infiltration Sump #105

Inflow Area = 0.123 ac, 8.26% Impervious, Inflow Depth > 1.17" for 25Yr-24Hr event
Inflow = 0.12 cfs @ 12.12 hrs, Volume= 0.012 af
Outflow = 0.04 cfs @ 12.55 hrs, Volume= 0.012 af, Atten= 67%, Lag= 26.0 min
Discarded = 0.04 cfs @ 12.55 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 202.67' @ 12.55 hrs Surf.Area= 578 sf Storage= 86 cf
Flood Elev= 203.00' Surf.Area= 857 sf Storage= 324 cf

Plug-Flow detention time= 12.6 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 12.2 min (912.8 - 900.6)

Volume	Invert	Avail.Storage	Storage Description
#1	202.50'	538 cf	**Infiltration Area (Irregular)** Listed below (Recalc)

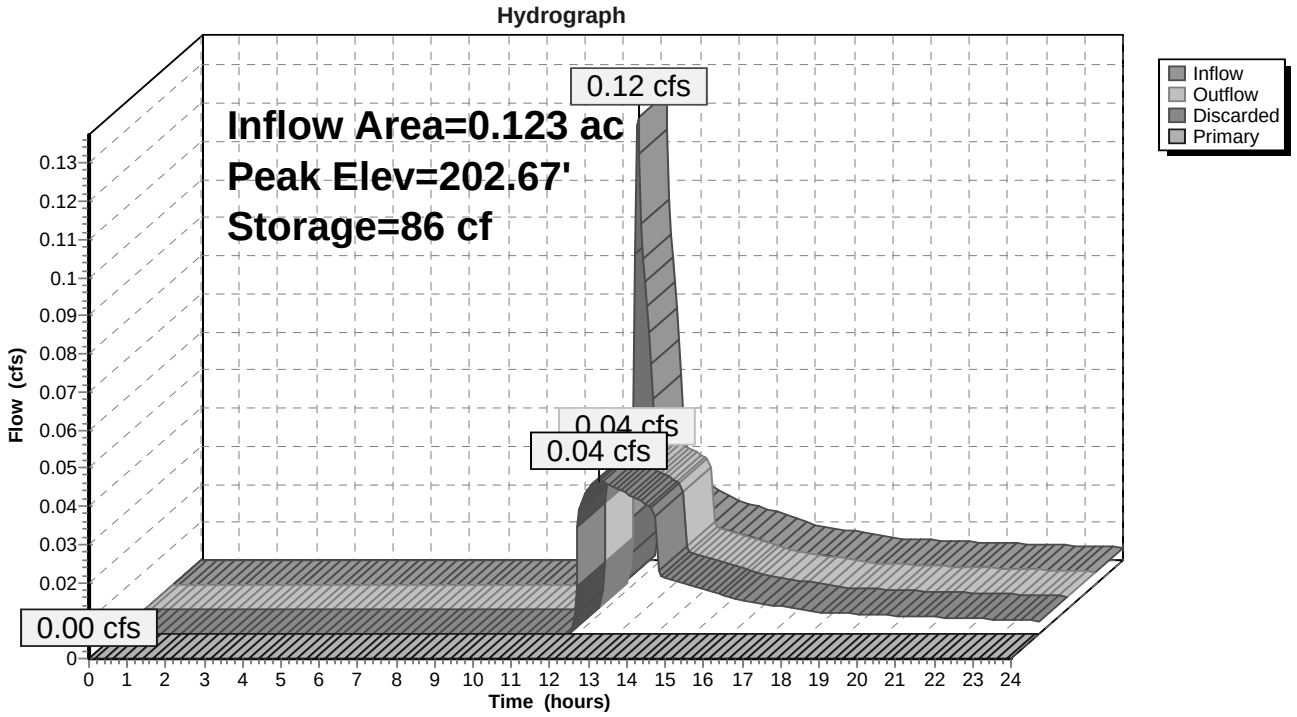
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.50	460	393.3	0	0	460
203.00	857	399.6	324	324	904
203.25	857	399.6	214	538	1,004

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.50'	**3.000 in/hr 3in/hr Infiltration over Surface area**
#2	Primary	203.00'	**15.0' long x 2.0' breadth Overflow** 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

Discarded OutFlow Max=0.04 cfs @ 12.55 hrs HW=202.67' (Free Discharge)
↑**1=3in/hr Infiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=202.50' (Free Discharge)
↑**2=Overflow** (Controls 0.00 cfs)

Pond 105P: Infiltration Sump #105



Summary for Pond 201P: Porous Pavement #201

Inflow Area = 0.104 ac, 96.42% Impervious, Inflow Depth > 5.97" for 25Yr-24Hr event
Inflow = 0.10 cfs @ 15.67 hrs, Volume= 0.052 af
Outflow = 0.09 cfs @ 15.10 hrs, Volume= 0.052 af, Atten= 6%, Lag= 0.0 min
Discarded = 0.09 cfs @ 15.10 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.17' @ 16.45 hrs Surf.Area= 1,321 sf Storage= 36 cf
Flood Elev= 202.94' Surf.Area= 1,321 sf Storage= 1,104 cf

Plug-Flow detention time= 3.4 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (984.6 - 981.6)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	528 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,321 cf Overall x 40.0% Voids
#2	201.10'	396 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,982 cf Overall x 20.0% Voids
#3	202.60'	180 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 449 cf Overall x 40.0% Voids
		1,104 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.10	1,321	197.8	0	0	1,321
201.10	1,321	197.8	1,321	1,321	1,519

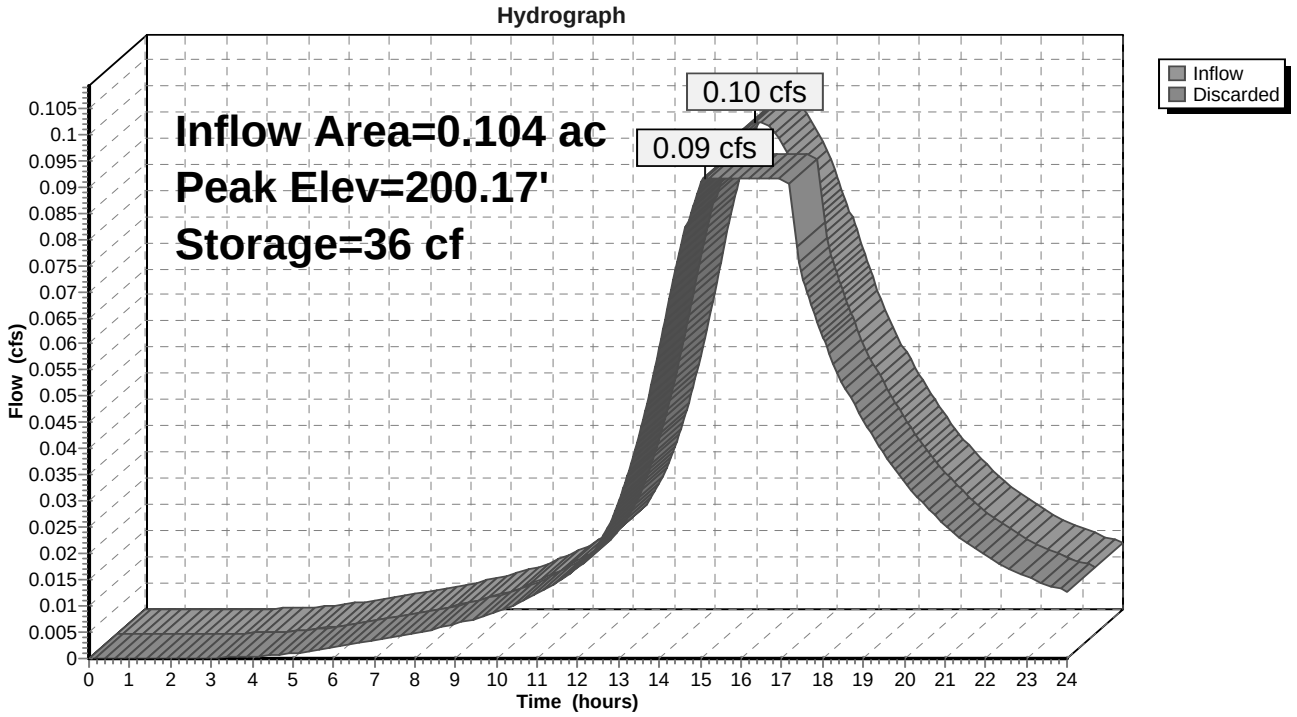
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.10	1,321	197.8	0	0	1,321
202.60	1,321	197.8	1,982	1,982	1,618

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.60	1,321	197.8	0	0	1,321
202.94	1,321	197.8	449	449	1,388

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.10'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.09 cfs @ 15.10 hrs HW=200.13' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.09 cfs)

Pond 201P: Porous Pavement #201



Summary for Pond 202P: Porous Pavement #202

Inflow Area = 0.172 ac, 84.25% Impervious, Inflow Depth > 5.12" for 25Yr-24Hr event
Inflow = 0.14 cfs @ 15.93 hrs, Volume= 0.073 af
Outflow = 0.12 cfs @ 14.85 hrs, Volume= 0.073 af, Atten= 13%, Lag= 0.0 min
Discarded = 0.12 cfs @ 14.85 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.35' @ 16.97 hrs Surf.Area= 1,794 sf Storage= 120 cf
Flood Elev= 203.02' Surf.Area= 1,794 sf Storage= 1,500 cf

Plug-Flow detention time= 6.5 min calculated for 0.073 af (100% of inflow)
Center-of-Mass det. time= 6.1 min (1,010.8 - 1,004.8)

Volume	Invert	Avail.Storage	Storage Description
#1	200.18'	718 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,794 cf Overall x 40.0% Voids
#2	201.18'	538 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,691 cf Overall x 20.0% Voids
#3	202.68'	244 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 610 cf Overall x 40.0% Voids
		1,500 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.18	1,794	250.7	0	0	1,794
201.18	1,794	250.7	1,794	1,794	2,045

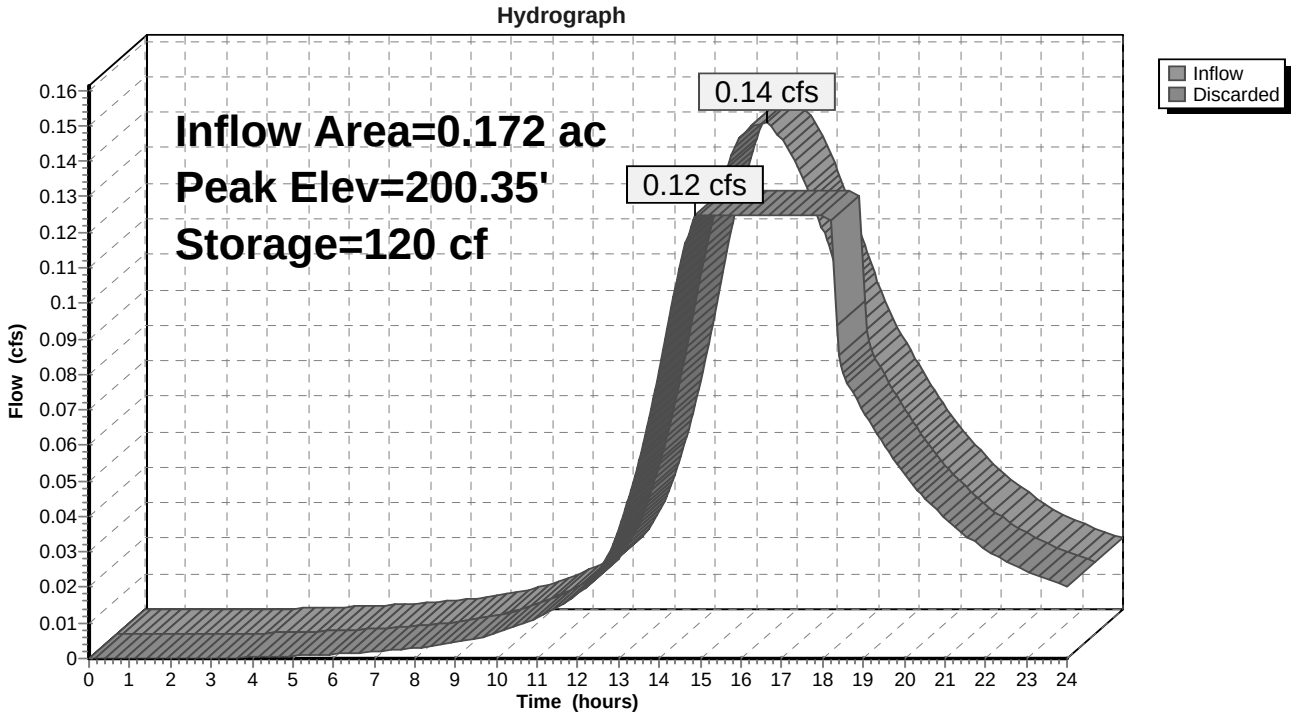
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.18	1,794	250.7	0	0	1,794
202.68	1,794	250.7	2,691	2,691	2,170

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.68	1,794	250.7	0	0	1,794
203.02	1,794	250.7	610	610	1,879

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.18'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.12 cfs @ 14.85 hrs HW=200.21' (Free Discharge)
1=3in/Hr Infiltration (Exfiltration Controls 0.12 cfs)

Pond 202P: Porous Pavement #202



Summary for Pond 203P: Porous Pavement #203

Inflow Area = 0.109 ac, 97.31% Impervious, Inflow Depth > 6.01" for 25Yr-24Hr event
Inflow = 0.10 cfs @ 15.67 hrs, Volume= 0.055 af
Outflow = 0.08 cfs @ 14.45 hrs, Volume= 0.055 af, Atten= 23%, Lag= 0.0 min
Discarded = 0.08 cfs @ 14.45 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.75' @ 17.32 hrs Surf.Area= 1,147 sf Storage= 172 cf
Flood Elev= 203.22' Surf.Area= 1,147 sf Storage= 959 cf

Plug-Flow detention time= 14.1 min calculated for 0.055 af (100% of inflow)
Center-of-Mass det. time= 13.7 min (992.5 - 978.8)

Volume	Invert	Avail.Storage	Storage Description
#1	200.38'	459 cf	**Storage Reservoir (Irregular)**Listed below (Recalc) 1,147 cf Overall x 40.0% Voids
#2	201.38'	344 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,721 cf Overall x 20.0% Voids
#3	202.88'	156 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 390 cf Overall x 40.0% Voids
		959 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.38	1,147	179.1	0	0	1,147
201.38	1,147	179.1	1,147	1,147	1,326

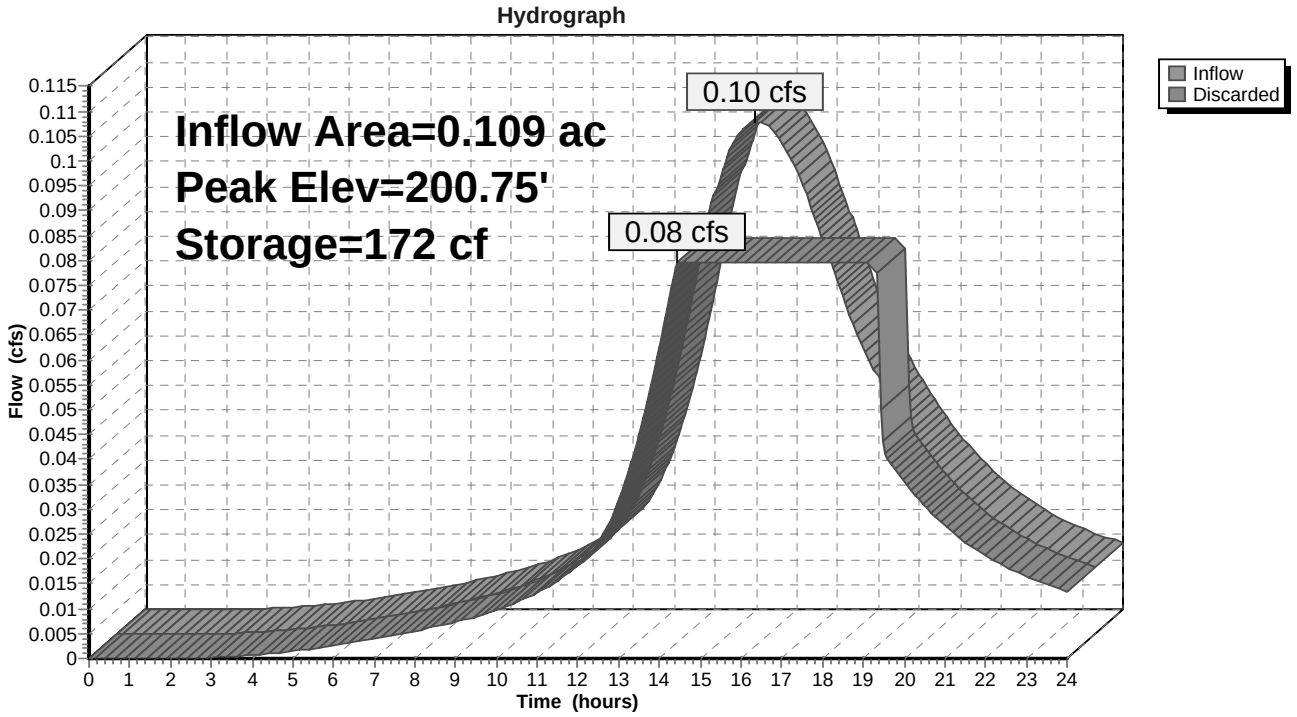
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.38	1,147	179.1	0	0	1,147
202.88	1,147	179.1	1,721	1,721	1,416

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.88	1,147	179.1	0	0	1,147
203.22	1,147	179.1	390	390	1,208

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.38'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.08 cfs @ 14.45 hrs HW=200.41' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.08 cfs)

Pond 203P: Porous Pavement #203



Summary for Pond 204P: Porous Pavement #204

Inflow Area = 0.055 ac,100.00% Impervious, Inflow Depth > 6.20" for 25Yr-24Hr event
Inflow = 0.05 cfs @ 15.66 hrs, Volume= 0.029 af
Outflow = 0.05 cfs @ 15.72 hrs, Volume= 0.029 af, Atten= 0%, Lag= 3.5 min
Discarded = 0.05 cfs @ 15.72 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 199.98' @ 15.72 hrs Surf.Area= 983 sf Storage= 9 cf
Flood Elev= 202.80' Surf.Area= 983 sf Storage= 822 cf

Plug-Flow detention time= 2.7 min calculated for 0.029 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (973.4 - 971.1)

Volume	Invert	Avail.Storage	Storage Description
#1	199.96'	393 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 983 cf Overall x 40.0% Voids
#2	200.96'	295 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,475 cf Overall x 20.0% Voids
#3	202.46'	134 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 334 cf Overall x 40.0% Voids
		822 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.96	983	159.7	0	0	983
200.96	983	159.7	983	983	1,143

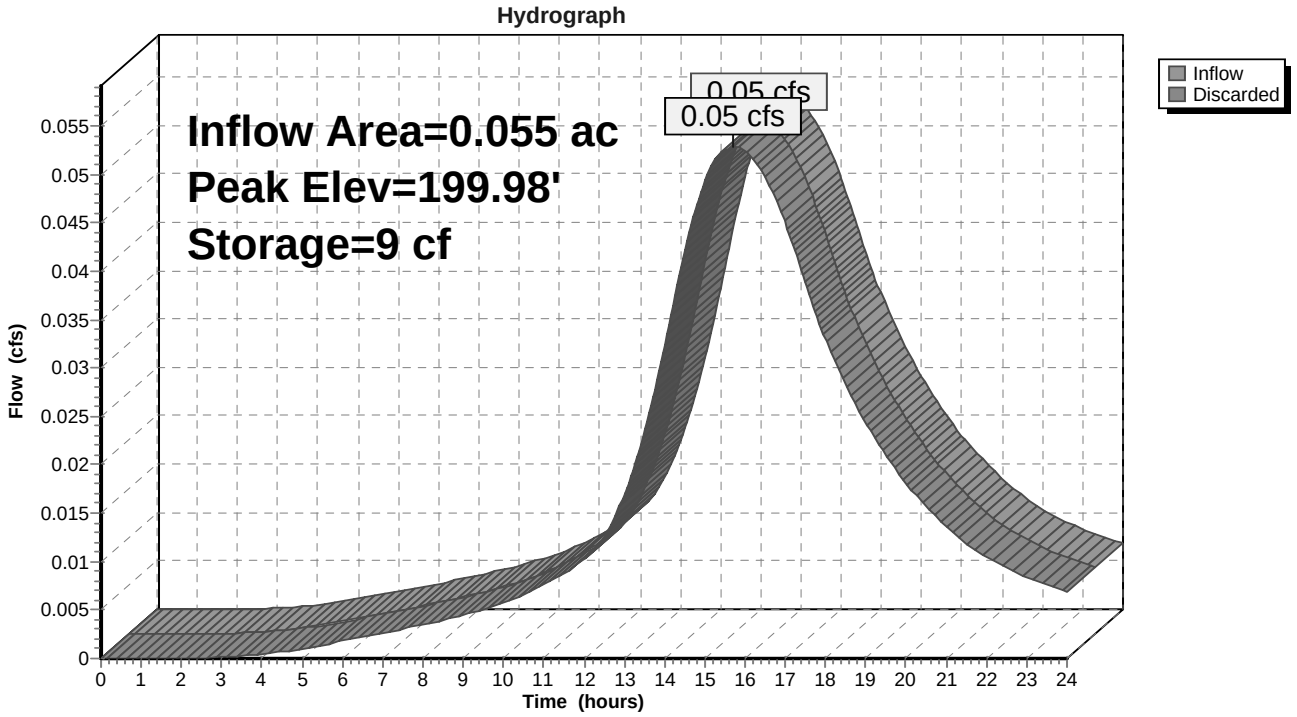
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.96	983	159.7	0	0	983
202.46	983	159.7	1,475	1,475	1,223

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.46	983	159.7	0	0	983
202.80	983	159.7	334	334	1,037

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.96'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 15.72 hrs HW=199.98' (Free Discharge)
1=3in/Hr Infiltration (Exfiltration Controls 0.07 cfs)

Pond 204P: Porous Pavement #204



Summary for Pond 205P: Porous Pavement #205

Inflow Area = 0.143 ac, 75.75% Impervious, Inflow Depth > 4.72" for 25Yr-24Hr event
Inflow = 0.11 cfs @ 15.93 hrs, Volume= 0.056 af
Outflow = 0.11 cfs @ 15.96 hrs, Volume= 0.056 af, Atten= 0%, Lag= 1.3 min
Discarded = 0.11 cfs @ 15.96 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 199.79' @ 15.96 hrs Surf.Area= 1,971 sf Storage= 19 cf
Flood Elev= 202.61' Surf.Area= 1,971 sf Storage= 1,648 cf

Plug-Flow detention time= 2.7 min calculated for 0.056 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (1,021.0 - 1,018.8)

Volume	Invert	Avail.Storage	Storage Description
#1	199.77'	788 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,971 cf Overall x 40.0% Voids
#2	200.77'	591 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,957 cf Overall x 20.0% Voids
#3	202.27'	268 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 670 cf Overall x 40.0% Voids
		1,648 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.77	1,971	275.6	0	0	1,971
200.77	1,971	275.6	1,971	1,971	2,247

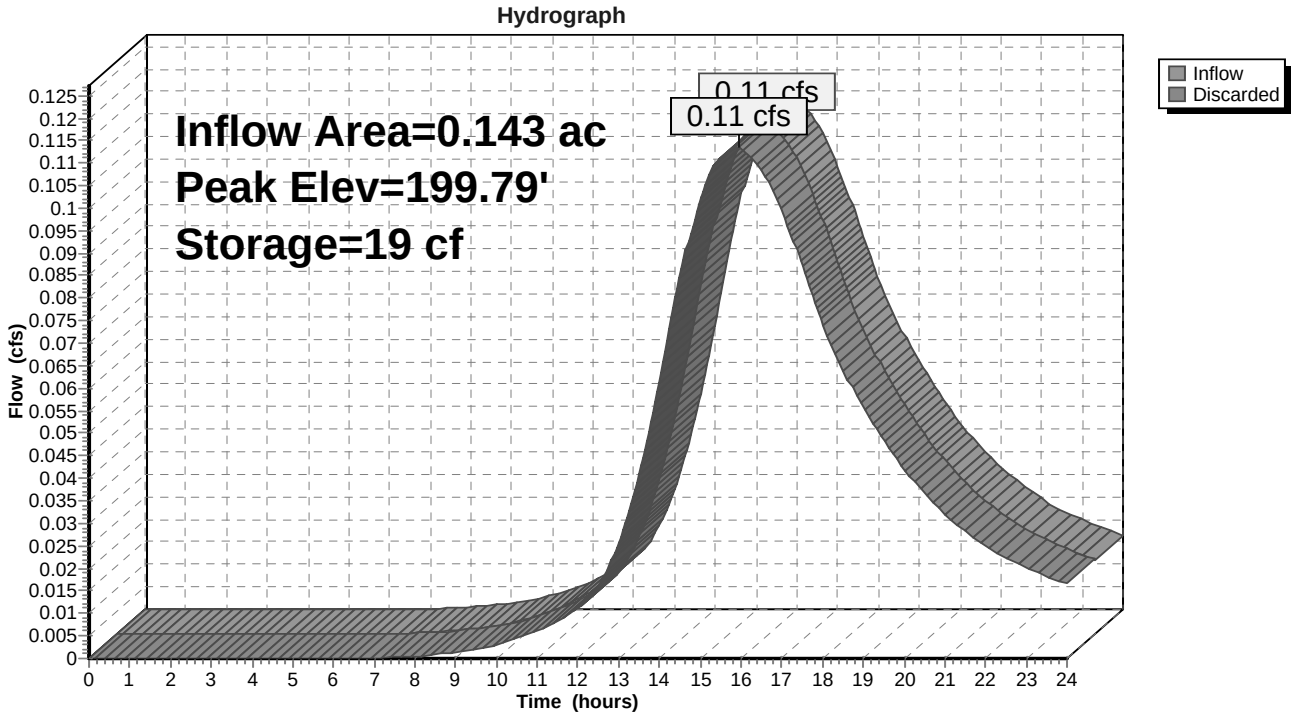
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.77	1,971	275.6	0	0	1,971
202.27	1,971	275.6	2,957	2,957	2,384

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.27	1,971	275.6	0	0	1,971
202.61	1,971	275.6	670	670	2,065

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.77'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.14 cfs @ 15.96 hrs HW=199.79' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.14 cfs)

Pond 205P: Porous Pavement #205



Summary for Pond 206P: Porous Pavement #206

Inflow Area = 0.125 ac, 95.57% Impervious, Inflow Depth > 5.91" for 25Yr-24Hr event
Inflow = 0.12 cfs @ 15.67 hrs, Volume= 0.062 af
Outflow = 0.11 cfs @ 15.15 hrs, Volume= 0.062 af, Atten= 5%, Lag= 0.0 min
Discarded = 0.11 cfs @ 15.15 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.31' @ 16.40 hrs Surf.Area= 1,592 sf Storage= 38 cf
Flood Elev= 203.09' Surf.Area= 1,592 sf Storage= 1,331 cf

Plug-Flow detention time= 3.3 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 2.8 min (985.0 - 982.1)

Volume	Invert	Avail.Storage	Storage Description
#1	200.25'	637 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,592 cf Overall x 40.0% Voids
#2	201.25'	478 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,388 cf Overall x 20.0% Voids
#3	202.75'	217 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 541 cf Overall x 40.0% Voids
		1,331 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.25	1,592	231.4	0	0	1,592
201.25	1,592	231.4	1,592	1,592	1,823

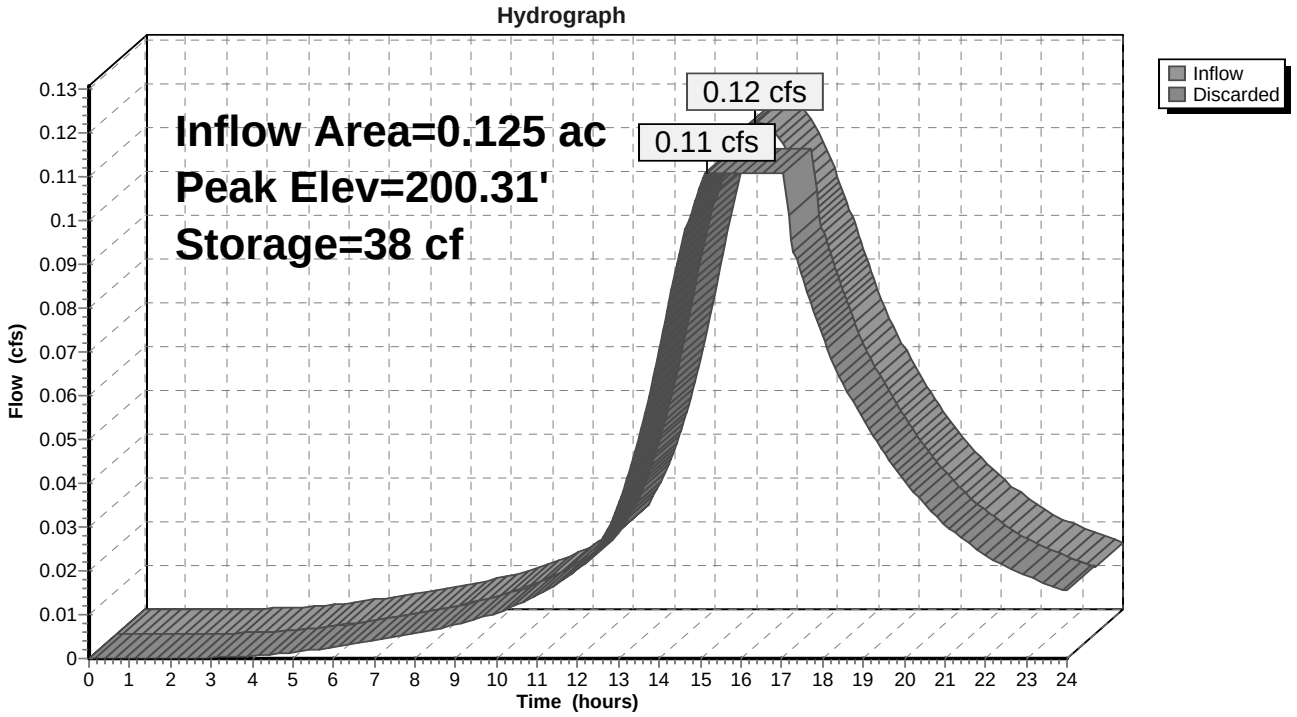
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.25	1,592	231.4	0	0	1,592
202.75	1,592	231.4	2,388	2,388	1,939

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.75	1,592	231.4	0	0	1,592
203.09	1,592	231.4	541	541	1,671

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.25'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 15.15 hrs HW=200.28' (Free Discharge)
↑**1=3in/hr Infiltration** (Exfiltration Controls 0.11 cfs)

Pond 206P: Porous Pavement #206



Summary for Pond 207P: Porous Pavement #207

Inflow Area = 0.248 ac, 89.90% Impervious, Inflow Depth > 5.55" for 25Yr-24Hr event
Inflow = 0.22 cfs @ 15.89 hrs, Volume= 0.115 af
Outflow = 0.20 cfs @ 14.95 hrs, Volume= 0.115 af, Atten= 9%, Lag= 0.0 min
Discarded = 0.20 cfs @ 14.95 hrs, Volume= 0.115 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.29' @ 16.71 hrs Surf.Area= 2,893 sf Storage= 124 cf
Flood Elev= 203.01' Surf.Area= 2,893 sf Storage= 2,407 cf

Plug-Flow detention time= 4.5 min calculated for 0.115 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (998.5 - 994.4)

Volume	Invert	Avail.Storage	Storage Description
#1	200.18'	1,157 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 2,893 cf Overall x 40.0% Voids
#2	201.18'	868 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 4,340 cf Overall x 20.0% Voids
#3	202.68'	382 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 955 cf Overall x 40.0% Voids
		2,407 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.18	2,893	368.1	0	0	2,893
201.18	2,893	368.1	2,893	2,893	3,261

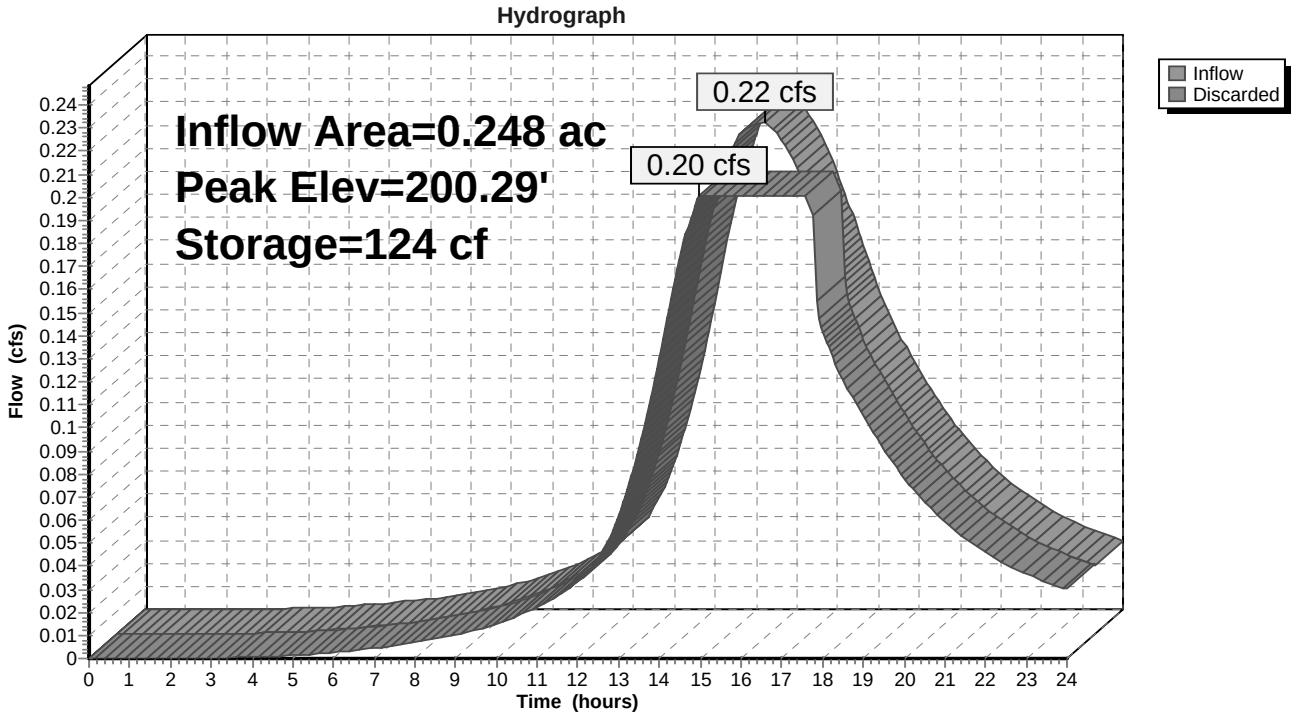
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.18	2,893	368.1	0	0	2,893
202.68	2,893	368.1	4,340	4,340	3,445

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.68	2,893	368.1	0	0	2,893
203.01	2,893	368.1	955	955	3,014

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.18'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.20 cfs @ 14.95 hrs HW=200.21' (Free Discharge)
1=3in/hr Infiltration (Exfiltration Controls 0.20 cfs)

Pond 207P: Porous Pavement #207



Summary for Pond 208P: Porous Pavement #208

Inflow Area = 0.713 ac, 43.33% Impervious, Inflow Depth > 2.10" for 25Yr-24Hr event
Inflow = 0.24 cfs @ 15.90 hrs, Volume= 0.125 af
Outflow = 0.17 cfs @ 14.35 hrs, Volume= 0.125 af, Atten= 30%, Lag= 0.0 min
Discarded = 0.17 cfs @ 14.35 hrs, Volume= 0.125 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 199.98' @ 17.65 hrs Surf.Area= 2,446 sf Storage= 609 cf
Flood Elev= 202.52' Surf.Area= 2,446 sf Storage= 2,116 cf

Plug-Flow detention time= 26.5 min calculated for 0.125 af (100% of inflow)
Center-of-Mass det. time= 25.8 min (1,020.9 - 995.0)

Volume	Invert	Avail.Storage	Storage Description
#1	199.36'	978 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 2,446 cf Overall x 40.0% Voids
#2	200.36'	734 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 3,669 cf Overall x 20.0% Voids
#3	201.86'	323 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 40.0% Voids
#4	202.19'	81 cf	**Porous Pavement (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 10.0% Voids
#5	202.52'	277 cf	**Ponding Area (Irregular)**Listed below (Recalc) -Impervious
		2,393 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.36	2,446	318.0	0	0	2,446
200.36	2,446	318.0	2,446	2,446	2,764

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.36	2,446	318.0	0	0	2,446
201.86	2,446	318.0	3,669	3,669	2,923

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.86	2,446	318.0	0	0	2,446
202.19	2,446	318.0	807	807	2,551

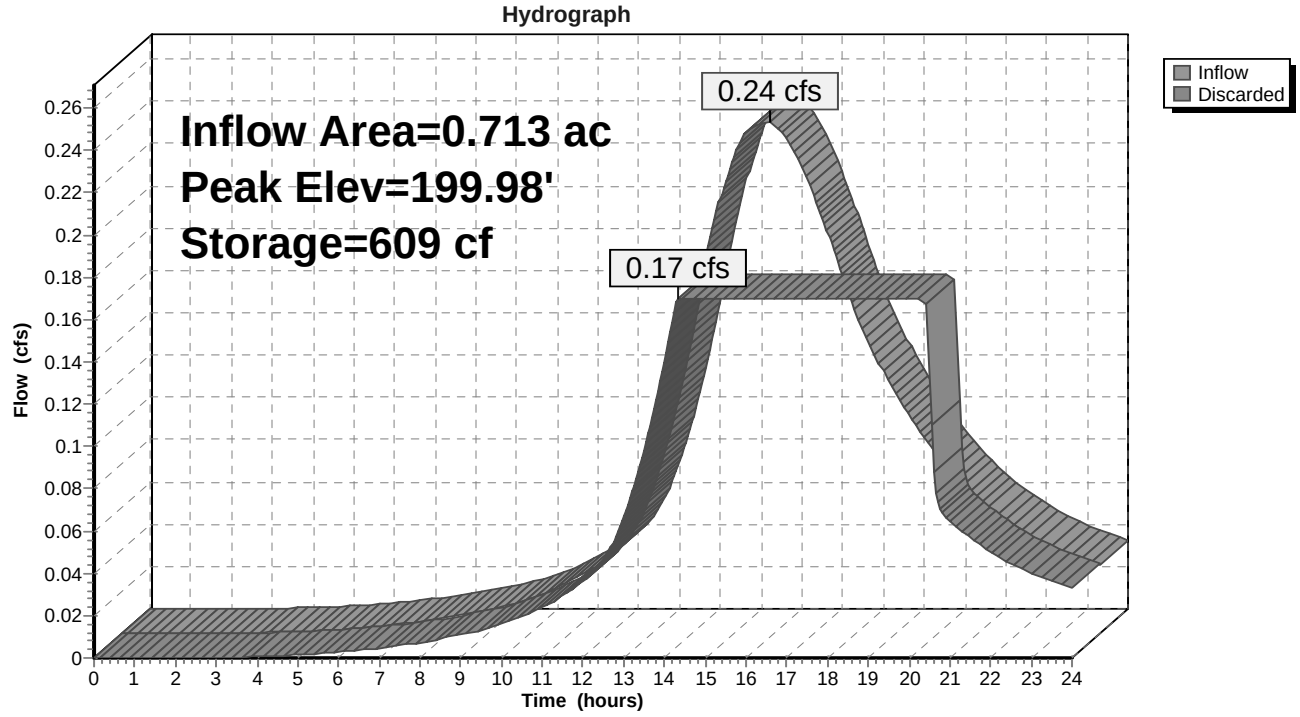
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.19	2,446	318.0	0	0	2,446
202.52	2,446	318.0	807	807	2,551

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.52	4	4.0	0	0	4
203.00	582	118.4	101	101	1,119
203.25	829	133.6	175	277	1,425

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.36'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.17 cfs @ 14.35 hrs HW=199.40' (Free Discharge)
↑**1=3in/hr Infiltration** (Exfiltration Controls 0.17 cfs)

Pond 208P: Porous Pavement #208



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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>1.65"
Flow Length=184' Tc=12.0 min CN=79 Runoff=0.36 cfs 0.031 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>0.14"
Tc=6.0 min CN=47 Runoff=0.00 cfs 0.000 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>1.02"
Tc=6.0 min CN=69 Runoff=0.12 cfs 0.009 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>0.08"
Tc=6.0 min CN=44 Runoff=0.00 cfs 0.001 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>0.01"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>0.76"
Tc=6.0 min CN=64 Runoff=0.07 cfs 0.006 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>0.10"
Tc=6.0 min CN=45 Runoff=0.00 cfs 0.001 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.02 cfs 0.010 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>2.84"
Tc=293.0 min CN=95 Runoff=0.03 cfs 0.016 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.02 cfs 0.010 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>2.01"
Tc=293.0 min CN=86 Runoff=0.05 cfs 0.023 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.019 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>2.63"
Tc=293.0 min CN=93 Runoff=0.02 cfs 0.008 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.015 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>1.93"
Tc=293.0 min CN=85 Runoff=0.05 cfs 0.023 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.019 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>2.54"
Tc=293.0 min CN=92 Runoff=0.02 cfs 0.011 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.019 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>2.35"
Tc=293.0 min CN=90 Runoff=0.07 cfs 0.034 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>3.16"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.020 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>2.35"
Tc=293.0 min CN=90 Runoff=0.08 cfs 0.039 af

Reach 100R: Final Reach #100 Inflow=0.36 cfs 0.031 af
Outflow=0.36 cfs 0.031 af

Reach 200R: Final Reach #200 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 101P: Infiltration Sump #101 Peak Elev=202.23' Storage=90 cf Inflow=0.12 cfs 0.009 af
Outflow=0.03 cfs 0.009 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.50' Storage=0 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 103P: Infiltration Sump #103 Peak Elev=203.50' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.09' Storage=37 cf Inflow=0.07 cfs 0.006 af
Discarded=0.03 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.006 af

Pond 105P: Infiltration Sump #105 Peak Elev=202.50' Storage=0 cf Inflow=0.00 cfs 0.001 af
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

Pond 201P: Porous Pavement #201 Peak Elev=200.12' Storage=8 cf Inflow=0.05 cfs 0.026 af
Outflow=0.05 cfs 0.026 af

Pond 202P: Porous Pavement #202 Peak Elev=200.19' Storage=10 cf Inflow=0.06 cfs 0.032 af
Outflow=0.06 cfs 0.032 af

Pond 203P: Porous Pavement #203 Peak Elev=200.40' Storage=9 cf Inflow=0.05 cfs 0.027 af
Outflow=0.05 cfs 0.027 af

Pond 204P: Porous Pavement #204 Peak Elev=199.97' Storage=4 cf Inflow=0.03 cfs 0.015 af
Outflow=0.03 cfs 0.015 af

Pond 205P: Porous Pavement #205 Peak Elev=199.78' Storage=8 cf Inflow=0.05 cfs 0.023 af
Outflow=0.05 cfs 0.023 af

Pond 206P: Porous Pavement #206 Peak Elev=200.27' Storage=10 cf Inflow=0.06 cfs 0.030 af
Outflow=0.06 cfs 0.030 af

Pond 207P: Porous Pavement #207 Peak Elev=200.19' Storage=17 cf Inflow=0.11 cfs 0.054 af
Outflow=0.11 cfs 0.054 af

Pond 208P: Porous Pavement #208 Peak Elev=199.39' Storage=26 cf Inflow=0.12 cfs 0.058 af
Outflow=0.11 cfs 0.058 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.314 af Average Runoff Depth = 1.65"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>3.17"
Flow Length=184' Tc=12.0 min CN=79 Runoff=0.70 cfs 0.060 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>0.70"
Tc=6.0 min CN=47 Runoff=0.01 cfs 0.001 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>2.27"
Tc=6.0 min CN=69 Runoff=0.28 cfs 0.021 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>0.53"
Tc=6.0 min CN=44 Runoff=0.03 cfs 0.006 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>0.29"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.02 cfs 0.008 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>1.86"
Tc=6.0 min CN=64 Runoff=0.21 cfs 0.016 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>0.59"
Tc=6.0 min CN=45 Runoff=0.04 cfs 0.006 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.015 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>4.52"
Tc=293.0 min CN=95 Runoff=0.05 cfs 0.025 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.015 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>3.57"
Tc=293.0 min CN=86 Runoff=0.08 cfs 0.040 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.030 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>4.30"
Tc=293.0 min CN=93 Runoff=0.03 cfs 0.013 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.022 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>3.47"
Tc=293.0 min CN=85 Runoff=0.08 cfs 0.041 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.030 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>4.19"
Tc=293.0 min CN=92 Runoff=0.04 cfs 0.018 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.030 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>3.98"
Tc=293.0 min CN=90 Runoff=0.12 cfs 0.058 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>4.87"
Tc=293.0 min CN=98 Runoff=0.06 cfs 0.030 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>3.98"
Tc=293.0 min CN=90 Runoff=0.13 cfs 0.065 af

Reach 100R: Final Reach #100 Inflow=0.70 cfs 0.060 af
Outflow=0.70 cfs 0.060 af

Reach 200R: Final Reach #200 Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 101P: Infiltration Sump #101 Peak Elev=202.62' Storage=301 cf Inflow=0.28 cfs 0.021 af
Outflow=0.04 cfs 0.021 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.50' Storage=2 cf Inflow=0.03 cfs 0.006 af
Outflow=0.03 cfs 0.006 af

Pond 103P: Infiltration Sump #103 Peak Elev=203.54' Storage=10 cf Inflow=0.02 cfs 0.008 af
Discarded=0.02 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.008 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.31' Storage=173 cf Inflow=0.21 cfs 0.016 af
Discarded=0.05 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.016 af

Pond 105P: Infiltration Sump #105 Peak Elev=202.51' Storage=7 cf Inflow=0.04 cfs 0.006 af
Discarded=0.03 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.006 af

Pond 201P: Porous Pavement #201 Peak Elev=200.12' Storage=13 cf Inflow=0.08 cfs 0.040 af
Outflow=0.08 cfs 0.040 af

Pond 202P: Porous Pavement #202 Peak Elev=200.20' Storage=18 cf Inflow=0.11 cfs 0.055 af
Outflow=0.11 cfs 0.055 af

Pond 203P: Porous Pavement #203 Peak Elev=200.41' Storage=15 cf Inflow=0.08 cfs 0.043 af
Outflow=0.08 cfs 0.043 af

Pond 204P: Porous Pavement #204 Peak Elev=199.98' Storage=7 cf Inflow=0.04 cfs 0.022 af
Outflow=0.04 cfs 0.022 af

Pond 205P: Porous Pavement #205 Peak Elev=199.79' Storage=14 cf Inflow=0.08 cfs 0.041 af
Outflow=0.08 cfs 0.041 af

Pond 206P: Porous Pavement #206 Peak Elev=200.27' Storage=15 cf Inflow=0.09 cfs 0.048 af
Outflow=0.09 cfs 0.048 af

Pond 207P: Porous Pavement #207 Peak Elev=200.20' Storage=28 cf Inflow=0.17 cfs 0.088 af
Outflow=0.17 cfs 0.088 af

Pond 208P: Porous Pavement #208 Peak Elev=199.47' Storage=106 cf Inflow=0.19 cfs 0.096 af
Outflow=0.17 cfs 0.095 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.552 af Average Runoff Depth = 2.89"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>4.44"
Flow Length=184' Tc=12.0 min CN=79 Runoff=0.97 cfs 0.085 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>1.33"
Tc=6.0 min CN=47 Runoff=0.03 cfs 0.003 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>3.39"
Tc=6.0 min CN=69 Runoff=0.43 cfs 0.031 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>1.09"
Tc=6.0 min CN=44 Runoff=0.12 cfs 0.012 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>0.71"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.10 cfs 0.020 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>2.88"
Tc=6.0 min CN=64 Runoff=0.33 cfs 0.025 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>1.17"
Tc=6.0 min CN=45 Runoff=0.12 cfs 0.012 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.019 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>5.85"
Tc=293.0 min CN=95 Runoff=0.06 cfs 0.033 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.03 cfs 0.019 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>4.83"
Tc=293.0 min CN=86 Runoff=0.11 cfs 0.054 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>5.62"
Tc=293.0 min CN=93 Runoff=0.03 cfs 0.017 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.029 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>4.72"
Tc=293.0 min CN=85 Runoff=0.11 cfs 0.056 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>5.50"
Tc=293.0 min CN=92 Runoff=0.05 cfs 0.024 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.038 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>5.28"
Tc=293.0 min CN=90 Runoff=0.15 cfs 0.077 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>6.20"
Tc=293.0 min CN=98 Runoff=0.07 cfs 0.039 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>5.28"
Tc=293.0 min CN=90 Runoff=0.17 cfs 0.087 af

Reach 100R: Final Reach #100 Inflow=0.97 cfs 0.085 af
Outflow=0.97 cfs 0.085 af

Reach 200R: Final Reach #200 Inflow=0.03 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 101P: Infiltration Sump #101 Peak Elev=202.92' Storage=504 cf Inflow=0.43 cfs 0.031 af
Outflow=0.05 cfs 0.031 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.57' Storage=52 cf Inflow=0.12 cfs 0.012 af
Outflow=0.06 cfs 0.012 af

Pond 103P: Infiltration Sump #103 Peak Elev=203.85' Storage=139 cf Inflow=0.10 cfs 0.020 af
Discarded=0.04 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.020 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.47' Storage=315 cf Inflow=0.33 cfs 0.025 af
Discarded=0.07 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.024 af

Pond 105P: Infiltration Sump #105 Peak Elev=202.67' Storage=86 cf Inflow=0.12 cfs 0.012 af
Discarded=0.04 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.012 af

Pond 201P: Porous Pavement #201 Peak Elev=200.17' Storage=36 cf Inflow=0.10 cfs 0.052 af
Outflow=0.09 cfs 0.052 af

Pond 202P: Porous Pavement #202 Peak Elev=200.35' Storage=120 cf Inflow=0.14 cfs 0.073 af
Outflow=0.12 cfs 0.073 af

Pond 203P: Porous Pavement #203 Peak Elev=200.75' Storage=172 cf Inflow=0.10 cfs 0.055 af
Outflow=0.08 cfs 0.055 af

Pond 204P: Porous Pavement #204 Peak Elev=199.98' Storage=9 cf Inflow=0.05 cfs 0.029 af
Outflow=0.05 cfs 0.029 af

Pond 205P: Porous Pavement #205 Peak Elev=199.79' Storage=19 cf Inflow=0.11 cfs 0.056 af
Outflow=0.11 cfs 0.056 af

Pond 206P: Porous Pavement #206 Peak Elev=200.31' Storage=38 cf Inflow=0.12 cfs 0.062 af
Outflow=0.11 cfs 0.062 af

Pond 207P: Porous Pavement #207 Peak Elev=200.29' Storage=124 cf Inflow=0.22 cfs 0.115 af
Outflow=0.20 cfs 0.115 af

Pond 208P: Porous Pavement #208 Peak Elev=199.98' Storage=609 cf Inflow=0.24 cfs 0.125 af
Outflow=0.17 cfs 0.125 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.754 af Average Runoff Depth = 3.94"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>5.67"
Flow Length=184' Tc=12.0 min CN=79 Runoff=1.23 cfs 0.108 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>2.04"
Tc=6.0 min CN=47 Runoff=0.05 cfs 0.004 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>4.51"
Tc=6.0 min CN=69 Runoff=0.57 cfs 0.041 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>1.73"
Tc=6.0 min CN=44 Runoff=0.23 cfs 0.020 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>1.23"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.23 cfs 0.035 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>3.93"
Tc=6.0 min CN=64 Runoff=0.46 cfs 0.033 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>1.83"
Tc=6.0 min CN=45 Runoff=0.22 cfs 0.019 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.023 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>7.10"
Tc=293.0 min CN=95 Runoff=0.08 cfs 0.040 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.04 cfs 0.023 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>6.04"
Tc=293.0 min CN=86 Runoff=0.14 cfs 0.068 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.08 cfs 0.045 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>6.86"
Tc=293.0 min CN=93 Runoff=0.04 cfs 0.021 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.06 cfs 0.034 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>5.93"
Tc=293.0 min CN=85 Runoff=0.14 cfs 0.071 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.08 cfs 0.045 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>6.75"
Tc=293.0 min CN=92 Runoff=0.06 cfs 0.030 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.08 cfs 0.045 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>6.51"
Tc=293.0 min CN=90 Runoff=0.19 cfs 0.095 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>7.46"
Tc=293.0 min CN=98 Runoff=0.09 cfs 0.046 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>6.51"
Tc=293.0 min CN=90 Runoff=0.21 cfs 0.107 af

Reach 100R: Final Reach #100 Inflow=1.23 cfs 0.108 af
Outflow=1.23 cfs 0.108 af

Reach 200R: Final Reach #200 Inflow=0.05 cfs 0.004 af
Outflow=0.05 cfs 0.004 af

Pond 101P: Infiltration Sump #101 Peak Elev=203.17' Storage=719 cf Inflow=0.57 cfs 0.041 af
Outflow=0.06 cfs 0.041 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.67' Storage=148 cf Inflow=0.23 cfs 0.020 af
Outflow=0.08 cfs 0.020 af

Pond 103P: Infiltration Sump #103 Peak Elev=204.15' Storage=367 cf Inflow=0.23 cfs 0.035 af
Discarded=0.06 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.035 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.60' Storage=472 cf Inflow=0.46 cfs 0.033 af
Discarded=0.09 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.033 af

Pond 105P: Infiltration Sump #105 Peak Elev=202.84' Storage=196 cf Inflow=0.22 cfs 0.019 af
Discarded=0.05 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.019 af

Pond 201P: Porous Pavement #201 Peak Elev=200.46' Storage=188 cf Inflow=0.12 cfs 0.063 af
Outflow=0.09 cfs 0.063 af

Pond 202P: Porous Pavement #202 Peak Elev=200.79' Storage=435 cf Inflow=0.18 cfs 0.091 af
Outflow=0.12 cfs 0.091 af

Pond 203P: Porous Pavement #203 Peak Elev=201.25' Storage=399 cf Inflow=0.12 cfs 0.066 af
Outflow=0.08 cfs 0.066 af

Pond 204P: Porous Pavement #204 Peak Elev=199.99' Storage=10 cf Inflow=0.06 cfs 0.034 af
Outflow=0.06 cfs 0.034 af

Pond 205P: Porous Pavement #205 Peak Elev=199.81' Storage=33 cf Inflow=0.14 cfs 0.071 af
Outflow=0.14 cfs 0.071 af

Pond 206P: Porous Pavement #206 Peak Elev=200.59' Storage=218 cf Inflow=0.14 cfs 0.075 af
Outflow=0.11 cfs 0.075 af

Pond 207P: Porous Pavement #207 Peak Elev=200.64' Storage=537 cf Inflow=0.27 cfs 0.141 af
Outflow=0.20 cfs 0.140 af

Pond 208P: Porous Pavement #208 Peak Elev=200.90' Storage=1,244 cf Inflow=0.29 cfs 0.153 af
Outflow=0.17 cfs 0.153 af

Total Runoff Area = 2.293 ac Runoff Volume = 0.953 af Average Runoff Depth = 4.99"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 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 Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Old Rochester Road Runoff Area=9,966 sf 66.26% Impervious Runoff Depth>7.17"
Flow Length=184' Tc=12.0 min CN=79 Runoff=1.54 cfs 0.137 af

Subcatchment 2S: Southern Property Line Runoff Area=1,088 sf 0.00% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=47 Runoff=0.08 cfs 0.006 af

Subcatchment 11S: Perimeter Area Runoff Area=4,778 sf 47.68% Impervious Runoff Depth>5.89"
Tc=6.0 min CN=69 Runoff=0.74 cfs 0.054 af

Subcatchment 12S: Side & Rear Yard Runoff Area=5,910 sf 8.95% Impervious Runoff Depth>2.62"
Tc=6.0 min CN=44 Runoff=0.37 cfs 0.030 af

Subcatchment 13S: Abutting Parcel Runoff Area=14,814 sf 7.44% Impervious Runoff Depth>1.97"
Flow Length=100' Slope=0.0175 '/' Tc=21.3 min CN=39 Runoff=0.42 cfs 0.056 af

Subcatchment 14S: Lawn & Walk Runoff Area=4,440 sf 41.71% Impervious Runoff Depth>5.24"
Tc=6.0 min CN=64 Runoff=0.61 cfs 0.045 af

Subcatchment 15S: Back Yard Runoff Area=5,361 sf 8.26% Impervious Runoff Depth>2.75"
Tc=6.0 min CN=45 Runoff=0.36 cfs 0.028 af

Subcatchment 21aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.027 af

Subcatchment 21S: Porous Pavement Runoff Area=2,941 sf 94.49% Impervious Runoff Depth>8.59"
Tc=293.0 min CN=95 Runoff=0.09 cfs 0.048 af

Subcatchment 22aS: Building Runoff Area=1,585 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.05 cfs 0.027 af

Subcatchment 22S: Porous Pavement Runoff Area=5,892 sf 80.01% Impervious Runoff Depth>7.50"
Tc=293.0 min CN=86 Runoff=0.17 cfs 0.084 af

Subcatchment 23aS: Building Runoff Area=3,173 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.10 cfs 0.054 af

Subcatchment 23S: Porous Pavement Runoff Area=1,593 sf 91.96% Impervious Runoff Depth>8.35"
Tc=293.0 min CN=93 Runoff=0.05 cfs 0.025 af

Subcatchment 24S: Aisle & Porous Runoff Area=2,408 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.08 cfs 0.041 af

Subcatchment 25S: Drive & Porous Runoff Area=6,244 sf 75.75% Impervious Runoff Depth>7.37"
Tc=293.0 min CN=85 Runoff=0.17 cfs 0.088 af

Subcatchment 26aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.10 cfs 0.054 af

Subcatchment 26S: Porous Pavement Runoff Area=2,292 sf 89.44% Impervious Runoff Depth>8.23"
Tc=293.0 min CN=92 Runoff=0.07 cfs 0.036 af

Subcatchment 27aS: Building Runoff Area=3,171 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.10 cfs 0.054 af

Subcatchment 27S: Drive Aisle & Porous Runoff Area=7,652 sf 85.72% Impervious Runoff Depth>7.98"
Tc=293.0 min CN=90 Runoff=0.23 cfs 0.117 af

Subcatchment 28aS: Building Runoff Area=3,246 sf 100.00% Impervious Runoff Depth>8.95"
Tc=293.0 min CN=98 Runoff=0.10 cfs 0.056 af

Subcatchment 28S: Drive Aisle & Porous Runoff Area=8,576 sf 84.70% Impervious Runoff Depth>7.98"
Tc=293.0 min CN=90 Runoff=0.25 cfs 0.131 af

Reach 100R: Final Reach #100 Inflow=1.54 cfs 0.137 af
Outflow=1.54 cfs 0.137 af

Reach 200R: Final Reach #200 Inflow=0.09 cfs 0.007 af
Outflow=0.09 cfs 0.007 af

Pond 101P: Infiltration Sump #101 Peak Elev=203.46' Storage=1,000 cf Inflow=0.74 cfs 0.054 af
Outflow=0.07 cfs 0.054 af

Pond 102P: Infiltration Sump #102 Peak Elev=203.78' Storage=297 cf Inflow=0.37 cfs 0.030 af
Outflow=0.10 cfs 0.030 af

Pond 103P: Infiltration Sump #103 Peak Elev=204.31' Storage=530 cf Inflow=0.42 cfs 0.056 af
Discarded=0.07 cfs 0.047 af Primary=0.21 cfs 0.009 af Outflow=0.28 cfs 0.056 af

Pond 104P: Infiltration Sump #104 Peak Elev=203.76' Storage=679 cf Inflow=0.61 cfs 0.045 af
Discarded=0.10 cfs 0.044 af Primary=0.01 cfs 0.000 af Outflow=0.11 cfs 0.044 af

Pond 105P: Infiltration Sump #105 Peak Elev=203.01' Storage=336 cf Inflow=0.36 cfs 0.028 af
Discarded=0.06 cfs 0.027 af Primary=0.06 cfs 0.001 af Outflow=0.12 cfs 0.028 af

Pond 201P: Porous Pavement #201 Peak Elev=200.94' Storage=442 cf Inflow=0.14 cfs 0.075 af
Outflow=0.09 cfs 0.075 af

Pond 202P: Porous Pavement #202 Peak Elev=201.73' Storage=914 cf Inflow=0.22 cfs 0.112 af
Outflow=0.12 cfs 0.112 af

Pond 203P: Porous Pavement #203 Peak Elev=202.52' Storage=719 cf Inflow=0.15 cfs 0.080 af
Outflow=0.08 cfs 0.080 af

Pond 204P: Porous Pavement #204 Peak Elev=200.07' Storage=44 cf Inflow=0.08 cfs 0.041 af
Outflow=0.07 cfs 0.041 af

Pond 205P: Porous Pavement #205 Peak Elev=200.12' Storage=273 cf Inflow=0.17 cfs 0.088 af
Outflow=0.14 cfs 0.088 af

Pond 206P: Porous Pavement #206 Peak Elev=201.07' Storage=523 cf Inflow=0.17 cfs 0.090 af
Outflow=0.11 cfs 0.090 af

Pond 207P: Porous Pavement #207 Peak Elev=201.23' Storage=1,185 cf Inflow=0.33 cfs 0.171 af
Outflow=0.20 cfs 0.171 af

Pond 208P: Porous Pavement #208 Peak Elev=203.11' Storage=2,289 cf Inflow=0.36 cfs 0.195 af
Outflow=0.17 cfs 0.176 af

Total Runoff Area = 2.293 ac Runoff Volume = 1.199 af Average Runoff Depth = 6.28"
39.22% Pervious = 0.899 ac 60.78% Impervious = 1.394 ac

Appendix III - Calculations, Charts, & Graphs

Extreme Precipitation Tables
NHDES AoT Spreadsheets
NCRS USDA Web-soil Map
Site Specific Soils Survey Report & Plan
Infiltration Feasibility Study & Report
Ksat New Hampshire Manual
Stormwater System Management: Inspection & Maintenance Manual & Plan
Watershed Report Card, 303(d) List, & ORW List
Filtrexx Construction Specifications

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	70.901 degrees West
Latitude	43.230 degrees North
Elevation	0 feet
Date/Time	Mon, 29 Aug 2022 09:47:06 -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	2.87	**1yr**	2.29	2.76	3.16	3.89	4.45	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.28	**2yr**	0.87	1.17	1.50	1.91	2.44	3.14	3.50	**2yr**	2.78	3.37	3.86	4.59	5.23	**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	3.96	4.48	**5yr**	3.50	4.31	4.93	5.79	6.55	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.82	3.65	4.72	5.40	**10yr**	4.18	5.20	5.95	6.91	7.76	**10yr**
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.70	3.52	4.59	5.96	6.93	**25yr**	5.28	6.66	7.61	8.72	9.73	**25yr**
50yr	0.52	0.83	1.06	1.49	2.01	2.67	**50yr**	1.73	2.46	3.18	4.18	5.46	7.12	8.36	**50yr**	6.30	8.04	9.18	10.41	11.55	**50yr**
100yr	0.58	0.94	1.21	1.71	2.33	3.13	**100yr**	2.01	2.89	3.75	4.95	6.49	8.50	10.10	**100yr**	7.52	9.71	11.07	12.43	13.72	**100yr**
200yr	0.65	1.05	1.37	1.96	2.71	3.68	**200yr**	2.34	3.40	4.43	5.88	7.74	10.15	12.19	**200yr**	8.98	11.72	13.35	14.85	16.29	**200yr**
500yr	0.76	1.25	1.63	2.37	3.32	4.55	**500yr**	2.87	4.22	5.51	7.36	9.75	12.84	15.66	**500yr**	11.37	15.06	17.12	18.79	20.47	**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	2.07	2.45	**1yr**	1.84	2.36	2.93	3.43	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	3.40	**2yr**	2.70	3.27	3.74	4.47	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	4.12	**5yr**	3.27	3.96	4.60	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	2.43	3.12	4.24	4.77	**10yr**	3.75	4.58	5.31	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	2.83	3.63	5.07	5.76	**25yr**	4.49	5.54	6.47	7.49	8.34	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.19	**50yr**	1.52	2.14	2.36	3.19	4.07	5.81	6.63	**50yr**	5.14	6.38	7.51	8.62	9.53	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.51	**100yr**	1.74	2.45	2.65	3.57	4.53	6.66	7.63	**100yr**	5.89	7.34	8.72	9.92	10.88	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.87	**200yr**	1.98	2.81	2.96	4.01	5.05	7.62	8.78	**200yr**	6.74	8.44	10.11	11.41	12.43	**200yr**
500yr	0.70	1.04	1.33	1.94	2.75	3.46	**500yr**	2.38	3.39	3.44	4.65	5.84	9.07	10.55	**500yr**	8.03	10.15	12.29	13.75	14.76	**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	3.08	**1yr**	2.50	2.96	3.39	4.18	4.75	**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	3.25	3.62	**2yr**	2.87	3.48	3.99	4.75	5.40	**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	4.22	4.85	**5yr**	3.73	4.66	5.29	6.22	6.98	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.91	**10yr**	1.35	1.87	2.23	3.03	3.84	5.18	6.05	**10yr**	4.59	5.82	6.67	7.63	8.50	**10yr**
25yr	0.56	0.84	1.05	1.50	1.97	2.46	**25yr**	1.70	2.41	2.87	3.95	4.94	6.83	8.13	**25yr**	6.04	7.81	8.93	10.04	11.06	**25yr**
50yr	0.64	0.98	1.22	1.75	2.36	2.97	**50yr**	2.03	2.91	3.48	4.81	6.00	8.40	10.18	**50yr**	7.43	9.79	11.17	12.34	13.52	**50yr**
100yr	0.75	1.13	1.42	2.05	2.81	3.59	**100yr**	2.43	3.51	4.22	5.88	7.30	10.33	12.76	**100yr**	9.14	12.27	13.96	15.20	16.53	**100yr**
200yr	0.87	1.31	1.66	2.40	3.35	4.34	**200yr**	2.89	4.25	5.13	7.18	8.86	12.74	16.01	**200yr**	11.27	15.40	17.46	18.71	20.24	**200yr**
500yr	1.07	1.58	2.04	2.96	4.21	5.57	**500yr**	3.64	5.45	6.63	9.39	11.49	16.84	21.62	**500yr**	14.90	20.79	23.50	24.67	26.47	**500yr**

Powered by ACIS Northeast Regional Climate Center

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

0.82	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"
	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"
0.40	inches	Rd = Weighted groundwater recharge depth	
0.3296	ac-in	GRV = AI * Rd	
1,196	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):

0.824 AC additional impervious surface

Porous Pavement Area #207 stores 1,215 cu.ft.

Remaining BMPs infiltrate additional stormwater runoff

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Type/Node Name: **Porous Pavement #201**

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).	
0.10	ac	A = Area draining to the practice	
0.10	ac	A_I = Impervious area draining to the practice	
0.96	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.92	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.10	ac-in	WQV= 1" x Rv x A	
346	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
86	cf	25% x WQV (check calc for sediment forebay volume)	
259	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,321	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.0	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
201.10	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
197.40	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
197.40	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
201.10	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.70	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.70	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
200.46	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
202.94	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
3.5	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 1,321 Sq. Ft. = .030 Ac.

Summary for Pond 201P: Porous Pavement #201

Inflow Area = 0.104 ac, 96.42% Impervious, Inflow Depth > 7.23" for 50Yr-24Hr event
Inflow = 0.12 cfs @ 15.66 hrs, Volume= 0.063 af
Outflow = 0.09 cfs @ 14.50 hrs, Volume= 0.063 af, Atten= 22%, Lag= 0.0 min
Discarded = 0.09 cfs @ 14.50 hrs, Volume= 0.063 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.46' @ 17.29 hrs Surf.Area= 1,321 sf Storage= 188 cf
Flood Elev= 202.94' Surf.Area= 1,321 sf Storage= 1,104 cf

Plug-Flow detention time= 13.4 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 13.0 min (991.4 - 978.4)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	528 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,321 cf Overall x 40.0% Voids
#2	201.10'	396 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,982 cf Overall x 20.0% Voids
#3	202.60'	180 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 449 cf Overall x 40.0% Voids
		1,104 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.10	1,321	197.8	0	0	1,321
201.10	1,321	197.8	1,321	1,321	1,519

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.10	1,321	197.8	0	0	1,321
202.60	1,321	197.8	1,982	1,982	1,618

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.60	1,321	197.8	0	0	1,321
202.94	1,321	197.8	449	449	1,388

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.10'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.09 cfs @ 14.50 hrs HW=200.13' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.09 cfs)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #202**

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).	
0.17	ac	A = Area draining to the practice	
0.14	ac	A_I = Impervious area draining to the practice	
0.84	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.81	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.14	ac-in	WQV= 1" x Rv x A	
505	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
126	cf	25% x WQV (check calc for sediment forebay volume)	
379	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,794	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
201.18	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
197.10	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
197.10	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
201.18	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
4.08	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
4.08	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
200.79	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
203.02	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**> 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
4.2	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 1,794 Sq. Ft. = .0412 Ac.

Summary for Pond 202P: Porous Pavement #202

Inflow Area = 0.172 ac, 84.25% Impervious, Inflow Depth > 6.34" for 50Yr-24Hr event
Inflow = 0.18 cfs @ 15.92 hrs, Volume= 0.091 af
Outflow = 0.12 cfs @ 14.35 hrs, Volume= 0.091 af, Atten= 30%, Lag= 0.0 min
Discarded = 0.12 cfs @ 14.35 hrs, Volume= 0.091 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.79' @ 17.67 hrs Surf.Area= 1,794 sf Storage= 435 cf
Flood Elev= 203.02' Surf.Area= 1,794 sf Storage= 1,500 cf

Plug-Flow detention time= 25.4 min calculated for 0.091 af (100% of inflow)
Center-of-Mass det. time= 25.0 min (1,025.7 - 1,000.7)

Volume	Invert	Avail.Storage	Storage Description
#1	200.18'	718 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,794 cf Overall x 40.0% Voids
#2	201.18'	538 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,691 cf Overall x 20.0% Voids
#3	202.68'	244 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 610 cf Overall x 40.0% Voids
		1,500 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.18	1,794	250.7	0	0	1,794
201.18	1,794	250.7	1,794	1,794	2,045

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.18	1,794	250.7	0	0	1,794
202.68	1,794	250.7	2,691	2,691	2,170

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.68	1,794	250.7	0	0	1,794
203.02	1,794	250.7	610	610	1,879

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.18'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.12 cfs @ 14.35 hrs HW=200.21' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.12 cfs)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #203**

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).	
0.11	ac	A = Area draining to the practice	
0.11	ac	A_I = Impervious area draining to the practice	
0.97	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.93	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.10	ac-in	WQV= 1" x Rv x A	
366	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
92	cf	25% x WQV (check calc for sediment forebay volume)	
275	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,147	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.3	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
201.38	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
197.67	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
197.67	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
201.38	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.71	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.71	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
201.25	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
203.22	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
4.1	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 1,147 Sq. Ft. = .0263 Ac.

Summary for Pond 203P: Porous Pavement #203

Inflow Area = 0.109 ac, 97.31% Impervious, Inflow Depth > 7.26" for 50Yr-24Hr event
Inflow = 0.12 cfs @ 15.66 hrs, Volume= 0.066 af
Outflow = 0.08 cfs @ 14.10 hrs, Volume= 0.066 af, Atten= 36%, Lag= 0.0 min
Discarded = 0.08 cfs @ 14.10 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 201.25' @ 17.87 hrs Surf.Area= 1,147 sf Storage= 399 cf
Flood Elev= 203.22' Surf.Area= 1,147 sf Storage= 959 cf

Plug-Flow detention time= 37.1 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 36.6 min (1,012.6 - 976.0)

Volume	Invert	Avail.Storage	Storage Description
#1	200.38'	459 cf	**Storage Reservoir (Irregular)**Listed below (Recalc) 1,147 cf Overall x 40.0% Voids
#2	201.38'	344 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,721 cf Overall x 20.0% Voids
#3	202.88'	156 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 390 cf Overall x 40.0% Voids
		959 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.38	1,147	179.1	0	0	1,147
201.38	1,147	179.1	1,147	1,147	1,326

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.38	1,147	179.1	0	0	1,147
202.88	1,147	179.1	1,721	1,721	1,416

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.88	1,147	179.1	0	0	1,147
203.22	1,147	179.1	390	390	1,208

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.38'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.08 cfs @ 14.10 hrs HW=200.41' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.08 cfs)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #204**

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).	
0.06	ac	A = Area draining to the practice	
0.06	ac	A_I = Impervious area draining to the practice	
1.00	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.95	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.05	ac-in	WQV= 1" x Rv x A	
190	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
47	cf	25% x WQV (check calc for sediment forebay volume)	
142	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
983	sf	A_{SA} = Surface area of the practice	
3.00	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)	
0.8	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	≤ 72-hrs
200.96	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
197.67	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
197.67	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
200.96	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	≥ 1'
3.29	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	≥ 1'
3.29	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	≥ 1'
199.99	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
202.80	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
2.4	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 983 Sq. Ft. = .0226 Ac.

Summary for Pond 204P: Porous Pavement #204

Inflow Area = 0.055 ac,100.00% Impervious, Inflow Depth > 7.46" for 50Yr-24Hr event
Inflow = 0.06 cfs @ 15.66 hrs, Volume= 0.034 af
Outflow = 0.06 cfs @ 15.71 hrs, Volume= 0.034 af, Atten= 0%, Lag= 3.4 min
Discarded = 0.06 cfs @ 15.71 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 199.99' @ 15.71 hrs Surf.Area= 983 sf Storage= 10 cf
Flood Elev= 202.80' Surf.Area= 983 sf Storage= 822 cf

Plug-Flow detention time= 2.7 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (971.2 - 968.9)

Volume	Invert	Avail.Storage	Storage Description
#1	199.96'	393 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 983 cf Overall x 40.0% Voids
#2	200.96'	295 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 1,475 cf Overall x 20.0% Voids
#3	202.46'	134 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 334 cf Overall x 40.0% Voids
		822 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.96	983	159.7	0	0	983
200.96	983	159.7	983	983	1,143

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.96	983	159.7	0	0	983
202.46	983	159.7	1,475	1,475	1,223

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.46	983	159.7	0	0	983
202.80	983	159.7	334	334	1,037

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.96'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 15.71 hrs HW=199.99' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.07 cfs)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #205**

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).	
0.14	ac	A = Area draining to the practice	
0.11	ac	A_I = Impervious area draining to the practice	
0.76	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.73	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.10	ac-in	WQV= 1" x Rv x A	
379	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
95	cf	25% x WQV (check calc for sediment forebay volume)	
284	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,971	sf	A_{SA} = Surface area of the practice	
3.00	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)	
0.8	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
200.77	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
198.39	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
198.39	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
200.77	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
2.38	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
2.38	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
199.81	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
202.61	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
3.2	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 1,971 Sq. Ft. = .0452 Ac.

Summary for Pond 205P: Porous Pavement #205

Inflow Area = 0.143 ac, 75.75% Impervious, Inflow Depth > 5.93" for 50Yr-24Hr event
Inflow = 0.14 cfs @ 15.93 hrs, Volume= 0.071 af
Outflow = 0.14 cfs @ 15.35 hrs, Volume= 0.071 af, Atten= 3%, Lag= 0.0 min
Discarded = 0.14 cfs @ 15.35 hrs, Volume= 0.071 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 199.81' @ 16.31 hrs Surf.Area= 1,971 sf Storage= 33 cf
Flood Elev= 202.61' Surf.Area= 1,971 sf Storage= 1,648 cf

Plug-Flow detention time= 2.9 min calculated for 0.071 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (1,016.0 - 1,013.6)

Volume	Invert	Avail.Storage	Storage Description
#1	199.77'	788 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,971 cf Overall x 40.0% Voids
#2	200.77'	591 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,957 cf Overall x 20.0% Voids
#3	202.27'	268 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 670 cf Overall x 40.0% Voids
		1,648 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.77	1,971	275.6	0	0	1,971
200.77	1,971	275.6	1,971	1,971	2,247

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.77	1,971	275.6	0	0	1,971
202.27	1,971	275.6	2,957	2,957	2,384

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.27	1,971	275.6	0	0	1,971
202.61	1,971	275.6	670	670	2,065

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.77'	**3.000 in/hr 3in/Hr Infiltration over Surface area**

Discarded OutFlow Max=0.14 cfs @ 15.35 hrs HW=199.80' (Free Discharge)
↑**1=3in/Hr Infiltration** (Exfiltration Controls 0.14 cfs)

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Type/Node Name: **Porous Pavement #206**

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).	
0.13	ac	A = Area draining to the practice	
0.12	ac	A_I = Impervious area draining to the practice	
0.96	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.91	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.11	ac-in	WQV= 1" x Rv x A	
413	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
103	cf	25% x WQV (check calc for sediment forebay volume)	
310	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,592	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.0	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
201.25	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
197.55	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
197.55	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
201.25	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.70	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.70	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
200.59	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
203.09	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
3.4	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 1,592 Sq. Ft. = .0365 Ac.

Summary for Pond 206P: Porous Pavement #206

Inflow Area = 0.123 ac, 94.60% Impervious, Inflow Depth > 7.09" for 50Yr-24Hr event
Inflow = 0.14 cfs @ 15.67 hrs, Volume= 0.073 af
Outflow = 0.11 cfs @ 14.55 hrs, Volume= 0.073 af, Atten= 20%, Lag= 0.0 min
Discarded = 0.11 cfs @ 14.55 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.55' @ 17.19 hrs Surf.Area= 1,592 sf Storage= 189 cf
Flood Elev= 203.09' Surf.Area= 1,592 sf Storage= 1,331 cf

Plug-Flow detention time= 11.1 min calculated for 0.073 af (100% of inflow)
Center-of-Mass det. time= 10.6 min (991.5 - 980.9)

Volume	Invert	Avail.Storage	Storage Description
#1	200.25'	637 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 1,592 cf Overall x 40.0% Voids
#2	201.25'	478 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 2,388 cf Overall x 20.0% Voids
#3	202.75'	217 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 541 cf Overall x 40.0% Voids
		1,331 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.25	1,592	231.4	0	0	1,592
201.25	1,592	231.4	1,592	1,592	1,823

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.25	1,592	231.4	0	0	1,592
202.75	1,592	231.4	2,388	2,388	1,939

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.75	1,592	231.4	0	0	1,592
203.09	1,592	231.4	541	541	1,671

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.25'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 14.55 hrs HW=200.28' (Free Discharge)
↑**1=3in/hr Infiltration** (Exfiltration Controls 0.11 cfs)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #207**

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).	
0.25	ac	A = Area draining to the practice	
0.22	ac	A_I = Impervious area draining to the practice	
0.90	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.86	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.21	ac-in	WQV= 1" x Rv x A	
773	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
193	cf	25% x WQV (check calc for sediment forebay volume)	
580	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
2,893	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	≤ 72-hrs
201.18	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
198.13	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
198.13	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
201.18	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	≥ 1'
3.05	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	≥ 1'
3.05	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	≥ 1'
200.64	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
203.01	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.1	acres	A_{SA} = Surface area of the pervious pavement	
3.7	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 2,893 Sq. Ft. = 0.0664 Ac.

Summary for Pond 207P: Porous Pavement #207

Inflow Area = 0.248 ac, 89.90% Impervious, Inflow Depth > 6.79" for 50Yr-24Hr event
Inflow = 0.27 cfs @ 15.90 hrs, Volume= 0.141 af
Outflow = 0.20 cfs @ 14.40 hrs, Volume= 0.140 af, Atten= 26%, Lag= 0.0 min
Discarded = 0.20 cfs @ 14.40 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.64' @ 17.46 hrs Surf.Area= 2,893 sf Storage= 537 cf
Flood Elev= 203.01' Surf.Area= 2,893 sf Storage= 2,407 cf

Plug-Flow detention time= 18.3 min calculated for 0.140 af (100% of inflow)
Center-of-Mass det. time= 17.9 min (1,008.5 - 990.6)

Volume	Invert	Avail.Storage	Storage Description
#1	200.18'	1,157 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 2,893 cf Overall x 40.0% Voids
#2	201.18'	868 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 4,340 cf Overall x 20.0% Voids
#3	202.68'	382 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 955 cf Overall x 40.0% Voids
		2,407 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.18	2,893	368.1	0	0	2,893
201.18	2,893	368.1	2,893	2,893	3,261

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.18	2,893	368.1	0	0	2,893
202.68	2,893	368.1	4,340	4,340	3,445

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.68	2,893	368.1	0	0	2,893
203.01	2,893	368.1	955	955	3,014

Device	Routing	Invert	Outlet Devices
#1	Discarded	200.18'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.20 cfs @ 14.40 hrs HW=200.21' (Free Discharge)
1=3in/hr Infiltration (Exfiltration Controls 0.20 cfs)

Stage-Area-Storage for Pond 207P: Porous Pavement #207

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
200.18	2,893	0
200.23	2,893	58
200.28	2,893	116
200.33	2,893	174
200.38	2,893	231
200.43	2,893	289
200.48	2,893	347
200.53	2,893	405
200.58	2,893	463
200.63	2,893	521
200.68	2,893	579
200.73	2,893	636
200.78	2,893	694
200.83	2,893	752
200.88	2,893	810
200.93	2,893	868
200.98	2,893	926
201.03	2,893	984
201.08	2,893	1,041
201.13	2,893	1,099
201.18	**2,893**	1,157
201.23	2,893	1,186
201.28	2,893	1,215
201.33	2,893	1,244
201.38	2,893	1,273
201.43	2,893	1,302
201.48	2,893	1,331
201.53	2,893	1,360
201.58	2,893	1,389
201.63	2,893	1,418
201.68	2,893	1,447
201.73	2,893	1,475
201.78	2,893	1,504
201.83	2,893	1,533
201.88	2,893	1,562
201.93	2,893	1,591
201.98	2,893	1,620
202.03	2,893	1,649
202.08	2,893	1,678
202.13	2,893	1,707
202.18	2,893	1,736
202.23	2,893	1,765
202.28	2,893	1,794
202.33	2,893	1,823
202.38	2,893	1,852
202.43	2,893	1,880
202.48	2,893	1,909
202.53	2,893	1,938
202.58	2,893	1,967
202.63	2,893	1,996
202.68	2,893	2,025
202.73	2,893	2,083
202.78	2,893	2,141
202.83	2,893	2,199
202.88	2,893	2,257
202.93	2,893	2,314
202.98	2,893	**2,372**

2,372 CF - 1,157 CF = 1,215 CF Storage

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Porous Pavement #208**

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).	
0.27	ac	A = Area draining to the practice	
0.24	ac	A_I = Impervious area draining to the practice	
0.89	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.85	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.23	ac-in	WQV= 1" x Rv x A	
836	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
209	cf	25% x WQV (check calc for sediment forebay volume)	
627	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
2,446	sf	A_{SA} = Surface area of the practice	
3.00	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)	
1.4	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
200.36	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
198.13	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
198.13	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
200.36	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
2.23	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
2.23	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
200.90	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
202.52	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**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 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	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.1	acres	A_{SA} = Surface area of the pervious pavement	
4.8	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	#14	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: Surface area is 2,446 Sq. Ft. = 0.0562 Ac.

Overflow received on the 100YR event from P-103 & P-104 disconnected for WQV Surface Area purposes

Summary for Pond 208P: Porous Pavement #208

Inflow Area = 0.713 ac, 43.33% Impervious, Inflow Depth > 2.58" for 50Yr-24Hr event
Inflow = 0.29 cfs @ 15.90 hrs, Volume= 0.153 af
Outflow = 0.17 cfs @ 14.00 hrs, Volume= 0.153 af, Atten= 42%, Lag= 0.0 min
Discarded = 0.17 cfs @ 14.00 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.90' @ 18.26 hrs Surf.Area= 2,446 sf Storage= 1,244 cf
Flood Elev= 202.52' Surf.Area= 2,446 sf Storage= 2,116 cf

Plug-Flow detention time= 60.0 min calculated for 0.153 af (100% of inflow)
Center-of-Mass det. time= 59.3 min (1,050.6 - 991.2)

Volume	Invert	Avail.Storage	Storage Description
#1	199.36'	978 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 2,446 cf Overall x 40.0% Voids
#2	200.36'	734 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 3,669 cf Overall x 20.0% Voids
#3	201.86'	323 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 40.0% Voids
#4	202.19'	81 cf	**Porous Pavement (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 10.0% Voids
#5	202.52'	277 cf	**Ponding Area (Irregular)**Listed below (Recalc) -Impervious
		2,393 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.36	2,446	318.0	0	0	2,446
200.36	2,446	318.0	2,446	2,446	2,764

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.36	2,446	318.0	0	0	2,446
201.86	2,446	318.0	3,669	3,669	2,923

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.86	2,446	318.0	0	0	2,446
202.19	2,446	318.0	807	807	2,551

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.19	2,446	318.0	0	0	2,446
202.52	2,446	318.0	807	807	2,551

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.52	4	4.0	0	0	4
203.00	582	118.4	101	101	1,119
203.25	829	133.6	175	277	1,425

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.36'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.17 cfs @ 14.00 hrs HW=199.40' (Free Discharge)
↑—**1=3in/hr Infiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond 208P: Porous Pavement #208

Inflow Area = 0.271 ac, 88.90% Impervious, Inflow Depth > 6.77" for 50Yr-24Hr event
Inflow = 0.29 cfs @ 15.90 hrs, Volume= 0.153 af
Outflow = 0.17 cfs @ 14.00 hrs, Volume= 0.153 af, Atten= 42%, Lag= 0.0 min
Discarded = 0.17 cfs @ 14.00 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 200.90' @ 18.26 hrs Surf.Area= 2,446 sf Storage= 1,244 cf
Flood Elev= 202.52' Surf.Area= 2,446 sf Storage= 2,116 cf

Plug-Flow detention time= 60.0 min calculated for 0.153 af (100% of inflow)
Center-of-Mass det. time= 59.3 min (1,050.6 - 991.2)

Volume	Invert	Avail.Storage	Storage Description
#1	199.36'	978 cf	**Stone Reservoir (Irregular)**Listed below (Recalc) 2,446 cf Overall x 40.0% Voids
#2	200.36'	734 cf	**Filter Media (Irregular)**Listed below (Recalc) -Impervious 3,669 cf Overall x 20.0% Voids
#3	201.86'	323 cf	**Choker Course (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 40.0% Voids
#4	202.19'	81 cf	**Porous Pavement (Irregular)**Listed below (Recalc) -Impervious 807 cf Overall x 10.0% Voids
#5	202.52'	277 cf	**Ponding Area (Irregular)**Listed below (Recalc) -Impervious
		2,393 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
199.36	2,446	318.0	0	0	2,446
200.36	2,446	318.0	2,446	2,446	2,764

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
200.36	2,446	318.0	0	0	2,446
201.86	2,446	318.0	3,669	3,669	2,923

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
201.86	2,446	318.0	0	0	2,446
202.19	2,446	318.0	807	807	2,551

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.19	2,446	318.0	0	0	2,446
202.52	2,446	318.0	807	807	2,551

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
202.52	4	4.0	0	0	4
203.00	582	118.4	101	101	1,119
203.25	829	133.6	175	277	1,425

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.36'	**3.000 in/hr 3in/hr Infiltration over Surface area**

Discarded OutFlow Max=0.17 cfs @ 14.00 hrs HW=199.40' (Free Discharge)
↑—**1=3in/hr Infiltration** (Exfiltration Controls 0.17 cfs)

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,720 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 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 22, Aug 31, 2021

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Gv	Gravel and borrow pits	1.6	1.6%
HaA	Hinckley loamy sand, 0 to 3 percent slopes	10.4	10.0%
ScA	Scantic silt loam, 0 to 3 percent slopes	3.0	2.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	46.3	44.6%
WdB	Windsor loamy sand, 3 to 8 percent slopes	25.0	24.0%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	17.5	16.9%
Totals for Area of Interest		**103.8**	**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

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5/19/23
Christopher Berry
Berry Surveying and Engineering
335 Second Crown Point Road
Barrington NH 03825

Job # 23-008

Site Specific Soil Survey 5/16/23
Map 40 Lot 25
Old Rochester Road 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 May 16, 2023. The soil survey was conducted in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standard For New Hampshire and Vermont, Special Publication # 3, Version 7.0 July 2021, published by the Society of Soil Scientist of Northern New England

The property that are subject of the soil survey is located on the westerly side of of Old Rochester road, and south of Longhill road, in Dover, NH. The mapped pacel is approximaterly 1.7 acres in size. The plans used for these soil maps are a 60 scale plan, where 1 inch equals 60 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 holes, 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 inclusions on the site, do not exceed 15 percent of any of the soil map units. Dissimilar inclusions, if any, will be noted in the report. 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.

Portions of the soil map with the map unit 400, contain disturbed soils that have been excavated and/or regraded, that are somewhat excessively drained, and sandy and/or gravelly in texture, 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 disturbed soil map units that are present on the site.

MAP UNIT #	SOIL TAXANOMIC NAME	SLOPES	HYDRO LOGIC SOIL GROUP	DESCRIPTION
10	**Merrimac**	**A**	**A**	The Merrimac series consists of very deep, somewhat excessively drained soils formed in outwash. These soils are located in the undisturbed areas, the northern and eastern portions of the property.The soil texture is gravelly sandy loam and loamy sand, over gravelly sand. These soils are deep to bedrock. Saturated hydraulic conductivity is high or very high. Some inclusions excessively drained Windsor, and of moderately well drained Sudbury soils may be present, but are less than 10 percent of the mapped area. Estimated seasonal high water tables in these soils range from 38 to 60 inches.
400 (bbada)	**Udorthents (sandy or gravelly)**	**A B**	**A**	Udorthents are disturbed soils that have been excavated and/or regraded, and are sandy or gravelly in texture. These soils are located throughout the majority of the site. These disturbed soils appear to be mostly derived from the surrouding Merrimac soil series. The soil textures are gravelly sandy loam and loamy sand over gravelly sand. These soils are somewhat excessively drained, and are deep to bedrock. Saturated hydraulic conductivity is high or very high. Estimated seasonal high water tables in these soils range from 38 to 60 inches.

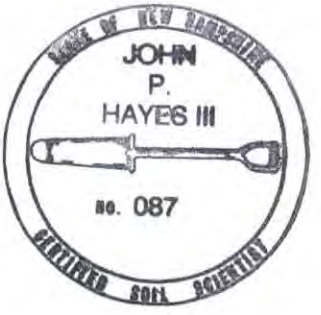
Slope Phases

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



John P. Hayes III CSS, CWS

LOCATION MERRIMAC MA+CT NH NY RI VT

Established Series
Rev. DGG-WHT-MFF
01/2013

MERRIMAC SERIES

The Merrimac series consists of very deep, somewhat excessively drained soils formed in outwash. They are nearly level through very steep soils on outwash terraces and plains and other glaciofluvial landforms. Slope ranges from 0 through 35 percent. Saturated hydraulic conductivity is high or very high. Mean annual temperature is about 48 degrees F. (9 degrees C.) and mean annual precipitation is about 42 inches (1067 millimeters).

TAXONOMIC CLASS: Sandy, mixed, mesic Typic Dystrudepts

TYPICAL PEDON: Merrimac fine sandy loam cultivated, at an elevation of about 122 meters. (Colors are for moist soil.)

Ap -- 0 to 10 inches (0 to 25 centimeters); very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; very friable; many fine roots; 10 percent fine gravel; strongly acid; abrupt smooth boundary. (1 to 14 inches (3 to 36 centimeters) thick.)

Bwl -- 10 to 15 inches (25 to 38 centimeters); brown (7.5YR 4/4) fine sandy loam; weak fine and medium granular structure; very friable; common fine roots; 10 percent fine gravel; strongly acid; clear wavy boundary.

Bw2 -- 15 to 22 inches (38 to 56 centimeters); dark yellowish brown (10YR 4/4) gravelly sandy loam; weak fine and medium granular structure; very friable; few fine roots; 15 percent gravel; strongly acid; clear wavy boundary.

Bw3 -- 22 to 26 inches (56 to 66 centimeters); dark yellowish brown (10YR 4/4) gravelly loamy sand; very weak fine granular structure; very friable; few fine roots; 25 percent gravel; moderately acid; clear wavy boundary. (Combined thickness of the Bw horizons is 6 to 34 inches (15 to 86 centimeters).)

2C -- 26 to 65 inches (66 to 165 centimeters); 80 percent yellowish brown (10YR 5/4) and 20 percent dark grayish brown (10YR 4/2) very gravelly sand; single grain; loose; stratified; few fine roots in upper 4 inches; 40 percent gravel, 10 percent cobbles; moderately acid.

TYPE LOCATION: Franklin County, Massachusetts; Town of Leverett, 2.75 miles south-southeast of Montague Village, 0.13 miles southeast of Cranberry Pond, just west of Route 63. USGS Williamsburg, MA topographic quadrangle, Latitude 42 degrees, 29 minutes, 51 seconds N. and Longitude 72 degrees, 31 minutes, 12 seconds W., NAD 1983.

RANGE IN CHARACTERISTICS: Solum thickness ranges from 18 through 36 inches (46 through 91 centimeters). Rock fragments are commonly granite or gneiss or schist but up to 25 percent are flat, fine-grained slate, shale, or phyllite fragments. The upper part of the solum commonly has 2 through 20 percent gravel, but includes cobbles in some pedons, and the lower part 5 through 30 percent. The substratum contains 2 through 55 percent gravel and 5 through 15 percent cobbles. Total volume of rock fragments in the particle-size control section is less than 35 percent. Clay content is less than 18 percent. Reaction ranges from extremely acid through moderately acid, unless limed.

The O horizon, where present, ranges in thickness from 2 through 5 inches (4 through 13 centimeters). They have hue 2.5YR through 10YR, value 2 or 3, and chroma 1 through 3. They are fibric, hemic, or sapric material.

The Ap, A, or AE horizon has hue of 7.5YR or 10YR, value of 2 through 4, and chroma of 1 through 4. Texture is fine sandy loam, sandy loam, or very fine sandy loam in the fine-earth fraction.

The E horizon, where present, ranges in thickness from 1 through 3 inches (3 through 8 centimeters). They have hue 5YR through 10YR, value 4 through 6, and chroma 1 through 4. Texture is sandy loam or coarse sandy loam in the fine-earth fraction. Some pedons have thin Spodic horizons less than 2 inches (5 centimeters) thick with hue 7.5YR or 10YR, value 4, and chroma 3 through 6.

The Bw horizon has hue of 7.5YR or 10YR in the upper part and 7.5YR through 2.5Y in the lower part. Value ranges from 3 through 6 and chroma from 3 through 8. Texture of the upper part of the Bw horizon is fine sandy loam, sandy loam, coarse sandy loam, or very fine sandy loam in the fine-earth fraction. It has granular or subangular blocky structure or the horizon is massive. The lower part of the B horizon is sandy loam, coarse sandy loam, loamy coarse sand, loamy fine sand, or loamy sand in the fine-earth fraction. Sandy loam textures do not extend below a depth of 27 inches (69 centimeters), but a minimum thickness of 5 inches (13 centimeters) of sandy loam overlies any lower B or 2C horizon that is loamy fine sand or coarser. The B subhorizon that lies above the 2C horizon in many pedons is single grain. Some pedons have a BC horizon that is similar to the lower part of the Bw.

The 2C horizon has hue of 10YR through 5Y and ranges widely in value and chroma. It consists of stratified coarse sand, sand, gravel, and cobbles and has a weighted texture of gravelly or very gravelly sand or coarse sand. Some pedons have thin lenses of loamy fine sand or fine sand.

COMPETING SERIES: These are the Hartford and Knickerbocker series. Hartford soils have hues of 5YR or redder in the Bw horizon. Knickerbocker soils generally have less rock fragments in the substratum and the fragments are commonly slate and dark shale.

GEOGRAPHIC SETTING: Merrimac soils are level to very steep soils on outwash plains and valley trains, and associated kames, eskers, stream terraces and water deposited parts of moraines. The steeper slopes are on the margin escarpments of terraces and plains, and on eskers and kames. Slope ranges from 0 through 35 percent. The soils formed in water sorted gravelly and sandy material derived mainly from granitic, gneissic, and some schistose rocks. Mean annual precipitation ranges from 28 through 55 inches (711 through 1397 millimeters); mean annual air temperature ranges from 45 through 50 degrees F. (7 through 10 degrees C.), mean growing season ranges from 120 through 200 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Agawam, Hinckley, Mashpee (T), Massasoit (T), Sudbury, Scarboro, Walpole, and Windsor soils on nearby landscapes. The well drained Agawam soils are coarse-loamy over sandy or sandy-skeletal. The excessively drained Hinckley soils are sandy-skeletal. The very poorly drained Scarboro soils are in depressions. The moderately drained Sudbury soils are on adjacent, slightly lower landforms. The poorly drained Mashpee (T), Massasoit (T), and Walpole soils are in drainageways and on low landforms. The excessively drained Windsor soils have loamy fine sand to sand textures in the Bw horizon and lack rock fragments.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat excessively drained. Runoff is negligible through medium. Saturated hydraulic conductivity is high or very high.

USE AND VEGETATION: Most areas are cultivated and used for growing hay, pasture, silage, corn, or truck crops. Some areas are used to grow tobacco in the Connecticut River Valley in Massachusetts and Connecticut. Some areas are forested with mostly white pine, gray birch, hemlock, red maple, and red, black, white, and scarlet oaks.

DISTRIBUTION AND EXTENT: Massachusetts, Connecticut, New Hampshire, New York, Vermont, and Rhode Island. MLRA's 142, 144A, 145, and 149B. The series is extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Amherst, Massachusetts.

SERIES ESTABLISHED: Merrimack County, New Hampshire, 1906.

REMARKS: The use of the Merrimac series in Maine, and in MLRA 143 and 144B, is relict to before temperature classes. These have been removed from the SC file.

Diagnostic horizons and other features recognized in this pedon are:

1. Ochric epipedon - the zone from 0 to 10 inches (0 to 25 centimeters) (Ap horizon).
2. Cambic horizon - the zone from 10 to 22 inches (25 to 56 centimeters) (Bw horizon).

National Cooperative Soil Survey
U.S.A.

Disturbed Map Units

This edition of the New Hampshire State-Wide Numerical Soil Legend contains eleven distinct map units used for identifying areas of soils altered or disturbed by human influence and the addition of one naturally formed map unit. These map units were designed for the Order 2 and Order 3 levels of mapping intensity, but can be used in Order 1 mapping if appropriate.

The definition of disturbed map units is intentionally brief and vague. Classification at the Great Group level allows for a wide range in soil properties and behavioral characteristics. The variability in soil properties typically requires on-site investigations before any interpretation can be developed. The map unit descriptions are intended to provide guidance in differentiating map units. The author of the soil map is expected to provide additional information to reflect the nature of the disturbed areas within the survey area.

I. Excavated land

300 Udipsamments

This map unit is characterized by soil textures of loamy fine sand to sand and gravel throughout the entire particle-size class control section (25 - 100 cm or 10 - 40 inches). Saturated hydraulic conductivity (K_{sat}) is high or very high. Drainage class ranges from excessively drained to well drained. The Hydrologic Soil Group (HSG) is A. Typical sand pit.

350 Udipsamments, wet substratum

This map unit is characterized by soil textures of loamy fine sand to sand and gravel throughout the entire particle-size class control section (25 - 100 cm or 10 - 40 inches). Saturated hydraulic conductivity (K_{sat}) is high or very high. Drainage class ranges from moderately well drained to somewhat poorly drained.

400 Udorthents, sandy or gravelly

This map unit typically includes the following concepts: 1) very gravelly (> 35%) sand or very gravelly loamy sand; Or 2) sand or loamy sand textures that may have lenses of loamy very fine sand or finer somewhere in the particle-size class control section (25 - 100 cm or 10 - 40"). Saturated hydraulic conductivity (K_{sat}) is high or very high. Drainage class ranges from excessively drained to somewhat poorly drained. Typical gravel pit.

Disturbed Map Units (continued)

500 Udorthents, loamy

This map unit is characterized typically by soil textures that are sandy loam, loam, or silt loam within the particle size control section (25 – 100cm or 10 – 40"). Saturated hydraulic conductivity (K_{sat}) is low through high. Drainage class ranges from well drained to somewhat poorly drained. These areas typically represent excavated glacial till or perhaps areas where sand and gravel was excavated down to the loamy underlying material.

550 Udorthents, Bedrock substratum

This map unit is characterized by soil textures of sandy loam, loam, or silt loam within the particle-size class control section (25 - 100 cm or 10 - 40 inches). These areas typically represent excavated soil materials where the range in depth to bedrock is 10 - 60 inches (25 - 152 cm). Saturated hydraulic conductivity (K_{sat}) is low through high. Drainage class ranges from somewhat excessively drained to somewhat poorly drained.

600 Endoaquents, loamy

This map unit represents areas where soil material was excavated down to, or near the water table. Soil material is typically sandy loam, loam or silt loam within the particle-size class control section (25 - 100 cm or 10 - 40 inches). Saturated hydraulic conductivity (K_{sat}) is low through high. Drainage class is poorly or very poorly drained. The Hydrologic Soil Group (HSG) is D.

900 Endoaquents, sandy or gravelly

This map unit represents areas where soil material was excavated down to / near the water table. This map unit is characterized typically by soil textures of: 1) very gravelly (> 35% gravel) sand or very gravelly loamy sand or; 2) sand or loamy sand textures that may have lenses of loamy very fine sand or finer somewhere in the particle-size class control section (25 - 100 cm or 10 - 40"). Saturated hydraulic conductivity (K_{sat}) is high or very high. Drainage class is poorly or very poorly drained. The Hydrologic Soil Group (HSG) is D. Typical gravel pit dug down to or close to the water table.

Disturbed Map Units (continued)

II. Filled land

100 Udorthents, wet substratum

This map unit represents areas that have been filled and leveled over what were originally hydric soils.

199 Dumps, bark chips, and organic material

This map unit consists of man-made deposits of bark, wood chips, sawdust, paper mill sludge, cinders, waste paper, ashes, and other similar refuse from the operation of paper mills and sawmills.

200 Udorthents, refuse substratum

This map unit represents alternating layers of soil and refuse such as in sanitary landfills. Closed landfills typically have 2 feet of loamy material capping the area.

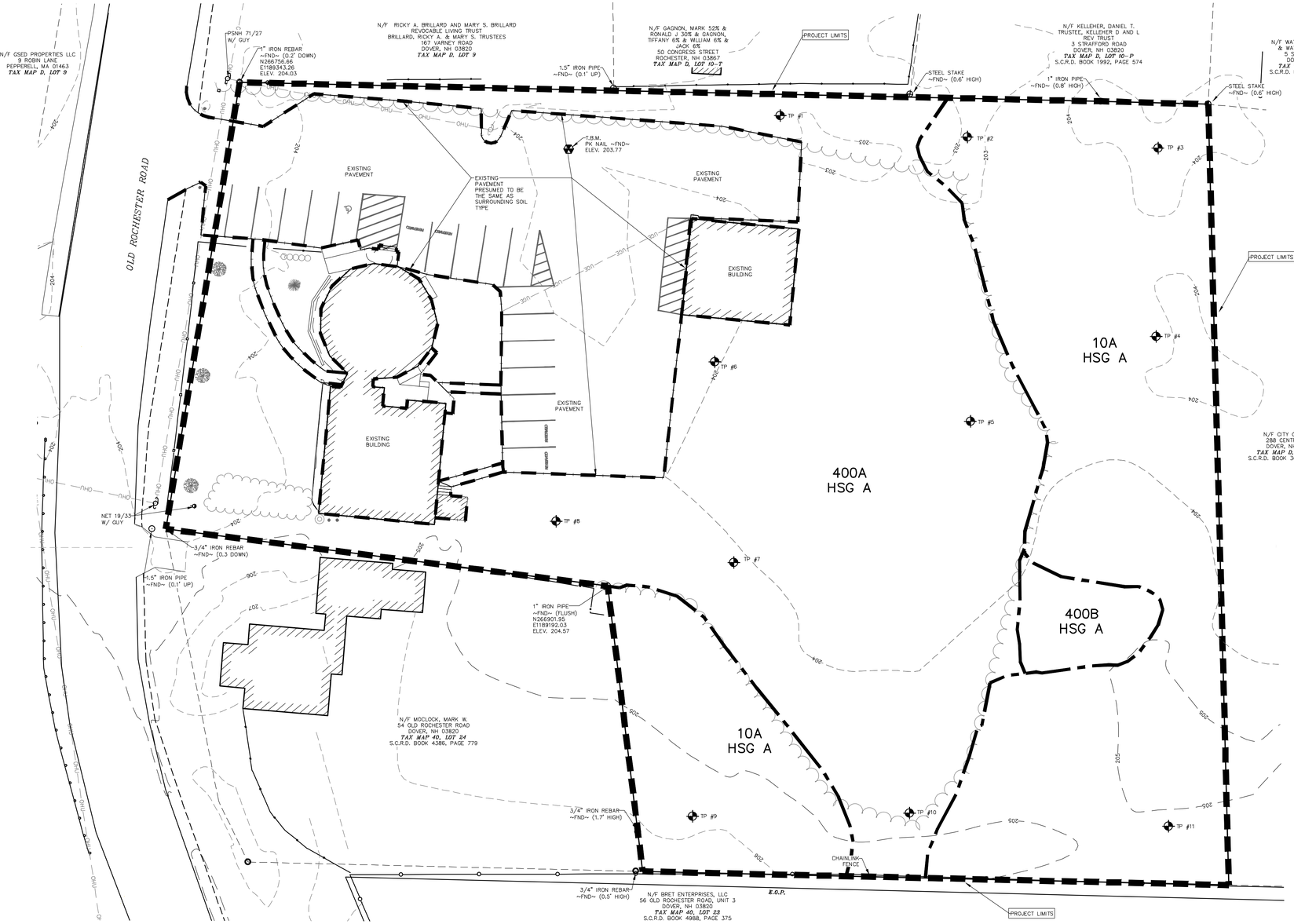
299 Udorthents, smoothed

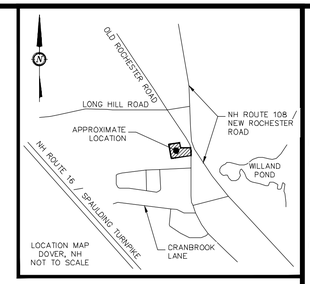
This map unit represents areas that have been cut and filled to create a large level or nearly level area. Soil material making up the map units typically came from the immediate area. School athletic fields are an example (unless they were created on hydric soils – see Map Unit 100).

III. Bottom Land

7 Fluvaquents

This map unit represents areas of various kinds of soil materials on the bottom lands of streams and rivers. The soil material ranges in texture from silt loam to sand and gravel within the particle-size class control section (25 - 100 cm or 10 - 40 inches). Drainage class is poorly or very poorly drained. The Hydrologic Soil Group (HSG) is D.





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SOIL CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN THE SUMMER OF 2022.

LEGEND:

- IRON BOUND (TBS)
- IRON BOUND (FND)
- DRILL HOLE (FND)
- GRANITE BOUND (TBS)
- UTILITY POLE/GUY WIRE
- TEST PIT
- BENCHMARK
- OHU — OHU — OVERHEAD UTILITIES LINE
- 276 — EXISTING CONTOUR MINOR
- 275 — EXISTING CONTOUR MAJOR
- SOIL LINE
- LIMIT OF SOIL SURVEY
- AREAS OF IMPERVIOUS SURFACE PRESUMED TO BE THE SAME SURROUNDING SOIL TYPE
- **448A** SOIL SERIES
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
- TYP. TYPICAL
- FND FOUND
- TBA TO BE ABANDONED

SOILS LEGEND				
Site Specific Soils				
Symbol	**K**	**Slopes**	**Taxonomic Soil Name**	**Hydrologic Soil Group**
10		A	Merrimac	A
400		A,B	Udorthents	A
NRCS Soils				
Symbol	**K**	**Slopes**	**Taxonomic Soil Name**	**Hydrologic Soil Group**
Wd		A	Windsor Loamy Sand	A
Slopes: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25- 50% F = 50%+				
Denominators: /P = Poorly Drained /VP = Very Poorly Drained /Rk = Rocky				

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

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

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE
JOHN P. HAYES III
No. 967
CERTIFIED SOILS SCIENTIST

JOHN P. HAYES III, CSS #87

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANNING FILE #

REVISION	DATE	DESCRIPTION

SITE SPECIFIC SOILS MAP
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
No. 805
LICENSED LAND SURVEYOR
KENNETH A. BERRY
SIGNATURE

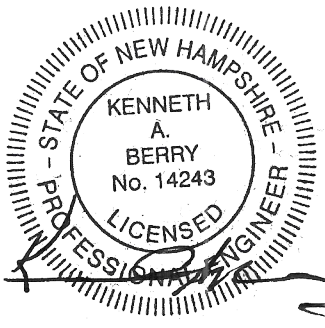
NOT FOR CONSTRUCTION

Infiltration Feasibility Report

52 Old Rochester Road
Dover, NH 03820
Tax Map 40, Lot 25

Prepared for:

Dover Development, LLC
242 Central Avenue
DOVER, NH 03820



Land of

Dover Development, LLC
242 Central Avenue
DOVER, NH 03820

Prepared By

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
603-332-2863

File Number
DB2022-075

July 1, 2024
Revised: March 18, 2025

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1.0 Location of Practices:

The project proposes eight porous pavement locations of infiltration for ground water recharge, treatment, and channel flow protection purposes via Porous Pavement Systems #201-#208. Infiltration also occurs across the site in a series of Infiltration Sumps #101-#105. These locations infiltrate generally grassed areas and are not included in the Infiltration Feasibility Study due to test pit data showing no seasonal high-water table within 6.5' of the surface on site. Additionally, the on-site sidewalk is proposed as porous brick pavers. These will be constructed as porous, but have not been modeled as so in the drainage analysis. This provides a factor of safety in the design. The following is a list and description of porous asphalt pavement practices in ascending order:

Porous Pavement w/ Infiltration #201 (Pond #201P) – This BMP is located at the southeastern side of the parcel, on the western side of Blazer Drive from stationing 1+28 to 1+94. Subcatchment area includes the adjacent conventional pavement lane (Subcatchment #21) and a portion of the roof runoff from the southern mixed-use building (Subcatchment #21a).

Porous Pavement w/ Infiltration #202 (Pond #202P) – This BMP is located near the center of the parcel, on the southern side of Blazer Drive from stationing 2+57 to 3+58. Subcatchment area includes the adjacent conventional pavement lane, sidewalk, and grassed area (Subcatchment #22) and a portion of the roof runoff from the southern mixed-use building (Subcatchment #22a).

Porous Pavement w/ Infiltration #203 (Pond #203P) – This BMP is located near the southwestern corner of the parcel, adjacent to the building and parking for the southern drive lane from stationing 10+33 to 10+96. Subcatchment area includes the adjacent conventional pavement lane, sidewalk, and grassed area (Subcatchment #23) and a portion of the roof runoff from the southern mixed-use building (Subcatchment #23a).

Porous Pavement w/ Infiltration #204 (Pond #204P) – This BMP is located near the southwestern corner of the parcel, opposite to the building and parking for the southern drive lane from stationing 10+24 to 10+96. Subcatchment area includes the adjacent conventional pavement lane and porous pavement (Subcatchment #24).

Porous Pavement w/ Infiltration #205 (Pond #205P) – This BMP is located near the northeast corner of the parcel, opposite to the building and parking for the northern drive lane from stationing 20+16 to 21+24. Subcatchment area includes the adjacent conventional pavement lane and porous pavement (Subcatchment #25).

Porous Pavement w/ Infiltration #206 (Pond #206P) – This BMP is located near the northeastern corner of the parcel, adjacent to the building and parking for the northern drive lane from stationing 20+34 to 21+24. Subcatchment area includes the

adjacent conventional pavement lane, sidewalk, and grassed area (Subcatchment #26) and a portion of the roof runoff from the northern mixed-use building (Subcatchment #26a).

Porous Pavement w/ Infiltration #207 (Pond #207P) – This BMP is located in the central portion of the parcel. This BMP is the porous pavement parking area along the northern side of Blazer Drive. adjacent to the building and parking for the northern drive lane from stationing 2+13 to 3+56. Subcatchment area includes the adjacent conventional pavement lane, sidewalk, and grassed area (Subcatchment #27) and a portion of the roof runoff from the northern mixed-use building (Subcatchment #27a).

Porous Pavement w/ Infiltration #208 (Pond #208P) – This BMP is located in the and eastern portion of the parcel. This BMP is the porous pavement parking area along the northern side of Blazer Drive to the first landscaping break, adjacent to the commercial building and parking for the northern drive lane from stationing 0+46 to 2+03. Subcatchment area includes the adjacent conventional pavement lane, sidewalk, and grassed area (Subcatchment #28) and the commercial building roof (Subcatchment #28b).

2.0 Existing Topography at the Location of the Practice

Porous Pavement w/ Infiltration #201 (Pond #201P) – The existing topography within this practice is less than 3%. This area is currently occupied by a paved parking lot.

Porous Pavement w/ Infiltration #202 (Pond #202P) – The existing topography within this practice is less than 3%. This area is currently unmaintained lawn.

Porous Pavement w/ Infiltration #203 (Pond #203P) – The existing topography within this practice is less than 3%. This area is currently wooded.

Porous Pavement w/ Infiltration #204 (Pond #204P) – The existing topography within this practice is less than 3%. This area is currently wooded.

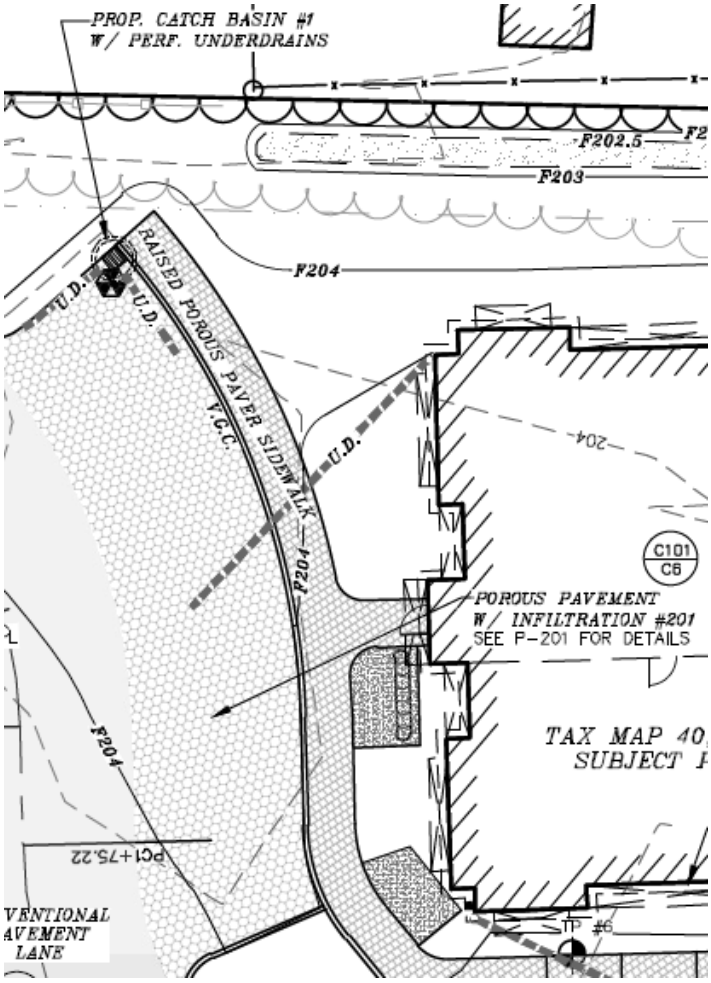
Porous Pavement w/ Infiltration #205 (Pond #205P) – The existing topography within this practice is less than 3%. This area is currently wooded.

Porous Pavement w/ Infiltration #206 (Pond #206P) – The existing topography within this practice is less than 3%. This area is currently wooded.

Porous Pavement w/ Infiltration #208 (Pond #208P) – The existing topography within this practice is less than 3%. This area is currently occupied by a paved parking lot to the east and unmaintained lawn to the west.

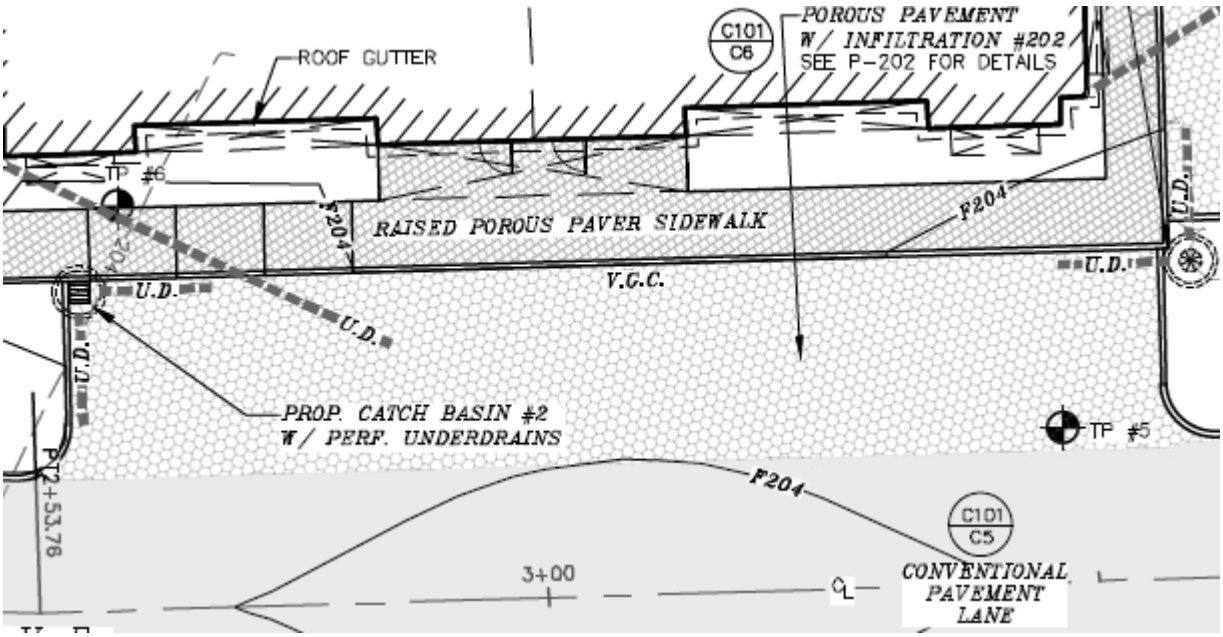
3.0 Test Pit Locations

Porous Pavement w/ Infiltration #201 (Pond #201P) – The practice has a surface area of 1,321 Sq. Ft.. As the practice is located in what is currently a paved parking lot, the closest test pit is TP #6. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Udorthents (derived from Merrimac).



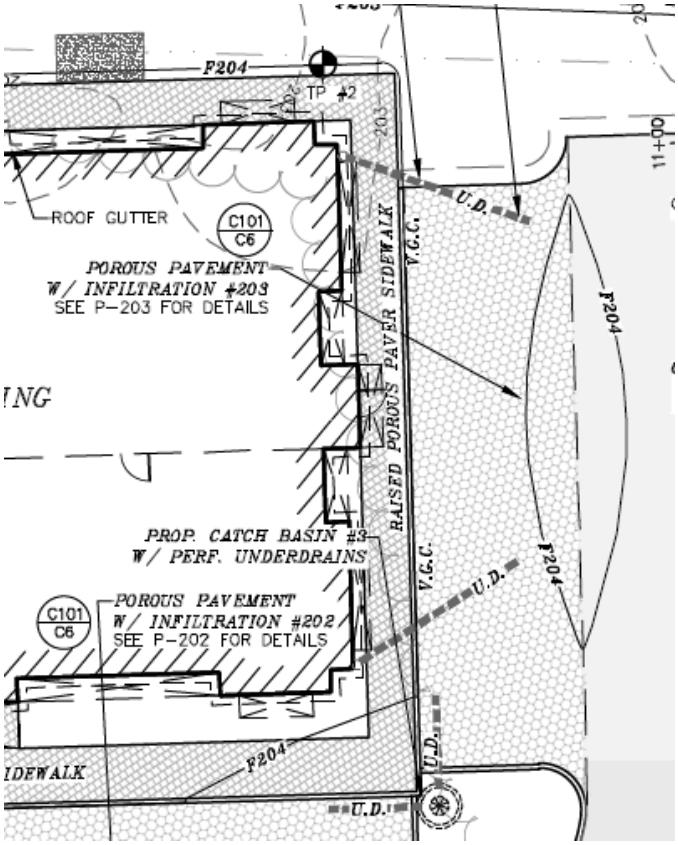
Porous Pavement W/ Infiltration #201 (Pond #201) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #202 (Pond #202P) – The practice has a surface area of 1,794 Sq. Ft.. As the practice is located over TP #5 and adjacent to TP #6. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Udorthents (derived from Merrimac).



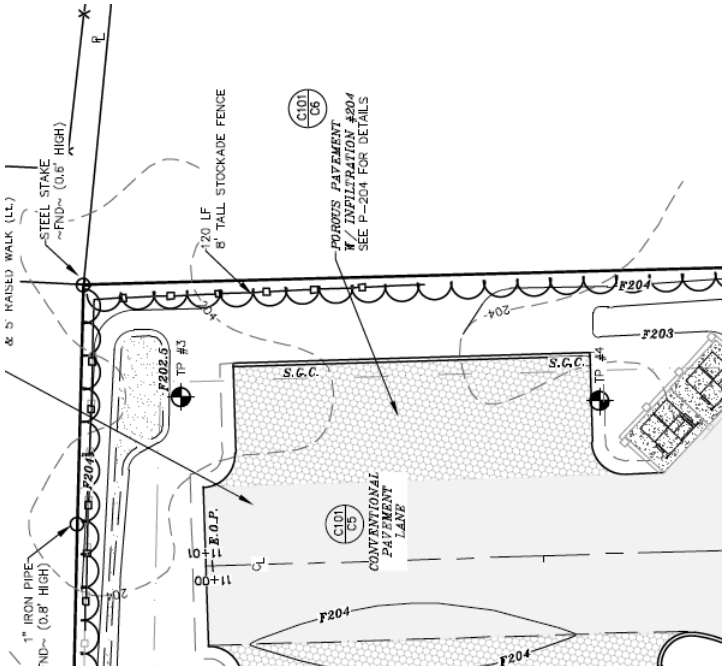
Porous Pavement W/ Infiltration #202 (Pond #202) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #203 (Pond #203P) – The practice has a surface area of 1,147 Sq. Ft.. The practice is located adjacent to TP #2. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Merrimac.



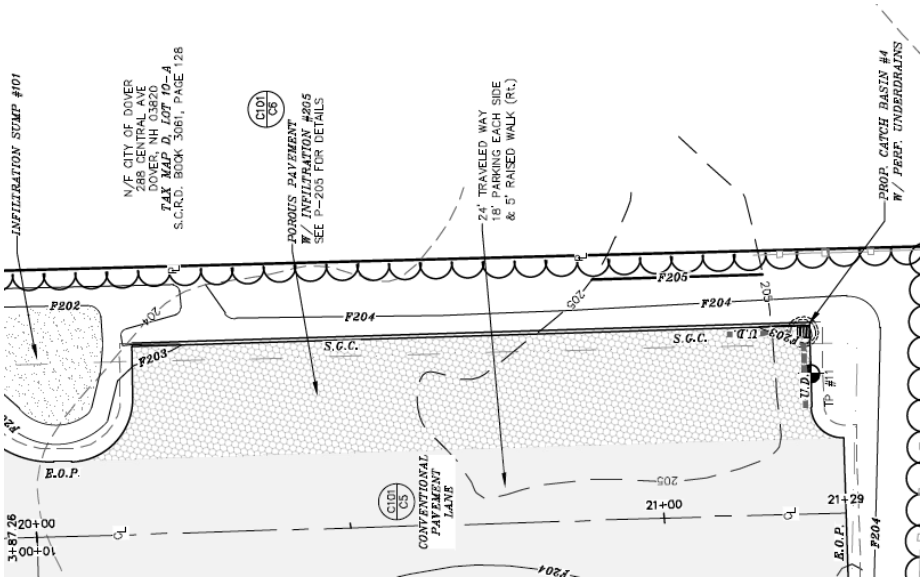
Porous Pavement W/ Infiltration #203 (Pond #203) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #204 (Pond #204P) – The practice has a surface area of 983 Sq. Ft.. The practice is located over TP #3 & TP #4. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Merrimac.



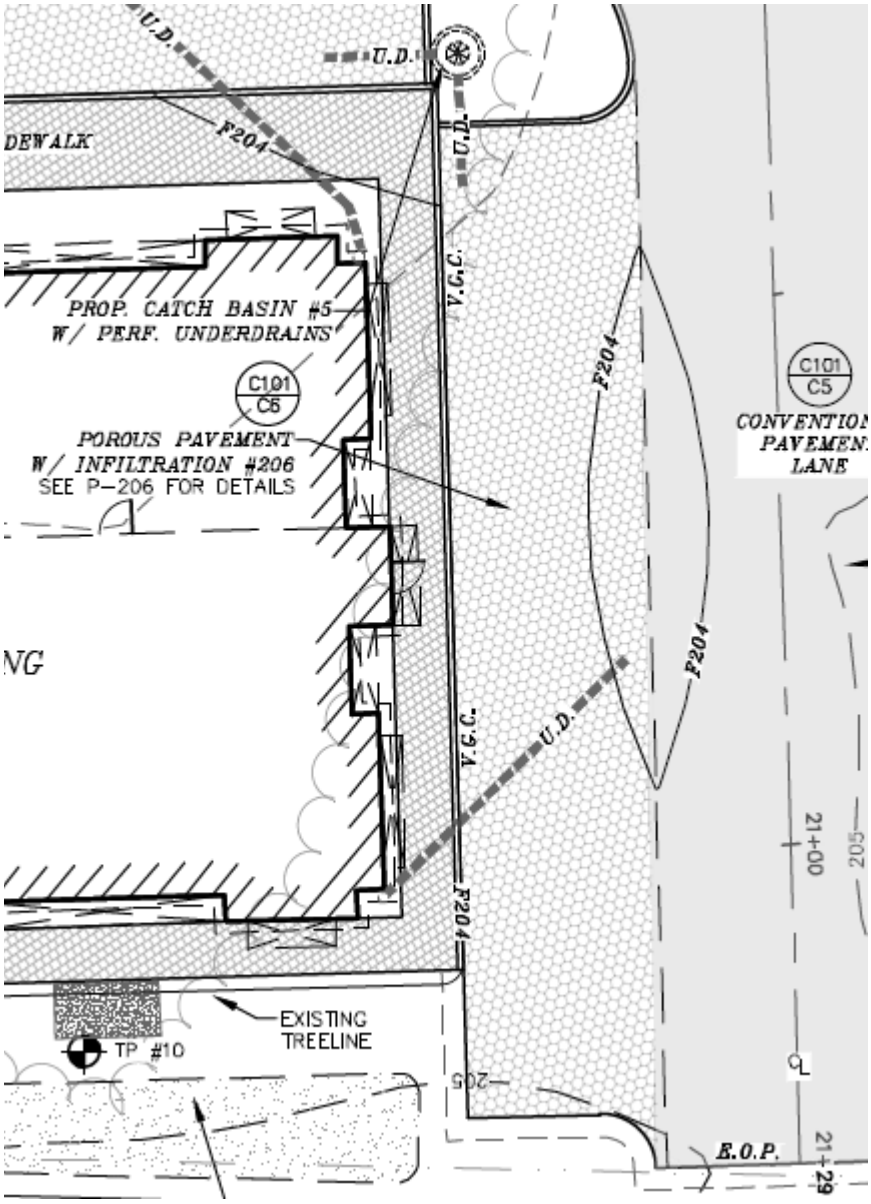
Porous Pavement W/ Infiltration #204 (Pond #204) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #205 (Pond #205P) – The practice has a surface area of 1,971 Sq. Ft. The practice is located over TP #11. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Merrimac.



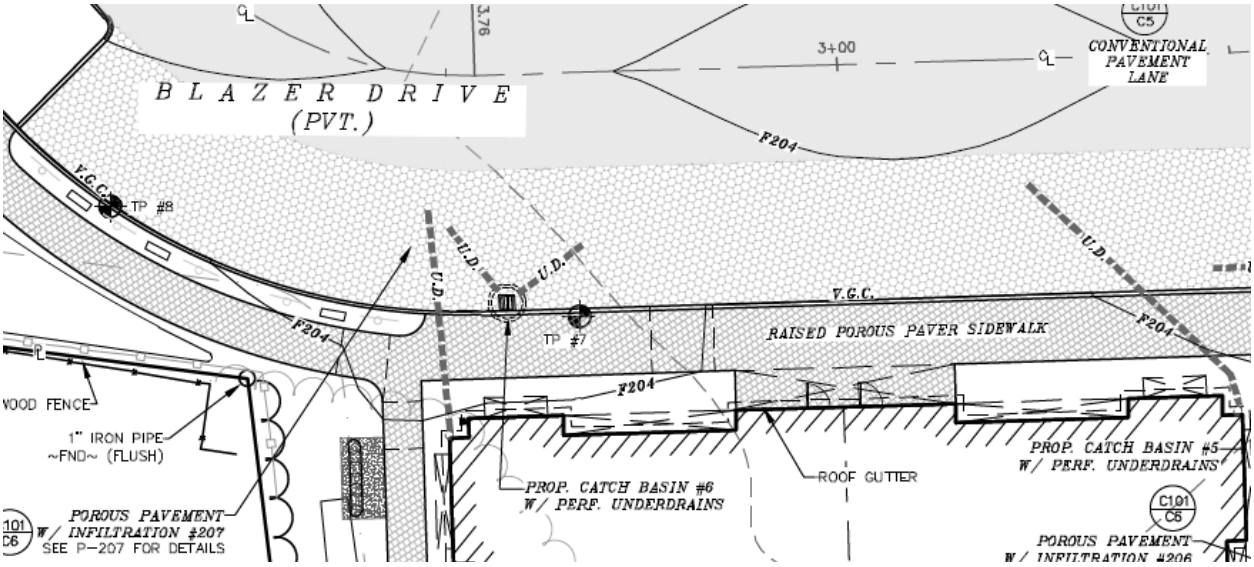
Porous Pavement W/ Infiltration #205 (Pond #205) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #206 (Pond #206P) – The practice has a surface area of 1,592 Sq. Ft.. The practice is located adjacent to TP #11. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Merrimac.



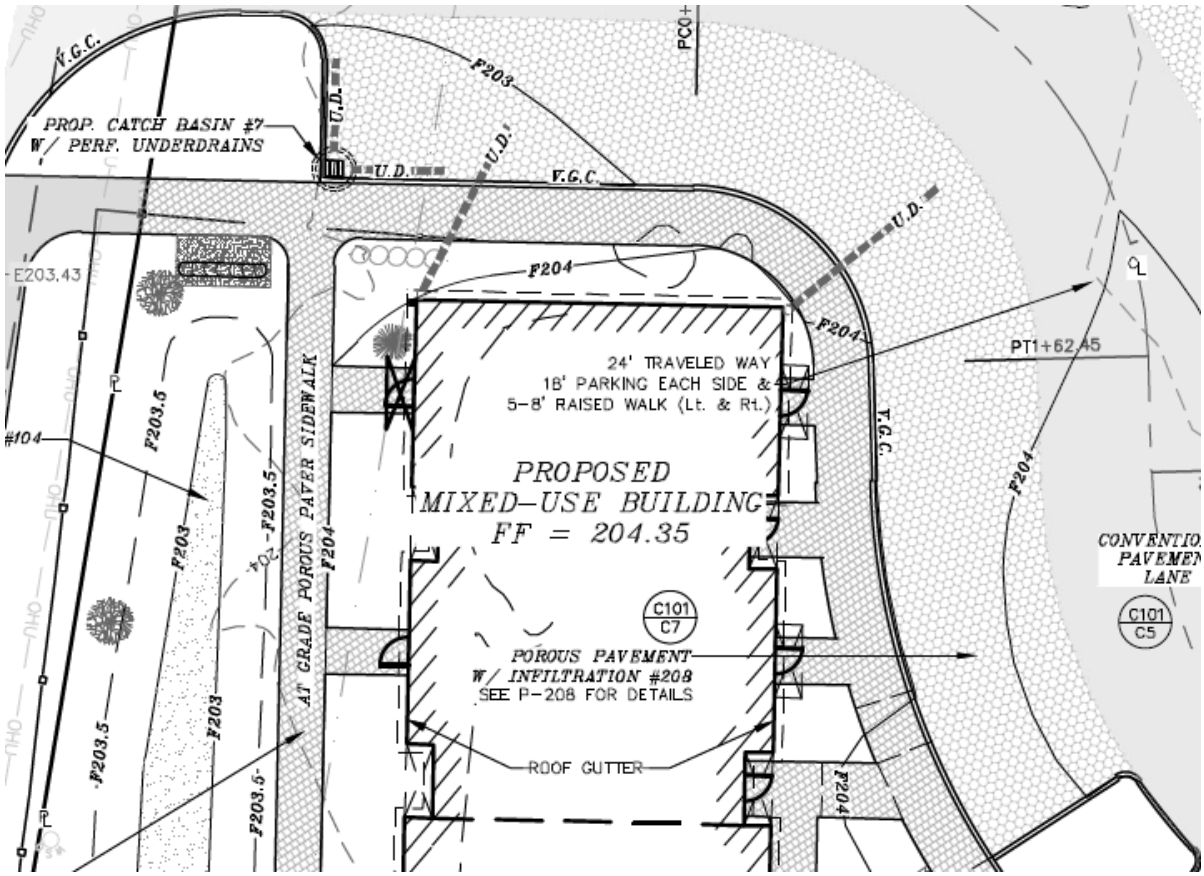
Porous Pavement W/ Infiltration #206 (Pond #206) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #207 (Pond #207P) – The practice has a surface area of 2,893 Sq. Ft.. As the practice is located in what is currently a paved parking lot and paved lawn. The practice is located over test pits TP #7 & TP #8. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Udorthents (derived from Merrimac).



Porous Pavement W/ Infiltration #207 (Pond #207) – (Reference Sheet Overview G&D)

Porous Pavement w/ Infiltration #208 (Pond #208P) – The practice has a surface area of 2,446 Sq. Ft.. As the practice is located in what is currently a paved parking lot and paved lawn. The practice is located adjacent to TP #8. See Site Specific Soils Map. See test pit files in following section. The soil in the vicinity of this practice is Udorthents (derived from Merrimac).



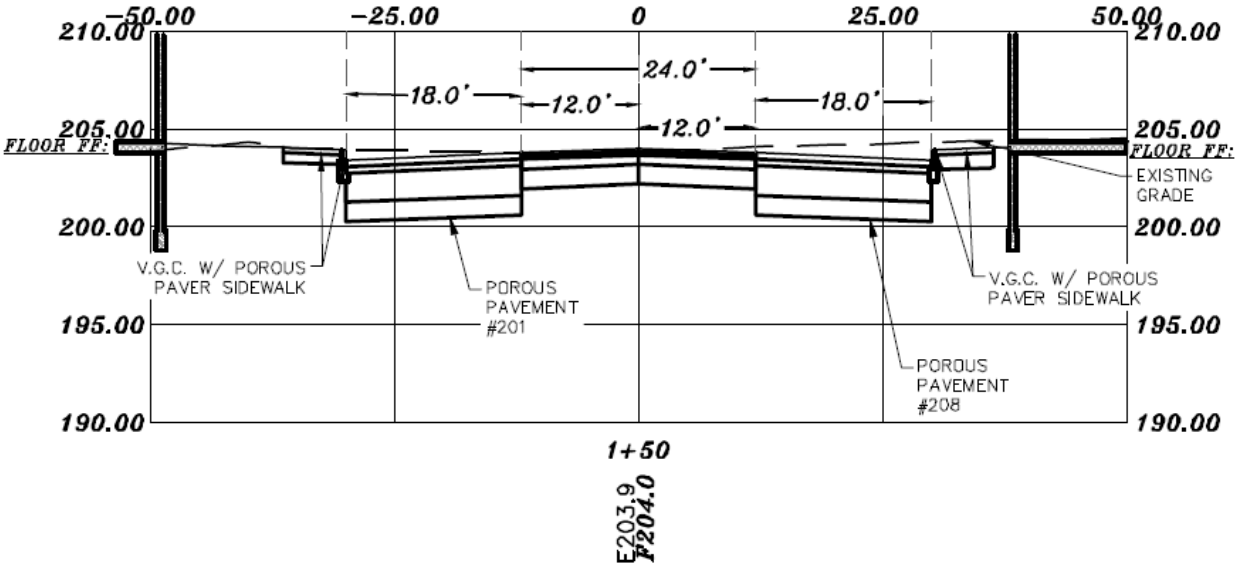
Porous Pavement W/ Infiltration #208 (Pond #208) – (Reference Sheet Overview G&D)

4.0 Seasonal High Water Table (SHWT) and Bedrock Elevations

TP #6:	Existing Surface Elevation of TP =	203.90’
	SHWT > 78 Inches	>197.40’
	Bedrock > 78 Inches	>197.40’
	Ground Water > 78 Inches	>197.40’
	Deepest Elevation of TP = 78 Inches	197.40’

Porous Pavement W/ Inf. #201 (Pond #201): Inv. Filter Media Low 201.10’

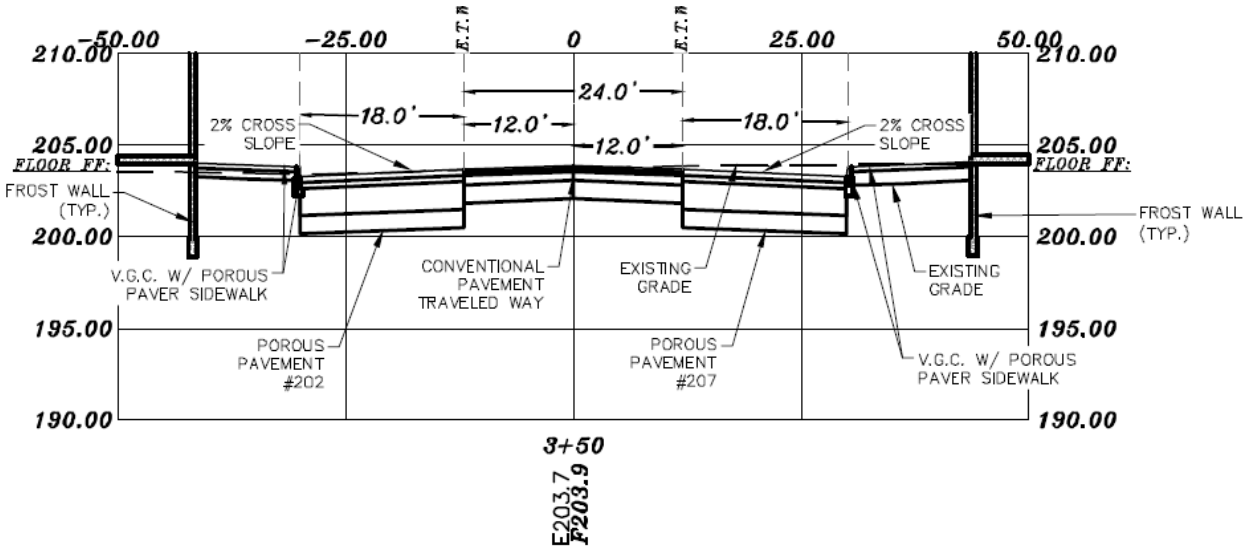
See cross section below.



TP #5:	Existing Surface Elevation of TP =	203.60’
	SHWT > 78 Inches	>197.10’
	Bedrock > 78 Inches	>197.10’
	Ground Water > 78 Inches	>197.10’
	Deepest Elevation of TP = 78 Inches	197.10’

Porous Pavement W/ Inf. #202 (Pond #202): Inv. Filter Media Low 201.18’

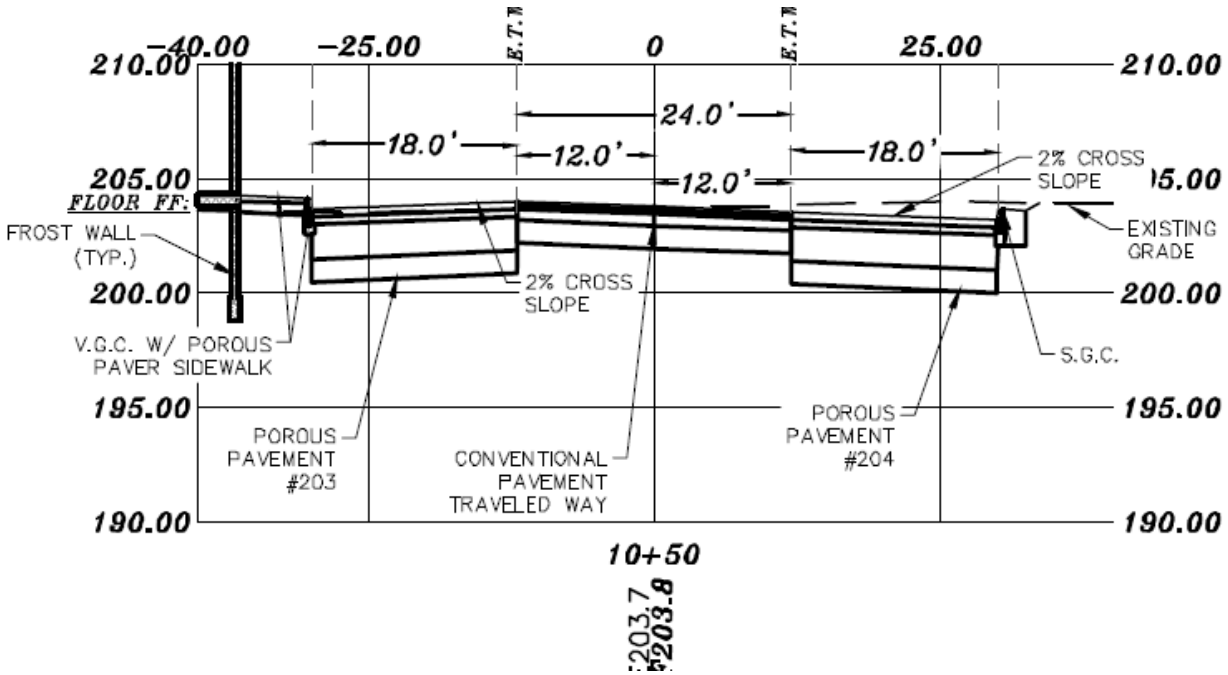
See cross section below.



TP #2: Existing Surface Elevation of TP = 202.95’
SHWT > 78 Inches >196.45’
Bedrock > 78 Inches >196.45’
Ground Water > 78 Inches >196.45’
Deepest Elevation of TP = 78 Inches 196.45’

Porous Pavement W/ Inf. #203 (Pond #203): Inv. Filter Media Low 201.38’

See cross section below.



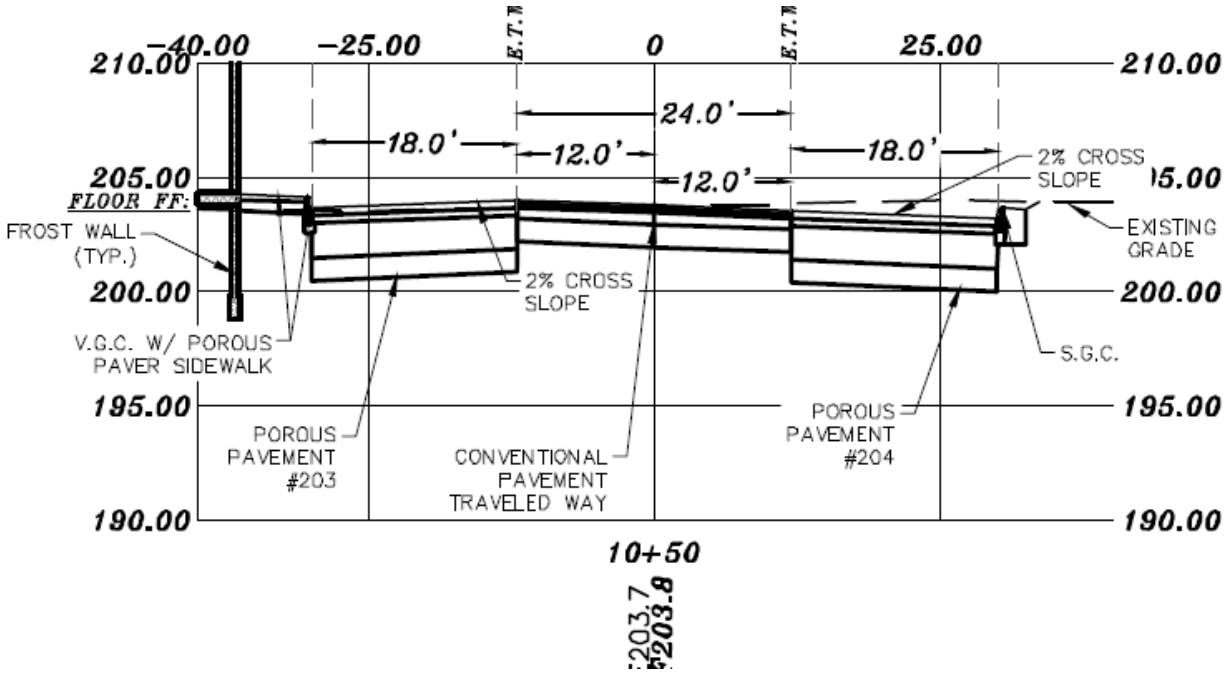
TP #3: Existing Surface Elevation of TP = 204.17’
SHWT > 78 Inches >197.67’

	Bedrock > 78 Inches	>197.67’
	Ground Water > 78 Inches	>197.67’
	Deepest Elevation of TP = 78 Inches	197.67’

TP #4:	Existing Surface Elevation of TP =	203.95’
	SHWT > 78 Inches	>197.45’
	Bedrock > 78 Inches	>197.45’
	Ground Water > 78 Inches	>197.45’
	Deepest Elevation of TP = 78 Inches	197.45’

Porous Pavement W/ Inf. #204 (Pond #204): Inv. Filter Media Low 200.96’

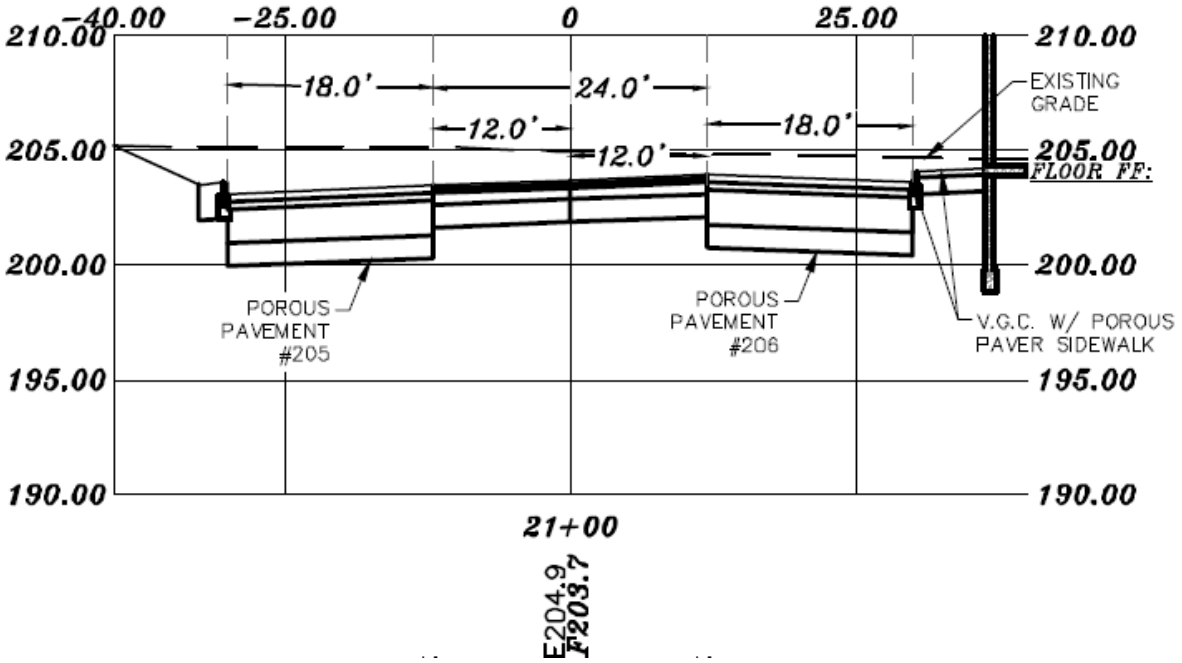
See cross section below.



TP #11:	Existing Surface Elevation of TP =	204.89’
	SHWT > 78 Inches	>198.39’
	Bedrock > 78 Inches	>198.39’
	Ground Water > 78 Inches	>198.39’
	Deepest Elevation of TP = 78 Inches	198.39’

Porous Pavement W/ Inf. #205 (Pond #205): Inv. Filter Media Low 200.77’

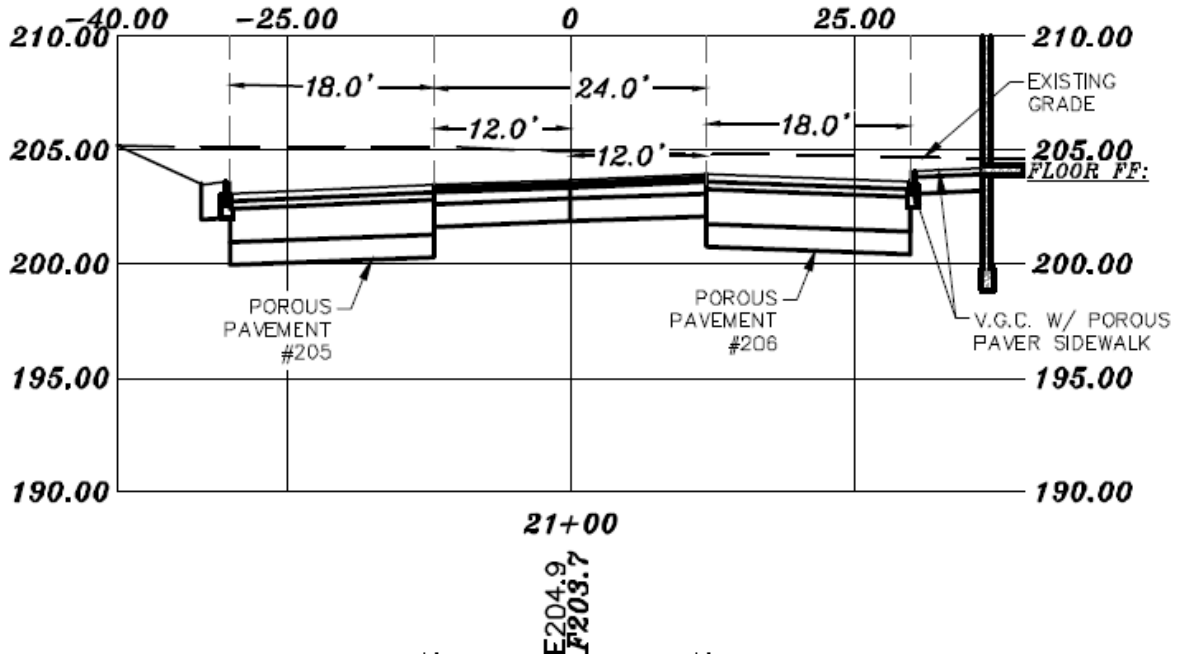
See cross section below.



TP #11: Existing Surface Elevation of TP = 204.89’
SHWT > 78 Inches >198.39’
Bedrock > 78 Inches >198.39’
Ground Water > 78 Inches >198.39’
Deepest Elevation of TP = 78 Inches 198.39’

Porous Pavement W/ Inf. #206 (Pond #206): Inv. Filter Media Low 201.25’

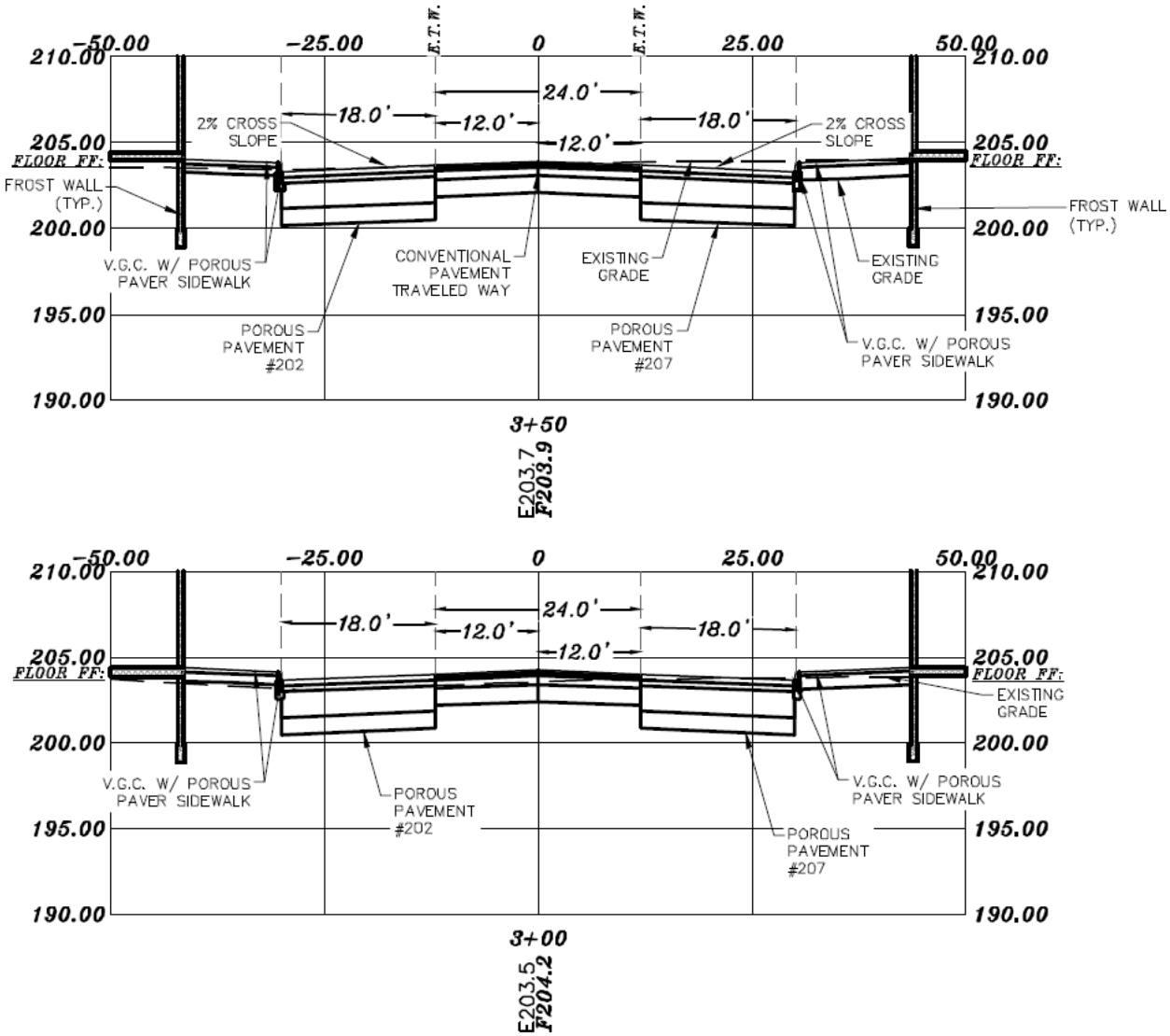
See cross section below.



TP #7:	Existing Surface Elevation of TP =	204.05’
	SHWT > 78 Inches	>197.55’
	Bedrock > 78 Inches	>197.55’
	Ground Water > 78 Inches	>197.55’
	Deepest Elevation of TP = 78 Inches	197.55’
TP #8:	Existing Surface Elevation of TP =	204.63’
	SHWT > 78 Inches	>198.13’
	Bedrock > 78 Inches	>198.13’
	Ground Water > 78 Inches	>198.13’
	Deepest Elevation of TP = 78 Inches	198.13’

Porous Pavement W/ Inf. #207 (Pond #207): Inv. Filter Media Low 201.18’

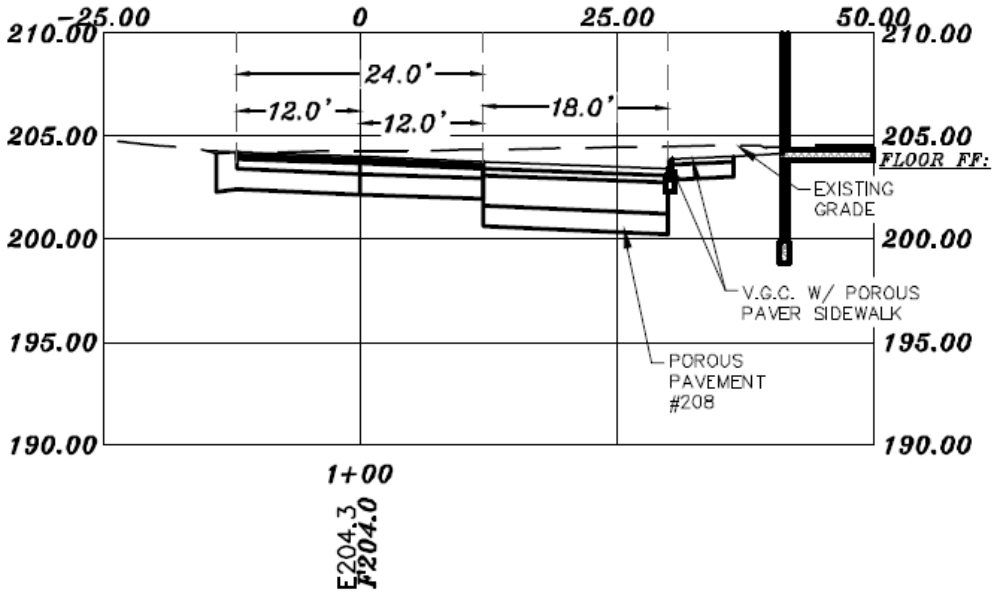
See cross section below.

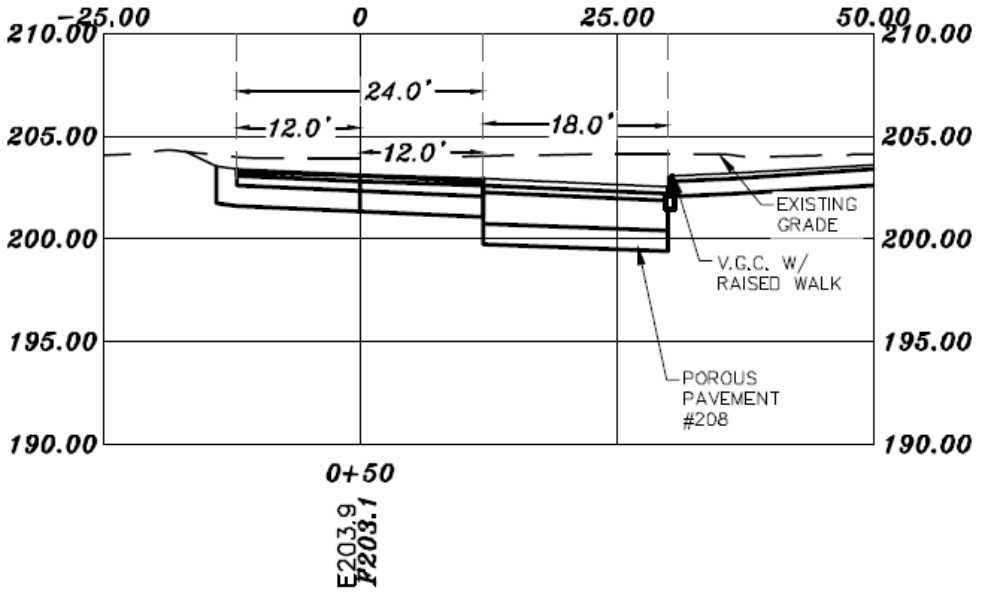


TP #8:	Existing Surface Elevation of TP =	204.63’
	SHWT > 78 Inches	>198.13’
	Bedrock > 78 Inches	>198.13’
	Ground Water > 78 Inches	>198.13’
	Deepest Elevation of TP = 78 Inches	198.13’

Porous Pavement W/ Inf. #208 (Pond #208): Inv. Filter Media Low 200.36’

See cross section below.





5.0 Profile descriptions

The following test pit data was collected, see profiles below.

TEST PIT #6

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #5

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #2

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #3

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #4

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #11

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0'	10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5'	10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #7

0-1.3'	10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE

1.3-2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5' 10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

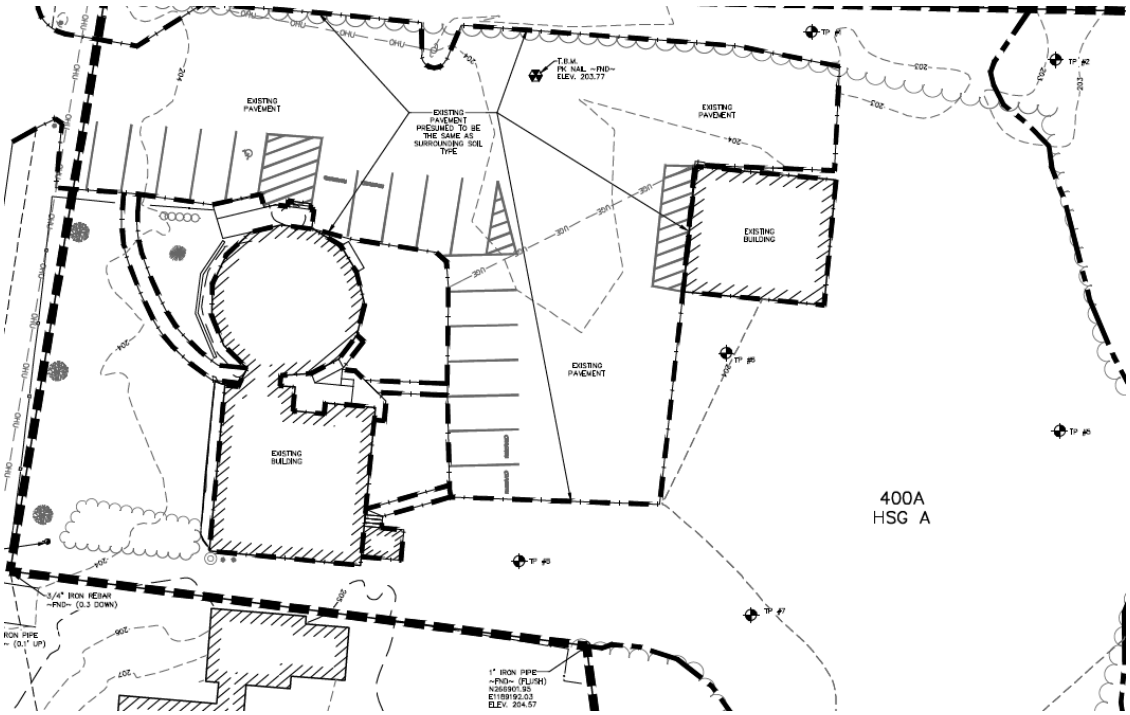
E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

TEST PIT #8

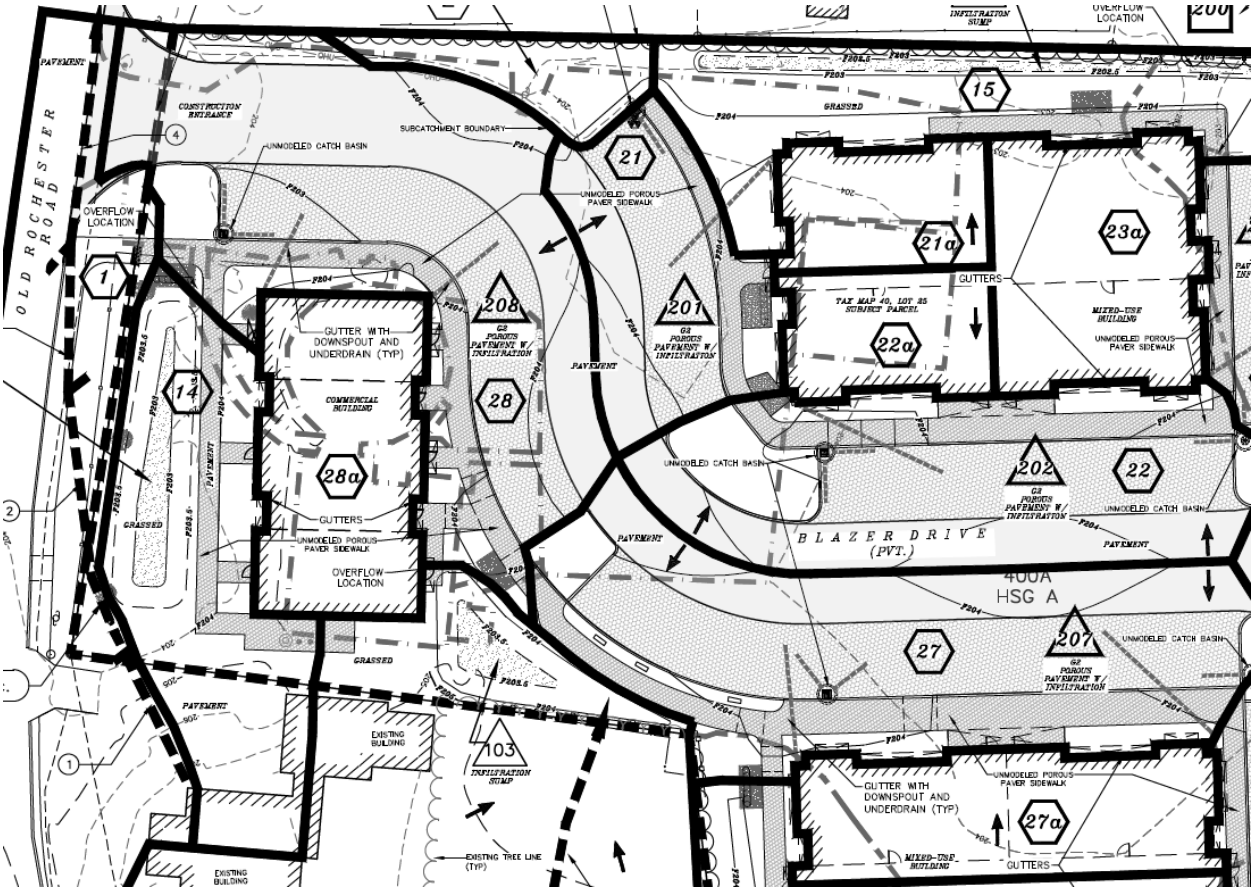
0-1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3-2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0-6.5' 10YR 5/8 DARK BROWN, COARSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

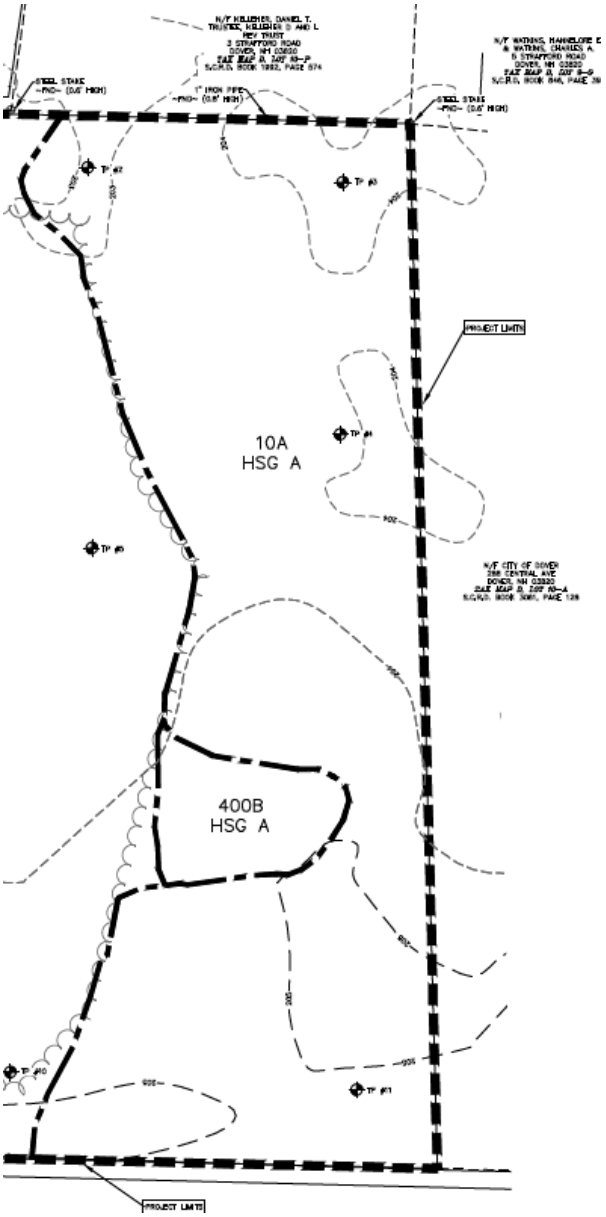
E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE

6.0 Soil Plan in the Area of the Constructed Practice

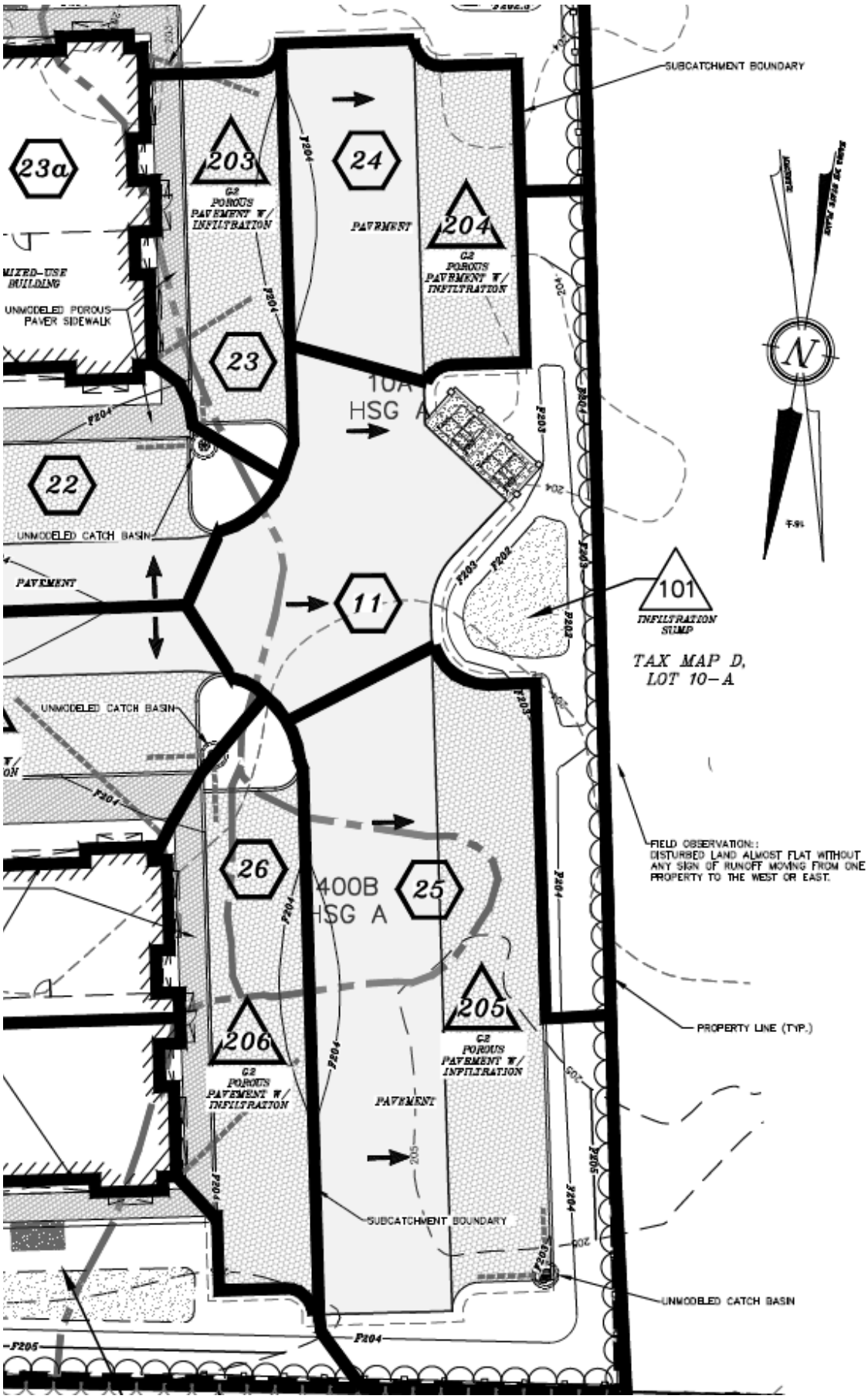


Porous Pavement W/ Infiltration #201 (Pond #201), Porous Pavement W/ Infiltration #202 (Pond #202), Porous Pavement W/ Infiltration #207 (Pond #207), & Porous Pavement W/ Infiltration #208 (Pond #208) are located over udorthents soil (Derived from Merrimac).





Porous Pavement W/ Infiltration #203 (Pond #203), Porous Pavement W/ Infiltration #204 (Pond #204), Porous Pavement W/ Infiltration #205 (Pond #205), & Porous Pavement W/ Infiltration #206 (Pond #206) are located over Merrimac soil. Porous Pavement W/ Infiltration #206 is also partially located over udorthents soil (Derived from Merrimac).


SUBCATCHMENT BOUNDARY
23a
203
G2 POROUS PAVEMENT W/ INFILTRATION
24
PAVEMENT
204
G2 POROUS PAVEMENT W/ INFILTRATION
MIXED-USE BUILDING
UNMODELED POROUS PAVER SIDEWALK
23
22
UNMODELED CATCH BASIN
PAVEMENT
11
101
INFILTRATION SUMP
TAX MAP D, LOT 10-A
UNMODELED CATCH BASIN
FIELD OBSERVATION:: DISTURBED LAND ALMOST FLAT WITHOUT ANY SIGN OF RUNOFF MOVING FROM ONE PROPERTY TO THE WEST OR EAST.
26
25
205
206
G2 POROUS PAVEMENT W/ INFILTRATION
PAVEMENT
PROPERTY LINE (TYP.)
SUBCATCHMENT BOUNDARY
UNMODELED CATCH BASIN
N

7.0 Summary of Infiltration Rate

Porous Pavement W/ Infiltration #201 (Pond #201), Porous Pavement W/ Infiltration #202 (Pond #202), Porous Pavement W/ Infiltration #207 (Pond #207), & Porous Pavement W/ Infiltration #208 (Pond #208) are located over udorthents (400A) soil (Derived from Merrimac), considered to be HSG A, in the soil area as mapped by Site Specific Soil Survey by John P. Hayes III, CSS with a documented Ksat of 6.0 inches per hour. The design exfiltration rate for the BMPs is 3.0 inches per hour.

Porous Pavement W/ Infiltration #203 (Pond #203), Porous Pavement W/ Infiltration #204 (Pond #204), Porous Pavement W/ Infiltration #205 (Pond #205), & Porous Pavement W/ Infiltration #206 (Pond #206) are located over Merrimac soil (10A). Porous Pavement W/ Infiltration #206 is also partially located over udorthents (400A) soil (Derived from Merrimac), considered to be HSG A, in the soil area as mapped by Site Specific Soil Survey by John P. Hayes III, CSS with a documented Ksat of 6.0 inches per hour. The design exfiltration rate for the BMPs is 3.0 inches per hour.

Amoozemeter testing was not conducted on site and the alternate method of using the USDA / NRCS published values was employed. Reference is made to K Sat Values for New Hampshire Soils (Including Hydrologic and DES Soil Lot Sizing Groups, sponsored by the Society of Soil Scientists of Northern New England, Publication #5 dated September 2009.

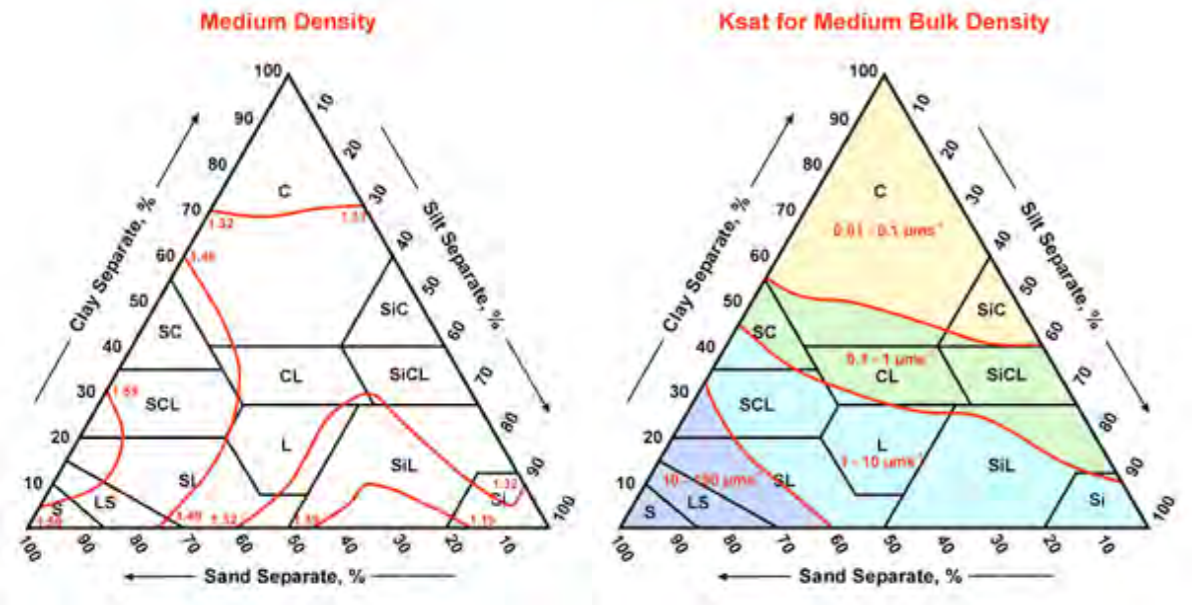
Respectfully submitted:

BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

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

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

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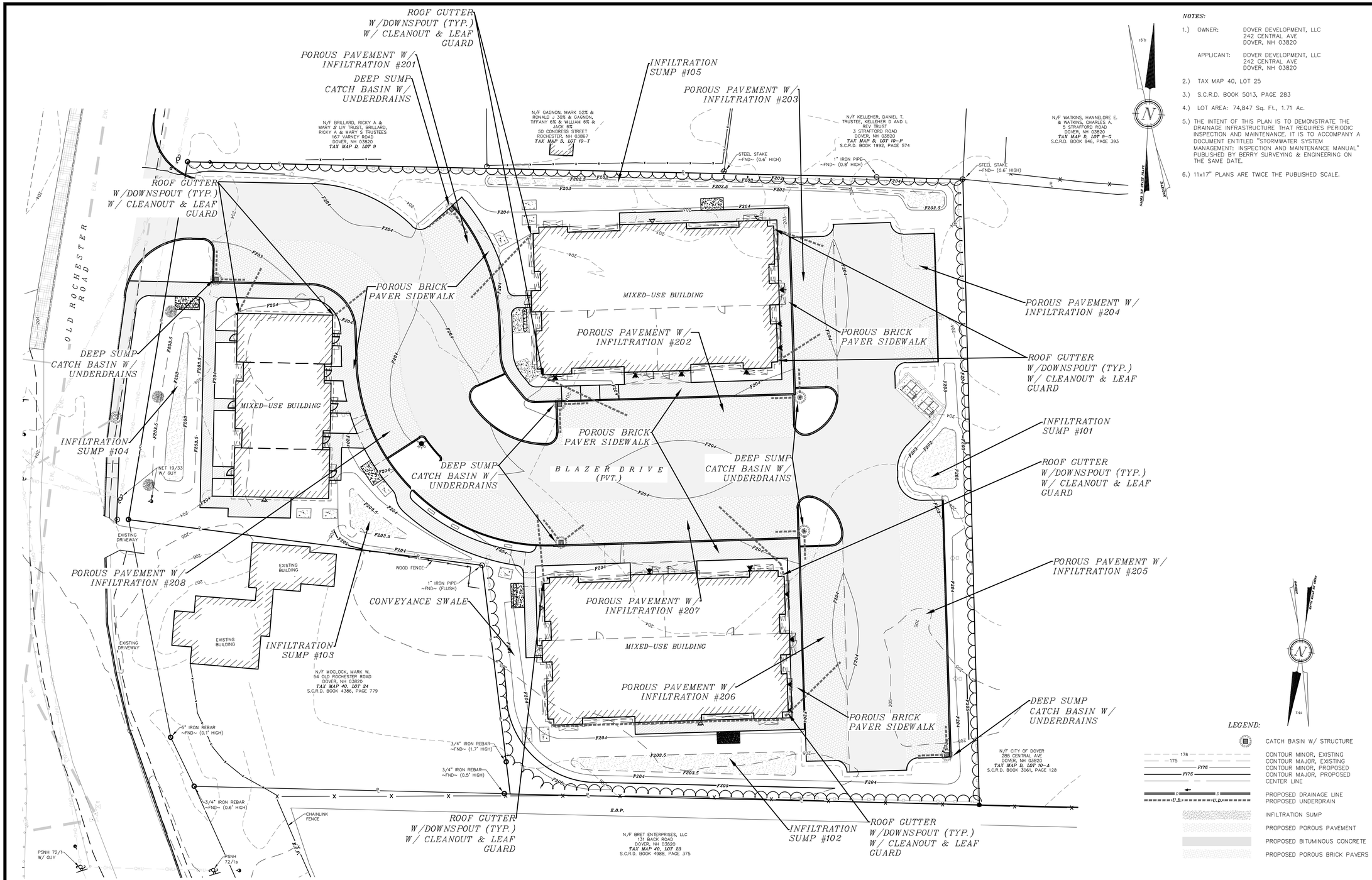
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DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 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.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

INSPECTION & MAINTENANCE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
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Stormwater System Management:

Inspection and Maintenance Manual

52 OLD ROCHESTER ROAD, DOVER, NH 03820
TAX MAP 40, LOTS 25

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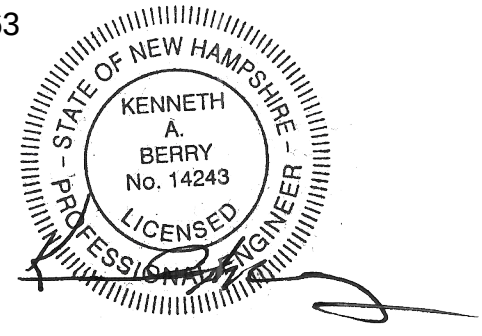
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242 Central Avenue
DOVER, NH 03820

Land of

Dover Development, LLC
242 Central Avenue
DOVER, NH 03820

Prepared By

Berry Surveying & Engineering
335 Second Crown Point Road
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File Number
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Stormwater System Management:

Inspection and Maintenance Manual

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Control of Invasive Plants, NH Department of Agriculture Attached – 4 Pages

NHDES Green SnoPro Application Rates Attached – 1 Page

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 owners 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 dated July 1, 2024. See also plan set completed for Dover Development, LLC dated July 1, 2024, as revised.

Dover Development, LLC, Robert Baldwin, Managing Member, is responsible for the Stormwater System Operation and Maintenance that will be constructed on this property. 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 driveway 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 properly inspect and maintain the system. (Reduced copies attached.) Dover Development, LLC is responsible to ensure that any subsequent owner, owners association, 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 Engineering Department, DPW, Dover Community Services with the Annual Report.

The owner of Tax Map 40, Lot 25 Dover Development, LLC, is proposing the construction of a two story mixed-use building with 4 residential units and two three-story mixed-use buildings, each with 20 residential units for a total of 44 units on a private road known as Blazer Drive.

The following drainage features will all require periodic inspections and maintenance based on this manual in addition to deep sump catch basins throughout:

Infiltration Sumps #101-#105

Porous Pavement w/ Infiltration #201-#208

Porous Brick Paver Sidewalks

Deep Sump Catch Basins #1-#7

Conveyance Swale

Stabilization for Long Term Cover

In-Ground Infiltration Basin (Sumps)

Description: Infiltration sumps are impoundments designed to temporarily store runoff, allowing all or a portion of the water to infiltrate into the ground. An infiltration sump is designed to completely drain between storm events. In a properly sited and designed infiltration basin, water quality treatment is provided by runoff pollutants binding to soil particles beneath the basin as water percolates into the subsurface. Biological and chemical processes occurring in the soil also contribute to the breakdown of pollutants. Infiltrated water is used by plants to support growth or it is recharged to the underlying groundwater.

Maintenance Considerations: Removal of debris from inlet and outlet structures. Removal of accumulated sediment. Inspection and repair of outlet structures and appurtenances. Inspection of infiltration components 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. Periodic mowing of embankments. Removal of woody vegetation from embankments. Inspection and repair of embankments and spillways. If an infiltration 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 infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration trench.

Porous Asphalt Pavement & Infiltration Bed

Description: The Permeable Pavement system consists of a porous pavement surface and permeable sub-base materials that is going to allow infiltration of surface water runoff into the native subsoil. The layers of the sub-base materials serve as a filter for the runoff prior to infiltration. Care must be taken during the preparation of the sub-base materials to ensure operation of the infiltration bed and the sub-soil under the system must be scarified to a depth of two-feet below the system to ensure that the soil has not become compacted and does not contain topsoil remnants or boulders.

Maintenance Considerations: No winter sand will be used on permeable pavement and will minimize application of salt for ice control. **Pavement Vacuuming** - Due to the nature of porous pavement, sand must be removed by vacuuming on a regular basis when the pores become clogged two to four times per year. This process varies due to the amount of sand and sweeping efforts but should be investigated two to four times every year. The life expectancy of the porous asphalt pavement system is about 20 years following the prescribed regular maintenance schedule.

Porous Brick Pavers & Infiltration Bed

Description: The Permeable Brick Paver system consists of brick pavers with stone filled gaps which infiltrate to permeable sub-base materials that is going to allow infiltration of surface water runoff into the native subsoil. The layers of the sub-base materials serve as a filter for the runoff prior to infiltration. Care must be taken during the preparation of the sub-base materials to ensure operation of the infiltration bed and the sub-soil under the system must be scarified to a depth of two-feet below the system to ensure that the soil has not become compacted and does not contain topsoil remnants or boulders.

Maintenance Considerations: Per the NHDES document "New Hampshire Homeowner's Guide to Stormwater Management" inspection should occur multiple times per year, looking for signs of clogging such as ponding at the surface or accumulated sediment. If clogging occurs, remove and wash or replace pea stone and fabric. Remove any vegetation growing between the pavers. Refer to manufacturer's instructions for pressure washing or vacuuming.

Deep Sump Catch Basin/Drain Manhole

Description: A deep sump catch basin consists of a manhole-type structure with an inlet grate, an outlet pipe connected to the piped drainage system, and a sump with a depth several times the diameter of the outlet pipe. The inlet grate is located at the surface of the pavement or in grassed areas. The sump's purpose is to capture coarse sediments and debris from the runoff intercepted by the structure. The outlet pipe can be fitted with a "hood" consisting of a cast metal or formed plastic fitting, designed to prevent floating materials from exiting the structure. All 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. Hoods are to be installed during initial construction. See SWM Volume 2, 4-4.5 Pre-treatment Practices, 5. Pre-treatment Swales, page 144.

Maintenance Considerations:

Catch basins may require frequent maintenance. Depending on location, this may require several cleanings of the sumps each year. At a minimum, it is recommended that catch basins be inspected at least twice annually, once following snow-melt and once following leaf drop, and cleaned as indicated by inspection. Sediment should be removed when it approaches half the sump depth. If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed in conformance with applicable state and federal regulations. Cleaning may require Vacuum-truck instead of

"clam-shell" to avoid damage to hood. Damaged hoods should be replaced when noted by inspection.

Conveyance Swales

Description: "Swales are stabilized channels designed to convey runoff at non-erosive velocities." (NHDES SWM) They will be trapezoidal or parabolic in section view. A conveyance swale is intended to move surface water runoff from one point to another where as a treatment swale will slow the velocity to a point where sediment will settle out of the stormwater flow. A treatment swale will be constructed to a width of between four and eight feet and have a minimum length of 100 feet. The flow characteristics will also meet design criteria. See SWM Volume 2, 4.3 Treatment Practices, 5. Treatment Swales, page 123.

Project Intent: The swales are individually designed in the drainage analysis and specified on the design plans. The designed swales must have greater than 85% vegetated growth prior to receiving runoff. The bottom of a treatment swale must be above the seasonal high water table.

Maintenance Considerations: Grassed swales will be inspected twice annually, removing accumulated sediment and gross solids. Grass will be mowed periodically but to a depth of not less than 4 inches. Any damage to the vegetation will be repaired and woody vegetation and invasive vegetation will be removed.

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.

Snow Storage Areas & Winter Maintenance

Description: The effective use of salt and sand for winter maintenance is both a cost and an environmental consideration. In accordance with City of Dover Chapter 149-14 A, Snow and ice removal shall be performed by a contractor certified by the "Green SnoPro" program, or approved equivalent, following the Best Management Practices for the application of deicing materials. The use of salt for deicing will be minimized. De-icing logs will be maintained for the development.

Maintenance Considerations: Snow will be stockpiled in designated area during the course of the winter and any excess snow will be taken off-site and disposed of in an appropriate area. As the snow is melting in the spring, sand will be swept and removed from the site. The catch basin sumps will be scheduled for one of the two annual cleanings in the early spring.

Reference is made to the NHDES Green SnoPro program and Minnesota Pollution Control Agency document "Winter Parking Lot and Sidewalk Maintenance Manual". Please note the restricting on sanding materials on site due to the porous pavement asphalt.

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.

See the attached pages prepared by the New Hampshire Department of Agriculture.

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 Management: 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 Department with copies of both logs and check lists no later than December 15th of each year. Upon an ownership change, the Annual Report will include the Transfer of Ownership Responsibility Forms duplicated from the form found below.

The plan set that accompanies this project includes a grading and drainage plan, construction details, and a sediment & erosion control plan. The Inspection and Maintenance Plan is attached.

Respectfully
BERRY SURVEYING & ENGINEERING

Christopher R. Berry, SIT
Principal - President

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

Kevin R. Poulin, PE
Design Engineer

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Checklist

Residential & Commercial Development

Dover Development, LLC
52 Old Rochester Road
Dover, NH

☑	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.
		Closed Drainage System:			
		Porous Pavement	Vacuum 2-4 times per year	Check for sediment and debris accumulation buildup.	Vacuum pavement to remove debris
		Porous Pavers	Vacuum 2-4 times per year	Check for sediment and debris accumulation buildup/ponding.	If clogging occurs, remove and wash or replace peastone and fabric. Remove any vegetation growing between the pavers.

					Refer to manufacturer's instructions for pressure washing or vacuuming.
☑	**Date**	**BMP / System**	**Minimum Inspection Frequency**	**Minimum Inspection Requirements**	**Maintenance / Cleanout Threshold**
		Winter Maintenance	Ongoing	Remove snow as directed.	Ongoing
		Deep Sump Catch Basins	2 times per year	Check for sediment accumulation & clogging.	Sediment accumulated to a depth of 2 feet.
		Post Winter Maintenance	Annually	Remove excess sand, gross solids, and repair vegetation and plantings	Parcel will be free of excess sand, litter/trash. Vegetation per approved plans.
		Infiltration Sumps	Annually	72-Hour drawdown time evaluation and vegetation evaluation.	Remove dead & diseased vegetation along with all debris, take corrective measures of filtration surface if required.
		Annual Report	1 time per year	Submit Annual Report to Dover Community Services Department and	Report to be submitted on or before December 15th each year.

				kept on file by the owner.	

Inspection Checklist: Page 3

Infiltration Sumps #101-#105

Porous Pavement w/ Infiltration #201-#208

Porous Brick Paver Sidewalks

Deep Sump Catch Basins #1-#7

Conveyance Swale

Stabilization for Long Term Cover

Inspection Notes:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Log Form

Residential & Commercial Development

Dover Development, LLC
52 Old Rochester Road
Dover, NH

BMP / System	Date Inspected	Inspector	Cleaning/Repair (List Items & Comments)	Repair Date	Performed By:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Deicing Log Form

Residential & Commercial Development

Dover Development, LLC
52 Old Rochester Road
Dover, NH

Date	Amount Applied	Performed By:	Date	Amount Applied	Performed By:

STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN CERTIFICATION

Owner	Responsibility
Name: DOVER DEVELOPMENT, LLC MANAGING MEMBER: ROBERT BALDWIN Address: 242 Central Avenue DOVER, NH 03820 Telephone: 603-986-2373 E-Mail Address: Robert@centralfallsrealty.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:

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 2020/2022, 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 2020/2022 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.

		Severe Not Supporting, Severe	**Poor** Not Supporting, Marginal	**Likely Bad** Insufficient Information – Potentially Not Supporting	**No Data** No Data	**Likely Good** Insufficient Information – Potentially Full Supporting	**Marginal** Full Support, Marginal	**Good** Full Support, Good
CATEGORY	**Description**							
Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL* Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL* Needed	5-P	5-M or 5-T					

* TMDL stands for Total Maximum Daily Load studies

Watershed 305(b) Assessment Summary Report:

Assessment Cycle: 2020/2022

HUC 12: 010600030405

HUC 12 Name: Middle Salmon Falls 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.

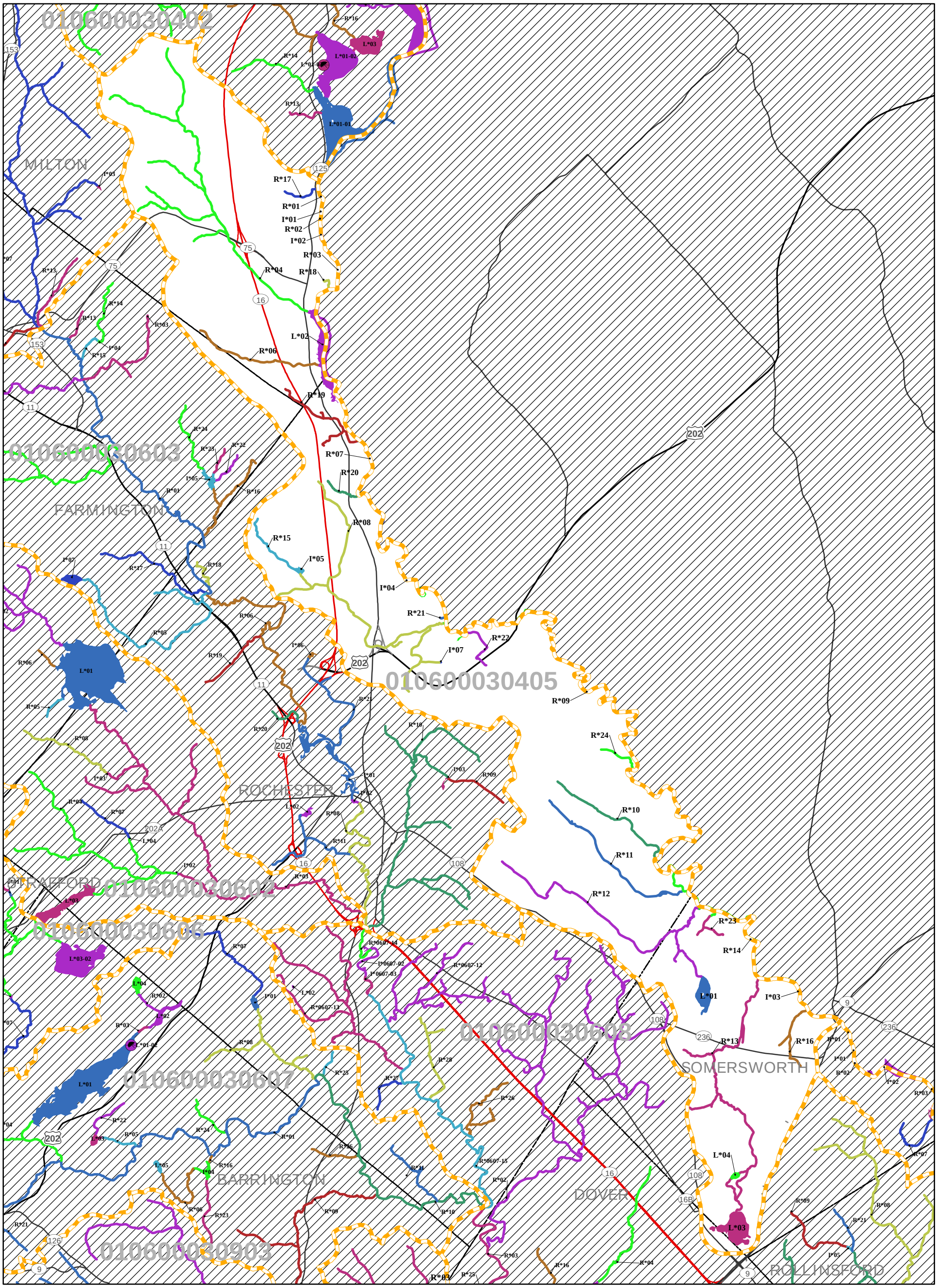





Assessment Unit ID	Map Label	Assessment Unit Name	Aquatic Life	Fish Consump.	Swimming	Boating
NHIMP600030405-01	I*01	Salmon Falls River - Milton Leather Board Dam		4A-M	3-ND	3-ND
NHIMP600030405-02	I*02	Salmon Falls River - Salmon Falls River Ii	3-PAS	4A-M	3-PAS	3-ND
NHIMP600030405-03	I*03	Salmon Falls River - Great Falls Upper Dam	5-M	4A-M	3-ND	3-ND
NHIMP600030405-04	I*04	Salmon Falls River - Baxter Mill Dam Pond	5-M	4A-M	4A-M	4A-M
NHIMP600030405-05	I*05	Unnamed Brook - Pulitzer Dam	3-ND	4A-M	3-ND	3-ND
NHIMP600030405-07	I*07	Unnamed Brook - Woodland Green Detention Pond	3-ND	4A-M	3-ND	3-ND
NHLAK600030405-01	L*01	Lily Pond	3-ND	4A-M	3-ND	3-ND
NHLAK600030405-02	L*02	Spaulding Pond	4C-P	4A-M	3-ND	3-ND
NHLAK600030405-03	L*03	Willand Pond	5-P	4A-M	4A-P	3-ND
NHLAK600030405-04	L*04	Unnamed Pond	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-01	R*01	Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-02	R*02	Salmon Falls River	3-ND	4A-M	3-ND	3-ND

NHRIV600030405-03	R*03	Salmon Falls River	3-PAS	4A-M	3-PAS	3-ND
NHRIV600030405-04	R*04	Lyman Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-06	R*06	Unnamed Brook - To Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-07	R*07	Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-08	R*08	Heath Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-09	R*09	Salmon Falls River	5-P	4A-M	3-PAS	3-ND
NHRIV600030405-10	R*10	Unnamed Brook - To Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-11	R*11	Unnamed Brook - To Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-12	R*12	Unnamed Brook - From Lily Pond To Salmon Falls River	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-13	R*13	Tates Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-14	R*14	Salmon Falls River - Unnamed Brook	5-M	4A-M	4A-M	3-ND
NHRIV600030405-15	R*15	Heath Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-16	R*16	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-17	R*17	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-18	R*18	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-19	R*19	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-20	R*20	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-21	R*21	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-22	R*22	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-23	R*23	Unnamed Brook	3-ND	4A-M	3-ND	3-ND
NHRIV600030405-24	R*24	Unnamed Brook	3-ND	4A-M	3-ND	3-ND

AUIDs For HUC12: 010600030405 - Middle Salmon Falls River



HUC12 Boundaries
Town Boundaries

Major Roads
Interstate Highway
US Highway
State Highway

Assessment Unit Coloring
AUs Ending with:

0 =
1 =
2 =
3 =
4 =
5 =
6 =
7 =
8 =
9 =

N
W E
S

Abbrv. Label	HUC 12
L*03	010700060201

AUID = NHLAK700060201-03

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.

0 0.7 1.4 2.1 2.8 Miles

Scale:1:71,650

S:\WD-Watershed\WQ_Planning\305b_303d\2020\Report_Cards\HUC12_maps

Assessment Unit ID: NHLAK600030405-03
Assessment Unit Name: Willand Pond
Town(s) Primary Town is Listed First: Dover, Somersworth

Size: 65.6710 ACRES
Assessment Unit Category: 5-P
Beach: N

2020/2022, 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-P	CHLORIDE	N	2017	N/A	3-PAS	
		CHLOROPHYLL-A		2017	NLV	2-M	LOW
		DISSOLVED OXYGEN SATURATION		2017	2017	5-M	LOW
		Non-Native Aquatic Plants	N			4C-M	
		OXYGEN, DISSOLVED		2017	2017	5-P	LOW
		Other flow regime alterations	N			4C-P	
		PH		2017	2017	5-M	LOW
		PHOSPHORUS (TOTAL)	N	2017	NLV	2-M	LOW
		TURBIDITY	N	2017	2015	3-PAS	
Fish Consumption	4A-M	MERCURY - FISH CONSUMPTION ADVISORY	N			4A-M	
Potential Drinking Water Supply	2-G	ESCHERICHIA COLI	N	2010	2010	3-PNS	
Primary Contact Recreation	4A-P	CHLOROPHYLL-A	N	2017	2011	2-M	
		Cyanobacteria hepatotoxic microcystins	N	2019	2019	3-PNS	
		ESCHERICHIA COLI	N	2010	2009	4A-P	
Secondary Contact Recreation	3-ND	ESCHERICHIA COLI	N	2010	2009	3-ND	
Wildlife	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.

Welcome to New Hampshire's Watershed Report Cards built from the 2020/2022, 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 2020/2022 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.

		Severe Not Supporting, Severe	**Poor** Not Supporting, Marginal	**Likely Bad** Insufficient Information – Potentially Not Supporting	**No Data** No Data	**Likely Good** Insufficient Information – Potentially Full Supporting	**Marginal** Full Support, Marginal	**Good** Full Support, Good
CATEGORY	**Description**							
Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL* Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL* Needed	5-P	5-M or 5-T					

* TMDL stands for Total Maximum Daily Load studies

Watershed 305(b) Assessment Summary Report:

Assessment Cycle: 2020/2022

HUC 12: 010600030608

HUC 12 Name: Lower Cocheco River

(Locator map on next page only applies to this HUC12)

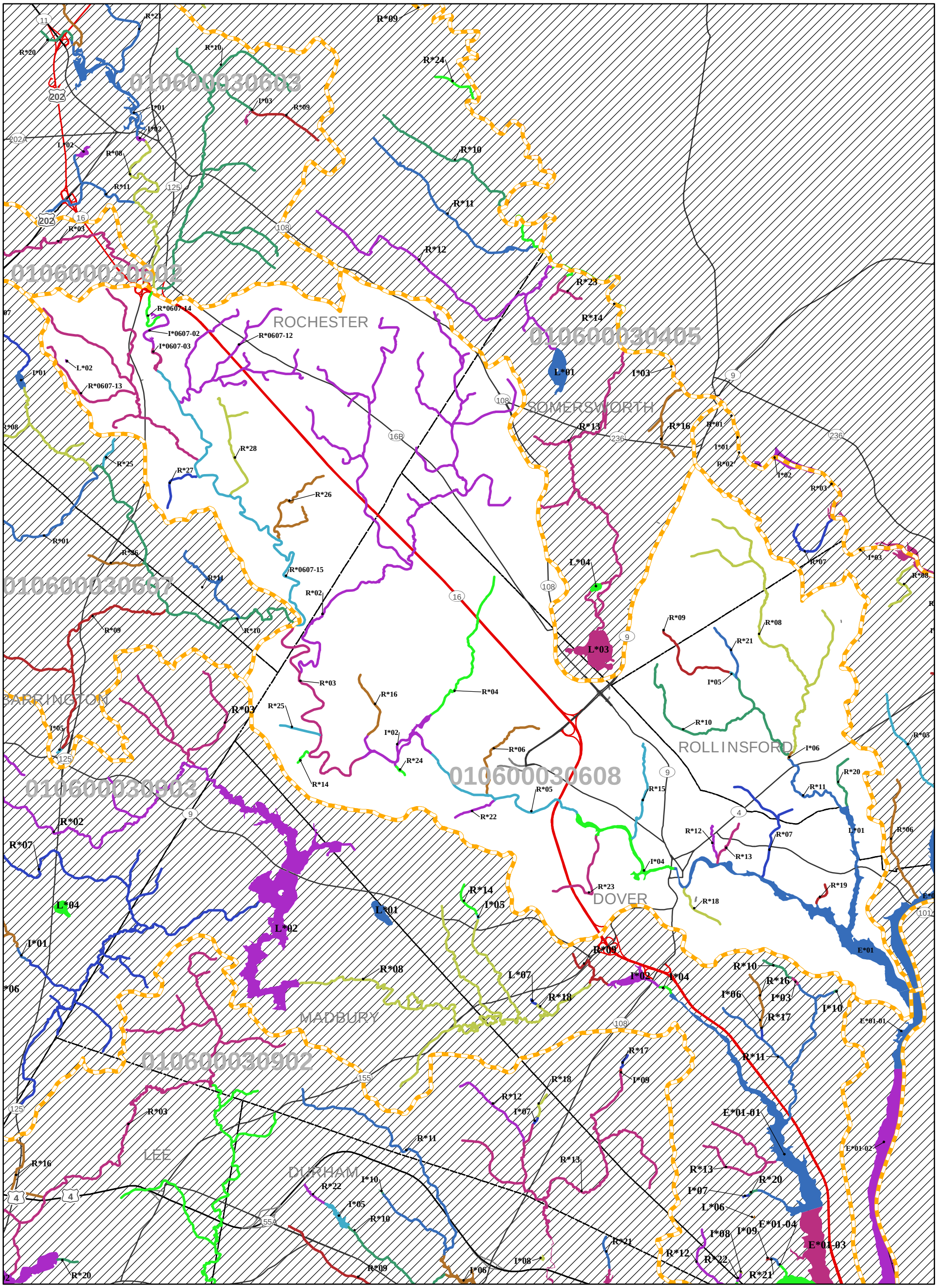
Good	Meets water quality standards/thresholds by a relatively large margin.
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Likely Good	Limited data available, however, the data that is available suggests that the parameter is Potentially Attaining Standards (PAS).
No Current Data	Insufficient information 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-PAS	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-PAS	3-PAS
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	2-G	2-G
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	2-G
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



HUC12 Boundaries
Town Boundaries

Major Roads
Interstate Highway
US Highway
State Highway

Assessment Unit Coloring AUs Ending with:

0 =
1 =
2 =
3 =
4 =
5 =
6 =
7 =
8 =
9 =

N
W E
S

Abbrv. Label	HUC 12
L* 03	010 700060201

AUID = NH L AK700060201 - 03

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.

0 0.6 1.2 1.8 2.4 Miles

Scale:1:59,820

S:\WD-Watershed\WQ_Planning\305b_303d\2020\Report_Cards\HUC12_maps

Assessment Unit ID: NHRIV600030608-04
Assessment Unit Name: Reyners Brook
Town(s) Primary Town is Listed First: Dover

Size: 1.77 MILES
Assessment Unit Category: 4A-P
Beach: N

2020/2022, 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	3-ND	Benthic-Macroinvertebrate Bioassessments (Streams)	N			3-ND	
		CHLORIDE	N	2008	N/A	3-ND	
		Dissolved oxygen saturation	N			3-ND	
		Fishes Bioassessments (Streams)	N			3-ND	
		Oxygen, Dissolved	N			3-ND	
		pH	N			3-ND	
Fish Consumption	4A-M	MERCURY - FISH CONSUMPTION ADVISORY	N			4A-M	
Potential Drinking Water Supply	2-G	ESCHERICHIA COLI	N	2007	2007	3-ND	
Primary Contact Recreation	4A-P	ESCHERICHIA COLI	N	2007	2007	4A-P	
Secondary Contact Recreation	3-ND	ESCHERICHIA COLI	N	2007	N/A	3-ND	
Wildlife	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.

Assessment Unit ID: NHRIV600030608-06
Assessment Unit Name: Indian Brook
Town(s) Primary Town is Listed First: Dover

Size: 1.1060 MILES
Assessment Unit Category: 5-P
Beach: N

2020/2022, 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-P	Benthic-Macroinvertebrate Bioassessments (Streams)	N			3-ND	
		CHLORIDE	N	2009	2009	5-P	LOW
		DISSOLVED OXYGEN SATURATION	N	2009	N/A	3-ND	
		Fishes Bioassessments (Streams)	N			3-ND	
		OXYGEN, DISSOLVED	N	2009	N/A	3-ND	
		PH	N	2009	N/A	3-ND	
		TURBIDITY	N	2009	N/A	3-ND	
Fish Consumption	4A-M	MERCURY - FISH CONSUMPTION ADVISORY	N			4A-M	
Potential Drinking Water Supply	2-G	ESCHERICHIA COLI	N	2007	2007	3-ND	
Primary Contact Recreation	4A-P	ESCHERICHIA COLI	N	2007	2007	4A-P	
Secondary Contact Recreation	3-ND	ESCHERICHIA COLI	N	2007	N/A	3-ND	
Wildlife	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.

2020	NHRIV600030603-10	WILLOW BROOK	ROCHESTER	Yes	7.347	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments (Streams)	5-P	LOW	N	2011	2011
2020	NHRIV600030603-10	WILLOW BROOK	ROCHESTER	Yes	7.347	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-P	LOW	N	2017	2011
2020	NHRIV600030603-10	WILLOW BROOK	ROCHESTER	Yes	7.347	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2017	2011
2020	NHRIV600030603-10	WILLOW BROOK	ROCHESTER	Yes	7.347	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHRIV600030603-11	HURD BROOK	ROCHESTER	Yes	1.621	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2007	2007
2020	NHRIV600030605-05	MOHAWK BROOK	STRAFFORD, BARRINGTON		10.233	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2007
2020	NHRIV600030605-05	MOHAWK BROOK	STRAFFORD, BARRINGTON		10.233	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2009	2007
2020	NHRIV600030605-05	MOHAWK BROOK	STRAFFORD, BARRINGTON		10.233	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2009	2009
2020	NHRIV600030605-10	ISINGLASS RIVER	STRAFFORD		0.459	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2016
2020	NHRIV600030605-11	ISINGLASS RIVER	STRAFFORD, BARRINGTON		4.467	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2019	2019
2020	NHRIV600030605-12	UNNAMED BROOK - TO ISINGLASS RIVER	STRAFFORD		2.183	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2016	2016
2020	NHRIV600030605-14	STONEHOUSE BROOK - HALL BROOK	BARRINGTON, NORTHWOOD, STRAFFORD		7.020	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2009	2009
2020	NHRIV600030605-14	STONEHOUSE BROOK - HALL BROOK	BARRINGTON, NORTHWOOD, STRAFFORD		7.020	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2009	2009
2020	NHRIV600030605-15	NIPPO BROOK	BARRINGTON, STRAFFORD		12.125	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2007
2020	NHRIV600030605-15	NIPPO BROOK	BARRINGTON, STRAFFORD		12.125	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2009	2009
2020	NHRIV600030605-16	ISINGLASS RIVER	STRAFFORD, BARRINGTON		0.778	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2019	2003
2020	NHRIV600030605-16	ISINGLASS RIVER	STRAFFORD, BARRINGTON		0.778	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030606-03	BERRYS RIVER	STRAFFORD, FARMINGTON, ROCHESTER		5.200	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2009	2009
2020	NHRIV600030606-04	BERRYS RIVER - UNNAMED BROOK	STRAFFORD, BARRINGTON		5.705	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2007	2007
2020	NHRIV600030606-06	BERRY RIVER - FROM LONG POND TO ISINGLASS RIVER	BARRINGTON		0.107	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2007
2020	NHRIV600030606-06	BERRY RIVER - FROM LONG POND TO ISINGLASS RIVER	BARRINGTON		0.107	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	LOW	N	2009	2008
2020	NHRIV600030606-06	BERRY RIVER - FROM LONG POND TO ISINGLASS RIVER	BARRINGTON		0.107	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2009	2009
2020	NHRIV600030606-07	BERRYS RIVER	BARRINGTON		1.260	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2009	2009
2020	NHRIV600030607-01	ISINGLASS RIVER	BARRINGTON, ROCHESTER	Yes	7.336	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments (Streams)	5-M	LOW	N	2015	NA
2020	NHRIV600030607-01	ISINGLASS RIVER	BARRINGTON, ROCHESTER	Yes	7.336	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030607-03	AYERS POND BROOK	BARRINGTON		0.128	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	LOW	N	2009	2009
2020	NHRIV600030607-03	AYERS POND BROOK	BARRINGTON		0.128	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030607-04	AYERS POND BROOK	BARRINGTON		1.691	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	LOW	N	2009	2009
2020	NHRIV600030607-04	AYERS POND BROOK	BARRINGTON		1.691	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030607-08	HANSON BROOK	ROCHESTER, BARRINGTON	Yes	2.411	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2009	2009
2020	NHRIV600030607-09	GREEN HILL BROOK	BARRINGTON		3.224	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2008	2008
2020	NHRIV600030607-10	ISINGLASS RIVER	ROCHESTER, BARRINGTON	Yes	3.796	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2019	2007
2020	NHRIV600030607-10	ISINGLASS RIVER	ROCHESTER, BARRINGTON	Yes	3.796	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030607-15	COCHECO RIVER	ROCHESTER		4.414	MILES	Aquatic Life Integrity	Iron	5-M	LOW	N	2013	2013
2020	NHRIV600030607-15	COCHECO RIVER	ROCHESTER		4.414	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030607-16	SCRUTON POND OUTLET BROOK	BARRINGTON		0.071	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2008	2008
2020	NHRIV600030607-16	SCRUTON POND OUTLET BROOK	BARRINGTON		0.071	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2008	2008
2020	NHRIV600030607-16	SCRUTON POND OUTLET BROOK	BARRINGTON		0.071	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2008	2008
2020	NHRIV600030608-03	COCHECO RIVER - UNNAMED BROOK	DOVER, ROCHESTER	Yes	3.267	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2013	2007
2020	NHRIV600030608-03	COCHECO RIVER - UNNAMED BROOK	DOVER, ROCHESTER	Yes	3.267	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2013	2013
2020	NHRIV600030608-05	COCHECO RIVER	DOVER	Yes	2.060	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2013	2009
2020	NHRIV600030608-06	INDIAN BROOK	DOVER	Yes	1.106	MILES	Aquatic Life Integrity	Chloride	5-P	LOW	N	2009	2009
2020	NHRIV600030608-08	FRESH CREEK - TWOMBLY BROOK	ROLLINSFORD, SOMERSWORTH	Yes	4.983	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2009
2020	NHRIV600030608-08	FRESH CREEK - TWOMBLY BROOK	ROLLINSFORD, SOMERSWORTH	Yes	4.983	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2009	2009
2020	NHRIV600030608-08	FRESH CREEK - TWOMBLY BROOK	ROLLINSFORD, SOMERSWORTH	Yes	4.983	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2009	2009
2020	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	Yes	2.856	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2009
2020	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	Yes	2.856	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2009	2009
2020	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	Yes	2.856	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2009	2009
2020	NHRIV600030608-14	UNNAMED TRIB. TO COCHECO RIVER, DOVER (FROM	DOVER	Yes	0.169	MILES	Aquatic Life Integrity	Iron	5-M	LOW	N	2013	2013
2020	NHRIV600030608-15	BERRY BROOK	DOVER	Yes	1.106	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments (Streams)	5-M	LOW	N	2001	2001
2020	NHRIV600030608-15	BERRY BROOK	DOVER	Yes	1.106	MILES	Aquatic Life Integrity	Chloride	5-M	LOW	N	2016	2016
2020	NHRIV600030701-01	LAMPREY RIVER - AND HEADWATER TRIBUTARIES	NORTHWOOD, DEERFIELD		13.652	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-P	LOW	N	2016	2014
2020	NHRIV600030701-01	LAMPREY RIVER - AND HEADWATER TRIBUTARIES	NORTHWOOD, DEERFIELD		13.652	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2016	2016
2020	NHRIV600030701-01	LAMPREY RIVER - AND HEADWATER TRIBUTARIES	NORTHWOOD, DEERFIELD		13.652	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2016	2016
2020	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD		10.734	MILES	Aquatic Life Integrity	Aluminum	5-M	LOW	N	2006	2006
2020	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD		10.734	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments (Streams)	5-P	LOW	N	2003	2003
2020	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD		10.734	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD		7.767	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-P	LOW	N	2017	2016
2020	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD		7.767	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2017	2017
2020	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD		7.767	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHRIV600030701-13	LAMPREY RIVER	DEERFIELD		0.041	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2012	2007
2020	NHRIV600030701-13	LAMPREY RIVER	DEERFIELD		0.041	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2012	2012
2020	NHRIV600030702-06	NORTH BRANCH RIVER - UNNAMED BROOKS	DEERFIELD, CANDIA		5.185	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2017	2016
2020	NHRIV600030702-06	NORTH BRANCH RIVER - UNNAMED BROOKS	DEERFIELD, CANDIA		5.185	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2017	2017
2020	NHRIV600030702-06	NORTH BRANCH RIVER - UNNAMED BROOKS	DEERFIELD, CANDIA		5.185	MILES	Aquatic Life Integrity	pH	5-P	LOW	N	2017	2017
2020	NHRIV600030702-07	NORTH BRANCH RIVER - UNNAMED BROOKS	CANDIA, DEERFIELD		10.013	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2017	2017
2020	NHRIV600030702-07	NORTH BRANCH RIVER - UNNAMED BROOKS	CANDIA, DEERFIELD		10.013	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2017	2017
2020	NHRIV600030702-07	NORTH BRANCH RIVER - UNNAMED BROOKS	CANDIA, DEERFIELD		10.013	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHRIV600030703-01	UNNAMED BROOK - TO ONWAY LAKE	RAYMOND, CANDIA		5.450	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments (Streams)	5-P	LOW	N	1998	1998
2020	NHRIV600030703-01	UNNAMED BROOK - TO ONWAY LAKE	RAYMOND, CANDIA		5.450	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD, NOTTINGHAM	Yes	4.340	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2005	2004
2020	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD, NOTTINGHAM	Yes	4.340	MILES	Aquatic Life Integrity	Lead	5-M	LOW	N	2000	2000
2020	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD, NOTTINGHAM	Yes	4.340	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2005	2004
2020	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD, NOTTINGHAM	Yes	4.340	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2005	2005
2020	NHRIV600030703-05	LAMPREY RIVER	RAYMOND	Yes	2.647	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHRIV600030703-09	LAMPREY RIVER	RAYMOND	Yes	2.295	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHRIV600030703-10	LAMPREY RIVER	RAYMOND	Yes	0.558	MILES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2004

2020	NHLAK400010502-04	LITTLE GREENOUGH POND	WENTWORTHS LOCATION		41.457	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK400010502-06	DUSTAN POND	WENTWORTHS LOCATION		4.712	ACRES	Aquatic Life Integrity	Aluminum	5-M	LOW	N	2001	2001
2020	NHLAK400010502-06	DUSTAN POND	WENTWORTHS LOCATION		4.712	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2001	2001
2020	NHLAK400010602-01	LONG POND	ERROL		32.787	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHLAK400010602-02	ROUND POND	ERROL		41.504	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHLAK400010602-04	LAKE UMBAGOG	ERROL, CAMBRIDGE		4639.131	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHLAK400010602-11	PONTOOK RESERVOIR	DUMMER		268.666	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2018	2018
2020	NHLAK400010602-14	SIGNAL POND	ERROL		5.121	ACRES	Aquatic Life Integrity	Aluminum	5-M	LOW	N	2011	2011
2020	NHLAK400010602-14	SIGNAL POND	ERROL		5.121	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2019	2019
2020	NHLAK400010603-01	SUCCESS POND	SUCCESS		281.146	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2014	2014
2020	NHLAK400010606-01	JERICHO LAKE	BERLIN		126.224	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	N	2019	2019
2020	NHLAK400010606-01-02	JERICHO MOUNTAIN STATE PARK BEACH	BERLIN		1.286	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	Y	2018	2018
2020	NHLAK600020304-01-01	CONWAY LAKE	CONWAY, EATON		1312.843	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK600020401-01	UPPER KIMBALL LAKE	CHATHAM		168.203	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK600020601-01-01	BEARCAMP POND	SANDWICH		144.765	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2016	2009
2020	NHLAK600020601-01-01	BEARCAMP POND	SANDWICH		144.765	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHLAK600020604-01-01	LAKE CHOCORUA	TAMWORTH		232.268	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2001	2001
2020	NHLAK600020703-01-02	DUNCAN LAKE - TOWN BEACH	OSSIPEE		0.558	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	Y	2013	2010
2020	NHLAK600020703-06	MICHAWANIC POND	WAKEFIELD		3.699	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2013	2013
2020	NHLAK600020803-01-02	MIDDLE DANFORTH POND	FREEDOM		53.567	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	N	2019	2019
2020	NHLAK600020803-06	PURITY LAKE	EATON, MADISON		95.510	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2006	2006
2020	NHLAK600020803-09	TROUT POND	FREEDOM		20.691	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2008	2008
2020	NHLAK600020804-03	DUCK POND	FREEDOM		34.032	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2013	2008
2020	NHLAK600020902-01	PROVINCE LAKE	EFFINGHAM, WAKEFIELD		965.649	ACRES	Aquatic Life Integrity	Chlorophyll-a	5-M	LOW	N	2019	NLV
2020	NHLAK600020902-01	PROVINCE LAKE	EFFINGHAM, WAKEFIELD		965.649	ACRES	Aquatic Life Integrity	Phosphorus (Total)	5-M	LOW	N	2019	NLV
2020	NHLAK600020902-01	PROVINCE LAKE	EFFINGHAM, WAKEFIELD		965.649	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	N	2019	2019
2020	NHLAK600030401-01-01	LOVELL LAKE	WAKEFIELD		552.403	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2018	2017
2020	NHLAK600030401-03	COOKS POND	BROOKFIELD		245.934	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2015
2020	NHLAK600030404-01-01	MILTON POND	MILTON	Yes	163.895	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK600030404-01-02	TOWNHOUSE POND	MILTON	Yes	125.646	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2016
2020	NHLAK600030404-02	NORTHEAST POND	MILTON	Yes	285.041	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK600030405-03	WILLAND POND	SOMERSWORTH, DOVER	Yes	65.671	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2017	2017
2020	NHLAK600030405-03	WILLAND POND	SOMERSWORTH, DOVER	Yes	65.671	ACRES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2017	2017
2020	NHLAK600030405-03	WILLAND POND	SOMERSWORTH, DOVER	Yes	65.671	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2017	2017
2020	NHLAK600030601-05-01	SUNRISE LAKE	MIDDLETON		246.308	ACRES	Aquatic Life Integrity	Chlorophyll-a	5-M	LOW	N	2019	NLV
2020	NHLAK600030601-05-01	SUNRISE LAKE	MIDDLETON		246.308	ACRES	Aquatic Life Integrity	Phosphorus (Total)	5-M	LOW	N	2019	NLV
2020	NHLAK600030601-05-01	SUNRISE LAKE	MIDDLETON		246.308	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	N	2019	2018
2020	NHLAK600030602-01	BAXTER LAKE	FARMINGTON, ROCHESTER		301.390	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2018	2000
2020	NHLAK600030602-01	BAXTER LAKE	FARMINGTON, ROCHESTER		301.390	ACRES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	LOW	N	2018	2000
2020	NHLAK600030602-01	BAXTER LAKE	FARMINGTON, ROCHESTER		301.390	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2018	2016
2020	NHLAK600030605-01	NIPPO POND	BARRINGTON		85.116	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-M	LOW	N	2019	2019
2020	NHLAK600030608-01	FRESH CREEK POND	DOVER, ROLLINSFORD	Yes	19.795	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2009	2009
2020	NHLAK600030608-01	FRESH CREEK POND	DOVER, ROLLINSFORD	Yes	19.795	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2009	2009
2020	NHLAK600030701-02	LOWER FREESES POND	DEERFIELD		25.093	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2001	2001
2020	NHLAK600030701-03	UPPER FREESES POND	DEERFIELD		30.154	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2001	2001
2020	NHLAK600030702-02-01	SPRUCE POND	DEERFIELD		21.692	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2019	2019
2020	NHLAK600030703-01	GOVERNORS LAKE	RAYMOND	Yes	60.331	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHLAK600030703-03-01	ONWAY LAKE	RAYMOND		178.248	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2019	2013
2020	NHLAK600030703-03-01	ONWAY LAKE	RAYMOND		178.248	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHLAK600030705-03	NORTH RIVER POND	NOTTINGHAM, BARRINGTON, NORTHWOOD		83.647	ACRES	Aquatic Life Integrity	Chlorophyll-a	5-M	LOW	N	2015	NLV
2020	NHLAK600030705-03	NORTH RIVER POND	NOTTINGHAM, BARRINGTON, NORTHWOOD		83.647	ACRES	Aquatic Life Integrity	Phosphorus (Total)	5-M	LOW	N	2014	NLV
2020	NHLAK600030705-05	DEMERITT POND	NOTTINGHAM, NORTHWOOD		14.259	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2000	2000
2020	NHLAK600030705-06	MARSTON POND	NOTTINGHAM		10.404	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2000	2000
2020	NHLAK600030707-01	MENDUMS POND	BARRINGTON, NOTTINGHAM		263.988	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2012	2012
2020	NHLAK600030708-02	MITIGATION BASIN 2	BRENTWOOD, EPPING		1.185	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2005	2005
2020	NHLAK600030802-02	LILY POND	SANDOWN	Yes	13.214	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2001	2001
2020	NHLAK600030802-02	LILY POND	SANDOWN	Yes	13.214	ACRES	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	5-P	LOW	N	2017	2017
2020	NHLAK600030802-03-01	PHILLIPS POND	SANDOWN	Yes	94.688	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2019	2019
2020	NHLAK600030802-04	SHOWELL POND	SANDOWN	Yes	20.005	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2013	2013
2020	NHLAK600030804-01	COLCORD POND	EXETER	Yes	8.168	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2003	2003
2020	NHLAK600030902-02	WHEELWRIGHT POND	LEE		102.019	ACRES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2019	2019
2020	NHLAK600030903-02	BELLAMY RESERVOIR	MADBURY, DOVER	Yes	332.357	ACRES	Aquatic Life Integrity	pH	5-M	LOW	N	2000	2000
2020	NHLAK600030903-03	SWAINS LAKE	BARRINGTON		339.997	ACRES	Aquatic Life Integrity	Chlorophyll-a	5-P	LOW	N	2015	NLV
2020	NHLAK600030903-03	SWAINS LAKE	BARRINGTON		339.997	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2015	2015
2020	NHLAK600030903-03	SWAINS LAKE	BARRINGTON		339.997	ACRES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2015	2015
2020	NHLAK600030903-03	SWAINS LAKE	BARRINGTON		339.997	ACRES	Aquatic Life Integrity	Phosphorus (Total)	5-M	LOW	N	2015	NLV
2020	NHLAK600030903-03	SWAINS LAKE	BARRINGTON		339.997	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2017	2017
2020	NHLAK600030903-04	WINKLEY POND	BARRINGTON		11.070	ACRES	Aquatic Life Integrity	pH	5-P	LOW	N	2006	2006
2020	NHLAK600031001-02	UNKNOWN POND	NEW CASTLE	Yes	0.233	ACRES	Primary Contact Recreation	Escherichia coli	5-P	LOW	N	2009	2009
2020	NHLAK600031002-01	EEL POND	RYE	Yes	38.911	ACRES	Aquatic Life Integrity	Chloride	5-M	LOW	N	2010	2010
2020	NHLAK600031002-01	EEL POND	RYE	Yes	38.911	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-P	LOW	N	2010	2010
2020	NHLAK600031002-01	EEL POND	RYE	Yes	38.911	ACRES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	LOW	N	2010	2010
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Anthracene	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Arsenic	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Barium	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Benzo(a)pyrene (PAHs)	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Benzo[b]fluoranthene	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Benzo[k]fluoranthene	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	DDD	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	DDE	5-M	LOW	N	2006	2006
2020	NHLAK600031003-02	TAYLOR RIVER REFUGE POND	HAMPTON, HAMPTON FALLS	Yes	46.524	ACRES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M	LOW	N	2008	2008

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

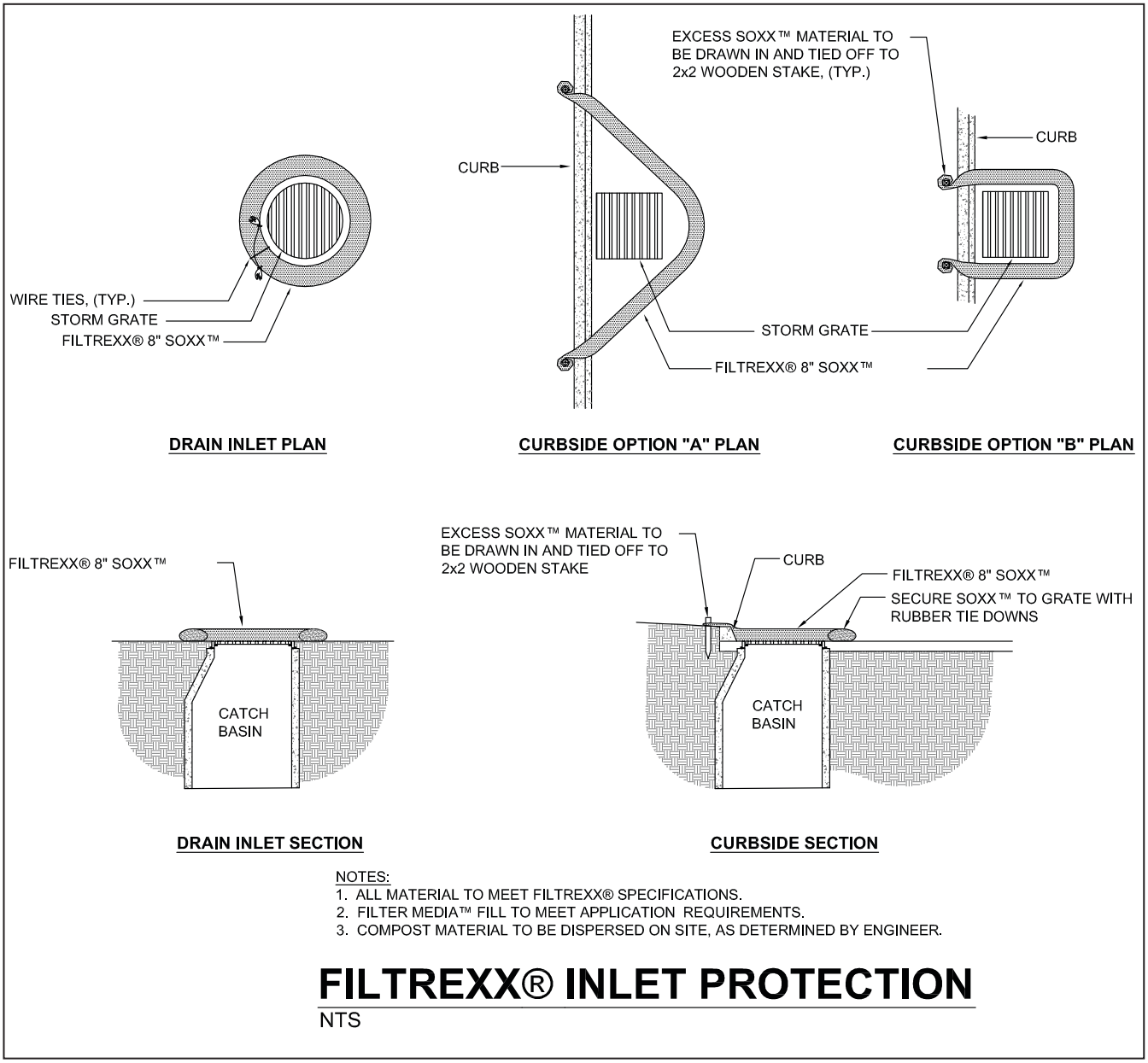
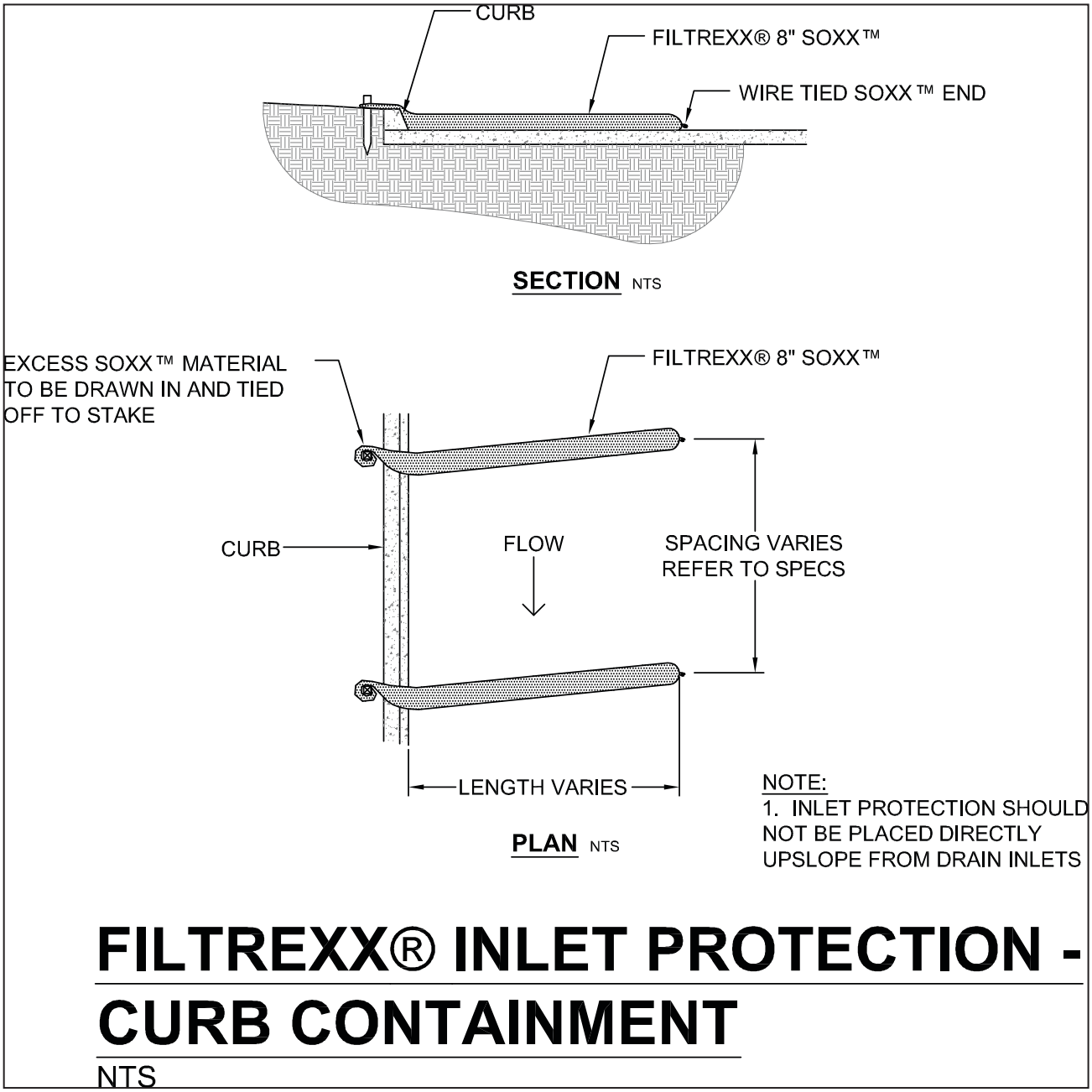


Figure 2.2. Engineering Design Drawing for Curb Sediment Containment Inlet Protection



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

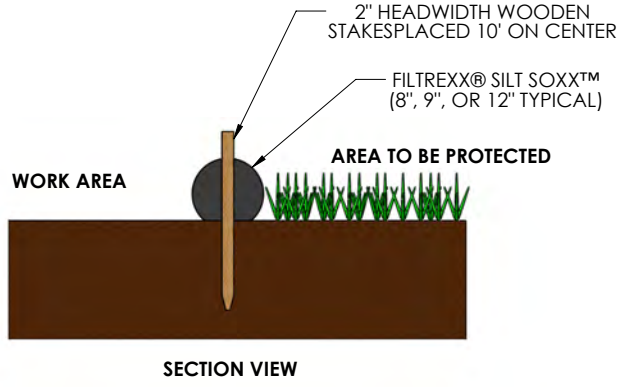
1. The Contractor shall maintain the Sediment control in a functional condition at all times and it shall be routinely inspected.
2. If the Sediment control has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of 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)

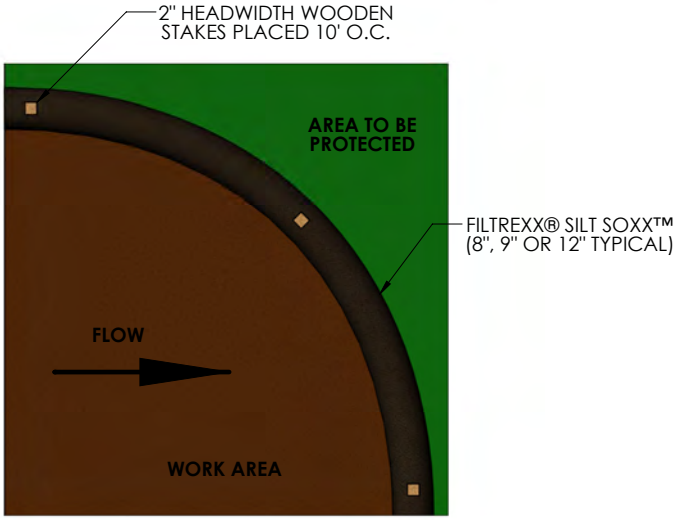
* Based on a failure point of 36 in (0.9 m) super silt fence (wire reinforced) at 1000 ft (303 m) of slope, watershed width equivalent to receiving length of sediment control device, 1 in/ 24 hr (25 mm/24 hr) rain event.

** Effective height of Sediment control after installation and with constant head from runoff as determined by Ohio State University.

FILTREXX® SILT SOXX™

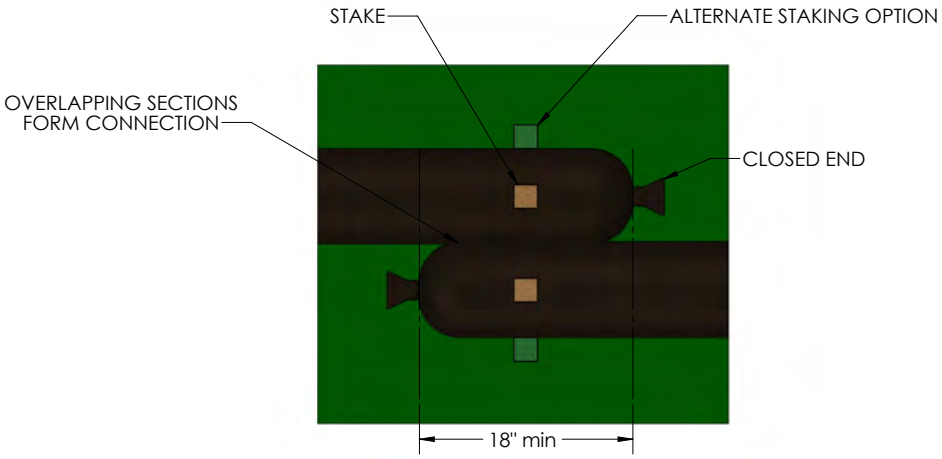


SECTION VIEW

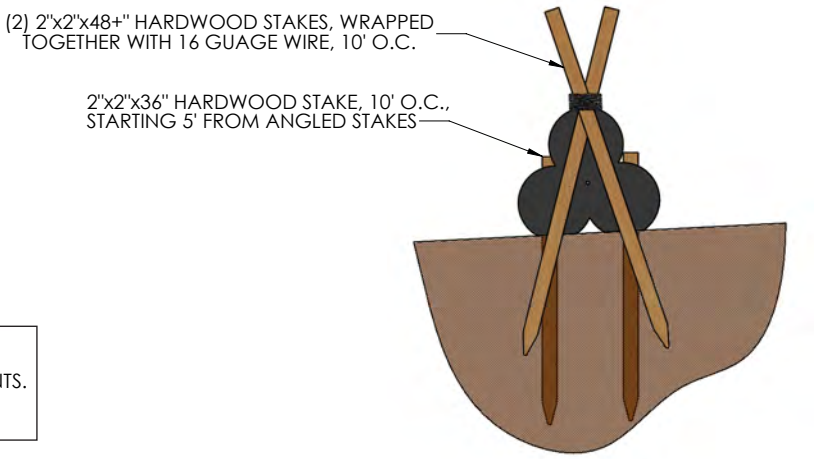


TOP VIEW

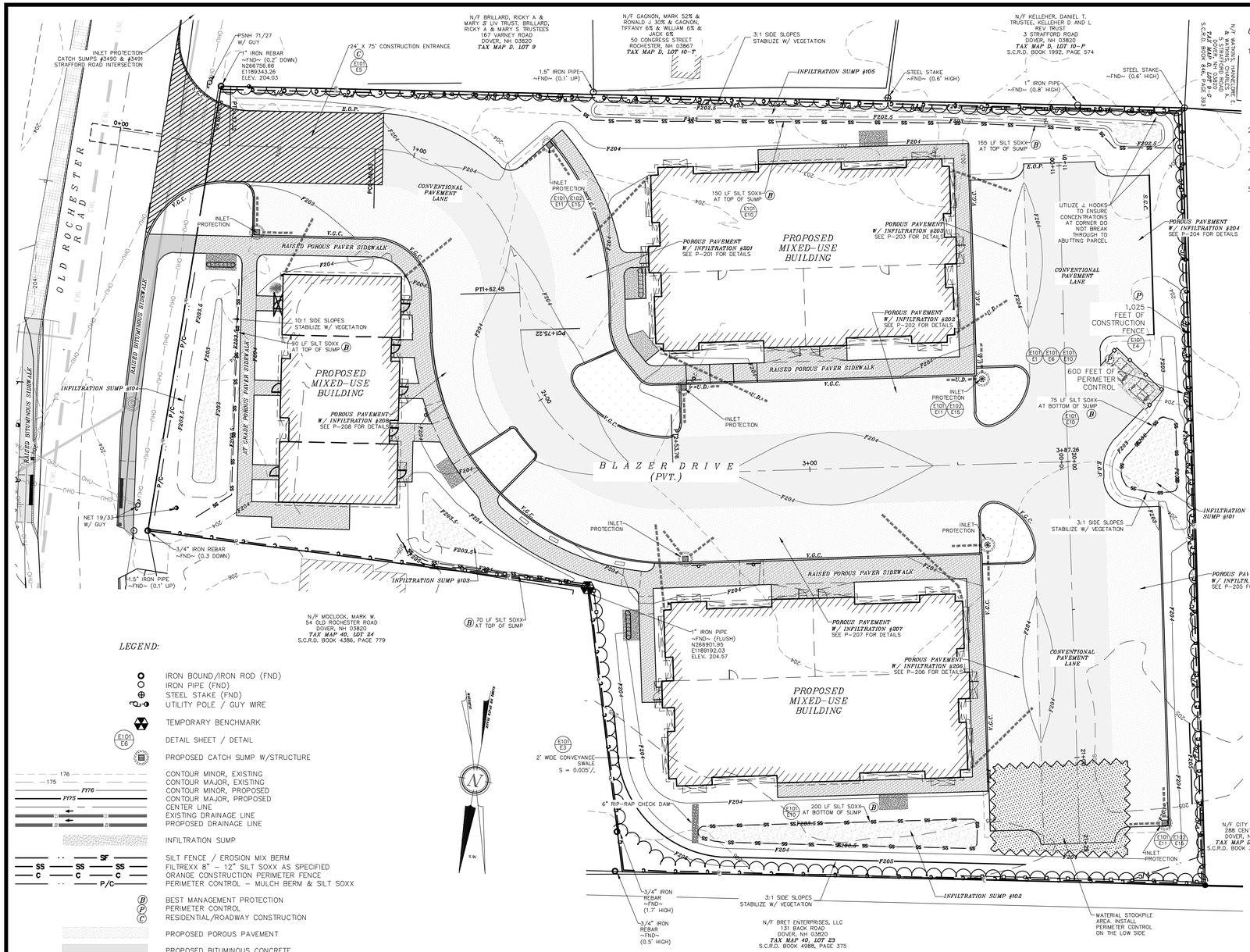
COMPOST SOCK CONNECTION/ATTACHMENT DETAIL



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.



LEGEND:

- IRON BOUND/IRON ROD (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- TEMPORARY BENCHMARK
- E101 / E6 — DETAIL SHEET / DETAIL
- PROPOSED CATCH SUMP W/STRUCTURE
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING DRAINAGE LINE
- PROPOSED DRAINAGE LINE
- INFILTRATION SUMP
- SILT FENCE / EROSION MIX BERM
- FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- PERIMETER CONTROL – MULCH BERM & SILT SOXX
- (B) BEST MANAGEMENT PROTECTION
- (P) PERIMETER CONTROL
- (C) RESIDENTIAL/ROADWAY CONSTRUCTION
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

SOILS & DEWATERING:

10 MERRIMAC GRAVELLY LOAMY SAND 0 TO 3% SLOPE K = 0.24 – B HORIZON

SEE SITE SPECIFIC SOILS MAP (SSSM)
SEE WEBSOIL USDA–NRCS
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 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 RECEIVING SURFACE WATER RUNOFF. CONTRACTOR TO BE RESPONSIBLE FOR ALL DIVERSIONS DURING CONSTRUCTION AND FOR INTERIM SEDIMENT AND EROSION CONTROL MEASURES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GENERAL NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac..

5.) THE INTENT OF THIS PLAN IS SHOW THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES.

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 OLD ROCHESTER 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. CALCIUM CHLORIDE SHALL NOT BE USED FOR DUST CONTROL AS THIS IS IN THE SECONDARY GROUNDWATER PROTECTION ZONE.

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 THE EXPAND CONSTRUCTION BEYOND THE STAKED OUT LIMITS.

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.

PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

EROSION AND SEDIMENT CONTROL PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY No. 7824 LICENSED PROFESSIONAL ENGINEER

DOVER, NH E&SC

E&SC

NOT FOR CONSTRUCTION

Total SF Commercial Space	5030
Total Commercial GPD	251.5
# 1br Units	40
# Bedrooms	40
Flow Received from Units (gpm)	
GPM=(225GPD * #BR * 6)/1440min/day	
37.50	
Flow Received from Commercial (gpm)	
GPM=(GPD * 6)/1440min/day (5gpd/100sf)	
1.05	
Flow Received from Infiltration (gpm)	
Inf. Rate = ((300 GPD*8IN*LF)/5280 LF)/1440 min/day	
0.062	
Cumulative Infiltration (gpm)	
0.062	
Total Flow Received (BR Flow + INF) (gpm)	
38.61	
Prop. SMH #3	
Rim Elev	203.60
Inv In (South Mixed Use Building)	196.45
Inv In (North Mixed Use Building)	194.45
Inv Out (Prop. SMH #2)	196.35
Depth SMH	7.25

Full Velocity (Manning Equation)	
V=(1.486/n)*(R^2/3)*(S^1/2)	
n	0.011
R	0.167
Pipe Dia (in)	8
Area (ft^2)	0.349
8" SDR 35	
Inv In (Prop. SMH #3)	196.35
Inv Out (Prop. SMH #2)	195.85
Length (ft)	109.00
Slope	0.005
Full Velocity (ft/s)	2.77
Discharge Rate (gpm)	433.91
8" SCHD40 Services Total (ft)	87.0

Total SF Commercial Space	7809
Total Commercial GPD	390.45
# 1br Units	44
# Bedrooms	44
Flow Received from Units (gpm)	
GPM=(225GPD * #BR * 6)/1440min/day	
41.25	
Flow Received from Commercial (gpm)	
GPM=(GPD * 6)/1440min/day	
1.63	
Flow Received from Infiltration (gpm)	
Inf. Rate = ((300 GPD*8IN*LF)/5280 LF)/1440 min/day	
0.020	
Cumulative Infiltration (gpm)	
0.082	
Total Flow Received (BR Flow + INF) (gpm)	
42.96	
Prop. SMH #2	
Rim Elev	204.75
Inv In (Front Mixed-Use Building)	198.75
Inv In (Prop. SMH #2)	195.85
Inv Out (Ex. SMH #758)	195.75
Depth SMH	9.00

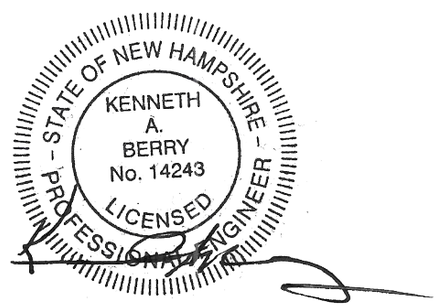
Full Velocity (Manning Equation)	
V=(1.486/n)*(R^2/3)*(S^1/2)	
n	0.011
R	0.167
Pipe Dia (in)	8
Area (ft^2)	0.349
8" SDR 35	
Inv In (Prop. SMH #3)	195.75
Inv Out (Prop. SMH #1)	195.45
Length (ft)	62.25
Slope	0.005
Full Velocity (ft/s)	2.84
Discharge Rate (gpm)	444.75
8" SCHD40 Services Total (ft)	12.25

Total SF Commercial Space	7809
Total Commercial GPD	390.45
# 1br Units	44
# Bedrooms	44
Flow Received from Units (gpm)	
GPM=(225GPD * #BR * 6)/1440min/day	
41.25	
Flow Received from Commercial (gpm)	
GPM=(GPD * 6)/1440min/day	
1.63	
Flow Received from Infiltration (gpm)	
Inf. Rate = ((300 GPD*8IN*LF)/5280 LF)/1440 min/day	
0.012	
Cumulative Infiltration (gpm)	
0.093	
Total Flow Received (BR Flow + INF) (gpm)	
42.97	
Prop. SMH #1	
Rim Elev	203.50
Inv In (Prop. SMH #2)	195.45
Inv Out (Ex. SMH #758)	195.35
Depth SMH	8.15

Full Velocity (Manning Equation)	
V=(1.486/n)*(R^2/3)*(S^1/2)	
n	0.011
R	0.167
Pipe Dia (in)	8
Area (ft^2)	0.349
8" SDR 35	
Inv In (Prop. SMH #1)	195.35
Inv Out (Ex. SMH #758)	195.03
Length (ft)	37.25
Slope	0.009
Full Velocity (ft/s)	3.79
Discharge Rate (gpm)	593.80

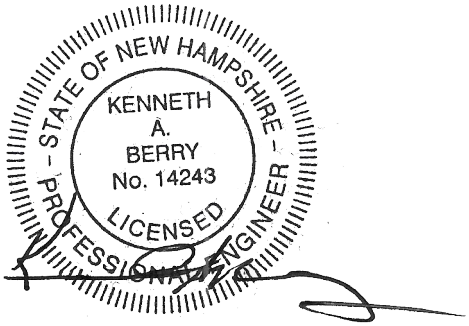
Total SF Commercial Space	7809
Total Commercial GPD	390.45
# 1br Units	44
# Bedrooms	44
Flow Received from Units (gpm)	
GPM=(225GPD * #BR * 6)/1440min/day	
41.25	
Flow Received from Commercial (gpm)	
GPM=(GPD * 6)/1440min/day	
1.63	
Cumulative Infiltration (gpm)	
0.093	
Total Flow Received (BR Flow + INF) (gpm)	
42.97	
Ex. SMH #758 (Only flow from 52 Old Rochester Rd)	
Rim Elev	203.85
Inv In (Prop. SMH #1)	195.45

22-075 Sewer Calculations 52 Old Rochester Road		
Peaking Factor		6
Flow/Bedroom (gpd)		225
Apartment units are one (1) bedroom		
Commercial Flow (gpd) (Env-Wq 1000) (Office Unspecified) (5GPD/100SF)		
Total 8" SDR 35 Length (Ft):	Total Rate (Design Flow)(GPD):	Total Rate (Design Flow)(GPM):
208.50	10,290	42.88
	Total Rate (Infiltration)(GPD):	Total Rate (Infiltration)(GPM):
Total 8" Schd. 40 Length (Ft):	134	0.09
99.25	Total Flow Received (GPD):	Total Flow Received (GPM):
	10,425	42.97
It is not anticipated that the pipes will ever flow full		
The two story building at the front of the site contains 2,779 Sq. Ft. of unspecified commercial space on the first level with and 4 1BR units on the second level and is referred to as "Front Mixed-Use Building"		
The two three story buildings each contain 2,515 Sq. Ft. of commercial on the first level, with 20 1BR units remaining in the building levels 1-3 and are referred to as either "North or South Mixed-Use Building"		
Berry Surveying & Engineering		Date: 7/1/2024/Rev: March 18, 2025



BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com
July 1, 2024/Rev: March 18, 2025

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



RE: Traffic Impact Analysis (TIA)
Blazer Drive Mixed-Use Site Plan
Dover Development, LLC
Tax Map 40, Lot 25
52 Old Rochester Road
Dover, NH 03820

Mrs. Benton,

Pursuant to the City of Dover Site Review Regulations, Berry Surveying & Engineering (BS&E), on behalf of Dover Development, LLC, has prepared a Standard Traffic Impact Analysis (TIA) for the following three structures proposed at 52 Old Rochester Road: along Old Rochester Road will be a two-story mixed-use building containing +/- 2,779 Sq. Ft. of unspecified commercial space on the first level and four one-bedroom units above and two, three-story mixed-use buildings each containing +/- 2,515 Sq. Ft. of unspecified commercial space and twenty (20) one-bedroom units, resulting in forty-four (44) residential units on a private roadway known as Blazer Drive. The point of analysis is the proposed intersection of Blazer Drive and Old Rochester Road.

The following conclusions/observations have been reached from the TIA:

- 459 total vehicle trips are predicted to occur on a weekday, 48 vehicle trips (19 enter/29 exit) are predicted to occur at the weekday AM peak hour and 54 vehicle trips (30 enter/24 exit) at the PM peak hour for Blazer Drive.
- The 2026 and 2036 build traffic volumes DO NOT satisfy the NCHRP 457 guidelines for the implementation of a left-turn lane or right turn lane for all weekday peak hours for Blazer Drive.
- A raised paved sidewalk is proposed to connect to the existing paved sidewalk along the eastern side of Old Rochester Road, south towards Strafford Farms Restaurant. This involves the installation of a raised cross walk (speed table) with signage and flashers from the site across the street. This also reduces speeds to a posted limit of 15 MPH in the vicinity of Blazer Drive, then returning to the posted 30 MPH speed limit to the north and south.
- Blazer Drive is proposed in the location of the existing driveway cut.

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Proposed Development & Introduction

The proposal is to redevelop Tax Map 40, Lot 25 to contain three structures: along Old Rochester Road will be a two-story mixed-use building containing +/- 2,779 Sq. Ft. of unspecified commercial space on the first level and four one-bedroom units above and two three-story mixed-use buildings each containing +/- 2,515 Sq. Ft. of unspecified commercial space and twenty (20) one-bedroom units, resulting in forty-four (44) residential units. The access to the site is a 24-foot-wide roadway, known as Blazer Drive, with 20 & 24-foot pavement entrance radii for vehicle turning. Blazer Drive is 387 LF in length to the parking areas, which function as a hammerhead, with parking lengths 101LF and 129LF in length, respectively. A total of 79 parking spaces are provided on site. A copy of the Site Plan is located in Appendix C for reference.

The centerline of Blazer Drive will be +/- 235LF to the north of the centerline of Strafford Road/driveway of Strafford Farms Restaurant, in the location of the existing driveway cut. The project proposes a raised sidewalk connection from the development to the eastern side of Old Rochester Road, connecting to the existing sidewalk to the south towards Strafford Farms Restaurant. A raised crosswalk (speed table) is proposed with specified MUTCD signage and flashing lights to reduce vehicle speeds to a posted 15 MPH in the vicinity of Blazer Drive, before returning to the posted speed limit of 30 MPH. The edge of the raised sidewalk to the north is a minimum of four feet from the fog line of Old Rochester Road.

The purpose of this analysis is to determine the maximum number of trips coming to and leaving the proposed project site during certain peak periods of the day. This information is then used in determining the impact on safety as it relates to the existing roadway infrastructure. The following components of the analysis are typical for a project of this size pursuant to the Institute of Traffic Engineers (ITE) manual.

Existing Conditions

Existing Site Description

The subject parcel is known as Tax Map 40, Lot 25 containing 74,997 Sq. Ft. (1.72 Ac.) of land. Tax Map 40, Lot 25 currently contains a 2,853 Sq. Ft. office building (formerly the office of Walcot Properties) containing a three-bedroom apartment. The front of the parcel contains the existing primary structure, parking, and a detached garage. The rear of the parcel is a combination of unmaintained lawn and wooded area. This office is not active as this point in time, but has been included within the existing trip generation to account for the difference in trip generation assuming it is operational. The subject parcel is located in the Commercial District and contains lot frontage on Old

Rochester Road. There are several commercial and residential driveways, local roads, and arterial roadways surrounding the subject parcel, which are discussed later in the analysis.

Old Rochester Road Roadway Description

Old Rochester Road is a two-lane minor arterial road to the north of the subject parcel and a local road to the south of the subject parcel according to the NHDOT Traffic Count (TCDS) System (NHDOT). This portion of Old Rochester Road is not under NHDOT jurisdiction. Old Rochester Road runs north to south parallel with N.H. Route 16 and NH Route 108 (New Rochester Road) and provides access to Somersworth and Rochester to the north and N.H. Routes 9 & 16 to the south (Indian Brook Drive, Central Avenue, High Street, Dover, Somersworth, Rochester, Portsmouth). It has an Average Annual Daily Traffic (AADT) of approximately 5,021 (2023) divided between north and south to the north of the subject parcel and 4,417 (2023) divided between north and south in the data provided by the NHDOT.

In addition to the historical data from the NHDOT, Accurate Counts has collected traffic volumes and speeds at the existing site driveway on August 13 (Tuesday) & August 14 (Wednesday) of 2024. Vehicle count and speed collection data is located in Appendix A. Based upon the two days of data collection, the calculated AADT of Old Rochester Road was 5,096, which is similar to the 2023 data provided by the NHDOT.

Old Rochester Road in the area of the project is composed of a thirty-foot wide paved surface (edge of pavement to edge of pavement) with an eleven-foot southbound lane and an eleven-foot northbound lane. There is a variable width paved and gravel shoulder on the west side of the road and vertical granite curbing with a sidewalk on the east side. There is centerline delineation and fog / edge lines provided. The posted speed limit of the roadway is 30 miles per hour (MPH). There is a "blind driveway" sign on the eastern side of Old Rochester Road approximately 275' to the north of the driveway. There are also chevron alignment signs at each end of the guard rail on the eastern side of the road to the north and south. The geometry of Old Rochester Road is relatively flat and is located near the tangency of the roadway curve in the project location, with the curve to the north. There are public transit opportunities within a ¼ mile of Blazer Drive that will be discussed later in the analysis.

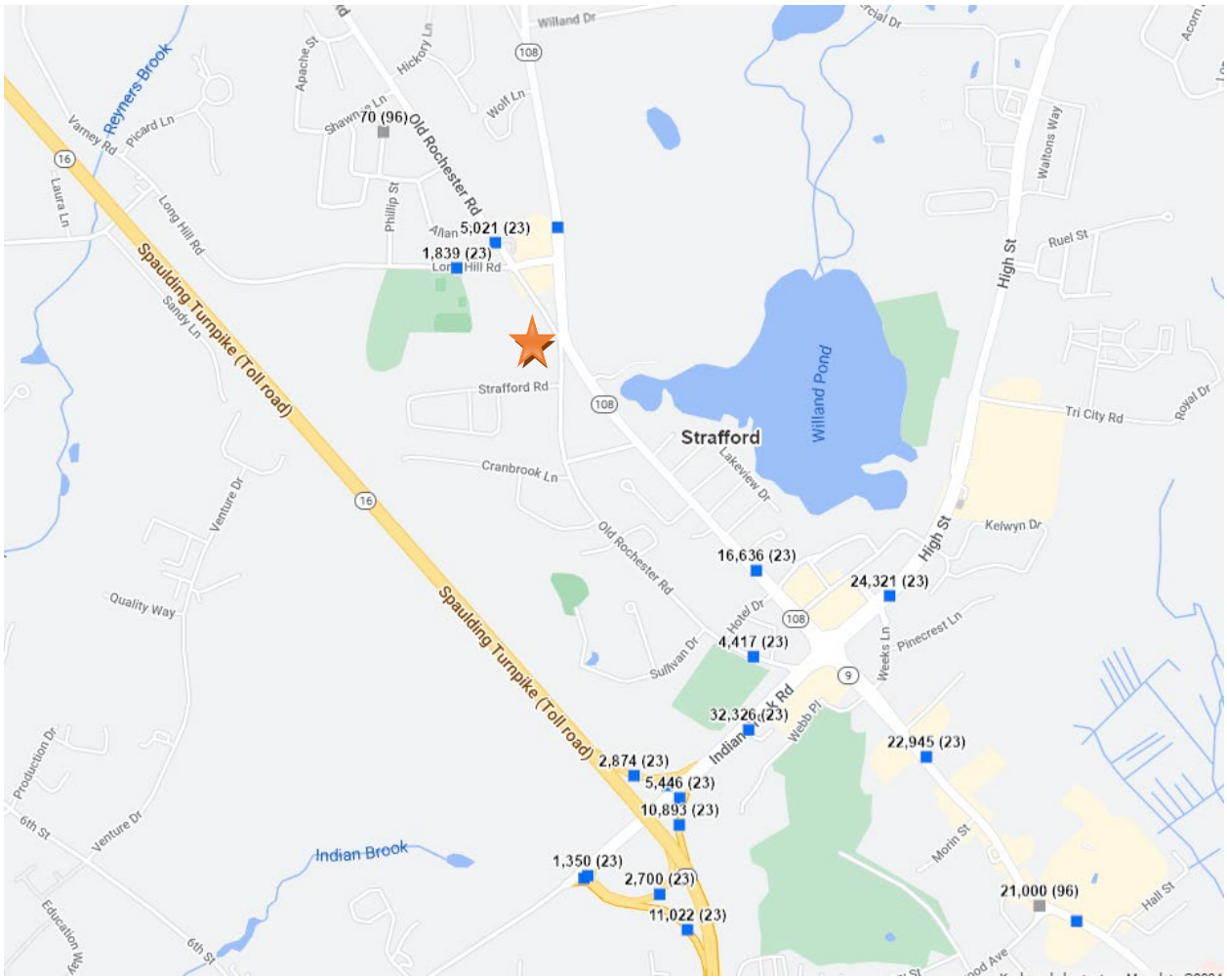


Figure 1: Old Rochester Road with surrounding roadways (NHDOT)

Existing Traffic Volumes

According to traffic counts recorded by Accurate Counts for August 13 - August 14 2024, the Old Rochester Road AM and PM weekday two-way peaks were 376 trips and 477 trips, respectively. It is shown by Accurate Counts that this portion of Old Rochester Road has an AADT 5,096 (2024) divided between north and south in the data provided by the NHDOT.

The highest weekday peak hour traffic volume on this section of Old Rochester Road northbound occurred from 7:15-8:15 AM with 79 vehicles and from 4:15-5:15 PM with 266 vehicles. Southbound highest weekday peak hour traffic volume occurred from 7:45-8:45 AM with 304 vehicles and from 4:15-5:15 PM with 211 vehicles. Table #1 shows the traffic direction breakdown of Old Rochester Road and Tables #2-3 provide

15-minute interval data. Figures #1-3 are graphical representations of the traffic variations occurring throughout the day. It can be seen from the directional percent distribution that the primary direction of travel during the Weekday AM peak hour is southbound towards Dover and NH Route 16. The primary direction of travel during the PM peak hour is northbound towards Somersworth and Rochester. These observed percentages indicate a high percentage of commuter traffic. With the surrounding arterial roadways, this is a reasonable assumption. Traffic counts of Old Rochester Road provided by Accurate Counts are included in Appendix A.

Traffic Distribution Old Rochester Road						
Date	Northbound		Southbound		Two-Way	
Tuesday 8/13/24	AM Peak	68	AM Peak	304	AM Peak	371
	PM Peak	266	PM Peak	211	PM Peak	477
Wednesday 8/14/25	AM Peak	79	AM Peak	297	AM Peak	376
	PM Peak	246	PM Peak	190	PM Peak	436
Average Peak Hour Traffic	AM Peak	74	AM Peak	301	AM Peak	374
	PM Peak	256	PM Peak	201	PM Peak	457
% Distribution	AM Peak	19.7	AM Peak	80.3		
	PM Peak	56.1	PM Peak	43.9		

Table 1: Directional breakdown of trips occurring on Old Rochester Road

Northbound Vehicle Count Tuesday 8/13/24		Southbound Vehicle Count Tuesday 8/13/24		Two-Way Vehicle Count Tuesday 8/13/24	
7:00:00 AM	13	7:00:00 AM	62	7:00:00 AM	75
7:15:00 AM	15	7:15:00 AM	75	7:15:00 AM	90
7:30:00 AM	12	7:30:00 AM	79	7:30:00 AM	91
7:45:00 AM	16	7:45:00 AM	67	7:45:00 AM	83
8:00:00 AM	23	8:00:00 AM	70	8:00:00 AM	93
8:15:00 AM	17	8:15:00 AM	78	8:15:00 AM	95
8:30:00 AM	11	8:30:00 AM	89	8:30:00 AM	100
8:45:00 AM	15	7:00:00 AM	57	8:45:00 AM	72
4:00:00 PM	58	4:00:00 PM	54	4:00:00 PM	112
4:15:00 PM	65	4:15:00 PM	45	4:15:00 PM	110
4:30:00 PM	68	4:30:00 PM	61	4:30:00 PM	129
4:45:00 PM	62	4:45:00 PM	45	4:45:00 PM	107
5:00:00 PM	71	5:00:00 PM	60	5:00:00 PM	131
5:15:00 PM	62	5:15:00 PM	47	5:15:00 PM	109
5:30:00 PM	39	5:30:00 PM	44	5:30:00 PM	83
5:45:00 PM	43	5:45:00 PM	41	5:45:00 PM	84
AM Peak Veh	68	AM Peak Veh	304	AM Peak Veh	371
PM Peak Veh	266	PM Peak Veh	211	PM Peak Veh	477

Table 2: AM & PM Weekday Peak Hour 15-minute intervals

Northbound Vehicle Count Wednesday 8/14/24		Southbound Vehicle Count Wednesday 8/14/24		Two-Way Vehicle Count Wednesday 8/14/24	
7:00:00 AM	16	7:00:00 AM	61	7:00:00 AM	77
7:15:00 AM	21	7:15:00 AM	74	7:15:00 AM	95
7:30:00 AM	12	7:30:00 AM	74	7:30:00 AM	86
7:45:00 AM	28	7:45:00 AM	77	7:45:00 AM	105
8:00:00 AM	18	8:00:00 AM	72	8:00:00 AM	90
8:15:00 AM	12	8:15:00 AM	69	8:15:00 AM	81
8:30:00 AM	12	8:30:00 AM	76	8:30:00 AM	88
8:45:00 AM	20	7:00:00 AM	65	8:45:00 AM	85
4:00:00 PM	69	4:00:00 PM	61	4:00:00 PM	130
4:15:00 PM	61	4:15:00 PM	45	4:15:00 PM	106
4:30:00 PM	63	4:30:00 PM	41	4:30:00 PM	104
4:45:00 PM	53	4:45:00 PM	43	4:45:00 PM	96
5:00:00 PM	66	5:00:00 PM	40	5:00:00 PM	106
5:15:00 PM	60	5:15:00 PM	41	5:15:00 PM	101
5:30:00 PM	58	5:30:00 PM	39	5:30:00 PM	97
5:45:00 PM	44	5:45:00 PM	41	5:45:00 PM	85
AM Peak Veh	79	AM Peak Veh	297	AM Peak Veh	376
PM Peak Veh	246	PM Peak Veh	190	PM Peak Veh	436

Table 3: AM & PM Weekday Peak Hour 15-minute intervals

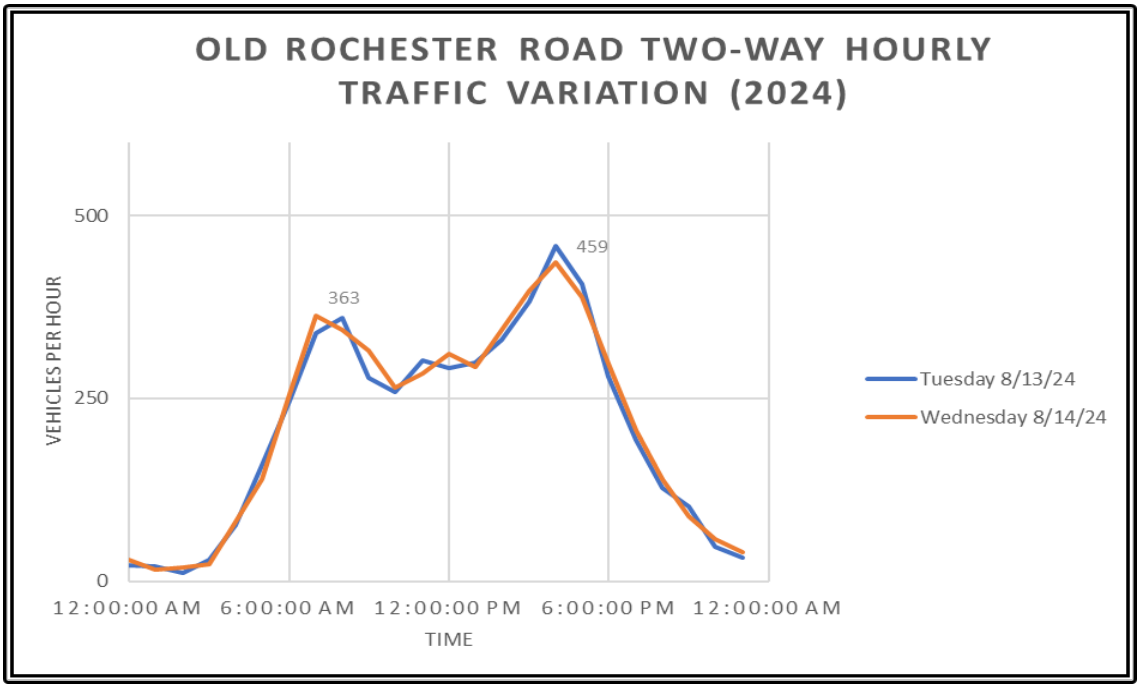


Figure 2: Old Rochester Road 2024 two-way hourly variation

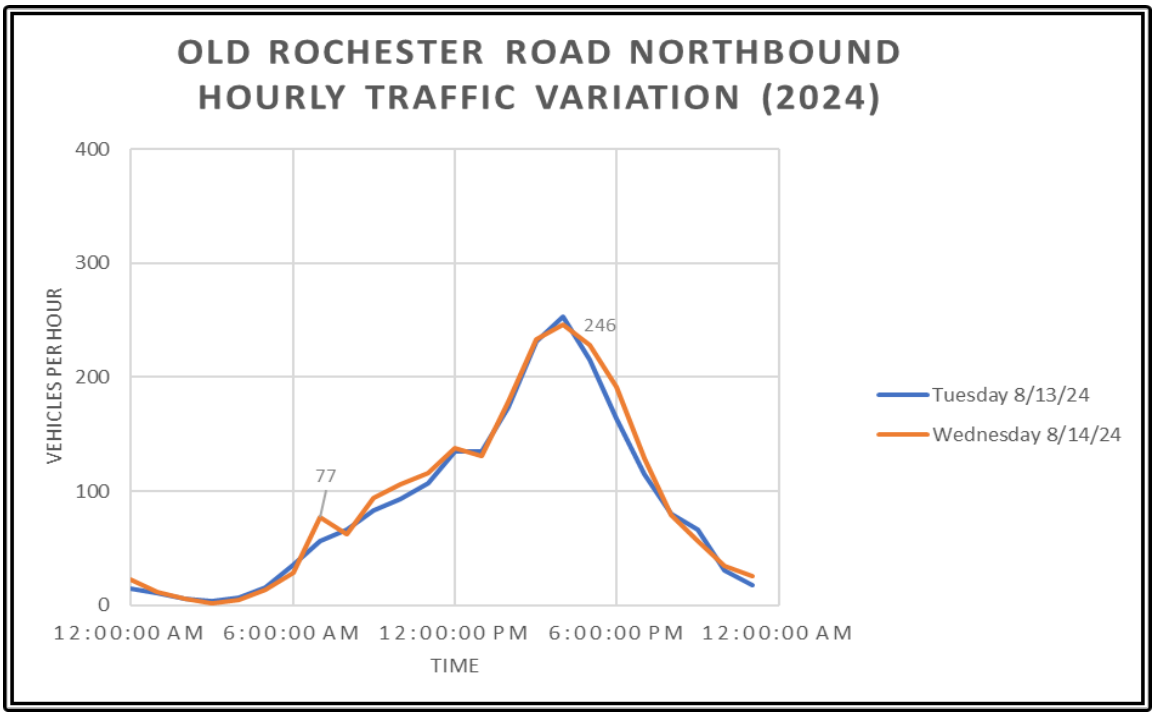


Figure 3: Old Rochester Road 2024 northbound hourly variation

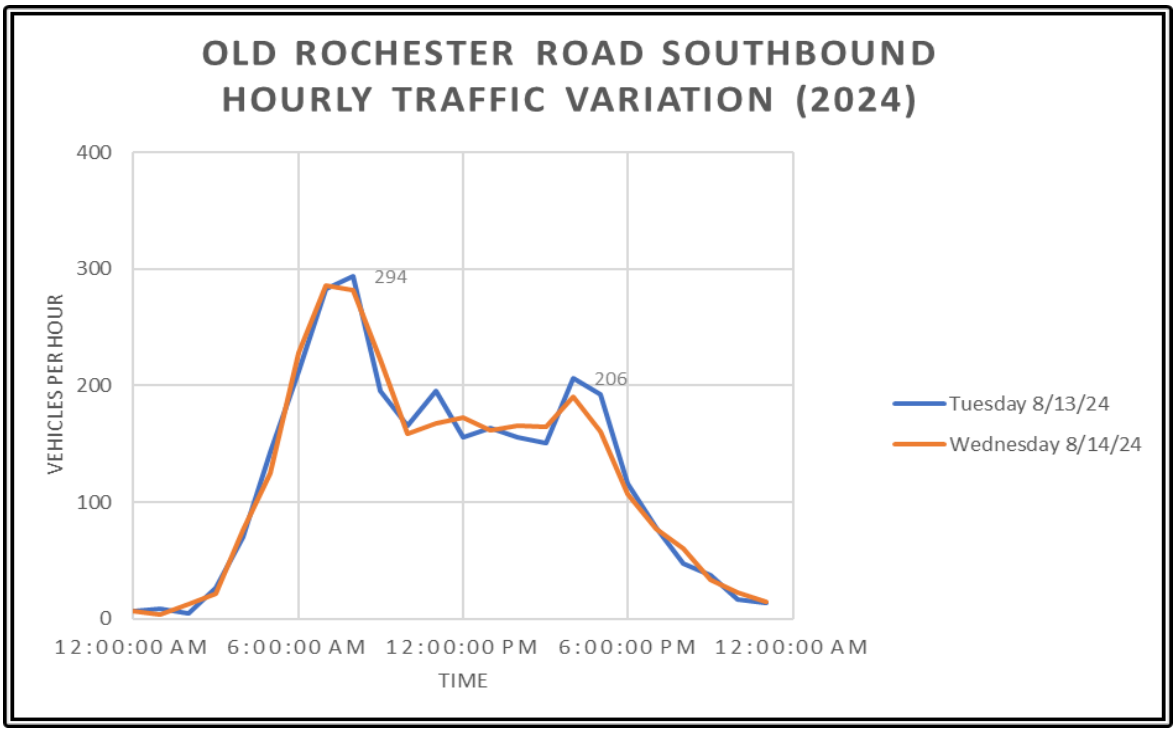


Figure 4: Old Rochester Road 2024 southbound hourly variation with peak values

Existing Vehicle Speeds

As previously mentioned, the posted speed limit of Old Rochester Road is 30 MPH. For the purposes of the safety analysis below, the 85th percentile of speed is required. The traffic counts conducted by Accurate Counts included a speed analysis. For southbound traffic originating from the stop-controlled intersection of Old Rochester Road & Long Hill Road, the mean speed was 30.3 MPH with an 85th percentile speed of 34 MPH and a 95th percentile speed of 37 MPH. The 10 MPH pace speed was 26-35 MPH, with 71% of vehicles within this pace. For northbound the mean speed was 35.3 MPH with an 85th percentile speed of 39 MPH and a 95th percentile speed of 41 MPH. The 10 MPH pace speed was 31-40 MPH, with 73% of vehicles within this pace.

Surrounding Roadways & Intersections

There are several local roadways within a quarter mile to the south of proposed Blazer Drive. On the western side of Old Rochester Road local roads include: Strafford Road, Willand Ave., and Cranbrook Lane. The eastern side includes the driveway for Strafford Farms Restaurant. These local roads serve single-family homes.

To the north, approximately 0.2 miles, is the 4-way stop-controlled intersection of Old Rochester Road and Long Hill Road. Old Rochester Road to the north provides access to Somersworth and Rochester. Long Hill Road to the east provides access to the signalized intersection on NH Route 108 & Long Hill Road. Long Hill Road to the west provides access to more rural parts of Dover. The proximity to this stop-controlled intersection likely decreases southbound vehicles approach speeds to the site access.

To the south, approximately 0.6 miles, is the minor leg stopped controlled un-signalized intersection of Old Rochester Road & Hotel Drive. Hotel Drive provides access to Hampton Inn and Comfort Inn & Suites. Hotel Drive also provides signalized intersection access to Old Rochester Road (NH Route 108), Central Ave (NH Route 9/108), and High Street (NH Route 9). Approximately 0.7 miles to the south of the parcel is the minor leg stop controlled intersection of Old Rochester Road and Indian Brook Drive. Vehicles are only able to enter Old Rochester Road heading westbound on Indian Brook Drive and only able to exit west on Indian Brook Drive towards NH Route 16. A median in Indian Brook Drive prevents all other turning movements from this intersection. Vehicles heading east on Indian Brook Drive frequently U-Turn at this signalized intersection to head back west on Indian Brook Drive to access Old Rochester Road.

Vehicles that are looking to access NH Route 108 northbound would likely travel to the Long Hill Road/Old Rochester Road intersection. Vehicles looking to access NH Route 108 southbound, High Street, or Central Ave would likely travel south to Hotel Drive/Old

Rochester Road intersection. Vehicles looking to access NH Route 16 would likely travel south to the intersection of Old Rochester Road and Indian Brook Drive.

Indian Brook Drive is considered an Other Principal Arterial roadway by the NHDOT with an AADT of 32,326 (2023). Central Avenue is considered a Minor Arterial roadway by the NHDOT with an AADT of 22,945 (2023). High Street is considered an Other Principal Arterial roadway by the NHDOT with an AADT of 24,321 (2023). New Rochester Road is considered a Minor Arterial roadway by the NHDOT with an AADT of 16,636 (2023).

Proximity to Public Transportation/Pedestrian Access

The proposed build out presents an excellent opportunity for the utilization of public transportation for residents and guests alike. Approximately 0.2 miles to the south is a Coast bus stop, Route 12, New Rochester Road Strafford Farms Restaurant). There is an existing sidewalk on the eastern of Old Rochester Road (starts at the subject parcel frontage), which will be connected to as part of the raised crosswalk (speed table) installation. This connectivity to sidewalks and bus stop proximity has a potential for a reduction in vehicle trip generation.

Existing Trip Generation

The 11th Edition ITE Trip Generation Manual was used to determine the existing volume of trips from the subject parcel. Included is the percentage of entrance-to-exit traffic experienced during the weekday AM & PM peak hours between 7 and 9 AM and 4 and 6 PM, and total weekday volume. Land Use Coded Multi-Family Low Rise (220) and Small Office Building (712) were used in deriving the existing trip generation from the project site. Tables 4-6 provide average trip rate, total trips generated, enter to exit ratio, and the enter to exit distribution.

Multi-Family (Low Rise) Existing:

Time Method	Weekday Total Dwelling Units			Time Method	AM Peak Adj. Street Traffic Dwelling Units			Time Method	PM Peak Adj. Street Traffic Dwelling Units		
# Units	1			# Units	1			# Units	1		
Avg. Rate	7.2			Avg. Rate	0.48			Avg. Rate	0.57		
Total Trips	7			Total Trips	1			Total Trips	1		
% Enter	50	Total Enter	4	% Enter	25	Total Enter	0	% Enter	59	Total Enter	1
% Exit	50	Total Exit	3	% Exit	75	Total Exit	1	% Exit	41	Total Exit	0

Table 4: (Residential) Peak hr of adjacent street traffic AM, PM, & weekday total

Small Office Building Existing:

Time Method	Weekday Total 1,000 SF GFA			Time Method	AM Peak Adj. Street Traffic 1,000 SF GFA			Time Method	PM Peak Adj. Street Traffic 1,000 SF GFA		
1,000 SF GFA	2.853			1,000 SF GFA	2.853			1,000 SF GFA	2.853		
Avg. Rate	14.39			Avg. Rate	1.67			Avg. Rate	2.16		
Total Trips	41			Total Trips	5			Total Trips	6		
% Enter	50	Total Enter	21	% Enter	82	Total Enter	4	% Enter	34	Total Enter	2
% Exit	50	Total Exit	20	% Exit	18	Total Exit	1	% Exit	66	Total Exit	4

Table 5: (Small Office Bld.) Peak hr of adj. street traffic AM, PM, & weekday total

Total Existing Trip Generation:

Time	Weekday Total			Time	AM Peak Adj. Street Traffic			Time	PM Peak Adj. Street Traffic		
Total Trips	48			Total Trips	6			Total Trips	7		
% Enter	52	Total Enter	25	% Enter	67	Total Enter	4	% Enter	43	Total Enter	3
% Exit	48	Total Exit	23	% Exit	33	Total Exit	2	% Exit	57	Total Exit	4

Table 6: Existing trip generation from site during AM, PM, & weekday total

Proposed Trip Generation

The 11th Edition ITE Trip Generation Manual was used to determine the proposed volume of trips. Included is the percentage of entrance-to-exit traffic experienced during the weekday AM & PM peak hours between 7 and 9 AM and 4 and 6 PM, and total weekday volume. Land Use Code Multi-Family Low Rise (220) and Small Office Building (712) were used in deriving the proposed trip generation from the project site. Tables 7-8 provide average trip rate, total trips generated, enter to exit ratio, and the enter to exit distribution for the proposed trips at Blazer Drive. Table 9 includes the total trip generation for Blazer Drive and Table #10 provides the increase in trips from the existing condition. As the proposed units are all one-bedroom units, the calculated trip generation may provide a conservative estimate. As shown in Appendix D, Figure #38, sites which provided a number of residents and occupied dwelling units, had an average of 2.72 residents per occupied dwelling unit.

Multi-Family (Low Rise) Blazer Drive:

Time Method	Weekday Total Dwelling Units			Time Method	AM Peak Adj. Street Traffic Dwelling Units			Time Method	PM Peak Adj. Street Traffic Dwelling Units		
# Units	44			# Units	44			# Units	44		
Fitted Curve	T=6.41(X)+75.31			Fitted Curve	T=0.31(X)+22.85			Fitted Curve	Ln(T)=0.87Ln(X)+3.05		
Total Trips	357			Total Trips	36			Total Trips	39		
% Enter	50	Total Enter	148	% Enter	24	Total Enter	9	% Enter	63	Total Enter	25
% Exit	50	Total Exit	149	% Exit	76	Total Exit	27	% Exit	37	Total Exit	14

Table 7: (Residential) Peak hr of adjacent street traffic AM, PM, & weekday total

Small Office Building Blazer Drive:

Time Method	Weekday Total 1,000 SF GFA			Time Method	AM Peak Adj. Street Traffic 1,000 SF GFA			Time Method	PM Peak Adj. Street Traffic 1,000 SF GFA		
1,000 SF GFA	7.089			1,000 SF GFA	7.089			1,000 SF GFA	7.089		
Avg. Rate	14.39			Avg. Rate	1.67			Avg. Rate	2.16		
Total Trips	102			Total Trips	12			Total Trips	15		
% Enter	50	Total Enter	51	% Enter	82	Total Enter	10	% Enter	34	Total Enter	5
% Exit	50	Total Exit	51	% Exit	18	Total Exit	2	% Exit	66	Total Exit	10

Table 8: (Small Office Bld.) Peak hr of adj. street traffic AM, PM, & weekday total

Total Trip Generation Blazer Drive:

Time	Weekday Total			Time	AM Peak Adj. Street Traffic			Time	PM Peak Adj. Street Traffic		
Total Trips	459			Total Trips	48			Total Trips	54		
% Enter	50	Total Enter	199	% Enter	40	Total Enter	19	% Enter	56	Total Enter	30
% Exit	50	Total Exit	200	% Exit	60	Total Exit	29	% Exit	44	Total Exit	24

Table 9: Pro trip generation from site during AM, PM, & weekday total

Increase from Existing Trip Generation

Changes in Trip Generation	
Time	Change in Trips Generated
Weekday Total	411
Weekday AM Peak Hour	42
Weekday PM Peak Hour	47

Table 10: Increase from existing trip generation

Build Traffic Projections and Turning Analysis

Traffic data obtained from Accurate Counts in 2024 has been projected to 2026 and ten years further to 2036. This has been done using an August peak seasonal adjustment factor of 1.00 (Urban Highways Group 4, AM & PM) and using an annual growth rate of 1%, compounded annually. The derivation of the peak seasonal adjustment factor comes from an average series of values from other urban highways from across New Hampshire, which can be found as Table 17 in Appendix C. Figures 5 and 6 show the build turning movements to and from Blazer during weekday AM and PM peak hours. These figures also show the projected volume of traffic northbound and southbound on Old Rochester Road for 2026 and 2036. This data is then used to preform NCHRP 457 left-turn and right-turn bay warrant analyses. Appendix B contains the data that was used to conduct the analyses as Figures 17 & 18 and 24 & 25. A visual of these turning movements is shown in the following figures.

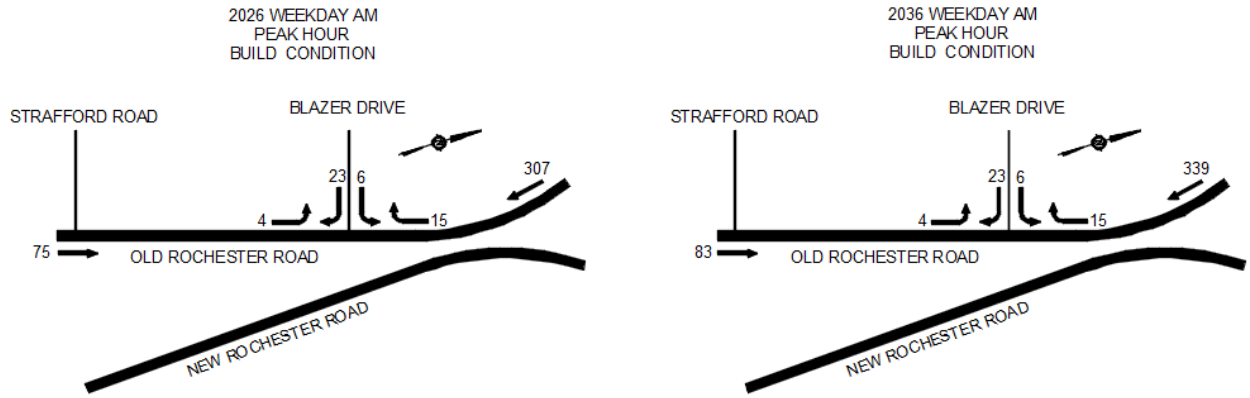


Figure 5: 2026 & 2036 build projected volumes & turn movement weekday AM peak

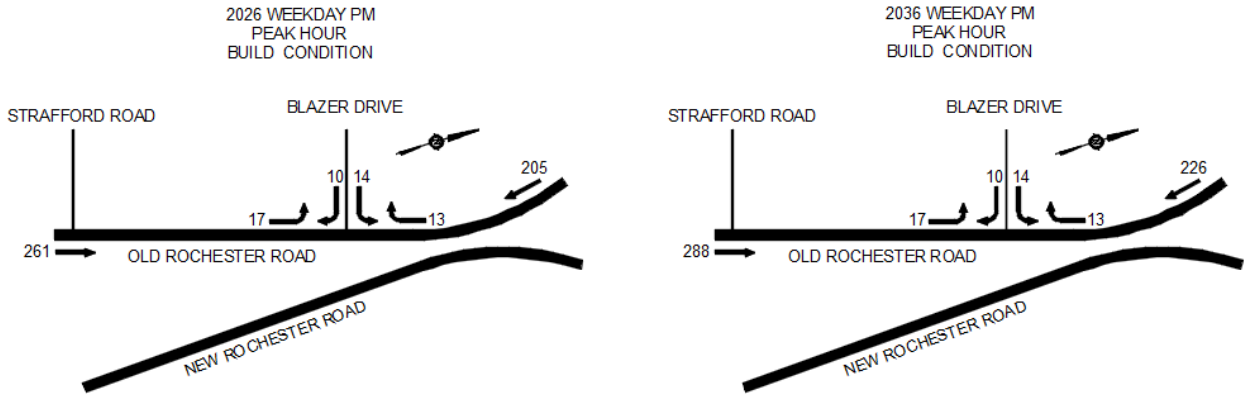


Figure 6: 2026 & 2036 build projected volumes & turn movement weekday PM peak

Tables 11 & 12 show in a tabular format the total trips that are calculated to occur to and from Blazer Drive are shown at the weekday peak hours analyzed in a build situation. These trips are further broken down into enter and exit to and from the site as well as percentage of left and right turns.

Time	AM Peak Hour	# Trips	Turn Type	% Distribution
Total Trips	48			
Trips Enter from Old Rochester Rd Northbound		3.7	Left	7.8
Trips Enter from Old Rochester Rd Southbound		15.3	Right	31.8
Trips Exit to Old Rochester Rd Northbound		5.7	Left	11.9
Trips Exit to Old Rochester Rd Southbound		23.3	Right	48.5

Table 11: Weekday AM peak hour build turning movements to and from Blazer Dr.

Time	PM Peak Hour	# Trips	Turn Type	% Distribution
Total Trips	54			
Trips Enter from Old Rochester Rd Northbound		16.8	Left	31.2
Trips Enter from Old Rochester Rd Southbound		13.2	Right	24.4
Trips Exit to Old Rochester Rd Northbound		13.5	Left	24.9
Trips Exit to Old Rochester Rd Southbound		10.5	Right	19.5

Table 12: Weekday PM peak hour build turning movements to and from Blazer Dr.

Left-Turn Warrants Analysis

Depending on vehicle speed, advancing vehicular volumes, opposing vehicular volumes, and the percent of left turns that vehicles are predicted to make, certain roadways may require special treatment for vehicles making left turning maneuvers. The determination of this special treatment is determined by the NCHRP 457 left-turn bay guidelines. Calibration constants of 3.0 seconds are used for average left turn time, 5.0 seconds for critical headway, and 1.9 seconds for vehicles to clear the advancing lane. If warranted, the left turn bay would allow for deceleration of vehicles and storage in the queue to wait safely for advancing traffic to pass.

The traffic volumes obtained from the Accurate Counts from 2024 projected to 2026 and 2036 were used to determine if a left-turn bay is warranted to safely enter the site. It has been calculated that approximately 4 trips are to occur turning left into the site during the weekday AM peak hour and 17 trips during the PM peak hour for Blazer Drive. The projection of the traffic volumes and data used to conduct the left-turn bay warrant analyses are included in Appendix B as Figures 17 & 18. The full warrant analyses can be found in Appendix B as Figures 19-22. Tables 13 & 14 are summaries of the left-turn bay warrant analyses for the proposed site entrance. Using the 85th percentile speed of 30 MPH, it was determined that a left-turn bay IS NOT warranted to safely enter Blazer Drive. Data from Accurate Counts shows an 85th percentile speed of 39 MPH for northbound traffic. However, a speed of 30 MPH is used due to the installation of the previously discussed raised crosswalk (speed table), and associated posted speed limit reduction to 15 MPH in the vicinity of Blazer Drive.

Left-Turn Lane Warrants Analysis Old Rochester Road		
Factors	2026 Weekday AM Build Volume	2036 Weekday AM Build Volume
Left-Turn Volume (NB)	4	4
Advancing Volume (NB) (L+TR+R)	94	102
Opposing Volume (SB) (TR+R)	322	354
Percent Lefts	3.97%	3.67%
85th Percentile Speed (MPH)	30	30
Limiting Adv. Volume (veh/hr)	687	689
Left-Turn Bay Warranted	NO	NO

Table 13: Weekday AM peak hour NCHRP 457 left-turn bay analysis

Left-Turn Lane Warrants Analysis Old Rochester Road		
Factors	2026 Weekday PM Build Volume	2036 Weekday PM Build Volume
Left-Turn Volume (NB)	17	17
Advancing Volume (NB) (L+TR+R)	291	318
Opposing Volume (SB) (TR+R)	218	239
Percent Lefts	5.78%	5.28%
85th Percentile Speed (MPH)	30	30
Limiting Adv. Volume (veh/hr)	645	657
Left-Turn Bay Warranted	NO	NO

Table 14: Weekday PM peak hour NCHRP 457 left-turn bay analysis

Right-Turn Warrants Analysis

Depending on vehicle speed, advancing vehicular volumes, and the percent of right turns that vehicles are predicted to make, certain roadways may require special treatment for vehicles making right turning maneuvers. The determination of this special treatment is determined by the NCHRP 457 right turn bay guidelines. If warranted, the right-turn bay would allow for deceleration of vehicles and storage in the queue to wait safely for right turning traffic to clear.

The traffic volumes obtained from Accurate Counts from 2024 projected to 2026 and 2036 were used to determine if a right-turn bay is warranted to safely enter the site. It has been calculated that approximately 15 trips are to occur turning right into the site during the weekday AM peak hour and 13 trips during the PM peak hour for Blazer Drive. The projection of the traffic volumes and data used to conduct the right-turn bay warrant analyses are included in Appendix B as Figures 24 & 25. The full warrant analyses can be found in Appendix B as Figures 25-28. Tables 15 & 16 are summaries of the right-turn bay warrant analyses for the proposed site entrance. Using the 85th percentile speed of 30 MPH, it was determined that a right-turn bay IS NOT warranted to safely enter Blazer Drive. Data from Accurate Counts shows an 85th percentile speed

of 34 MPH for southbound traffic. However, a speed of 30 MPH is used due to the installation of the previously discussed raised crosswalk (speed table), and associated posted speed limit reduction to 15 MPH in the vicinity of Blazer Drive.

Right-Turn Lane Warrants Analysis Old Rochester Road		
Factors	2026 Weekday AM Build Volume	2036 Weekday AM Build Volume
Right-Turn Volume (SB)	15	15
Advancing Volume (SB) (L+TR+R)	326	358
85th Percentile Speed (MPH)	30	30
Limiting Right-Turn Volume (veh/hr)	4362	2773
Right-Turn Bay Warranted	NO	NO

Table 15: Weekday AM peak hour NCHRP 457 right-turn bay analysis

Right-Turn Lane Warrants Analysis Old Rochester Road		
Factors	2026 Weekday AM Build Volume	2036 Weekday AM Build Volume
Right-Turn Volume (SB)	13	13
Advancing Volume (SB) (L+TR+R)	235	256
85th Percentile Speed (MPH)	30	30
Limiting Right-Turn Volume (veh/hr)	21180	13905
Right-Turn Bay Warranted	NO	NO

Table 16: Weekday PM peak hour NCHRP 457 right-turn bay analysis

Sight Distance and Safety Analysis

Sight distance on Old Rochester Road to the north and south, as well as roadway alignment are the two determining factors of safety. Sight distance to the north un-obstructed for well over 200 feet (measured, 30 MPH AASHTO requirement), while sight distance to the south is un-obstructed for well over 300 feet (measured, for 39 MPH AASHTO requirement).

A series of off-site improvements are proposed to reduce vehicle speeds in Old Rochester Road and allow for a 30MPH sight distance from Blazer Drive to the north. This includes the construction of an extension of the raised sidewalk along the eastern side of Old Rochester Road heading south and raised crosswalk at the northern subject parcel corner. Vehicles approaching the crossing from north and south will see three sets of signs: Approximately 175 LF before the crossing are signs MUTCD W17-1 ("SPEED HUMP") & MUTCD W13-1P (15 MPH), approximately 100 LF before the crossing are MUTCD signs W11-2 (Pedestrian Crossing) & MUTCD W16-9P ("AHEAD"), and at the raised cross with flashing solar LED lights is MUTCD W11-2 (Pedestrian Crossing) & MUTCD W16-7P (down arrow to raised cross walk). The posted speed limit

returns to 30 MPH southbound just to the south of Blazer Drive. The posted speed limit to the north returns to 30 MPH approximately 115LF from the crossing. It is the opinion of BS&E that the implementation of the raised crosswalk and supporting 15 MPH signage along with other MUTCD signage & LED flashers and will allow Blazer Drive to provide sight distance at an 85th percentile speed of 30 MPH. The following image from the Site Plan presents the signage proposed to support the raised crosswalk and to reduce vehicle speeds on Old Rochester Road.

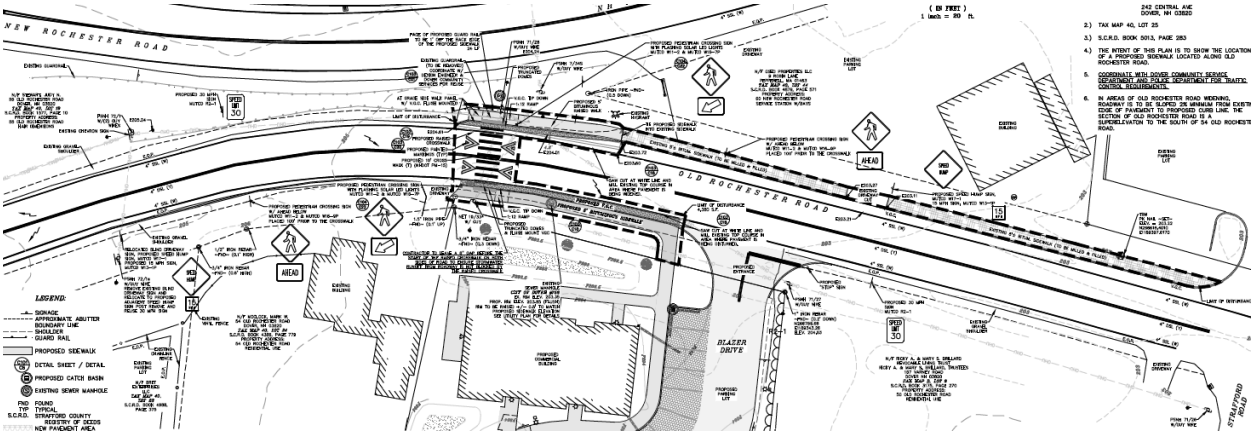


Figure 7: Plan view of proposed raised crosswalk (speed table) & signage

Conclusions and Recommendations

1) 459 total vehicle trips are predicted to occur on a weekday, 48 vehicle trips (19 enter/29 exit) are predicted to occur at the weekday AM peak hour and 54 vehicle trips (30 enter/24 exit) at the PM peak hour for Blazer Drive.

2) The 2026 and 2036 build traffic volumes DO NOT satisfy the NCHRP 457 guidelines for the implementation of a left-turn lane or right turn lane for all weekday peak hours for Blazer Drive.

3) A raised paved sidewalk is proposed to connect to the existing paved sidewalk along the eastern side of Old Rochester Road, south towards Strafford Farms Restaurant. This involves the installation of a raised cross walk (speed table) with signage and flashers from the site across the street. This also reduces speeds to a posted limit of 15 MPH in the vicinity of Blazer Drive, then returning to the posted 30 MPH speed limit to the north and south.

4) Blazer Drive is proposed in the location of the existing driveway cut.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

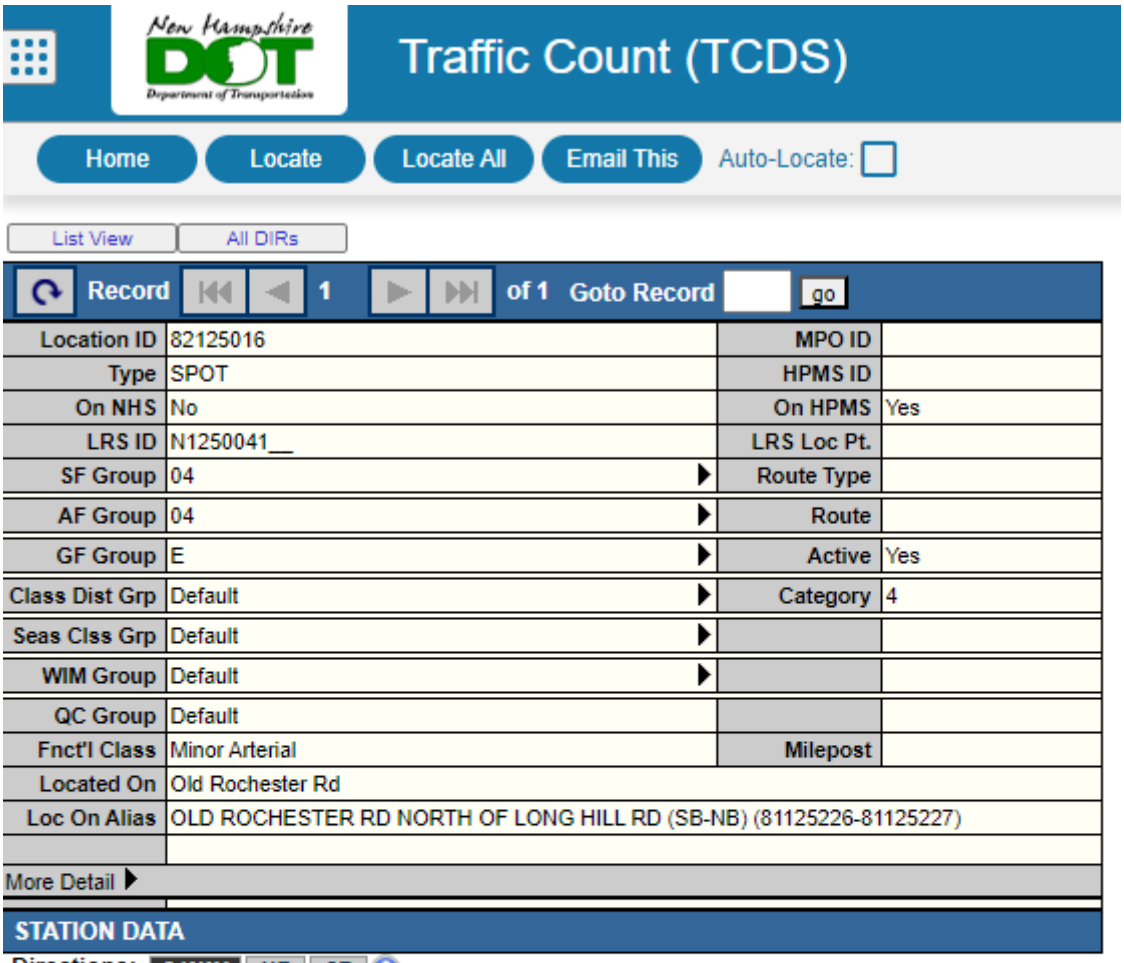
Christopher R. Berry, SIT
Principal, President

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

Kevin R. Poulin, PE
Project Engineer

Appendix A

Traffic Counts & Speed Data



New Hampshire DOT — Department of Transportation

Traffic Count (TCDS)

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	82125016	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	Yes
LRS ID	N1250041__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	4
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Minor Arterial	Milepost	
Located On	Old Rochester Rd		
Loc On Alias	OLD ROCHESTER RD NORTH OF LONG HILL RD (SB-NB) (81125226-81125227)		

More Detail

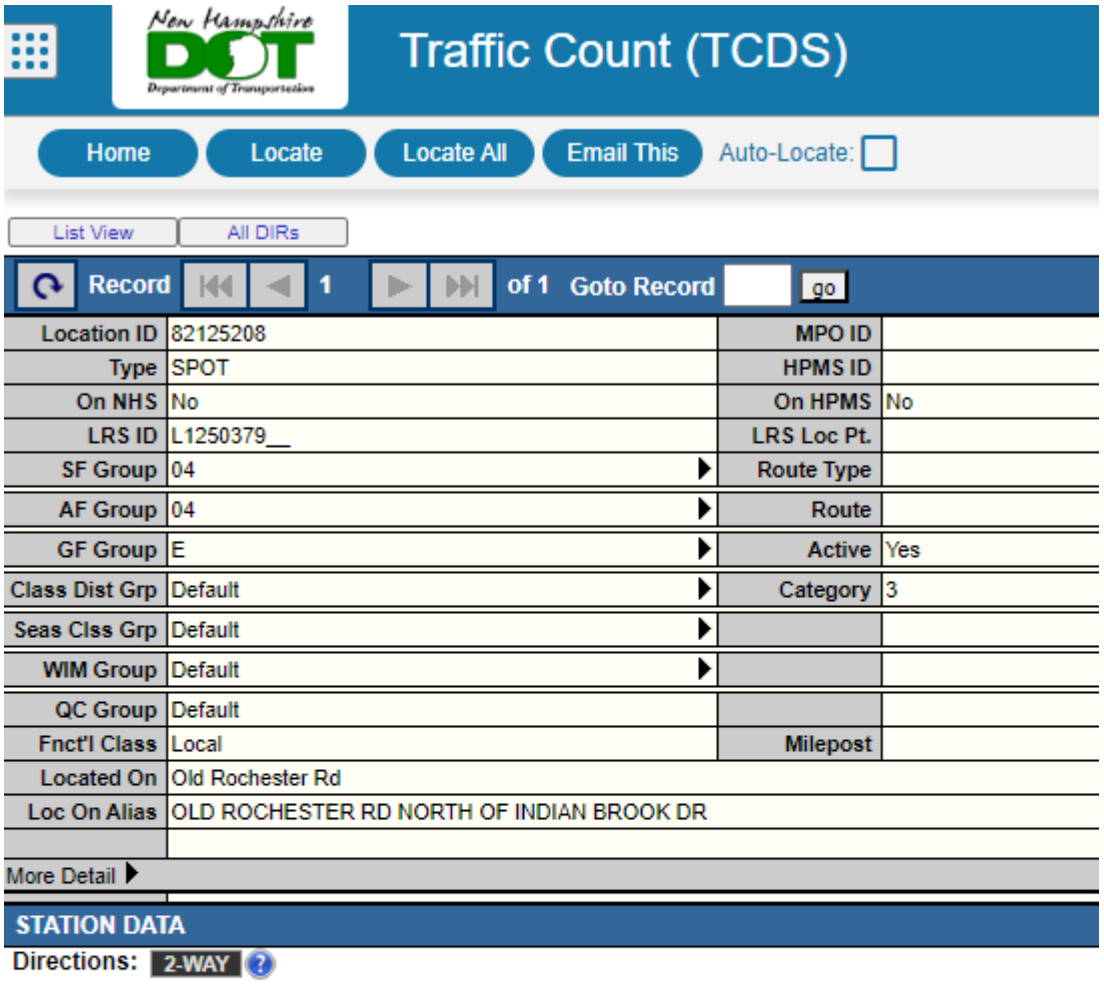
STATION DATA

Directions: 2-WAY | NB | SB

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2023	5,021	553	11	68	4,861 (97%)	160 (3%)	
2022	5,169[3]		10	58	4,844 (94%)	325 (6%)	Grown from 2021
2021	5,073[3]		10	58	4,612 (91%)	461 (9%)	Grown from 2020
2020	4,574	478	10	58	4,176 (91%)	398 (9%)	
2019	5,300[3]		11	63	4,853 (92%)	447 (8%)	Grown from 2018

Figure 8: History of AADT for Old Rochester Road north of site (analysis data)



New Hampshire DOT Department of Transportation

Traffic Count (TCDS)

Home | Locate | Locate All | Email This | Auto-Locate:

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	82125208	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID	L1250379__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Local	Milepost	
Located On	Old Rochester Rd		
Loc On Alias	OLD ROCHESTER RD NORTH OF INDIAN BROOK DR		

More Detail

STATION DATA

Directions: 2-WAY

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2023	4,417[3]		11		4,102 (93%)	315 (7%)	Grown from 2022
	2022	4,318[3]		11		4,045 (94%)	273 (6%)	Grown from 2021
	2021	4,237	475	11		3,853 (91%)	384 (9%)	
	2020	3,774[3]		11		3,433 (91%)	341 (9%)	Grown from 2019
	2019	4,471[3]		11		4,095 (92%)	376 (8%)	Grown from 2018

Figure 9: History of AADT for Old Rochester Road south of site

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH

Site Code: 20750001

8/13/2024	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	40			6	46				
12:15	4	38			3	34				
12:30	1	42			4	22				
12:45	1	36	7	156	2	33	15	135	22	291
1:00	2	41			4	32				
1:15	4	40			3	29				
1:30	2	46			3	40				
1:45	1	37	9	164	1	34	11	135	20	299
2:00	0	38			3	28				
2:15	2	38			1	37				
2:30	1	44			2	54				
2:45	2	36	5	156	0	55	6	174	11	330
3:00	3	36			0	50				
3:15	6	43			2	55				
3:30	7	41			0	64				
3:45	10	31	26	151	2	62	4	231	30	382
4:00	13	54			2	58				
4:15	11	45			1	65				
4:30	21	61			1	68				
4:45	25	46	70	206	3	62	7	253	77	459
5:00	31	60			3	71				
5:15	33	47			1	62				
5:30	38	44			6	39				
5:45	41	41	143	192	6	43	16	215	159	407
6:00	37	33			6	33				
6:15	61	38			11	48				
6:30	53	30			7	49				
6:45	61	15	212	116	11	34	35	164	247	280
7:00	62	26			13	27				
7:15	75	17			15	31				
7:30	79	17			12	30				
7:45	67	18	283	78	16	27	56	115	339	193
8:00	70	10			23	18				
8:15	78	11			17	25				
8:30	89	15			11	23				
8:45	57	11	294	47	15	14	66	80	360	127
9:00	53	18			20	20				
9:15	45	5			24	18				
9:30	57	9			16	15				
9:45	40	5	195	37	23	13	83	66	278	103
10:00	43	4			26	12				
10:15	49	1			22	7				
10:30	38	11			22	6				
10:45	36	1	166	17	23	5	93	30	259	47
11:00	57	5			25	4				
11:15	44	3			27	5				
11:30	46	2			20	5				
11:45	48	4	195	14	35	4	107	18	302	32
Total	1605	1334			499	1616			2104	2950
Percent	54.6%	45.4%			23.6%	76.4%			41.6%	58.4%

Figure 10: Tuesday August. 13, 2024 Old Rochester Road traffic count

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH

Site Code: 20750001

8/14/2024	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	41			4	43				
12:15	2	50			7	33				
12:30	1	36			4	37				
12:45	1	46	7	173	8	25	23	138	30	311
1:00	1	40			3	37				
1:15	1	47			3	27				
1:30	1	39			4	29				
1:45	1	36	4	162	2	38	12	131	16	293
2:00	3	47			1	44				
2:15	2	33			2	42				
2:30	5	39			2	39				
2:45	3	47	13	166	1	53	6	178	19	344
3:00	4	39			0	52				
3:15	5	40			2	46				
3:30	2	43			0	69				
3:45	11	43	22	165	0	66	2	233	24	398
4:00	13	61			2	69				
4:15	21	45			1	61				
4:30	24	41			2	63				
4:45	18	43	76	190	0	53	5	246	81	436
5:00	24	40			4	66				
5:15	30	41			3	60				
5:30	36	39			4	58				
5:45	35	41	125	161	3	44	14	228	139	389
6:00	47	29			2	52				
6:15	52	26			8	57				
6:30	62	27			9	36				
6:45	67	25	228	107	9	46	28	191	256	298
7:00	61	25			16	34				
7:15	74	17			21	34				
7:30	74	20			12	30				
7:45	77	15	286	77	28	31	77	129	363	206
8:00	72	12			18	25				
8:15	69	15			12	20				
8:30	76	17			12	17				
8:45	65	16	282	60	20	17	62	79	344	139
9:00	62	14			30	19				
9:15	49	7			24	15				
9:30	57	6			18	10				
9:45	54	6	222	33	22	12	94	56	316	89
10:00	43	7			21	9				
10:15	42	6			26	11				
10:30	47	7			29	5				
10:45	27	3	159	23	30	9	106	34	265	57
11:00	39	7			23	6				
11:15	48	4			28	5				
11:30	48	2			31	7				
11:45	33	2	168	15	34	7	116	25	284	40
Total	1592	1332			545	1668			2137	3000
Percent	54.4%	45.6%			24.6%	75.4%			41.6%	58.4%
Grand Total	3197	2666			1044	3284			4241	5950
Percent	54.5%	45.5%			24.1%	75.9%			41.6%	58.4%
ADT		ADT: 5,096		AADT: 5,096						

Figure 11: Wednesday August. 14, 2024 Old Rochester Road traffic count

Accurate Counts
978-664-2565

Site Code: 20750001

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH

8/12/2024	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,
12:00 AM	*	*	7	15	7	23	*	*	*	*	*	*	*	*	7	19
1:00	*	*	9	11	4	12	*	*	*	*	*	*	*	*	6	12
2:00	*	*	5	6	13	6	*	*	*	*	*	*	*	*	9	6
3:00	*	*	26	4	22	2	*	*	*	*	*	*	*	*	24	3
4:00	*	*	70	7	76	5	*	*	*	*	*	*	*	*	73	6
5:00	*	*	143	16	125	14	*	*	*	*	*	*	*	*	134	15
6:00	*	*	212	35	228	28	*	*	*	*	*	*	*	*	220	32
7:00	*	*	283	56	286	77	*	*	*	*	*	*	*	*	284	66
8:00	*	*	294	66	282	62	*	*	*	*	*	*	*	*	288	64
9:00	*	*	195	83	222	94	*	*	*	*	*	*	*	*	208	88
10:00	*	*	166	93	159	106	*	*	*	*	*	*	*	*	162	100
11:00	*	*	195	107	168	116	*	*	*	*	*	*	*	*	182	112
12:00 PM	*	*	156	135	173	138	*	*	*	*	*	*	*	*	164	136
1:00	*	*	164	135	162	131	*	*	*	*	*	*	*	*	163	133
2:00	*	*	156	174	166	178	*	*	*	*	*	*	*	*	161	176
3:00	*	*	151	231	165	233	*	*	*	*	*	*	*	*	158	232
4:00	*	*	206	253	190	246	*	*	*	*	*	*	*	*	198	250
5:00	*	*	192	215	161	228	*	*	*	*	*	*	*	*	176	222
6:00	*	*	116	164	107	191	*	*	*	*	*	*	*	*	112	178
7:00	*	*	78	115	77	129	*	*	*	*	*	*	*	*	78	122
8:00	*	*	47	80	60	79	*	*	*	*	*	*	*	*	54	80
9:00	*	*	37	66	33	56	*	*	*	*	*	*	*	*	35	61
10:00	*	*	17	30	23	34	*	*	*	*	*	*	*	*	20	32
11:00	*	*	14	18	15	25	*	*	*	*	*	*	*	*	14	22
Total	0	0	2939	2115	2924	2213	0	0	0	0	0	0	0	0	2930	2167
Day	0		5054		5137		0		0		0		0		5097	
AM Peak			8:00	11:00	7:00	11:00									8:00	11:00
Volume			294	107	286	116									288	112
PM Peak			4:00	4:00	4:00	4:00									4:00	4:00
Volume			206	253	190	246									198	250
Comb Total	0		5054		5137		0		0		0		0		5097	
ADT	ADT: 5,096		AADT: 5,096													

Figure 12: Old Rochester Road combined traffic count w/ AADT

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH
Direction: SB,

Site Code: 20750001

8/13/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	0	1	2	2	1	0	0	0	0	0	0	0	7
1:00	0	2	3	2	2	0	0	0	0	0	0	0	0	9
2:00	0	0	1	3	1	0	0	0	0	0	0	0	0	5
3:00	0	0	8	10	4	3	1	0	0	0	0	0	0	26
4:00	0	2	8	27	26	6	1	0	0	0	0	0	0	70
5:00	0	1	24	55	50	12	1	0	0	0	0	0	0	143
6:00	0	3	16	59	89	40	5	0	0	0	0	0	0	212
7:00	0	2	33	87	127	31	3	0	0	0	0	0	0	283
8:00	2	7	42	119	103	19	2	0	0	0	0	0	0	294
9:00	1	4	27	85	54	20	4	0	0	0	0	0	0	195
10:00	1	1	23	71	57	12	1	0	0	0	0	0	0	166
11:00	0	3	25	63	81	22	1	0	0	0	0	0	0	195
12:00 PM	2	5	27	49	59	13	1	0	0	0	0	0	0	156
1:00	1	5	22	54	58	23	1	0	0	0	0	0	0	164
2:00	0	2	13	69	50	17	5	0	0	0	0	0	0	156
3:00	1	3	19	55	50	20	2	1	0	0	0	0	0	151
4:00	2	1	29	65	80	23	6	0	0	0	0	0	0	206
5:00	0	6	21	69	66	24	5	1	0	0	0	0	0	192
6:00	1	3	23	50	29	10	0	0	0	0	0	0	0	116
7:00	2	1	15	34	19	6	1	0	0	0	0	0	0	78
8:00	1	0	12	18	11	4	1	0	0	0	0	0	0	47
9:00	0	0	7	20	7	3	0	0	0	0	0	0	0	37
10:00	0	0	7	5	4	1	0	0	0	0	0	0	0	17
11:00	0	1	3	7	3	0	0	0	0	0	0	0	0	14
Total	15	52	409	1078	1032	310	41	2	0	0	0	0	0	2939

Percentile	15th	50th	85th	95th
Speed	24	29	34	36
Mean Speed (Average)	30.1			
10 MPH Pace Speed	26-35			
Number in Pace	2110			
Percent in Pace	72.0%			
Number > 30 MPH	1385			
Percent > 30 MPH	47.1%			

Figure 13: Tuesday August. 13, 2024 Old Rochester Road SB speeds

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH
Direction: NB,

Site Code: 20750001

8/13/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	0	0	0	10	3	1	0	0	0	0	0	0	15
1:00	0	0	0	1	3	6	1	0	0	0	0	0	0	11
2:00	0	0	1	2	1	2	0	0	0	0	0	0	0	6
3:00	0	0	0	0	2	1	1	0	0	0	0	0	0	4
4:00	0	0	0	2	1	2	1	0	0	1	0	0	0	7
5:00	0	0	0	3	4	5	4	0	0	0	0	0	0	16
6:00	0	0	0	5	11	12	5	2	0	0	0	0	0	35
7:00	0	0	0	7	18	19	11	1	0	0	0	0	0	56
8:00	0	0	3	5	21	25	11	1	0	0	0	0	0	66
9:00	2	2	2	14	31	24	8	0	0	0	0	0	0	83
10:00	0	0	5	17	33	30	6	2	0	0	0	0	0	93
11:00	1	0	1	12	33	47	13	0	0	0	0	0	0	107
12:00 PM	0	0	3	10	52	58	12	0	0	0	0	0	0	135
1:00	0	0	1	21	62	38	11	1	1	0	0	0	0	135
2:00	3	1	6	16	60	57	29	2	0	0	0	0	0	174
3:00	0	0	3	27	88	85	25	2	1	0	0	0	0	231
4:00	0	0	6	17	101	90	32	5	2	0	0	0	0	253
5:00	0	2	2	25	74	81	30	1	0	0	0	0	0	215
6:00	1	2	2	16	68	63	11	1	0	0	0	0	0	164
7:00	0	0	1	14	45	43	8	3	1	0	0	0	0	115
8:00	1	0	1	22	26	26	4	0	0	0	0	0	0	80
9:00	1	0	0	7	33	15	7	3	0	0	0	0	0	66
10:00	0	0	2	1	11	13	2	1	0	0	0	0	0	30
11:00	0	0	0	2	11	4	1	0	0	0	0	0	0	18
Total	10	7	39	246	799	749	234	25	5	1	0	0	0	2115

	Percentile	15th	50th	85th	95th
	Speed	29	34	39	41
Mean Speed (Average)		35.2			
10 MPH Pace Speed		31-40			
Number in Pace		1548			
Percent in Pace		73.0%			
Number > 30 MPH		1813			
Percent > 30 MPH		85.7%			

Figure 14: Tuesday August. 13, 2024 Old Rochester Road NB speeds

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH
Direction: SB,

Site Code: 20750001

8/14/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	2	2	1	1	1	0	0	0	0	0	0	0	7
1:00	0	0	1	2	1	0	0	0	0	0	0	0	0	4
2:00	0	0	2	4	6	1	0	0	0	0	0	0	0	13
3:00	0	0	4	10	7	1	0	0	0	0	0	0	0	22
4:00	0	1	13	29	18	14	0	1	0	0	0	0	0	76
5:00	0	0	19	45	45	13	2	0	1	0	0	0	0	125
6:00	0	3	25	84	78	32	6	0	0	0	0	0	0	228
7:00	1	2	35	97	122	26	3	0	0	0	0	0	0	286
8:00	1	4	25	90	114	46	2	0	0	0	0	0	0	282
9:00	1	1	36	72	80	30	2	0	0	0	0	0	0	222
10:00	0	5	25	61	55	8	4	1	0	0	0	0	0	159
11:00	1	1	27	57	58	19	5	0	0	0	0	0	0	168
12:00 PM	0	4	23	64	61	20	1	0	0	0	0	0	0	173
1:00	1	8	19	52	61	19	2	0	0	0	0	0	0	162
2:00	0	5	30	59	56	13	3	0	0	0	0	0	0	166
3:00	0	4	16	54	69	21	1	0	0	0	0	0	0	165
4:00	0	1	23	68	71	23	4	0	0	0	0	0	0	190
5:00	1	5	29	45	63	17	0	0	1	0	0	0	0	161
6:00	1	2	13	35	38	16	2	0	0	0	0	0	0	107
7:00	0	0	14	30	27	6	0	0	0	0	0	0	0	77
8:00	0	1	10	23	22	3	1	0	0	0	0	0	0	60
9:00	0	2	6	15	6	3	1	0	0	0	0	0	0	33
10:00	0	2	7	5	6	3	0	0	0	0	0	0	0	23
11:00	0	1	3	5	3	2	1	0	0	0	0	0	0	15
Total	7	54	407	1007	1068	337	40	2	2	0	0	0	0	2924
			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	37							
			Mean Speed (Average)	30.3										
			10 MPH Pace Speed	26-35										
			Number in Pace	2056										
			Percent in Pace	71.0%										
			Number > 30 MPH	1449										
			Percent > 30 MPH	49.6%										
Grand Total	22	106	816	2085	2100	647	81	4	2	0	0	0	0	5863
Stats			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	36							
			Mean Speed (Average)	30.2										
			10 MPH Pace Speed	26-35										
			Number in Pace	4177										
			Percent in Pace	71.0%										
			Number > 30 MPH	2834										
			Percent > 30 MPH	48.3%										

Figure 15: Wednesday August. 14, 2024 Old Rochester Road SB speeds

Accurate Counts
978-664-2565

Location : Old Rochester Road South of
Location : #52 Old Rochester Road
City/State: Dover, NH
Direction: NB,

Site Code: 20750001

8/14/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	0	0	3	7	11	1	0	0	0	0	0	0	23
1:00	0	0	0	1	6	1	3	1	0	0	0	0	0	12
2:00	0	0	1	1	0	3	1	0	0	0	0	0	0	6
3:00	0	0	0	0	0	1	1	0	0	0	0	0	0	2
4:00	0	0	0	0	3	2	0	0	0	0	0	0	0	5
5:00	0	0	0	3	4	5	2	0	0	0	0	0	0	14
6:00	0	0	1	1	9	6	9	1	1	0	0	0	0	28
7:00	0	0	5	6	23	30	12	0	1	0	0	0	0	77
8:00	1	0	1	9	19	24	8	0	0	0	0	0	0	62
9:00	0	0	0	17	30	38	7	2	0	0	0	0	0	94
10:00	0	1	2	17	37	37	10	2	0	0	0	0	0	106
11:00	2	0	2	14	43	40	11	3	0	0	0	1	0	116
12:00 PM	0	0	2	17	52	45	20	1	0	0	1	0	0	138
1:00	2	0	1	15	45	46	16	5	1	0	0	0	0	131
2:00	2	2	3	21	76	61	8	4	0	1	0	0	0	178
3:00	2	1	1	30	91	86	19	2	1	0	0	0	0	233
4:00	3	0	1	28	79	97	30	5	2	1	0	0	0	246
5:00	0	1	5	20	80	93	24	3	0	1	1	0	0	228
6:00	1	0	4	17	82	67	16	4	0	0	0	0	0	191
7:00	1	0	3	16	51	44	14	0	0	0	0	0	0	129
8:00	1	0	1	7	30	37	2	0	0	1	0	0	0	79
9:00	0	0	6	9	12	23	5	1	0	0	0	0	0	56
10:00	0	0	0	7	16	10	1	0	0	0	0	0	0	34
11:00	1	0	0	2	8	9	3	1	1	0	0	0	0	25
Total	17	5	39	261	803	816	223	35	7	4	2	1	0	2213
			Percentile	15th	50th	85th	95th							
			Speed	29	34	38	41							
			Mean Speed (Average)	35.3										
			10 MPH Pace Speed	31-40										
			Number in Pace	1576										
			Percent in Pace	73.0%										
			Number > 30 MPH	1891										
			Percent > 30 MPH	85.4%										
Grand Total	27	12	78	507	1602	1565	457	60	12	5	2	1	0	4328
Stats			Percentile	15th	50th	85th	95th							
			Speed	29	34	39	41							
			Mean Speed (Average)	35.2										
			10 MPH Pace Speed	31-40										
			Number in Pace	3150										
			Percent in Pace	73.0%										
			Number > 30 MPH	3704										
			Percent > 30 MPH	85.6%										

Figure 16: Wednesday August. 14, 2024 Old Rochester Road NB speeds

Appendix B

Data Used in Left-Turn Bay Warrants Analysis

Year	Advancing Volume	Advancing Volume Peaked (TR)	Left Turns (L)	Right Turns (R)	Total Advancing Volume (L+TR+R)	% of Left Turn
2024	74	73.5			73.5	
2025	74	74.2			74.2	
2026	75	75.0	3.7	15.3	94.0	3.97
2027	76	75.7	3.7	15.3	94.7	3.94
2028	76	76.5	3.7	15.3	95.5	3.91
2029	77	77.2	3.7	15.3	96.2	3.88
2030	78	78.0	3.7	15.3	97.0	3.85
2031	79	78.8	3.7	15.3	97.8	3.82
2032	80	79.6	3.7	15.3	98.6	3.79
2033	80	80.4	3.7	15.3	99.4	3.76
2034	81	81.2	3.7	15.3	100.2	3.73
2035	82	82.0	3.7	15.3	101.0	3.70
2036	83	82.8	3.7	15.3	101.8	3.67
Year	Opposing Volume	Opposing Volume Peaked (TR)	Right Turns (R)		Total Opposing Volume (TR+R)	
2024	301	300.5			300.5	
2025	304	303.5			303.5	
2026	307	306.5	15.3		321.8	
2027	310	309.6	15.3		324.9	
2028	313	312.7	15.3		328.0	
2029	316	315.8	15.3		331.1	
2030	319	319.0	15.3		334.3	
2031	322	322.2	15.3		337.4	
2032	325	325.4	15.3		340.7	
2033	329	328.7	15.3		343.9	
2034	332	331.9	15.3		347.2	
2035	335	335.3	15.3		350.5	
2036	339	338.6	15.3		353.9	
Seasonal Peaking Factor (August)		1.00				

Figure 17: Data used for Weekday AM peak hour left-turn warrant analyses

Year	Advancing Volume	Advancing Volume Peaked (TR)	Left Turns (L)	Right Turns (R)	Total Advancing Volume (L+TR+R)	% of Left Turn
2024	256	256.0				
2025	259	258.6				
2026	261	261.1	16.8	13.2	291.1	5.78
2027	264	263.8	16.8	13.2	293.8	5.73
2028	266	266.4	16.8	13.2	296.4	5.68
2029	269	269.1	16.8	13.2	299.1	5.63
2030	272	271.7	16.8	13.2	301.7	5.58
2031	274	274.5	16.8	13.2	304.5	5.53
2032	277	277.2	16.8	13.2	307.2	5.48
2033	280	280.0	16.8	13.2	310.0	5.43
2034	283	282.8	16.8	13.2	312.8	5.38
2035	286	285.6	16.8	13.2	315.6	5.33
2036	288	288.5	16.8	13.2	318.5	5.28
Year	Opposing Volume	Opposing Volume Peaked (TR)	Right Turns (R)		Total Opposing Volume (TR+R)	
2024	201	200.5	13.2		213.7	
2025	203	202.5	13.2		215.7	
2026	205	204.5	13.2		217.7	
2027	207	206.6	13.2		219.8	
2028	209	208.6	13.2		221.8	
2029	211	210.7	13.2		223.9	
2030	213	212.8	13.2		226.0	
2031	215	215.0	13.2		228.1	
2032	217	217.1	13.2		230.3	
2033	219	219.3	13.2		232.5	
2034	221	221.5	13.2		234.7	
2035	224	223.7	13.2		236.9	
2036	226	225.9	13.2		239.1	
Seasonal Peaking Factor (August)		1.00				

Figure 18: Data used for Weekday PM peak hour left-turn warrant analyses

Left-Turn Bay Warrants Analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

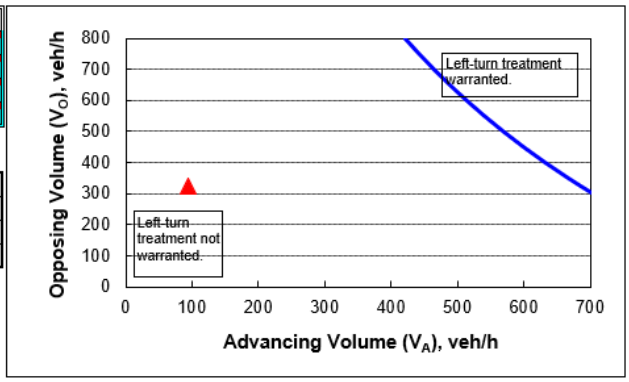
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	94
Opposing volume (V_O), veh/h:	322

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	687
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 19: 2026 Weekday AM peak hr NCHRP 457 left-turn bay warrant analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

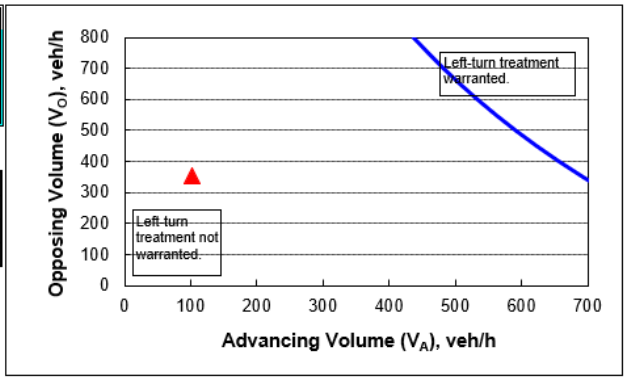
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	102
Opposing volume (V_O), veh/h:	354

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	689
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 20: 2036 Weekday AM peak hr NCHRP 457 left-turn bay warrant analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

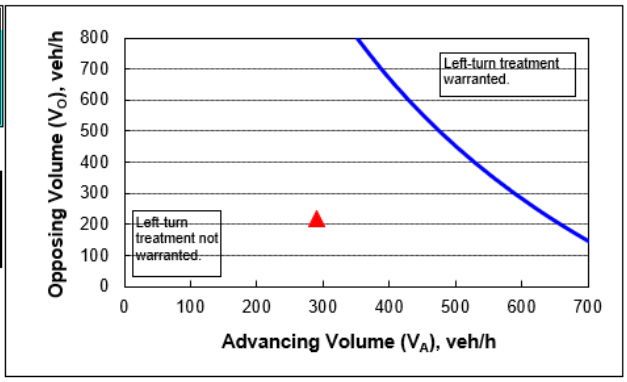
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	6%
Advancing volume (V_A), veh/h:	291
Opposing volume (V_O), veh/h:	218

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	645
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 21: 2026 Weekday PM peak hr NCHRP 457 left-turn bay warrant analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

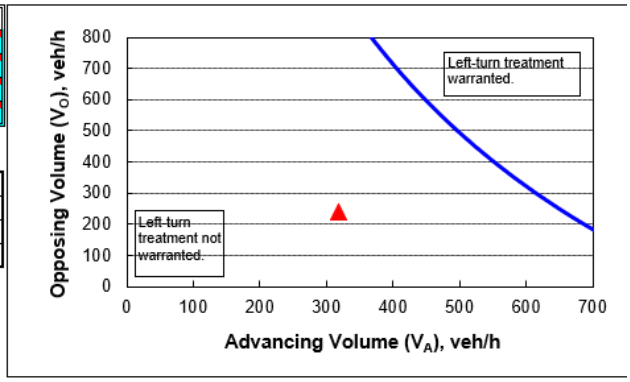
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	318
Opposing volume (V_O), veh/h:	239

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	657
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 22: 2036 Weekday PM peak hr NCHRP 457 left-turn bay warrant analysis

Data Used in Right-Turn Bay Warrants Analysis

Year	Advancing Volume	Advancing Volume Peaked (TR)	Left Turns (L)	Right Turns (R)	Total Advancing Volume (L+TR+R)
2024	301	300.5			300.5
2025	304	303.5			303.5
2026	307	306.5	3.7	15.3	325.5
2027	310	309.6	3.7	15.3	328.6
2028	313	312.7	3.7	15.3	331.7
2029	316	315.8	3.7	15.3	334.8
2030	319	319.0	3.7	15.3	338.0
2031	322	322.2	3.7	15.3	341.2
2032	325	325.4	3.7	15.3	344.4
2033	329	328.7	3.7	15.3	347.7
2034	332	331.9	3.7	15.3	350.9
2035	335	335.3	3.7	15.3	354.3
2036	339	338.6	3.7	15.3	357.6
Seasonal Peaking Factor (August)		1.00			

Figure 23: Data used for Weekday AM peak hour right-turn warrant analyses

Year	Advancing Volume	Advancing Volume Peaked (TR)	Left Turns (L)	Right Turns (R)	Total Advancing Volume (L+TR+R)
2024	201	200.5			200.5
2025	203	202.5			202.5
2026	205	204.5	16.8	13.2	234.5
2027	207	206.6	16.8	13.2	236.6
2028	209	208.6	16.8	13.2	238.6
2029	211	210.7	16.8	13.2	240.7
2030	213	212.8	16.8	13.2	242.8
2031	215	215.0	16.8	13.2	245.0
2032	217	217.1	16.8	13.2	247.1
2033	219	219.3	16.8	13.2	249.3
2034	221	221.5	16.8	13.2	251.5
2035	224	223.7	16.8	13.2	253.7
2036	226	225.9	16.8	13.2	255.9
Seasonal Peaking Factor (August)		1.00			

Figure 24: Data used for Weekday PM peak hour right-turn warrant analyses

Right-Turn Bay Warrants Analysis

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	326
Right-turn volume, veh/h:	15

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	4362
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

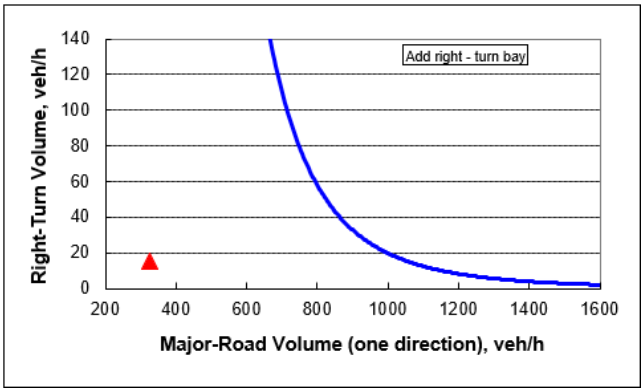


Figure 25: 2026 Weekday AM peak hr NCHRP 457 right-turn bay warrant analysis

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	358
Right-turn volume, veh/h:	15

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	2773
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

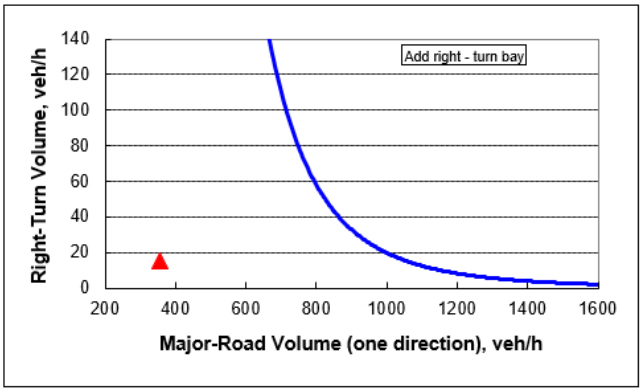


Figure 26: 2036 Weekday AM peak hr NCHRP 457 right-turn bay warrant analysis

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	235
Right-turn volume, veh/h:	13

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	21180
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

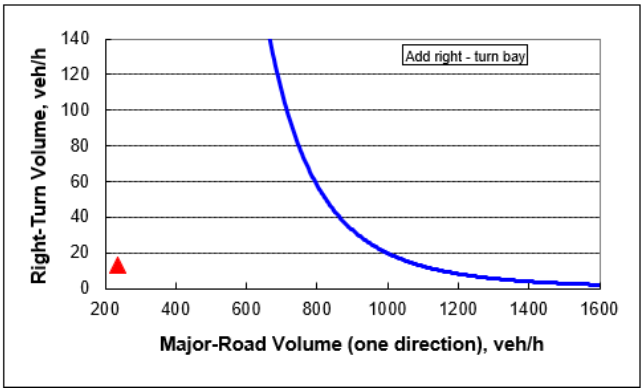


Figure 27: 2026 Weekday PM peak hr NCHRP 457 right-turn bay warrant analysis

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	256
Right-turn volume, veh/h:	13

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	13905
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

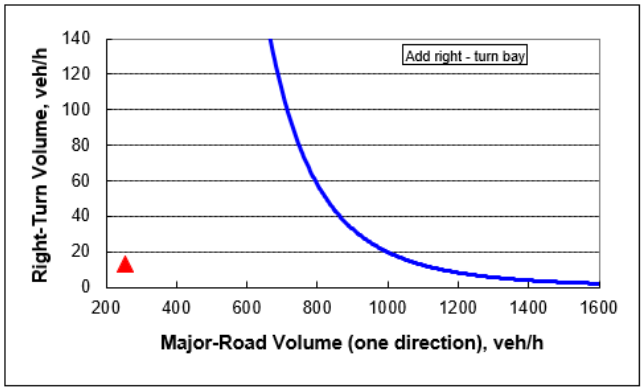


Figure 28: 2036 Weekday PM peak hr NCHRP 457 right-turn bay warrant analysis

Appendix C

Miscellaneous

Group 4 Averages:		Year 2019 Monthly Data Urban Highways	
		Adjustment to	
Month	ADT	Average	Peak
January	11,431	1.12	1.23
February	11,848	1.08	1.18
March	12,141	1.06	1.15
April	12,860	1.00	1.09
May	13,551	0.95	1.03
June	13,785	0.93	1.02
July	13,942	0.92	1.01
August	14,016	0.92	1.00
September	13,379	0.96	1.05
October	13,339	0.96	1.05
November	12,265	1.05	1.14
December	11,496	1.12	1.22
Average ADT:	12,838		
Peak ADT:	14,016		

Table 17: Derivation of the seasonal peaking factor

Table 3-1. Stopping Sight Distance on Level Roadways

U.S. Customary					Metric				
Design Speed (mph)	Brake Reaction Distance (ft)	Braking Distance on Level (ft)	Stopping Sight Distance		Design Speed (km/h)	Brake Reaction Distance (m)	Braking Distance on Level (m)	Stopping Sight Distance	
			Calculated (ft)	Design (ft)				Calculated (m)	Design (m)
15	55.1	21.6	76.7	80	20	13.9	4.6	18.5	20
20	73.5	38.4	111.9	115	30	20.9	10.3	31.2	35
25	91.9	60.0	151.9	155	40	27.8	18.4	46.2	50
30	110.3	86.4	196.7	200	50	34.8	28.7	63.5	65
35	128.6	117.6	246.2	250	60	41.7	41.3	83.0	85
40	147.0	153.6	300.6	305	70	48.7	56.2	104.9	105
45	165.4	194.4	359.8	360	80	55.6	73.4	129.0	130
50	183.8	240.0	423.8	425	90	62.6	92.9	155.5	160
55	202.1	290.3	492.4	495	100	69.5	114.7	184.2	185
60	220.5	345.5	566.0	570	110	76.5	138.8	215.3	220
65	238.9	405.5	644.4	645	120	83.4	165.2	248.6	250
70	257.3	470.3	727.6	730	130	90.4	193.8	284.2	285
75	275.6	539.9	815.5	820	140	97.3	224.8	322.1	325
80	294.0	614.3	908.3	910					
85	313.5	693.5	1007.0	1010					

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 11.2 ft/s² [3.4 m/s²] used to determine calculated sight distance.

Figure 29: Derivation of stopping sight distance requirements

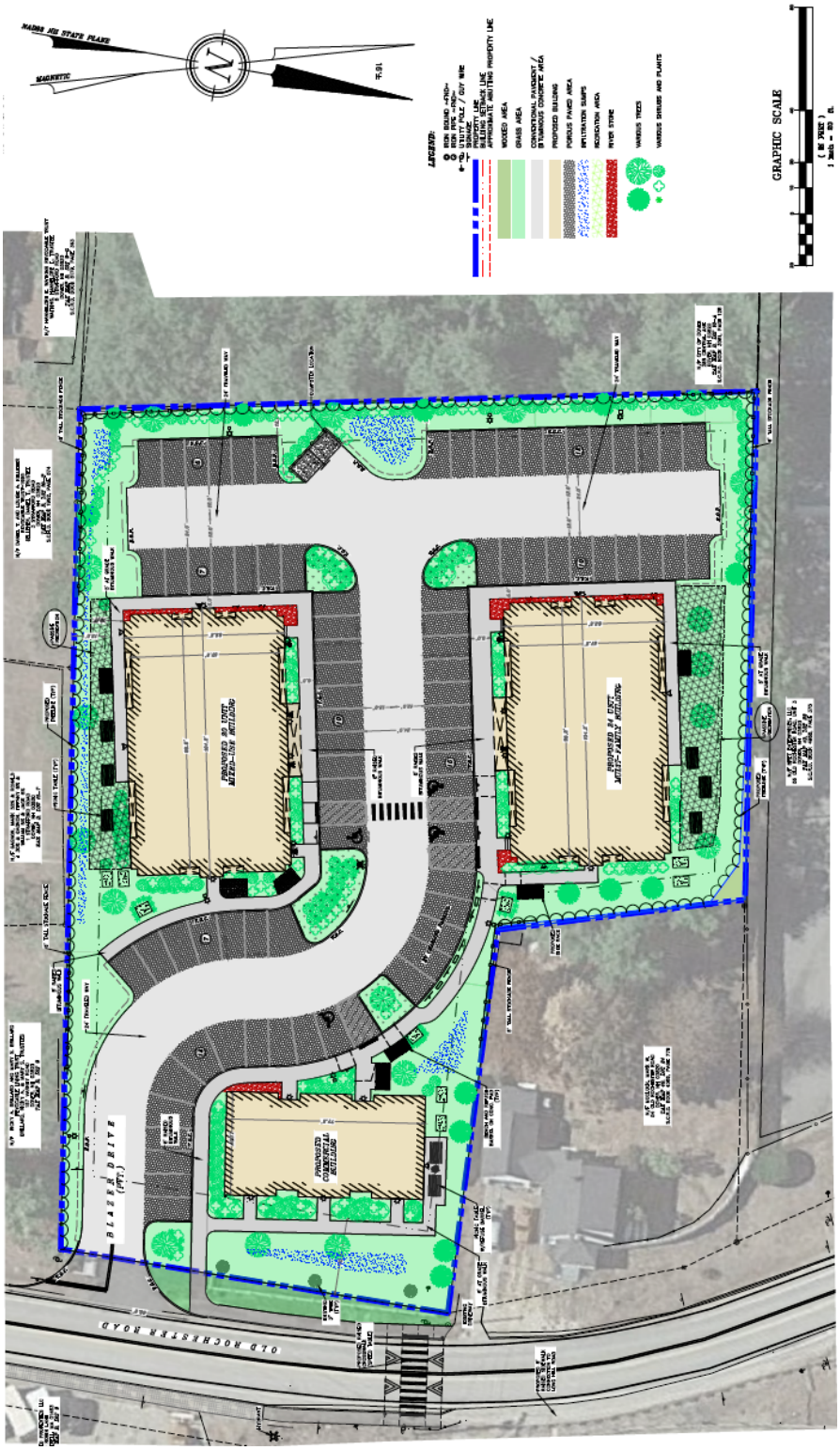


Figure 30: Color Rendering of the Site Plan

Appendix D

Trip Generation Derivation

Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

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Figure 31: ITE Trip Generation, 11th Edition Existing Land Use

Land Use: 712
Small Office Building

Description

A small office building is the same as a general office building (Land Use 710) but with less than or equal to 10,000 square feet of gross floor area. The building typically houses a single tenant. It is a location where affairs of a business, commercial or industrial organization, or professional person or firm are conducted. General office building (Land Use 710) is a related use.

Additional Data

Attorney office, mortgage company, financial advisor, insurance agency, home health care provider, and real estate company are examples of tenants included in the small office building database. The diversity of employer types results in a wide range in employee density in the database. Densities range from a high of 1,300 to a low of 240 square feet per employee with an overall average of nearly 600 square feet per employee (a value much larger than the average observed in a general office building study sites).

In addition to the significant difference in employee density, small office buildings tend to be dominated by a single tenant (or very few) that are more service-oriented than a typical general office building. The result is more frequent and regular visitors and higher trip generation rates.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s and the 2010s in Alberta (CAN), California, Texas, and Wisconsin.

Source Numbers

418, 890, 891, 959, 976

Figure 32: ITE Trip Generation, 11th Edition Existing Land Use

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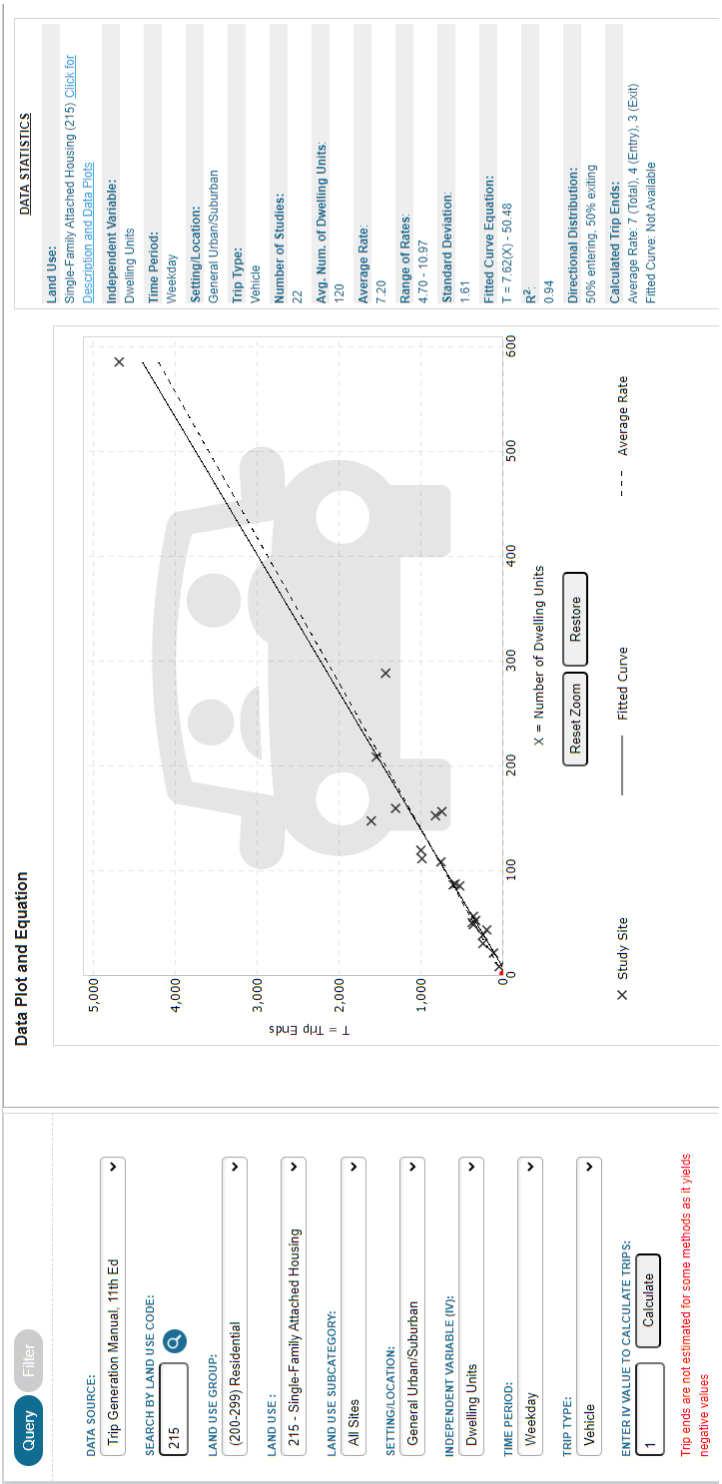


Figure 33: ITE Trip Generation, 11th Edition Ex Residential Weekday Total

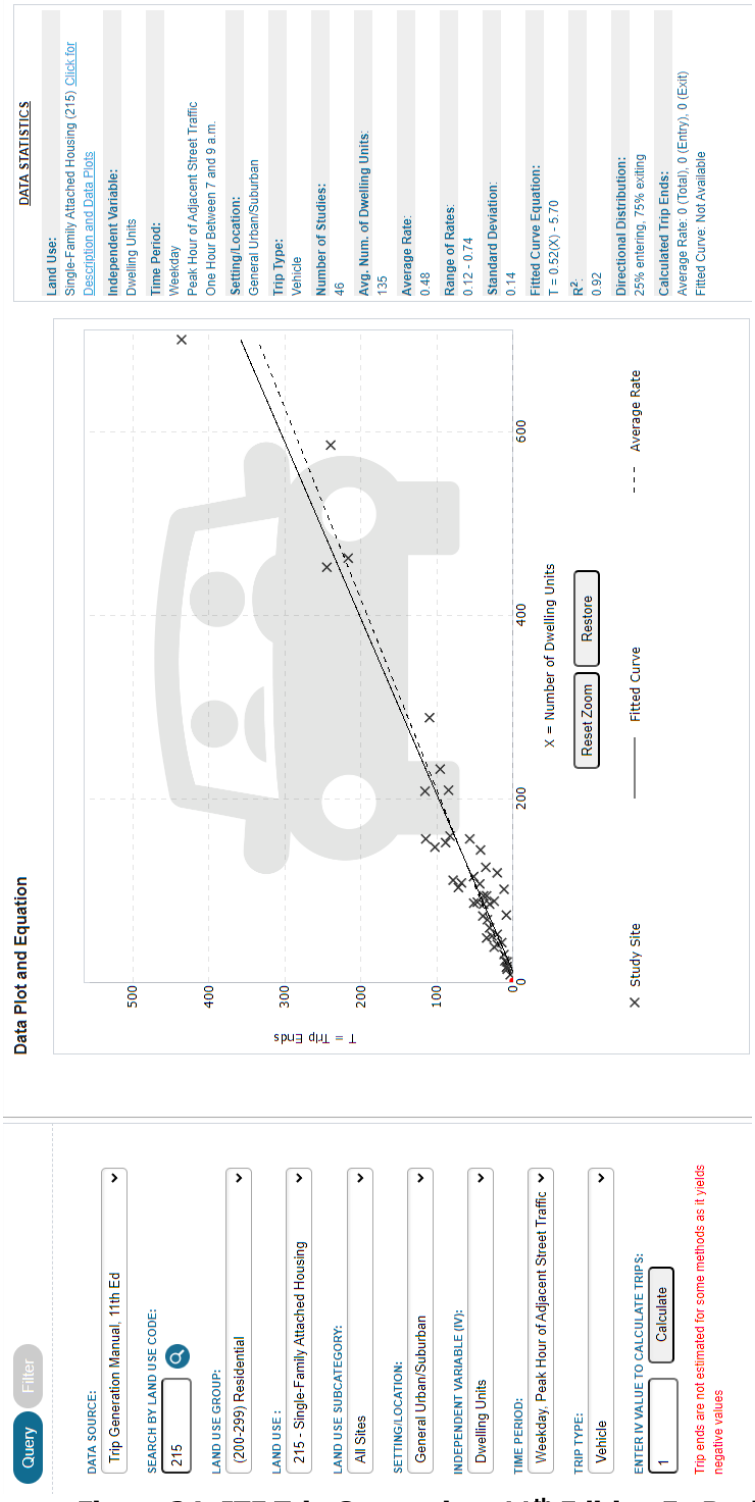


Figure 34: ITE Trip Generation, 11th Edition Ex Residential Weekday AM Peak hour

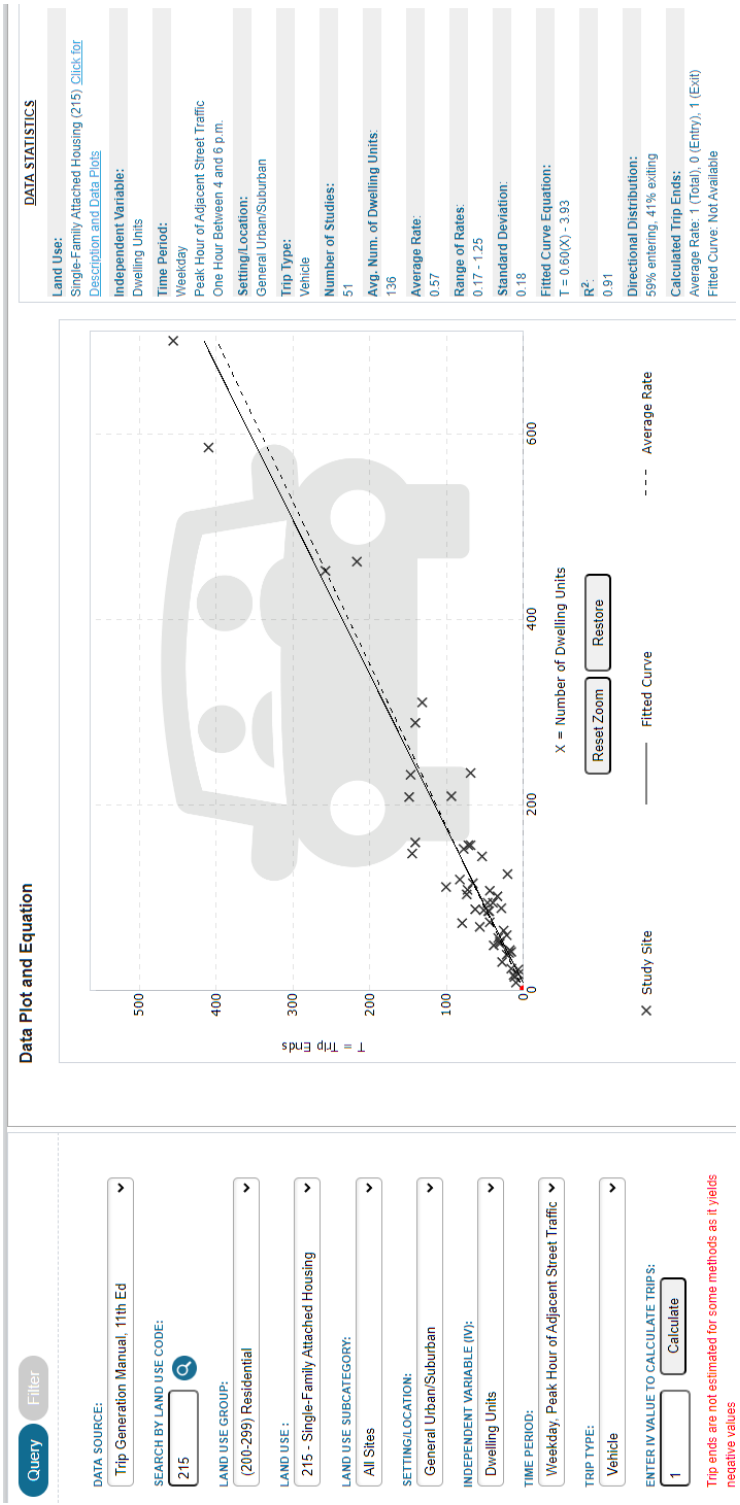


Figure 35: ITE Trip Generation, 11th Edition Ex Residential Weekday PM Peak Hour

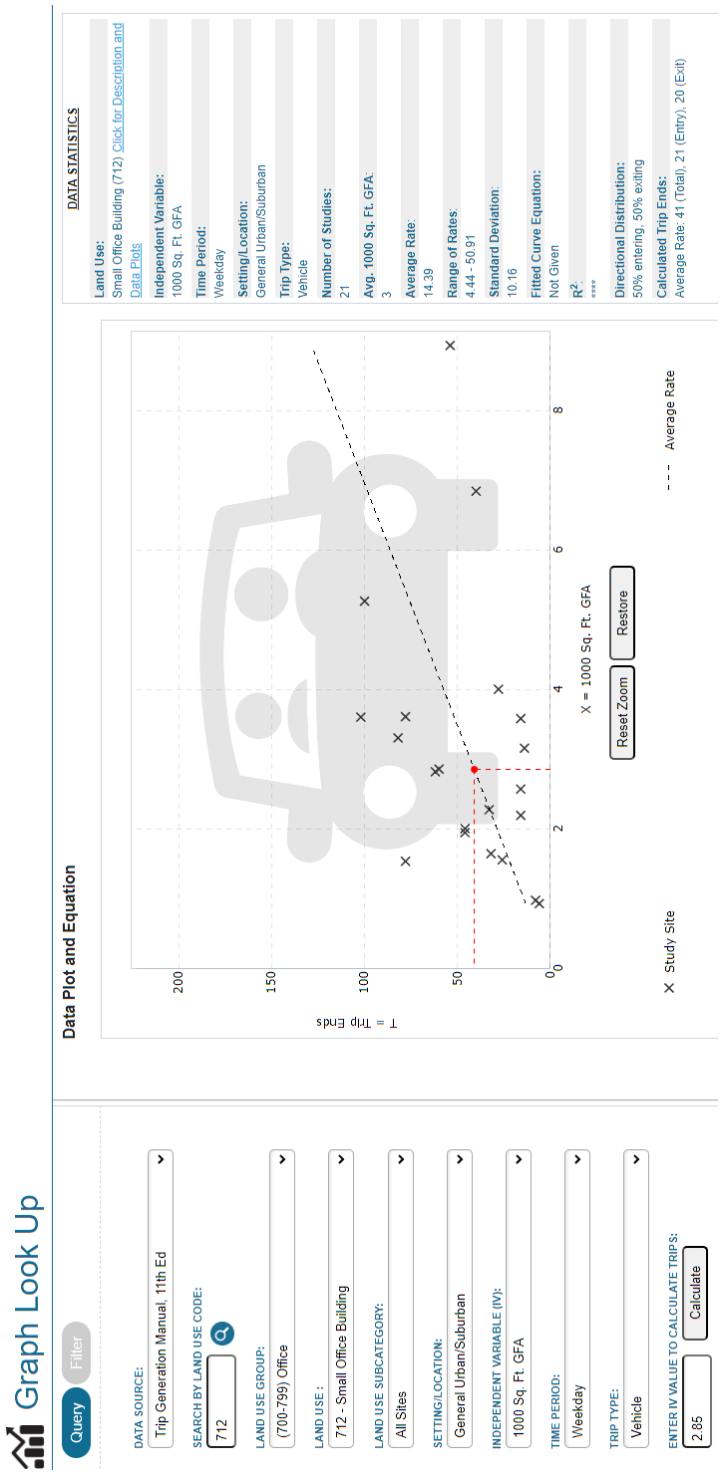


Figure 36: ITE Trip Generation, 11th Edition Ex Office Weekday Total

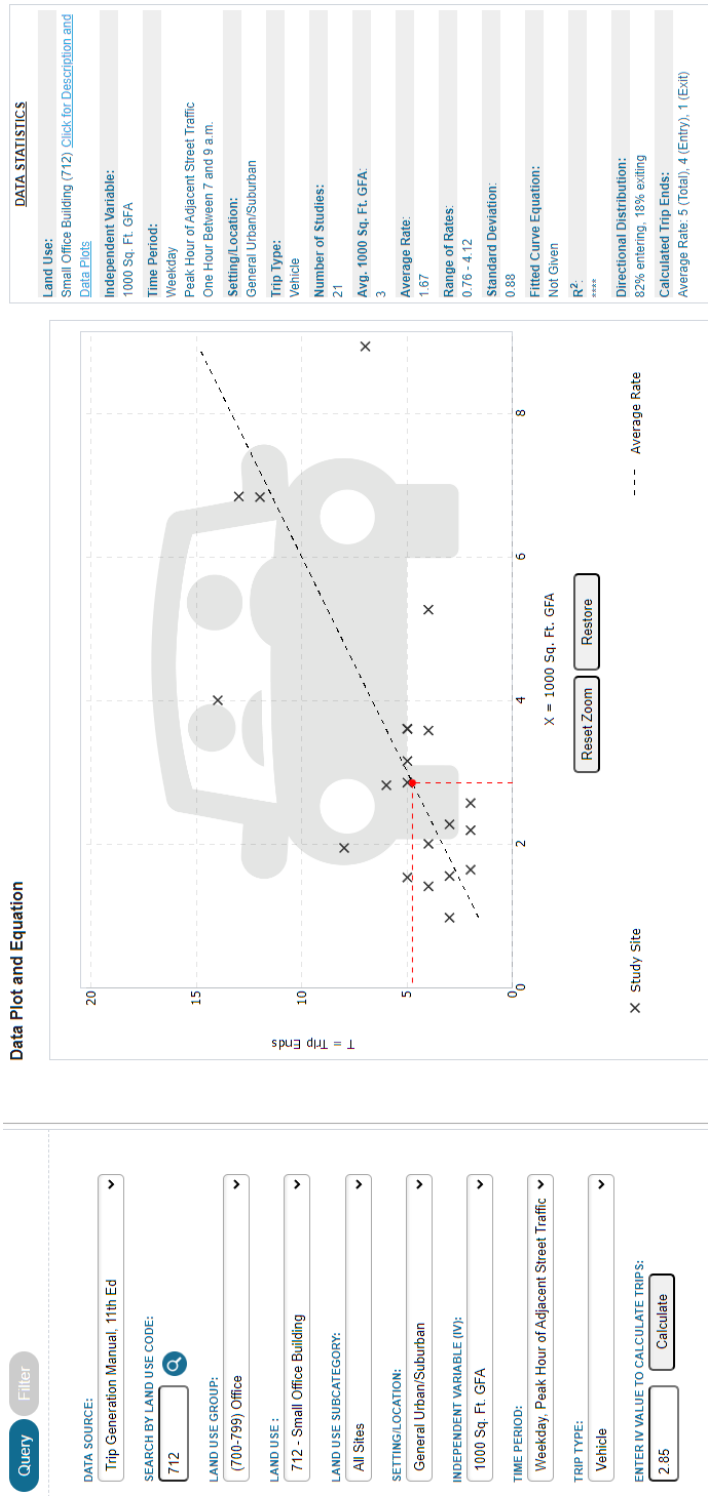


Figure 37: ITE Trip Generation, 11th Edition Ex Office Weekday AM Peak Hour

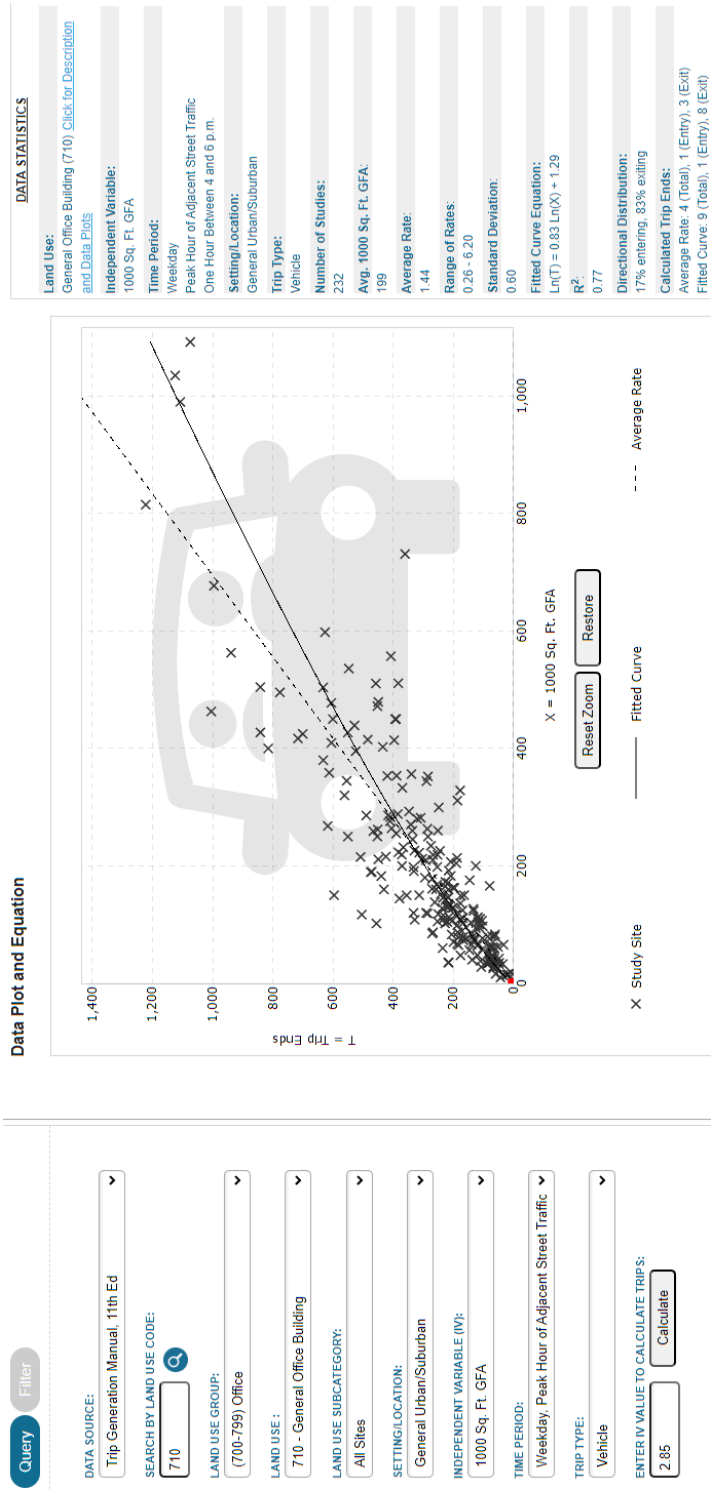


Figure 38: ITE Trip Generation, 11th Edition Ex Office Weekday PM Peak Hour

Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
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Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

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For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

Figure 39: ITE Trip Generation, 11th Edition Proposed Land Use

Land Use: 712
Small Office Building

Description

A small office building is the same as a general office building (Land Use 710) but with less than or equal to 10,000 square feet of gross floor area. The building typically houses a single tenant. It is a location where affairs of a business, commercial or industrial organization, or professional person or firm are conducted. General office building (Land Use 710) is a related use.

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The sites were surveyed in the 1980s and the 2010s in Alberta (CAN), California, Texas, and Wisconsin.

Source Numbers

418, 890, 891, 959, 976

Figure 40: ITE Trip Generation, 11th Edition Proposed Land Use

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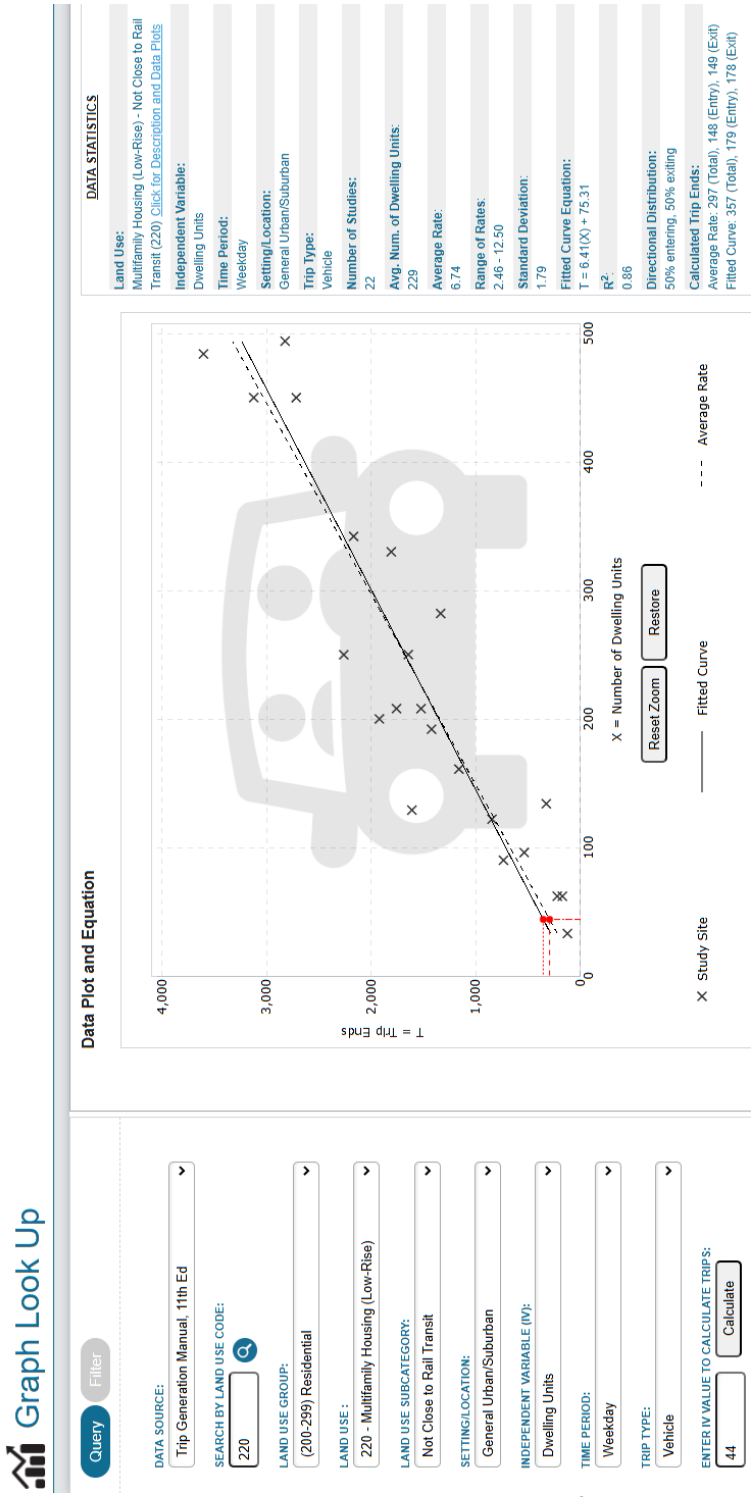


Figure 41: ITE Trip Generation, 11th Edition Prop Residential Weekday Total

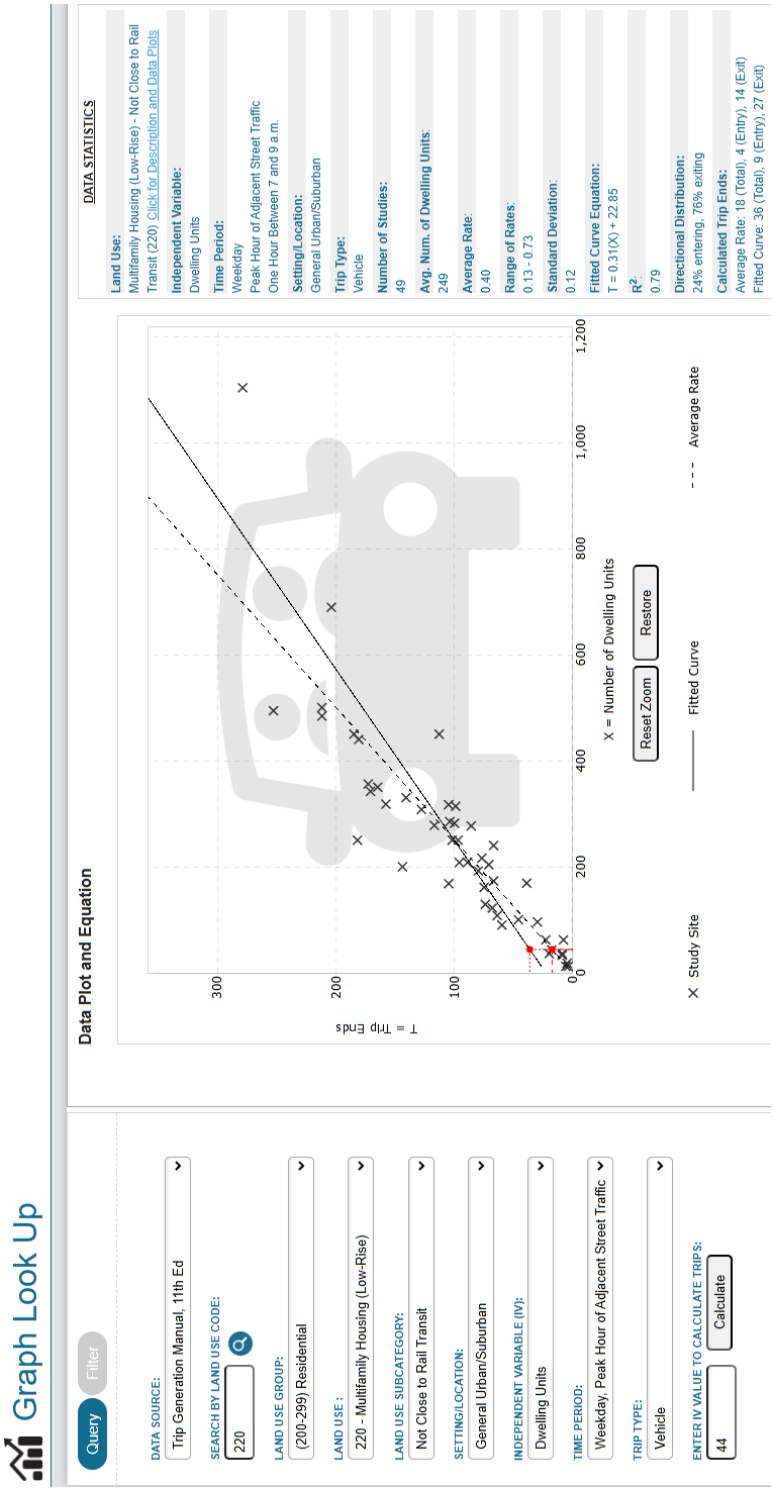


Figure 42: ITE Trip Generation, 11th Edition Prop Residential Weekday AM Peak hour

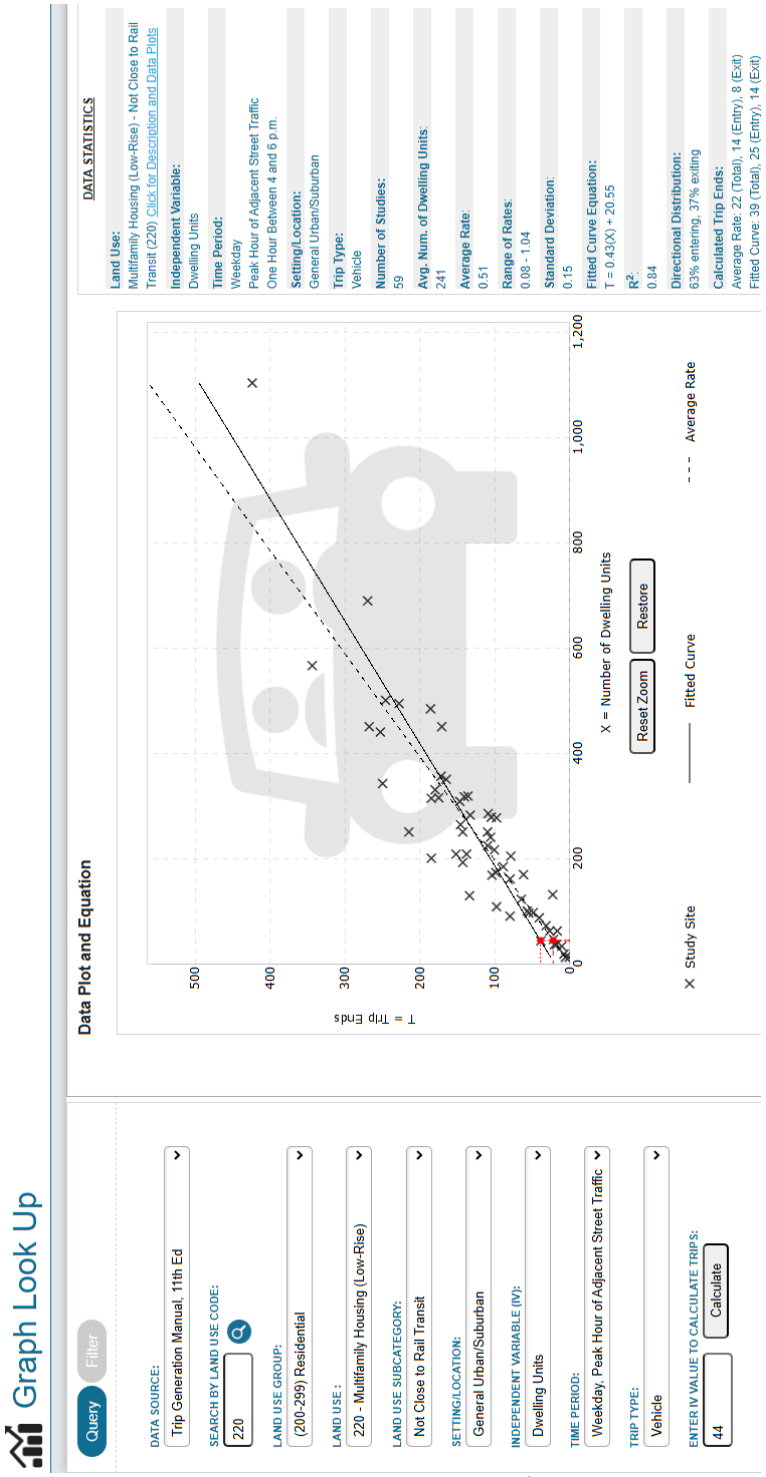


Figure 43: ITE Trip Generation, 11th Edition Prop Residential Weekday PM Peak Hour

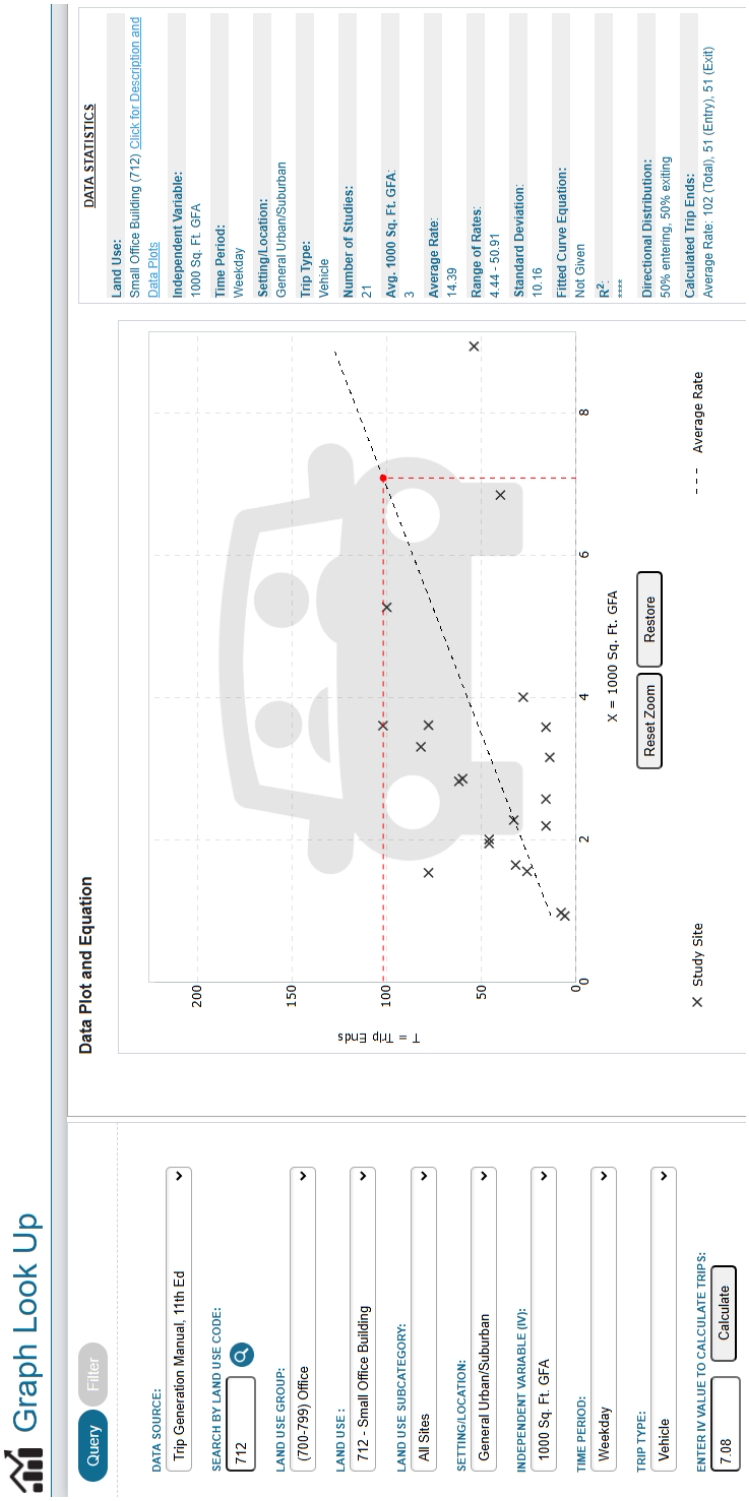


Figure 44: ITE Trip Generation, 11th Edition Prop Office Weekday Total

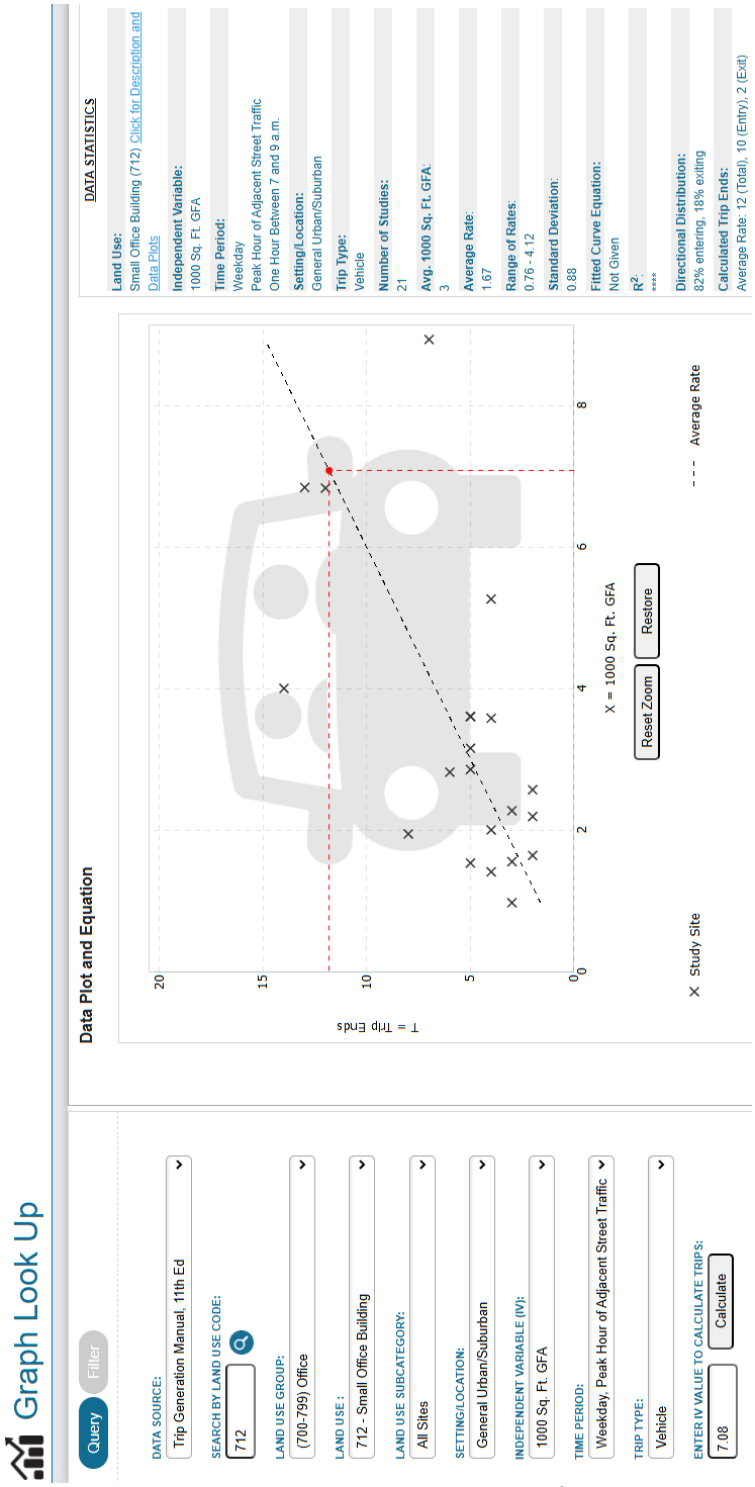


Figure 45: ITE Trip Generation, 11th Edition Prop Office Weekday AM Peak Hour

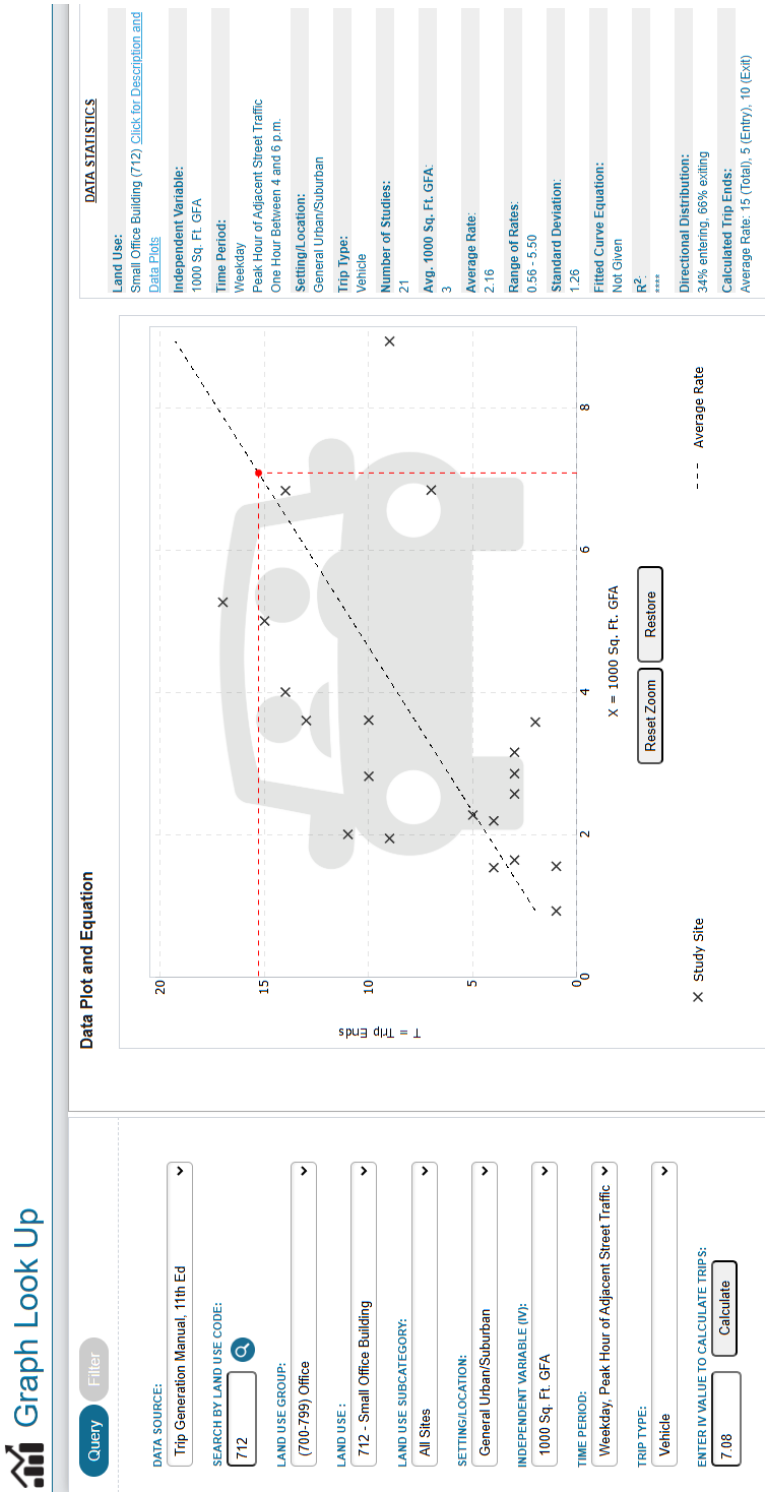


Figure 46: ITE Trip Generation, 11th Edition Prop Office Weekday PM Peak Hour

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MIXED USE SITE PLAN
FOR
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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SHEET 26 ~ U101-UTILITY DETAILS
SHEET 27 ~ L101-LANDSCAPING DETAILS
SHEET 28 ~ W101-WILDLIFE IDENTIFICATION PLAN
SHEET 29 ~ DOVER FIRE TRUCK TURNING TEMPLATE (SITE)
SHEET 30 ~ DOVER FIRE TRUCK TURNING TEMPLATE (ENTRANCE)

OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN MANAGING MEMBER

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN MANAGING MEMBER

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

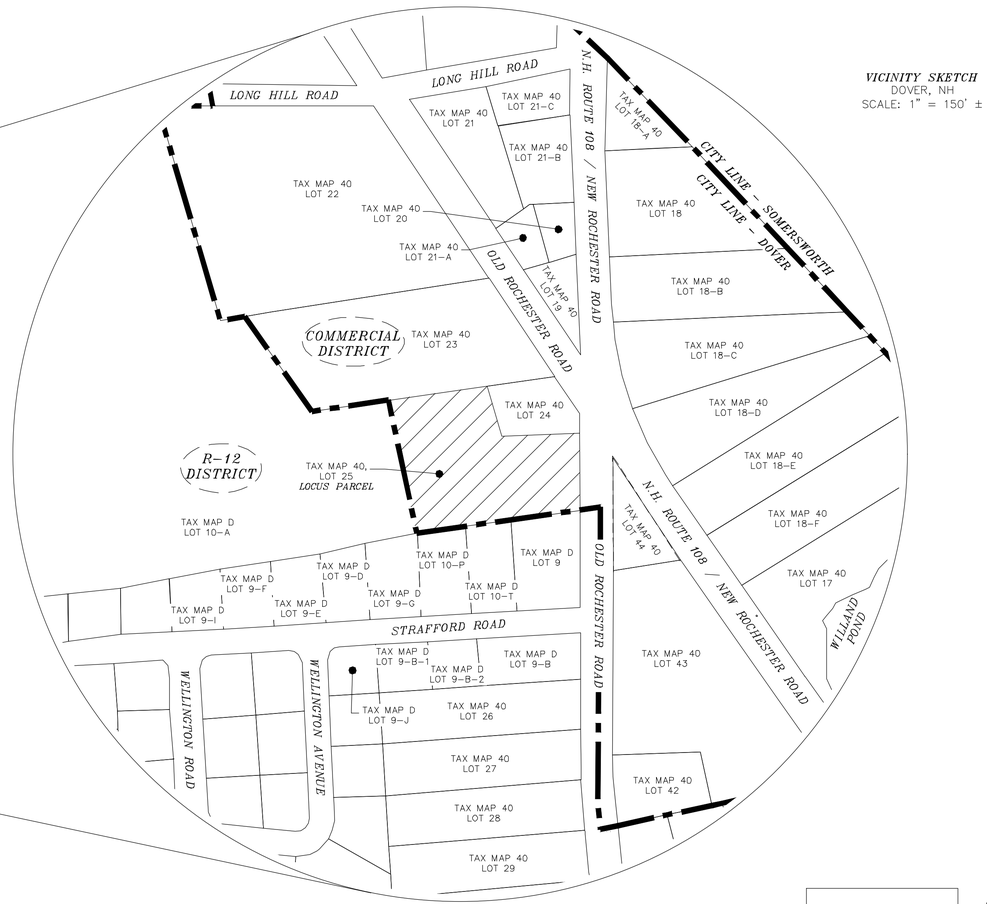
SOIL SCIENTIST: JOHN P. HAYES, III, CSS, CWS
7 LIMESTONE WAY
NORTH HAMPTON, NH 03862

WETLAND SCIENTIST: DEIDRA L. BENJAMIN, CWS
100 LEAVITT ROAD
PITTSFIELD, NH 03263

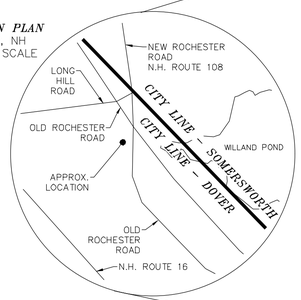
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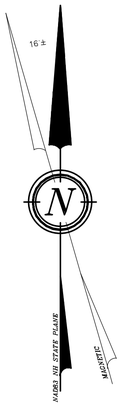
BERRY SURVEYING & ENGINEERING HAS PREPARED AN INSPECTION & MAINTENANCE MANUAL AS PART OF THIS PROJECTS DOCUMENTATION. ALL USERS ARE BOUND TO THIS DOCUMENT AS PART OF THE APPROVAL OF THE PLANNING BOARD. COPIES OF THE YEARLY INSPECTIONS ARE TO BE DELIVERED TO THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT. INSPECTION AND MAINTENANCE MANUAL TO BE RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS.

VICINITY SKETCH
DOVER, NH
SCALE: 1" = 150' ±



LOCATION PLAN
DOVER, NH
NOT TO SCALE





REQUIRED PERMITS:

~ US EPA NOI & SWPPP	(PENDING)
~ NH DIVISION OF HISTORICAL RESOURCES	(PENDING)
~ NHDES SEWER DISCHARGE PERMIT	(PENDING)
~ EVERSOURCE WORK #	WR#17976755

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.

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.

APPROVED DOVER

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
NO. 805
KENNETH A. BERRY
SIGNATURE

STATE OF NEW HAMPSHIRE - KENNETH A. BERRY No. 14343 LICENSED PROFESSIONAL ENGINEER -

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

MIXED USE SITE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

NOT FOR CONSTRUCTION

ABBREVIATION LEGEND:

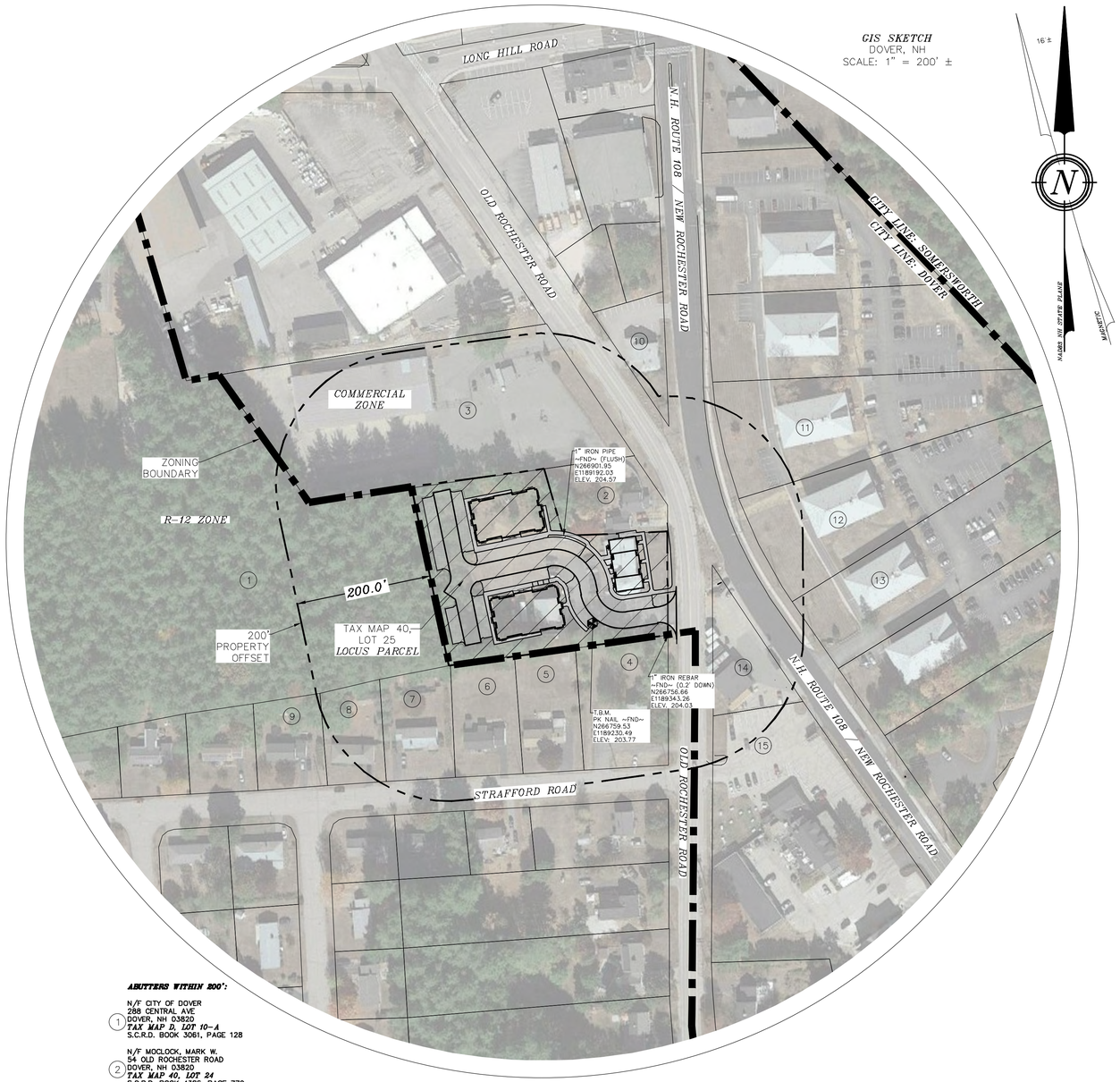
E.O.P.	EDGE OF PAVEMENT
V.G.C.	VERTICAL GRANITE CURB
S.G.C.	SLOPED GRANITE CURB
BITUM.	BITUMINOUS
E.S.H.W.T	ESTIMATE SEASONAL HIGH WATER TABLE
TYP.	TYPICAL
U.G.E	UNDER GROUND ELECTRIC / UTILITY
CLDI	CONCRETE LINED DUCTILE IRON
DI	DUCTILE IRON
F.P.	FIRE PROTECTION
U.D.	UNDER DRAIN
C.O.	CLEAN OUT
INV.	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:

- IRON PIPE ~FND~
- IRON BOUND ~FND~
- STEEL STAKE ~FND~
- UTILITY POLE
- SEWER MANHOLE W/ STRUCTURE
- CATCH BASIN W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- DETAIL SHEET / DETAIL
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- GRAVEL SHOULDER
- STOCKADE FENCE
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING OVERHEAD UTILITY
- PROPOSED WATER MAIN
- PROPOSED FIRE PROTECTION
- PROPOSED WATER SERVICE
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED UNDERDRAIN
- UNDERGROUND UTILITY
- STORMWATER BEST MANAGEMENT PRACTICE (BMP)
- TEST PIT
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS
- TRANSFORMER OR CONDENSER ON CONCRETE PAD
- GATE VALVE
- CURB STOP
- FIRE HYDRANT
- THRUST BLOCKS
- LIGHT TYPE "A" MOUNTED ON POLE
- LIGHT TYPE "B" MOUNTED ON BUILDING
- LIGHT TYPE "C" MOUNTED ON BUILDING
- LIGHT TYPE "D" MOUNTED ON BUILDING
- LIGHT TYPE "E" MOUNTED ON BUILDING
- LIGHT TYPE "F" MOUNTED BESIDE DOORS
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- FLOW ARROW
- SILT FENCE / EROSION MIX BERM
- FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- PERIMETER CONTROL – MULCH BERM & SILT SOXX
- BEST MANAGEMENT PROTECTION
- PERIMETER CONTROL
- RESIDENTIAL/ROADWAY CONSTRUCTION
- SNOW STORAGE
- RECREATION SPACE
- ZONING DISTRICT LINE
- EXISTING SPOT ELEVATION
- NRCS SOIL DELINEATION
- SOIL TYPE

GIS SKETCH
DOVER, NH
SCALE: 1" = 200' ±



ABUTTERS WITHIN 200':

1. N/F CITY OF DOVER
288 CENTRAL AVE
DOVER, NH 03820
TAX MAP D, LOT 10-A
S.C.R.D. BOOK 3061, PAGE 128

2. N/F MOCLOCK, MARK W.
54 OLD ROCHESTER ROAD
DOVER, NH 03820
TAX MAP 40, LOT 24
S.C.R.D. BOOK 4386, PAGE 779

3. N/F BRET ENTERPRISES, LLC
56 OLD ROCHESTER ROAD, UNIT 3
DOVER, NH 03820
TAX MAP 40, LOT 23
S.C.R.D. BOOK 4988, PAGE 375

4. N/F RICKY A. BRILLARD & MARY S. BRILLARD REVOCABLE LIVING TRUST
BRILLARD, RICKY A. & MARY S. TRUSTEES
167 VARNEY ROAD
DOVER, NH 03820
TAX MAP D, LOT 9
S.C.R.D. BOOK 3175, PAGE 270

5. N/F GAGNON, MARK 52% &
RONALD J 30% & GAGNON, TIFFANY 6% &
WILLIAM 6% & JACK 6%
1 STRAFFORD ROAD
DOVER, NH 03820
TAX MAP D, LOT 10-T

6. N/F DANIEL T. AND LOUISE A. KELLEHER REVOCABLE TRUST–1995
KELLEHER, DANIEL T., TRUSTEE
3 STRAFFORD ROAD
DOVER, NH 03820
TAX MAP D, LOT 10-P
S.C.R.D. BOOK 1992, PAGE 574

ABUTTERS WITHIN 200':

7. N/F HANNELORE E. WATKINS REVOCABLE TRUST
WATKINS, HANNELORE E., TRUSTEE
5 STRAFFORD ROAD
DOVER, NH 03820
TAX MAP D, LOT 9-C
S.C.R.D. BOOK 5179, PAGE 363

8. N/F JONES, DANIEL
7 STRAFFORD ROAD
DOVER, NH 03820
TAX MAP D, LOT 9-D
S.C.R.D. BOOK 4858, PAGE 926

9. N/F TRASK, TOD A.
10 IONA AVE.
DOVER, NH 03820
TAX MAP D, LOT 9-E
S.C.R.D. BOOK 4479, PAGE 364

10. N/F STEWART, JUDY N.
55 OLD ROCHESTER ROAD
DOVER, NH 03820
TAX MAP 40, LOT 19
S.C.R.D. BOOK 1577, PAGE 10

ABUTTERS WITHIN 200':

11. N/F WINCHESTER ARMS, LLC
176 CHURCH STREET
LOWELL, MA 01852
TAX MAP 40, LOTS 18-C, 18-D & 18-E
S.C.R.D. BOOK, 4625, PAGE 905

12. N/F GSED PROPERTIES, LLC
9 ROBIN LANE
PEPPERELL, MA 01463
TAX MAP 40, LOT 44
S.C.R.D. BOOK 4879, PAGE 571

13. N/F STRAFFORD FARMS RESTAURANT INC.
58 NEW ROCHESTER ROAD
DOVER, NH 03820
TAX MAP 40, LOT 43
S.C.R.D. BOOK 1997, PAGE 1001

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

NEIGHBORHOOD PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE LAND SURVEYOR No. 805 KENNETH R. BERRY SIGNATURE

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

NOT FOR CONSTRUCTION

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN MANAGING MEMBER

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN MANAGING MEMBER

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) ZONING: C – COMMERCIAL

SETBACKS		
FRONT – 30'	(35' PROVIDED)	
SIDE – 12'	(19' PROVIDED)	
REAR – 15'	(74' PROVIDED)	
MINIMUM LOT SIZE: 20,000 S.F.	(74,997 S.F. PROVIDED)	
MINIMUM FRONTAGE: 125'	(152.14' PROVIDED)	
MAXIMUM LOT COVERAGE: 50%	(48.94% PROVIDED)	
MAXIMUM BUILDING HEIGHT: 40'	(38.5' PROVIDED)	

SECONDARY GROUNDWATER RECHARGE OVERLAY (SGRO)
MAXIMUM IMPERVIOUS LOT COVERAGE: 20% (44.15% PROVIDED CUP REQ.)

6.) THE INTENT OF THIS PLAN IS TO SHOW A MIXED-USE TRANSFER OF DEVELOPMENT RIGHTS SITE PLAN IN THE COMMERCIAL ZONE LOCATED ON TAX MAP 40, LOT 25.

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 SUMMER OF 2022 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 SUMMER OF 2022.

11.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

12.) WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, CERTIFIED WETLANDS SCIENTIST, IN ACCORDANCE WITH CHAPTER 170–27.1 OF THE ZONING ORDINANCE, IN THE SUMMER OF 2022. NO WETLANDS WERE FOUND ON SITE.

13.) 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, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS:
ZONE–2023–0037 OWNERS: DOVER DEVELOPMENT, LLC, 52 OLD ROCHESTER ROAD (TAX MAP 40, LOT 25), LOCATED IN THE COMMERCIAL (C) ZONING DISTRICT REQUESTS A VARIANCE FROM SECTION 170–11, OF THE ZONING ORDINANCE, TO ALLOW FOR THE REMOVAL OF ALL EXISTING STRUCTURES AND TO CONSTRUCT FORTY–EIGHT (48) RESIDENTIAL UNITS, WITH TWO (2), THREE–STORY BUILDINGS, AND TO EXCEED THE RESIDENTIAL RATIO REQUIRED UNDER FOOTNOTE 3 WHERE 2/3RD IS THE MAXIMUM AND 17%/83% IS PROPOSED. APPROVED JULY 20, 2023

14.) AS–BUILT PLANS OF THE SUBDIVISION 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–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.

15.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE PROPOSED.

16.) ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2016" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

17.) 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.

18.) THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS: NO 50' BUFFERS ON SITE SO NOT APPLICABLE FOR THIS PROJECT.

19.) ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS. (NOT APPLICABLE)

20.) 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 80,150 Sq.Ft. 1.84 Ac. (SEE NOTE #43)

21.) 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.

22.) THE SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7AM–6PM, NO SATURDAY & NO SUNDAY. OR FEDERAL HOLIDAY HOURS. HOURS OF CONSTRUCTION SHALL BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. THE PROJECT SIGN SHALL INDICATE THE ROAD IS PROPOSED TO BE PRIVATE AND SHALL RECEIVE NO CITY SERVICES.

23.) BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

24.) THE PROPOSED USE FOR THE SITE IS FOR A NEW MIXED USE BUILDING WHICH WILL CONSIST OF 3 UNSPECIFIED COMMERCIAL UNITS, 2,279 Sq.Ft. ON THE FIRST LEVEL AND 4 ONE BEDROOM RESIDENTIAL UNITS 3,189 Sq.Ft. ON THE SECOND LEVEL (INCLUDES 1 LEVEL STAIRS TO ACCESS RESIDENTIAL), ALONG OLD ROCHESTER ROAD, PROPOSED TO BE TWO STORIES TALL. THE REAR OF THE SITE WILL CONTAIN TWO NEW BUILDINGS. THE SOUTHERLY BUILDING WILL CONSIST OF 2 UNSPECIFIED COMMERCIAL UNITS, 2,515 Sq.Ft., ON THE FIRST FLOOR WITH 20 ONE BEDROOM RESIDENTIAL UNITS, 15,386 Sq.Ft. ON THE FIRST, SECOND AND THIRD FLOORS (INCLUDES 1 LEVEL STAIRS & CORRIDOR TO ACCESS RESIDENTIAL). THE NORTHERLY BUILDING WILL CONSIST OF 2 UNSPECIFIED COMMERCIAL UNITS, 2,515 Sq.Ft., ON THE FIRST FLOOR WITH 20 ONE BEDROOM RESIDENTIAL UNITS, 15,386 Sq.Ft. ON THE FIRST, SECOND AND THIRD FLOORS (INCLUDES 1 LEVEL STAIRS & CORRIDOR TO ACCESS RESIDENTIAL).THE COMMERCIAL ASPECT IS 18.7% OF THE BUILDING SPACE. THE RESIDENTIAL ASPECT IS 81.3% EACH UNIT WILL BE RENTED AT THE ESTABLISHED HUD FAIR MARKET RATES. THIS MEETS THE ORDINANCE MAXIMUM REQUIREMENT OF 17% COMMERCIAL AND 83% RESIDENTIAL FROM ZONE–2023–0037.

25.) THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
NHDES SEWER DISCHARGE PERMIT:
EPA NOTICE OF INTENT/SWPPP (NOI):
DIVISION OF HISTORICAL RESOURCES:

26.) COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

27.) ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

28.) ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

29.) 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.

30.) FIRE DEPARTMENT ACCESS ROADS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.

31.) EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.

32.) APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR DOMESTIC WATER LINES.

33.) SITE IS TO COMPLY WITH NFPA 1 CHAPTER 18.

34.) BLAZER DRIVE IS PROPOSED TO BE PRIVATE, REFER TO THE DEVELOPMENT AGREEMENT FOR ROAD & DRAINAGE RESPONSIBILITIES. BLAZER DRIVE PROPOSES POROUS ASPHALT PAVEMENT IN THE PARKING AREAS. BLAZER DRIVE WILL ALWAYS BE PRIVATE AND WILL NEVER BE ACCEPTED BY THE CITY OF DOVER.

35.) 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

36.) THE STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS APPLICABLE TO DOVER CHAPTER 81–30 AND THE NH BUILDING AND FIRE CODES.

37.) 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.

NOTES CONTINUED:

38.) FIRE DEPARTMENT CONNECTION(S), IF REQUIRED BY THE SPECIFIC SYSTEM, 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.

39.) THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS (I.E. IBC, ANSI–117.1) AND NH RSA 155–A:5.

40.) PRIVATE TRASH PICKUP WILL BE DONE THROUGH THE USE OF DUMPSTER(S) ON PADS, WITH SCREENING AND WILL BE COLLECTED THROUGH A PRIVATE WASTE PICK UP COMPANY.

41.) HEATING & COOLING FOR PROPOSED UNITS IS TO BE DONE VIA MINI–SPLITS WITH PAD MOUNTED HEAT PUMPS.

42.) THE BUILDINGS ARE DESIGNED AS SLAB ON GRADE CONSTRUCTION WITH STANDARD 4' FROST WALLS.

43.) PROJECT DISTURBANCE: TOTAL 80,150 Sq. Ft. (1.84 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). EROSION AND SEDIMENT CONTROL INSPECTIONS TO BE CONDUCTED ONCE PER EVERY SEVEN DAYS AND AT AN INCREASED FREQUENCY INCLUDING WITHIN 24–HOURS OF A 0.25 INCH RAIN EVENT. INSPECTIONS TO BE CONDUCTED BY A "QUALIFIED PERSON" AS DEFINED BY EPA CGP 4.1.1 AND INSPECTION REPORTS SUBMITTED TO THE CITY OF DOVER, NH, ENGINEERING DEPARTMENT WITHIN 24 HOURS IN ACCORDANCE WITH CGP 4.1.7 AND MAINTAINED BY THE OWNER FOR A PERIOD OF THREE YEARS AFTER THE PROJECT IS COMPLETED. SEE ALSO CITY OF DOVER ADDITIONAL INSPECTION REQUIREMENTS BELOW.

44.) EXISTING BUILDING COVERAGE AREA: 4,552 Sq.Ft., (6.07%)
EXISTING PAVED IMPERVIOUS AREA: 13,357 Sq. Ft. (17.81%)
EXISTING IMPERVIOUS AREA/LOT COVERAGE 17,909 Sq.Ft., (23.88%)

POROUS PAVEMENT & PAVERS NOT INCLUDED IN CALCULATION OF IMPERVIOUS AREA
PROP. BUILDING & OVERHANG IMPERVIOUS AREA: 16,810 Sq. Ft. (22.41%)
PROPOSED ROAD: 14,182 Sq. Ft. (18.91%)
PROPOSED IMPERVIOUS AREA (CURB, SHOULDER & CONCRETE PADS): 2,122 Sq. Ft. (2.83%)
TOTAL PROPOSED IMPERVIOUS COVER IS 33,114 Sq. Ft., (44.15%)

45.) FIVE (5) EV PARKING SPACES ARE PROVIDED (ONE (1) ACCESSIBLE).

46.) THE OWNERS AND THEIR SUCCESSORS ARE RESPONSIBLE FOR THE LIFETIME MAINTENANCE OF ALL BUFFERING AND INTERNAL LANDSCAPING.

47.) THE PERIMETER BOUNDARY WILL BE STAKED OUT BY BERRY SURVEYING & ENGINEERING PRIOR TO THE START OF CONSTRUCTION.

48.) THE APPLICANT IS TO PROVIDE SURETY WITHIN THE CONFINES OF NH RSA 674:36.

49.) DURING PERIODS OF HEAVY SNOW AND WHEN TEMPORARY PILES ARE USED ON SITE, SNOW IS TO BE LOADED INTO TRUCKS AND REMOVED FROM THE SITE. SNOW IS TO BE DISPOSED OF ON AN APPROVED SNOW DUMP.

50.) THERE IS 14,142 Sq.Ft. OF POROUS PARKING AREA AND 1,410 Sq.Ft. OF INTERNAL LANDSCAPING WHICH IS 9.97% 8% IS REQUIRED.

POROUS PAVEMENT SHALL BE MAINTAINED IN ACCORDANCE WITH THE SITE'S APPROVED O&M MANUAL IN PERPETUITY. FAILURE TO DO SO COULD RESULT IN A FAILURE TO COMPLY WITH THE PLANNING BOARD APPROVALS.

GRADING NOTES:

1.) 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.

2.) CONTRACTOR SHALL TAKE SPECIAL CARE IN NOT DISTURBING EXISTING MONUMENTS BOUNDS, AND OR BENCHMARKS WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION

3.) 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

4.) 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.

5.) THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

6.) 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.

7.) 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).

8.) ALL SYMBOLS, WORDS, TRANSVERSE MARKINGS (STOP BARS, CROSSWALK LINES, AND RAILROAD SYMBOLS), LANE LINES, AND ALL OTHER MARKINGS NOTED WITH [T] SHALL BE THERMOPLASTIC.

9.) 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.

10.) 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.

11.) 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.

12.) SEE DETAILS CONCERNING SITE LAYOUT, DRAINAGE, UTILITY, AND SEDIMENT AND EROSION CONTROLS.

13.) DESIGN ENGINEER OF RECORD SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS. DESIGN ENGINEER OR DESIGN ENGINEERS REPRESENTATIVE IS TO BE PERIODICALLY ON SITE AND INSPECT DURING CONSTRUCTION PROCESS. CONTRACTOR IS TO PROVIDE 24–48 HOURS NOTICES PRIOR TO INSPECTION REQUESTS.

14.) UPON FINAL COMPLETION AND 85% STABILIZATION THE DRAINAGE SYSTEM IS TO BE CLEANED OF ALL DEBRIS TO INCLUDE THE PUMPING OF THE BASINS. SEE SHEET E102, DETAIL E18 FOR DEFINITION OF STABLE. ALSO TO BE DONE ONCE A YEAR DURING THE CONSTRUCTION PROCESS.

15.) 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.

16.) CATCH BASINS WITHIN ANY GRASS LINED AREAS OUTSIDE THE ROADWAY WILL HAVE "BEE HIVE" GRATES TO NOT ALLOW FOR ENTRAPMENT OF ANIMALS IN THE STRUCTURE. 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.

17.) DESIGN ENGINEER OF RECORD SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM AND UTILITY INFRASTRUCTURE HAVE BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS DESIGN ENGINEER OR DESIGN ENGINEERS REPRESENTATIVE IS TO BE PERIODICALLY ON SITE AND INSPECT DURING CONSTRUCTION PROCESS. CONTRACTOR IS TO PROVIDE 24–48 HOURS NOTICES PRIOR TO INSPECTION REQUESTS.

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 OLD ROCHESTER 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.
CALCIUM CHLORIDE SHALL NOT BE USED FOR DUST CONTROL AS THIS IS IN THE SECONDARY GROUNDWATER PROTECTION ZONE.

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 THE EXPAND CONSTRUCTION BEYOND THE STAKED OUT LIMITS.

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 (CESSW), 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.

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 RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE 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 SHOULD 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.

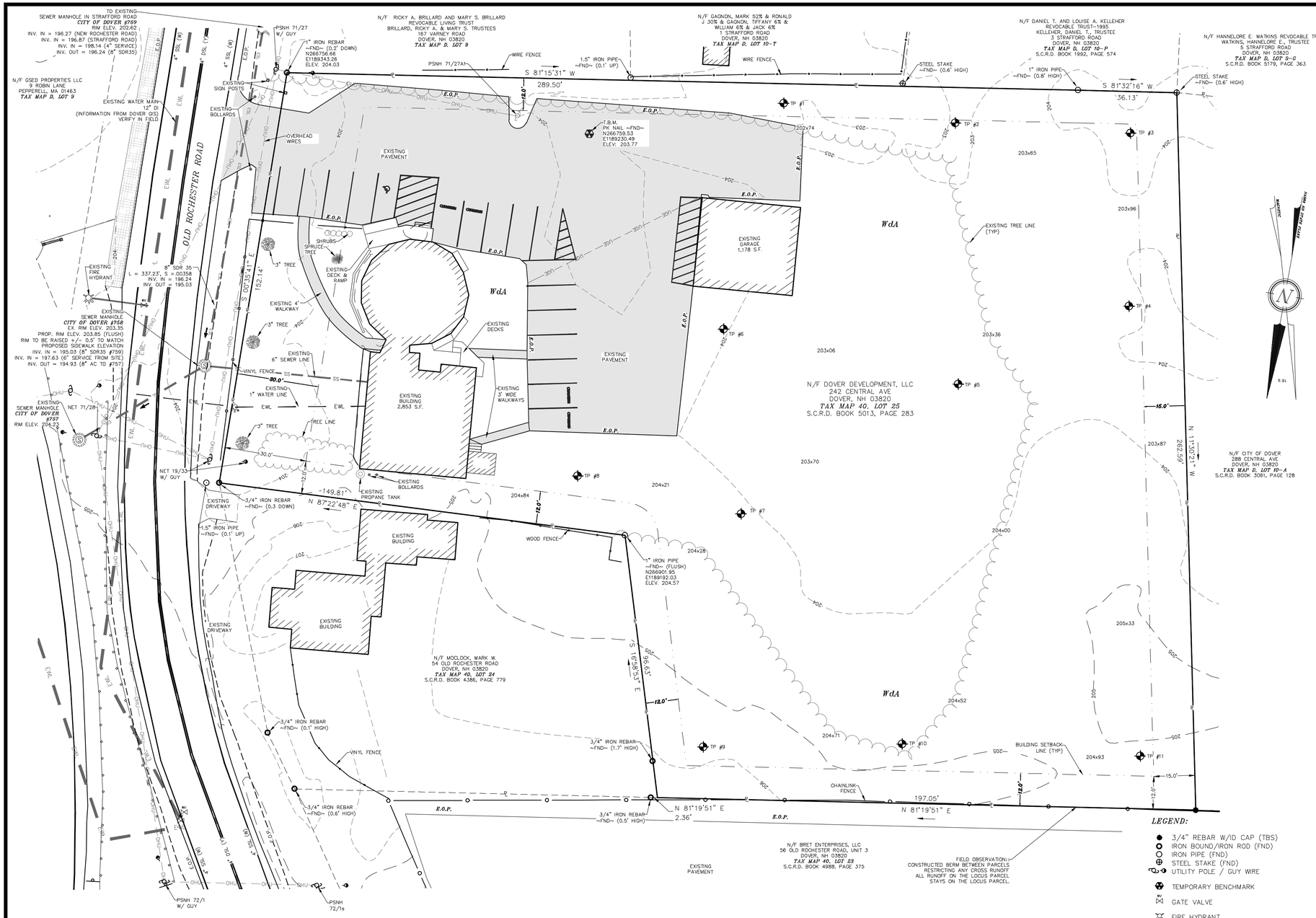
10.) CONTRACTOR SHALL COORDINATE ALL TELECOMMUNICATIONS INSTALLATIONS WITH FAIRPOINT COMMUNICATIONS AT (603) 427–5525.

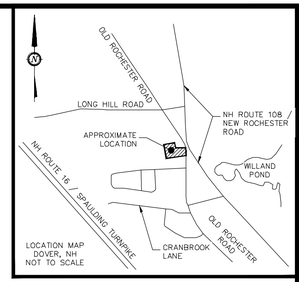
11.) CONTRACTOR SHALL COORDINATE ALL CABLE INSTALLATIONS WITH COMCAST.

12.) ALL SEWER MANHOLE RIMS & COVERS ARE TO BE LIFTMATE R–1743–LM.

13.) ALL WATER SERVICES ARE TO BE WITNESSED WITH A 2"X4" PAINTED BLUE. ALL SEWER SERVICES ARE TO BE WITNESSED WITH A 2"X4" PAINTED YELLOW, IS STUBBED PRIOR TO BUILDING CONSTRUCTION. DETECTABLE METALLIC UNDERGROUND TAPE SHALL BE LABELED APPROPRIATELY.

14.) CURB BOXES SHOULD BE PLACED IN THE LAWN AREA, OR IF PLACED IN PAVEMENT, A ROAD BOX IS REQUIRED.





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) SITE ADDRESS: 52 OLD ROCHESTER ROAD

3.) TAX MAP 40, LOT 25

4.) S.C.R.D. BOOK 5013, PAGE 283

5.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

6.) ZONING: C – COMMERCIAL
SECONDARY GROUNDWATER RECHARGE OVERLAY
SETBACKS
FRONT ~ 30'
SIDE ~ 12'
REAR ~ 15'
MIN. LOT SIZE: 20,000'
MIN. FRONTAGE: 125'
MAX. LOT COVERAGE: 50%
MAX. BUILDING HEIGHT: 40'
MAX. IMPERVIOUS COVERAGE: 20%

7.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING BOUNDARIES AND CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN AUGUST OF 2022.

87.) 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.

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

10.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST 2022 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

11.) TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED IN AUGUST 2022.

12.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

13.) WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, CWS, CERTIFIED WETLANDS SCIENTIST, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, IN JUNE OF 2022. NO WETLANDS WERE FOUND ON SITE.

14.) EXISTING LOT COVERAGE, BUILDING, DECKS & GARAGE: 4,552 Sq.Ft., 6.07%

15.) EXISTING IMPERVIOUS COVERAGE: 17,909 Sq.Ft., 23.88%

16.) NO OBSERVED CEMETERIES

PLAN REFERENCES:

1.) "RAYMOND G. SWEATT & PERLEY J. COLE, FINAL PAL, STGRAFFORD WOODS, DOVER, NEW HAMPSHIRE" BY: G.L. DAVIS & ASSOCIATES. DATED: MAY 1960 DOVER PLAN# 7 POCKET # 7 FOLDER#2

2.) "RE-SUBDIVISION OF LAND, PREPARED FOR, DORIS GRADY, LONG HILL ROAD, DOVER, NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES, INC. DATED: SEPTEMBER 3, 1997 S.C.R.D.: PLAN # 50-79

3.) "LOT LINE ADJUSTMENT PLAN, PREPARED FOR, COLONIAL DOVER PROPERTIES LLC, AND, CITY OF DOVER, NH, LONG HILL ROAD & NH ROUTE 16B, DOVER, NEW HAMPSHIRE"" BY: MCENEANEY SURVEY ASSOCIATES, INC. DATED: JANUARY 4, 1999 S.C.R.D.: PLAN # 55-79

4.) "CONDOMINIUM SITE PLAN, PERRO PLACE CONDOMINIUM, 52 OLD ROCHESTER ROAD, DOVER, NEW HAMPSHIRE" BY: TRITECH ENGINEERING CORP DATED: JANUARY 24, 2019 FILE NUMBER 11897

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

SOILS:

WdA – WINDSOR, LOAMY SAND, 3-8% SLOPES

SEE: USDA/NRCS WEBSOIL

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR NOR THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN. IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

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

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND:

- 3/4" REBAR W/ID CAP (TBS)
- IRON BOUND/IRON ROD (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- TEMPORARY BENCHMARK
- GATE VALVE
- FIRE HYDRANT
- SEWER MANHOLE
- CURB STOP
- TEST PIT
- SINGLE POST SIGN
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING WATER LINE (FROM GIS)
- EXISTING SEWER LINE
- EXISTING SEWER SERVICE
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- FENCE

FND FOUND
TYP TYPICAL
TBS TO BE SET
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

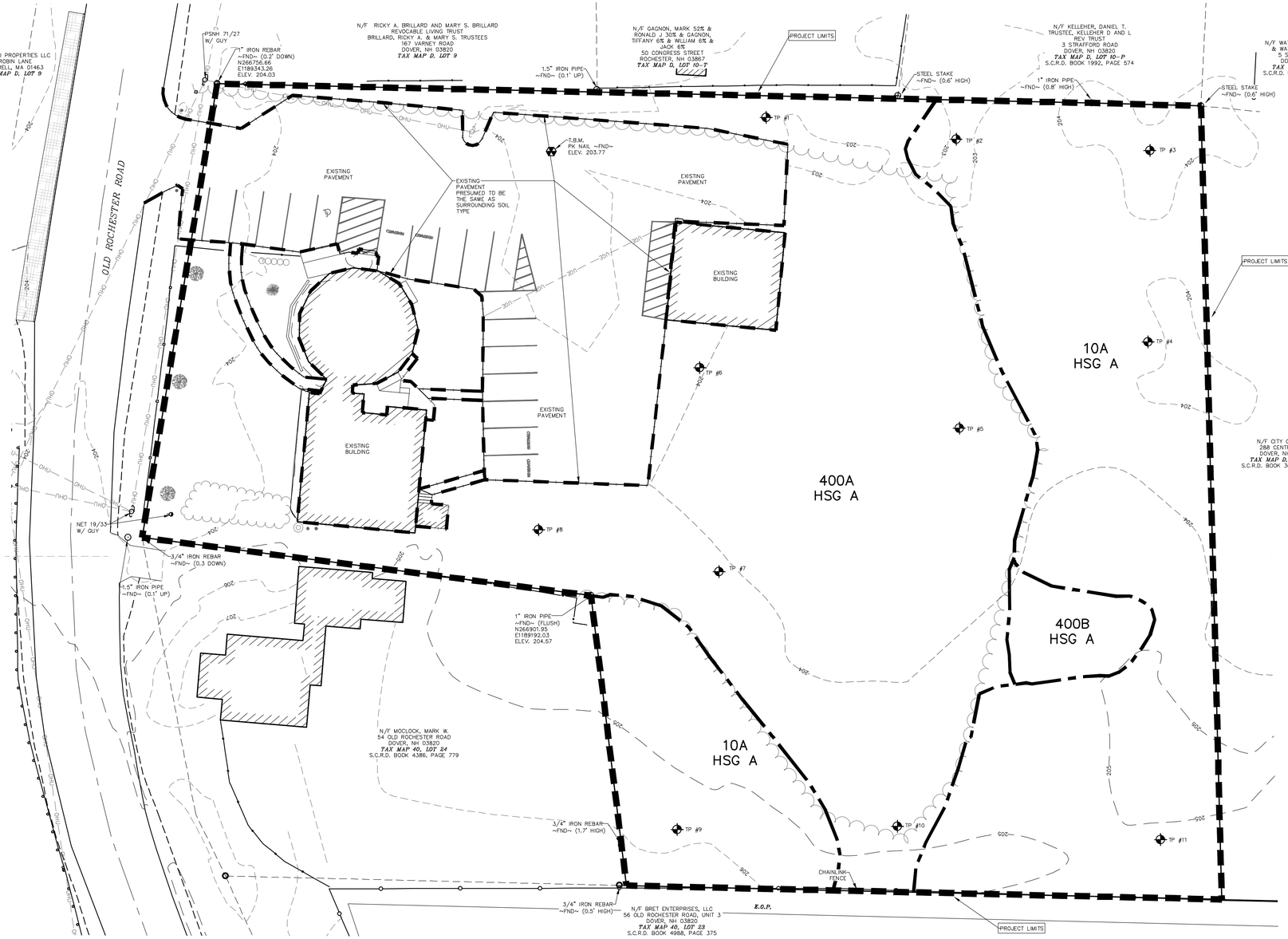
EXISTING CONDITIONS PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

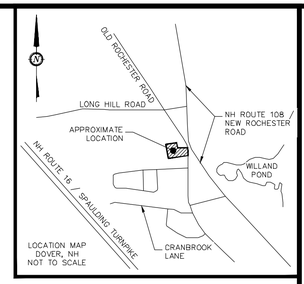
BERRY & SURVEYING ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE No. 805 KENNETH A. BERRY LICENSED LAND SURVEYOR SIGNATURE

NOT FOR CONSTRUCTION





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SOIL CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN THE SUMMER OF 2022.

LEGEND:

- IRON BOUND (TBS)
- IRON BOUND (FND)
- DRILL HOLE (FND)
- GRANITE BOUND (TBS)
- UTILITY POLE/GUY WIRE
- TEST PIT
- BENCHMARK
- OHU — OHU — OVERHEAD UTILITIES LINE
- 276 — EXISTING CONTOUR MINOR
- 275 — EXISTING CONTOUR MAJOR
- SOIL LINE
- LIMIT OF SOIL SURVEY
- AREAS OF IMPERVIOUS SURFACE PRESUMED TO BE THE SAME SURROUNDING SOIL TYPE

448A SOIL SERIES
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
TYP. TYPICAL
FND FOUND
TBA TO BE ABANDONED

SOILS LEGEND

Site Specific Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
10		A	Merrimac	A
400		A,B	Udorthents	A

NRCS Soils

Symbol	K	Slopes	Taxonomic Soil Name	Hydrologic Soil Group
Wd		A	Windsor Loamy Sand	A

Slopes: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25- 50% F = 50%+
Denominators: /P = Poorly Drained /VP = Very Poorly Drained /Rk = Rocky

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

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

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE
JOHN P. HAYES III
0387
CERTIFIED SOIL SCIENTIST

JOHN P. HAYES III, CSS #87

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

SITE SPECIFIC SOILS MAP
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
No. 805
LICENSED LAND SURVEYOR
KENNETH A. BERRY
SIGNATURE

NOT FOR CONSTRUCTION

TEST PIT DATA:

TEST PIT #1
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #2
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #3
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #4
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #5
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #6
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #7
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #8
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #9
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #10
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

TEST PIT #11
0–1.3' 10YR 4/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
1.3–2.0' 10YR 4/6 DARK YELLOWISH BROWN, VERY FINE SANDY LOAM, GRANULAR, FRIABLE
2.0–6.5' 10YR 5/8 DARK BROWN, COURSE SAND AND GRAVEL, SINGLE GRAIN, LOOSE

E.S.H.W.T. @ NONE
RESTRICTIVE LAYER @ N/A
GROUND WATER @ N/A
TERMINATED @ 6.5'
REFUSAL @ NONE
P = <2 MIN/IN

NEW HAMPSHIRE
Designer of Subsurface Disposal Systems
Christopher R. Berry
No. 1886
Department of Environmental Services

CHRISTOPHER R. BERRY
NH PERMITTED DESIGNER #1886

PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

TEST PITS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : NONE
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
No. 805
KENNETH A. BERRY
LICENSED LAND SURVEYOR
SIGNATURE

NOT FOR CONSTRUCTION

PARKING REQUIREMENTS:

- CHAPTER 153-14D RESIDENTIAL USE IN A NON-CBD ZONE 1.90 SPACES PER UNIT x 44 UNITS = 84 MAX. SPACES
- CO-LOCATED RESIDENTIAL AND COMMERCIAL USES:
- 5% EV SPACES ARE REQUIRED = 4 (5 PROVIDED, 1 ACCESSIBLE)
- 5% BIKE SPACES REQUIRED = 4 (21 PROVIDED)

TOTAL PROVIDED = 79 SPACES
RATION OF 1.8 SPACES PER UNIT

- 4 ADA SPACES REQUIRED, 1 VAN ACCESSIBLE REQUIRED (4 VAN ACCESSIBLE ADA SPACES PROVIDED)

SNOW STORAGE CALCULATION:

- STORAGE CALCULATION (6:1 RATIO USED)
  - PLOWABLE AREA = 35,941 Sq.Ft. / 6 = 5,991 Sq.Ft.
  - 6,021 Sq.Ft. PROVIDED FOR TEMPORARY SNOW STORAGE

SNOW TO BE REMOVED TO AN APPROVED OFF-SITE LOCATION

BUILDING COMPOSITION AND SQUARE FOOTAGE ALLOCATION (81.3% RESIDENTIAL, 18.7% COMMERCIAL PROVIDED):

PROPOSED MIXED-USE BUILDING (FRONT)
3 COMMERCIAL UNITS LEVEL 1
4, 1 BR UNITS LEVEL 2
2,984 Sq.Ft. (FOOT PRINT)
2,779 Sq.Ft. (COMMERCIAL)
3,189 Sq.Ft. (RESIDENTIAL)
2 STORY BUILDING
(TOTAL AREA 5,968 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 3,246 Sq. Ft.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 3,342 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN, MANAGING MEMBER

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN, MANAGING MEMBER

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) ZONING: C - COMMERCIAL
SECONDARY GROUNDWATER RECHARGE OVERLAY
SETBACKS
FRONT ~ 30'
SIDE ~ 12'
REAR ~ 15'
MIN. LOT SIZE: 20,000'
MIN. FRONTAGE: 125'
MAX. LOT COVERAGE: 50%
MAX. BUILDING HEIGHT: 40'
MAX. IMPERVIOUS COVERAGE: 20% (SRGO REQ.)

6.) SEE PROJECT NOTES SHEET FOR SITE PLAN NOTES AND OTHER REQUIRED CALCULATIONS.

7.) SEE LANDSCAPING AND LIGHTING PLANS FOR DETAILS.

8.) POROUS PAVEMENT SHALL BE MAINTAINED IN ACCORDANCE WITH THE SITE'S APPROVED O&M MANUAL IN PERPETUITY. FAILURE TO DO SO COULD RESULT IN A FAILURE TO COMPLY WITH THE PLANNING BOARD APPROVALS.

9.) EXISTING BUILDING COVERAGE AREA: 4,552 Sq.Ft., (6.07%)
EXISTING PAVED IMPERVIOUS AREA: 13,357 Sq. Ft. (17.81%)
EXISTING IMPERVIOUS AREA/LOT COVERAGE 17,909 Sq.Ft., (23.88%)

POROUS PAVEMENT & PAVERS NOT INCLUDED IN CALCULATION OF IMPERVIOUS AREA
PROP. BUILDING & OVERHANG IMPERVIOUS AREA: 16,810 Sq. Ft. (22.41%)
PROPOSED ROAD: 14,182 Sq. Ft. (18.91%)
PROPOSED IMPERVIOUS AREA (CURB, SHOULDER & CONCRETE PADS): 2,122 Sq. Ft. (2.83%)
TOTAL PROPOSED IMPERVIOUS COVER IS 33,114 Sq. Ft. (44.15%)

UNIT DENSITY CALCULATION:

- TOTAL AREA COMMERCIAL ZONE: 74,997 Sq. Ft.
  - DENSITY OF 5,000 Sq. Ft. / UNIT
  - 74,997 Sq. Ft. / 5,000 Sq. Ft. / UNIT = 14.99 UNITS
  - 14 UNITS ALLOWED BY RIGHT, 44 UNITS ON THE PROJECT
  - THE APPLICANT IS PROPOSING TO PURCHASE 30 UNITS THROUGH THE TDR PROGRAM. EACH UNIT IS PROPOSED TO BE RESTRICTED TO THE YEARLY PUBLISHED HUD RATES AND THEREFORE NO FEE IS REQUIRED FOR THE REQUESTED UNITS.

TRANSFER OF DEVELOPMENT RIGHTS (TDR):
PURCHASE OF 30 UNITS. ALL UNITS ARE RESTRICTED TO HUD RATES ~ NO FEE REQ.

PROPOSED LEGEND:

- E101 / E6 — DETAIL SHEET / DETAIL
- TRANSFORMER & PAD
- FIRE HYDRANT
- SIGNAGE
- SHOULDER
- CENTER LINE
- BUILDING SETBACK LINE
- STOCKADE FENCE
- SNOW STORAGE
- RECREATION SPACE
- LIGHT TYPE "A" MOUNTED ON POLE
- LIGHT TYPE "B" MOUNTED ON BUILDING
- LIGHT TYPE "C" MOUNTED ON BUILDING
- LIGHT TYPE "D" MOUNTED ON BUILDING
- LIGHT TYPE "E" MOUNTED ON BUILDING
- LIGHT TYPE "F" MOUNTED BESIDE DOORS

PROPOSED SURFACE LEGEND:

- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

APPROVED DOVER

PLANNING FILE # SITE 2024-0009

#	REVISION	DATE	DESCRIPTION
#01		03-18-25	REVISED PER TRC COMMENT

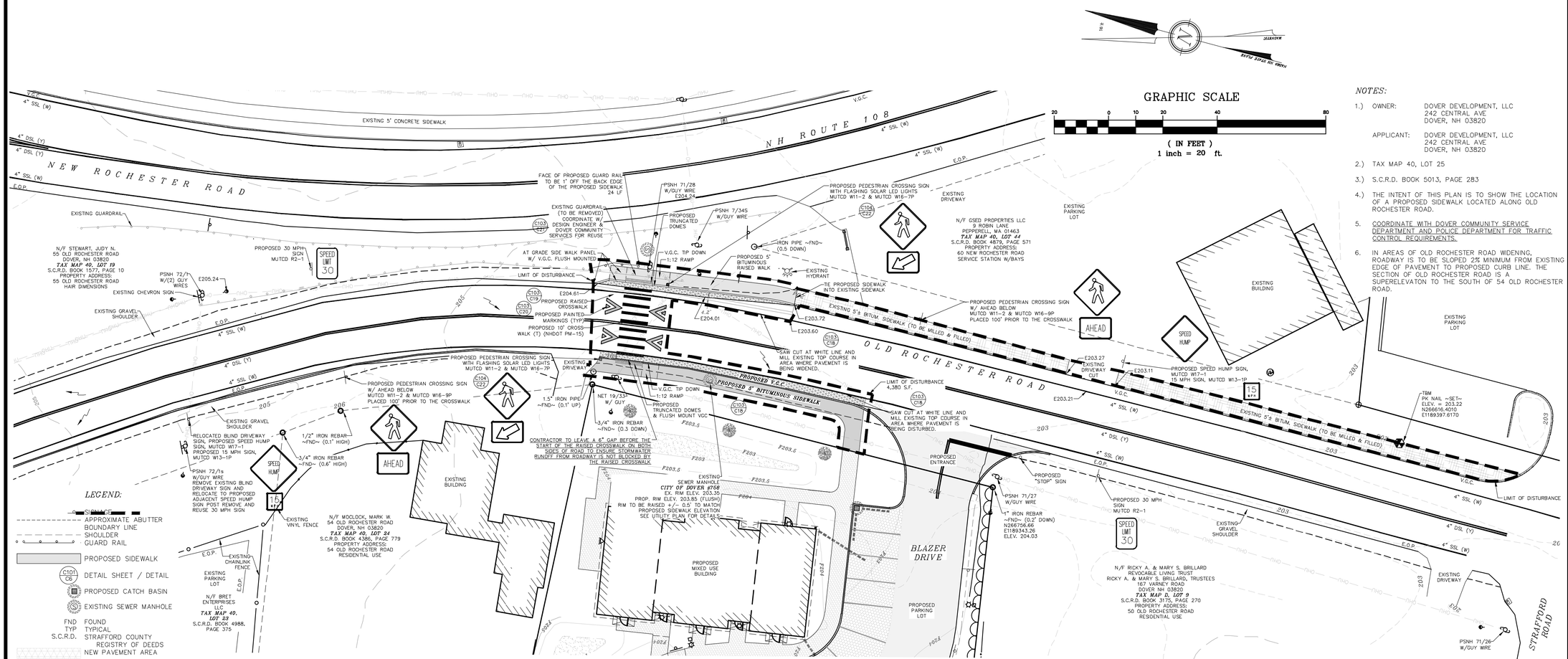
SITE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14511
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF A PROPOSED SIDEWALK LOCATED ALONG OLD ROCHESTER ROAD.

5. COORDINATE WITH DOVER COMMUNITY SERVICE DEPARTMENT AND POLICE DEPARTMENT FOR TRAFFIC CONTROL REQUIREMENTS.

6. IN AREAS OF OLD ROCHESTER ROAD WIDENING, ROADWAY IS TO BE SLOPED 2% MINIMUM FROM EXISTING EDGE OF PAVEMENT TO PROPOSED CURB LINE. THE SECTION OF OLD ROCHESTER ROAD IS A SUPERELEVATON TO THE SOUTH OF 54 OLD ROCHESTER ROAD.

APPROVED DOVER

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

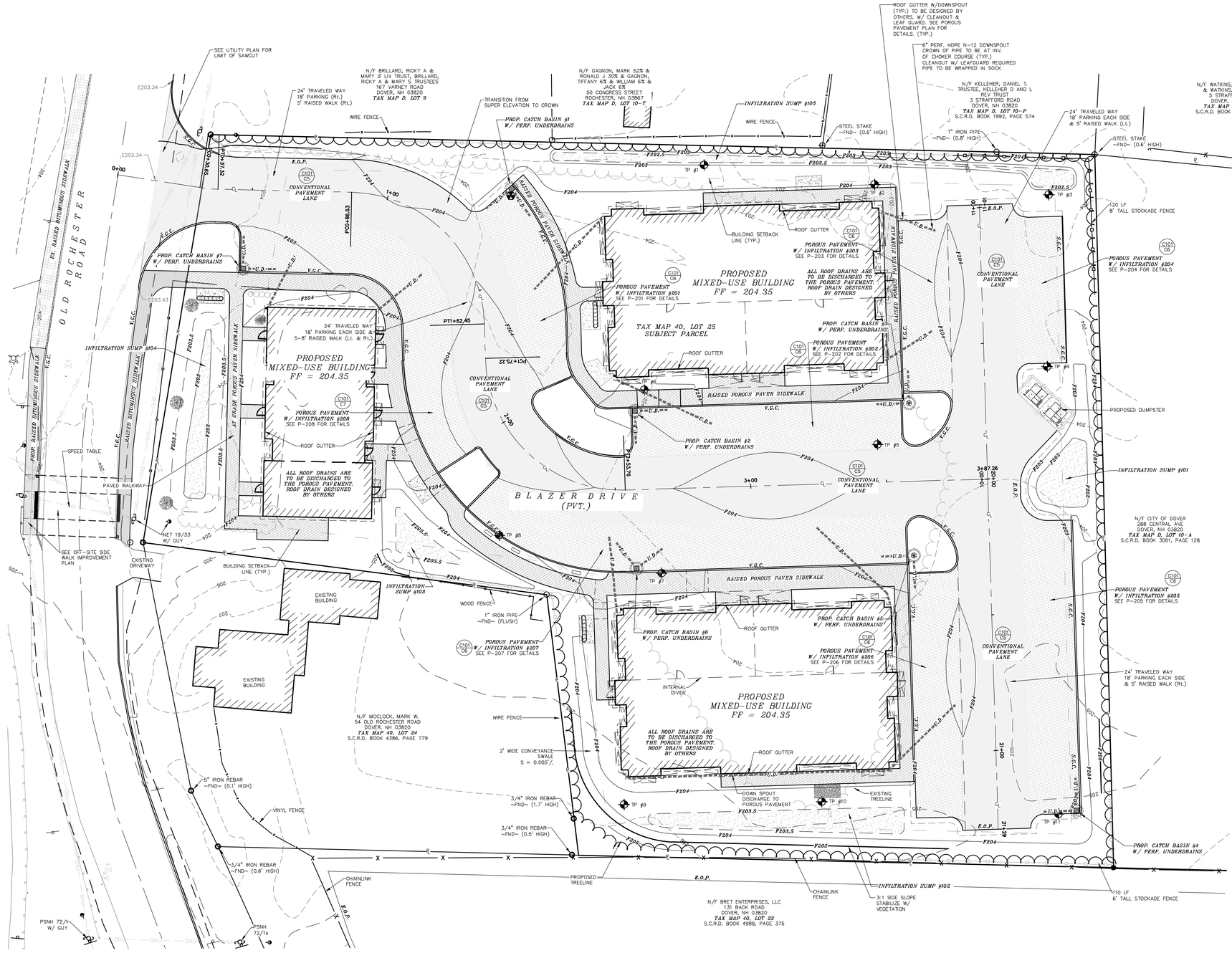
OFFSITE SIDEWALK PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14047
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



PROJECT NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac

5.) THE INTENT OF THIS PLAN IS TO PROVIDE AN OVERVIEW OF GRADING & ENGINEERING DETAILS FOR BLAZER DRIVE AND TAX MAP 40, LOT 25.

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 WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

9.) SEE PROJECT NOTES SHEET FOR REMAINING GRADING NOTES.

10.) CATCH BASINS WITHIN ANY GRASS LINED AREAS OUTSIDE THE ROADWAY WILL HAVE "BEE HIVE" GRATES TO NOT ALLOW FOR ENTRAPMENT OF ANIMALS IN THE STRUCTURE. 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.

LEGEND:

- PROPOSED SEWER MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING OVERHEAD UTILITY
- PROPOSED WATER MAIN
- PROPOSED FIRE PROTECTION
- PROPOSED WATER SERVICE
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED UNDERDRAIN
- PROPOSED UNDERGROUND UTILITY
- E175.31 / F175.31 — EXISTING SPOT GRADE / PROPOSED SPOT GRADE / FLOW ARROW
- INFILTRATION SUMP
- TEST PIT
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

OVERVIEW GRADING & DRAINAGE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

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

NOT FOR CONSTRUCTION

PROJECT NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac

5.) THE INTENT OF THIS PLAN IS TO PROVIDE DETAIL GRADING & ENGINEERING DETAILS FOR BLAZER DRIVE AND TAX MAP 40, LOT 25.

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.

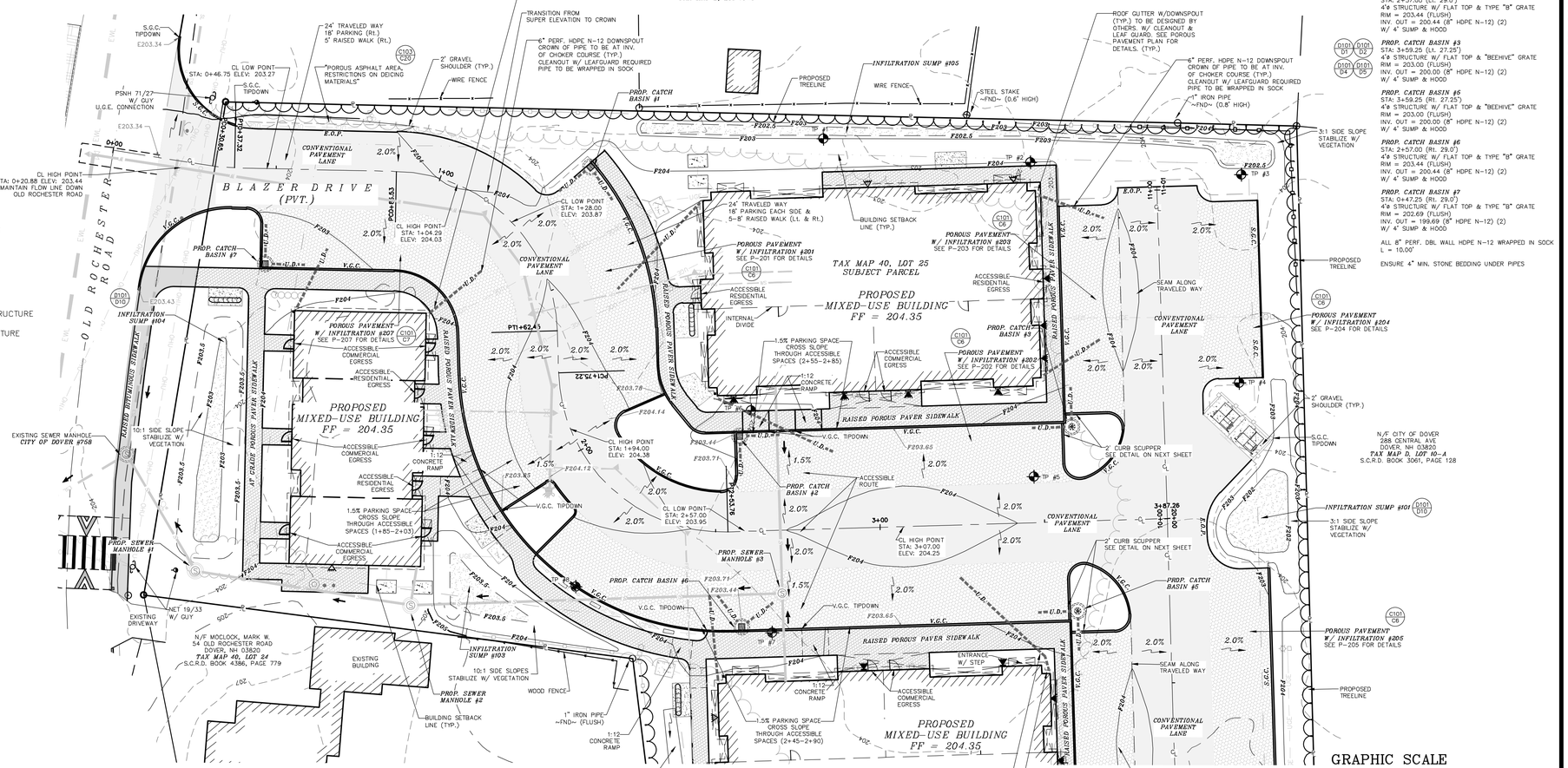
8.) EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

9.) SEE PROJECT NOTES SHEET FOR REMAINING GRADING NOTES.

10.)CATCH BASINS WITHIN ANY GRASS LINED AREAS OUTSIDE THE ROADWAY WILL HAVE "BEE HIVE" GRATES TO NOT ALLOW FOR ENTRAPMENT OF ANIMALS IN THE STRUCTURE. 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.

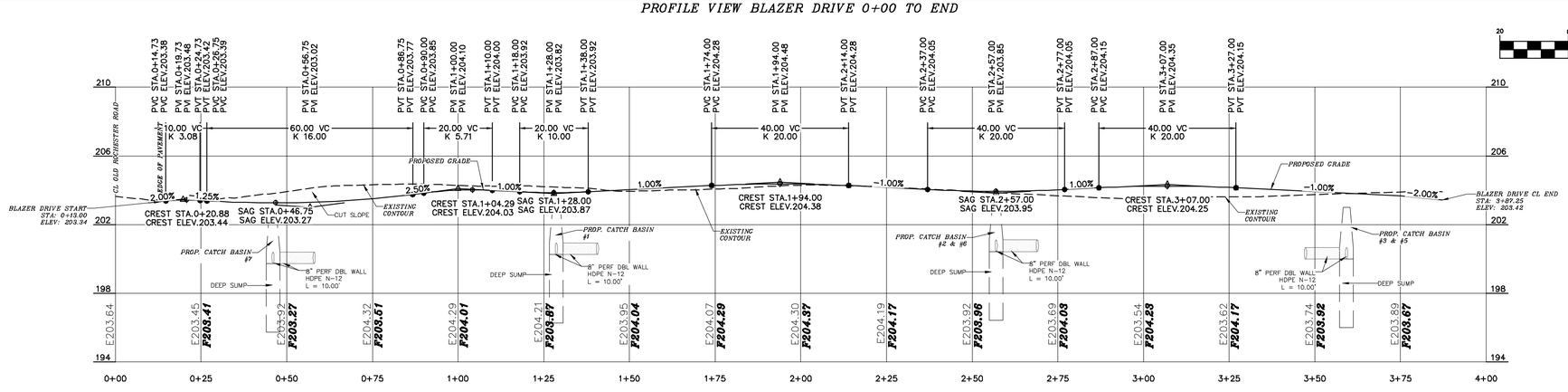
LEGEND:

- PROPOSED SEWER MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- 176 / 175 / PVT6 / PVT5 — CONTOUR MINOR, EXISTING; CONTOUR MAJOR, EXISTING; CONTOUR MINOR, PROPOSED; CONTOUR MAJOR, PROPOSED; CENTER LINE
- EXISTING WATER MAIN; EXISTING SEWER LINE; EXISTING DRAINAGE LINE; EXISTING OVERHEAD UTILITY
- PROPOSED WATER MAIN; PROPOSED FIRE PROTECTION; PROPOSED WATER SERVICE; PROPOSED SEWER LINE; PROPOSED DRAINAGE LINE; PROPOSED UNDERDRAIN; UNDERGROUND UTILITY
- E175.31 / PVT5.31 — EXISTING SPOT GRADE; PROPOSED SPOT GRADE; FLOW ARROW
- INFILTRATION SUMP
- TEST PIT
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS



PLAN VIEW BLAZER DRIVE 0+00 TO END

PROFILE VIEW BLAZER DRIVE 0+00 TO END



STRUCTURES TABLE:

PROP. CATCH BASIN #1
STA: 1+28.65 (Lt. 29.0')
4'ø STRUCTURE W/ FLAT TOP & TYPE "B" GRATE
RIM = 203.29 (FLUSH)
INV. OUT = 200.29 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #2
STA: 2+57.00 (Lt. 29.0')
4'ø STRUCTURE W/ FLAT TOP & TYPE "B" GRATE
RIM = 203.44 (FLUSH)
INV. OUT = 200.44 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #3
STA: 3+59.25 (Lt. 27.25')
4'ø STRUCTURE W/ FLAT TOP & "BEEHIVE" GRATE
RIM = 203.00 (FLUSH)
INV. OUT = 200.00 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #5
STA: 3+59.25 (Rt. 27.25')
4'ø STRUCTURE W/ FLAT TOP & "BEEHIVE" GRATE
RIM = 203.00 (FLUSH)
INV. OUT = 200.00 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #6
STA: 2+57.00 (Rt. 29.0')
4'ø STRUCTURE W/ FLAT TOP & TYPE "B" GRATE
RIM = 203.44 (FLUSH)
INV. OUT = 200.44 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

PROP. CATCH BASIN #7
STA: 0+47.25 (Rt. 29.0')
4'ø STRUCTURE W/ FLAT TOP & TYPE "B" GRATE
RIM = 202.69 (FLUSH)
INV. OUT = 199.69 (8" HDPE N-12) (2)
W/ 4' SUMP & HOOD

ALL 8" PERF. DBL WALL HDPE N-12 WRAPPED IN SOCK
L = 10.00'

ENSURE 4" MIN. STONE BEDDING UNDER PIPES

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

PLAN & PROFILE BLAZER DRIVE 0+00 TO END
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

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

NOT FOR CONSTRUCTION

PROJECT NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac

5.) THE INTENT OF THIS PLAN IS TO PROVIDE DETAIL GRADING & ENGINEERING DETAILS FOR BLAZER DRIVE PARKING AREAS AND TAX MAP 40, LOT 25.

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 WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

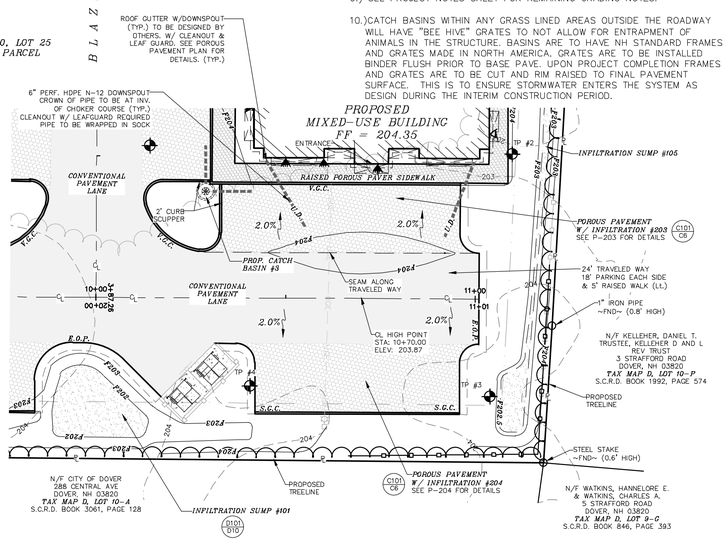
9.) SEE PROJECT NOTES SHEET FOR REMAINING GRADING NOTES.

10.) CATCH BASINS WITHIN ANY GRASS LINED AREAS OUTSIDE THE ROADWAY WILL HAVE "BEE HIVE" GRATES TO NOT ALLOW FOR ENTRAPMENT OF ANIMALS IN THE STRUCTURE. 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.

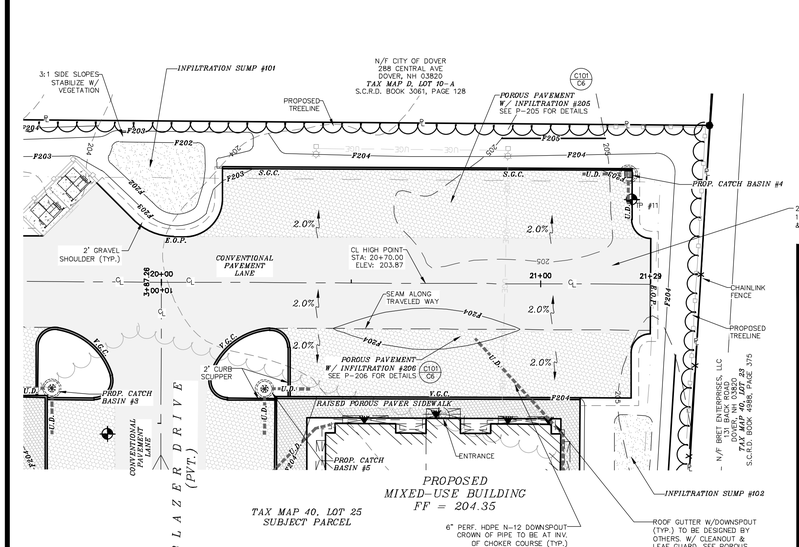
GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



PLAN VIEW SOUTHERN PARKING 10+00 – END



PLAN VIEW NORTHERN PARKING 20+00 – END

STRUCTURES TABLE:

D101 D1 | D101 D2 | D101 D3 | D101 D5

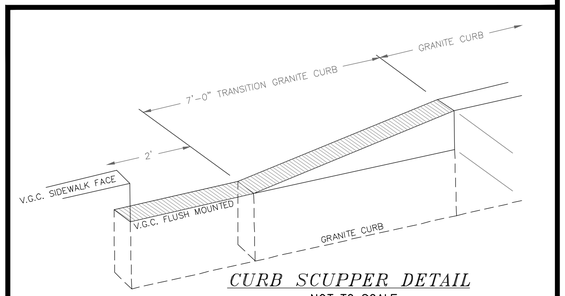
PROP. CATCH BASIN #4
STA: 21+23.35 (Lt. 29.0')
4'ø STRUCTURE W/ FLAT TOP & TYPE "B" GRATE
RIM = 202.96 (FLUSH)
INV. OUT = 199.96 (8" HDPE N-12) (2)
W/ 4" SUMP & HOOD

ALL 8" PERF. DBL WALL HDPE N-12 WRAPPED IN SOCK
L = 10.00'

ENSURE 4" MIN. STONE BEDDING UNDER PIPES

LEGEND:

- PROPOSED SEWER MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING OVERHEAD UTILITY
- PROPOSED WATER MAIN
- PROPOSED FIRE PROTECTION
- PROPOSED WATER SERVICE
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED UNDERDRAIN
- UNDERGROUND UTILITY
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- FLOW ARROW
- INFILTRATION SUMP
- TEST PIT
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS



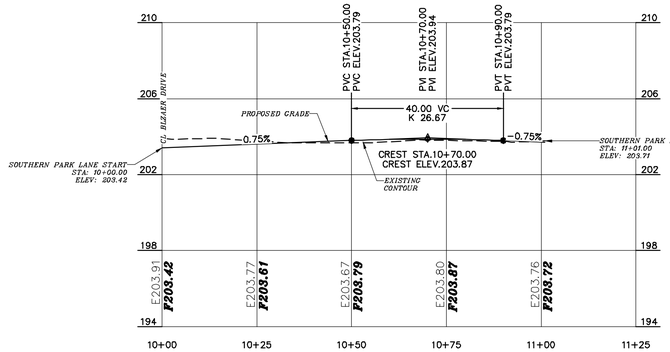
CURB SCUPPER DETAIL
NOT TO SCALE
TO BE USED AT THE LANDSCAPED ISLANDS AT THE END OF BLAZER DRIVE

GRAPHIC SCALE

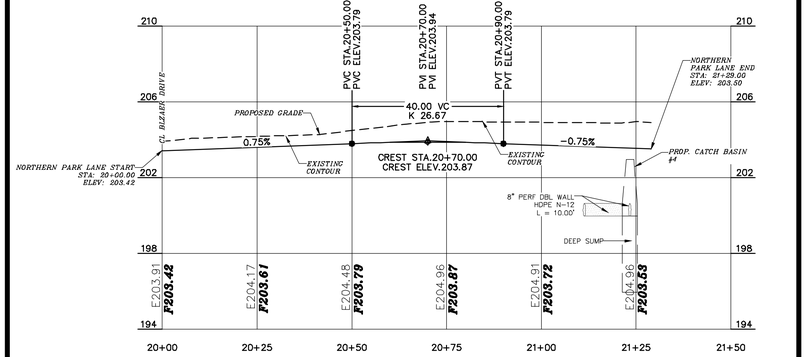
20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
VERTICAL SCALE: 1" = 4'

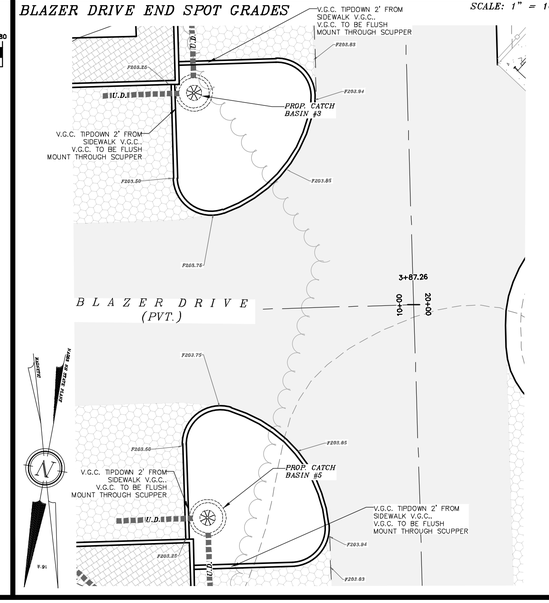
PROFILE VIEW SOUTHERN PARKING 10+00 – END



PROFILE VIEW NORTHERN PARKING 20+00 – END



BLAZER DRIVE END SPOT GRADES SCALE: 1" = 10'



NOT FOR CONSTRUCTION

PLANNING FILE # SITE 2024-0009

#	REVISION	DATE	DESCRIPTION
#01		03-18-25	REVISED PER TRC COMMENT

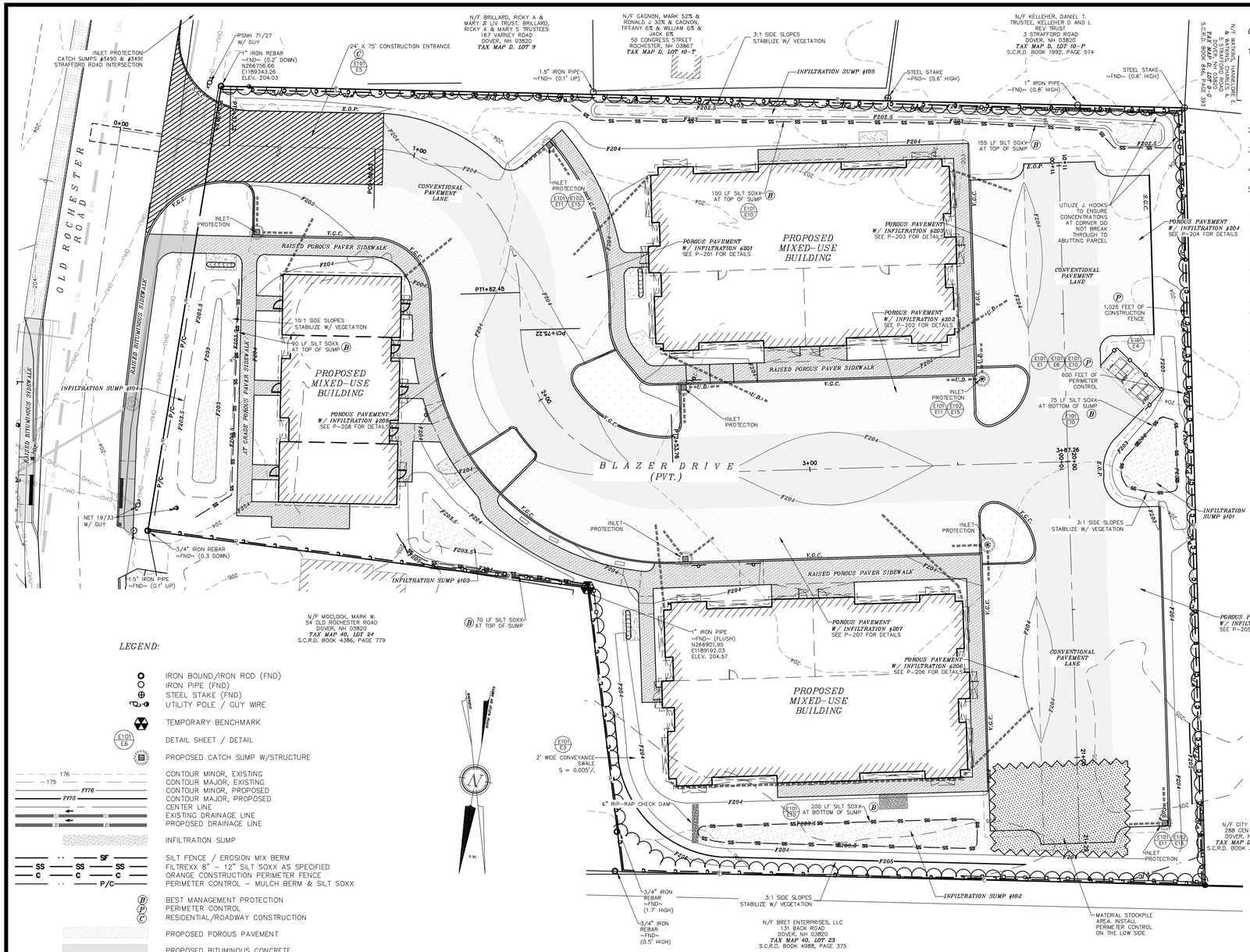
PLAN & PROFILE PARKING LANES
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

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

SHEET 10 OF 30



LEGEND:

- IRON BOUND/IRON ROD (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- TEMPORARY BENCHMARK
- E101 / E6 — DETAIL SHEET / DETAIL
- PROPOSED CATCH SUMP W/STRUCTURE
- 176 / 175 — CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- F176 — CONTOUR MINOR, PROPOSED
- F175 — CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING DRAINAGE LINE
- PROPOSED DRAINAGE LINE
- INFILTRATION SUMP
- SF — SILT FENCE / EROSION MIX BERM
- SS — FILTREXX 8" – 12" SILT SOXX AS SPECIFIED
- C — ORANGE CONSTRUCTION PERIMETER FENCE
- P/C — PERIMETER CONTROL – MULCH BERM & SILT SOXX
- (B) BEST MANAGEMENT PROTECTION
- (P) PERIMETER CONTROL
- (C) RESIDENTIAL/ROADWAY CONSTRUCTION
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

SOILS & DEWATERING:

10 MERRIMAC GRAVELLY LOAMY SAND 0 TO 3% SLOPE K = 0.24 – B HORIZON

SEE SITE SPECIFIC SOILS MAP (SSSM)
SEE WEBSOIL USDA–NRCS
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 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 RECEIVING SURFACE WATER RUNOFF. CONTRACTOR TO BE RESPONSIBLE FOR ALL DIVERSIONS DURING CONSTRUCTION AND FOR INTERIM SEDIMENT AND EROSION CONTROL MEASURES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GENERAL NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac..

5.) THE INTENT OF THIS PLAN IS SHOW THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES.

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 OLD ROCHESTER 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. CALCIUM CHLORIDE SHALL NOT BE USED FOR DUST CONTROL AS THIS IS IN THE SECONDARY GROUNDWATER PROTECTION ZONE.

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 THE EXPAND CONSTRUCTION BEYOND THE STAKED OUT LIMITS.

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.

PLANNING FILE # SITE 2024–0009

#	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT
REVISION	DATE	DESCRIPTION

EROSION AND SEDIMENT CONTROL PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

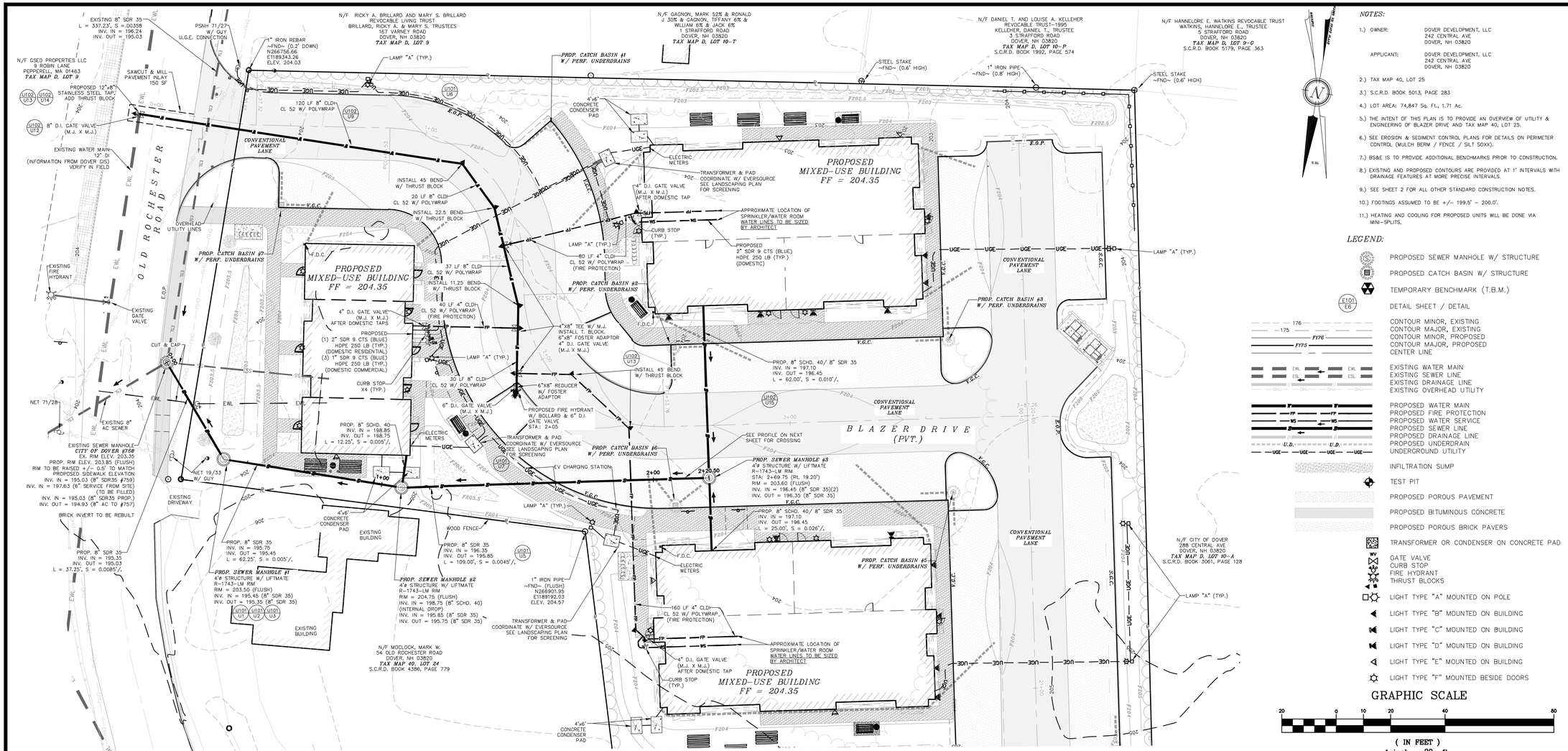
SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE — KENNETH A. BERRY No. 14213 LICENSED PROFESSIONAL ENGINEER

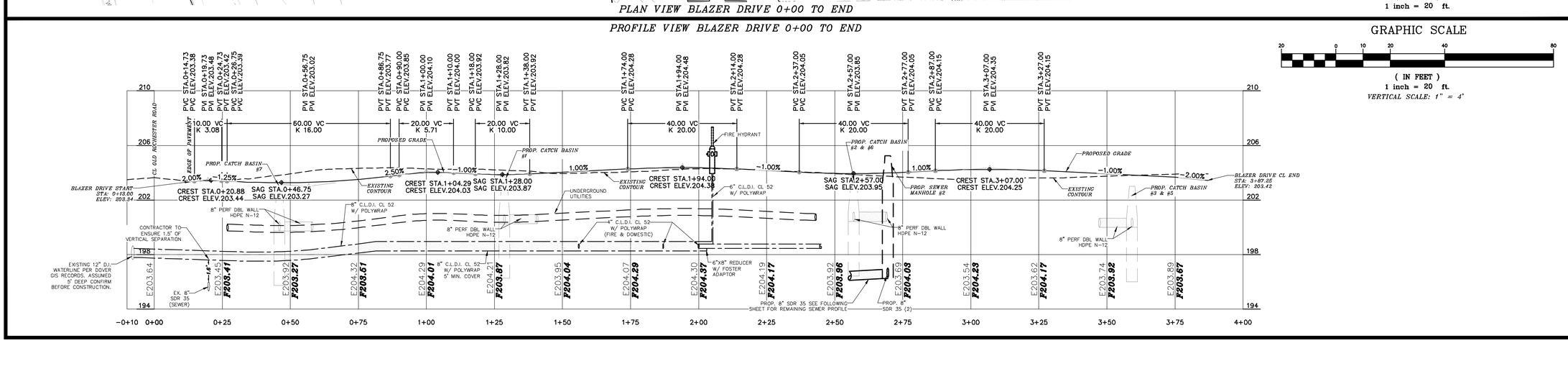
DOVER, NH E&SC

E&SC

NOT FOR CONSTRUCTION



PLAN VIEW BLAZER DRIVE 0+00 TO END



#	REVISION	DATE	DESCRIPTION
			PLANNING FILE # SITE 2024-0009
#01		03-18-25	REVISED PER TRC COMMENT

OVERVIEW UTILITY PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

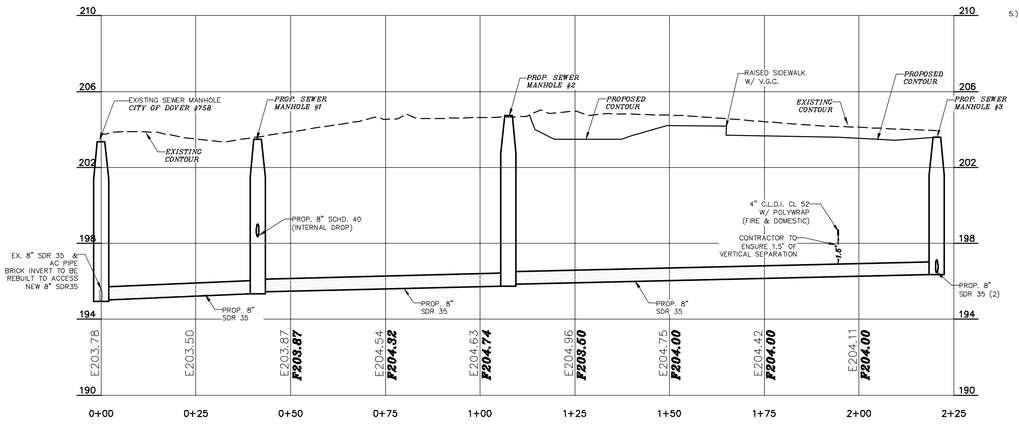
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE KENNETH A. BERRY No. 14311 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

PLAN VIEW SEWER LINE 0+00 TO END



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
VERTICAL SCALE: 1" = 4'

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

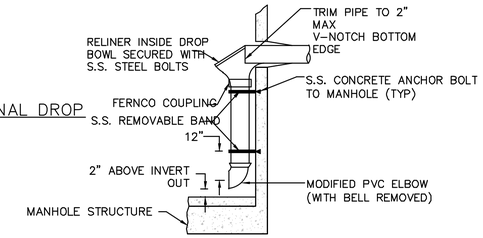
2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac.

5.) THE INTENT OF THIS PLAN IS TO PROVIDE A PROFILE OF THE SEWER CONNECTION FOR BLAZER DRIVE AND TAX MAP 40, LOT 25.

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.

INTERNAL DROP DETAIL
NOT TO SCALE

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

SEWER PROFILE
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE - KENNETH A. BERRY No. 14261 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.

BLAZER DRIVE 0+00–END

SOUTHERN PARKING

NORTHERN PARKING

DESIGN NOTES:

1.) POROUS ASPHALT PAVEMENT WILL CONFORM TO UNHSC (2007b) SPECIFICATIONS AS UPDATED BY UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS (DATED: SEPTEMBER 2016).

2.) THE FILTER COURSE WILL BE INSTALLED AT A MINIMUM DEPTH OF 18 INCHES AND CONSIST OF NHDOT (2016) SAND, ITEM 304.1 PER THE NH STORMWATER MANUAL.

3.) SEE CROSS SECTIONS FOR DETAILS.

4.) SEE STORMWATER SYSTEM MANAGEMENT: INSPECTION AND MAINTENANCE MANUAL AND PLAN, DATED JULY 1, 2024 FOR MAINTENANCE REQUIREMENTS.

REFERENCE:

1.) NH STORMWATER MANUAL: VOLUME 2, SECTION 4E PERMEABLE PAVEMENT.

2.) UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS, FEBRUARY 2014, REVISED SEPTEMBER 2016, UNIVERSITY OF NEW HAMPSHIRE STORWATER CENTER, DURHAM, NH 03824-3534.

3.) POROUS ASPHALT PAVEMENT FOR STORMWATER MANAGEMENT, THE UNH STORMWATER CENTER.

POROUS PAVEMENT
TOTAL SECTION DEPTH = 38"
TOTAL SECTION REQUIRED = 31.2"
(65% OF FROST DEPTH)
FROST DEPTH = 48" (UNHSC)
18" FILTER MEDIA PROVIDED

SEE GRADING PLANS & PROFILES FOR SPOT ELEVATIONS

CHOKER COURSE *	
SIEVE SIZE	% PASSING BY WEIGHT
1 1/2"	100
1"	95 – 100
1/2"	25 – 60
# 4	0 – 10
# 8	0 – 5

* EQUIVALENT TO STANDARD STONE SIZE #57 – AASHTO

FILTER BLANKET COURSE *	
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

FILTER COURSE *	
SIEVE SIZE	% PASSING BY WEIGHT
6"	100
# 4	70 – 100
# 200	0 – 6**

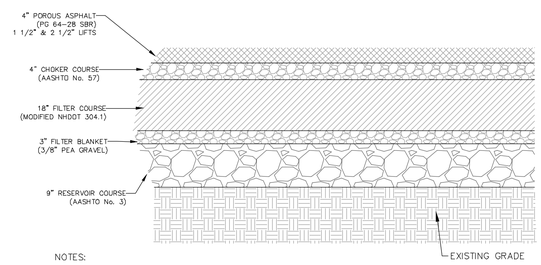
* EQUIVALENT TO MODIFIED NHDOT 304.1 – SECTION 304 OF NHDOT NHDOT STANDARD SPECIFICATIONS

** LESS THAN 4% FINES

RESERVOIR COURSE *	
SIEVE SIZE	% PASSING BY WEIGHT
2 1/2"	100
2"	90 – 100
1 1/2"	35 – 70
1"	0 – 15
1/2"	0 – 5

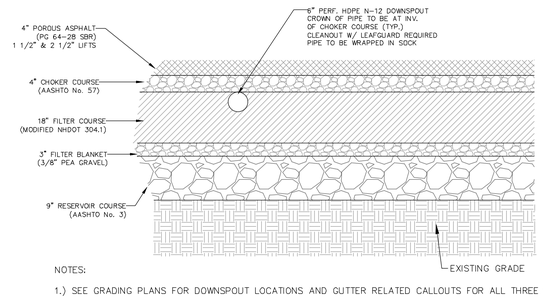
* EQUIVALENT TO STANDARD STONE SIZE #3 – AASHTO

POROUS ASPHALT MIX DESIGN CRITERIA	
SIEVE SIZE	% PASSING BY WEIGHT
3/4"	100
1/2"	85 – 100
3/8"	55 – 75
# 4	10 – 25
# 8	5 – 12
# 200	2 – 4
BINDER CONTENT (AASHTO T164)	5.8 – 6.5%
AIR VOID CONTENT (AASHTO D6752)	16 – 22%
DRAINDOWN (AASHTO D6390)	≤ 0.3%
RETAINED TENSILE STRENGTH (AASHTO D6390)	≥ 80%
CANTABRO ABRASION TEST (UNAGED)	≤ 20%
CANTABRO ABRASION TEST (7 DAYS)	≤ 30%



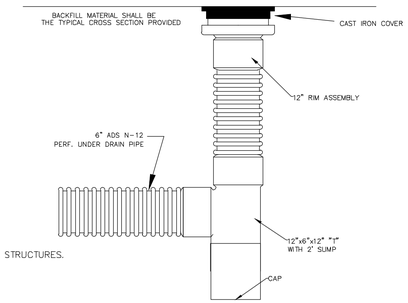
NOTES:
1.) SEE TYPICAL SECTIONS ON SHEET C102, DETAIL C17.

POROUS ASPHALT PAVEMENT SECTION
NOT TO SCALE

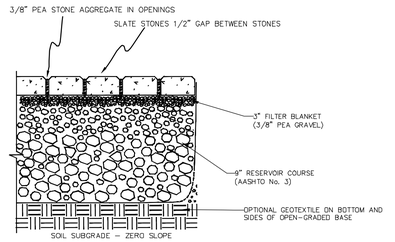


NOTES:
1.) SEE GRADING PLANS FOR DOWNSPOUT LOCATIONS AND GUTTER RELATED CALLOUTS FOR ALL THREE STRUCTURES.
2.) A CLEANOUT IS REQUIRED FOR EACH DOWNSPOUT NEAR THE BUILDING.

DOWNSPOUT DISCHARGE DETAIL
NOT TO SCALE



ADS N-12, INLINE DRAIN/CLEANOUT
NOT TO SCALE USED FOR DOWNSPOUT CLEANOUTS



5-8' WIDE POROUS PAVERS DETAIL
NOT TO SCALE

POROUS ASPHALT PAVEMENT
NOT TO SCALE

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

BLAZER DRIVE & PARKING CROSS SECTIONS (P-201-P-208)
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

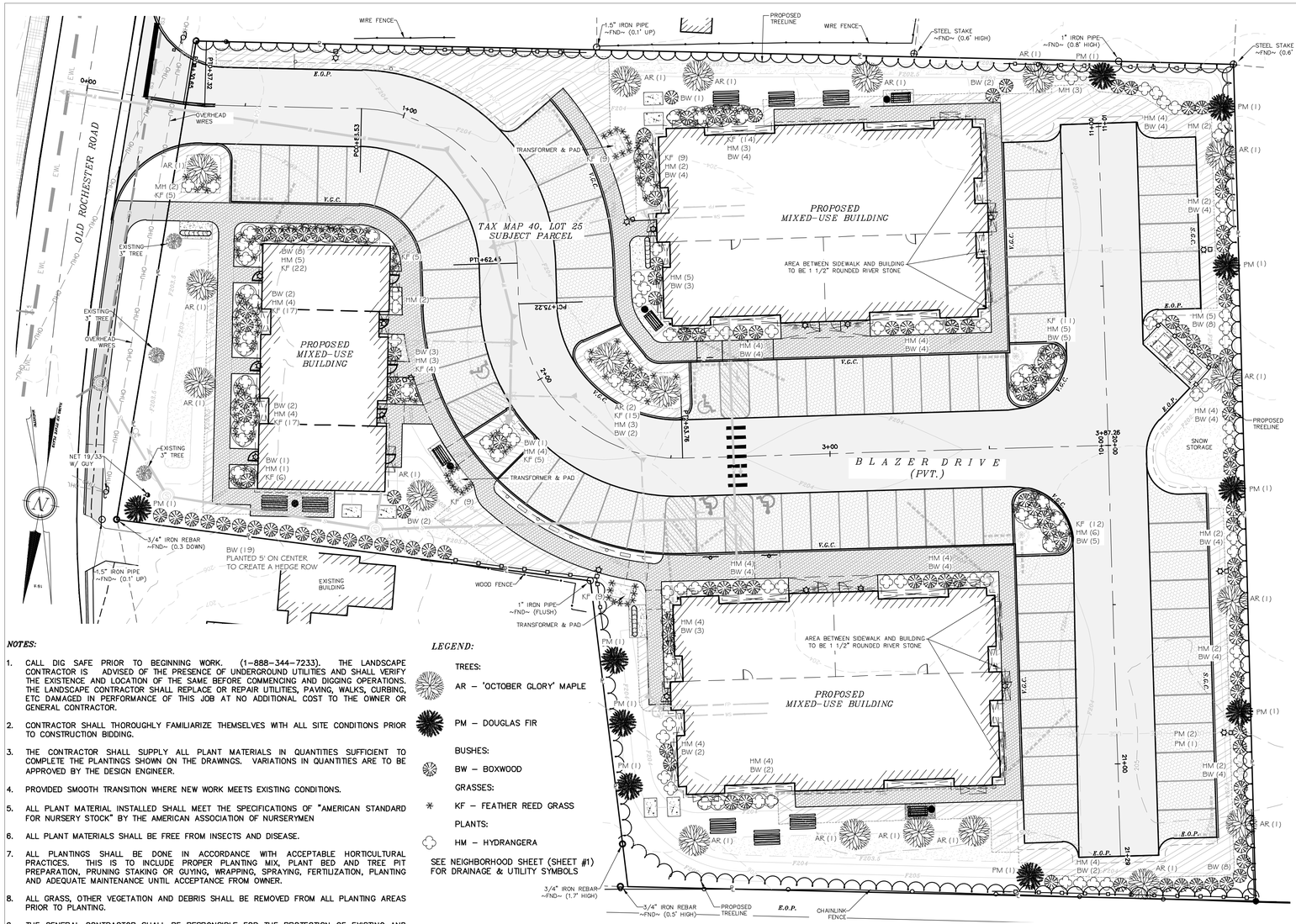
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

KENNETH A. BERRY No. 14245 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

P-201-P208

NOT FOR CONSTRUCTION



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.

LEGEND:

TREES:

AR – 'OCTOBER GLORY' MAPLE

PM – DOUGLAS FIR

BUSHES:

BW – BOXWOOD

GRASSES:

KF – FEATHER REED GRASS

PLANTS:

HM – HYDRANGERA

SEE NEIGHBORHOOD SHEET (SHEET #1) FOR DRAINAGE & UTILITY SYMBOLS

16. 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.
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, 153-14 (G), SUCH THAT THERE SHALL BE DECIDUOUS SHADE TREES PLANTED 40 FEET O.C. ALONG THE PERIMITERE 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.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANTING SCHEDULE
Blazer Drive
Botanical Name/ Common Name

	Size	Qty	Label
Trees			
Acer rubrum / Red Maple	4" Cal.	19	AR
Pseudotsuga menziesii / Douglas Fir	4" Cal.	10	PM
Shrubs			
Buxus / Boxwood	3 Gal.	122	BW
Grasses			
Calamagrostis acutifolia 'Karl Foerster' / Feather Reed Grass	#2	156	KF
Perennials			
Hydrangea macrophylla/ Hydrangea	#1	107	HM

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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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planning & design llc
311 kast hill road
hopkinton, nh 03229
603. 491. 2322
terrainplanning.com

BLAZER DRIVE

Site Location:
52 Old Rochester Road
Dover, NH
Tax Map 40, Lot 25

Prepared For:
Berry Surveying & Engineering
335 Second Crown Point Rd
Barrington, NH 03825

LANDSCAPING PLAN

DATE: JULY 1, 2024
REVISED: MARCH 18, 2025

SCALE: 1" = 20'

PROJECT #: DB 2022-075

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: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED LIGHTING DESIGN FOR THE SITE PLAN.

6.) LAMP "A" MOUNTED 16.5' – 17.5' ABOVE GRADE. LAMPS "B, C, D & E" ARE MOUNTED AT 10' ON THE BUILDING. LAMP "F" MOUNTED +/– 9' BESIDE DOORS ON BUILDINGS.

7.) EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.

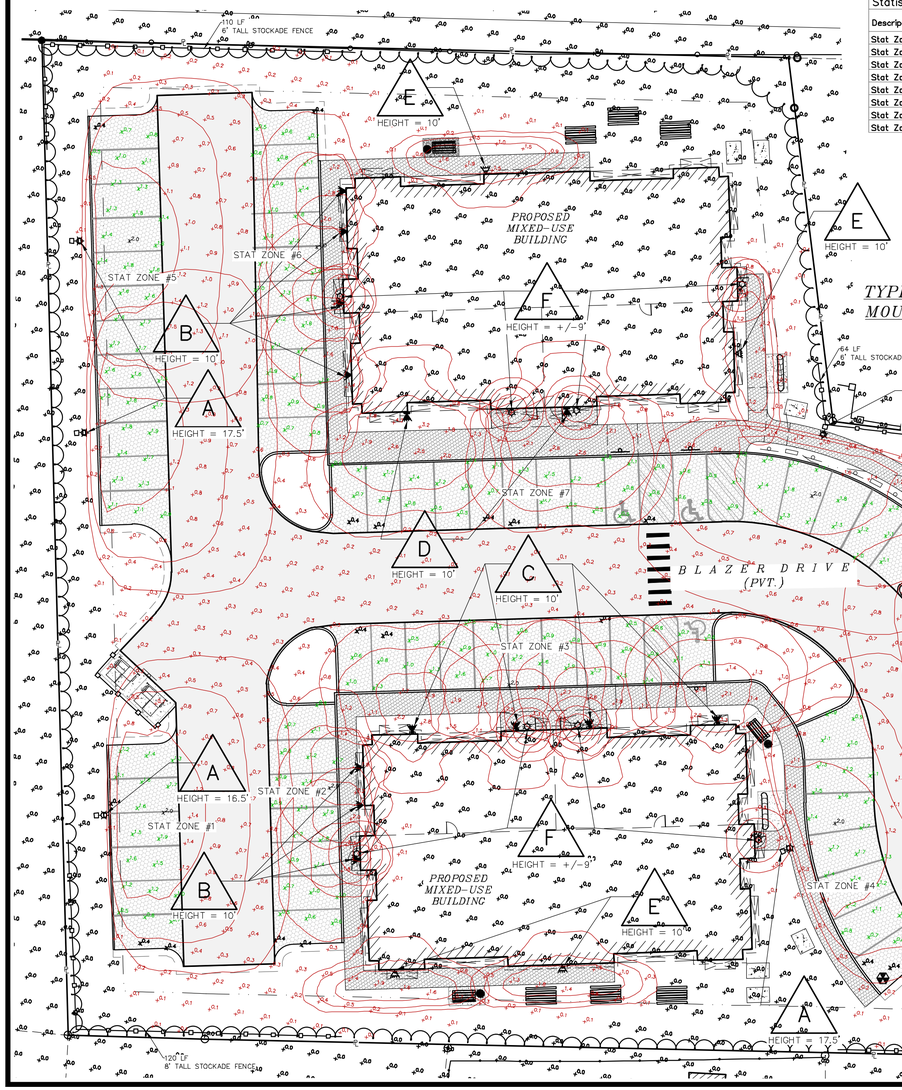
A
B
C
D
E
F

Schedule

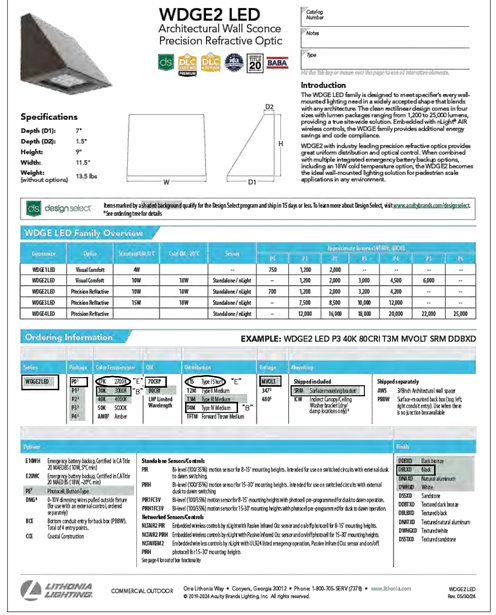
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
	A	7	Lithonia Lighting	DSXO LED P1 30K 70CRI BLC4	D–Series Size 0 Area Luminaire P1 Performance Package 3000K CCT 70 CRI Type 4 Extreme Backlight Control	1	3454	1	33.21
	B	7	Lithonia Lighting	WDGE2 LED P0 30K 70CRI T4M	WDGE2 LED WITH P0 – PERFORMANCE PACKAGE, 3000K, 70CRI, TYPE 4 MEDIUM OPTIC	1	746	1	6.8946
	C	4	Lithonia Lighting	WDGE2 LED P1 30K 70CRI TFTM	WDGE2 LED WITH P1 – PERFORMANCE PACKAGE, 3000K, 70CRI, TYPE FORWARD THROW MEDIUM OPTIC	1	1305	1	11.1658
	D	2	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
	E	5	Lithonia Lighting	WDGE2 LED P0 27K 70CRI T1S	WDGE2 LED WITH P0 – PERFORMANCE PACKAGE, 2700K, 70CRI, TYPE 1 SHORT OPTIC	1	708	1	6.8946
	F	13	Lithonia Lighting	ODSL10 SRC	CRAFTSTON WALL MOUNTED SMALL DECORATIVE LANTERN, ONE LAMP 13W SPIRAL COMPACT FLUORESCENT, WHITE GLASS DIFFUSER 4.25" DIA. X 6.65" HIGH, ELECTRONIC BALLAST	1	900	1	12.6

Statistics

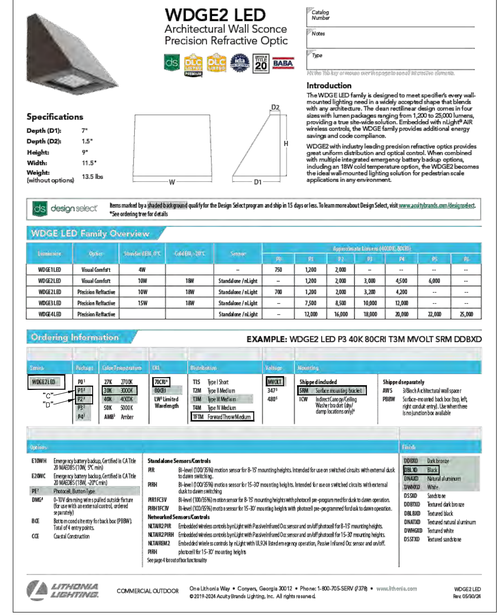
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Stat Zone #1	X	1.2 fc	2.0 fc	0.4 fc	5.0:1	3.0:1
Stat Zone #2	X	1.0 fc	2.0 fc	0.4 fc	5.0:1	2.5:1
Stat Zone #3	X	1.0 fc	2.0 fc	0.4 fc	5.0:1	2.5:1
Stat Zone #4	X	1.2 fc	2.0 fc	0.4 fc	5.0:1	3.0:1
Stat Zone #5	X	1.4 fc	2.0 fc	0.4 fc	5.0:1	3.5:1
Stat Zone #6	X	1.1 fc	2.0 fc	0.4 fc	5.0:1	2.8:1
Stat Zone #7	X	1.0 fc	2.0 fc	0.4 fc	5.0:1	2.5:1
Stat Zone #8	X	0.9 fc	2.0 fc	0.4 fc	5.0:1	2.3:1



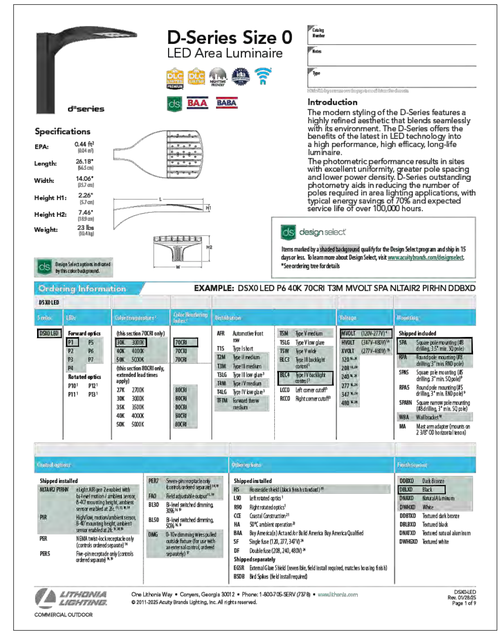
TYPICAL RESIDENTIAL LAMP "F" MOUNTED AT 9' +/– AS SHOWN
NOT TO SCALE



TYPICAL WALL PACK "B&E" MOUNTED AT 10' AS SHOWN
NOT TO SCALE



TYPICAL WALL PACK "C&D" MOUNTED AT 10' AS SHOWN
NOT TO SCALE



TYPICAL POLE LAMP "A" MOUNTED AT 16.5' – 17.5' AS SHOWN
NOT TO SCALE

LIGHTING DETAILS
NOT TO SCALE

#	REVISION	DATE	DESCRIPTION
	PLANNING FILE # SITE 2024–0009		
#1		03–18–25	REVISED PER TRC COMMENT

LIGHTING PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14941
LICENSED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THIS IS A MIXED USE SITE PLAN.

6.) THE INTENT OF THIS PLAN IS TO DEMONSTRATE THE AVAILABLE SIGHT DISTANCE FROM THE PROPOSED ROADWAY KNOWN AS BLAZER DRIVE.

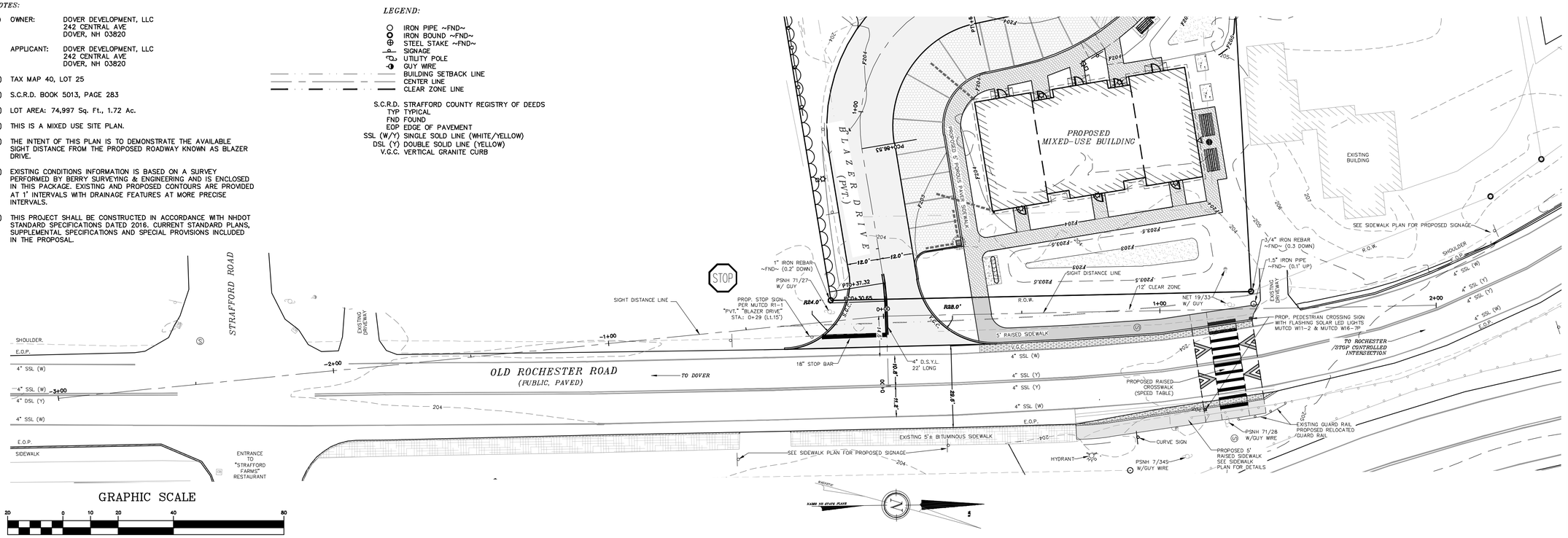
7.) EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY PERFORMED BY BERRY SURVEYING & ENGINEERING AND IS ENCLOSED IN THIS PACKAGE. EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

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.

LEGEND:

- IRON PIPE ~FND~
- IRON BOUND ~FND~
- STEEL STAKE ~FND~
- SIGNAGE
- UTILITY POLE
- GUY WIRE
- BUILDING SETBACK LINE
- CENTER LINE
- CLEAR ZONE LINE

S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
TYP TYPICAL
FND FOUND
EOP EDGE OF PAVEMENT
SSL (W/Y) SINGLE SOLD LINE (WHITE/YELLOW)
DSL (Y) DOUBLE SOLID LINE (YELLOW)
V.G.C. VERTICAL GRANITE CURB



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLAN VIEW OLD ROCHESTER ROAD

CLEAR ZONE CALCULATION:

SOUTHBOUND DESIGN SPEED: 30 MPH / 85TH ASSUMED 30 MPH
SEE RAISED CROSSWALK WITH PEDESTRIAN CROSSING SIGNS WITH FLASHING SOLAR LED AMBER LIGHTS ON EACH SIDE OF THE ROADWAY.

SOUTHBOUND DESIGN ADT (2023): 2,555 (NHDOT)

FROM AASHTO ROADSIDE DESIGN GUIDE (2018) TABLE 3.1 PAGE 3-6

CLEAR ZONE REQUIRED TO BE 12-14 FEET (FLATTER THAN 1V:6H
12 FEET HAS BEEN SELECTED.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
VERTICAL SCALE: 1" = 4'

NOTES CONT.:

9.) 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

10.) 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.

11.) THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

NOTES CONT.:

12.) 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.

13.) 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).

14.) ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS NOTED OTHERWISE.

15.) ALL SYMBOLS, WORDS, TRANSVERSE MARKINGS (STOP BARS, CROSSWALK LINES, AND RAILROAD SYMBOLS), LANE LINES, AND ALL OTHER MARKINGS NOTED WITH (T) SHALL BE THERMOPLASTIC.

16.) 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.

NOTES CONT.:

17.) ALL PAVEMENT MARKINGS TO BE PAINTED TO NHDOT STANDARD NO. PM-9.

18.) THE SPEED LIMIT ON OLD ROCHESTER ROAD IS 30 MPH.

19.) SEE SIDEWALK DESIGN PLAN FOR DETAILS OF RAISED CROSSWALK (SPEED TABLE) AND POSTED 15MPH SPEED LIMIT IN THE VICINITY OF THE PROJECT DRIVEWAY.

PM-9 GENERAL NOTES

1.) EDGELINE DETAILS ARE SHOWN FOR MAINLINE ROADWAYS WITHOUT TURN LANE. THE PRESENCE OF TURN LANES MAY REQUIRE DIFFERENT EDGELINE TREATMENTS.

2.) EDGELINES ON THE SIDE ROADS, WHEN CALLED FOR, SHALL FOLLOW THE ABOVE MAINLINE TYPICALS. EDGELINES SHALL NOT BE CONTINUOUS AROUND THE MAINLINE/SIDE ROAD RADIUS. EDGELINES SHALL END AT STOP BARS.

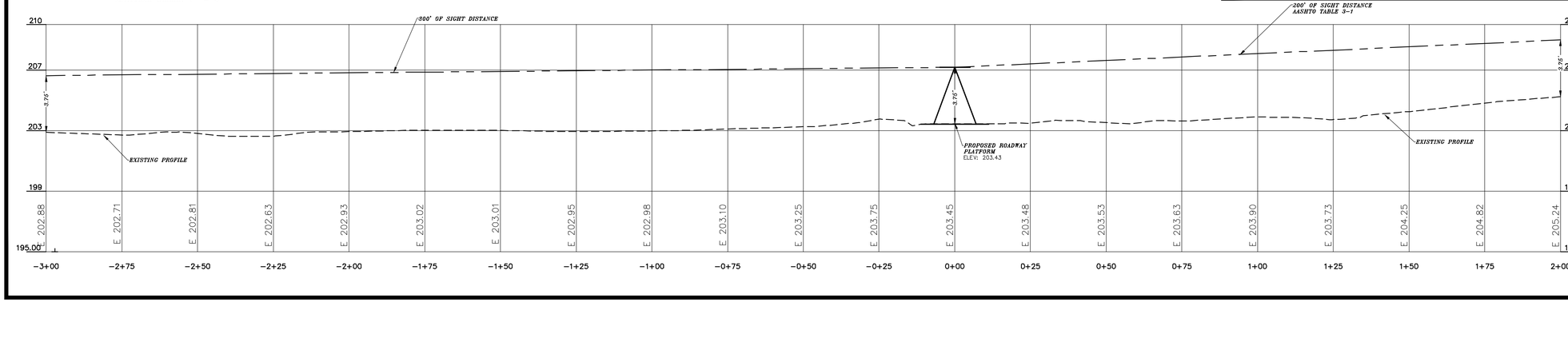
3.) CENTERLINE AND EDGELINE SHALL BE CONTINUOUS PAST RESIDENTIAL DRIVEWAYS. CENTERLINE AND EDGELINE SHALL BREAK FOR COMMERCIAL DRIVES W/TRAFFIC CONTROLS, MINOR SIDE ROADS, OR PRIVATE INTERSECTIONS.

4.) LOCATION OF THE STOP LINE MAY VARY DUE TO INTERSECTION SIGHT DISTANCE AND VEHICLE TURNING RADIUS AND MAY NOT ALWAYS COINCIDE WITH THE LOCATION OF THE STOP SIGN.

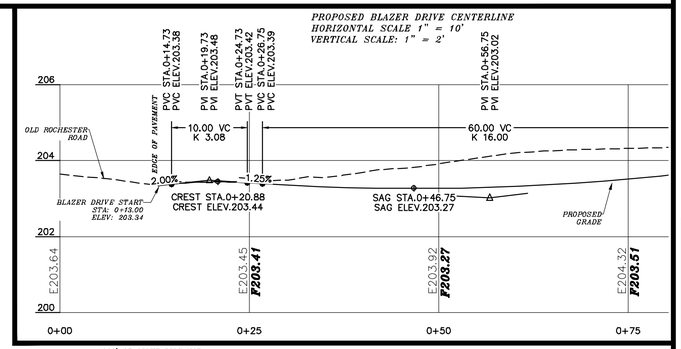
5.) IF THERE IS NO EDGELINE, END STOP BAR 12" FROM EDGE OF PAVEMENT.

6.) STOP BARS, WORDS, LANE LINES, SYMBOLS AND ARROWS SHALL BE THERMOPLASTIC (T).

PROFILE VIEW SIGHT LINE



PROPOSED BLAZER DRIVE CENTERLINE
HORIZONTAL SCALE 1" = 10'
VERTICAL SCALE: 1" = 2'



PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

SIGHT DISTANCE PLAN BLAZER DRIVE
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

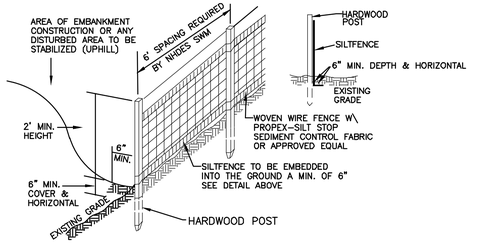
SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14241
LICENSED PROFESSIONAL ENGINEER

SD-1

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

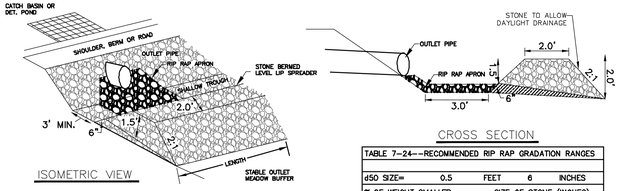
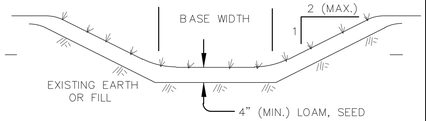


TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9		12
85%	8		11
50%	6		9
15%	2		3

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

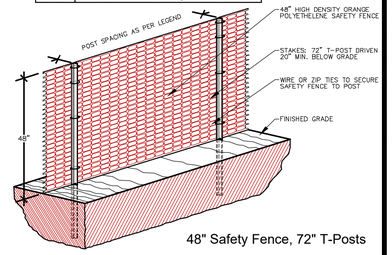
TO BE CONSTRUCTED IAW NH SWM #2 CHAPTER 4, #5 TREATMENT SWALES, PAGE 123.

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

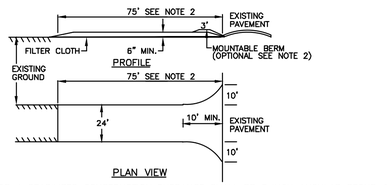
1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
4. SAFETY 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.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

E5

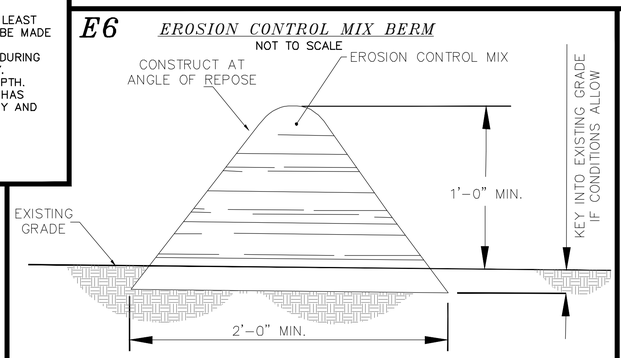
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



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

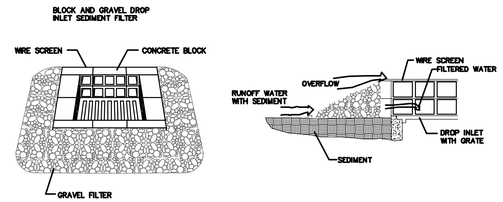
EROSION CONTROL MIX BERM
NOT TO SCALE



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

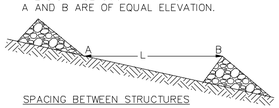
1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS SHALL BE RETURNED TO ORIGINAL GRADES AND ELEVATIONS. DISTURBED AREAS 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
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

E9

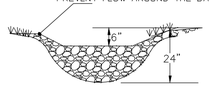
STONE CHECK DAM
NOT TO SCALE

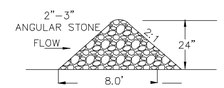
THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.



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.

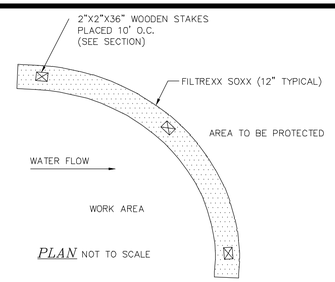




STONE GRADE STABILIZATION STRUCTURE

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

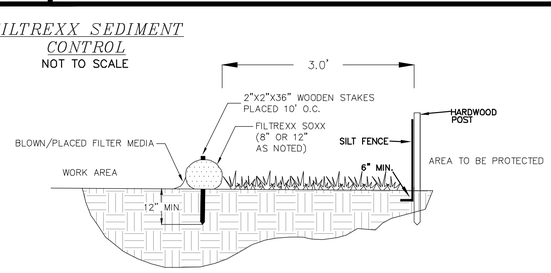


PLAN NOT TO SCALE

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 SEDIMENT CONTROL
NOT TO SCALE



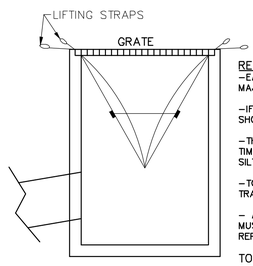
Filtrexx International, LLC
35481 Grafton Eastern Rd | Grafton, Oh 44044
440-926-2607 | fax: 440-926-4021
WWW.FILTREXX.COM
OR APPROVED EQUAL

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

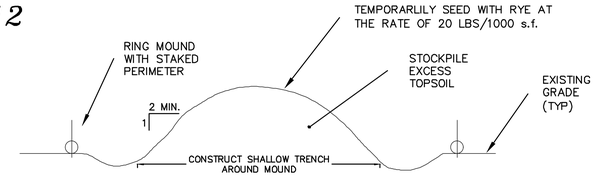
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

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.

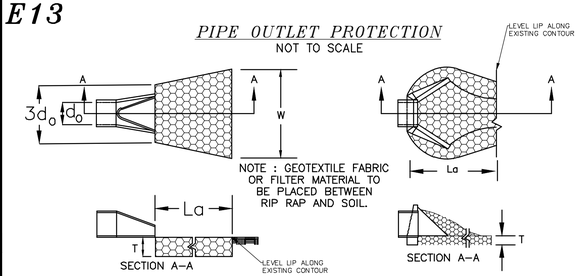
TOPSOIL STOCKPILE MOUND

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

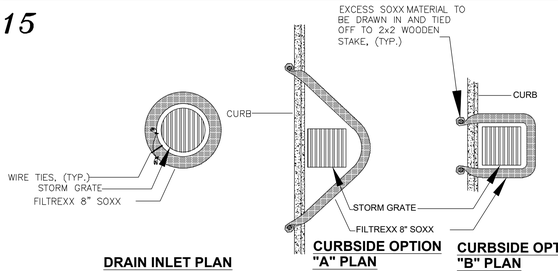
PIPE OUTLET PROTECTION CONSTRUCTION SPECIFICATIONS

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

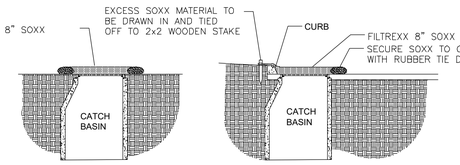
E15



DRAIN INLET PLAN

CURBSIDE OPTION "A" PLAN

CURBSIDE OPTION "B" PLAN



DRAIN INLET SECTION

CURBSIDE SECTION

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/

RECOMMENDED

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.

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	0.35
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	1.30
F. TALL FESCUE 1	150	3.60

*

New England Conservation/Wildlife Mix

Botanical Name	Common Name	Indicator
Elymus virginicus	Virginia 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	Showy Tick Trefoil	FAC
Asclepias tuberosa	Butterfly Milkweed	NI
Bidens frondosa	Beggar Ticks	FACW
Eupatorium purpureum (Eutrochium maculatum)	Purple Joe Pye Weed	FAC
Rudbeckia hirta	Black Eyed Susan	FACU-
Aster pilosus (Symphyotrichum pilosum)	Heath (or Hairy) Aster	UPL
Solidago juncea	Early Goldenrod	

PRICE PER LB. $39.50 MIN. QUANTITY 2 LBS. TOTAL: $79.00 APPLY: 25 LBS/ACRE (1750 sq ft)ft

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:*

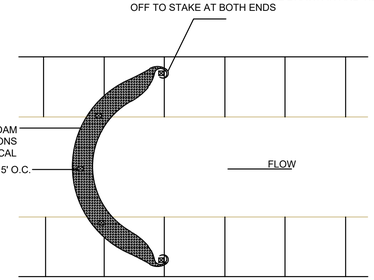
PER ENV–WQ 1500 ALTERATION OF TERRAIN

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

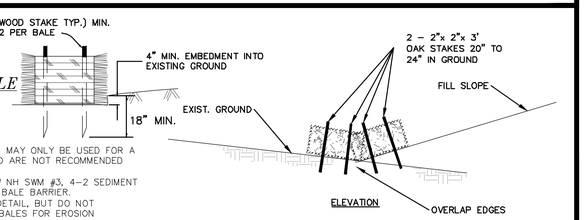


FILTREXX CHECK DAM

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

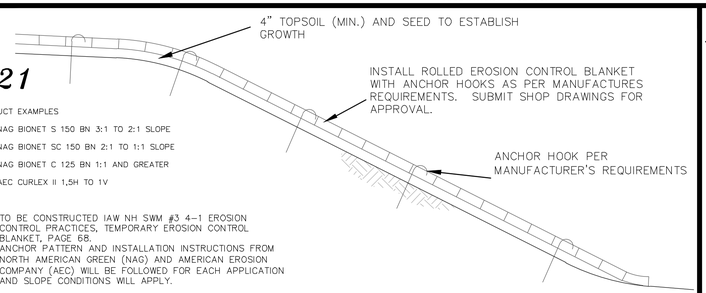


STAKED HAYBALE DETAIL

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,SH TO 1V

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.

ROLLED EROSION CONTROL BLANKET (RECB) SLOPE STABILIZATION DETAIL

NOT TO SCALE

E22 *WINTER STABILIZATION NOTES*

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. 1st 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 1st, ANY ACCUMULATED SNOW SHALL BE REMOVED FROM ALL ROADWAY AND PARKING AREAS.

4. AFTER OCTOBER 1st, 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.

E–102

PLANNING FILE # SITE 2024–0009

#	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

EROSION & SEDIMENT CONTROL DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

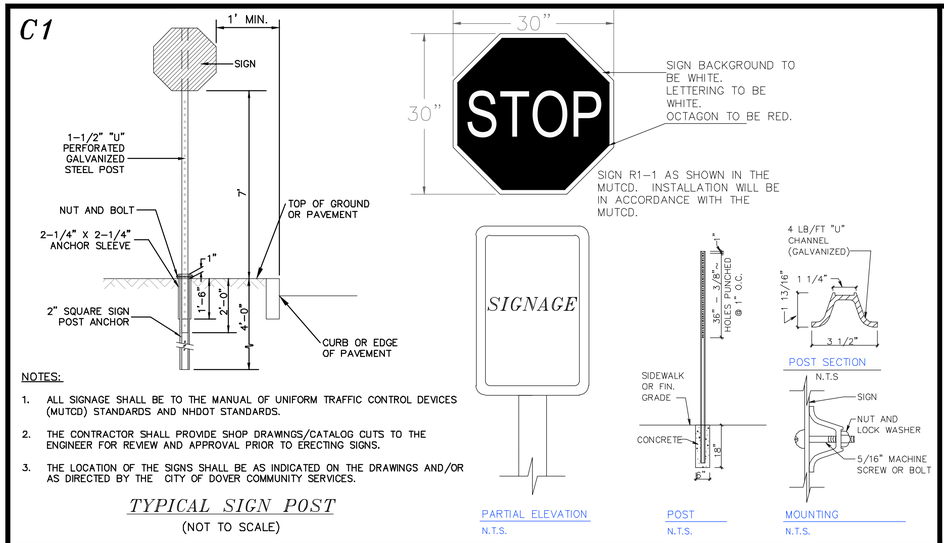
SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

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

SHEET 19 OF 30

NOT FOR CONSTRUCTION

C1



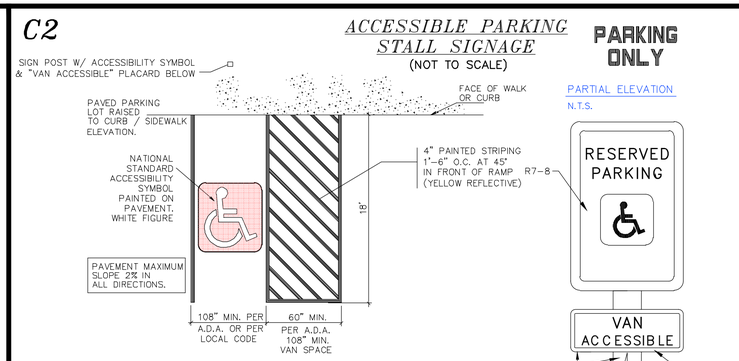
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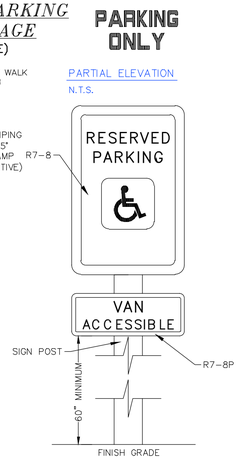
1. ALL SIGNAGE SHALL BE TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND NHDOT STANDARDS.
2. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS/CATALOG CUTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ERECTING SIGNS.
3. THE LOCATION OF THE SIGNS SHALL BE AS INDICATED ON THE DRAWINGS AND/OR AS DIRECTED BY THE CITY OF DOVER COMMUNITY SERVICES.

TYPICAL SIGN POST
(NOT TO SCALE)

C2

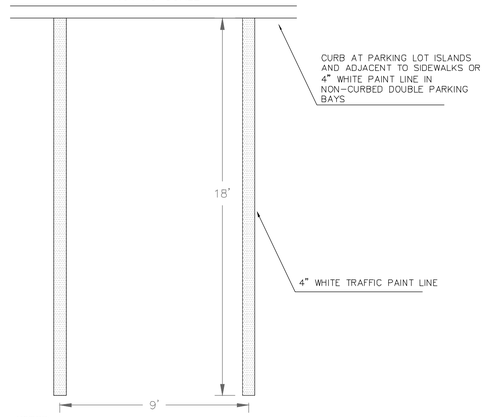
ACCESSIBLE PARKING STALL SIGNAGE
(NOT TO SCALE)





C3

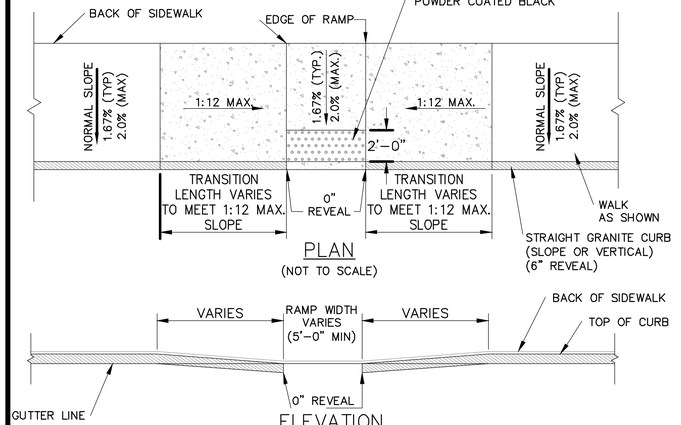
PARKING SPACE DETAIL
NOT TO SCALE



NOTES:

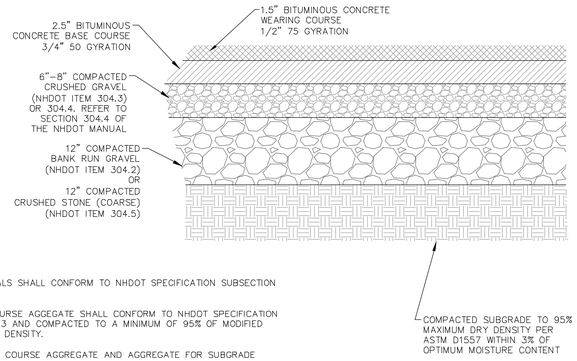
1.) PROVIDE TWO COATS OF PAINT ON ALL PARKING LINES.
2.) SEE PROPOSED SITE PLANS FOR LOCATION OF PARKING SPACES.
3.) PAINTED SPACES ONLY WHERE MARKED ON SITE PLAN

C4



TYPICAL DETAIL FOR WHEELCHAIR RAMP
NOT TO SCALE

C5



NOTES:

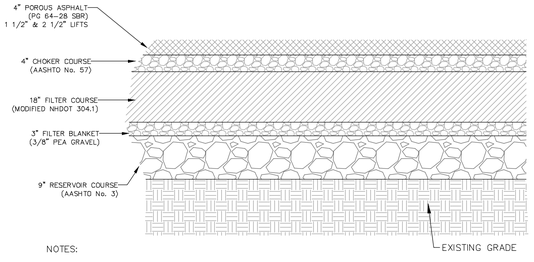
1.) BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SUBSECTION 401.3.6.

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

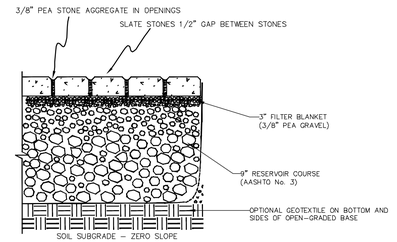
C6



NOTES:

1.) SEE SPECIFICATIONS, GRADATIONS, AND DESIGN REFERENCES ON SHEET P-201-207.

POROUS ASPHALT PAVEMENT SECTION
NOT TO SCALE



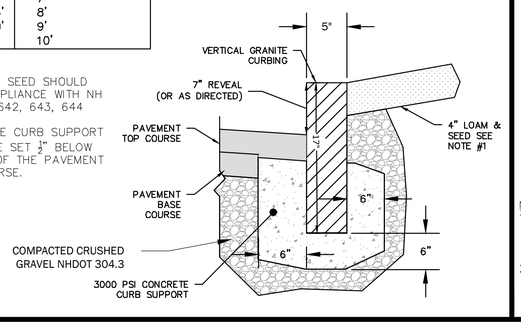
5-8' WIDE POROUS PAVERS DETAIL
NOT TO SCALE

C7

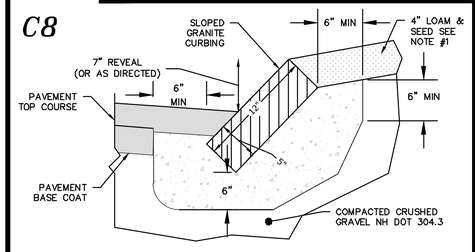
RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:
1.LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ½" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

VERTICAL GRANITE CURB DETAIL
NOT TO SCALE



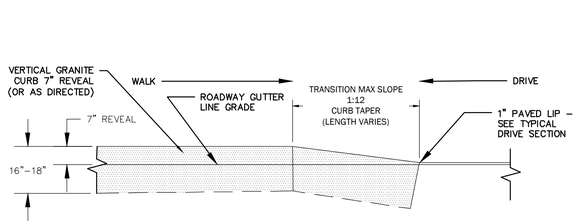
C8



NOTES:
1.LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ½" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

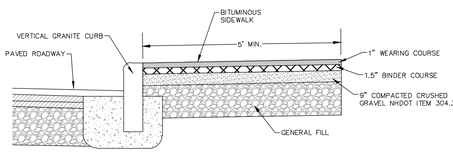
SLOPE GRANITE CURBDETAIL
NOT TO SCALE

C9



GRANITE CURB TRANSITION AT TIP DOWN 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

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

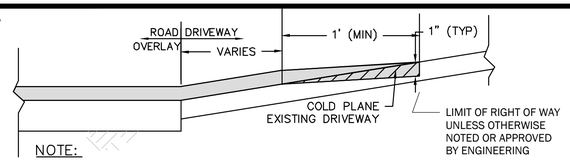
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14934
LICENSED PROFESSIONAL ENGINEER

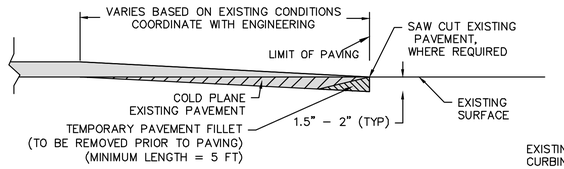
NOT FOR CONSTRUCTION

C11

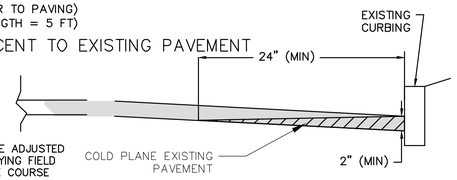


NOTE:
CONTRACTOR MAY SAWCUT DRIVEWAY TRANSITION AT HIS OPTION. PAVEMENT SHALL BE REMOVED AND REPLACED TO MATCH EXISTING.

ADJACENT TO EXISTING DRIVEWAY



ADJACENT TO EXISTING PAVEMENT

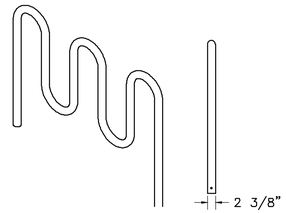


ADJACENT TO EXISTING CURB

NOTES:
1. THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

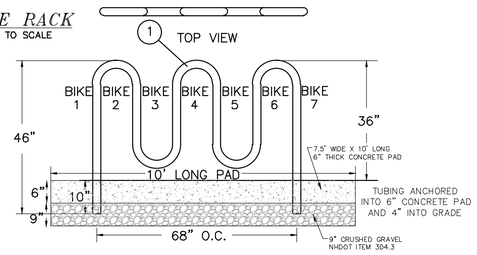
PAVEMENT OVERLAY
NOT TO SCALE

C12



MATERIALS LIST
(1) TUBING – ø 2 3/8" x .154" Wall Steel Tubing

BIKE RACK
NOT TO SCALE

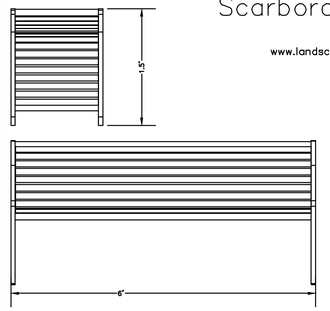


C13

Scarborough Bench, 24" Backed, with Horizontal Strap Seat

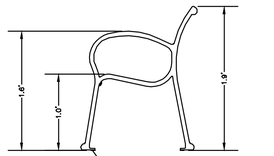
BENCH DETAIL
(NOT TO SCALE)

Scarborough Bench, 24" Backed, with Horizontal Strap Seat
Product Drawing



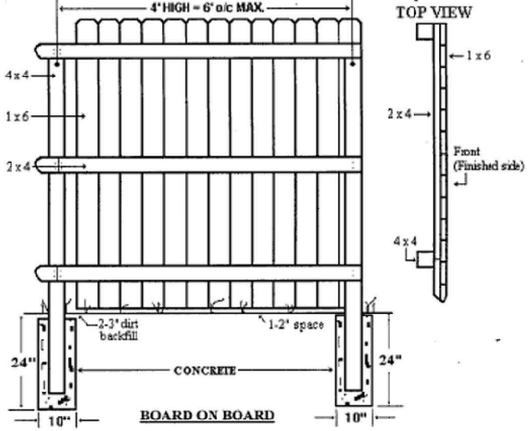
Scarborough Bench, 24" Backed, with Horizontal Strap Seat

www.landscapeforms.com Date: 5/19/2010 Ph: 800.521.2546



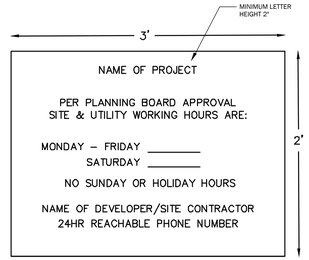
C14

STOCKADE FENCE DETAIL
NOT TO SCALE



C15

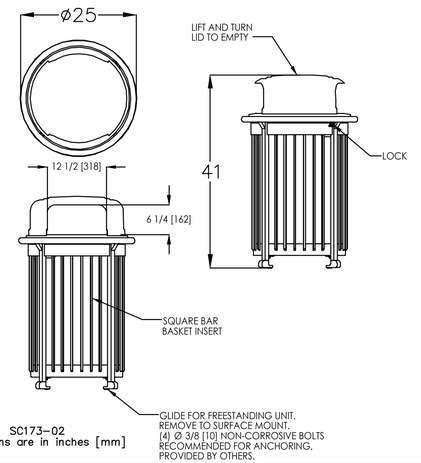
REQUIRED PROJECT INFORMATION SIGN
NOT TO SCALE



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.
4. TO BE PLACED AT THE INTERSECTION OF OLD ROCHESTER ROAD/BLAZER DRIVE.

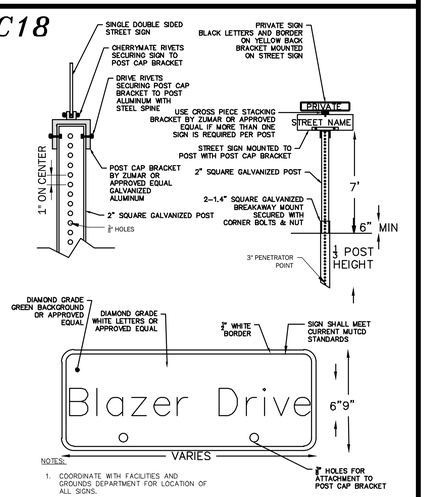
C16

BIN DETAIL
(NOT TO SCALE)



landscapeforms Drawing: SC173–02
Dimensions are in inches [mm]

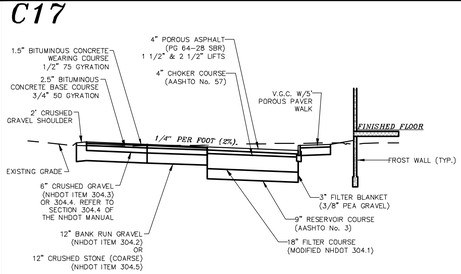
C18



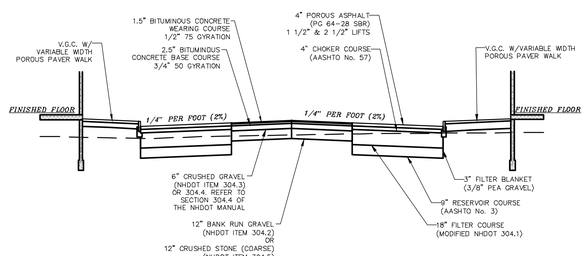
STREET SIGN
NOT TO SCALE

SEE GRADING PLAN FOR PARKING SLOPE MODIFICATIONS IN ACCESSIBLE PARKING AREAS

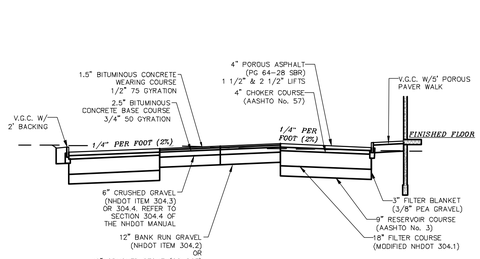
C17



TYPICAL ROADWAY SECTION BLAZER DRIVE 0+00–1+25
NOT TO SCALE

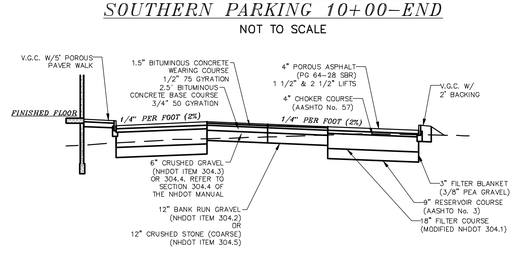


TYPICAL ROADWAY SECTION BLAZER DRIVE 1+25–END
NOT TO SCALE



TYPICAL ROADWAY SECTION NORTHERN PARKING 20+00–END
NOT TO SCALE

TYPICAL ROADWAY SECTION SOUTHERN PARKING 10+00–END
NOT TO SCALE



PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 10, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

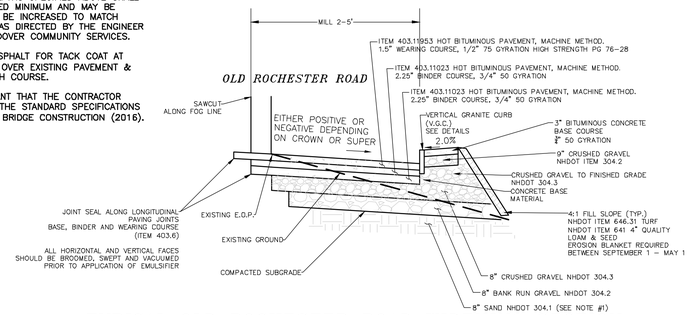
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14947
LICENSED PROFESSIONAL ENGINEER

C–102

NOT FOR CONSTRUCTION

C18

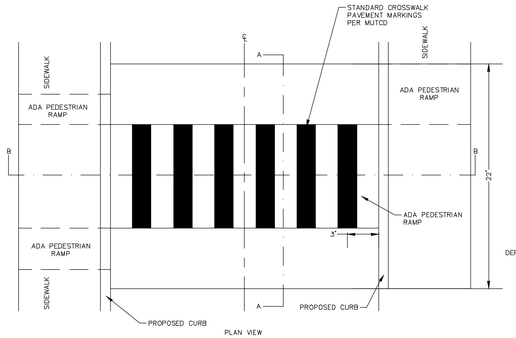
1. THE CRUSHED GRAVEL, BANKRUN GRAVEL, AND SAND DEPTHS SPECIFIED ABOVE SHALL BE CONSIDERED MINIMUM AND MAY BE REQUIRED TO BE INCREASED TO MATCH EXISTING OR AS DIRECTED BY THE ENGINEER OR CITY OF DOVER COMMUNITY SERVICES.
2. EMULSIFIED ASPHALT FOR TACK COAT AT 0.02 GAL/SY OVER EXISTING PAVEMENT & BETWEEN EACH COURSE.
3. IT IS IMPORTANT THAT THE CONTRACTOR UNDERSTAND THE STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION (2016).

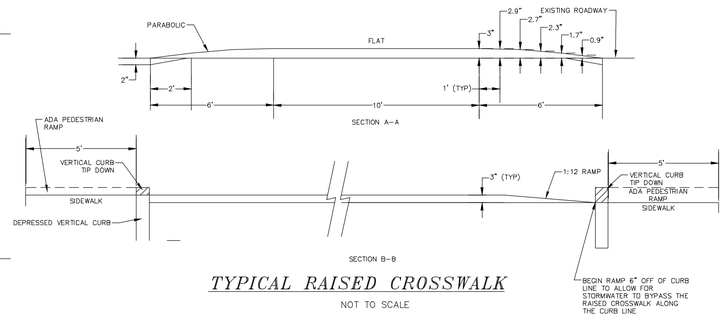


TYPICAL OLD ROCHESTER ROAD WIDENING SECTION V.G.C ON ONE SIDE

NOT TO SCALE

C19

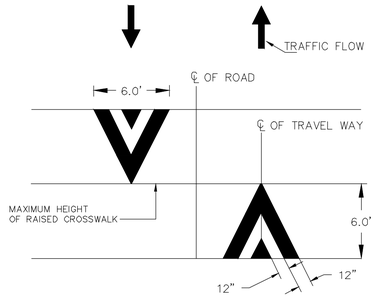




TYPICAL RAISED CROSSWALK

NOT TO SCALE

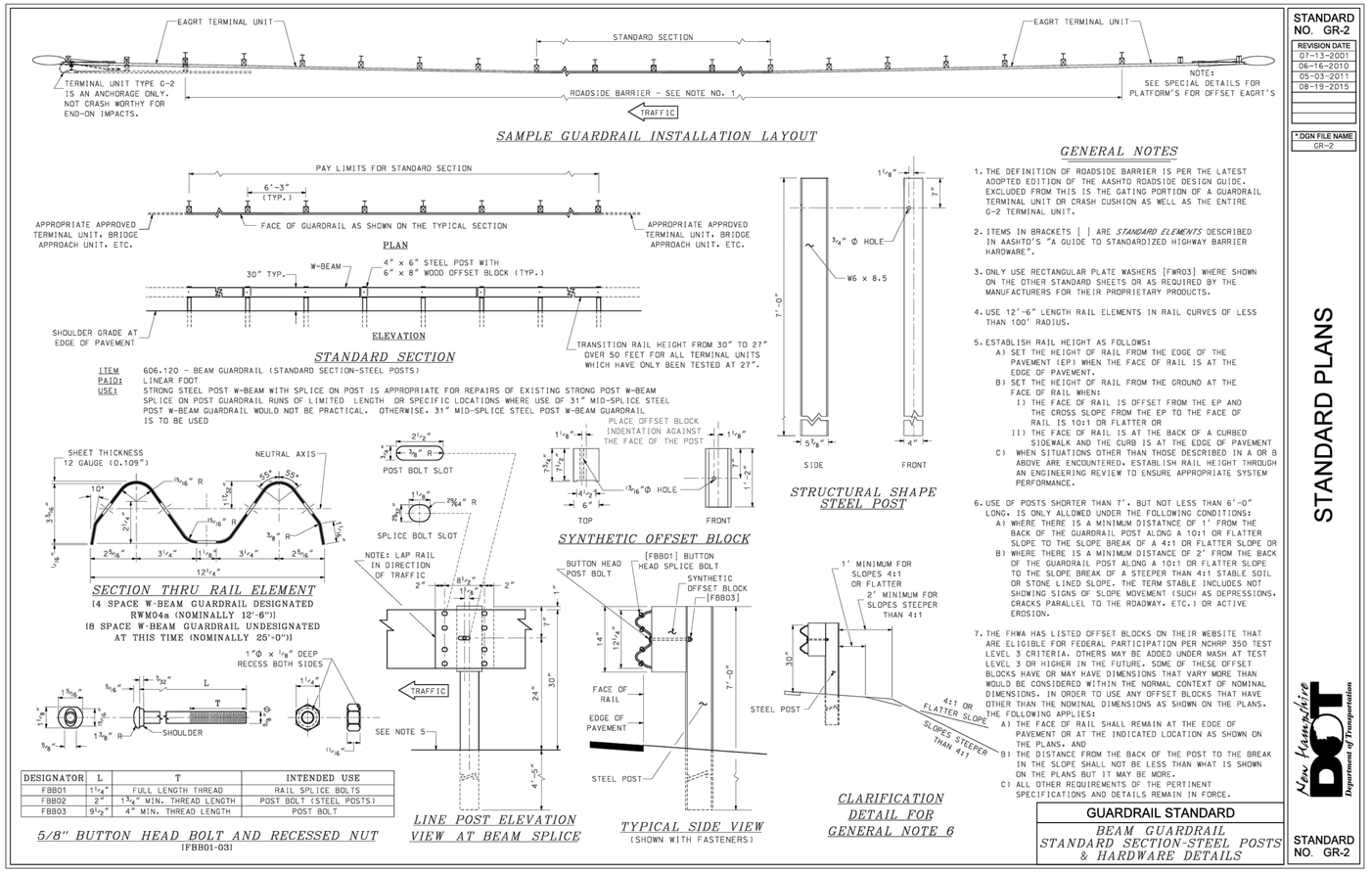
C20



RAISED CROSSWALK PAVEMENT MARKINGS

NOT TO SCALE

C21



DESIGNATOR	L	T	INTENDED USE
FBB01	1 1/4"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 3/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	9 1/2"	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.

GUARDRAIL STANDARD

BEAM GUARDRAIL STANDARD SECTION-STEEL POSTS & HARDWARE DETAILS

STANDARD NO. GR-2

REVISION DATE
07-13-2001
06-16-2010
05-03-2011
08-19-2015

* DGN FILE NAME: GR-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. GR-2

GUARD RAIL

(NOT TO SCALE)

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY – No. 14543 – LICENSED PROFESSIONAL ENGINEER

C-103

NOT FOR CONSTRUCTION

C22

RRFB

TS60-RRFB LED Rectangular Rapid Flashing Beacons





Shown with RRFB, pedestrian crossing sign, crosswalk arrow sign, and push-button station.



Shown with RRFB, school zone crossing sign, crosswalk arrow sign, and push-button station.

General Description
Our Rectangular Rapid Flashing Beacons (RRFBs) are used to supplement warning signs at uncontrolled intersections or mid-block crosswalks. Our RRFBs feature flashing, high-intensity LEDs that alert motorists that pedestrians are using the crosswalk. Studies have shown that RRFBs significantly increase driver yielding behavior.

RRFBs are placed on both sides of a crosswalk below a pedestrian crossing sign and above an arrow sign that points at the crossing. Pedestrians can manually activate RRFBs with a push-button or passively with photo-sensor bollards.

Applications
- Pedestrian crossings
- School crossings
- School zones

Benefits
- High intensity LEDs command the attention of drivers and significantly increase driver yield rates.
- LEDs visible under all weather conditions.
- Easy installation with minimal traffic disruptions.

Features
- MUTCD Section 2A.07 / 2A.08 Compliant with push-button activation.
- MUTCD compliant flash pattern: Wig-Wag + Simultaneous (WW+S).
- Yellow LED RRFB light bar.
- Optional Pedestrian Confirmation Light alerts pedestrians that the RRFB is flashing.
- Single or double-sided (back-to-back) configuration.
- LED life expectancy over 100,000 hours.
- Solar or AC powered.
- Day and night visibility.
- Automatic dimming at night to reduce glare.
- Push-button or Photo-Sensor Bollard activation.
- Fast, easy installation.
- Easy battery replacement in field.
- Quick LED light replacement.
- Multiple mounting hardware options.





RRFBs are placed on both sides of a crosswalk in a single or double-sided (back-to-back) configuration.

+1.888.446.9255 USA
+1.916.394.9884 Worldwide
xwalk.com
sales@xwalk.com
Traffic Safety Corp., 2708 47th Ave.
Sacramento, CA, 95822, USA

Product specifications may be subject to change without prior notice. Verify current specifications when ordering. © Traffic Safety Corp. | 5/13/2024

RRFB

Specifications
- Construction: .080 highway grade aluminum/stainless fasteners.
- LED Modules: 2 arrays of 24 yellow LEDs
- Dimensions (weight):
  - Light Bar: 24.5"L x 2.25"W x 4"H (5 lb.)
  - LED Modules: 7.25"L x 3.125"W
  - Locking Cabinet: 10.54" x 12.54" x 7.35" (6 lb.)
  - Battery: 7" x 3" x 6.5" (15 lb.)
  - 20W Solar Panel: 22.68"L x 14.06"W x 1.18"H (6.17 lb.)
- Optional Pedestrian Confirmation Light: mount on left or right side of light bar.
- Traffic Sign Sizes: 24", 30", 36", 48"
- Traffic Sign Reflective Sheeting Types:
  - Type IX reflective sheeting.
  - Fluorescent yellow green sheeting.
- Power:
  - 12 volt solar panel with SLA battery (12 volt, 22 amp)
  - AC power
- LED Lighting:
  - MUTCD Compliant RRFB light bar.
  - Wig-Wag + Simultaneous (WW+S) flash pattern.
  - Single-sided with or without pedestrian confirmation light.
  - Double-sided with or without pedestrian confirmation light.
- Activation: Push-buttons, Push-button Stations, or Pedestrian Detection Photo-Sensor Bollards.
- Locking Cabinet:
  - High-impact, UV resistant polycarbonate
  - UL/NEMA 4X (IP66)
  - Light gray opaque hinged enclosure
  - Stainless steel locking latch
  - Dimensions: 10.54" x 12.54" x 7.35"
  - Part Number: H12106HLL
- Optional mounting pole systems available.
- Warranty: 10 year solar collector panel, 2 year PCB/LED technology, 1 year battery.



Locking Cabinet

Pole Options
Telespar Poles:
The Telespar Pole is 2" x 2" and is available in 8', 10' or 12' lengths. We offer a 5' x 2.25" sleeve. The Telespar pole and sleeve combination is considered a breakaway system.





Aluminum Pole System:
Our 4.5" Aluminum Pole System has a clean and professional look, with the added security of a required breakaway pole application. It is approved by the FDOT and meets MUTCD requirements. Our Aluminum Pole System is available in 10', 12' or 14' lengths. A pole cap is included along with 4 galvanized 3/4" x 18" anchor bolts.







4EVR Push-Button Station with Stainless Steel Button (left), Guardian APS Push-Button Station with Audio Caution Message Capability (center), Pedestrian Detection Photo-Sensor Bollards (right)

Ordering Codes

RRFB Configuration	Power	Activation Options (select only one)
SI-RRFB: Single-sided RRFB without pedestrian confirmation light	AC: AC	1: 4EVR Push-Button with Stainless Steel Button[2]
SI-RRFBC: Single-sided RRFB with (1) pedestrian confirmation light	DC: DC[1]	2: 4EVR Push-Button Station with Stainless Steel Button[2]
SI-RRFBD: Double-sided (back-to-back) RRFBs without pedestrian confirmation light		3: Guardian APS Push-Button Station with Audio Caution Message Capability[2]
SI-RRFBCD: Double-sided (back-to-back) RRFBs with (1) pedestrian confirmation light		4: Pedestrian Detection Photo-Sensor Bollards

1. DC power option includes solar panel and battery.
2. MUTCD Section 2A.07 / 2A.08 Compliant with push-button activation. RRFBs should not be configured to flash 24/7.

+1.888.446.9255 USA
+1.916.394.9884 Worldwide
xwalk.com
sales@xwalk.com
Traffic Safety Corp., 2708 47th Ave.
Sacramento, CA, 95822, USA

Product specifications may be subject to change without prior notice. Verify current specifications when ordering. © Traffic Safety Corp. | 5/13/2024

RAISED CROSSWALK CROSSING LIGHTS
NOT TO SCALE

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

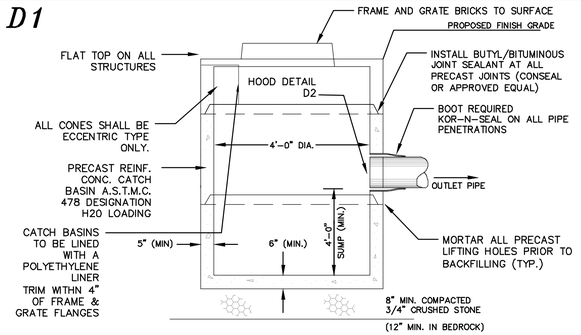
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14967
LICENSED PROFESSIONAL ENGINEER

C-104

SHEET 23 OF 30

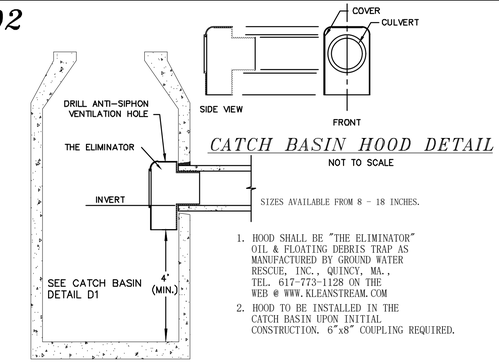
NOT FOR CONSTRUCTION

D1



CATCH BASIN DETAIL
NOT TO SCALE

D2

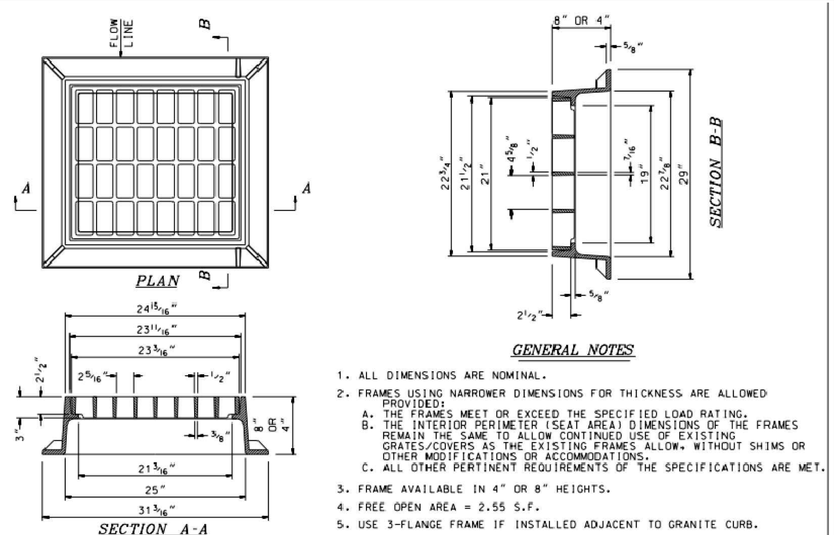


CATCH BASIN HOOD DETAIL
NOT TO SCALE

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
2. HOOD TO BE INSTALLED IN THE CATCH BASIN UPON INITIAL CONSTRUCTION. 6"x8" COUPLING REQUIRED.

D3



GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW. WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
4. FREE OPEN AREA = 2.55 S.F.
5. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

NHDOT STANDARD PLANS

TYPE "B" GRATE & FRAME

REV. DATE		PLATE
06-16-2010		2
08-14-2015		STANDARD
		DR-1

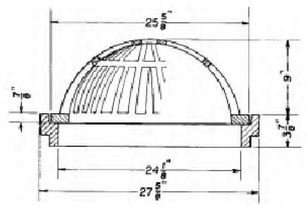
CATCH BASIN GRATE (TYPE "B")
NOT TO SCALE

D4

R-4353
Beehive Grate, Frame

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4353	Beehive	1.8	6.7

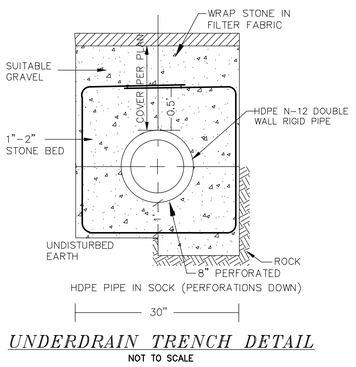




Also available with 2 - 7/8" tall frame, if requested.

CATCH BASIN IN GRASSED AREA
FRAME & GRATE DETAIL
NOT TO SCALE

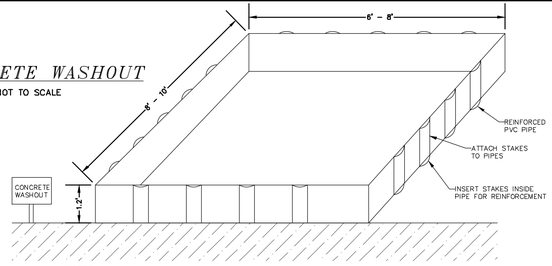
D5



UNDERDRAIN TRENCH DETAIL
NOT TO SCALE

D6

CONCRETE WASHOUT
NOT TO SCALE



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 RESPONSIBLE TO MAINTAIN AND REPLACE WASHOUT AREA AS NEEDED.

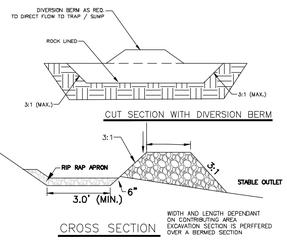
4.) RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

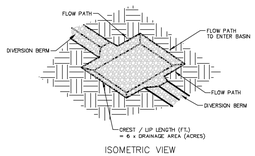
5.) DO NOT WASH CONCRETE TRUCKS OUT INTO DRAINAGE AREAS, SWALES, STREETS OR UNDISTURBED AREAS.

6.) WASHOUT AREA SHALL BE PLACED AWAY FROM DRAINAGE FEATURES AND OUTSIDE AND WETLAND BUFFERS.

D7

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.



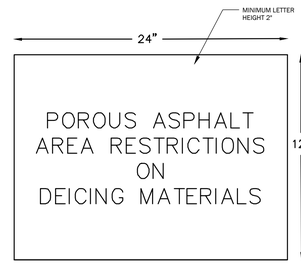


ISOMETRIC VIEW

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

D8



NOTES:

1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. TO BE MOUNTED AT A HEIGHT OF 3'

POROUS PAVEMENT SIGN
NOT TO SCALE

D9

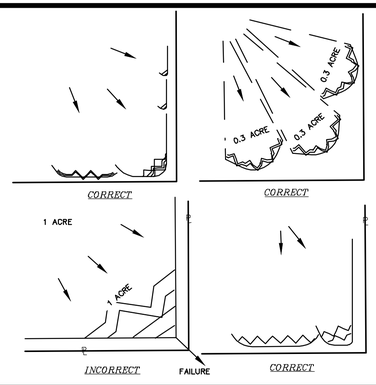
PERIMETER CONTROL
NOT TO SCALE

DESIGN CONSITERATIONS:

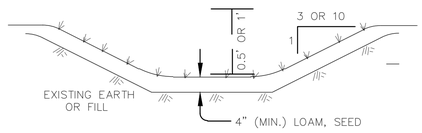
1. THE MAXIMUM LENGTH OF SLOPE ABOVE PERIMETER CONTROL IS 100 FEET.
2. SILT FENCE OR SILT SOXX REQUIRED WHEN UPGRADIENT DISTURBED SOIL IS GREATER THAN 5% (50% SLOPE MAX). MULCH BERM CAN BE USED WHEN THE UPGRADIENT DISTURBED SOIL IS 5% OR LESS.
3. THE MAXIMUM CONTRIBUTING DRAINAGE AREA OF ONE-QUARTER ACRE PER 100-FEET OF PRACTICE LENGTH.
4. PERIMETER CONTROL IS TO BE INSTALLED PRIOR TO EARTH MOVING ACTIVITIES, INCLUDING GRUBBING AND CLEARING.

NOTES

1. DO NOT LAYOUT PERIMETER CONTROL ALONG SLOPING PROPERTY PERIMETER WITHOUT INSTALLING "J HOOKS" AT HIGH CONCENTRATION AREAS. RUNOFF WILL CONCENTRATE AND CAUSE FAILURES ALONG THE PERIMETER.
2. "J HOOKS" CAN BE USED TO HELP LIMIT THE CONCENTRATION OF RUNOFF AND PROVIDE MORE STABILITY TO THE PERIMETER.
3. SILT FENCE AND EROSION CONTROL MULCH BERM MAY BE USED INTERCHANGEABLY. IN SPECIFIED AREA, SILT FENCE MAY NOT BE SUBSTITUTED FOR FILTREXX SILT SOXX OR APPROVED ALTERNATIVE.
4. SEE HAMPSHIRE STORM WATER MANUAL: VOLUME 3, PAGE 99 FOR FURTHER DETAILS AND SPECIFICATIONS



D10



INFILTRATION SUMP
NOT TO SCALE

INSPECT ANNUALLY FOR EROSION, SEDIMENT ACCUMULATIONS, VEGETATION LOSS, & INVASIVE SPECIES. REPAIR AS NECESSARY.

MOW GRASS ANNUALLY TO A DEPTH OF 4".

REFERENCE IS MADE TO A LONG TERM MAINTENANCE MANUAL PREPARED BY BERRY SURVEYING & ENGINEERING, WHICH IS ON FILE AT THE CITY OF ROCHESTER PLANNING DEPARTMENT, AND CAN BE FOUND AT THE OFFICE OF BERRY SURVEYING & ENGINEERING. (603) 332-2863

D-101

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

DRAINAGE DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 10, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14947
LICENSED
PROFESSIONAL ENGINEER

SHEET 24 OF 30

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.

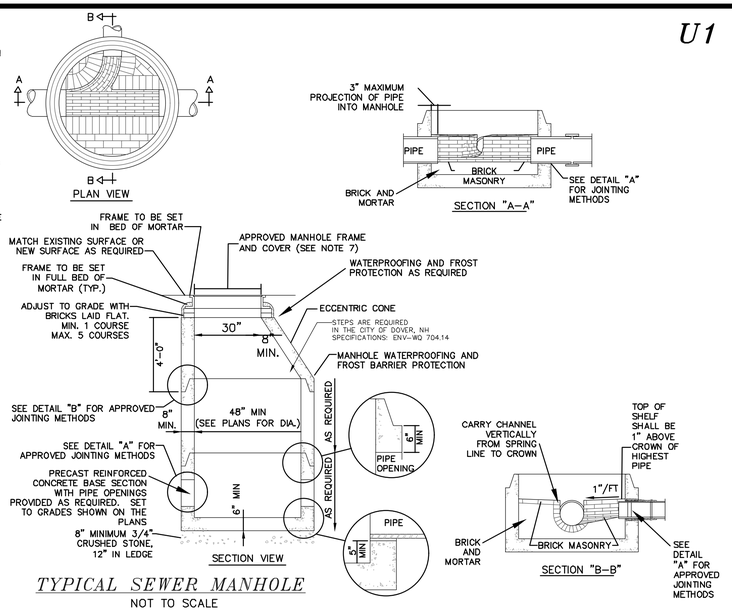
12.) THE CONTRACTOR TO WORK WITH CITY OF DOVER REVIEW ENGINEER AND SEWER DEPARTMENT ON THE MEANS AND METHODS USED TO INSTALL ALL SEWER STRUCTURES.

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

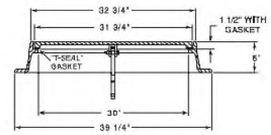
R-1743-LM
LiftMate Frame, Solid Gasketed Lid

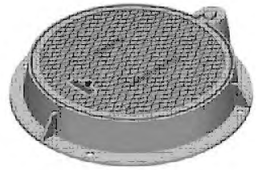
Heavy Duty

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.

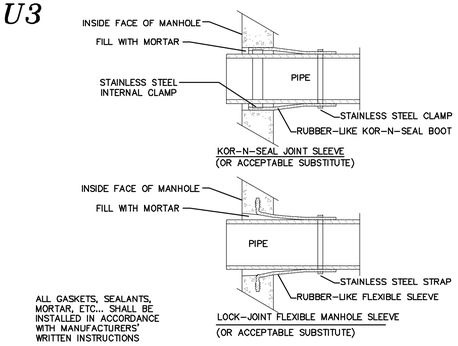




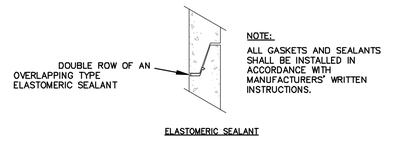
SEWER MANHOLE FRAME AND GRATE WILL BE LIFTMATE R-1743-LM, OR APPROVED EQUAL, 32 INCH OPENING, CAST IRON, H20 LOADING.

SEWER MANHOLE COVER DETAIL
NOT TO SCALE

U3



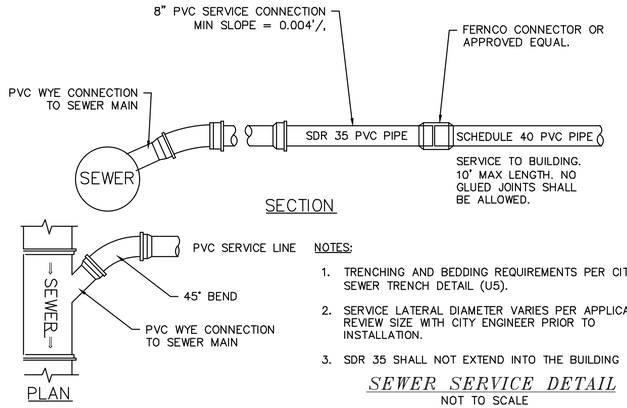
DETAIL "A" - PIPE TO MANHOLE JOINTS
NOT TO SCALE



NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

DETAIL "B" HORIZONTAL JOINTS
NOT TO SCALE

U4

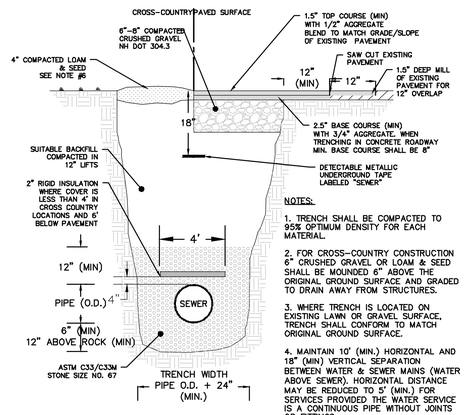


NOTES:

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

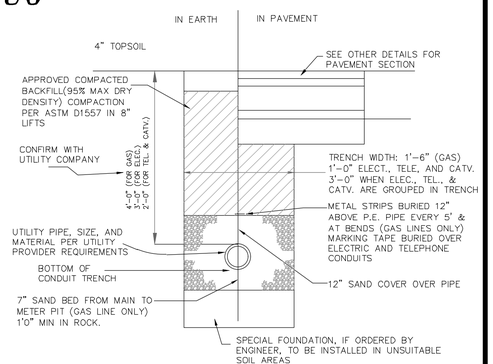


NOTES:

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 AND GRADED TO DRAIN AWAY FROM STRUCTURES.
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.

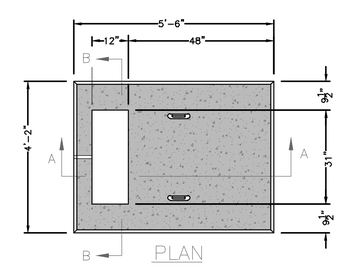
TYPICAL SEWER PIPE TRENCH
NOT TO SCALE

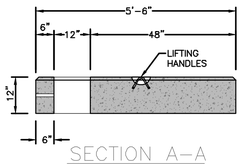
U6

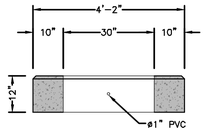


ELECTRICAL, TELEPHONE, AND GAS TRENCH
NOT TO SCALE

U7



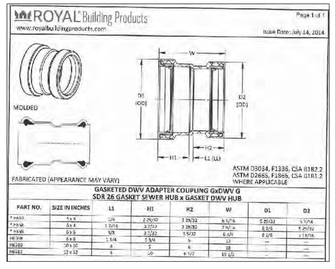




NOTES:
1. CONCRETE MINIMUM STRENGTH 4,000 PSI AFTER 28 DAYS
2. REINFORCEMENT STEEL CONFORMS TO ASTM A615 GRADE 60 #6 REBAR.
3. MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS.
4. MUST BE A SHEA CONCRETE PRODUCT OR EQUAL.

TRANSFORMER AND PAD DETAIL
NOT TO SCALE

U8



COUPLING DETAIL
NOT TO SCALE

U-101

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

UTILITY DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 10, LOT 25

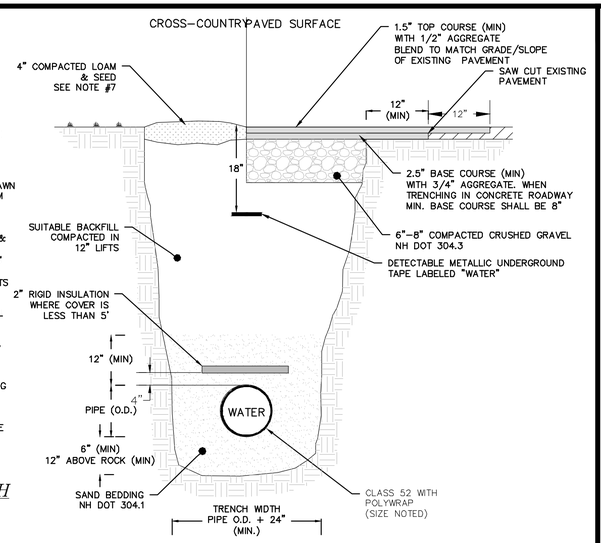
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14947
LICENSED PROFESSIONAL ENGINEER

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 AND GRADED TO DRAIN AWAY FROM STRUCTURES.

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

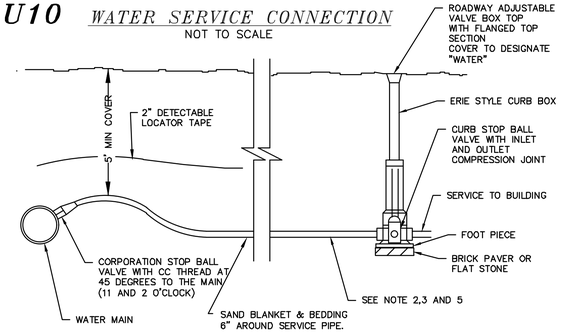
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.

7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

WATER PIPE TRENCH
NOT TO SCALE

U10 WATER SERVICE CONNECTION

NOT TO SCALE



NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH A ZINC COATED 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

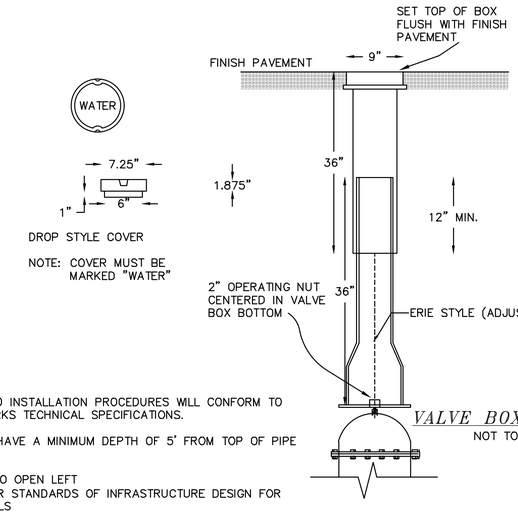
5. ALL SERVICES SHALL BE 1". PROVIDE 1" TO 3/4" REDUCER COUPLING WHERE EXISTING SERVICES ARE 3/4", SUBSIDIARY.

6. APPROVED WATER SERVICE MATERIALS INCLUDE:
   1"– COPPER, CTS
   2"– CTS, HDPE, IPS

7. ALL SADDLES USED AS SPECIFIED SHALL HAVE DOUBLE STAINLESS STEEL STRAPS.

8. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.

U11



NOTES:

1.) ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO LOCAL WATER WORKS TECHNICAL SPECIFICATIONS.

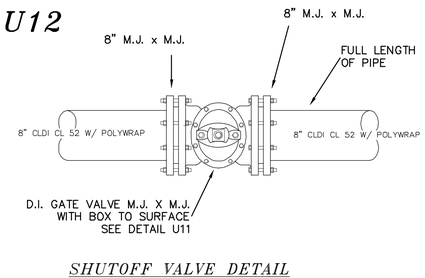
2.) ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

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

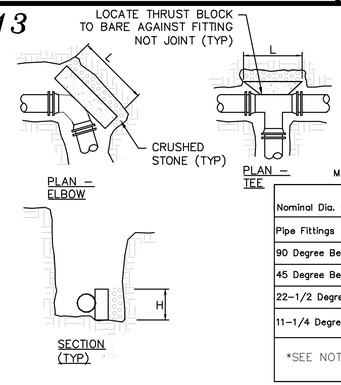
U12

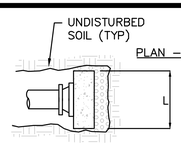


SHUTOFF VALVE DETAIL
NOT TO SCALE

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)

Nominal Dia. (in)	PIPE SIZE 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

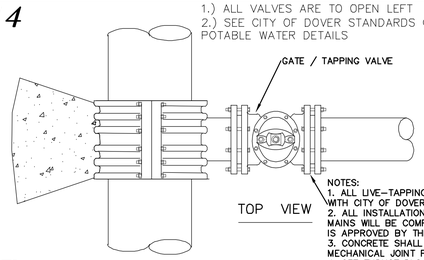
NOTES:

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

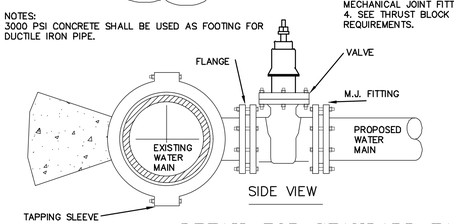
U14

1.) ALL VALVES ARE TO OPEN LEFT
2.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS



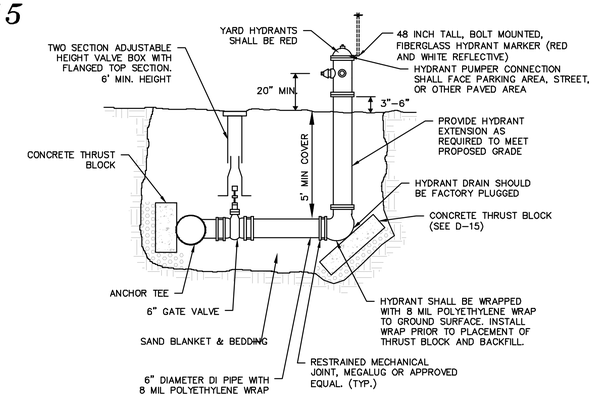
NOTES:
1. ALL LIVE–TAPPING WILL BE COMPLETED IN ACCORDANCE WITH CITY OF DOVER WATER DEPARTMENT REGULATIONS.
2. ALL INSTALLATION AND TAPPING OF EXISTING WATER MAINS WILL BE COMPLETED BY AN INDIVIDUAL OR FIRM THAT IS APPROVED BY THE CITY OF DOVER ENGINEERING
3. CONCRETE SHALL NOT CONTACT BOLTS OR END OF MECHANICAL JOINT FITTINGS.
4. SEE THRUST BLOCK TABLES FOR AREA OF CONCRETE REQUIREMENTS.

NOTES:
3000 PSI CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.



DETAIL FOR STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY
NOT TO SCALE

U15

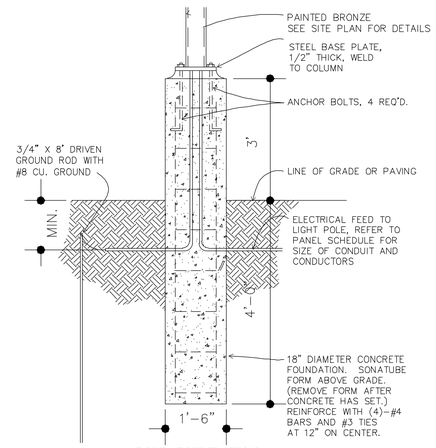


NOTES:

1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.
4. HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E–ZGUIDE PRODUCTS OR APPROVED EQUAL.
5. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD WATER TRENCH DETAIL D–4.

FIRE HYDRANT
NOT TO SCALE

U16



LIGHT BASE DETAIL
NOT TO SCALE

PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

UTILITY DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

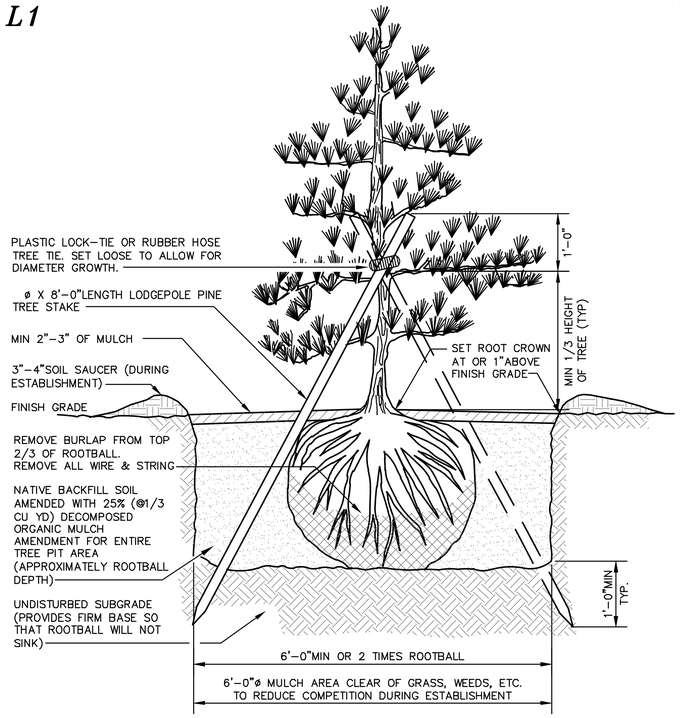
SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY No. 14347 – LICENSED PROFESSIONAL ENGINEER

U–102

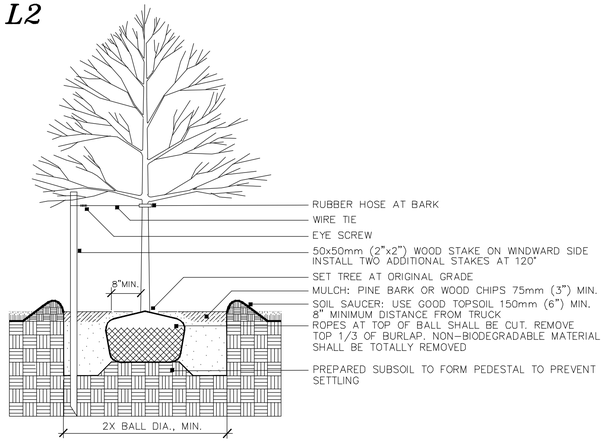
NOT FOR CONSTRUCTION

L1



CONIFEROUS TREE PLANTING

L2



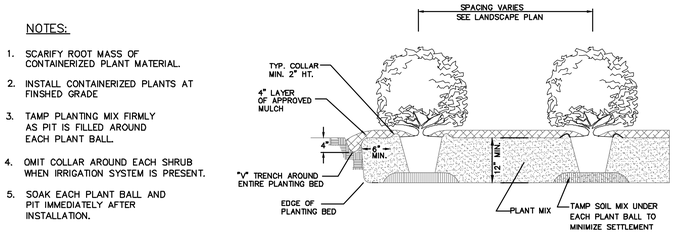
DECIDUOUS TREE PLANTING

NOTE: STAKING TO BE USED IN PARKING ISLANDS AND OTHER CONFINED AREAS AS NECESSARY TO AVOID CONFLICTS WITH PEDESTRIANS

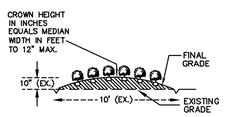
L3

NOTES:

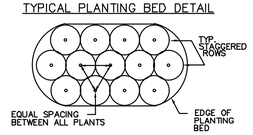
1. SCARIFY ROOT MASS OF CONTAINERIZED PLANT MATERIAL.
2. INSTALL CONTAINERIZED PLANTS AT FINSHED GRADE
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
5. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.



TYPICAL PLANTING BED DETAIL



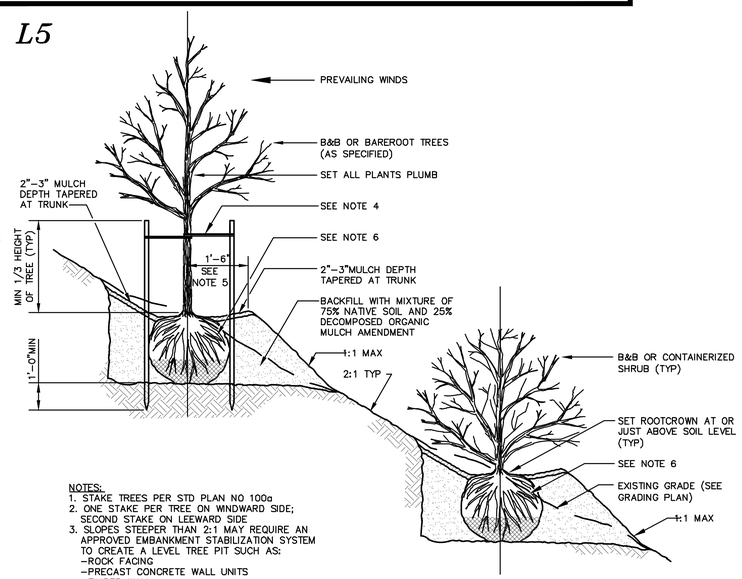
TYPICAL BED CROWNING



TYPICAL PLANTING BED PLAN

SHRUB & HEDGE PLANTING

L5

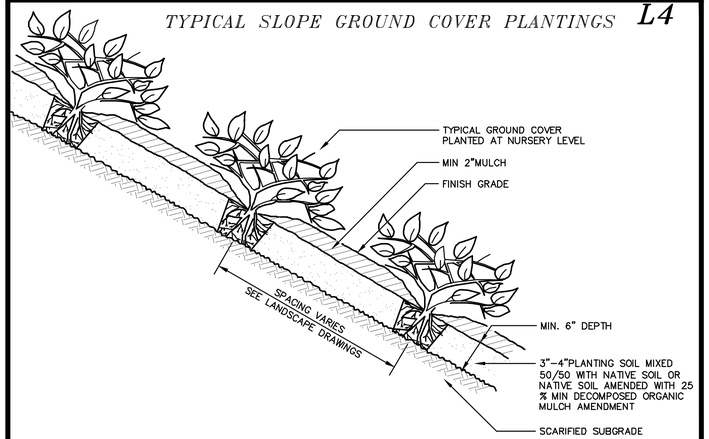


NOTES:
1. STAKE TREES PER STD PLAN NO 100a
2. ONE STAKE PER TREE ON WINDWARD SIDE; SECOND STAKE ON LEEWARD SIDE
3. SLOPES STEEPER THAN 2:1 MAY REQUIRE AN APPROVED EMBANKMENT STABILIZATION SYSTEM TO CREATE A LEVEL TREE PIT SUCH AS:
   –ROCK FACING
   –PRECAST CONCRETE WALL UNITS
   –TIMBER WALL
   –MANUFACTURED 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.

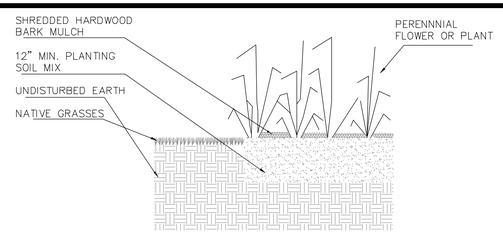
TREE PLANTING ON SLOPES

L4

TYPICAL SLOPE GROUND COVER PLANTINGS



L7



PERENNIAL PLANTING DETAIL

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.

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 GROWING 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 3.5" 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.

L–101

PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

LANDSCAPING DETAILS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : AS SHOWN
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY No. 14947 – LICENSED PROFESSIONAL ENGINEER

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.

W–101

PLANNING FILE # SITE 2024–0009

REVISION	DATE	DESCRIPTION
#01	03–18–25	REVISED PER TRC COMMENT

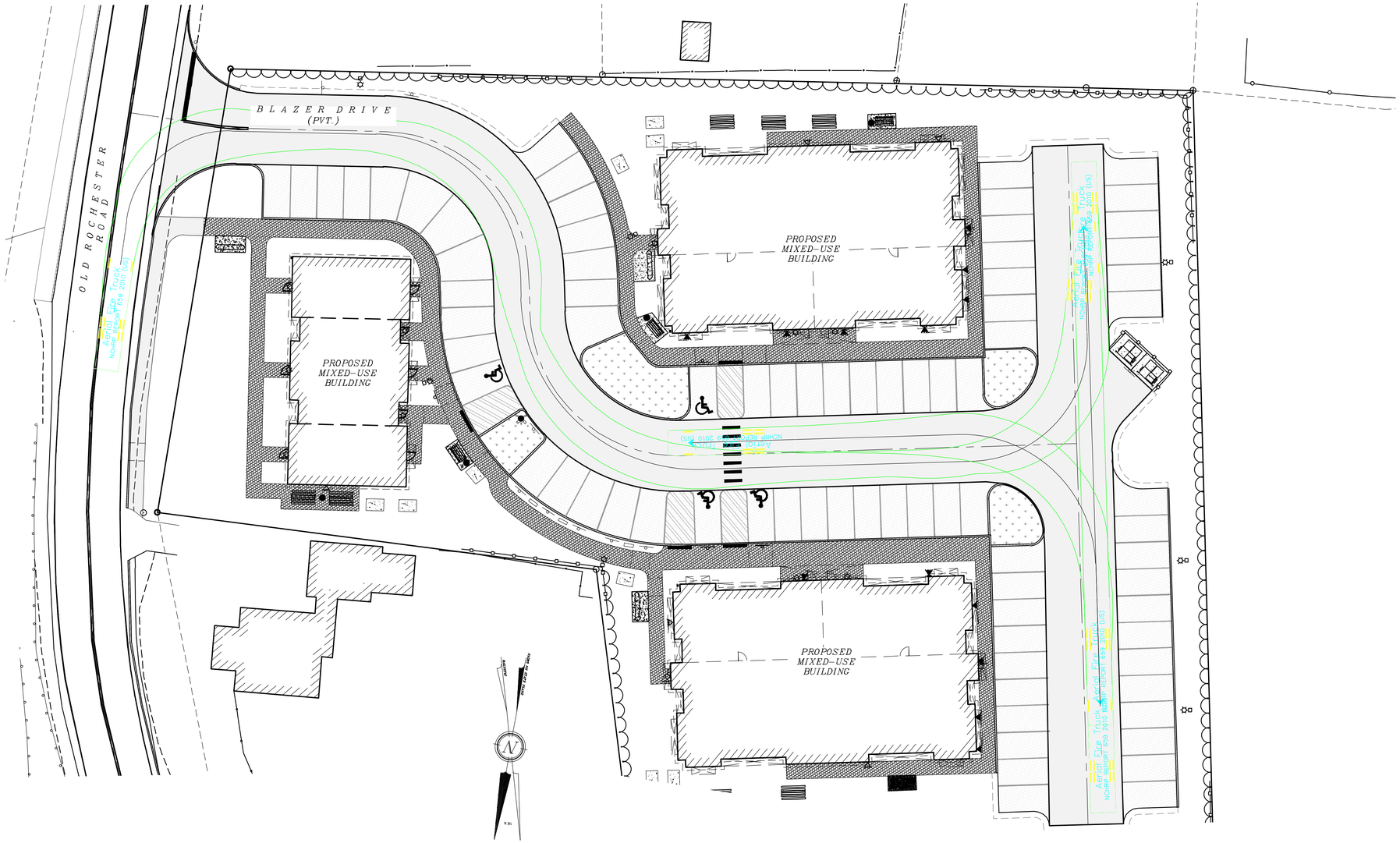
WILDLIFE IDENTIFICATION PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : N/A
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY No. 14234 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW FIRE TRUCK TURNING MOVEMENTS FOR THE PROPOSED SITE CIRCULATION.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

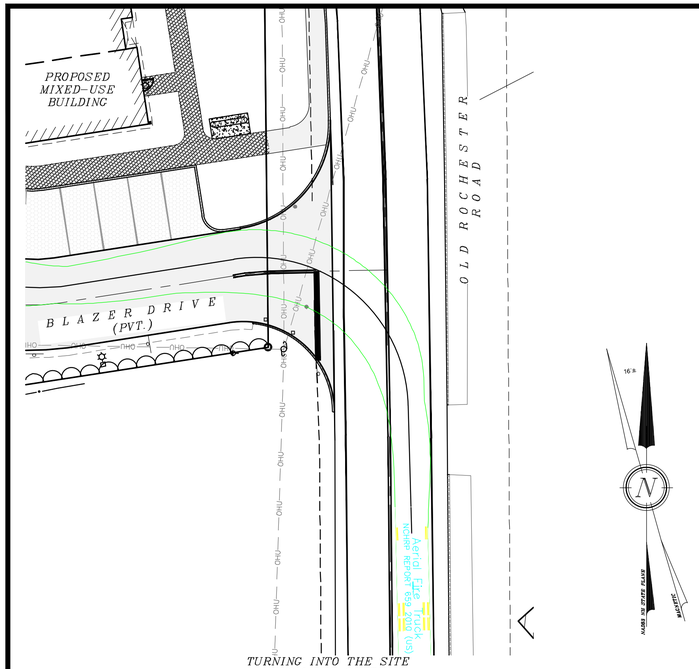
FIRE TRUCK TURN TEMPLATE
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

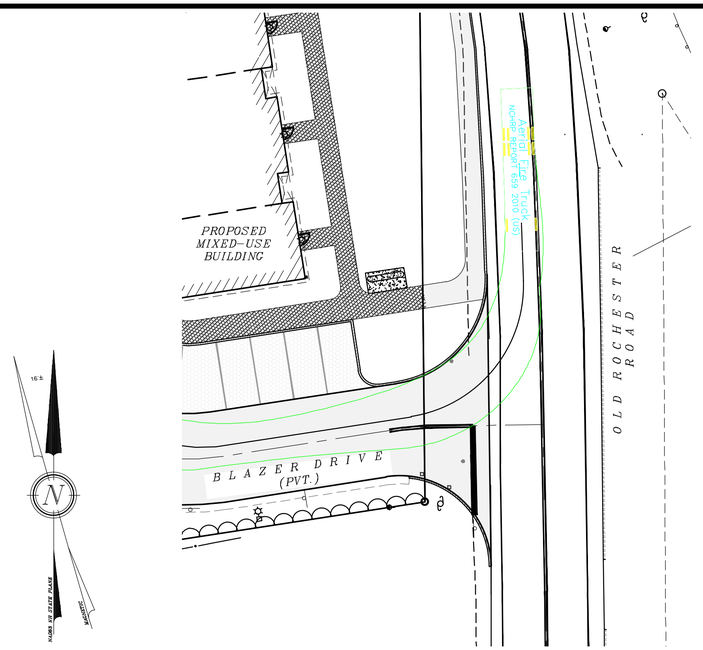
SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14267
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



TURNING INTO THE SITE
FROM THE SOUTH



TURNING INTO THE SITE
FROM THE NORTH

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

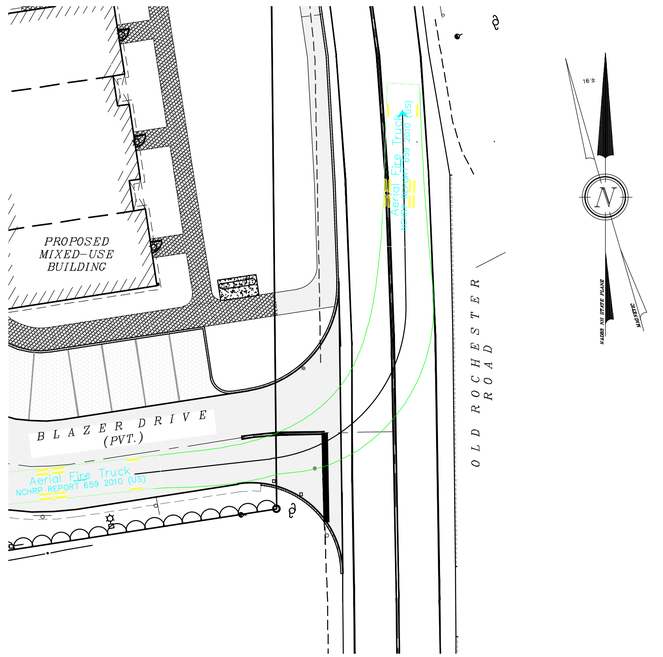
APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

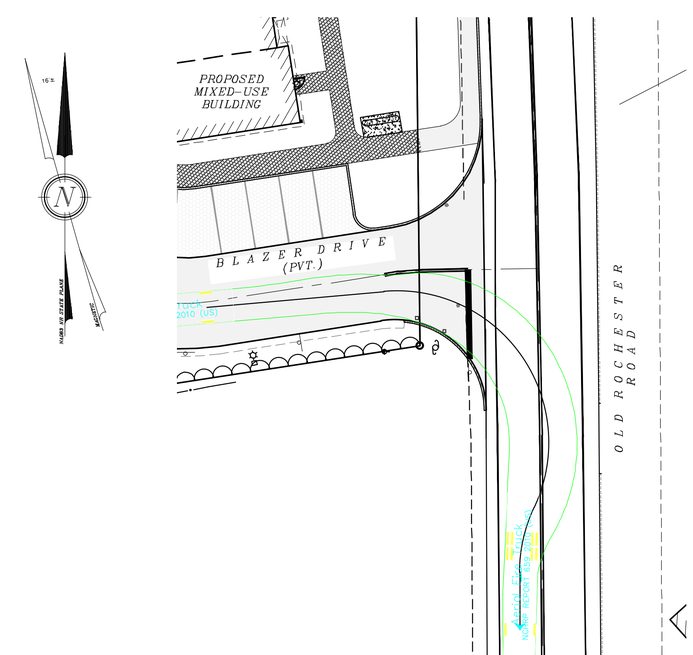
3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW FIRE TRUCK TURNING MOVEMENTS FOR THE PROPOSED SITE ENTRANCE.



TURNING OUT OF THE SITE
TO THE NORTH



TURNING OUT OF THE SITE
TO THE SOUTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

FIRE TRUCK ENTRANCE TURNING MOVEMENTS
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14847
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION



FRONT VIEW



RIGHT VIEW

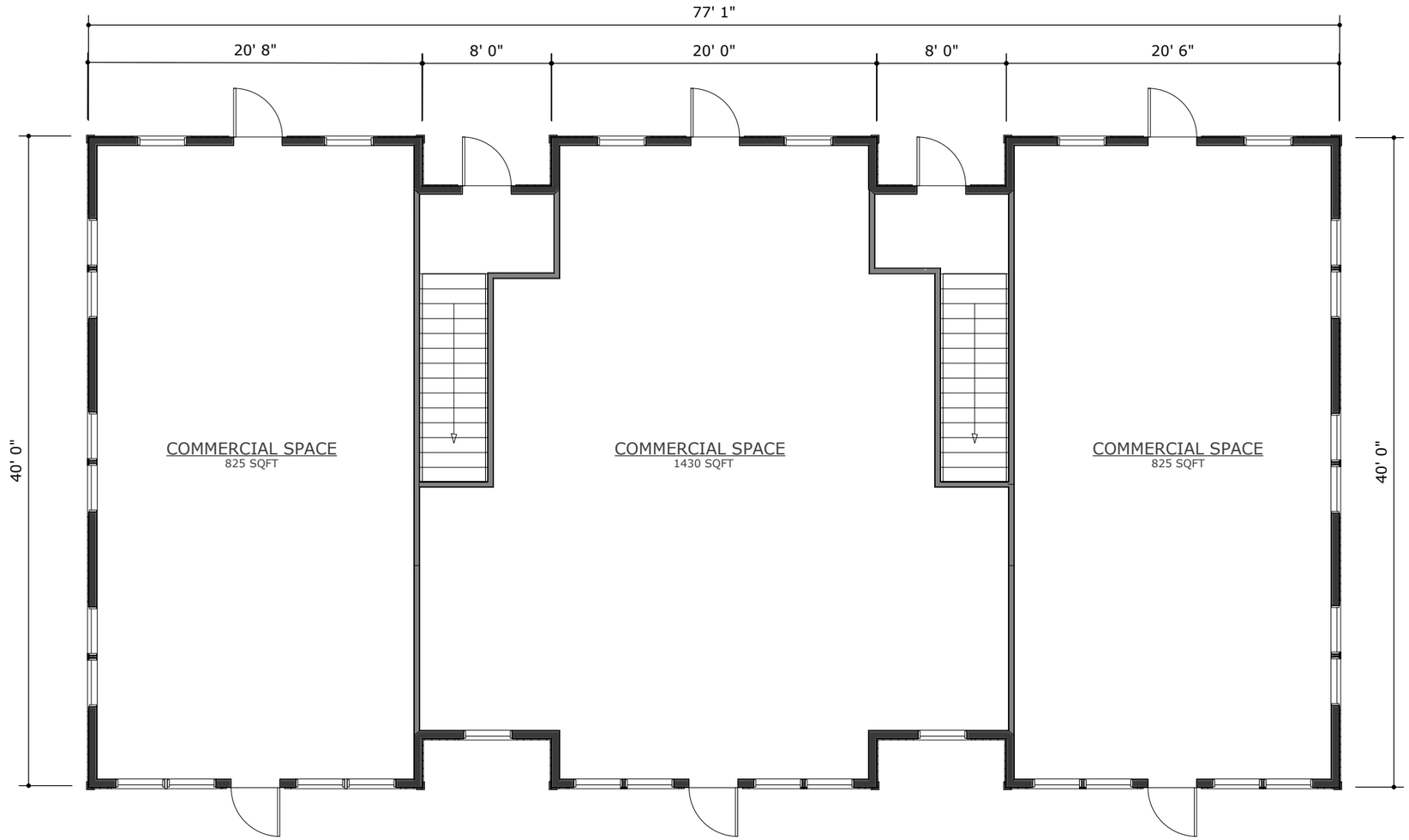


REAR VIEW



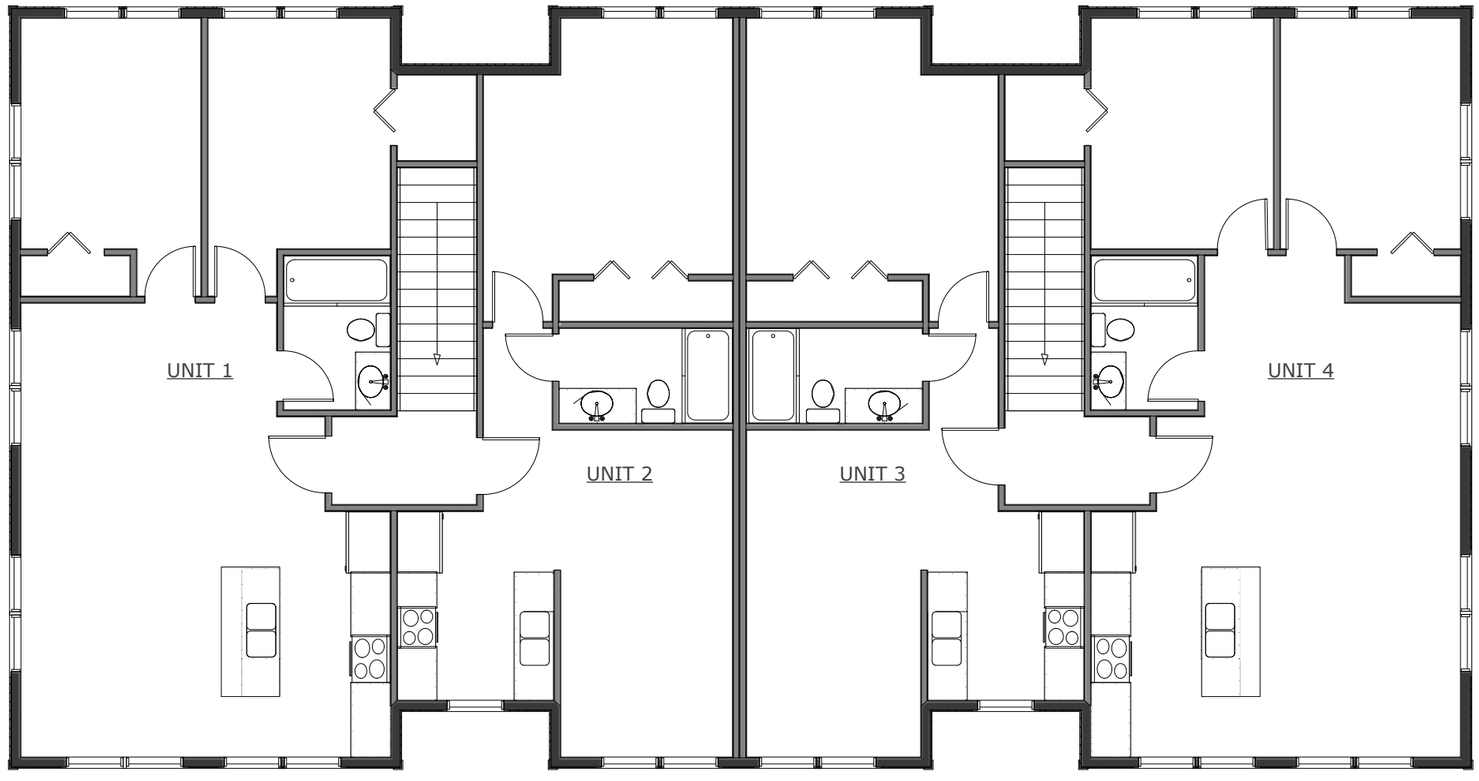
LEFT VIEW

DOVER DEVELOPMENT LLC



FIRST FLOOR
SCALE 1/8" = 1'

DOVER DEVELOPMENT LLC



SECOND FLOOR
SCALE 1/8" = 1'

DOVER DEVELOPMENT LLC



FRONT VIEW



RIGHT VIEW

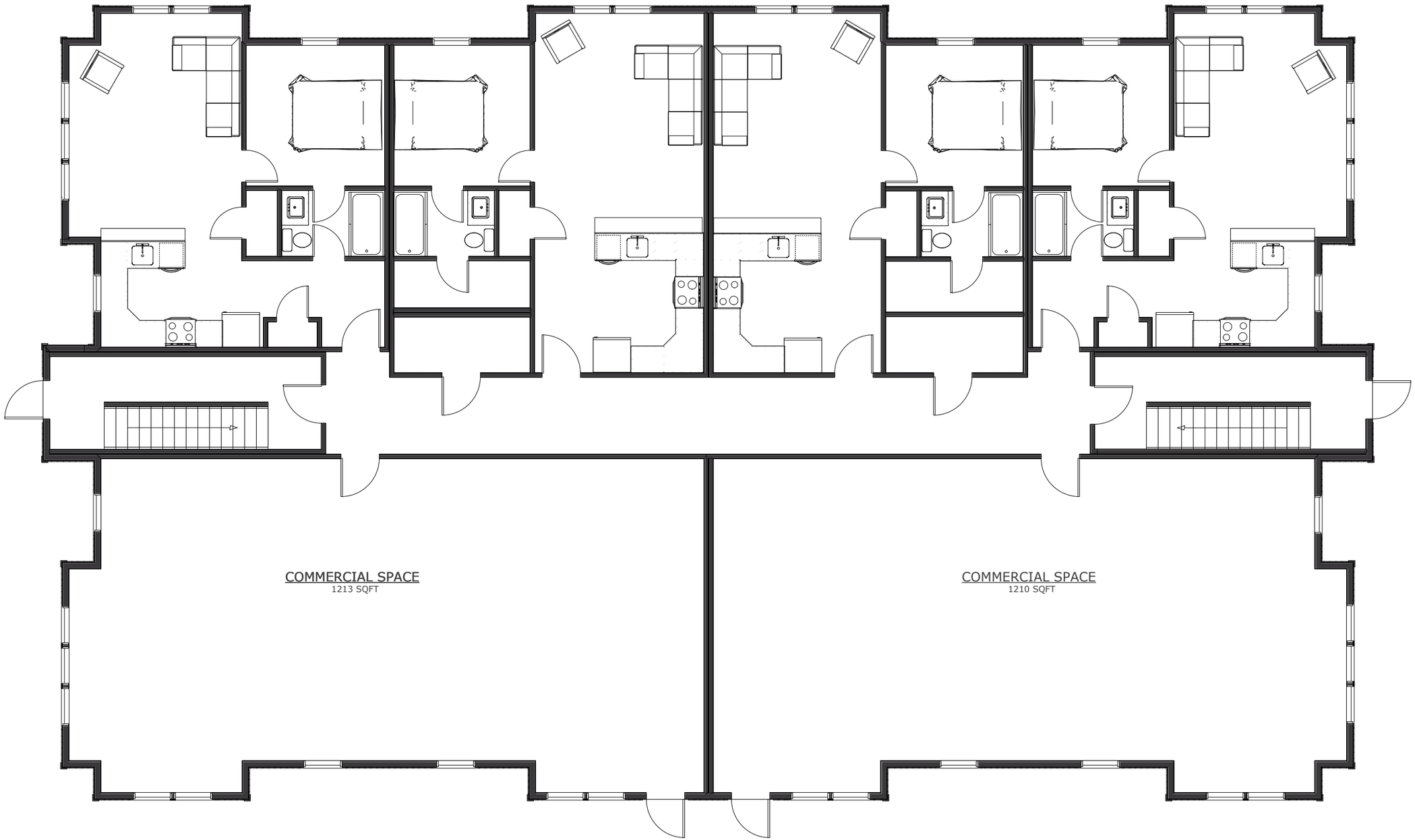


REAR VIEW



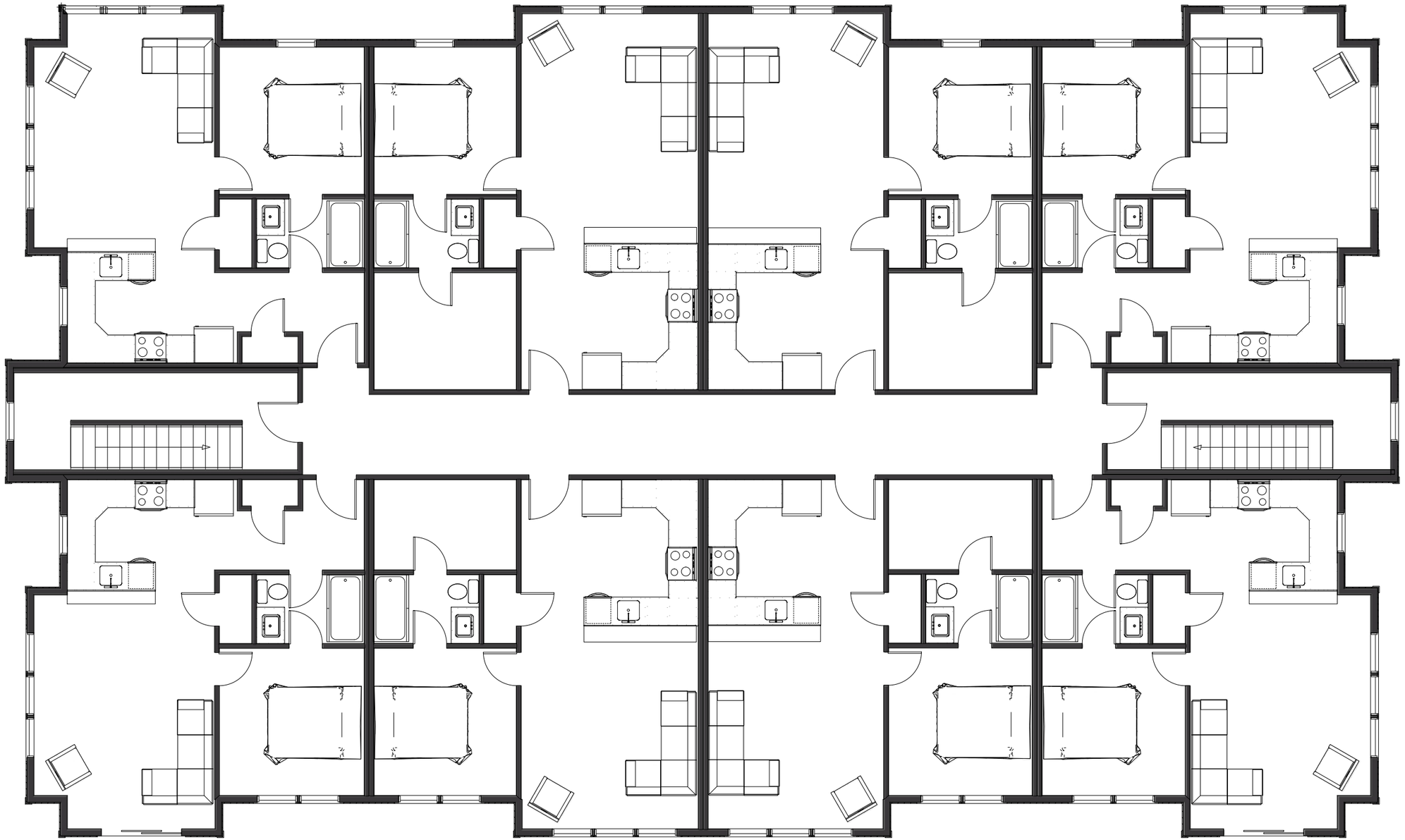
LEFT VIEW

DOVER DEVELOPMENT LLC



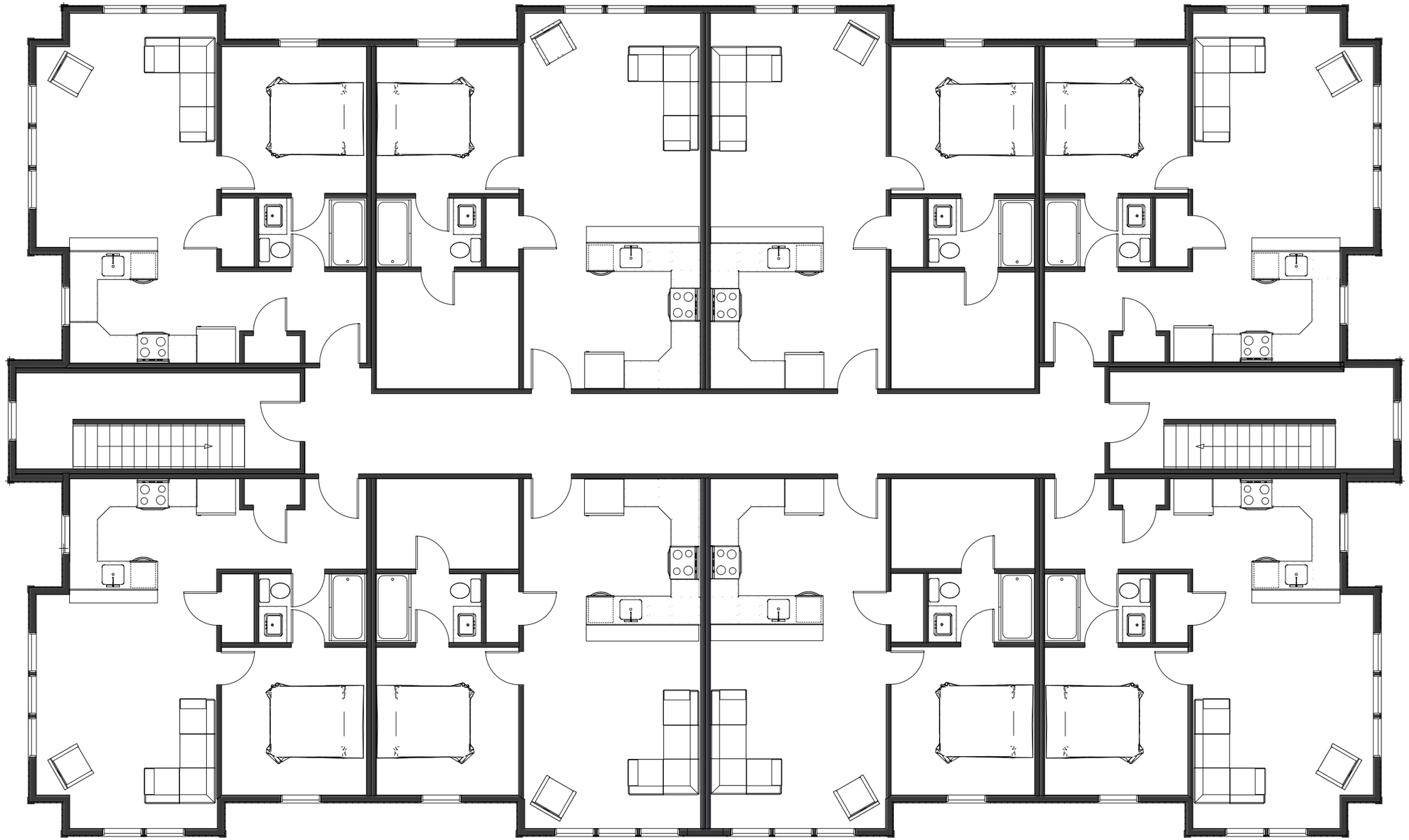
FIRST FLOOR

DOVER DEVELOPMENT LLC



SECOND FLOOR

DOVER DEVELOPMENT LLC



PARKING REQUIREMENTS:

- CHAPTER 153-14D RESIDENTIAL USE IN A NON-CBD ZONE 1.90 SPACES PER UNIT x 44 UNITS = 84 MAX. SPACES
- CO-LOCATED RESIDENTIAL AND COMMERCIAL USES:
- 5% EV SPACES ARE REQUIRED = 4 (5 PROVIDED, 1 ACCESSIBLE)
- 5% BIKE SPACES REQUIRED = 4 (21 PROVIDED)

TOTAL PROVIDED = 79 SPACES
RATION OF 1.8 SPACES PER UNIT

- 4 ADA SPACES REQUIRED. 1 VAN ACCESSIBLE REQUIRED (4 VAN ACCESSIBLE ADA SPACES PROVIDED)

SNOW STORAGE CALCULATION:

- STORAGE CALCULATION (6:1 RATIO USED)
  - PLOWABLE AREA = 35,941 Sq.Ft. / 6 = 5,991 Sq.Ft.
  - 6,021 Sq.Ft. PROVIDED FOR TEMPORARY SNOW STORAGE

SNOW TO BE REMOVED TO AN APPROVED OFF-SITE LOCATION

BUILDING COMPOSITION AND SQUARE FOOTAGE ALLOCATION (81.3% RESIDENTIAL, 18.7% COMMERCIAL PROVIDED):

PROPOSED MIXED-USE BUILDING (FRONT)
3 COMMERCIAL UNITS LEVEL 1
4, 1 BR UNITS LEVEL 2
2,984 Sq.Ft. (FOOT PRINT)
2,779 Sq.Ft. (COMMERCIAL)
3,189 Sq.Ft. (RESIDENTIAL)
2 STORY BUILDING
(TOTAL AREA 5,968 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 3,246 Sq. Ft.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 3,342 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

UNIT DENSITY CALCULATION:

- TOTAL AREA COMMERCIAL ZONE: 74,997 Sq. Ft.
  - DENSITY OF 5,000 Sq. Ft. / UNIT
  - 74,997 Sq. Ft. / 5,000 Sq. Ft. / UNIT = 14.99 UNITS
  - 14 UNITS ALLOWED BY RIGHT, 44 UNITS ON THE PROJECT
  - THE APPLICANT IS PROPOSING TO PURCHASE 30 UNITS THROUGH THE TDR PROGRAM. EACH UNIT IS PROPOSED TO BE RESTRICTED TO THE YEARLY PUBLISHED HUD RATES AND THEREFORE NO FEE IS REQUIRED FOR THE REQUESTED UNITS.

TRANSFER OF DEVELOPMENT RIGHTS (TDR):
PURCHASE OF 30 UNITS. ALL UNITS ARE RESTRICTED TO HUD RATES ~ NO FEE REQ.

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) THE INTENT OF THIS PLAN IS TO SHOW A COLOR RENDERING OF THE MIXED USE SITE PLAN OF TAX MAP 40, LOT 25, LOCATED IN DOVER, N.H.



LEGEND:

- IRON BOUND ~FND~
- IRON PIPE ~FND~
- UTILITY POLE / GUY WIRE
- SIGNAGE
- PROPERTY LINE
- BUILDING SETBACK LINE
- APPROXIMATE ABUTTING PROPERTY LINE
- WOODED AREA
- GRASS AREA
- CONVENTIONAL PAVEMENT / BITUMINOUS CONCRETE AREA
- PROPOSED BUILDING
- PROPOSED BUILDING OVERHANG
- POROUS PAVED AREA
- POROUS PAVER SIDEWALK
- INFILTRATION SUMPS
- RECREATION AREA
- RIVER STONE
- VARIOUS TREES
- VARIOUS SHRUBS AND PLANTS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#01	03-18-25	REVISED PER TRC COMMENT

COLOR RENDERING OF
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
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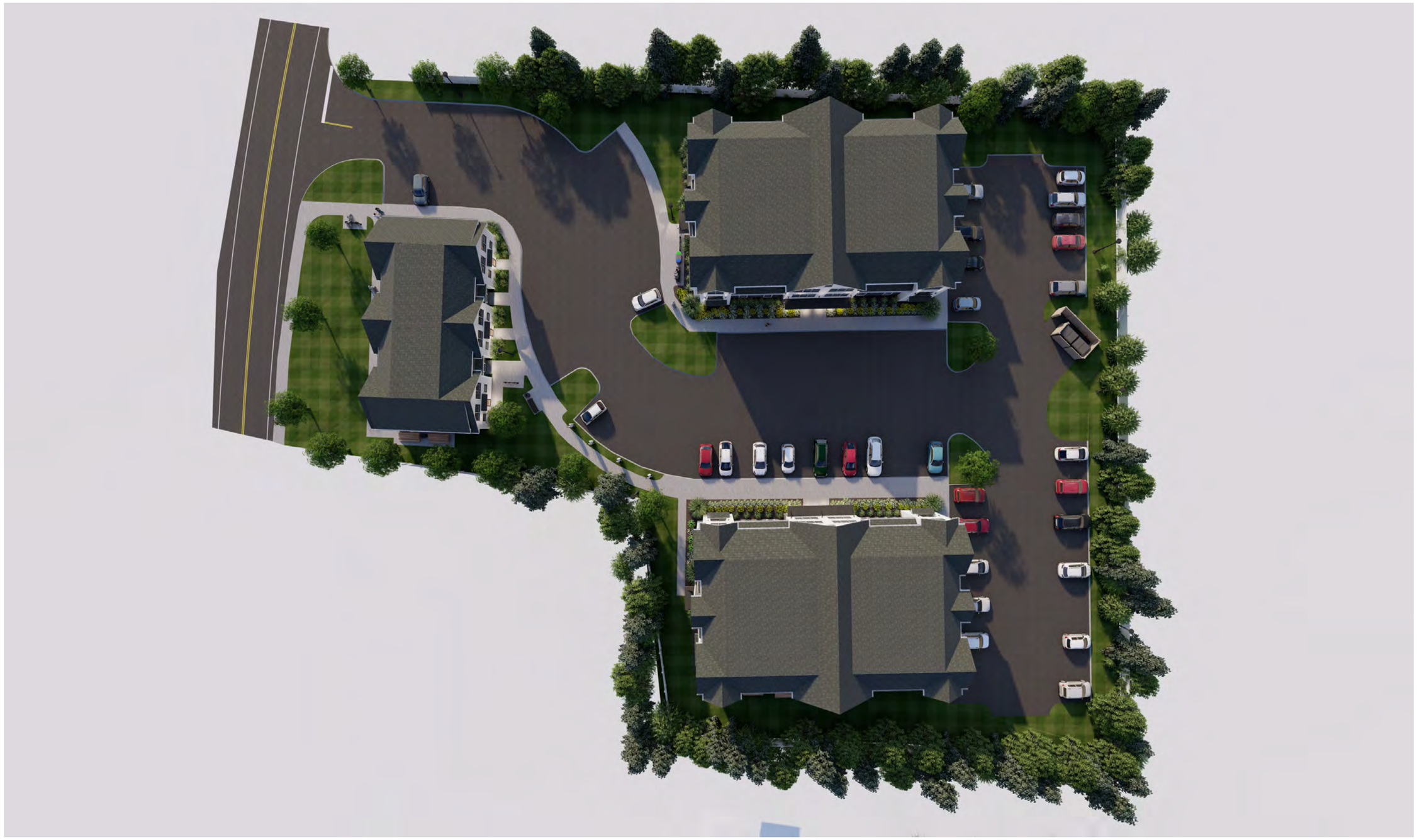
NOT FOR CONSTRUCTION



DOVER DEVELOPMENT LLC

242 CENTRAL AVENUE
DOVER, NH 03820

52 OLD ROCHESTER ROAD, DOVER




CHLOE
NAILS


BREW













