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, June 4, 2026**
Meeting Time: **10:30 AM**

1. Site Plan for Corey MacKoul, Assessor's Map 17, lot 38, zoned R-12, located at 89 Stark Avenue. (Proposal is to construct two (2) single-family homes.) (SITE-2026-0008)

PLAN SNAPSHOT REPORT SITE-2026-0008
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	05/14/2026
Work Class:	New Construction	**District:**	None	**Exp Date:**	07/18/2026
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: The applicant proposed to construction of 2 single family homes and associated site improvements to 89 Stark Avenue which has an existing home.

Parcel:	17038-000000 Main	**Address:**	89 Stark Av Dover, NH Main	**Zone:**

Applicant
Tritech Engineering Corp.
755 Central Avenue
Dover, NH 03820
Business: (603) 742-8107

Owner
Koul Contracting LLC
Corey MacKoul
8 HULL AV
DOVER, 03820
Mobile: (603) 630-4113

Plan Custom Fields

Total2	0	Total3	0	Total	0
Total5	0	Total4	0	Total6	0
Total7	0	Total9	0	Total8	0
Street Classification Type	Municipal	Recording Number		Net Change in # Parking Spaces (+/-)	4
Water Service	Municipal	Sewer Service	Municipal	Deed Book	5248
Total Acres (GIS)	0.833	Deed Page	342	Total SQFT	36285.5
Deed Date	03-07-2025	Proposed Property Use	3 Single Family Homes	Area of Parcel to be Developed (SQFT)	0.833
Number of Parking Spaces Existing	2	Number of Parking Spaces Proposed	6	Distance to City Water	0
Distance to City Sewer	0	Type of Building to be Built	2 Wood frame Single Family Homes	Estimated Construction Value	850000.00
Refuse Removal	Public	Existing Conservation Easement Details		Total of Impact Fees to be Assessed	0.00
TotalImpactFeeSDTOD	0.00	Sub Total Residential	0.00	TotalImpactFeeTHTOD	0.00
TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00
TotalImpactFeeADUTOD	0.00	TotalImpactFeeAONRTOD	0.00	TotalImpactFeeAR55TOD	0.00
TotalImpactFeeAR62TOD	0.00	TotalImpactFeeRIRCTOD	0.00	Sub Total Non-Residential	0.00
TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00
TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00		

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Robert_Stowell_5/14/2026.jpg	05/14/2026 11:34	Stowell, Robert		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026001666	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026001666	$200.00	$0.00
	Grand Total for Plan	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		05/15/2026 13:01	

PLAN SNAPSHOT REPORT (SITE-2026-0008)

Confirm application complete v.1	Generic Action		05/15/2026 13:01
Technical Review Committee Meeting Agenda v.1	Task	05/15/2026 13:01	
Land Use Plan Technical Review v.1	Receive Submittal		
Technical Review Committee Meeting v.1	Hold Meeting		
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: Corey MacKoul Telephone # 603-630-4113

Address of Applicant: 8 Hull Avenue, Dover, NH

E-Mail Address: corey@koulcontracting.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 89 Stark Ave

Assessor's Map # 17 Lot(s) # 38

Zoning District(s) R-12 Overlay District(s) _____

Size of Parcel: 38,452 sq. ft. 0.833 ac. Property Deed: Book 5248 Page: 342

Existing Use of Property: Single family residential

SITE PLAN INFORMATION

Describe Proposed Use: construct an additional 2 single family units.

Area of Parcel to be Developed: 30,185 sq. ft.

If Multi-family Residential: Number of Units 2 & Buildings Proposed 2

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

Number of Parking Spaces: Existing 2 Proposed 6

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

Number of Employees Total: _____ In Maximum Shift: _____

Disposition of Parcel:

Building Footprint Varies sq. ft.

Total Building Area 3,945 sq. ft.

Paved Area 4,000 sq. ft.

Building Setbacks:

Front Yard 12.3 ft.

Rear Yard 114 ft.

Side Yard: Right 19.5 ft. Left 26.7 ft.

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

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

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 1 units

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

The applicant proposes the construction of 2 single family homes. The base density is 2 units, therefore, the applicant proposes to purchase one additional unit through the TDR ordinance.

BUILDING INFORMATION

Type of Building to be Built: Wood frame

Height of Building: Varies Finished Floor Elevation: Varies

Number of Seats (where applicable) N/A

Estimated value of construction: $850,000 Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: 153-14.D.6(a) & (c)

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

See attachment.

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Robert Stowell; Tritech Engineering Corp.

Address 755 Central Ave. Dover, NH Telephone #: 603 742 8107

Professional License #: 884 E-mail address: rjs@tritecheng.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Robert Stowell; Tritech Engineering Corp.

Address 755 Central Ave. Dover, NH Telephone #: 603 742 8107

Professional License #: 884 E-mail address: rjs@tritecheng.com

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.) Romy N. Maurer; Terrain Planning & Design

Address 311 Kost Hill Rd. Hopkinton, NH 03229 Telephone #: 603 746 3512

Professional License #: 086 E-mail address: romy@terrainplanning.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Michael Mariano; Highland Soil Services

Address 75 Prospect St. Somersworth, NH Telephone #: 609 692 4457

Professional License #: 76 E-mail address: highlandsoilservices@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: 5/12/26

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

Signature of Agent: _____, PRESIDENT Date: 05/12/26

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: 5/12/26

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: 5/12/26

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: 5/12/26

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
17	38	Corey MacKoul	8 Hull Avenue, Dover, NH

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Robert J. Stowell	Tritech Engineering Corp.	755 Central Ave, Dover NH 03820
Michael Mariano	Highland Soil Services	75 Prospect St. Somersworth NH 03878
Romy N. Maurer	Terrain Planning & Design	311 Kost Hill Road, Hopkinton NH 03229

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☒ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # 2 per dwelling unit = $ 400.00
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $ 400.00

AND

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

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

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

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

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

APPLICANT: Corey MacKoul File Number: _____

PROJECT TITLE: Corey MacKoul

PROPERTY LOCATION: 89 Stark Ave Tax Map: 17 Lot: 38

	Where/How Provided	Reviewed
1. Completed and signed Application form	Attached	
2. Plan Review Fees are provided	Hand delivered	
3. Electronic copy of the engineered/surveyed plan layout	Via portal	
4. Electronic copy of supplementary materials and application	Via portal	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Attached	
6. Waiver requests to the Site Plan Review Regulations, with written justification	Attached	
7. Conditional Use Permit applications	N/A	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	Architectural plans	
9. A colored architectural plan showing all sides of buildings	Architectural plans	
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:	Attached	
Location map at appropriate scale	Sheet EX-1 Locus Map	
Proposed Project name and title and Planning File #	Title Block	
Date, north arrow and scale	All applicable sheets	
Names of all abutting property owners	Sheet EX-1	
Name and address of owners and/or applicants	Sheet EX-1	
Signature & stamp of NH licensed land surveyor and/or engineer	All applicable sheets	
Zoning District boundaries, including any special or overlay districts	Sheet SP-1	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	Sheet SP-1	
Location and widths of existing & proposed easements & right of ways	Sheet SP-1	
Location and width of existing and proposed access/egress ways	Sheet SP-1	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	Sheet SP-1	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Sheet EX-1	
Existing and proposed topographic information at two foot intervals	Sheet SP-4	
Existing and proposed buildings and structure locations	Sheet SP-1	
Minimum building setbacks or build to lines on all lots	Sheet SP-1	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Sheet SP-3	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	Sheet SP-3	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	Sheet SP-3	
Existing and proposed stormwater lines and facilities	Sheet SP-5	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	N/A	
Location of Flood Hazard Zone	Sheet SP-1	
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	Sheet T-2	
Existing natural features and/or significant vegetation on property	Sheet EX-1	
Depict existing contours up to 100 ft. beyond project limits	Sheet EX-1	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Sheet LA-1	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Sheet SP-2	
Location, material and size of existing and proposed pavement area	Sheet SP-2	
Location of proposed fire lanes	Sheet SP-2	
Specify finished floor elevations of buildings	Sheet SP-2	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	Sheet LA-1	
Depict all service, storage, loading bays and utility areas	N/A	
All applicable Dover Common Site Plan notes	Sheet SN-1	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Drainage Report	
Stormwater Management System Operation and Maintenance Plan	Stormwater Mgmt., Maintenance & Insp. Plan	
Letter to Serve from Public and Private Utilities	Pending	
Erosion and Sedimentation Control Plan	Drainage Report	
Landscape Operation and Maintenance Plan	Landscape O&M Plan	
Proposed restrictive covenants or homeowners association documents	Pending	
Dates and permit numbers of all required state and federal permits	N/A	
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	Sheet SSS-1	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	N/A	

REVIEWED BY: _____ DATE_____ TRC DATE_____

WAIVER REQUEST

Site Review Regulations §153-14.D.6(a) &(c)
Parking Lot Design Standards

for

COREY MACKOUL

89 Stark Ave
Dover, New Hampshire
May 2025

In accordance with Site Review Regulations Article 153.21.A, Waiver, the applicant formally requests a waiver from Section 153-14.D.6 (a) & (c) regarding the parking lot design standards for aisle width.

The 89 Stark Ave development project consists of a driveway for access & parking for the proposed 2-unit development. We have proposed 20-foot-wide travel ways / aisle ways where 153-14.D.6(a) requires an aisle width of 22 feet and 153-14.D.6(b) requires an aisle width of 24 feet.

153.21 Waivers

A. The PLANNING BOARD may waive specific provisions of this Chapter. The PLANNING BOARD may only grant a waiver if the PLANNING BOARD finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the APPLICANT and the waiver would not be contrary to the spirit and intent of the regulations; or

The spirit and intent of the regulation is to provide safe access the residents and guest of the proposed project. We respectfully submit that the 20-foot-wide pavement width will achieve this intent.
Our Traffic-Assessment Memorandum calculated weekday vehicle-trips due to the project as:

- ***daily, 18 (total of in and out)***
- ***AM-street-peak hour, 1 (1 in and 0 out)***
- ***PM-street-peak hour, 2 (1 in and 1 out)***

A 20-foot-wide travel way is more than adequate for the 2 peak hour trip generated by the proposed development. American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Street, 7th Edition (Washington, DC, 2018) allows for Urban Local Street to have a lane width of Nine (9) feet.

(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations.

The spirit and intent of the regulation is to provide safe access the residents and guest of the proposed project. We respectfully submit that the 20-foot-wide pavement width will achieve this intent. A 20-foot-wide travel way is more than adequate for the 2 peak hour trip generated by the proposed development. American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Street, 7th Edition (Washington, DC, 2018) allows for Urban Local Street to have a lane width of Nine (9) feet.

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING, AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

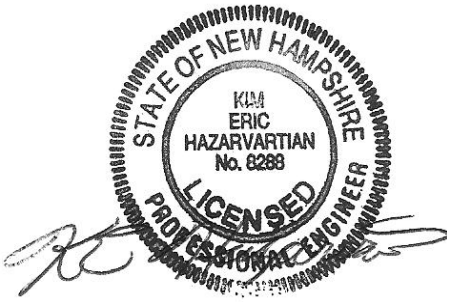
MEMORANDUM

Ref: 1784

Subject: Traffic-Assessment Memorandum
89 Stark Avenue
Dover, New Hampshire

From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
keh@teppllc.com

Date: May 14, 2026



INTRODUCTION

Tritech Engineering Corporation has retained TEPP LLC to prepare this traffic-assessment memorandum (TAM). This TAM regards the proposed redevelopment at 89 Stark Avenue in the City of Dover, New Hampshire.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit
- sight distances
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that:

- relevant sight distances at the Stark Avenue/proposed access intersection are appropriate
- the proposed project is not anticipated to add significant new traffic to the area

EXISTING SITE DESCRIPTION

The existing site:

- is along the west side of Stark Avenue
- has an area of about 0.883 acres
- includes one single-family-detached house
- has one driveway along the west side of Stark Avenue
- is bounded on the east by Stark Avenue
- is otherwise bounded by residential development

PROPOSED PROJECT DESCRIPTION

The project will:

- retain the existing dwelling unit
- add two proposed single-family-detached dwelling units
- remove the existing driveway
- provide a proposed access, south of the existing driveway location, for the three dwelling units

ROAD DESCRIPTION

Stark Avenue:

- is a north-south minor-arterial street under the jurisdiction of the City of Dover
- provides connections, to and from the north, with Central Avenue, a minor-arterial street, and with central Dover
- provides connections, to and from the south, with Dover Point Road, a minor-arterial street, and with southern Dover
- has a horizontal alignment with minor-to-moderate curvature
- has a vertical alignment with minor grades
- has a speed limit of 30 miles per hour (mph)
- has asphalt-cement-concrete pavement in overall good condition
- has one travel lane per direction
- has pavement markings including double-yellow lines, separating traffic directions, and single-white edge lines
- near the site, has a sidewalk on the west side
- near the site, has utility poles on the west side, including one pole with a luminaire along the site frontage

PUBLIC TRANSIT

Cooperative Alliance for Seacoast Transportation bus-transit system Route 13 runs along Stark Avenue near the site. A southbound stop is near 67 Stark Avenue, and a northbound stop is north of 34 Stark Avenue.

The route connects with:

- to the north, central Dover and the Dover Transportation Center
- to the south, the City of Portsmouth and Hanover Station

SIGHT DISTANCES

Table 1 presents a sight-distance summary for the Stark Avenue/proposed access intersection. Table 1 shows that available sight distances provide for approach speeds on Stark Avenue that are greater than the speed limit.

Table 1. Sight-distance summary.

	Geometry[a]		Speeds (mph)	
Intersection and View	Approach Grade (%)	Available Sight Distance (ft)	Limit	SSD[b]
Stark Avenue/Proposed Access Intersection				
Stark Avenue to/from North	Down 3±	325±	30	40+
Stark Avenue to/from South	Up 4 ±	400±	30	40+

[a] Provided by Tritech Engineering Corporation.

[b] SSD design speed that available sight distance provides. AASHTO, pages 3-2 to 3-6.

TRIP GENERATION

The Institute of Transportation Engineers (ITE) publishes trip-generation information in the authoritative *Trip Generation Manual*.[1] This information is based on empirical data for a variety of land uses, including land use 210, single-family-detached housing, based on dwelling units.[2]

Table 2 shows changes in calculated weekday vehicle-trips due to the project as:

- daily, 18 (total of in and out)
- AM-street-peak hour, 1 (1 in and 0 out)

[1] ITE, *Trip Generation Manual*, 12th Edition (Washington DC, August 2025).

[2] ITE, *Trip Generation Manual*, Volume 3, pages 230 to 248.

	Weekday Vehicle-Trips[a]						
		AM-Street-Peak Hour			PM-Street-Peak Hour		
	Daily	Total	In	Out	Total	In	Out
Existing One Dwelling Unit	9	1	0	1	1	1	0
Proposed Three Total Dwelling Units	27	2	1	1	3	2	1
Differences Due to Project	18	1	1	0	2	1	1

[a] Based on ITE, *Trip Generation Manual*, land use 210, single-family-detached housing.

- PM-street-peak hour, 2 (1 in and 1 out)

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations will not be sensitive to trip distribution/assignment. Trips will be split along Stark Avenue to/from the north and south and further split beyond the immediate project area.

POTENTIAL TRAFFIC IMPACTS

ITE suggests that land developments generating at least 100 peak-hour vehicle trips, in the busier direction, are candidates for consideration of traffic impact analysis.[3] Tabulated peak-hour trip generation of the project is well below this national ITE level. The project is not anticipated to add significant new traffic to the area.

CONCLUSION

This TAM concludes that.

- relevant sight distances at the Stark Avenue/proposed access intersection are appropriate
- the proposed project is not anticipated to add significant new traffic to the area

[3] ITE, *Manual of Transportation Engineering Studies* (Prentice Hall: Englewood Cliffs, New Jersey, 2000), page 144.

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

COREY MACKOUL

89 Stark Ave
Dover, New Hampshire
May 2026

PREPARED FOR

COREY MACKOUL

8 HULL AVE
DOVER, NH 03820

PREPARED BY

TRITECH ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

STORMWATER ANALYSIS

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8 Hull Ave
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SECTION I

NARRATIVE

STORMWATER ANALYSIS

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for

COREY MACKOUL

8 Hull Ave
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May 2026

1. PROJECT DESCRIPTION

The attached Site Plans are for Corey MacKoul and show the development of an approximately 0.883-acre parcel with an existing single family house. This site is located on the Southwestern side of Stark Ave in Dover, New Hampshire. The site is identified on Dover Property as Map 17 Lot 38.

The project consists of renovation of the existing single family house and the construction of two single family houses. The project will be constructed under Dover's Transfer of Development Rights Ordinance. The development will include associated infrastructure such as an access road, all utilities, and stormwater management.

Included in the stormwater management system is the construction of a Bioretention Area. The Bioretention Area is shown on the construction plans and provide permanent stormwater quality and quantity treatment, prior to the stormwater exiting the site.

Proposed site development details are shown on the Site Development Plans for Corey MacKoul as prepared by Tritech Engineering Corporation. Site and Construction plans are based upon an actual on-ground survey performed by Tritech Engineering Corporation, and on-site Wetland & Site Specific Soil delineation performed by Highland Soil Services.

2. METHODOLOGY

This stormwater runoff analysis and drainage design was accomplished using SCS TR-20 Methodology a third party computer software program was used in the facilitation of this analysis. This software is HydroCAD Stormwater Modeling System Version 10.20-8a, by Applied Microcomputer Systems. Analysis and design were performed for the Two-Year, Ten-Year, Twenty-Five Year and Fifty Year Storm Events.

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3. STORMWATER HYDROLOGIC REVIEW

EXISTING CONDITIONS

Table A – Existing Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Pre Development Volume (af)**	**Pre-Development Peak Flows (cfs)**			
Analysis Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
1	0.000	0.00	0.02	0.16	0.45
2	0.000	0.00	0.00	0.00	0.00

DEVELOPED CONDITIONS

Table B – Developed Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Post Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Analysis Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
1	0.000	0.00	0.00	0.00	0.25
2	0.000	0.00	0.00	0.00	0.01

HYDROLOGIC COMPARISON

Table C – Pre/Post Development Comparison (2, 10, 25, and 50-year storm events)

Watershed	**Pre/Post Development Volume (af)**	**Pre/Post Development Peak Flows (cfs)**			
Analysis Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
1	0.000/**0.000**	0.00/**0.00**	0.02/**0.00**	0.16/**0.00**	0.45/**0.25**
2	0.000/**0.000**	0.00/**0.00**	0.00/**0.00**	0.00/**0.00**	0.00/**0.01**

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4. STORMWATER RUNOFF QUALITY

Stormwater runoff from the site is collected in a system of open drainage swales, and catch basins, pretreated via deep sump catch basins and treated, detained, and infiltrated via the Bioretention area.

5. CONCLUSIONS

Treatment of drainage occurs in deep sump catch basins and a Bioretention practice. This Stormwater Management System effectively treats and detains the runoff from the Site Development, while maintaining the down gradient water quality through treatment.The development of this project will result in no adverse impacts to downstream properties.

6. SOIL TYPES

On site Test Pits indicate the entirety of the site contains Windsor soil.

7. RAINFALL DATA

As part of the 2007 Alteration of Terrain rules update, New Hampshire began using “extreme precipitation” in lieu of the previously accepted standard UDSA SCS rainfall distribution.

We have used the interactive web tool for extreme precipitation analysis published by Cornell University. On April 7, 2026, we submitted our site location (longitude 70.870° West, Latitude 43.179° North). A table with the resulting rainfall data is provided in the appendix.

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8. WETLANDS & SITE SPECIFIC SOILS MAP

Highland Soil Services, Michael Mariano, Certified Wetland #183 and Soil Scientist #76, conducted an on site wetlands deliniation investigation of the subject parcel. There are no wetlands located on the site. Highland Soil Services also completed a site-specific soil survey, the results of which are depicted on sheet SSS-1, D-1, & D-2

9. ADJACENT AREA

The site is zoned R-12. The site is bounded to the north by Stark Ave and to the east, south and west by residential properties.

10. CRITICAL AREAS

Anywhere on the site that existing vegetation is to be removed will require immediate erosion control treatment.

11. EXISTING CONDITIONS

The site is currently a single family residential property.

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12. EROSION AND SEDIMENT CONTROL PRACTICES

Erosion and sediment control practices will include the use of permanent grass ditches, vegetated filter strips, & Silt Soxx. All erosion control practices will be constructed and maintained according to the minimum standards and specifications contained in the "Erosion and Sediment Control Design Handbook for Developing Areas of New Hampshire".

A. Erosion and Sediment Control Measures

1. The erosion control procedures shall conform to Section 645 of the "Standard Specifications for Road and Bridge Construction" of the NH DOT, and the "Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire.
2. During Construction and thereafter, erosion control measures are to be implemented as noted. The smallest practical area of land should be exposed at any one time during development.
3. During grading operations, install hay bale barriers at 50 foot intervals in drainage swales and at drain inlets where shown. Barriers are to be maintained and cleaned until disturbed areas are stabilized.
4. Any disturbed areas which are to be left temporarily, and which will be regarded later during construction shall be machine hay mulched and seeded with rye grass to prevent erosion.
5. Silt Soxx shall be periodically inspected during the life of the project and after each storm. All damaged Silt Soxx shall be repaired. Sediment deposits shall periodically be removed.
6. Avoid the use of future open spaces (loam and seed areas) wherever possible during the construction. Construction traffic shall use the roadbeds of future roads and parking areas.
7. Topsoil required for the establishment of vegetation shall be stock piled in amounts necessary to complete finished grading of all exposed areas.
8. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. Stumps shall be disposed by grinding or fill in an approved facility.
9. All fills shall be placed and compacted to reduce erosion, slippage settlement, subsidence or other related problems.
10. All fill shall be placed and compacted in layers not to exceed 8 inches in thickness.

11. Frozen material or soft, mucky or highly compressible material shall not be incorporated into fills.
12. Fill material shall not be placed on a frozen foundation subgrade.
13. Disturbed areas shall be seeded immediately following finished grading.
14. At no time shall any disturbed area remain unstabilized for longer than thirty days. All areas where construction is not completed within thirty days of the initial disturbance shall be machine hay mulched and seeded with rye grass to prevent erosion.
15. Dewatering: Where groundwater is encountered during excavation, the contractor shall use a mechanical pump, pumping the water to a Dirt Bag™ or equivalent prior to discharge. Alternate systems must meet applicable sections of the 2017 CGP and NHDES requirements, and be approved by Tritech. Avoid allowing water to flow over disturbed or newly vegetated areas.

B. Vegetative Practice

1. All disturbed areas shall be loamed (4") and limed. Lime shall be thoroughly incorporated into the loam layer at a rate of 2 tons per acre.
2. Fertilizer shall be spread on the top layer of loam and worked into the surface. Fertilizer application rate shall be 500 pounds per acre of 10-20-20 fertilizers.
3. Seed shall be 48 lbs. per acre, SCS mixture "C".
   Immediately before seeding, the soil shall be lightly raked. One half the seed shall be sown in one direction and the other half at right angles to the original direction. It shall be lightly raked into the soil to a depth not over 1/4 inch and rolled with a hand roller weighing not over 100 pounds per linear foot of width.
4. Hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook.
5. The surface shall be watered and kept moist with a fine spray as required, without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds removed.

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13. CONSTRUCTION SEQUENCE

A. Do not begin construction until all local, state and federal permits have been applied for and received.

B. Install Silt Soxx and hay bale barriers necessary to control erosion and prevent sediment contamination of wetlands prior to any earth moving activities.

C. Cut and remove all trees, shrubs, saplings, brush, vines and other debris and rubbish as required. Remove unsuitable materials as required.

D. Care shall be taken to preserve the infiltration capacity of the infiltrating soil. Seet the New Hampshire Stormwater Manual for additional information.

E. Construct Stormwater Bioretention Basin #1. Do not direct runoff to the practice until the practice and contributing areas are fully stabilized.

F. Constuct of buildings, driveways, parking, & utilities.

G. Loam and seed disturbed areas in accordance with vegetative practice and general construction notes. Cut and fill slopes shall be seeded immediately after their construction.

H. Land leveling operations for buildings and other structures shall be completed along with off road storm sewer systems and utilities.

I. Maintain disturbed areas as necessary.

14. MAINTENANCE

During the period of construction and/or until long term vegetation is established:

A. Seeded areas will be fertilized and reseeded as necessary to insure vegetative establishment.

B. The ditches will be checked after each significant rainfall and cleaned of sediment as needed to retain flow capacity.

C. The ditches will be checked weekly and repaired when necessary until adequate vegetation is established.

D. The silt fence barriers will be checked regularly. Necessary repairs will be made to correct undermining or deterioration of the structures.

CITY OF DOVER

SITE DEVELOPMENT DESIGN CRITERIA

Site Review Regulations §153-14A – Stormwater Management

NARRATIVE

for

COREY MACKOUL

89 Stark Ave

Dover, New Hampshire

May 2026

A. Stormwater management, erosion control and flood hazards.

(1) Purpose and objective. These regulations establish standards to manage the discharge of runoff to the City of Dover's municipal storm sewer system and water bodies, in a manner compliant with the requirements of state and federal law, including provisions of the federal stormwater management legislation for municipal separate storm sewer systems (MS4), as amended. These provisions and standards are implemented for the purpose of:

(a) Managing stormwater runoff to protect water quality and quantity.

The projects stormwater analysis, design, plans and supporting documentation have been prepared in accordance with The City of Dover Site Review Regulations and the NH Stormwater Manual (December 2008).

The project design provides for storm attenuation, stormwater treatment and groundwater recharge in accordance with these regulations and standards.

(b) Minimizing the contribution of a pollutant for which a water body is impaired to the maximum extent practicable (MEP).

The project utilizes the appropriate BMP's to compensate for the pollutants that may be generated by new development to the maximum extent practicable.

(c) Causing no discharge of runoff to an adjacent property in excess of runoff discharge in the existing developed or undeveloped condition.

The proposed development post construction runoff does not exceed pre construction conditions. There will be no increase in runoff to the City's drainage system.

(d) Encouraging the use of low-impact development (LID) strategies.

The project utilizes a bioretention practice for stormwater treatment and infiltration for groundwater recharge.

(2) Applicability of the stormwater standards.

(a) All projects requiring site plan or major subdivision approval shall be subject to the following set of stormwater standards according to the amount and type of disturbance. Applicability is as follows:

[1] The minimum protections and management standards shall apply to all projects.

This narrative is prepared in conjunction with a Site Plan Review application for which the "new development standards" apply to the stormwater management and site design of the proposed development.

[2] The stormwater management for new development standards shall apply to any project that results in a contiguous land disturbance of more than 20,000 square feet or creates more than 4,000 square feet of new impervious area.

This narrative is prepared in conjunction with a Site Plan Review application for which the "new development standards" apply to the stormwater management and site design of the proposed development.

[3] The stormwater management for redevelopment standards shall apply to any project that results in a contiguous land disturbance of more than 20,000 square feet or creates more than 4,000 square feet of new impervious area where the existing land use has been previously developed as commercial, industrial, institutional, governmental, recreational, or multifamily.

The proposed project does not meet the standards for a "redevelopment" project.

(b) All projects of such magnitude as to require a permit from the National Pollutant Discharge Elimination System (NPDES) Program or the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain (AoT) Program shall also comply with the standards of the Environmental Protection Agency (EPA) and/or NHDES permits and this section, whereas the stricter standards shall apply.

As this project proposes disturbance of less than 100,000 square feet and less than one (1) acre it does not require a NH DES Alteration of Terrain (AoT) permit or the submittal of a Notice of Intent (NOI) application with the EPA as required by National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP).

(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.

The project complies with the City's design and stormwater requirements.

[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.

The subject property does not contain surface waters, wetlands or associated buffer setback.

[3] Low-impact development (LID) site planning and design strategies shall be used to the 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.

LID strategies were implemented to the maximum extent practicable. The project utilizes a bioretention practice for stormwater treatment as well as infiltration for groundwater recharge.

[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.

The project stormwater BMPs are designed in accordance with New Hampshire Stormwater Manual Volume 2 current version (December 2008 revision 1.0).

[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).

The project does not propose the storage of the referenced materials onsite.

[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.

The project does not provide for the storage of deicing materials onsite.

[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.

The project Stormwater Management, Maintenance & Inspection Plan requires the implementation of a salt minimization plan that also requires the owner or operator to track salt usage onsite through a quantity usage log.

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

The project design has minimized the impervious areas to the maximum extent possible. The number of parking spaces, travel way widths and vehicle maneuvering areas have been minimized for this specific project/use.

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

The project design utilizes a bioretention practice for stormwater treatment & flow mitigation as well as infiltration for groundwater recharge & flow mitigation.

(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 project design utilizes a bioretention practice for treatment of impervious areas. This bioretention practice system provides 90% removal of TSS and 65% removal of total nitrogen and phosphorous per the NH Stormwater Manual.

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

The project stormwater analysis and design utilizes the NRCC extreme precipitation.

[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.

The proposed design mitigates post development peak rate runoff of the two-year, ten-year, twenty-five-year and the fifty-year in a 24-Hour storm event.

[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.

On April 29th, 2026 Tritech performed on-site infiltration testing using Geulph Permeameter in accordance with NHDES Analysis Method. The analysis of this data determined the K_{sat} value to be used in the HydroCAD Stormwater Model.

We performed this testing at one location on the property. The testing location was located next to Test Pit #1. The results of the test determined a 13.75 in/hr. K_{sat} value to be used in the HydroCAD stormwater model.

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

On April 29th, 2026 Tritech performed on-site infiltration testing using Geulph Permeameter in accordance with NHDES Analysis Method. The analysis of this data determined the K_{sat} value to be used in the HydroCAD Stormwater Model.

We performed this testing at one location on the property. The testing location was located next to Test Pit #1. The results of the test determined a 13.75 in/hr. K_{sat} value to be used in the HydroCAD stormwater model.

[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.

The project's Stormwater infrastructure is designed to convey a 50-year, 24-hour storm event without overtopping and does not cause flooding on the property. See Stormwater Analysis.

[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.

The project does not add 10 acres or greater of impervious cover and is not located in a federally designated floodplain.

[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.

The project involves very little upstream or upgradient runoff, however, the project stormwater calculations, stormwater infrastructure design and site grading all accounted for this runoff.

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

A Site-Specific Soil Plan, Sheet SSS-1, is included in our Site Development Plan Set and Stormwater Analysis. This plan was prepared by Michael Mariano of Highland Soil Service. In conjunction with this plan preparation Mr. Mariano logged two (2) test pits on the subject property. The ESHWT and overall soil types factor into the placement and design of the project BMPs.

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

Stormwater facilities are included on site and the site will be solely owned by the applicant. Stormwater access easements are not required for this project.

[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.

Sheet La-1 was prepared by Romy Maurer a licensed Landscape Architect with Terrain Planning & Design, LLC. We have also provided a Landscape Operation & Maintenance Plan to ensure the functionality of the BMPs.

(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.

The project does not meet requirements to be classified as redevelopment project, therefore this section in not applicable.

[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.

[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:

[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.

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

[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 pervious 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:

The plan set includes temporary and permanent sediment and erosion control practice notes and details in support of meeting the erosion control standards.

[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.

The sediment and erosion control details provided in the plan set are all designed in accordance with the NH Stormwater Manual.

[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.

As this project proposes disturbance of less than 100,000 square feet and less than one (1) acre it does not require a NH DES Alteration of Terrain (AoT) permit or the submittal of a Notice of Intent (NOI) application with the EPA as required by National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP).

SWPPP inspections are not required for this development.

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

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set indicates that the smallest practical area shall be disturbed during construction.

[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set indicates that the smallest practical area shall be disturbed during construction.

[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. The integrity of downstream drainage systems shall be maintained.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set indicates that stormwater conveyance practices shall be stabilized prior to receiving stormwater runoff.

[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set details the Construction Sequencing. Dover scheduling and inspections will be discussed with Community Services prior to the start of construction.

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

This project does not propose any work in a wetland or a wetland buffer.

[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set identifies this requirement.

[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.

As this project proposes disturbance of less than 100,000 square feet and less than one (1) acre it does not require a NH DES Alteration of Terrain (AoT) permit or the submittal of a Notice of Intent (NOI) application with the EPA as required by National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP). SWPPP inspections are not required for this development.

[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.

The NHDES AoT winter construction notes are identified in The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set.

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

Slopes greater than 3:1 require erosion control matting and/or armoring. Sheet SP-7 notes are provided in the project plan set.

[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set identifies this requirement.

[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.

The project does not propose the disturbance of greater than 10 acres of area. A Sediment Trap is not proposed.

[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.

A Sediment Trap is not proposed.

(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 owner/applicant is aware of this requirement.

[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.

The owner/applicant is aware of the Community Services Department inspection scheduling requirements.

[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.

The owner/applicant is aware of this requirement.

[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.

SWPPP inspections are not required for this project.

[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.

The owner/applicant is aware of this requirement.

(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.

CITY OF DOVER

SITE DEVELOPMENT DESIGN CRITERIA

Site Review Regulations §153-14A – Stormwater Management

NARRATIVE

for

COREY MACKOUL

89 Stark Ave

Dover, New Hampshire

May 2026

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[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set describes this information.

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

The proposed development post construction runoff does not exceed pre construction conditions. The proposed development does not directs any stormwater runoff to the City of Dover closed stormwater system.

[c] Description of LID proposed measures.

The project utilizes a bioretention practice for stormwater treatment as well as an infiltration practice for groundwater recharge.

[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.

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set describes this information.

[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.

The Stormwater Analysis includes the above requirements.

[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.

A Site-Specific Soil Plan, Sheet SSS-1, is included in our Site Development Plan Set and Stormwater Analysis. This plan was prepared by Michael Mariano of Highland Soil Service. In conjunction with this plan preparation Mr. Mariano logged three (3) test pits on the subject property. The ESHWT and overall soil types factor into the placement and design of the project BMPs.

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

The Stormwater Analysis includes the above requirements.

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

The Stormwater Analysis includes the above requirements.

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

The Stormwater Analysis includes the above requirements.

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

The Stormwater Analysis includes the above requirements.

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

The Stormwater Analysis includes the above requirements.

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

The project utilizes a bioretention practice for stormwater treatment as well as an infiltration practice for groundwater recharge.

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

LID measures have been incorporated in the design of the project.

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

The Stormwater Analysis includes the above requirements.

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

The Stormwater Analysis includes the above requirements.

[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.

The stormwater analysis indicates there will no increase in the post-development runoff volumes.

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

The Site Development plan set includes the above 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.

No changes are anticipated.

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

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set identifies this requirement.

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

The Erosion & Sediment Control Notes, Detail 12 on Sheet SP-7 in the project plan set identifies this requirement.

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

Additional information shall be provided as requested and may include traffic studies, structural designs, sewer designs, geotechnical reports, etc.

[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.

The Stormwater Management, Maintenance and Inspection Plan requires the implementation of a salt minimization plan that also requires the owner or operator to track salt usage onsite through a quantity usage log.

[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.

A Stormwater Management, Maintenance and Inspection Plan (I&M) is included in the Stormwater Analysis provided as part of this submittal.

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

Copies of permits will be provided to the City of Dover, as applicable.

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

A Stormwater Management, Maintenance and Inspection Plan (M&I) is included in the Stormwater Analysis provided as part of this submittal.

[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.

The Owner, Responsible Party, and the Management Company are identified in the Stormwater Management, Maintenance and Inspection Plan.

[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.

Inspection requirements and maintenance thresholds are identified in the Stormwater Management, Maintenance and Inspection Plan.

[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.

The Stormwater Management, Maintenance and Inspection Plan requires the use of a Green SnoPro contractor.

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

The Stormwater Management, Maintenance and Inspection Plan requires the implementation of a salt minimization plan that also requires the owner or operator to track salt usage onsite through a quantity usage log.

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

The Site Development Plan Set is included as part of the Stormwater Management, Maintenance and Inspection Plan.

[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.

The Stormwater Management, Maintenance and Inspection Plan identifies this requirement.

[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.

The applicant is aware of this requirement.

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

COREY MACKOUL

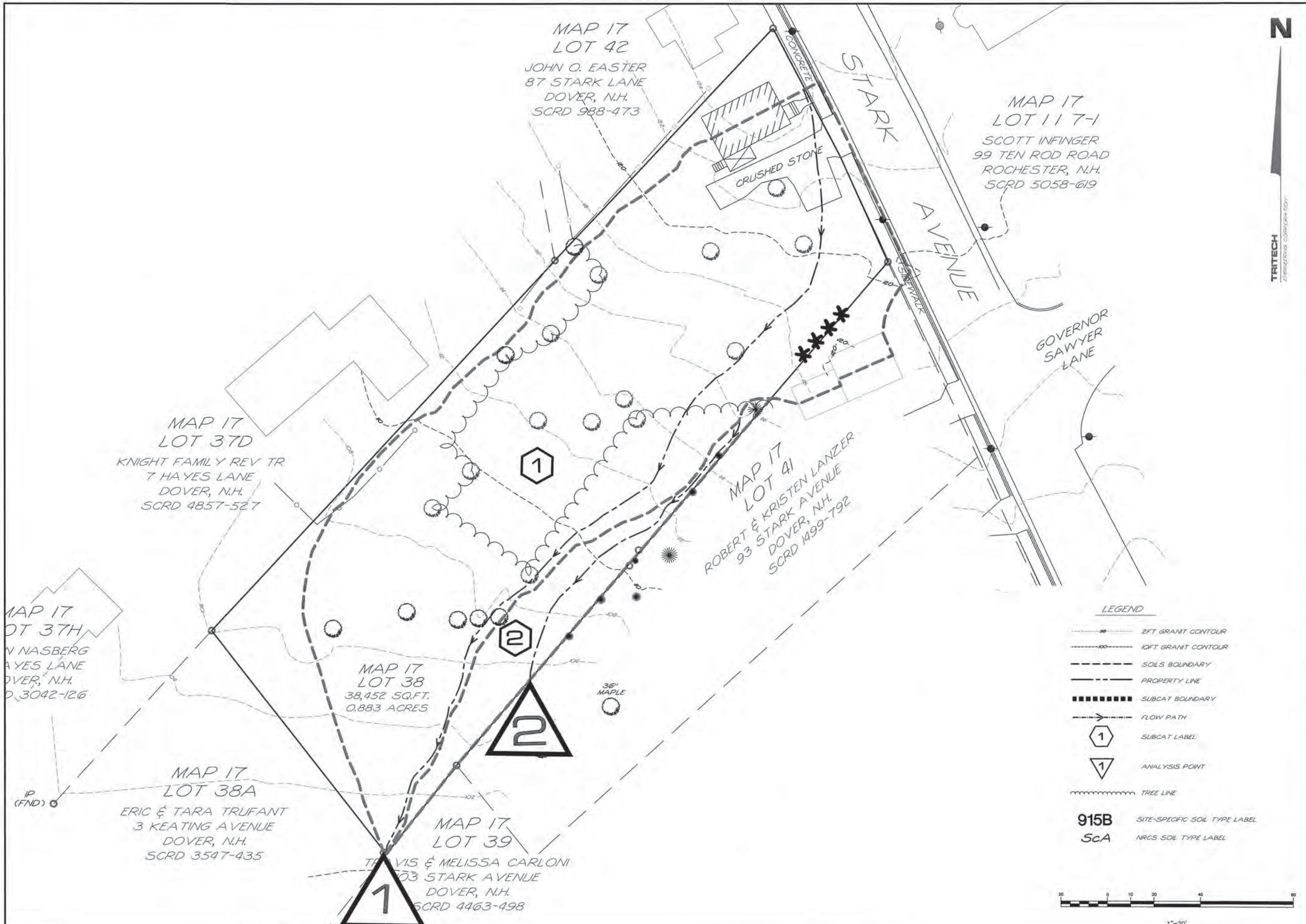
8 Hull Ave

Dover, New Hampshire

May 2026

SECTION II

COMPUTATIONS



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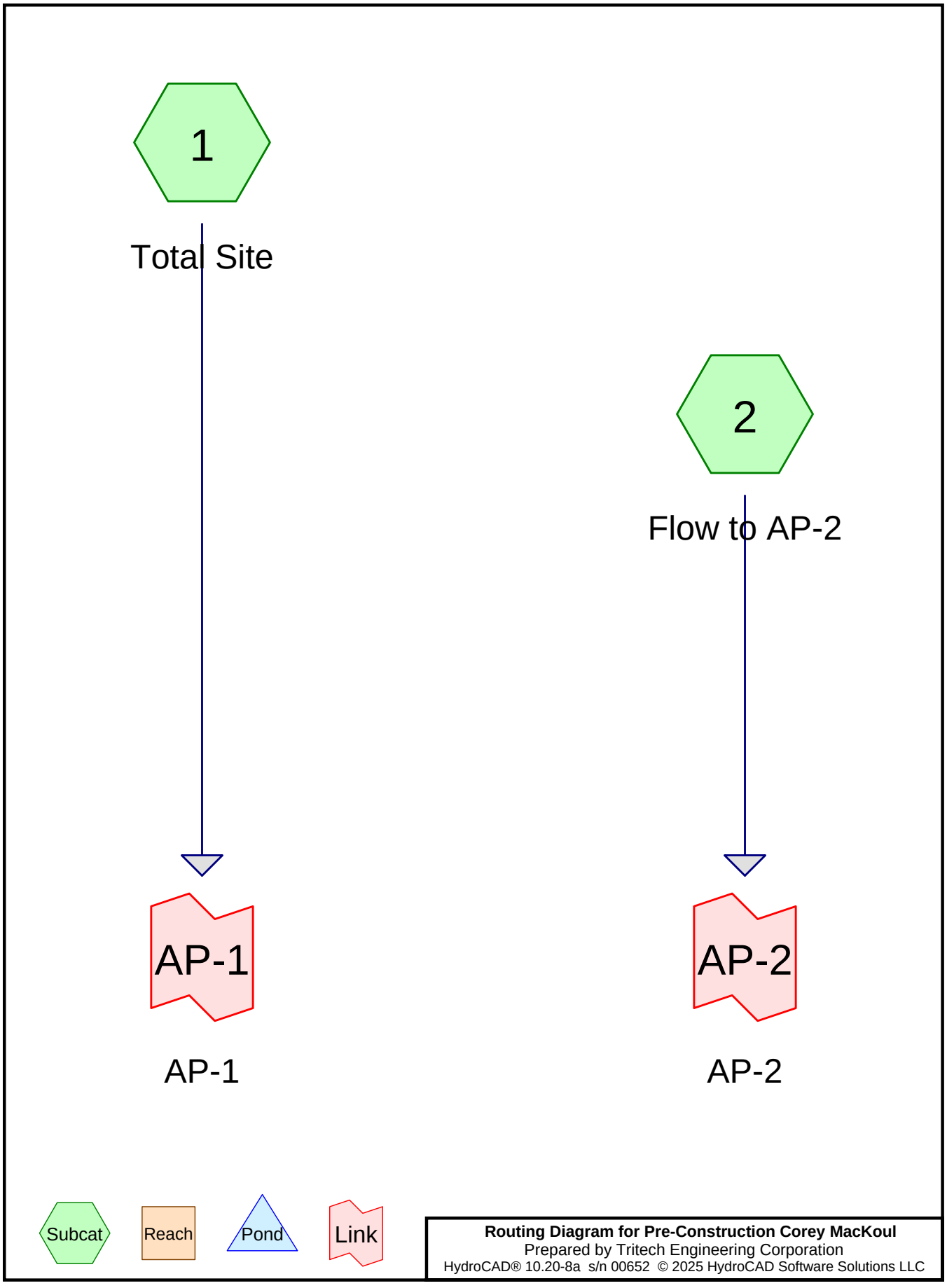
REVISIONS
DATE: DESCRIPTION:

PRE-CONSTRUCTION DRAINAGE PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 14, 2026 JOB No. 25136
SCALE: 1" = 20'

SHEET No.
D-1


1
Total Site
2
Flow to AP-2
AP-1
AP-2
AP-1
AP-2
Subcat
Reach
Pond
Link
Routing Diagram for Pre-Construction Corey MacKoul
Prepared by Tritech Engineering Corporation
HydroCAD® 10.20-8a s/n 00652 © 2025 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.361	39	>75% Grass cover, Good, HSG A (1)
0.021	96	Gravel surface, HSG A (1)
0.015	98	Paved parking, HSG A (1)
0.019	98	Roofs, HSG A (1)
0.387	30	Woods, Good, HSG A (1, 2)
0.804	**39**	**TOTAL AREA**

Soil Listing (all nodes)

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

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 1: Total Site Runoff Area=31,645 sf 4.70% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment 2: Flow to AP-2 Runoff Area=3,374 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=150' Tc=23.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link AP-1: AP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
95.75% Pervious = 0.770 ac 4.25% Impervious = 0.034 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 1: Total Site Runoff Area=31,645 sf 4.70% Impervious Runoff Depth=0.18"
Tc=6.0 min CN=40 Runoff=0.02 cfs 0.011 af

Subcatchment 2: Flow to AP-2 Runoff Area=3,374 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=150' Tc=23.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link AP-1: AP-1 Inflow=0.02 cfs 0.011 af
Primary=0.02 cfs 0.011 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.011 af Average Runoff Depth = 0.17"
95.75% Pervious = 0.770 ac 4.25% Impervious = 0.034 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 1: Total Site Runoff Area=31,645 sf 4.70% Impervious Runoff Depth=0.51"
Tc=6.0 min CN=40 Runoff=0.16 cfs 0.031 af

Subcatchment 2: Flow to AP-2 Runoff Area=3,374 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=150' Tc=23.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link AP-1: AP-1 Inflow=0.16 cfs 0.031 af
Primary=0.16 cfs 0.031 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.031 af Average Runoff Depth = 0.46"
95.75% Pervious = 0.770 ac 4.25% Impervious = 0.034 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 1: Total Site Runoff Area=31,645 sf 4.70% Impervious Runoff Depth=0.91"
Tc=6.0 min CN=40 Runoff=0.45 cfs 0.055 af

Subcatchment 2: Flow to AP-2 Runoff Area=3,374 sf 0.00% Impervious Runoff Depth=0.25"
Flow Length=150' Tc=23.5 min CN=30 Runoff=0.00 cfs 0.002 af

Link AP-1: AP-1 Inflow=0.45 cfs 0.055 af
Primary=0.45 cfs 0.055 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.057 af Average Runoff Depth = 0.85"
95.75% Pervious = 0.770 ac 4.25% Impervious = 0.034 ac

Summary for Subcatchment 1: Total Site

Runoff = 0.02 cfs @ 12.48 hrs, Volume= 0.011 af, Depth= 0.18"
Routed to Link AP-1 : AP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
843	98	Roofs, HSG A
13,487	30	Woods, Good, HSG A
15,735	39	>75% Grass cover, Good, HSG A
935	96	Gravel surface, HSG A
645	98	Paved parking, HSG A
31,645	40	Weighted Average
30,157		95.30% Pervious Area
1,488		4.70% Impervious Area

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

Summary for Subcatchment 2: Flow to AP-2

Runoff = 0.00 cfs @ 24.09 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link AP-2 : AP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
3,374	30	Woods, Good, HSG A
3,374		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	100	0.0700	0.07		**Sheet Flow, Sheet Flow Woods** Woods: Dense underbrush n= 0.800 P2= 3.15"
0.7	50	0.0600	1.22		**Shallow Concentrated Flow, SC Woods** Woodland Kv= 5.0 fps
23.5	150	Total			

Summary for Link AP-1: AP-1

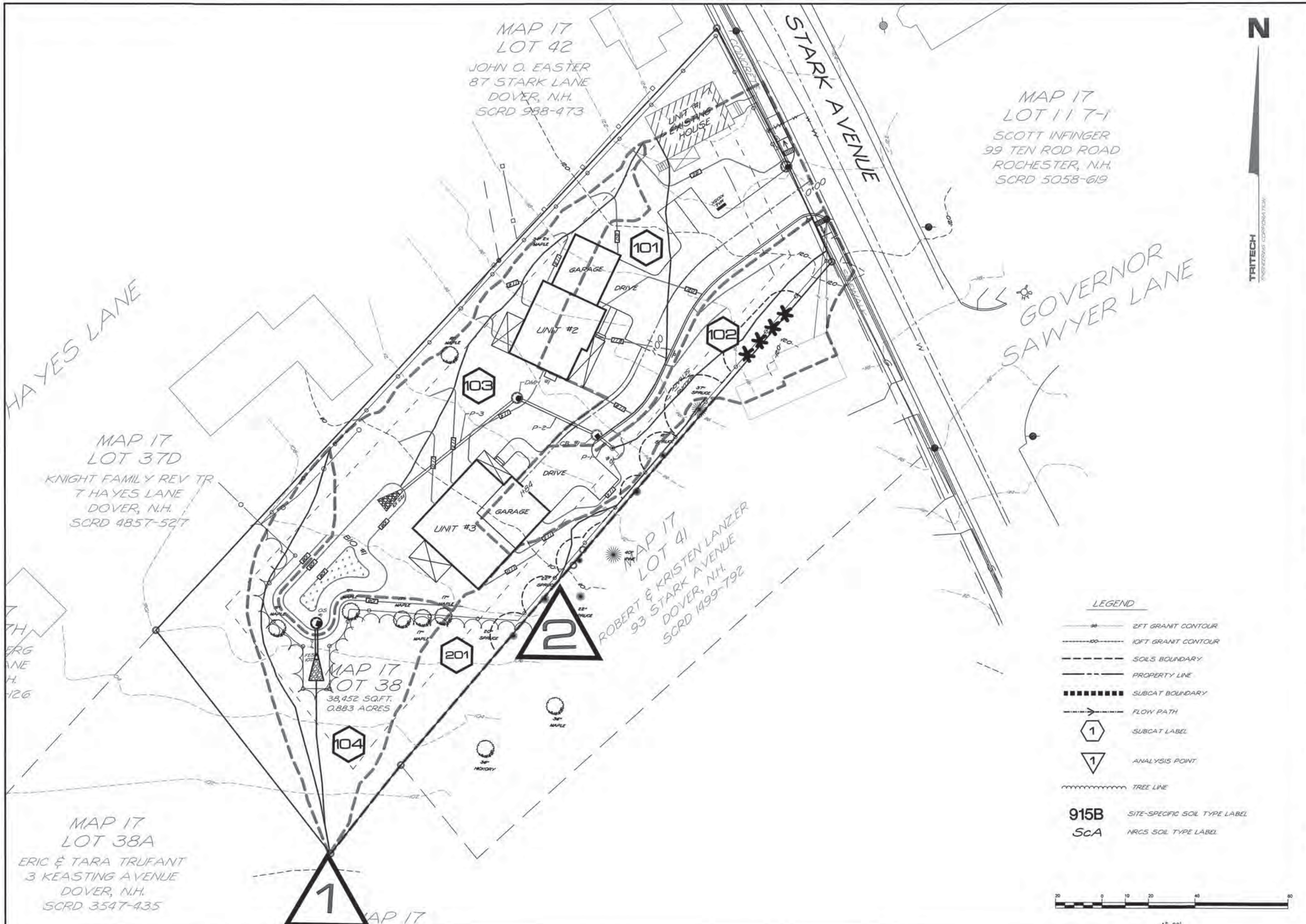
Inflow Area = 0.726 ac, 4.70% Impervious, Inflow Depth = 0.18" for 10-YR Extreme event
Inflow = 0.02 cfs @ 12.48 hrs, Volume= 0.011 af
Primary = 0.02 cfs @ 12.48 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP-2: AP-2

Inflow Area = 0.077 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-YR Extreme event
Inflow = 0.00 cfs @ 24.09 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.09 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs



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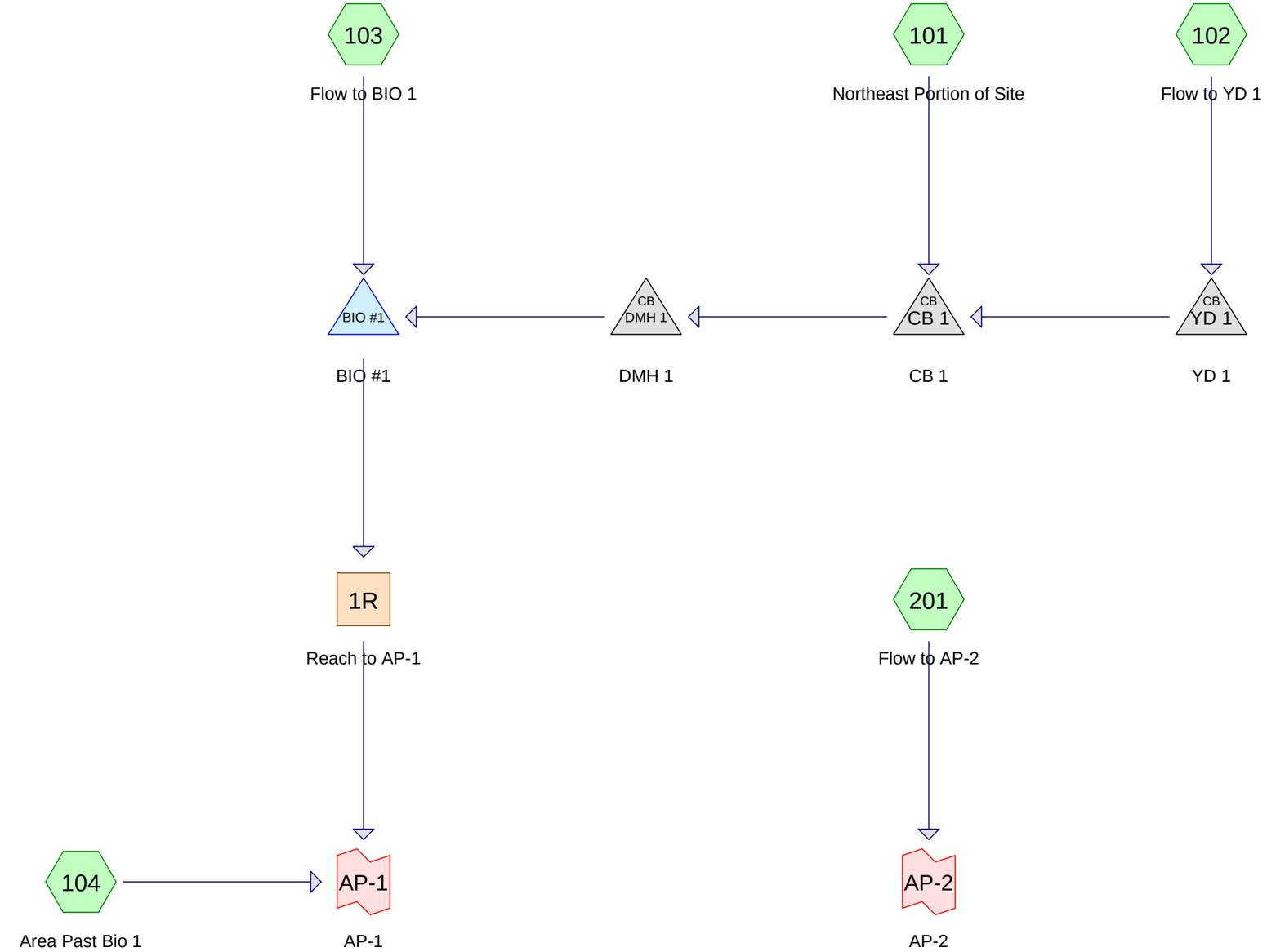
REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE
ROBERT J. STOWELL
PROFESSIONAL

POST-CONSTRUCTION DRAINAGE PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB NO. 25136
SCALE: 1" = 20'

SHEET No.
D-2



Subcat Reach Pond Link

Routing Diagram for Post-Construction Corey MacKoul

Prepared by Tritech Engineering Corporation

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.454	39	>75% Grass cover, Good, HSG A (101, 102, 103, 104, 201)
0.113	98	Paved parking, HSG A (101, 102, 103)
0.097	98	Roofs, HSG A (101, 102, 103)
0.139	30	Woods, Good, HSG A (104, 201)
0.804	**53**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.804	HSG A	101, 102, 103, 104, 201
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.804		**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 101: Northeast Portion of Site Runoff Area=8,415 sf 62.31% Impervious Runoff Depth=1.12"
Tc=6.0 min CN=76 Runoff=0.24 cfs 0.018 af

Subcatchment 102: Flow to YD 1 Runoff Area=6,018 sf 30.62% Impervious Runoff Depth=0.29"
Flow Length=128' Tc=7.4 min CN=57 Runoff=0.02 cfs 0.003 af

Subcatchment 103: Flow to BIO 1 Runoff Area=11,179 sf 18.67% Impervious Runoff Depth=0.12"
Flow Length=190' Tc=6.1 min CN=50 Runoff=0.00 cfs 0.003 af

Subcatchment 104: Area Past Bio 1 Runoff Area=6,033 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=185' Tc=19.1 min CN=33 Runoff=0.00 cfs 0.000 af

Subcatchment 201: Flow to AP-2 Runoff Area=3,375 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0700 '/' Tc=22.8 min CN=34 Runoff=0.00 cfs 0.000 af

Reach 1R: Reach to AP-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.800 L=75.0' S=0.0667 '/' Capacity=0.42 cfs Outflow=0.00 cfs 0.000 af

Pond BIO #1: BIO #1 Peak Elev=106.04' Storage=103 cf Inflow=0.25 cfs 0.024 af
Discarded=0.12 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.024 af

Pond CB 1: CB 1 Peak Elev=109.85' Inflow=0.25 cfs 0.021 af
12.0" Round Culvert n=0.012 L=38.0' S=0.0105 '/' Outflow=0.25 cfs 0.021 af

Pond DMH 1: DMH 1 Peak Elev=109.35' Inflow=0.25 cfs 0.021 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0175 '/' Outflow=0.25 cfs 0.021 af

Pond YD 1: YD 1 Peak Elev=109.87' Inflow=0.02 cfs 0.003 af
12.0" Round Culvert n=0.012 L=6.0' S=0.0167 '/' Outflow=0.02 cfs 0.003 af

Link AP-1: AP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.024 af Average Runoff Depth = 0.36"
73.81% Pervious = 0.593 ac 26.19% Impervious = 0.211 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 101: Northeast Portion of Site Runoff Area=8,415 sf 62.31% Impervious Runoff Depth=2.34"
Tc=6.0 min CN=76 Runoff=0.53 cfs 0.038 af

Subcatchment 102: Flow to YD 1 Runoff Area=6,018 sf 30.62% Impervious Runoff Depth=0.98"
Flow Length=128' Tc=7.4 min CN=57 Runoff=0.12 cfs 0.011 af

Subcatchment 103: Flow to BIO 1 Runoff Area=11,179 sf 18.67% Impervious Runoff Depth=0.60"
Flow Length=190' Tc=6.1 min CN=50 Runoff=0.10 cfs 0.013 af

Subcatchment 104: Area Past Bio 1 Runoff Area=6,033 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=185' Tc=19.1 min CN=33 Runoff=0.00 cfs 0.000 af

Subcatchment 201: Flow to AP-2 Runoff Area=3,375 sf 0.00% Impervious Runoff Depth=0.04"
Flow Length=100' Slope=0.0700 '/' Tc=22.8 min CN=34 Runoff=0.00 cfs 0.000 af

Reach 1R: Reach to AP-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.800 L=75.0' S=0.0667 '/' Capacity=0.42 cfs Outflow=0.00 cfs 0.000 af

Pond BIO #1: BIO #1 Peak Elev=107.01' Storage=537 cf Inflow=0.74 cfs 0.062 af
Discarded=0.24 cfs 0.062 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.062 af

Pond CB 1: CB 1 Peak Elev=110.00' Inflow=0.64 cfs 0.049 af
12.0" Round Culvert n=0.012 L=38.0' S=0.0105 '/' Outflow=0.64 cfs 0.049 af

Pond DMH 1: DMH 1 Peak Elev=109.50' Inflow=0.64 cfs 0.049 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0175 '/' Outflow=0.64 cfs 0.049 af

Pond YD 1: YD 1 Peak Elev=110.05' Inflow=0.12 cfs 0.011 af
12.0" Round Culvert n=0.012 L=6.0' S=0.0167 '/' Outflow=0.12 cfs 0.011 af

Link AP-1: AP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.062 af Average Runoff Depth = 0.93"
73.81% Pervious = 0.593 ac 26.19% Impervious = 0.211 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 101: Northeast Portion of Site Runoff Area=8,415 sf 62.31% Impervious Runoff Depth=3.40"
Tc=6.0 min CN=76 Runoff=0.77 cfs 0.055 af

Subcatchment 102: Flow to YD 1 Runoff Area=6,018 sf 30.62% Impervious Runoff Depth=1.69"
Flow Length=128' Tc=7.4 min CN=57 Runoff=0.24 cfs 0.019 af

Subcatchment 103: Flow to BIO 1 Runoff Area=11,179 sf 18.67% Impervious Runoff Depth=1.15"
Flow Length=190' Tc=6.1 min CN=50 Runoff=0.27 cfs 0.025 af

Subcatchment 104: Area Past Bio 1 Runoff Area=6,033 sf 0.00% Impervious Runoff Depth=0.17"
Flow Length=185' Tc=19.1 min CN=33 Runoff=0.00 cfs 0.002 af

Subcatchment 201: Flow to AP-2 Runoff Area=3,375 sf 0.00% Impervious Runoff Depth=0.21"
Flow Length=100' Slope=0.0700 '/' Tc=22.8 min CN=34 Runoff=0.00 cfs 0.001 af

Reach 1R: Reach to AP-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.800 L=75.0' S=0.0667 '/' Capacity=0.42 cfs Outflow=0.00 cfs 0.000 af

Pond BIO #1: BIO #1 Peak Elev=107.63' Storage=1,058 cf Inflow=1.27 cfs 0.099 af
Discarded=0.36 cfs 0.099 af Primary=0.00 cfs 0.000 af Outflow=0.36 cfs 0.099 af

Pond CB 1: CB 1 Peak Elev=110.13' Inflow=1.00 cfs 0.074 af
12.0" Round Culvert n=0.012 L=38.0' S=0.0105 '/' Outflow=1.00 cfs 0.074 af

Pond DMH 1: DMH 1 Peak Elev=109.62' Inflow=1.00 cfs 0.074 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0175 '/' Outflow=1.00 cfs 0.074 af

Pond YD 1: YD 1 Peak Elev=110.17' Inflow=0.24 cfs 0.019 af
12.0" Round Culvert n=0.012 L=6.0' S=0.0167 '/' Outflow=0.24 cfs 0.019 af

Link AP-1: AP-1 Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Link AP-2: AP-2 Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.102 af Average Runoff Depth = 1.52"
73.81% Pervious = 0.593 ac 26.19% Impervious = 0.211 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
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 101: Northeast Portion of Site Runoff Area=8,415 sf 62.31% Impervious Runoff Depth=4.43"
Tc=6.0 min CN=76 Runoff=1.00 cfs 0.071 af

Subcatchment 102: Flow to YD 1 Runoff Area=6,018 sf 30.62% Impervious Runoff Depth=2.44"
Flow Length=128' Tc=7.4 min CN=57 Runoff=0.36 cfs 0.028 af

Subcatchment 103: Flow to BIO 1 Runoff Area=11,179 sf 18.67% Impervious Runoff Depth=1.77"
Flow Length=190' Tc=6.1 min CN=50 Runoff=0.47 cfs 0.038 af

Subcatchment 104: Area Past Bio 1 Runoff Area=6,033 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=185' Tc=19.1 min CN=33 Runoff=0.02 cfs 0.005 af

Subcatchment 201: Flow to AP-2 Runoff Area=3,375 sf 0.00% Impervious Runoff Depth=0.48"
Flow Length=100' Slope=0.0700 '/' Tc=22.8 min CN=34 Runoff=0.01 cfs 0.003 af

Reach 1R: Reach to AP-1 Avg. Flow Depth=0.27' Max Vel=0.15 fps Inflow=0.45 cfs 0.006 af
n=0.800 L=75.0' S=0.0667 '/' Capacity=0.42 cfs Outflow=0.24 cfs 0.006 af

Pond BIO #1: BIO #1 Peak Elev=107.97' Storage=1,435 cf Inflow=1.81 cfs 0.137 af
Discarded=0.43 cfs 0.131 af Primary=0.45 cfs 0.006 af Outflow=0.88 cfs 0.137 af

Pond CB 1: CB 1 Peak Elev=110.24' Inflow=1.35 cfs 0.099 af
12.0" Round Culvert n=0.012 L=38.0' S=0.0105 '/' Outflow=1.35 cfs 0.099 af

Pond DMH 1: DMH 1 Peak Elev=109.71' Inflow=1.35 cfs 0.099 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0175 '/' Outflow=1.35 cfs 0.099 af

Pond YD 1: YD 1 Peak Elev=110.29' Inflow=0.36 cfs 0.028 af
12.0" Round Culvert n=0.012 L=6.0' S=0.0167 '/' Outflow=0.36 cfs 0.028 af

Link AP-1: AP-1 Inflow=0.25 cfs 0.011 af
Primary=0.25 cfs 0.011 af

Link AP-2: AP-2 Inflow=0.01 cfs 0.003 af
Primary=0.01 cfs 0.003 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.145 af Average Runoff Depth = 2.17"
73.81% Pervious = 0.593 ac 26.19% Impervious = 0.211 ac

Summary for Subcatchment 101: Northeast Portion of Site

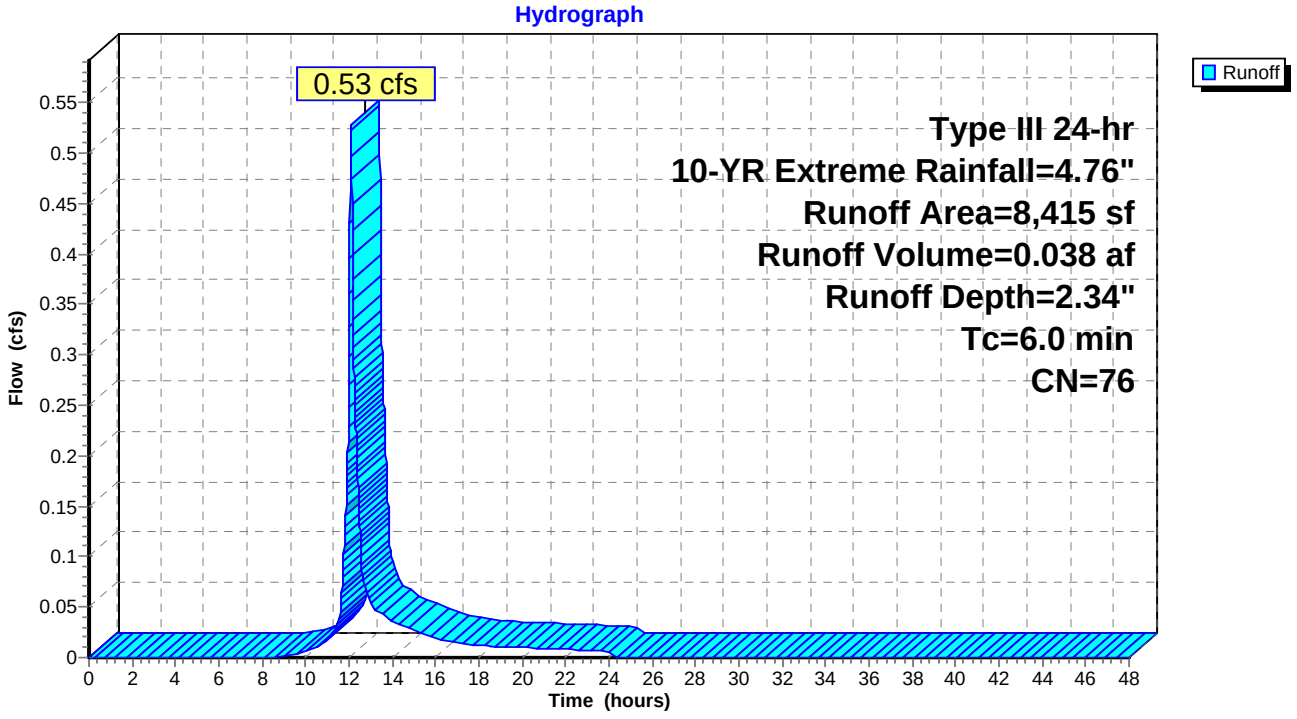
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 2.34"
Routed to Pond CB 1 : CB 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
1,323	98	Roofs, HSG A
3,172	39	>75% Grass cover, Good, HSG A
3,920	98	Paved parking, HSG A
8,415	76	Weighted Average
3,172		37.69% Pervious Area
5,243		62.31% Impervious Area

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

Subcatchment 101: Northeast Portion of Site



Summary for Subcatchment 102: Flow to YD 1

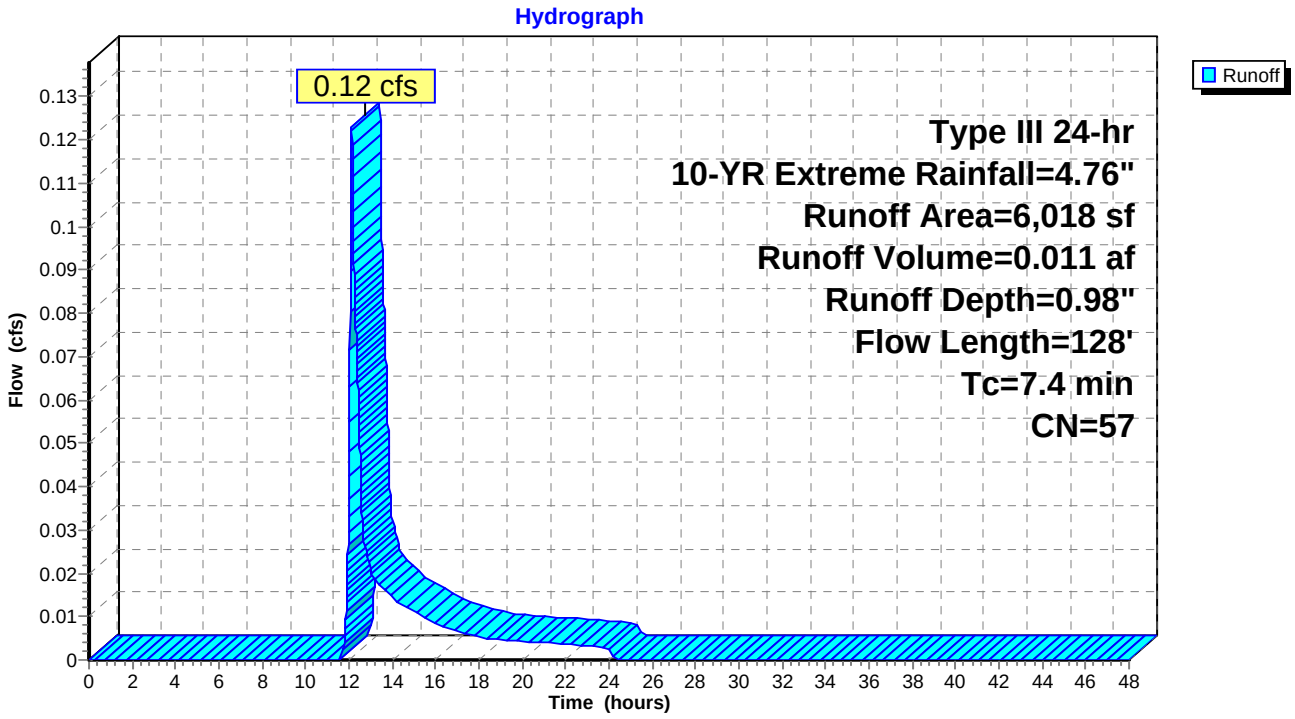
Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af, Depth= 0.98"
Routed to Pond YD 1 : YD 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
938	98	Roofs, HSG A
905	98	Paved parking, HSG A
4,175	39	>75% Grass cover, Good, HSG A
6,018	57	Weighted Average
4,175		69.38% Pervious Area
1,843		30.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0450	0.23		**Sheet Flow, Sheet Grass** Grass: Short n= 0.150 P2= 3.15"
0.3	28	0.0600	1.71		**Shallow Concentrated Flow, SC Grass** Short Grass Pasture Kv= 7.0 fps
7.4	128	Total			

Subcatchment 102: Flow to YD 1



Summary for Subcatchment 103: Flow to BIO 1

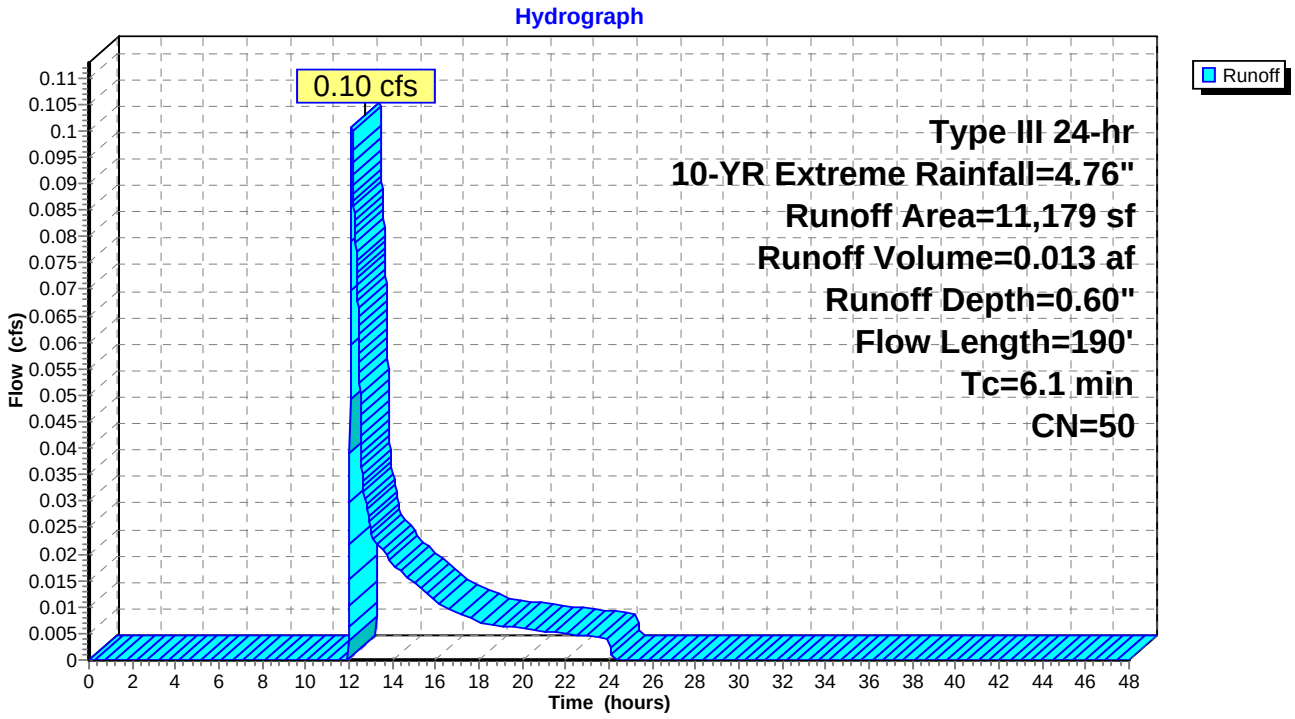
Runoff = 0.10 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 0.60"
Routed to Pond BIO #1 : BIO #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
1,970	98	Roofs, HSG A
9,092	39	>75% Grass cover, Good, HSG A
117	98	Paved parking, HSG A
11,179	50	Weighted Average
9,092		81.33% Pervious Area
2,087		18.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0800	1.98		**Shallow Concentrated Flow, SC Grass** Short Grass Pasture Kv= 7.0 fps
5.3	90	0.0780	0.28		**Sheet Flow, Sheet Grass** Grass: Short n= 0.150 P2= 3.15"
6.1	190	Total			

Subcatchment 103: Flow to BIO 1



Summary for Subcatchment 104: Area Past Bio 1

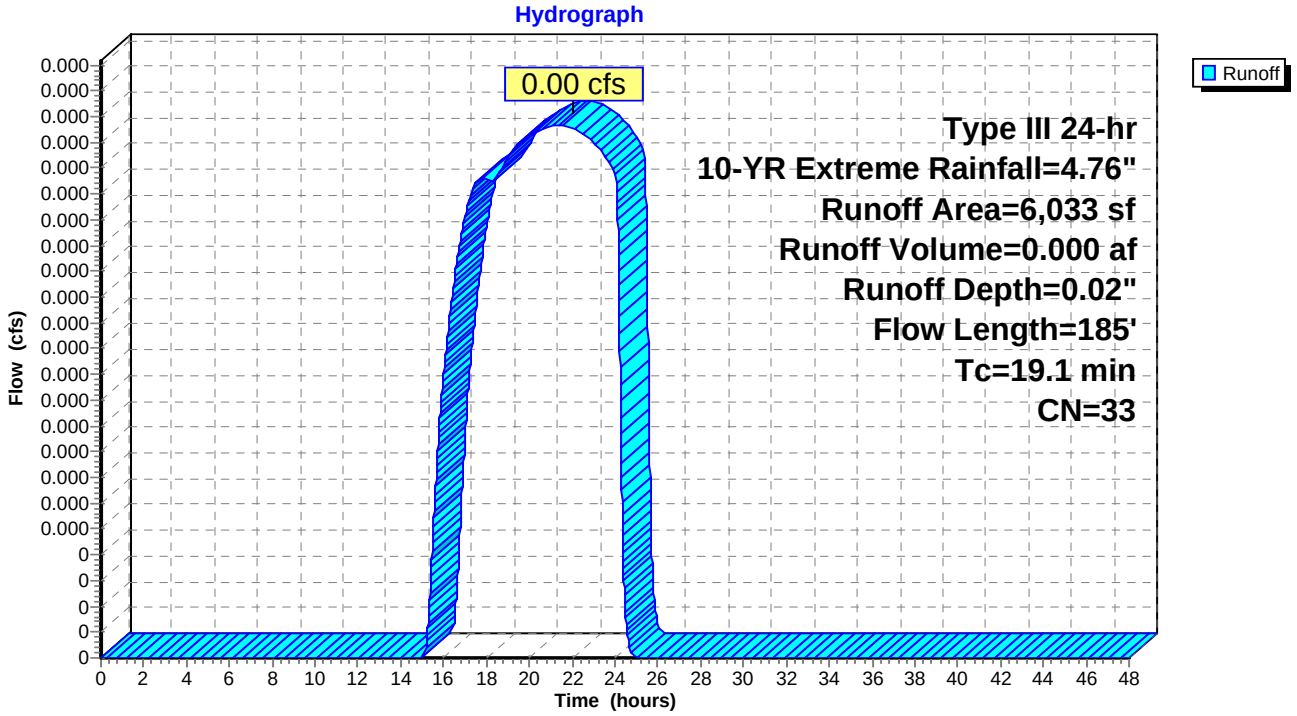
Runoff = 0.00 cfs @ 21.37 hrs, Volume= 0.000 af, Depth= 0.02"
Routed to Link AP-1 : AP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
1,690	39	>75% Grass cover, Good, HSG A
4,343	30	Woods, Good, HSG A
6,033	33	Weighted Average
6,033		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, SC Grass** Short Grass Pasture Kv= 7.0 fps
18.4	135	0.0550	0.12		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.15"
19.1	185	Total			

Subcatchment 104: Area Past Bio 1



Summary for Subcatchment 201: Flow to AP-2

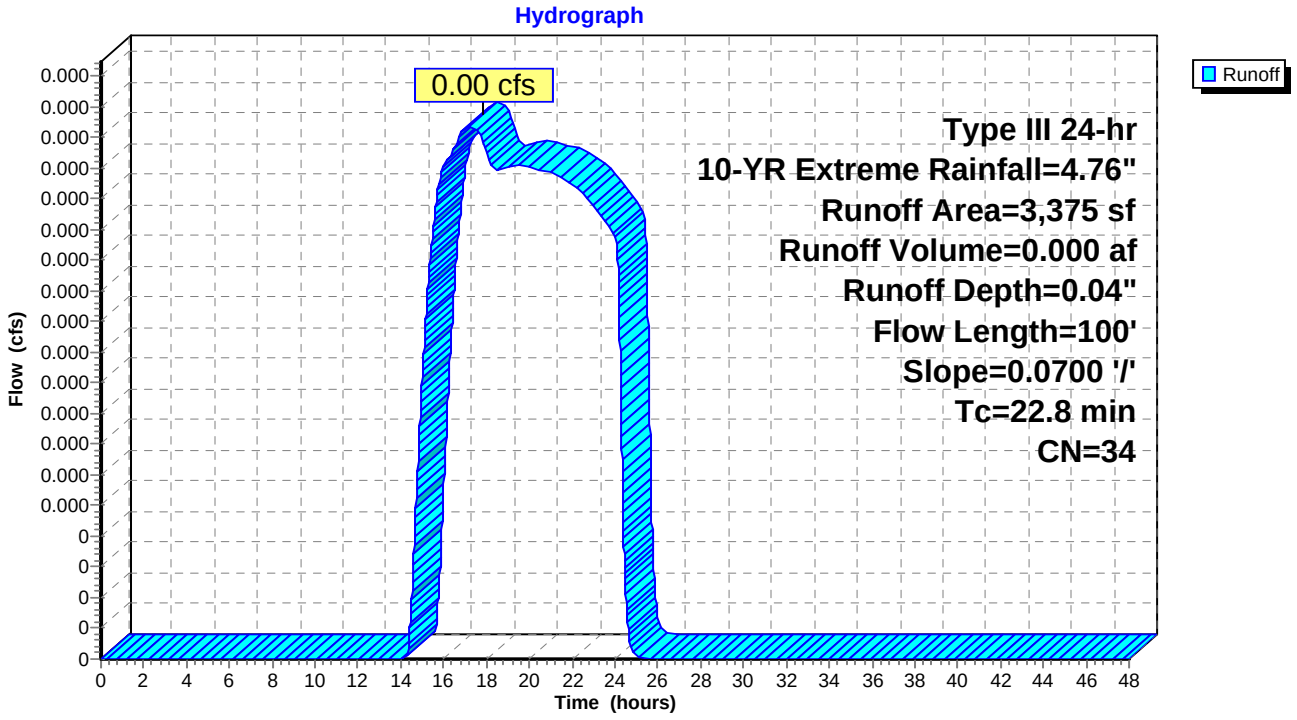
Runoff = 0.00 cfs @ 17.20 hrs, Volume= 0.000 af, Depth= 0.04"
Routed to Link AP-2 : AP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Extreme Rainfall=4.76"

Area (sf)	CN	Description
1,655	39	>75% Grass cover, Good, HSG A
1,720	30	Woods, Good, HSG A
3,375	34	Weighted Average
3,375		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	100	0.0700	0.07		**Sheet Flow, Sheet Woods** Woods: Dense underbrush n= 0.800 P2= 3.15"

Subcatchment 201: Flow to AP-2



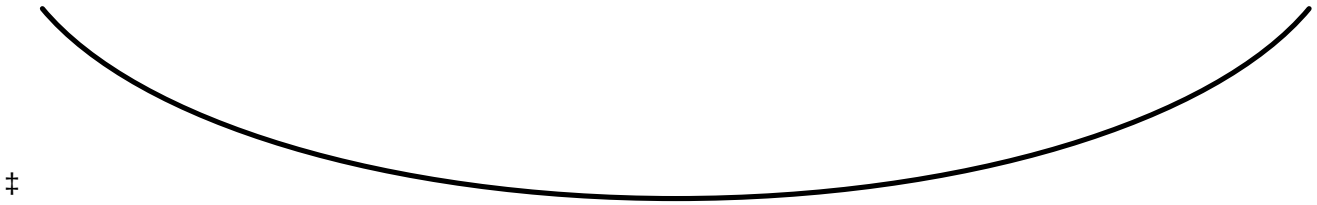
Summary for Reach 1R: Reach to AP-1

Inflow Area = 0.588 ac, 35.82% Impervious, Inflow Depth = 0.00" for 10-YR Extreme event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link AP-1 : AP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.35' Flow Area= 2.3 sf, Capacity= 0.42 cfs

10.00' x 0.35' deep Parabolic Channel, n= 0.800 Sheet flow: Woods+dense brush
Length= 75.0' Slope= 0.0667 '/'
Inlet Invert= 105.50', Outlet Invert= 100.50'



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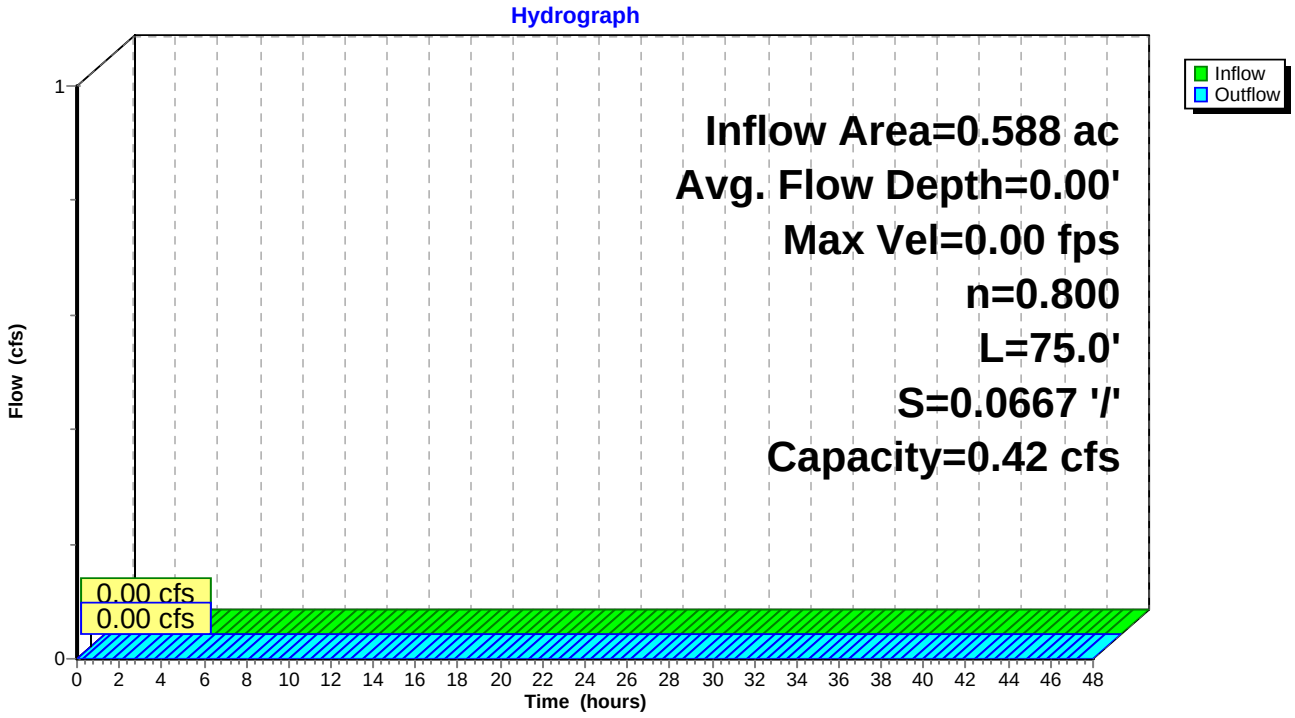
Reach 1R: Reach to AP-1



Summary for Pond BIO #1: BIO #1

Inflow Area = 0.588 ac, 35.82% Impervious, Inflow Depth = 1.26" for 10-YR Extreme event
Inflow = 0.74 cfs @ 12.10 hrs, Volume= 0.062 af
Outflow = 0.24 cfs @ 12.49 hrs, Volume= 0.062 af, Atten= 67%, Lag= 23.1 min
Discarded = 0.24 cfs @ 12.49 hrs, Volume= 0.062 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Reach to AP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.01' @ 12.49 hrs Surf.Area= 662 sf Storage= 537 cf
Flood Elev= 108.00' Surf.Area= 1,250 sf Storage= 1,471 cf

Plug-Flow detention time= 15.5 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 15.5 min (878.5 - 862.9)

Volume	Invert	Avail.Storage	Storage Description
#1	104.25'	1,471 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

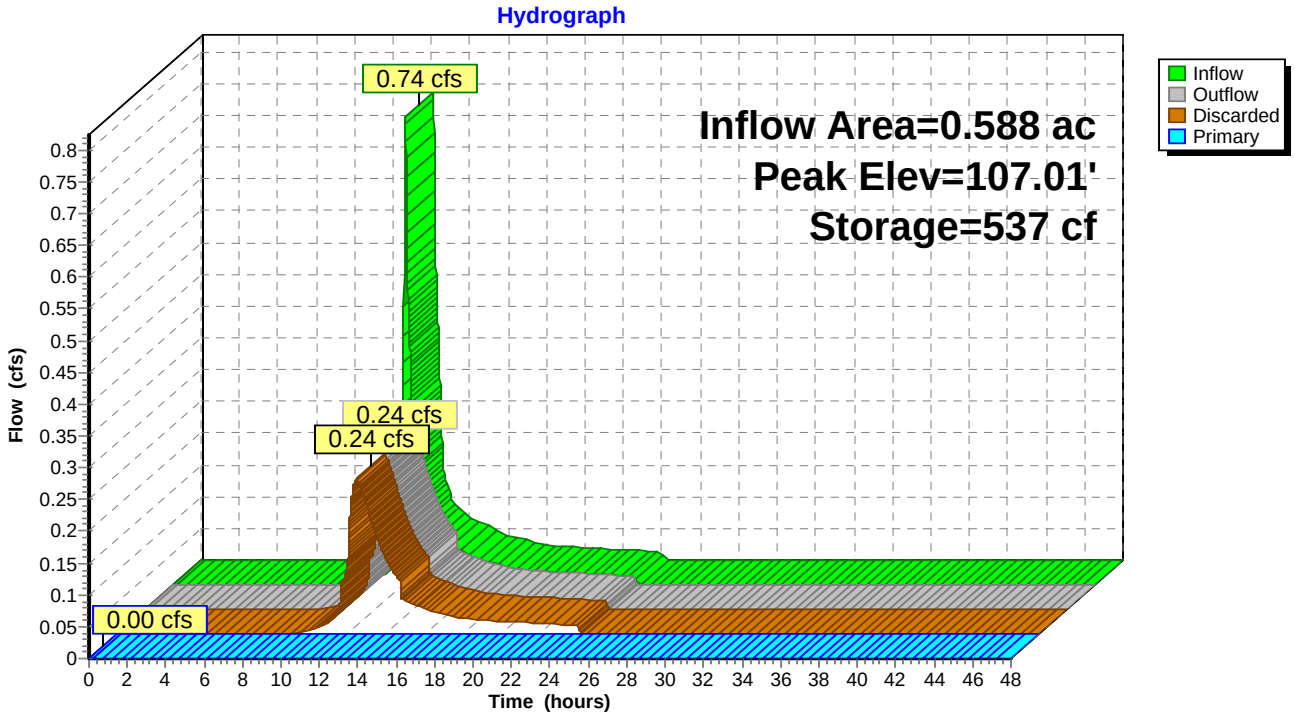
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
104.25	255	0.0	0	0	255
104.26	255	20.0	1	1	256
104.50	255	20.0	12	13	269
105.99	255	20.0	76	89	353
106.00	255	100.0	3	91	354
108.00	1,250	100.0	1,380	1,471	1,366

Device	Routing	Invert	Outlet Devices
#1	Discarded	104.25'	**13.750 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Device 3	107.95'	**0.5" x 4.5" Horiz. Orifice/ Grate Overflow X 14.00 columns** X 4 rows C= 0.600 Limited to weir flow at low heads
#3	Primary	106.00'	**6.0" Round 12" HDPE (P-4)** L= 10.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 106.00' / 105.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.24 cfs @ 12.49 hrs HW=107.01' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=104.25' TW=105.50' (Dynamic Tailwater)
└**3=12" HDPE (P-4)** (Controls 0.00 cfs)
└**2=Orifice/ Grate Overflow** (Controls 0.00 cfs)

Pond BIO #1: BIO #1



Summary for Pond CB 1: CB 1

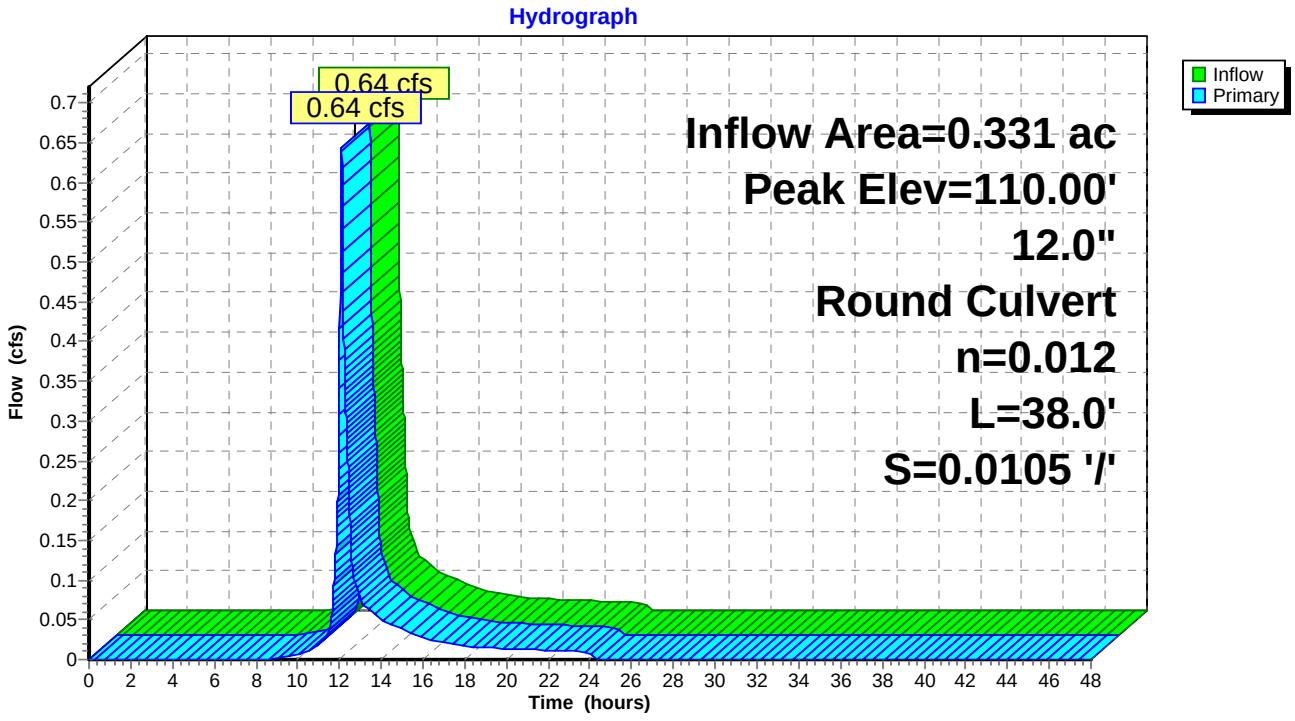
Inflow Area = 0.331 ac, 49.10% Impervious, Inflow Depth = 1.77" for 10-YR Extreme event
Inflow = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af
Outflow = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af
Routed to Pond DMH 1 : DMH 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.00' @ 12.10 hrs
Flood Elev= 115.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.60'	**12.0" Round P-2** L= 38.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 109.60' / 109.20' S= 0.0105 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.10 hrs HW=110.00' TW=109.50' (Dynamic Tailwater)
1=P-2 (Outlet Controls 0.64 cfs @ 3.19 fps)

Pond CB 1: CB 1



Summary for Pond DMH 1: DMH 1

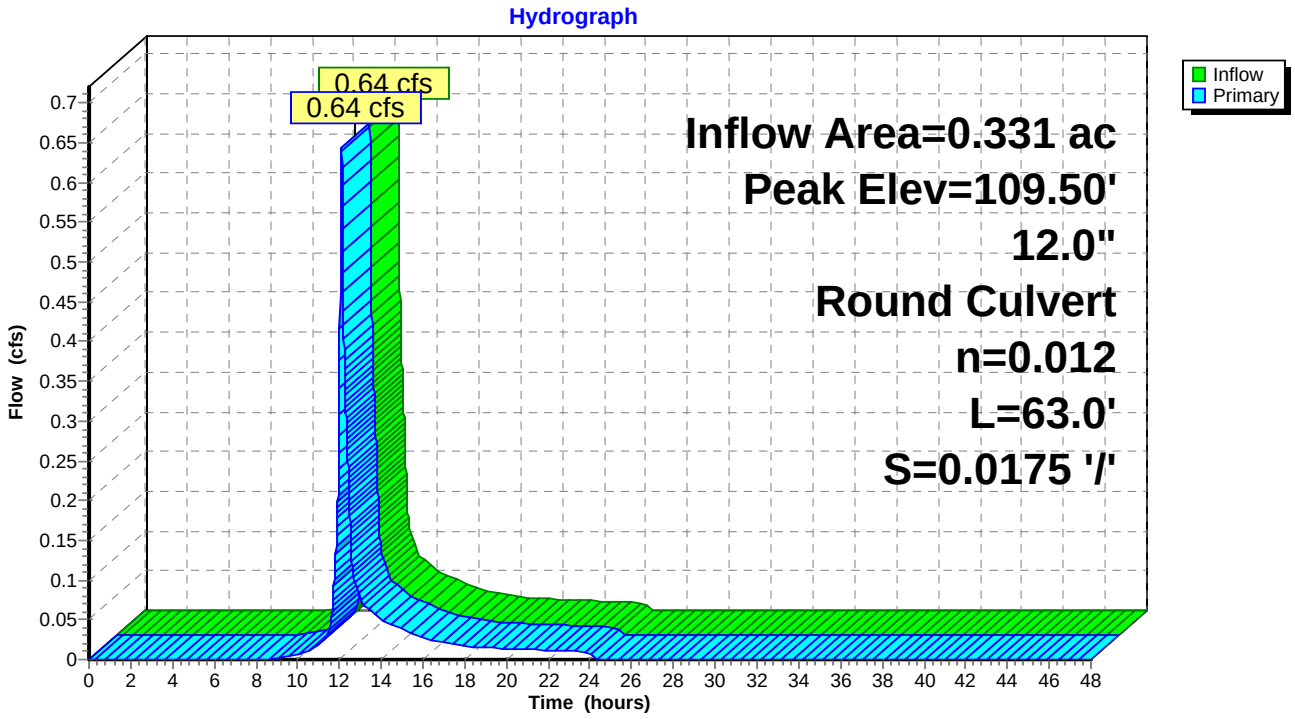
Inflow Area = 0.331 ac, 49.10% Impervious, Inflow Depth = 1.77" for 10-YR Extreme event
Inflow = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af
Outflow = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af
Routed to Pond BIO #1 : BIO #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.50' @ 12.10 hrs
Flood Elev= 113.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.10'	**12.0" Round P-3** L= 63.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 109.10' / 108.00' S= 0.0175 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.10 hrs HW=109.50' TW=106.43' (Dynamic Tailwater)
1=P-3 (Inlet Controls 0.64 cfs @ 2.16 fps)

Pond DMH 1: DMH 1



Summary for Pond YD 1: YD 1

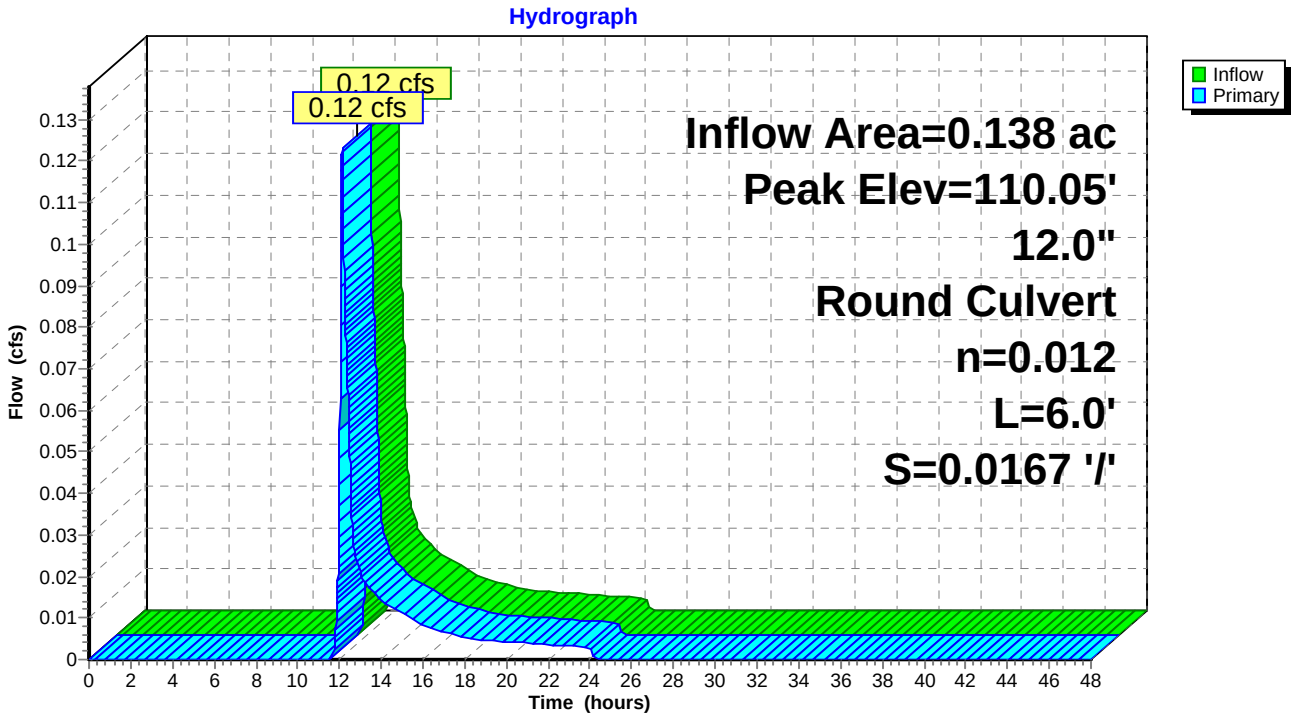
Inflow Area = 0.138 ac, 30.62% Impervious, Inflow Depth = 0.98" for 10-YR Extreme event
Inflow = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af
Outflow = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af
Routed to Pond CB 1 : CB 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.05' @ 12.10 hrs
Flood Elev= 113.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.80'	**12.0" Round P-1** L= 6.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 109.80' / 109.70' S= 0.0167 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.12 cfs @ 12.13 hrs HW=110.04' TW=109.99' (Dynamic Tailwater)
1=P-1 (Outlet Controls 0.12 cfs @ 1.27 fps)

Pond YD 1: YD 1

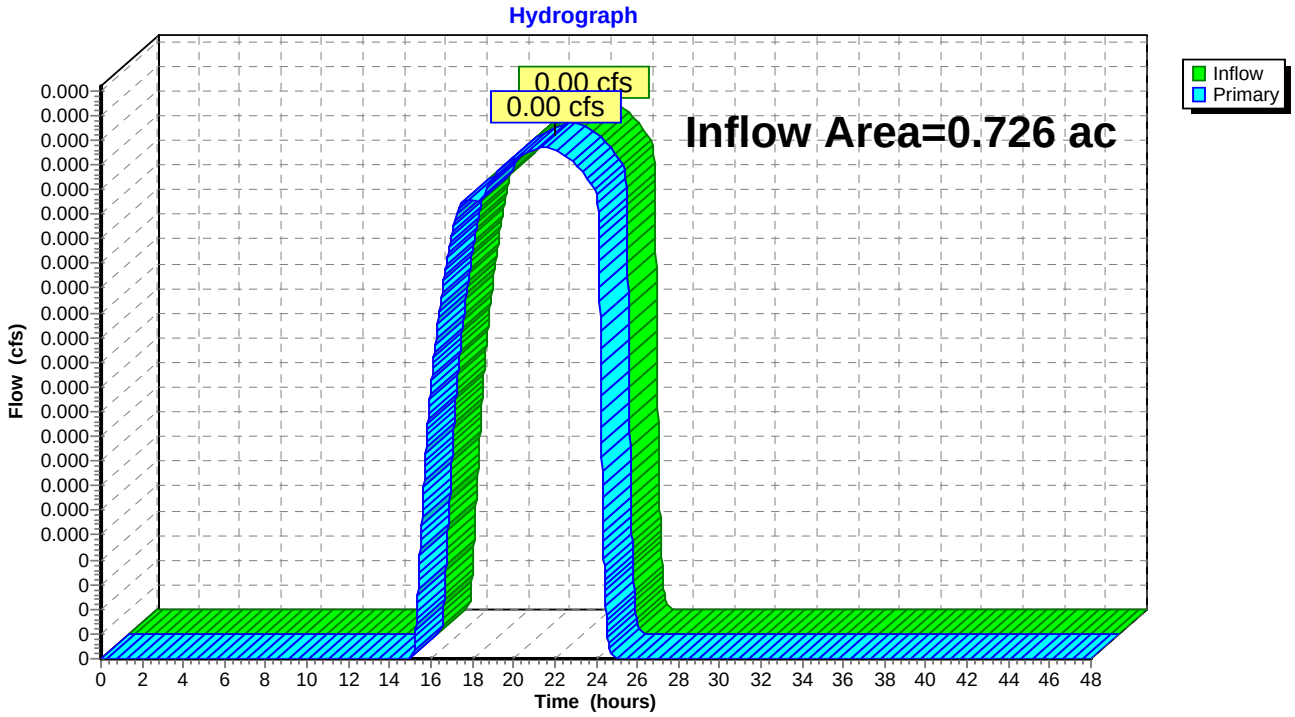


Summary for Link AP-1: AP-1

Inflow Area = 0.726 ac, 28.99% Impervious, Inflow Depth = 0.00" for 10-YR Extreme event
Inflow = 0.00 cfs @ 21.37 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 21.37 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link AP-1: AP-1

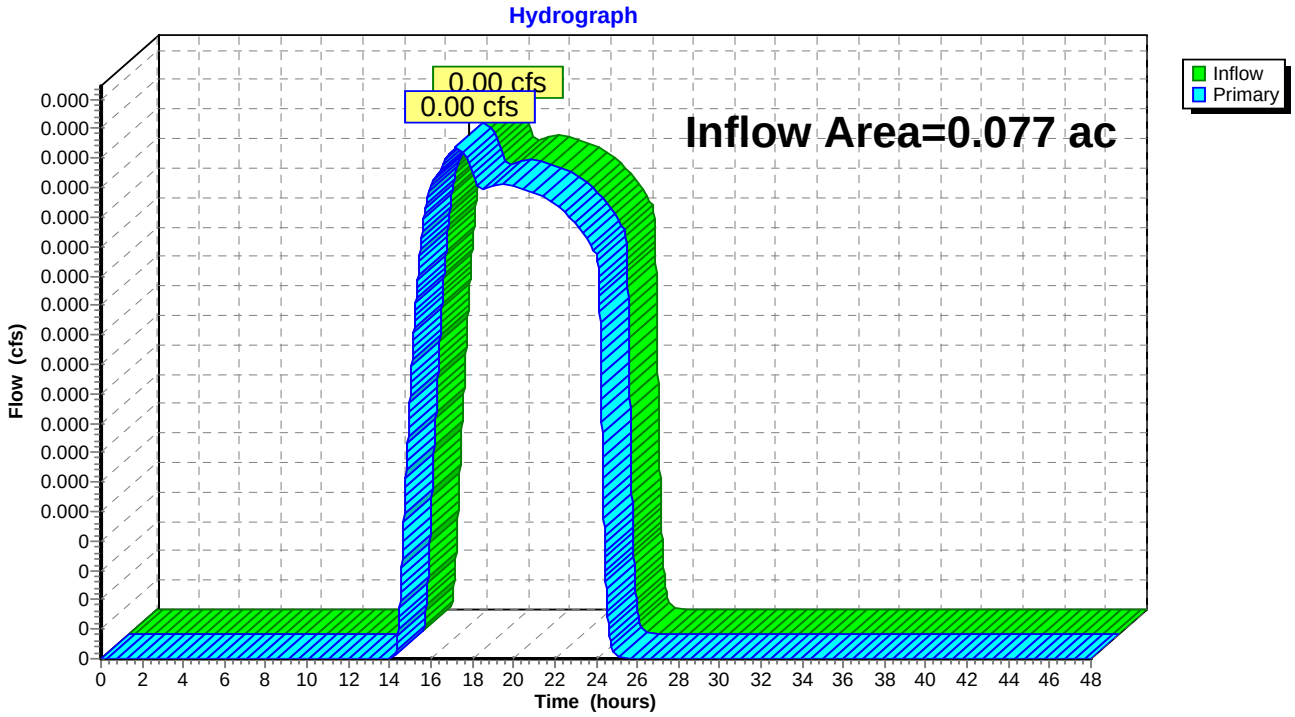


Summary for Link AP-2: AP-2

Inflow Area = 0.077 ac, 0.00% Impervious, Inflow Depth = 0.04" for 10-YR Extreme event
Inflow = 0.00 cfs @ 17.20 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 17.20 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link AP-2: AP-2



STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

COREY MACKOUL

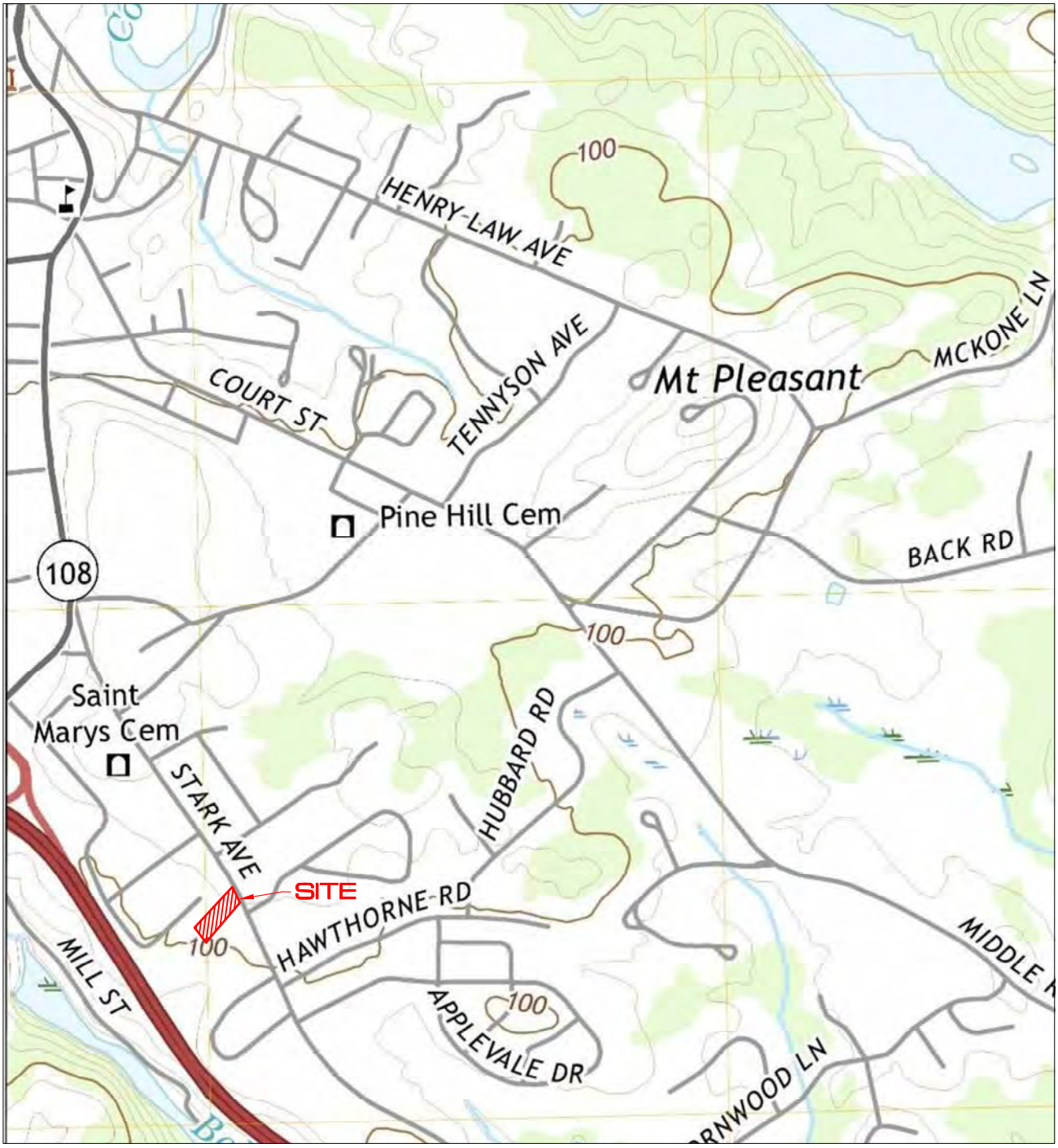
8 Hull Ave
Dover, New Hampshire
May 2026

SECTION III

EXHIBITS

NOTE:

THIS PLAN SHOWS PORTIONS OF THE U.S.G.S.: DOVER QUADRANGLE, NEW HAMPSHIRE 7.5 MINUTE SERIES 2021 MAP. SITE LOCATION IS APPROXIMATE.



SHEET NO.

LOCUS-1

USGS PLAN

COREY MACKOUL

89 STARK AVE

TAX MAP 17, LOT 38

DOVER, NEW HAMPSHIRE

APRIL 13, 2026 JOB No. 25136

SCALE: 1" : 1,000'

TRITECH

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TELEPHONE 603 742 8107
FAX 603 742 3330

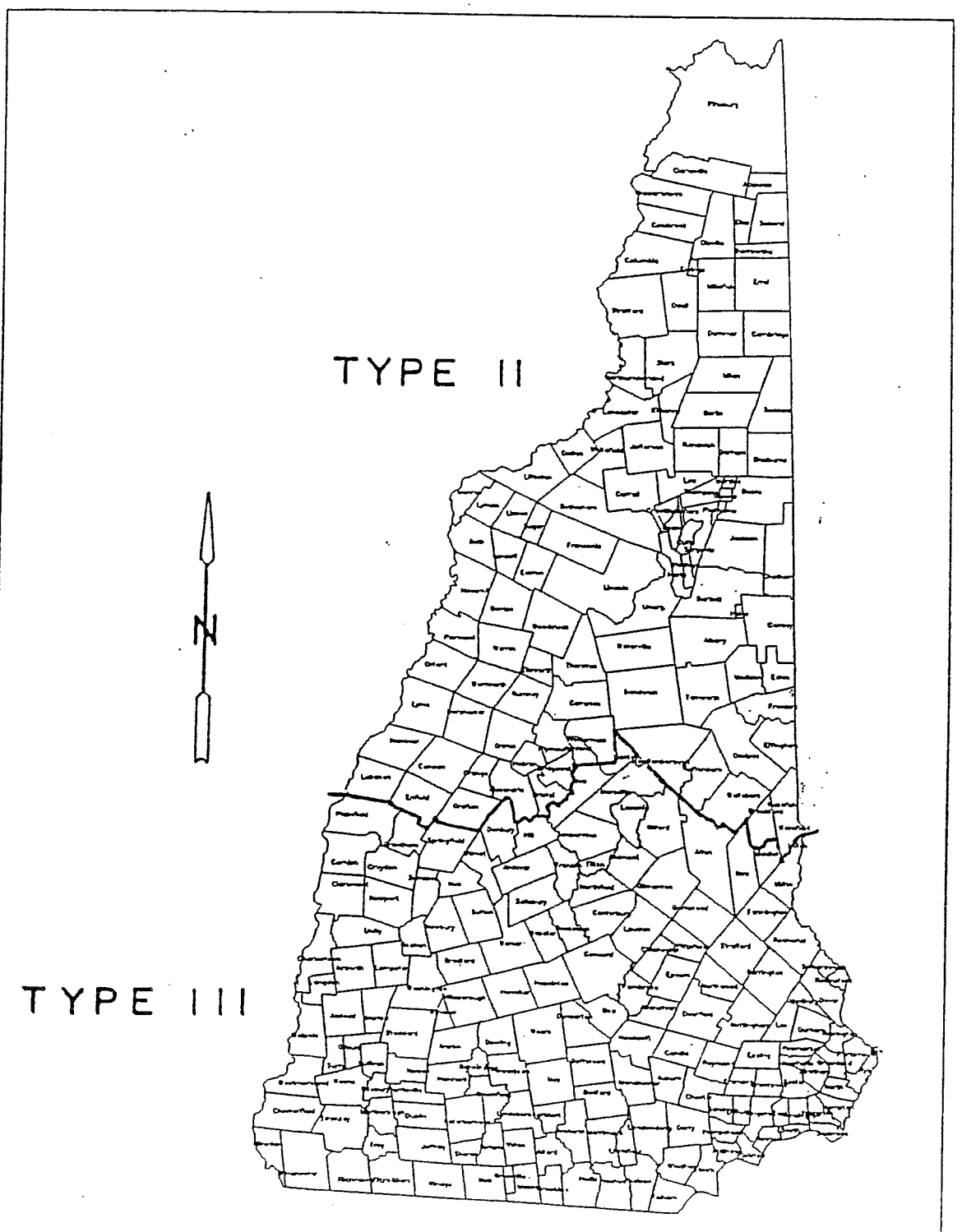


FIGURE 6-5 -- BOUNDARY FOR SCS RAINFALL DISTRIBUTION

Source: USDA Soil Conservation Service

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.179 degrees North
Longitude	70.87 degrees West
Elevation	30 feet
Date/Time	Tue Apr 07 2026 14:52:11 GMT-0400 (Eastern Daylight Time)

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	1.55	2.00	2.61	2.87	**1yr**	2.31	2.76	3.16	3.88	4.45	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.91	2.45	3.15	3.51	**2yr**	2.79	3.37	3.87	4.60	5.24	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.39	3.08	3.98	4.49	**5yr**	3.53	4.32	4.94	5.81	6.57	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.83	3.67	4.76	5.42	**10yr**	4.21	5.21	5.95	6.94	7.81	**10yr**
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.70	3.53	4.62	6.02	6.96	**25yr**	5.33	6.69	7.61	8.78	9.82	**25yr**
50yr	0.52	0.83	1.06	1.49	2.00	2.67	**50yr**	1.73	2.46	3.18	4.19	5.50	7.19	8.40	**50yr**	6.37	8.08	9.18	10.50	11.67	**50yr**
100yr	0.58	0.94	1.21	1.71	2.32	3.13	**100yr**	2.00	2.89	3.75	4.96	6.54	8.60	10.16	**100yr**	7.61	9.77	11.07	12.55	13.89	**100yr**
200yr	0.64	1.05	1.36	1.95	2.70	3.67	**200yr**	2.33	3.40	4.43	5.90	7.81	10.29	12.28	**200yr**	9.11	11.80	13.35	15.02	16.53	**200yr**
500yr	0.76	1.24	1.62	2.36	3.30	4.54	**500yr**	2.85	4.22	5.50	7.39	9.84	13.05	15.78	**500yr**	11.55	15.17	17.11	19.04	20.83	**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	1.26	1.59	2.14	2.46	**1yr**	1.90	2.36	2.87	3.33	4.01	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.36	3.04	3.40	**2yr**	2.69	3.27	3.75	4.47	5.04	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.77	3.72	4.13	**5yr**	3.29	3.97	4.61	5.42	6.12	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.81	2.44	3.12	4.28	4.79	**10yr**	3.79	4.60	5.32	6.25	7.03	**10yr**
25yr	0.44	0.66	0.82	1.18	1.55	1.91	**25yr**	1.34	1.86	2.11	2.84	3.64	4.91	5.79	**25yr**	4.34	5.57	6.49	7.57	8.44	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.18	**50yr**	1.52	2.13	2.35	3.19	4.09	5.59	6.68	**50yr**	4.95	6.42	7.53	8.73	9.69	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.50	**100yr**	1.73	2.44	2.63	3.57	4.56	6.36	7.70	**100yr**	5.62	7.41	8.74	10.08	11.11	**100yr**
200yr	0.59	0.89	1.13	1.63	2.28	2.86	**200yr**	1.97	2.79	2.93	3.99	5.08	7.22	8.88	**200yr**	6.39	8.54	10.14	11.65	12.75	**200yr**
500yr	0.69	1.03	1.32	1.92	2.73	3.44	**500yr**	2.35	3.36	3.40	4.62	5.89	8.52	10.70	**500yr**	7.54	10.29	12.33	14.12	15.26	**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	1.24	1.74	2.22	2.89	3.09	**1yr**	2.56	2.97	3.44	4.24	4.83	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.48	1.96	2.51	3.30	3.63	**2yr**	2.92	3.49	4.00	4.75	5.46	**2yr**
5yr	0.39	0.61	0.75	1.03	1.31	1.59	**5yr**	1.13	1.55	1.86	2.50	3.21	4.25	4.86	**5yr**	3.76	4.67	5.28	6.24	7.00	**5yr**
10yr	0.46	0.70	0.87	1.22	1.57	1.92	**10yr**	1.36	1.88	2.24	3.05	3.87	5.22	6.07	**10yr**	4.62	5.83	6.66	7.66	8.54	**10yr**
25yr	0.56	0.85	1.05	1.50	1.98	2.48	**25yr**	1.71	2.43	2.89	3.98	4.98	7.14	8.15	**25yr**	6.32	7.84	8.91	10.08	11.14	**25yr**
50yr	0.64	0.98	1.22	1.75	2.36	3.00	**50yr**	2.03	2.93	3.50	4.85	6.05	8.83	10.21	**50yr**	7.82	9.82	11.13	12.40	13.62	**50yr**
100yr	0.75	1.13	1.42	2.05	2.81	3.63	**100yr**	2.42	3.55	4.25	5.94	7.36	10.93	12.80	**100yr**	9.68	12.30	13.90	15.28	16.67	**100yr**
200yr	0.87	1.31	1.66	2.40	3.34	4.40	**200yr**	2.89	4.30	5.17	7.27	8.95	13.57	16.05	**200yr**	12.01	15.44	17.37	18.82	20.42	**200yr**
500yr	1.06	1.58	2.04	2.96	4.21	5.66	**500yr**	3.63	5.54	6.68	9.52	11.61	18.07	21.67	**500yr**	15.99	20.84	23.34	24.81	26.73	**500yr**

Powered by ACIS Northeast Regional Climate Center

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Corey MacKoul Bio #1**

Enter the type of infiltration practice (such as basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.07(a) to ensure that infiltration is allowed?	← **yes**
0.59	ac	A = Area draining to the practice	
0.21	ac	A_I = Impervious area draining to the practice	
0.36	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.37	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.22	ac-in	WQV= 1" x Rv x A	
793	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
198	cf	25% x WQV (check calc for sediment forebay volume)	
Deep Sump CB's		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ **25%WQV**
1,409	cf	V = Volume[1] (attach a stage-storage table)	≥ **WQV**
255	sf	A_{SA} = Surface area of the bottom of the pond	
13.75	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
2.7	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ **72-hrs**
106.00	feet	E_{BTM} = Elevation of the bottom of the basin	
103.80	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
103.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
2.20	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
3.0	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
1.5	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ **24"**
	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
no	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←**yes**
		If a trench is proposed, does material meet Env-Wq 1508.07(k)(2) requirements.[4]	← **yes**
yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← **yes**
3.0	:1	If a basin is proposed, pond side slopes.	≥**3:1**
107.01	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
107.97	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
108.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← **yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← **yes**

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Summary for Pond BIO #1: BIO #1

Inflow Area = 0.588 ac, 35.82% Impervious, Inflow Depth = 1.26" for 10-YR Extreme event
Inflow = 0.74 cfs @ 12.10 hrs, Volume= 0.062 af
Outflow = 0.24 cfs @ 12.49 hrs, Volume= 0.062 af, Atten= 67%, Lag= 23.1 min
Discarded = 0.24 cfs @ 12.49 hrs, Volume= 0.062 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Reach to AP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.01' @ 12.49 hrs Surf.Area= 662 sf Storage= 537 cf
Flood Elev= 108.00' Surf.Area= 1,250 sf Storage= 1,471 cf

Plug-Flow detention time= 15.5 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 15.5 min (878.5 - 862.9)

Volume	Invert	Avail.Storage	Storage Description
#1	104.25'	1,471 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
104.25	255	0.0	0	0	255
104.26	255	20.0	1	1	256
104.50	255	20.0	12	13	269
105.99	255	20.0	76	89	353
106.00	255	100.0	3	91	354
108.00	1,250	100.0	1,380	1,471	1,366

Device	Routing	Invert	Outlet Devices
#1	Discarded	104.25'	**13.750 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Device 3	107.95'	**0.5" x 4.5" Horiz. Orifice/ Grate Overflow X 14.00 columns** X 4 rows C= 0.600 Limited to weir flow at low heads
#3	Primary	106.00'	**6.0" Round 12" HDPE (P-4)** L= 10.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 106.00' / 105.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.24 cfs @ 12.49 hrs HW=107.01' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=104.25' TW=105.50' (Dynamic Tailwater)
└**3=12" HDPE (P-4)** (Controls 0.00 cfs)
└**2=Orifice/ Grate Overflow** (Controls 0.00 cfs)

Summary for Pond BIO #1: BIO #1

Inflow Area = 0.588 ac, 35.82% Impervious, Inflow Depth = 2.80" for 50-YR Extreme event
Inflow = 1.81 cfs @ 12.10 hrs, Volume= 0.137 af
Outflow = 0.88 cfs @ 12.30 hrs, Volume= 0.137 af, Atten= 52%, Lag= 12.5 min
Discarded = 0.43 cfs @ 12.30 hrs, Volume= 0.131 af
Primary = 0.45 cfs @ 12.30 hrs, Volume= 0.006 af
Routed to Reach 1R : Reach to AP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.97' @ 12.30 hrs Surf.Area= 1,230 sf Storage= 1,435 cf
Flood Elev= 108.00' Surf.Area= 1,250 sf Storage= 1,471 cf

Plug-Flow detention time= 28.6 min calculated for 0.137 af (100% of inflow)
Center-of-Mass det. time= 28.6 min (871.2 - 842.6)

Volume	Invert	Avail.Storage	Storage Description
#1	104.25'	1,471 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
104.25	255	0.0	0	0	255
104.26	255	20.0	1	1	256
104.50	255	20.0	12	13	269
105.99	255	20.0	76	89	353
106.00	255	100.0	3	91	354
108.00	1,250	100.0	1,380	1,471	1,366

Device	Routing	Invert	Outlet Devices
#1	Discarded	104.25'	**13.750 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Device 3	107.95'	**0.5" x 4.5" Horiz. Orifice/ Grate Overflow X 14.00 columns** X 4 rows C= 0.600 Limited to weir flow at low heads
#3	Primary	106.00'	**6.0" Round 12" HDPE (P-4)** L= 10.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 106.00' / 105.90' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.43 cfs @ 12.30 hrs HW=107.97' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.45 cfs @ 12.30 hrs HW=107.97' TW=105.63' (Dynamic Tailwater)
└**3=12" HDPE (P-4)** (Passes 0.45 cfs of 1.24 cfs potential flow)
└**2=Orifice/ Grate Overflow** (Weir Controls 0.45 cfs @ 0.47 fps)

Stage-Area-Storage for Pond BIO #1: BIO #1 (continued)

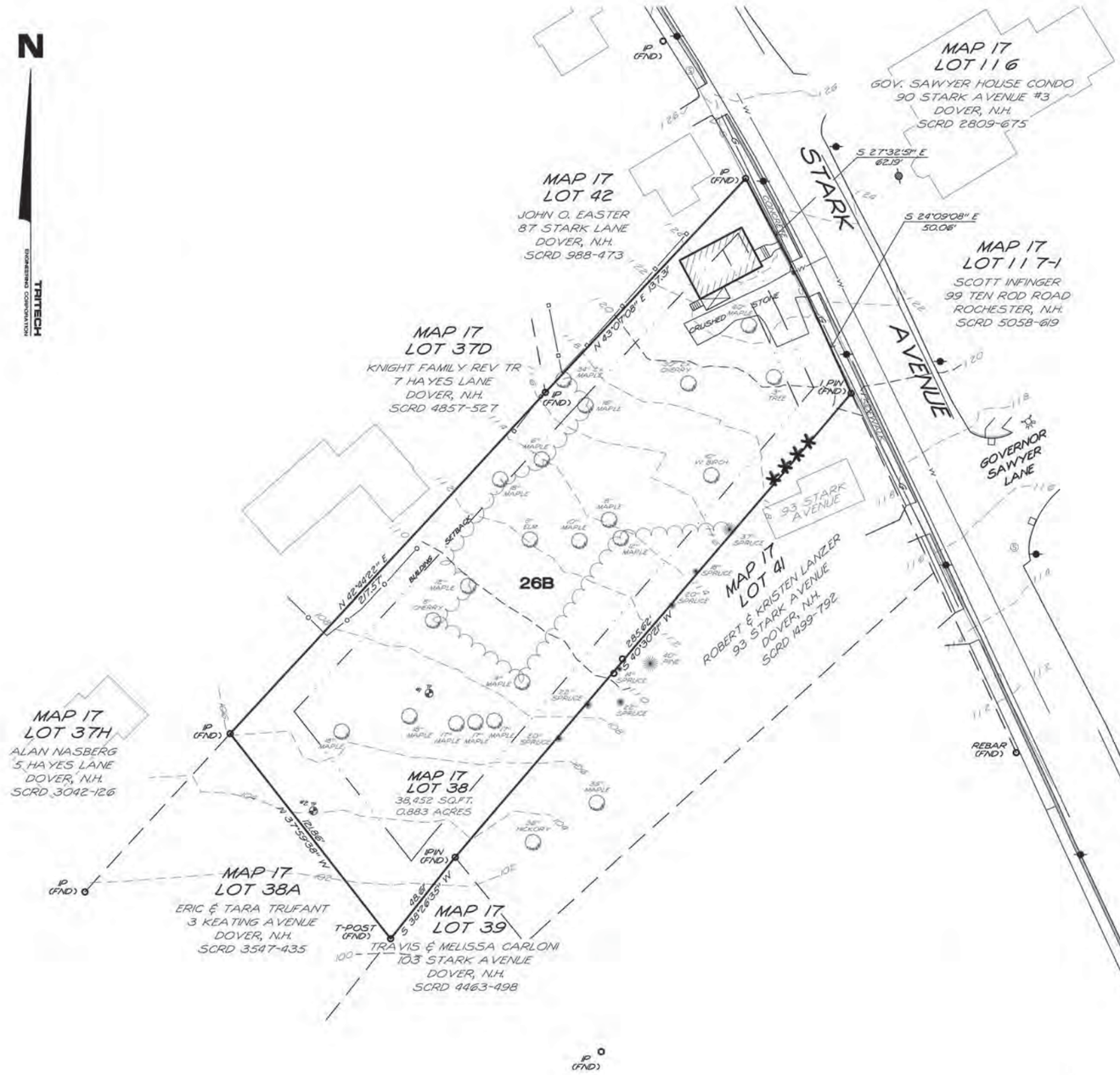
Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
107.43	890	999	864
107.44	896	1,005	873
107.45	901	1,011	882
107.46	907	1,017	891
107.47	913	1,023	900
107.48	919	1,029	909
107.49	925	1,035	918
107.50	931	1,041	928
107.51	937	1,047	937
107.52	943	1,053	947
107.53	949	1,059	956
107.54	955	1,065	965
107.55	961	1,071	975
107.56	967	1,077	985
107.57	973	1,084	994
107.58	979	1,090	1,004
107.59	985	1,096	1,014
107.60	991	1,102	1,024
107.61	997	1,108	1,034
107.62	1,003	1,115	1,044
107.63	1,009	1,121	1,054
107.64	1,015	1,127	1,064
107.65	1,022	1,133	1,074
107.66	1,028	1,140	1,084
107.67	1,034	1,146	1,095
107.68	1,040	1,152	1,105
107.69	1,047	1,159	1,116
107.70	1,053	1,165	1,126
107.71	1,059	1,172	1,137
107.72	1,065	1,178	1,147
107.73	1,072	1,184	1,158
107.74	1,078	1,191	1,169
107.75	1,085	1,197	1,179
107.76	1,091	1,204	1,190
107.77	1,097	1,210	1,201
107.78	1,104	1,217	1,212
107.79	1,110	1,223	1,223
107.80	1,117	1,230	1,234
107.81	1,123	1,237	1,246
107.82	1,130	1,243	1,257
107.83	1,136	1,250	1,268
107.84	1,143	1,257	1,280
107.85	1,149	1,263	1,291
107.86	1,156	1,270	1,303
107.87	1,162	1,277	1,314
107.88	1,169	1,283	1,326
107.89	1,176	1,290	1,338
107.90	1,182	1,297	1,349
107.91	1,189	1,304	1,361
107.92	1,196	1,310	1,373
107.93	1,202	1,317	1,385
107.94	1,209	1,324	1,397
107.95	1,216	1,331	1,409

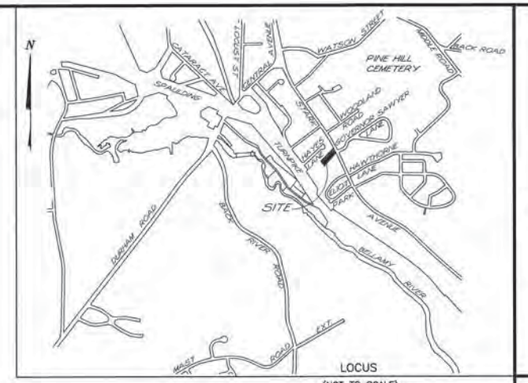
GROUNDWATER RECHARGE VOLUME (GRV)
(Env-Wq 1504.12)

0.16	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	
0.062	ac-in	GRV = AI * Rd	
225	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	
	← Y/N	Is a stage-storage table attached showing that the GRV can be stored below the lowest invert of the outlet structure (if applicable)? Multiple stormwater control measures may be used to meet the GRV requirements.	

Provide calculations/discussion below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Infiltration from Bio #1 = 1,409 cubic feet





SOILS NOTES

1.) SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT. SSSNNE SPECIAL PUBLICATION NO. 3, VERSION 7.0, JULY 2021. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE SUBMISSION TO NH DES ALTERATION OF TERRAIN. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE.

2.) WETLANDS WERE INVESTIGATED IN JANUARY 2026 BY MICHAEL MARIANO, NH CERTIFIED WETLAND SCIENTIST #183 IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0. HYDRIC SOILS WERE IDENTIFIED BY FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, MAY 2017. A ROUTINE DETERMINATION, AS DESCRIBED IN THE MANUAL, WAS FOLLOWED. NO WETLAND WERE FOUND.

3.) TEST PITS WERE OBSERVED AND DESCRIBED IN APRIL OF 2026.

LEGEND

26 WINDSOR

SLOPE CLASS

A	0 - 3%
B	3 - 8%
C	8 - 15%

LEGEND

- REBAR WITH IO CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- D — DRAIN LINE
- G — GAS LINE
- W — WATER LINE
- VINYL STOCKADE FENCE
- WOOD RAIL FENCE
- CHAIN LINK FENCE
- METAL RAIL FENCE
- SPECIMEN TREE
- ARBORVITAE

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3890

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - SOIL SCIENTIST - MICHAEL MARIANO No. 76 - CERTIFIED

SITE SPECIFIC SOILS PLAN

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 2513.6
SCALE: 1" = 30'

SHEET No. **SSS-1**

(P26-0000)

SOIL REPORT

April 23, 2026

89 Stark Ave
Dover NH
Map 17 Lot 38
0.88 acres

Landscape: Nearly uniform NE to SW slope of approximately 6 percent Mostly lawn and lightly wooded.

Wetlands: There are no wetlands on the property or within 50' of any property line. The area was observed in March 2026 by Michael Mariano, NH Certified Wetland Scientist #183.

Soils: Windsor soils are the only soil on the property

Purpose: The site-specific soil map was prepared for a proposed residential construction with city water and sewer.

Methodology: The soil map was prepared in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, July 2021 by the Society of Soil Scientists of Northern New England and standards established by the National Cooperative Soil Survey. The soil survey was prepared by Michael Mariano, NH Certified Soil Scientist #076.

A plan provided by Tritech Engineering, Dover NH at 1" = 30' with 2' contours was used as a base map. Existing monumentation, survey transects, and topographic features were used as control. Two pits were dug by an excavator to classify soils at the series level. Pits were located Tritech Engineering.

The identification of soils is based on the New Hampshire State-Wide Numerical Soils Legend.

Map Unit Purity:

Consociations: Map units will contain 75 percent or more of pedons that fit within the range of the taxon that provides the name for the map unit or are in a similar taxon. No one similar soil is greater than the named reference taxa. The total amount of dissimilar inclusions will not exceed 25 percent. No single dissimilar soil will make up more than 10 percent of the map unit. Limiting inclusions do not exceed 15 percent of the map unit. More intensive separation of dissimilar inclusions within a map unit can be made at the discretion of the Soil Scientist.

Complexes: There are no soil complexes on the property

Drainage Classes: Soil series names added for soils on this property.

***Very Poorly Drained*:** There are no very poorly drained soils mapped on this property.

Poorly Drained: **There** are no poorly drained soils mapped on this property.

***Somewhat Poorly Drained**:* There are no somewhat poorly drained soils on this property.

Moderately Well Drained: There are no moderately well drained soils on the property

Well Drained: There are no well drained soils on the property.

***Excessively Drained*:** Windsor. Water is removed very rapidly. The occurrence of internal free water commonly is very rare or very deep. The soils are commonly coarse textured and have very high hydrologic conductivity.

Soils with textures of very fine sand or coarser in all horizons within the control section

Soil Map Legend

26 Windsor

Slope Classes

A 0-3%
B 3-8%
C 8-15%

This map product is within the technical standards of the National Cooperative Soil Survey and produced in accordance with the Society of Soil Scientists of Northern New England Publication Site-Specific Soil Mapping Standards for New Hampshire and Vermont, July 2021 It was produced by a professional soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a map that accompanies this report.

Highland Soil Services
75 Prospect St., Somersworth NH 03878

Windsor

NH Numerical Soil Legend: 26

Setting

Parent Material:	Glacial outwash
Landform:	Outwash plains
Position on Landscape:	Highest elevations
Slope Range:	3 to 8 percent

Composition and Soil Characteristics

Drainage Class:	Somewhat excessively drained; seasonal high water table at >40 inches
Hydrologic Group:	A
Surface Runoff	Moderate
Permeability	Rapid
Depth to Bedrock	> 40 inches
Hydric conditions	No

Inclusions Within Mapping Unit

Similar:	None
Contrasting:	None

Use and Management

This soil is well suited to development. Droughtiness is the limiting factor. See Test Pit 3 for a typical description.

Test Pit Descriptions

89 Stark Ave
Dover NH
Map 17 Lot 38
Described: 03-31-2026

Test Pit 1:

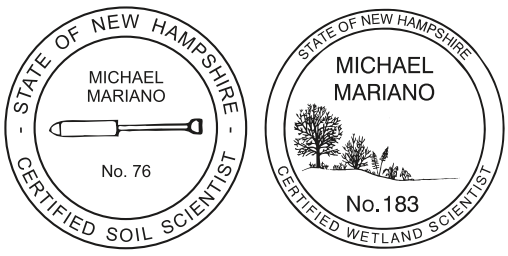
00 - 10”	Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable
10 - 23”	Strong brown (7.5YR5/8) sand; single grain, moist, loose
23 - 45”	Yellowish brown (10YR5/6) sand; single grain; moist, loose
45 - 66”	Light olive brown (2.5Y5/4) & strong brown (7.5YR5/8) sand; few redox features in 10YR6/1; single grain; moist, loose.

Series: Windsor
Estimated seasonal high water table: 45”
Observed water: none
Restrictive layer: none
Soil Hydrologic Group A

Test Pit 2:

00 - 08”	Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable
08 - 25”	Strong brown (7.5YR5/8) sand; single grain, moist, loose
25 - 50”	Yellowish brown (10YR5/6) sand; single grain; moist, loose
50 - 66”	Light olive brown (2.5Y5/4) & strong brown (7.5YR5/8) sand; few redox features in 10YR6/1; single grain; moist, loose.

Series: Windsor
Estimated seasonal high water table: 50”
Observed water: none
Restrictive layer: none
Soil Hydrologic Group A



Infiltration Feasibility Analysis

Site Plan Application

Corey MacKoul

89 Stark Ave

Tax Map 17 Lot 38

Dover, New Hampshire

Job No.:25136

This infiltration test is being performed in conjunction with the development of 89 Stark Ave. This on-site testing was completed to determine the rate of infiltration to be used in the stormwater system design.

Tritech performed this testing using a Geulph Permeameter in accordance with NHDES Analysis Method. In addition to the summary below, we have provided the raw data and the spreadsheet used in analysis of the raw data and determine the K_{sat} value to be used in the HydroCAD Stormwater Model.

We performed this testing at one location on the property. The location of the test was performed at Test Pit #1 in the Windsor soil to determine the K_{sat} value to be used in the HydroCAD stormwater model.

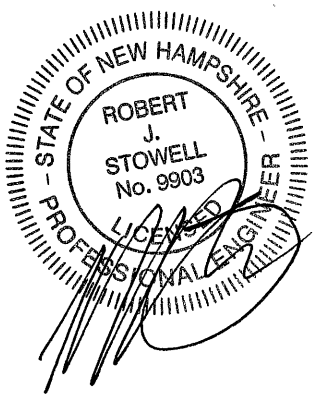
The borehole was prepared into the receiving soil & above the water table using a 6 cm Dutch Sand Auger. The bore hole was then sized and squared using a 6 cm Bayonet Auger, then the bore hole was brushed with a 6 cm prep brush to remove any smearing from the sides of the hole that may have been left by the Bayonet Auger.

Attached please find the raw data summaries for the tests performed. The raw data was entered into the spreadsheet supplied by Soilmoisture Equipment Corp., the permeameter supplier.

Test Pit #1 Results:
K_{sat} 0.459 in./min. or 27.52 in./hour

Field Infiltration Testing Results			
Location	Material	Depth (in.)	K_{sat} Rate (in./hr)
Test Pit #1	Strong brown sand; single grain, moist, loose	17"	27.52

The results above are the direct value from the field testing and a safety factor of 2 has been added resulting in a K_{sat} value of 13.75 in./hr. used in the design.



Infiltration Testing
Site Plan Application

Corey MacKoul

89 Stark Ave
Tax Map 17, Lot 38
Dover, New Hampshire
Job No.: 25136

Project Name:	Corey MacKoul	Test Performed By: Andrew J. Stowell	
Project Location:	89 Stark Ave, Dover	Test Date: April 29, 2026	
Test Location:	At Test Pit #1	Test Weather: 55 Degrees	
Reservoir Constants			
Combined Reservoirs (x)	35.22 cm²	Well Depth = 15 cm	Depth of Well from Existing Grade: 17"
Inner Reservoir (y) =	2.15 cm²	Well Radius = 3 cm	Soil Type: Windsor

Test #1

Water Level in Well = 5 cm

Time (Min)	**Time Interval Δt (min)**	**Water Level In Resevoir h (cm)**	**Water Level Change Δh (cm)**	**Rate of Water Change R1 (cm/min)**
0	0	0.5	-	-
1	1.0	18.0	17.5	17.5
2	1.0	29.0	11.0	11.0
3	1.0	40.0	11.0	11.0
4	1.0	51.0	11.0	11.0
5	1.0	62.0	11.0	11.0
6	1.0	73.0	11.0	11.0
Steady State Rate; Average 11.0 cm/min				

Guelph Permeameter Calculations

Input

Result

Support: ali@soilmoisture.com

89 Stark Ave- Infiltration Test at Test Pit #1

Reservoir Type (enter "1" for Combined and "2" for Inner reservoir):	1
Enter water Head Height ("H" in cm):	5
Enter the Borehole Radius ("a" in cm):	3
Enter the soil texture-structure category (enter one of the below numbers):	4

1. Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.
2. Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.
3. Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.
4. Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macropors, etc

Steady State Rate of Water Level Change ("R" in cm/min): 11.0000

Res Type	35.22
H	5
a	3
H/a	1.667
a*	0.36
C0.01	0.809
C0.04	0.842
C0.12	0.803
C0.36	0.803
C	0.803
R	11.000
Q	6.457
pi	3.142

$\alpha^* =$ 0.36 (cm^{-1})

$C =$ 0.803154

$Q =$ 6.457

$K_{fs} =$	1.94E-02	cm/sec
	1.17E+00	cm/min
	1.94E-04	m/sec
	4.59E-01	inch/min
	7.65E-03	inch/sec

27.52396788 In./Hr.

$\Phi_m =$ 5.39E-02 (cm^2/min)

Calculation formulas related to shape factor (C). Where H_1 is the first water head height (cm), H_2 is the second water head height (cm), a is borehole radius (cm) and α^* is microscopic capillary length factor which is decided according to the soil texture-structure category. For one-head method, only C_1 needs to be calculated while for two-head method, C_1 and C_2 are calculated (Zang et al., 1998).

Soil Texture-Structure Category	$\alpha^*(cm^{-1})$	Shape Factor
Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.	0.01	$C_1 = \left(\frac{H_1/a}{2.102 + 0.118(H_1/a)}\right)^{0.655}$ $C_2 = \left(\frac{H_2/a}{2.102 + 0.118(H_2/a)}\right)^{0.655}$
Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.	0.04	$C_1 = \left(\frac{H_1/a}{1.992 + 0.091(H_1/a)}\right)^{0.683}$ $C_2 = \left(\frac{H_2/a}{1.992 + 0.091(H_2/a)}\right)^{0.683}$
Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.	0.12	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$
Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macro pores, etc.	0.36	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$

Calculation formulas related to one-head and two-head methods. Where R is steady-state rate of fall of water in reservoir (cm/s), K_{fs} is Soil saturated hydraulic conductivity (cm/s), Φ_m is Soil matric flux potential (cm^2/s), α^* is Macroscopic capillary length parameter (from Table 2), a is Borehole radius (cm), H_1 is the first head of water established in borehole (cm) , H_2 is the second head of water established in borehole (cm) and C is Shape factor (from Table 2).

One Head, Combined Reservoir	$Q_1 = \bar{R}_1 \times 35.22$	$K_{fs} = \frac{C_1 \times Q_1}{2\pi H_1^2 + \pi a^2 C_1 + 2\pi\left(\frac{H_1}{\alpha^*}\right)}$ $\Phi_m = \frac{C_1 \times Q_1}{(2\pi H_1^2 + \pi a^2 C_1)\alpha^* + 2\pi H_1}$
One Head, Inner Reservoir	$Q_1 = \bar{R}_1 \times 2.16$	
Two Head, Combined Reservoir	$Q_1 = \bar{R}_1 \times 35.22$ $Q_2 = \bar{R}_2 \times 35.22$	$G_1 = \frac{H_2 C_1}{\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $G_2 = \frac{H_1 C_2}{\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $K_{fs} = G_2Q_2 - G_1Q_1$ $G_3 = \frac{(2H_2^2 + a^2C_2)C_1}{2\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $G_4 = \frac{(2H_1^2 + a^2C_1)C_2}{2\pi(2H_1H_2(H_2 - H_1) + a^2(H_1C_2 - H_2C_1))}$ $\Phi_m = G_3Q_1 - G_4Q_2$
Two Head, Inner Reservoir	$Q_1 = \bar{R}_1 \times 2.16$ $Q_2 = \bar{R}_2 \times 2.16$	

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	**BMP**	**Notes**	**Lit. Ref.**	**TSS**	**TN**	**TP**
Stormwater Ponds	Wet Pond		B, F	70%	35%	45%
	Wet Extended Detention Pond		A, B	80%	55%	68%
	Micropool Extended Detention Pond	TBA				
	Multiple Pond System	TBA				
	Pocket Pond	TBA				
Stormwater Wetlands	Shallow Wetland		A, B, F, I	80%	55%	45%
	Extended Detention Wetland		A, B, F, I	80%	55%	45%
	Pond/Wetland System	TBA				
	Gravel Wetland		H	95%	85%	64%
Infiltration Practices	Infiltration Trench (≥75 ft from surface water)		B, D, I	90%	55%	60%
	Infiltration Trench (<75 ft from surface water)		B, D, I	90%	10%	60%
	Infiltration Basin (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Infiltration Basin (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Dry Wells			90%	55%	60%
	Drip Edges			90%	55%	60%
Filtering Practices	Aboveground or Underground Sand Filter that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Aboveground or Underground Sand Filter that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Aboveground or Underground Sand Filter with underdrain		A, I, F, G, H	85%	10%	45%
	Tree Box Filter	TBA				
	Bioretention System		I, G, H	90%	65%	65%
	Permeable Pavement that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Permeable Pavement that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Permeable Pavement with underdrain		Use TN and TP values for sand filter w/ underdrain and outlet pipe	90%	10%	45%

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 6-4.1 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION Cover type and hydrologic condition	Average percent impervious area[2]	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP A	B	C	D
FULLY DEVELOPED URBAN AREAS[1] (Vegetation Established)					
Lawns, open spaces, parks, golf courses, cemeteries, etc.					
good condition; grass cover on 75% or more of the area		39	61	74	80
fair condition; grass cover on 50% to 75% of the area		49	69	79	84
poor condition; grass cover on 50% or less of the area		68	79	86	89
Paved parking lots, roofs, driveways, etc.		98	98	98	98
Streets and roads;					
paved with curbs and storm sewers		98	98	98	98
gravel		76	85	89	91
dirt		72	82	87	89
paved with open ditches		83	89	92	93
Commercial and business areas	85	89	92	94	95
Industrial districts	72	81	88	91	93
Row houses, town houses, and residential					
with lot sizes 1/8 acre or less	65	77	85	90	92
Residential					
Average lot size					
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acre	12	46	65	77	82
DEVELOPING URBAN AREAS[3] (No vegetation Established)					
Newly graded area		77	86	91	94

1. For land uses with impervious areas, curve numbers are computed assuming that 100% of runoff from impervious areas is directly connected to the drainage system. Pervious areas (lawn) are considered to be equivalent to lawns in good condition and the impervious areas have an RCN of 98.

2. Includes paved streets.

3. Use for the design of temporary measures during grading and construction. Impervious area percent for urban areas under development vary considerably. The user will determine the percent impervious. Then using the newly graded area RCN and Table 6-4, the composite RCN can be computed for any degree of development.

Source: USDA Soil Conservation Service

TABLE 6-4.2 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION			CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP			
Cover type and hydrologic condition		Hydrologic condition[4]	A	B	C	D
CULTIVATED AGRICULTURAL LAND						
Fallow	Bare soil		77	86	91	94
	Crop residue cover (CR)	poor	76	85	90	93
	CR	good	74	83	88	90
Row crops	Straight row (SR)	poor	72	81	88	91
	SR	good	67	78	85	89
	SR & CR	poor	71	80	87	90
	SR & CR	good	64	75	82	85
	Contoured (C)	poor	70	79	84	88
	C	good	65	75	82	86
	C & CR	poor	69	78	83	87
	C & CR	good	64	74	81	85
	Contoured & Terraces (C&T)	poor	66	74	80	82
	C&T	good	62	71	78	81
	C&T & CR	poor	65	73	79	81
	C&T & CR	good	61	70	77	80
Small grain	SR	poor	65	76	84	88
	SR	good	63	75	83	87
	SR & CR	poor	64	75	83	86
	SR & CR	good	60	72	80	84
	C	poor	63	74	82	85
	C	good	61	73	81	84
	C & CR	poor	62	73	81	84
	C & CR	good	60	72	80	83
	C&T	poor	61	72	79	82
	C&T	good	59	70	78	81
	C&T & CR	poor	60	71	78	81
	C&T & CR	good	58	69	77	80
Close-seeded Legumes or Rotation Meadow[5]	SR	poor	66	77	85	89
	SR	good	58	72	81	85
	C	poor	64	75	83	85
	C	good	55	69	78	83
	C&T	poor	63	73	80	83
	C&T	good	51	67	76	80

4. For conservation tillage poor hydrologic condition, 5 to 20 percent of the surface is covered with residue (less than 750 #/acre row crops or 300#/acre small grain).
   For conservation tillage good hydrologic condition, more than 20 percent of the surface is covered with residue (greater than 750 #/acre row crops or 300 #/acre small grain).
5. Close-drilled or broadcast.

Source: USDA Soil Conservation Service

TABLE 6-4.3 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION Cover type and hydrologic condition	Hydrologic condition[6]	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP A	B	C	D
NON-CULTIVATED AGRICULTURAL LAND					
Pasture, grassland, or range - continuous forage for grazing	poor	68	79	86	89
	fair	49	69	79	84
	good	39	61	74	80
Meadow - continuous grass, protected from grazing and generally mowed for hay	---	30	58	71	78
Woods-grass combination (orchard or tree farm)	poor	57	73	82	86
	fair	43	65	76	82
	good	32	58	72	79
Brush - brush-weed-grass mixture with brush the major element	poor	48	67	77	83
	fair	35	56	70	77
	good	30	48	65	73
Woods	poor	45	66	77	83
	fair	36	60	73	79
	good	30	55	70	77
Farmsteads - buildings, lanes, driveways, and surrounding lots	---	59	74	82	86

6. Poor hydrologic condition has less than 50 percent ground cover density.
Fair hydrologic condition has between 50 and 75 percent ground cover density.
Good hydrologic condition has more than 75 percent ground cover density.

Source: USDA Soil Conservation Service

VALUES OF THE ROUGHNESS COEFFICIENT n
(Boldface figures are values generally recommended in design)

Type of channel and description	Minimum	Normal	Maximum
A. CLOSED CONDUITS FLOWING PARTLY FULL			
A-1. Metal			
a. Brass, smooth	0.009	**0.010**	0.013
b. Steel			
1. Lockbar and welded	0.010	0.012	0.014
2. Riveted and spiral	0.013	0.016	0.017
c. Cast iron			
1. Coated	0.010	0.013	0.014
2. Uncoated	0.011	0.014	0.016
d. Wrought iron			
1. Black	0.012	0.014	0.015
2. Galvanized	0.013	0.016	0.017
e. Corrugated metal			
1. Subdrain	0.017	0.019	0.021
2. Storm drain	0.021	**0.024**	0.030
A-2. Nonmetal			
a. Lucite	0.008	0.009	0.010
b. Glass	0.009	**0.010**	0.013
c. Cement			
1. Neat, surface	0.010	0.011	0.013
2. Mortar	0.011	0.013	0.015
d. Concrete			
1. Culvert, straight and free of debris	0.010	0.011	0.013
2. Culvert with bends, connections, and some debris	0.011	**0.013**	0.014
3. Finished	0.011	0.012	0.014
4. Sewer with manholes, inlet, etc., straight	0.013	0.015	0.017
5. Unfinished, steel form	0.012	0.013	0.014
6. Unfinished, smooth wood form	0.012	**0.014**	0.016
7. Unfinished, rough wood form	0.015	0.017	0.020
e. Wood			
1. Stave	0.010	0.012	0.014
2. Laminated, treated	0.015	0.017	0.020
f. Clay			
1. Common drainage tile	0.011	**0.013**	0.017
2. Vitrified sewer	0.011	0.014	0.017
3. Vitrified sewer with manholes, inlet, etc.	0.013	0.015	0.017
4. Vitrified subdrain with open joint	0.014	0.016	**0.018**
g. Brickwork			
1. Glazed	0.011	**0.013**	**0.015**
2. Lined with cement mortar	0.012	0.015	0.017
h. Sanitary sewers coated with sewage slimes, with bends and connections	0.012	0.013	0.016
i. Paved invert, sewer, smooth bottom	0.016	0.019	0.020
j. Rubble masonry, cemented	0.018	0.025	0.030

VALUES OF THE ROUGHNESS COEFFICIENT n (*continued*)

Type of channel and description	Minimum	Normal	Maximum
B. LINED OR BUILT-UP CHANNELS			
B-1. Metal			
a. Smooth steel surface			
1. Unpainted	0.011	**0.012**	0.014
2. Painted	0.012	0.013	0.017
b. Corrugated	0.021	0.025	0.030
B-2. Nonmetal			
a. Cement			
1. Neat, surface	0.010	0.011	0.013
2. Mortar	0.011	0.013	0.015
b. Wood			
1. Planed, untreated	0.010	0.012	0.014
2. Planed, creosoted	0.011	0.012	0.015
3. Unplaned	0.011	0.013	0.015
4. Plank with battens	0.012	0.015	0.018
5. Lined with roofing paper	0.010	0.014	0.017
c. Concrete			
1. Trowel finish	0.011	**0.013**	0.015
2. Float finish	0.013	0.015	0.016
3. Finished, with gravel on bottom	0.015	0.017	0.020
4. Unfinished	0.014	0.017	0.020
5. Gunite, good section	0.016	0.019	0.023
6. Gunite, wavy section	0.018	0.022	0.025
7. On good excavated rock	0.017	0.020	
8. On irregular excavated rock	0.022	0.027	
d. Concrete bottom float finished with sides of			
1. Dressed stone in mortar	0.015	0.017	0.020
2. Random stone in mortar	0.017	0.020	0.024
3. Cement rubble masonry, plastered	0.016	0.020	0.024
4. Cement rubble masonry	0.020	0.025	0.030
5. Dry rubble or riprap	0.020	0.030	0.035
e. Gravel bottom with sides of			
1. Formed concrete	0.017	0.020	0.025
2. Random stone in mortar	0.020	0.023	0.026
3. Dry rubble or riprap	0.023	0.033	0.036
f. Brick			
1. Glazed	0.011	**0.013**	0.015
2. In cement mortar	0.012	**0.015**	0.018
g. Masonry			
1. Cemented rubble	0.017	**0.025**	0.030
2. Dry rubble	0.023	0.032	0.035
h. Dressed ashlar	0.013	0.015	0.017
i. Asphalt			
1. Smooth	0.013	0.013	
2. Rough	0.016	0.016	
j. Vegetal lining	0.030	.....	0.500

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
C. EXCAVATED OR DREDGED			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
D. NATURAL STREAMS			
D-1. Minor streams (top width at flood stage <100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage >100 ft). The n value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

Appendix D1: Broad-Crested Weir Coefficients for Sharp-Edged Crests

The following table lists *English* weir coefficients for broad crested weirs with a sharp-edged crest of various breadths. These coefficients are automatically entered into the lookup table for a broad crested weir whenever a crest breadth is entered as described on page 89. If breadth falls between two listed values, interpolated coefficients are automatically used. Breadths outside the listed range will use the first or last coefficient values without extrapolation. Values are automatically converted to the current input units as described on page 43.

	Weir Breadth--(ft)										
Head	0.50	0.75	1.00	1.50	2.00	2.50	3.00	4.00	5.00	10.0	15.0
0.2	2.80	2.75	2.69	2.62	2.54	2.48	2.44	2.38	2.34	2.49	2.68
0.4	2.92	2.80	2.72	2.64	2.61	2.60	2.58	2.54	2.50	2.56	2.70
0.6	3.08	2.89	2.75	2.64	2.61	2.60	2.68	2.69	2.70	2.70	2.70
0.8	3.30	3.04	2.85	2.68	2.60	2.60	2.67	2.68	2.68	2.69	2.64
1.0	3.32	3.14	2.98	2.75	2.66	2.64	2.65	2.67	2.68	2.68	2.63
1.2	3.32	3.20	3.08	2.86	2.70	2.65	2.64	2.67	2.66	2.69	2.64
1.4	3.32	3.26	3.20	2.92	2.77	2.68	2.64	2.65	2.65	2.67	2.64
1.6	3.32	3.29	3.28	3.07	2.89	2.75	2.68	2.66	2.65	2.64	2.63
1.8	3.32	3.32	3.31	3.07	2.88	2.74	2.68	2.66	2.65	2.64	2.63
2.0	3.32	3.31	3.30	3.03	2.85	2.76	2.72	2.68	2.65	2.64	2.63
2.5	3.32	3.32	3.31	3.28	3.07	2.89	2.81	2.72	2.67	2.64	2.63
3.0	3.32	3.32	3.32	3.32	3.20	3.05	2.92	2.73	2.66	2.64	2.63
3.5	3.32	3.32	3.32	3.32	3.32	3.19	2.97	2.76	2.68	2.64	2.63
4.0	3.32	3.32	3.32	3.32	3.32	3.32	3.07	2.79	2.70	2.64	2.63
4.5	3.32	3.32	3.32	3.32	3.32	3.32	3.32	2.88	2.74	2.64	2.63
5.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.07	2.79	2.64	2.63
5.5	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	2.88	2.64	2.63

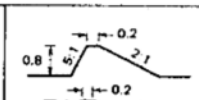
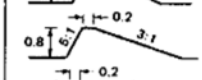
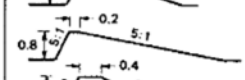
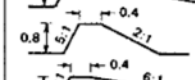
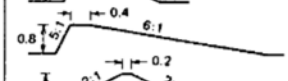
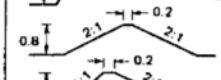
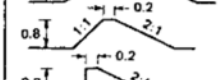
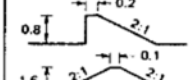
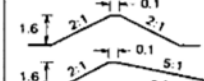
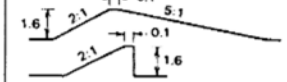
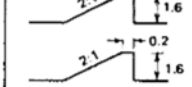
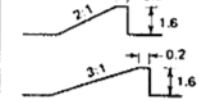
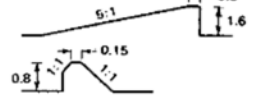
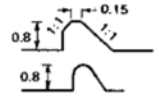
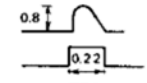
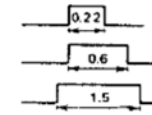
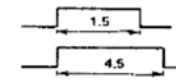
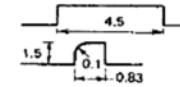
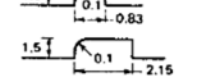
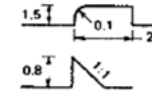
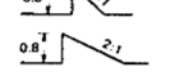
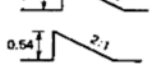
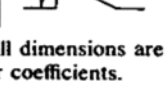
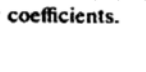
This table was derived from information in HANDBOOK OF HYDRAULICS by Brater and King, 1976.

Appendix D2: Broad-Crested Weir Coefficients for Assorted Profiles

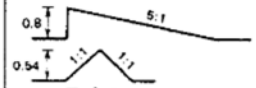
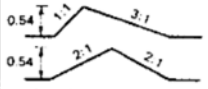
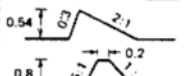
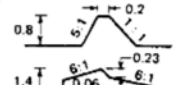
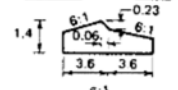
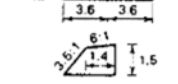
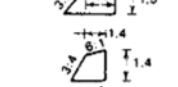
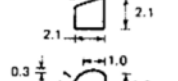
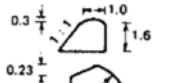
Coefficients for the following weirs may be entered automatically by specifying the appropriate Profile ID number on the HydroCAD weir screen.

Note: This table contains *metric* weir coefficients. To obtain English coefficients **multiply the values in this table by 1.811** as described on page 43.

Discharge Coefficients for Broad-Crested Weirs

	Cross section	Upstream head *h* [m]							
		0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
1		1.61	1.86	1.98					
2		1.60	1.80	1.90					
3		1.58	1.75	1.79					
4		1.53	1.64	1.77					
5		1.54	1.62	1.69					
6		1.72	1.88	1.98					
7		1.65	1.88	2.00					
8		1.53	1.80	1.93					
9					1.96	1.96	1.97	1.99	2.02
10					1.94	1.92	1.89	1.92	1.97
11			2.12	2.10	2.08	2.08	2.06	2.04	2.00
12			1.88	1.96	2.01	2.04	2.05	2.05	2.05
13					1.96	1.96	1.96	1.96	1.96
14					1.86	1.86	1.86	1.86	1.86
15		1.81	2.00						
16		2.10	2.35						
17		1.57	1.73	1.80	1.82	1.83	1.83		
18		1.44	1.46	1.55	1.56	1.69	1.76	1.84	
19		1.43	1.47	1.45	1.46	1.47	1.46	1.48	1.59
20		1.48	1.45	1.44	1.44				
21			1.56	1.60	1.65	1.70	1.74	1.84	1.92
22			1.56	1.56	1.55	1.55	1.55	1.55	1.54
23		2.13	2.13	2.13					
24		1.93	1.94	1.94					
25		1.94	1.98	1.97					

*All dimensions are in meters. Tabulated values represent metric weir coefficients.

	Cross section	Upstream head *h* [m]							
		0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
26		1.69	1.73	1.73					
27		2.28	2.25	2.06					
28		2.08	2.12	2.12					
29		1.92	1.93	1.92					
30		2.10	2.13	2.13					
31		2.03	2.03	2.01					
32		2.03	2.03	2.01					
33		1.65	1.94	2.10					
34			1.72	1.76	1.76	1.76	1.76	1.76	1.76
35				1.87	1.84	1.81	1.82	1.82	1.85
36			1.91	1.90	1.87	1.84	1.83	1.86	1.90
37						1.89	1.87	1.87	1.88
38			1.81	1.81	1.82	1.86	1.90	1.97	2.01
39		1.13	1.82 1.89	1.83 1.90	1.85 1.88	1.87 1.88	1.88 1.90	1.95	2.06
40		1.76	1.86 1.92	1.90 1.98	1.93 2.06	1.96 2.04	1.97 2.04	2.03	2.11
41		1.72	1.90	2.00	2.06	2.10	2.13		
42		1.78	1.84	1.89	1.93	1.97	2.00		
43		1.75	1.81	1.85	1.88	1.90	1.92	1.95	
44		1.80	1.92	1.95	1.94	1.85	1.82		
45		1.94	1.94	1.95	1.92	1.85	1.81	1.79	
46		1.72	1.72	1.70	1.72	1.76	1.79	1.85	
47		1.70	1.71	1.82					
48			2.09						

Appendix E: Culvert Entrance Loss Coefficients

The following table lists entrance loss coefficients for concrete, corrugated metal, and box culverts. These values are automatically provided by HydroCAD when the corresponding entrance description is selected for a given culvert.

Although comparable data is not available for corrugated plastic pipe, it is believed to be similar to corrugated metal, and the same entries are listed for "CPP" in the internal lookup table.

Entrance Loss Coefficients.

Type of Structure and Design of Entrance	Coefficient, k_e
Pipe, Concrete	
Projecting from fill, groove end	0.2
Projecting from fill, sq. cut end	0.5
Headwall or headwall and wingwalls	
Groove end of pipe	0.2
Square-edge	0.5
Rounded (radius = 1/12D)	0.1
Mitered to conform to fill slope	0.7
End-Section conforming to fill slope*	0.5
Pipe, or Pipe-Arch, Corrugated Metal	
Projecting from fill (no headwall)	0.9
Headwall or headwall end wingwalls	
Square-edge	0.5
Mitered to conform to fill slope	0.7
End-Section conforming to fill slope*	0.5
Box, Reinforced Concrete	
Headwall parallel to embankment (no wingwalls)	
Square-edged on 3 edges	0.5
Rounded on 3 edges to radius of 1/12 barrel dimension	0.2
Wingwalls at 30° to 75° to barrel	
Square-edged at crown	0.4
Crown edge rounded to radius of 1/12 barrel dimension	0.2
Wingwalls at 10° to 30° to barrel	
Square-edged at crown	0.5
Wingwalls parallel (extension of sides)	
Square-edged at crown	0.7

*Note: "End Section conforming to fill slope", made of either metal or concrete, are the sections commonly available from manufacturers. From limited hydraulic tests they are equivalent in operation to a headwall in both inlet and outlet control. Some end sections, incorporating a closed taper have a superior hydraulic performance.

Appendix F: Sheet Flow Roughness Coefficients

HydroCAD provides the following table of roughness coefficients for use with the Sheet Flow procedure (see page 54). This information is taken directly from NEH Table 15-1, with slight abbreviation of the descriptions. If you decide to substitute other roughness coefficients, note that these values are specifically for sheet flow, and are generally larger than the regular Manning's numbers for comparable surfaces.

Surface Description	n
Smooth surfaces	.011
Fallow	.05
Cultivated: Residue<=20%	.06
Cultivated: Residue>20%	.17
Grass: Short	.15
Grass: Dense	.24
Grass: Bermuda	.41
Range	.13
Woods: Light underbrush	.40
Woods: Dense underbrush	.80

Note: These coefficients may also be appropriate when using a reach to model artificially created sheet flow (as from a level spreader) as long as the depth of flow is limited to approximately 1/10 foot.

Appendix G: Velocity Factors

The Shallow Concentrated Flow procedure (a.k.a. Upland Method) uses a *velocity factor*, K_V, as listed below. The first two surfaces (paved and unpaved) are the basis for TR-55 Figure 3-1, and the factors were originally obtained from TR-55 Appendix F. The remaining surfaces were taken from NEH-4 Figure 15.2, with the factors derived from that chart. Subsequent revisions to NEH Part 630 provide *numerical* K_V values which are in good agreement with the original chart, except for "Grassed Waterways", which appears to have changed from 15.0 to 16.13, making it the same as the TR-55 "Unpaved" condition. For compatibility with previous calculations, the HydroCAD lookup table continues to supply the original K_V values as listed below. If different values are required for any reason, HydroCAD allows direct K_V entry instead of using the lookup table. See page 55 for further details on Shallow Concentrated Flow.

Surface Description	K_V [ft/sec]	K_V [m/sec]
Paved	20.33	6.2
Unpaved	16.13	4.92
Grassed Waterway	15.0	4.57
Nearly Bare & Untilled	10.0	3.05
Cultivated Straight Rows	9.0	2.74
Short Grass Pasture	7.0	2.13
Woodland	5.0	1.52
Forest w/Heavy Litter	2.5	0.76

Some descriptions have been abbreviated. Velocity factors have the same units as a velocity, and may be converted between English and metric as described on page 43.

H y d r o C A D ®

Stormwater Modeling System

Version 10

Owner's Manual

HydroCAD Software Solutions LLC
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COREY MACKOUL

Stormwater Management, Maintenance & Inspection Plan

89 Stark Ave
Dover, New Hampshire

May 2026

Prepared for: Corey MacKoul
8 Hull Ave
Dover, New Hampshire 03820

Contact: Corey MacKoul
corey@koulcontracting.com

Prepared by: Tritech Engineering Corporation
755 Central Avenue
Dover, New Hampshire 03820

Introduction

Tritech Engineering Corporation has prepared the following Stormwater Management System Inspection & Maintenance Plan for 89 Stark Ave, located on southern side of Stark Ave, Dover, New Hampshire. The intent of this plan is to provide Corey MacKoul with a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this development.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. By following the enclosed procedures, Corey MacKoul, will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Corey MacKoul, or its successors, heirs and assigns, will be responsible for implementing the required inspections and reporting over the expected life of the system.

Stormwater Management System Components

The 89 Stark Ave Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, its design includes the following elements:

Non-Structural BMP's

Non-Structural best management practices (BMP's) are designed to minimize and/or remove contaminants before they enter the stormwater collection system. Several of these BMP's have been incorporated into the Stormwater Management System including pavement sweeping, reduced use of road salt, and litter/trash removal. These types of BMP's are a highly effective initial treatment measure for reducing stormwater pollutant loading.

Closed Drainage Collection and Piping System

The closed drainage system is designed to collect and convey stormwater runoff from the roof paved areas and infiltrate stormwater back into the water table. Stormwater is collected in deep sump hooded catch basins for pre-treatment before being routed to the Bioretention area for treatment and infiltration.

Drainage Swales

The drainage swales are designed to collect and convey stormwater runoff from the roof paved areas and infiltrate stormwater back into the water table. Stormwater is collected in drainage swales before being routed to the Bioretention area for treatment and infiltration.

Bioretention Basins

Bioretention Basins collect stormwater from ground runoff, as well as roadway runoff after pretreatment in deep sump hooded catch basins, and allow contaminants and sedimentation to be contained. Bio Retention Pond allows rainwater to be infiltrated and recharge groundwater on the side, and treated excess water is allowed to exit pond through rectangular weir spillway.

Inspection & Maintenance Plan

By implementing the following procedures, Corey MacKoul will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff.

Pavement Sweeping:	Sweep Pavement Area at least three times per year or more as necessary. Spring pavement sweeping shall be performed as early as possible.
Litter/Trash Removal:	Routinely inspect all dumpster locations for spillage and clean as necessary.
Deicing Agents:	Use sand as the primary agent for parking lot safety during ice and snow conditions. Minimize the use of road salt (sodium chloride) during the winter. Use de-icing or anti-caking agents, added to enhance performance and application characteristics of sand mixtures, only as necessary and at minimum application rates. A deicing log (attached) must be maintained throughout the winter season.
Closed Drainage	Inspect all catch basins monthly for floatable objects and remove as required.
Drainage Swales:	Mow grass to maintain a height of 3 to 4 inches as needed. Remove sediment buildup from bottom of swale if accumulation reaches 25% of original design volume. Remove accumulated trash and debris as needed.
Bioretention Basins	Inspect detention basins twice annually for floatables and remove as required. Inspect detention basins, outlet structure, and outlet weir twice annually and remove accumulated sand and sediment. At least once annually, the system should be inspected for drawdown time. If the bioretention system does not drain within 72 hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore filtration function, including but not limited to removal of sediments, or reconstruction of the filter media. At least once annually, vegetation should be inspected and maintained in a healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species.
Invasive Species:	During maintenance and inspection activities, check for the presence of invasive species and dispose of in accordance with the procedures contained herein.

Annual Report: Submit an annual Inspection & Maintenance Report to the City of Dover's Planning Department by July 1st of each year. The report should include a summary of the system's maintenance requirements and repairs, and copies of the Inspection & Maintenance Log Sheets as well as the Deicing Log Sheets.

Each inspection shall include photographs of each the BMP being inspected

Additionally, Inspection and Maintenance Records must be provided to NHDES upon request.

Inspection & Maintenance Checklist/Log

The following pages contain an Inspection & Maintenance Checklist and blank copy of the Stormwater Management System's Inspection & Maintenance Log. These forms are provided to Corey MacKoul with the inspection and maintenance of the 89 Stark Ave Stormwater Management System.

Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants is not addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments</td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

Stormwater Management System

Inspection & Maintenance Checklist

89 Stark Ave

BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
Pavement Sweeping	3 times per year	N/A	N/A
Litter/Trash Removal	Routinely	Inspect outdoor waste receptacles areas for spillage.	Clean as required.
Deicing Agents	N/A	N/A	Use sand as primary agent for parking lot safety during winter.
Closed Drainage System			
Catch Basins	2 times per year 1 time per month	Check for sediment accumulation in sump and on sock. Check for floatable contaminants.	≥ 2 ft. sediment depth. ≥ 3 in. floatable depth.
Drainage Pipes	1 time per 2 years	Check for sediment accumulation/clogging.	≥ 2 in. sediment depth.
Drainage Swales	Per mowing	Maintain grass height of 3-4 inches. Remove sediment accumulation from bottom of swale. Remove accumulated trash and debris as needed.	Sediment accumulation reaches 25% of design volume. Grass height exceeds 4 inches.
Bioretention System	2 times per year	Check for sediment accumulation Check for floatables If system does not drain within 72 hours, actions must be taken to restore infiltration capabilities.	≥ 2 ft. sediment depth in forebay. ≥ 3 in. floatable depth in forebay.
Annual Report	1 time per year	Submit Annual Report, including all Inspection & Maintenance Logs, to the Somersworth Planning Department.	N/A

Stormwater Management System

Inspection & Maintenance Log

89 Stark Ave

BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed (*List Items/Comments)*	Date of Cleaning/Repair	Performed By

Stormwater Management System

Deicing Log

Corey MacKoul

Date	Amount Applied	Performed By	Date	Amount Applied	Performed By

CERTIFICATE OF UNDERSTANDING

Stormwater Management, Maintenance & Inspection Plan

Project: 89 Stark Ave
Dover, New Hampshire
April 2026

Owner: Corey MacKoul
8 Hull Ave
Dover, New Hampshire 03820

Engineer: Tritech Engineering Corporation
755 Central Avenue
Dover, New Hampshire 03820

Project Reference Plans:

Site Development Plans for:
Corey MacKoul
89 Stark Ave
Dover, New Hampshire
Dated May 14, 2026

Specifically:
T-1, T-2, EX-1, SSS-1, SN-1, C-1, SP-1 through SP-10, LA-1 & TR-1.

Project Drainage Analysis References:

Drainage Analysis, Erosion and Sedimentation Control, & Site Development Plan for:
Corey MacKoul
89 Stark Ave
Dover, New Hampshire
Dated May 2026

Site Plan Review Approval was granted by the Dover Planning Board Pending

I, Corey MacKoul , the property owner, am familiar with the references above and understand this Stormwater Management, Maintenance, and Inspection Plan, and my responsibilities identified herein. If ownership of the property is transferred, the new property owner(s) shall become the responsible party(ies).

_____ _____

Corey MacKoul, Owner Date

Water and Sewer Demand &
Pipe Analysis Summary

for

Corey MacKoul

89 Stark Ave
Dover, New Hampshire
May 2026

Water and Sewer Demand for 89 Stark Ave Dover, NH

2 Proposed 3 Bedroom Houses:

2 Houses X 3 Bedrooms each x 150 gal/day per BDR =

900 gal/day

Estimated Design Flow = **900 gal/day**

**This design flow rate is based on NHDES Env.Wq 1008.03 Table 1008-1 Unit Design Flow Figures*

LANDSCAPE
OPERATION & MAINTENANCE PLAN

for

COREY MACKOUL

89 Stark Ave
Dover, New Hampshire
May 2025

Weekly Tasks

1. Mow and edge lawns if needed. Lawns to be cut to 3.5" height.
2. Prune back any shrubs overhanging curbs or sidewalks.
3. Prune back any groundcover overhanging curbs or sidewalks.
4. Remove litter and leaves from plants, planters, and parking lots.
5. Remove any broken or fallen branches from trees. Remove sucker growth from tree trunks.
6. Remove any weeds larger than 2 inches (5 cm) high or wide from planters. Weeds 2 inches (5 cm) and larger must be removed, not just killed.
7. Replace bark mulch which has been knocked or washed out of planters. Smooth mulch layer if it has been disturbed.
8. Replace decorative rock which has been knocked or washed out of drip strips. Smooth decorative rock surface if it has been disturbed.
9. Check plants for signs of stress, pests or disease. Request authorization to replace other dead or missing plants. Note: Maintenance contractor must request authorization to make replacements within one week of the damage becoming evident.
10. Sweep or blow clean all walkways, curbs, and gutters.
11. Treat for any signs of disease or pest infestation.
12. Complete any items required on the Monthly Checklist.
13. Hand water any plants that are dry and stressed.
14. Check the irrigation system (if there is a system). Make emergency repairs as needed or request authorization to make major repairs. Note: Maintenance contractor must request authorization for repairs within one week of the damage becoming evident.
15. Adjust the irrigation controllers for current water needs of plants.
16. **Gently prune shrubs at appropriate time of year based on species, for shape and form. DO NOT shear.**

Yearly Tasks

Early Spring

1. Prune any tree branches that interfere with public safety. Prune all parking lot and street trees yearly to encourage strong growth.
2. Apply granular fertilizer to shrubs beds and lawns. Be sure to make application prior to a moderate rainfall in drip-irrigated planters so the rain will wash the fertilizer in.
3. Submit receipts to owner's authorized representative as proof of fertilizer purchase.
4. Trim any perennial foliage left in the fall for winter interest to within six inches of the ground.

---

5. Add new mulch to planters where the mulch depth has been reduced to less than 2 inches (5 cm) thick. Mulch depth shall not exceed 2". Additional mulch not required where shrubs or groundcover completely hide the soil surface from view.
6. Where there is irrigation and after threat of frost is gone, flush out irrigation systems as needed and check for proper operation of each valve zone. Clean or replace plugged sprinkler nozzles. Replace plugged drip emitters.
7. Replace irrigation controller program back-up batteries.

June:

No additional items

July:

No additional items

August:

No additional items

September:

1. Inventory all plant materials. Inventory shall include an exact count of all shrubs and trees, itemized by planter. Replace any dead or missing plants.

October:

1. Prepare irrigation system for winter. Make sure backflow preventer is well insulated or drained prior to first freeze. Blow out pipes using compressed air in areas where freezing could result in breakage.
2. Mow field areas.

November:

1. "WILT-PRUF" broadleaf evergreens when temperature permits.

December:

1. Prune any tree branches that interfere with public safety. Prune all parking lot and street trees yearly to encourage strong growth.

SITE DEVELOPMENT PLANS

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE

LIST OF PLANS

OWNER / APPLICANT
COREY MACKOUL
8 HULL AVENUE
DOVER, NEW HAMPSHIRE

CIVIL ENGINEER - SURVEYOR
TRITECH ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE

WETLAND & SOIL SCIENTIST
HIGHLAND SOILS SERVICES
75 PROSPECT STREET
SOMERSWORTH, NEW HAMPSHIRE

LANDSCAPE ARCHITECT
TERRAIN
PLANNING & DESIGN LLC
31 KAST HILL ROAD
HOPKINTON, NEW HAMPSHIRE

TRAFFIC ENGINEER
TEPP, LLC.
93 STILES ROAD, SUITE 201
SALEM, NEW HAMPSHIRE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - ROBERT STOCKWELL No. 9803

LICENSED LAND SURVEYOR NO. 884 ROBERT STOCKWELL STATE OF NEW HAMPSHIRE

TITLE SHEET
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

SHEET No.
T-1

(P26-0000)

TRITECH
ENGINEERING CORPORATION
785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 749 9107
FAX 603 749 3630

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

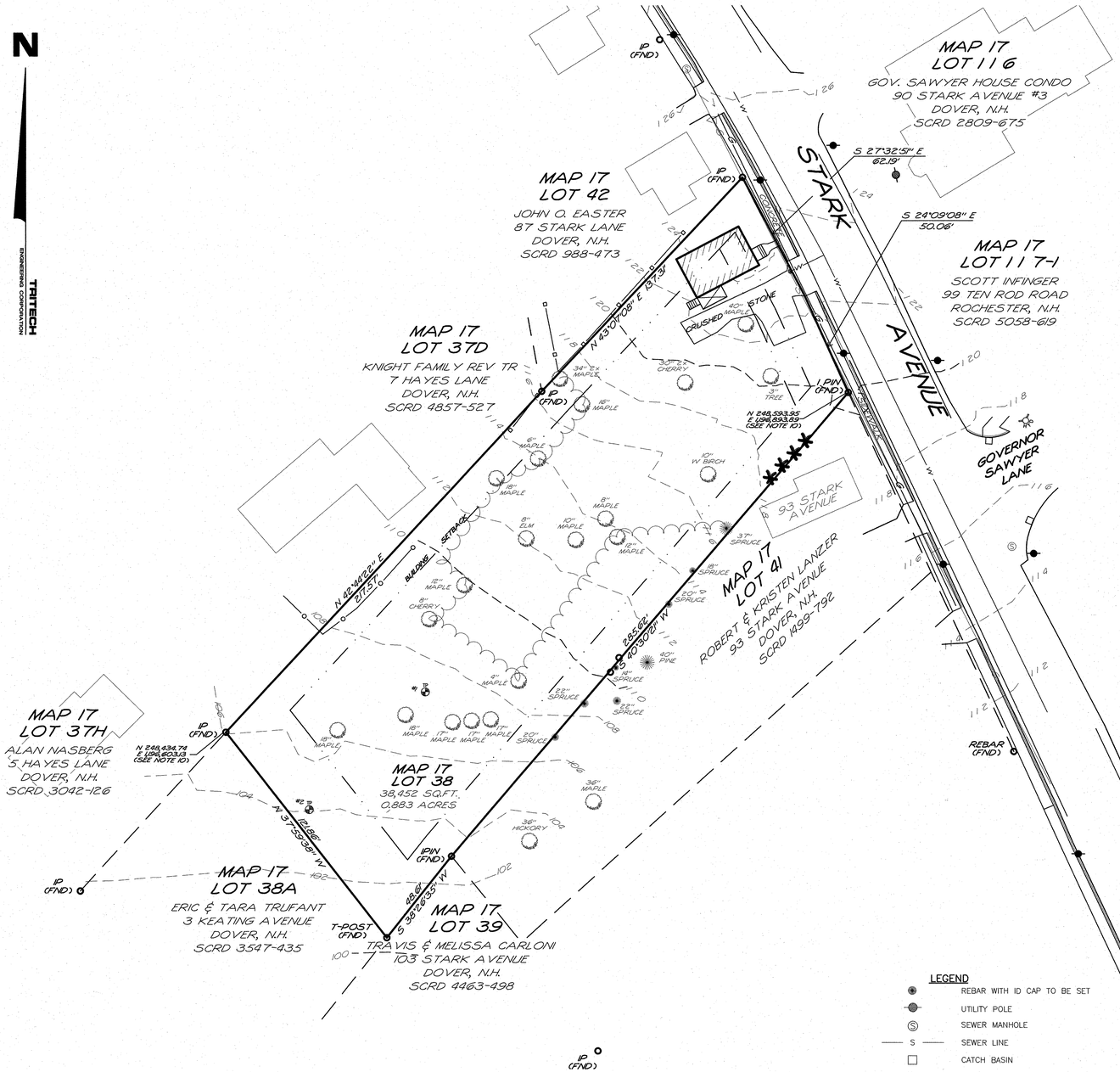
NEIGHBORHOOD PLAN

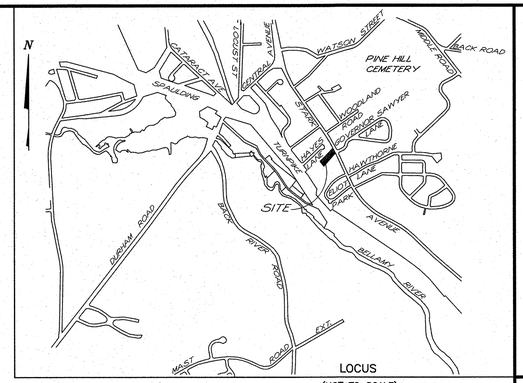
COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026 JOB No. 25136
SCALE: 1" = 60'

SHEET No. T-2

(P26-0000)





LOCUS
(NOT TO SCALE)

NOTES

1.) INTENT: TO SHOW THE EXISTING CONDITIONS OF DOVER MAP 17 LOT 38.

2.) CURRENT OWNER OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H.

3.) SUBJECT PARCEL IS LOCATED IS THE CITY OF DOVER, COUNTY OF STRAFFORD AND THE STATE OF NEW HAMPSHIRE.

4.) TOTAL LOT AREA: 38,452 SQ.FT. – 0.883 ACRES

5.) TAX MAP 17 LOT 38

6.) PROJECT DEED REFERENCE: BOOK 5248 PAGE 342

7.) ZONING: R–12
MIN. LOT SIZE: 12,000 SQ.FT.
MIN. FRONTAGE: 100 FT
MIN. SETBACKS:
FRONT: 15 FT TO 25 FT
SIDE: 15 FT
REAR: 30 FT
MAX. COVERAGE: 30 %
MAX. BUILDING HEIGHT: 35 FT

8.) PROJECT PLAN REFERENCE: PROPOSED SUBDIVISION
LAND OF
TRI–CITY BUILDERS
103 STARK AVENUE
DOVER, NEW HAMPSHIRE
BERRY SURVEYING & ENGINEERING
MAY 6, 2003 SCRD 71–89

SUBDIVISION OF LAND
FOR CLARA FISHER
ON STARK AVENUE & KEATING AVENUE
IN DOVER, N.H.
BRUCE POHOPEK
MAY 30, 1995 SCRD 41A–84A

PLAN OF LOTS
ROBERT LABRIE
DOVER, N.H.
GRANT L DAVIS
AUGUST 1949
POCKET #3, FOLDER #1, PLAN #28

9.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 35,000, AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF JANUARY, 2026.

10.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON JANUARY 13, 2026 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON JANUARY 15, 2026. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (VERTICAL DATUM: NAVD 88).

11.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (FLOOD HAZARD ZONE A – PANEL 330145, MAP No. 33017C0340E, DATE: 9–30–2015).

12.) ON JANUARY 14, 2026, MICHAEL MARIANO, STATE OF NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #76, NH CERTIFIED WETLAND SCIENTIST #183, CONDUCTED AN ON–SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE EVALUATED BASED ON THE CITY OF DOVER ZONING ORDINANCE (170–27.1) AND ON STATE & FEDERAL CRITERIA OUTLINED IN THE "CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL" (DEPT. OF THE ARMY, 1987). ON THIS SITE, WETLANDS BASED ON LOCAL CRITERIA SHARE THE SAME BOUNDARIES WITH THOSE BASED ON STATE AND FEDERAL CRITERIA. NO WETLANDS WERE OBSERVED ON THIS SITE.

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- S — SEWER LINE
- CATCH BASIN
- D — DRAIN LINE
- G — GAS LINE
- WATER GATE VALVE
- W — WATER LINE
- STOCKADE FENCE
- CHAIN LINK FENCE
- SPECIMEN TREE
- ARBORVITAE
- TREE LINE

TRITECH
ENGINEERING CORPORATION
785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

LICENSED LAND SURVEYOR
No. 884
ROBERT J. BERRY
SURVEYOR SEAL
STATE OF NEW HAMPSHIRE

EXISTING CONDITIONS PLAN

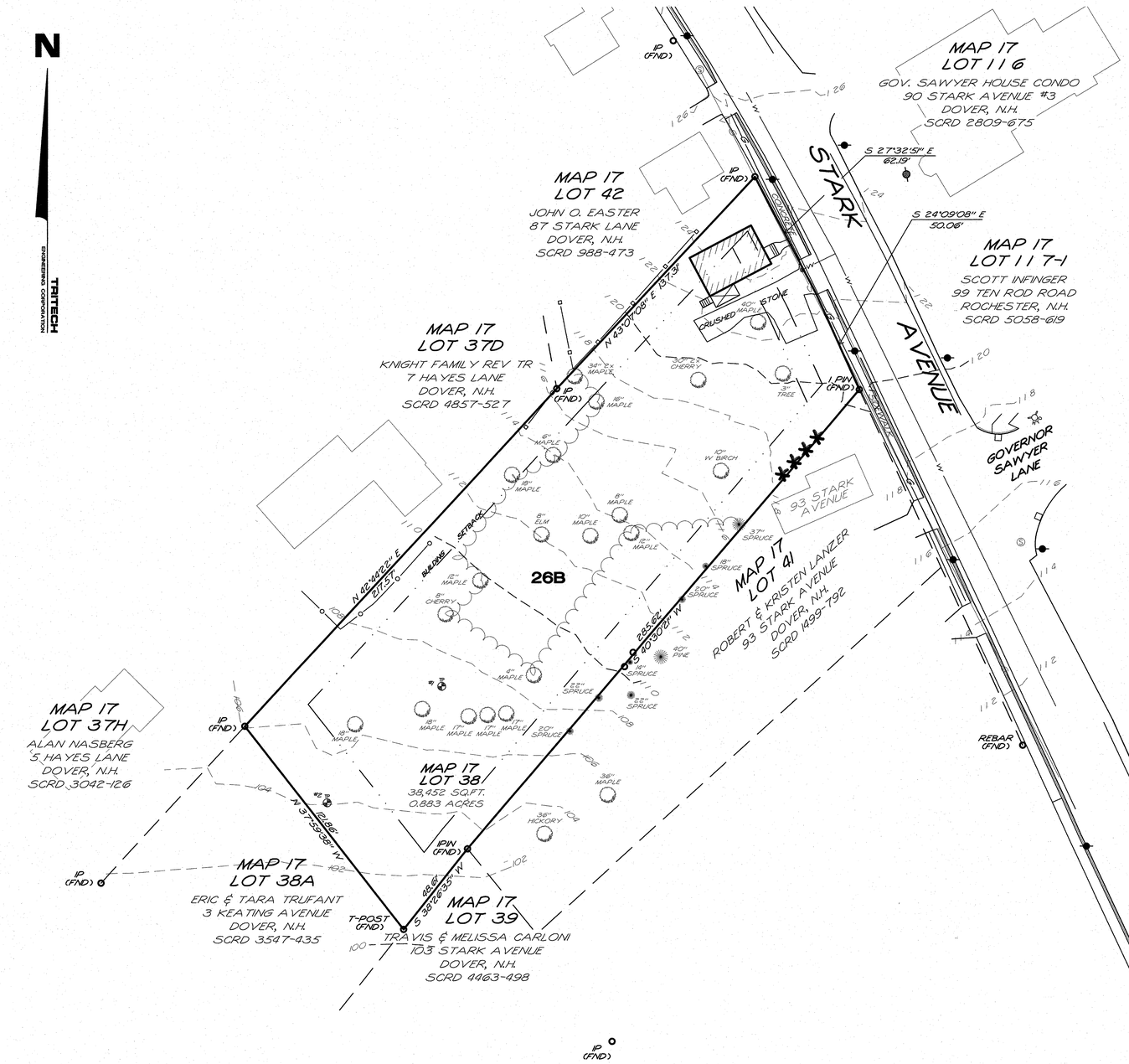
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

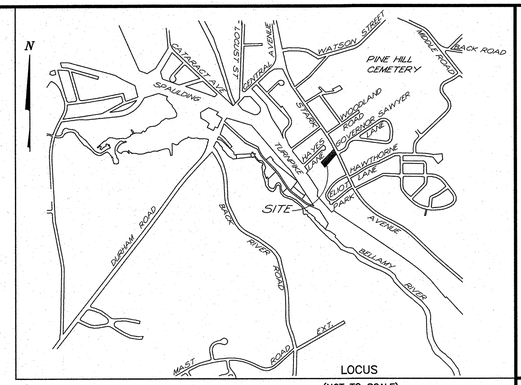
MAY 14, 2026 JOB No. 2513

SCALE: 1" = 30'

SHEET No.
EX-1

(P26-0000)





SOILS NOTES

1.) SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT. SSSNNE SPECIAL PUBLICATION NO. 3, VERSION 7.0, JULY 2021. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE SUBMISSION TO NH DES ALTERATION OF TERRAIN. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE.

2.) WETLANDS WERE INVESTIGATED IN JANUARY 2026 BY MICHAEL MARIANO, NH CERTIFIED WETLAND SCIENTIST #183 IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0. HYDRIC SOILS WERE IDENTIFIED BY FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, MAY 2017. A ROUTINE DETERMINATION, AS DESCRIBED IN THE MANUAL, WAS FOLLOWED. NO WETLAND WERE FOUND.

3.) TEST PITS WERE OBSERVED AND DESCRIBED IN APRIL OF 2026.

LEGEND

26	WINDSOR

SLOPE CLASS

A	0 - 3%
B	3 - 8%
C	8 - 15%

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- (S) SEWER MANHOLE
- (D) DRAIN MANHOLE
- CATCH BASIN
- D — DRAIN LINE
- G — GAS LINE
- W — WATER LINE
- □ — VINYL STOCKADE FENCE
- X — WOOD RAIL FENCE
- ○ — CHAIN LINK FENCE
- △ — METAL RAIL FENCE
- SPECIMEN TREE
- ARBORVITAE

TRITECH
ENGINEERING CORPORATION
765 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 9107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE · SOIL SCIENTIST · CERTIFIED
MICHAEL MARIANO
No. 76

SITE SPECIFIC SOILS PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136
SCALE: 1" = 30'

SHEET No.
SSS-1

(P26-0000)

DOVER SITE PLAN REVIEW NOTES:

1. PLAN INTENT: TO FURTHER DEVELOP DOVER TAX MAP 17 LOT 38. THIS DEVELOPMENT WILL INCLUDE THE RENOVATION OF THE EXISTING SINGLE FAMILY HOUSE (1 BASE UNIT). THE DEVELOPMENT WILL ALSO INCLUDE THE CONSTRUCTION OF 2 SINGLE FAMILY HOMES, ONE BASE UNIT AND ONE UNIT PURCHASED UNDER THE TDR ORDINANCE. 2 BASE UNITS AND THE PURCHASE OF ONE UNIT.

2. OWNERS OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H. 03820

3. THE PARCEL IS SHOWN AS:
LOT 38, MAP 17 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4. THE SUBJECT PARCEL CONTAINS 0.883 ACRES (38,452 SQ. FT.) OF LAND. 0 ACRES ARE CURRENTLY IN CURRENT USE.

5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5248, PAGE NO. 342.

6. REFERENCE PLANS:
PROPOSED SUBDIVISION, LAND OF TRI-CITY BUILDERS, 103 STARK AVENUE, DOVER, N.H., BERRY SURVEYING & ENGINEERING, MAY 6, 2003, SCRD 71-89
SUBDIVISION OF LAND, FOR CLARA FISHER, ON STARK AVENUE & KEATING AVENUE, IN DIVER, N.H., BRUCE POHOPEK, MAY 30, 1995, SCRD 41A-84A
PLAN OF LOTS, ROBERT LABRIE, DOVER, N.H., GRANT L DAVIS, AUGUST 1949, PO 3, FO 1, PLAN #28

7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE AND SHOWN ON THE PLAN.

8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS:

ZONING DISTRICT:	R-12	
SUB-DISTRICT:	NONE	
ZONING OVERLAY DISTRICTS:	NONE	
DIMENSIONAL REQUIREMENTS:		
	REQUIRED:	PROVIDED:
MINIMUM LOT SIZE:	12,000 SQ. FT.	12,000 SQ. FT.
MINIMUM LOT FRONTAGE:	100 FT.	100 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	15 TO 25 FT.	15 TO 25 FT.
SIDE	15 FT.	15 FT.
REAR	30 FT.	30 FT.
ABUT-A-STREET	15 TO 25 FT.	15 TO 25 FT.
MAXIMUM/MINIMUM LOT COVERAGE	30%	30 %
MINIMUM/MAXIMUM BLDG. HEIGHT	35 FT.	35 FT.

9. OFF STREET PARKING REQUIREMENTS:

	MAXIMUM:	PROVIDED:
PARKING DIMENSIONS:	9'x18'	9'x18'
AISLE DIMENSIONS:	24'	20'
MAXIMUM PARKING ALLOWED	6	6
ACCESSIBLE PARKING:	1	0

10. SEE SHEET SP-1 FOR TDR BASE DENSITY CALCULATION THAT DETERMINED A BASE DENSITY OF 2 UNITS. THE PROJECT CONTAINS A TOTAL OF 3 UNITS. THE EXISTING HOUSE (1 UNIT). THE 2 NEW SINGLE FAMILY HOMES. TWO BASE UNITS AND ONE UNIT OBTAINED BY TDR.

11. VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS ARE AS FOLLOWS: NONE GRANTED

12. 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 ARE AS FOLLOWS: NONE GRANTED

13. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION IN JANUARY, 2026 WITH AN ERROR NOT GREATER THAN 1 IN 35,000.

14. AS-BUILT PLANS OF THE PROJECT SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER CITY 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. SUBJECT PARCEL IS (IS NOT) LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C 0340E, EFFECTIVE DATE: SEPTEMBER 30, 2015.

16. TOPOGRAPHIC SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION DURING JANUARY 2026.

17. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.

18. WETLANDS WERE DELINEATED BY MICHAEL MARIANO, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER 183, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, IN JANUARY, 2026. NO WETLANDS WERE OBSERVED.

19. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.

20. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND MUNICIPAL SEWER.

21. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

22. CONTRACTOR SHALL FOLLOW TO THE CONSTRUCTION SEQUENCING IDENTIFIED WITHIN THE PLANNING BOARD APPROVED PLAN SET. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

23. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND BE PROVIDED FOR CONSTRUCTION SEQUENCING INCLUDING TEMPORARY MEASURES.

24. CONTRACTOR SHALL FOLLOW THE PERMANENT STABILIZATION MEASURES 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 AS NOTED WITHIN THE PLANNING BOARD APPROVED PLANS. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

25. 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.

26. ANY PERMANENT TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.

27. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO COMMENCING EARTH DISTURBANCE.

28. A CITY ENGINEER APPROVED CONSTRUCTION SIGN SHALL BE INSTALLED PRIOR TO COMMENCING EARTH DISTURBANCE. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

29. 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.

30. HOURS OF SITE WORK MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM - 6 PM, NO SATURDAY OR SUNDAY. NO SITE WORK SHALL BE DONE ON FEDERAL HOLIDAYS.

31. BUILDING ADDRESSES, INCLUDING APT AND UNIT NUMBERS (IF APPLICABLE), SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

32. THE PROPOSED USE FOR THE SITE IS SINGLE FAMILY RESIDENTIAL.

33. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: NONE

34. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO THE DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR OR THEIR DESIGNEE.

35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP

38. 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.

39. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED, IN ACCORDANCE WITH ALL APPLICABLE CODES, TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.

40. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.

41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.

42. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

43. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM, IF REQUIRED, BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

44. 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 THE CITY OF DOVER INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.

45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.

46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.

47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

48. DESIGN ENGINEER OF RECORD OR SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.

49. THE APPLICANT SHALL PROVIDE THE CITY OF DOVER AN EASEMENT TO ACCESS WATERLINE AND HYDRANTS TO MAINTAIN WATER QUALITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

PLAN SET LEGEND

- WETLAND
- WETLAND BOUNDARY
- IRON PIPE
- UTILITY POLE
- TP — TEST PIT
- D — EXISTING STREET LIGHT
- G — EXISTING STONEWALL
- EXISTING 2 FT CONTOUR
- EXISTING 10 FT CONTOUR
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE OR SERVICE
- WV — EXISTING WATER SHUTOFF
- EXISTING WATER GATE VALVE
- PROPOSED PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED EDGE OF GRAVEL
- 80 — PROPOSED CONTOUR
- PROPOSED HYDRANT
- W — PROPOSED END CAP WITH THRUST BLOCK
- WV — PROPOSED WATER GATE VALVE
- PROPOSED WATER SHUTOFF
- W — PROPOSED WATER LINE OR SERVICE
- PROPOSED VINYL STOCKADE FENCE
- U E&T — PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- // — PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- PROPOSED ELECTRICAL TRANSFORMER
- PROPOSED ELECTRICAL JUNCTION BOX
- PROPOSED STREET LIGHT
- PROPOSED UTILITY POLE
- D — PROPOSED DRAIN LINE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- UD — PROPOSED UNDERDRAIN
- PROPOSED FLARED END SECTION
- PROPOSED RIP RAP
- PROPOSED EASEMENT
- PROPOSED GUARDRAIL
- PROPOSED SILT FENCE OR SILT SOCK
- PROPOSED CONSTRUCTION FENCE
- PROPOSED SILT SOCK WITH ORANGE CONSTRUCTION FENCE OR ORANGE SILT FENCE
- PROPOSED STREET SIGN
- PROPOSED STOP SIGN
- PROPOSED STOP BAR
- PROPOSED STREET TREE
- PROPOSED TREELINE

TRITECH
ENGINEERING CORPORATION
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TELEPHONE 603 742 6107
FAX 603 742 3830

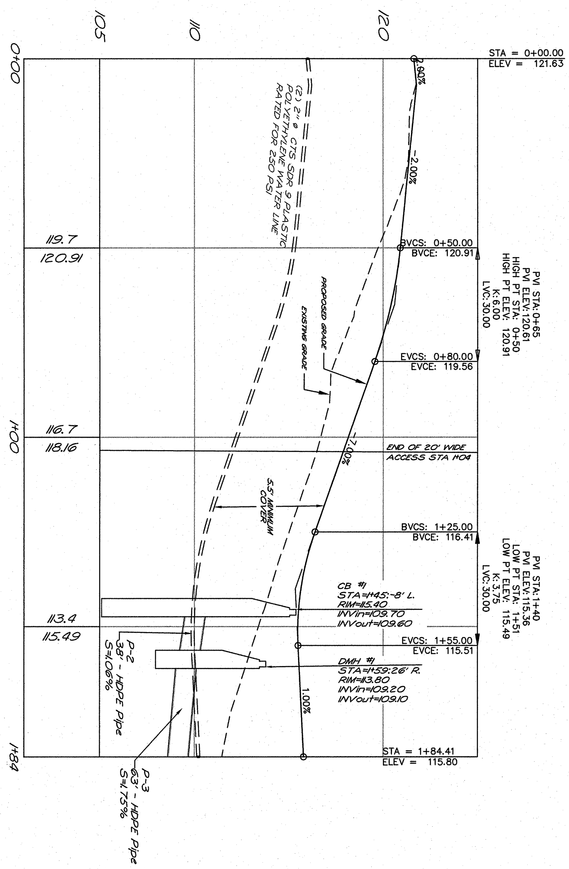
ISSUED FOR TRC REVIEW
May 14, 2026

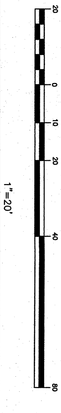
REVISIONS
DATE: DESCRIPTION:

GENERAL NOTES PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

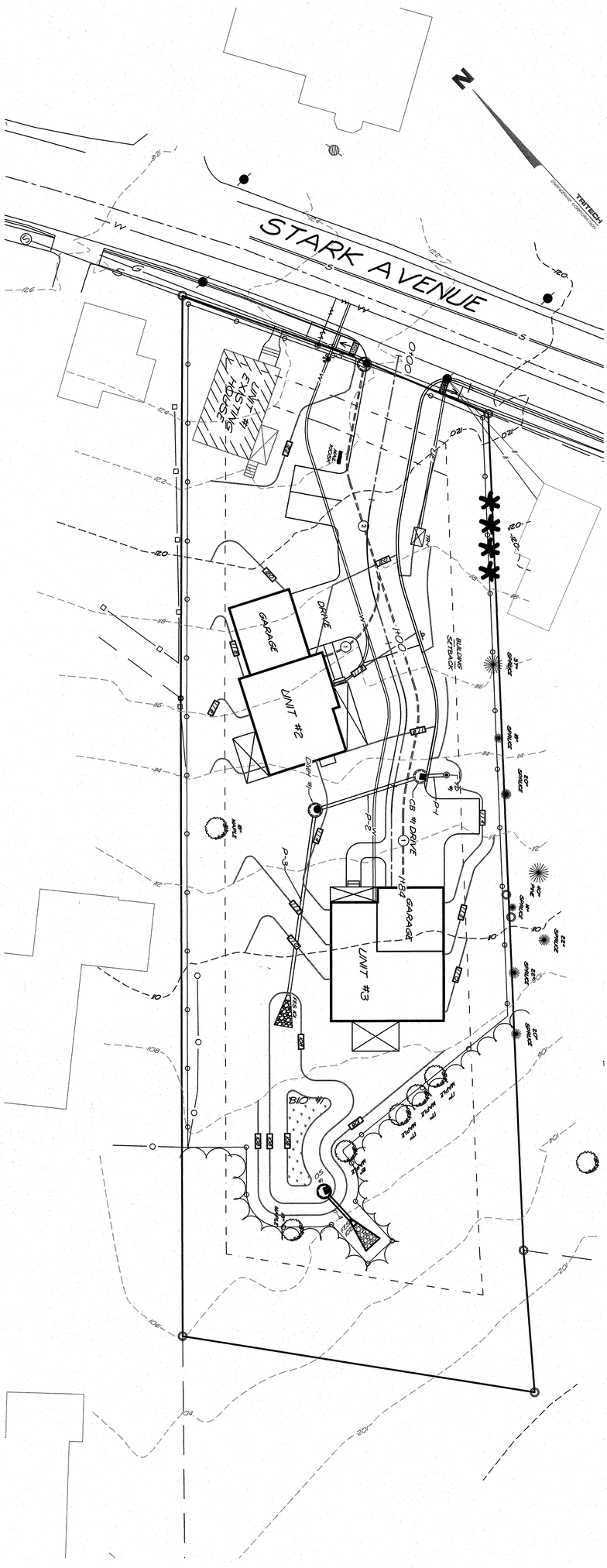
SHEET No.
SN-1

(P26-0000)





HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'



SHEET No.

C-1

ROADWAY PLAN & PROFILE

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 14, 2026 JOB No. 25136

SCALE: 1" = 20'

ISSUED FOR TRC REVIEW
May 14, 2026

STATE OF NEW HAMPSHIRE
ROBERT J. STOWELL
No. 9903
LICENSED PROFESSIONAL ENGINEER

REVISIONS	
DATE:	DESCRIPTION:

TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

TELEPHONE 603 742 8107
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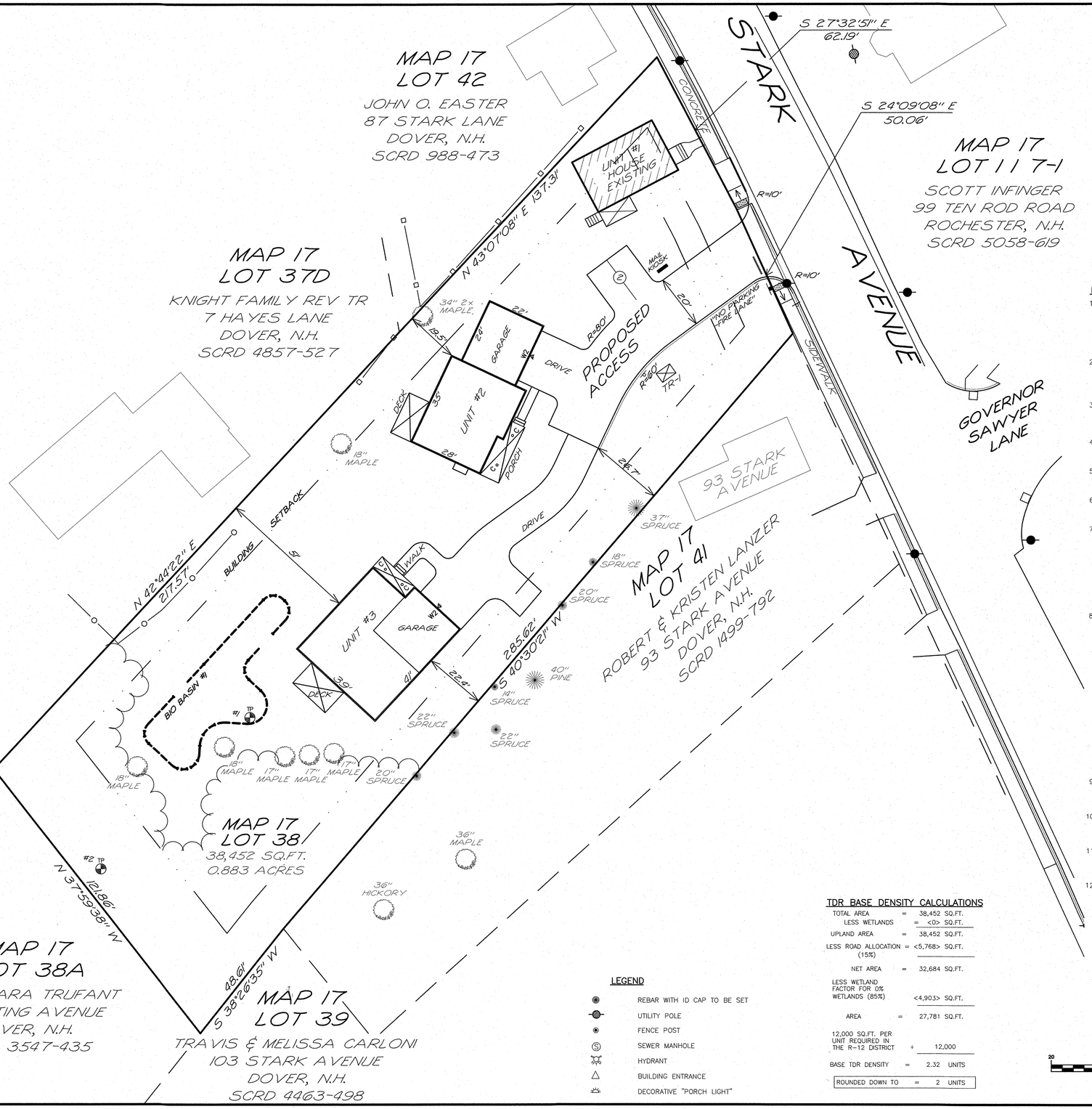

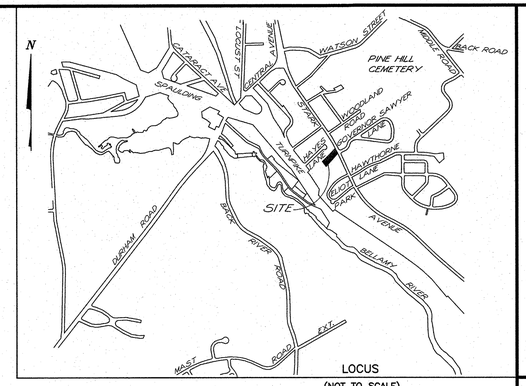

LOCUS
(NOT TO SCALE)

NOTES

1.) INTENT: TO FURTHER DEVELOP DOVER TAX MAP 17 LOT 38. THIS DEVELOPMENT WILL INCLUDE THE RENOVATION OF THE EXISTING SINGLE FAMILY HOUSE. THE DEVELOPMENT WILL ALSO INCLUDE THE CONSTRUCTION OF 2 SINGLE FAMILY HOMES. ONE OF THESE HOMES WILL BE CONSTRUCTED UNDER THE TDR ORDINANCE. 2 BASE UNITS AND THE PURCHASE OF ONE UNIT.

2.) CURRENT OWNER OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H.

3.) SUBJECT PARCEL IS LOCATED IS THE CITY OF DOVER, COUNTY OF STRAFFORD AND THE STATE OF NEW HAMPSHIRE.

4.) TOTAL LOT AREA: 38,452 SQ.FT. – 0.883 ACRES

5.) TAX MAP 17 LOT 38

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MIN. LOT SIZE: 12,000 SQ.FT.
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10.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON JANUARY 13, 2026 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON JANUARY 15, 2026. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (VERTICAL DATUM: NAVD 88).

11.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (FLOOD HAZARD ZONE A – PANEL 330145, MAP No. 33017C0340E, DATE: 9-30-2015).

12.) ON JANUARY 14, 2026, MICHAEL MARIANO, STATE OF NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #76, NH CERTIFIED WETLAND SCIENTIST #183, CONDUCTED AN ON-SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE EVALUATED BASED ON THE CITY OF DOVER ZONING ORDINANCE (170-27.1) AND ON STATE & FEDERAL CRITERIA OUTLINED IN THE "CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL" (DEPT. OF THE ARMY, 1987). ON THIS SITE, WETLANDS BASED ON LOCAL CRITERIA SHARE THE SAME BOUNDARIES WITH THOSE BASED ON STATE AND FEDERAL CRITERIA. NO WETLANDS WERE OBSERVED ON THIS SITE.

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- FENCE POST
- SEWER MANHOLE
- HYDRANT
- BUILDING ENTRANCE
- DECORATIVE "PORCH LIGHT"

TDR BASE DENSITY CALCULATIONS

TOTAL AREA	=	38,452 SQ.FT.
LESS WETLANDS	=	<0> SQ.FT.
UPLAND AREA	=	38,452 SQ.FT.
LESS ROAD ALLOCATION (15%)	=	<5,768> SQ.FT.
NET AREA	=	32,684 SQ.FT.
LESS WETLAND FACTOR FOR 0% WETLANDS (85%)		<4,903> SQ.FT.
AREA	=	27,781 SQ.FT.
12,000 SQ.FT. PER UNIT REQUIRED IN THE R-12 DISTRICT	÷	12,000
BASE TDR DENSITY	=	2.32 UNITS
ROUNDED DOWN TO	=	2 UNITS

20 0 10 20 40 80

1"=20'

TRITECH
ENGINEERING CORPORATION
785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 749 8107
FAX 603 742 9330

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

ROBERT STOWELL No. 9803 LICENSED LAND SURVEYOR STATE OF NEW HAMPSHIRE – PROFESSIONAL

GENERAL SITE PLAN

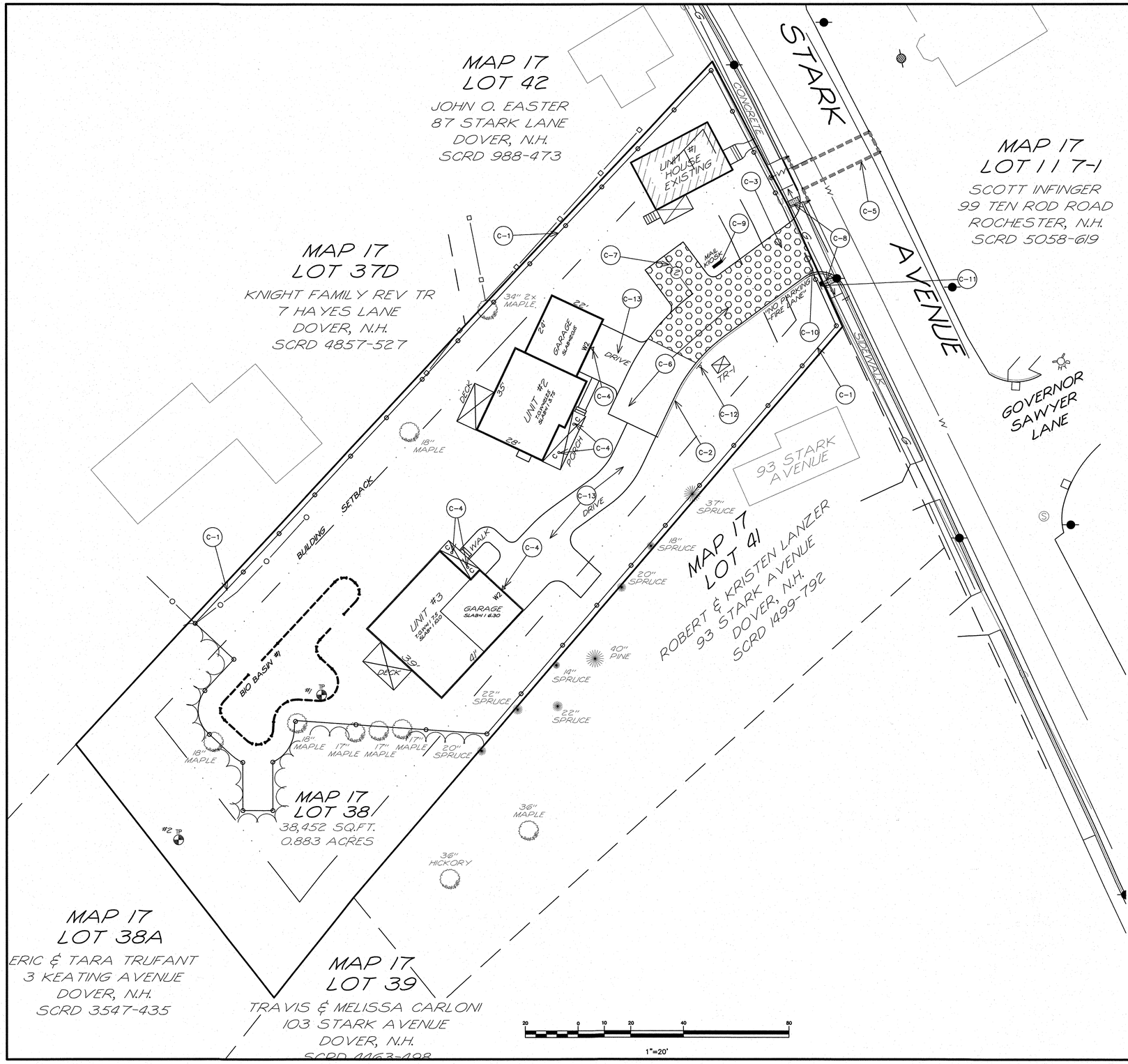
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 14, 2026 JOB No. 25136

SCALE: 1" = 20'

SHEET No. SP-1

(P26-0000)



CONSTRUCTION NOTES:

1. INSTALL EROSION CONTROL MEASURE, "SILT FENCE" PER DETAIL 1, SHEET SP-7 OR "SILT SOXX" PER DETAIL 9, SHEET SP-7 OR "EROSION CONTROL BERM" PER DETAIL 11, SHEET SP-7, MAY BE USED AT THE SITE WORK CONTRACTOR DISCRETION. PERIMETER CONTROLS MUST BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
2. INSTALL SLOPED GRANITE CURB PER DETAIL 4, SHEET SP-6.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 5, SHEET SP-7.
4. INSTALL BUILDING MOUNTED LIGHT (TYPICAL).
5. SAWCUT PAVEMENT, PATCH AND MATCH EXISTING PAVEMENT PER DETAIL 1, SHEET SP-8.
6. INSTALL ASPHALT PAVEMENT PER DETAIL 1, SHEET SP-6.
7. YELLOW OR WHITE PAVEMENT MARKINGS.
8. INSTALL (2) WHEEL CHAIR RAMPS PER DETAIL 11, SHEET SP-6.
9. INSTALL MAIL KIOSK.
10. INSTALL STOP BAR.
11. INSTALL "STOP" SIGN PER DETAIL 8, SHEET SP-6.
12. INSTALL "NO PARKING – FINE LANE" SIGN PER DETAIL 5, SHEET SP-6.
13. INSTALL ASPHALT PAVEMENT PER DETAIL 2, SHEET SP-8.

N

TRITECH
ENGINEERING CORPORATION

735 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3330

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

ROBERT STOWELL 14782 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

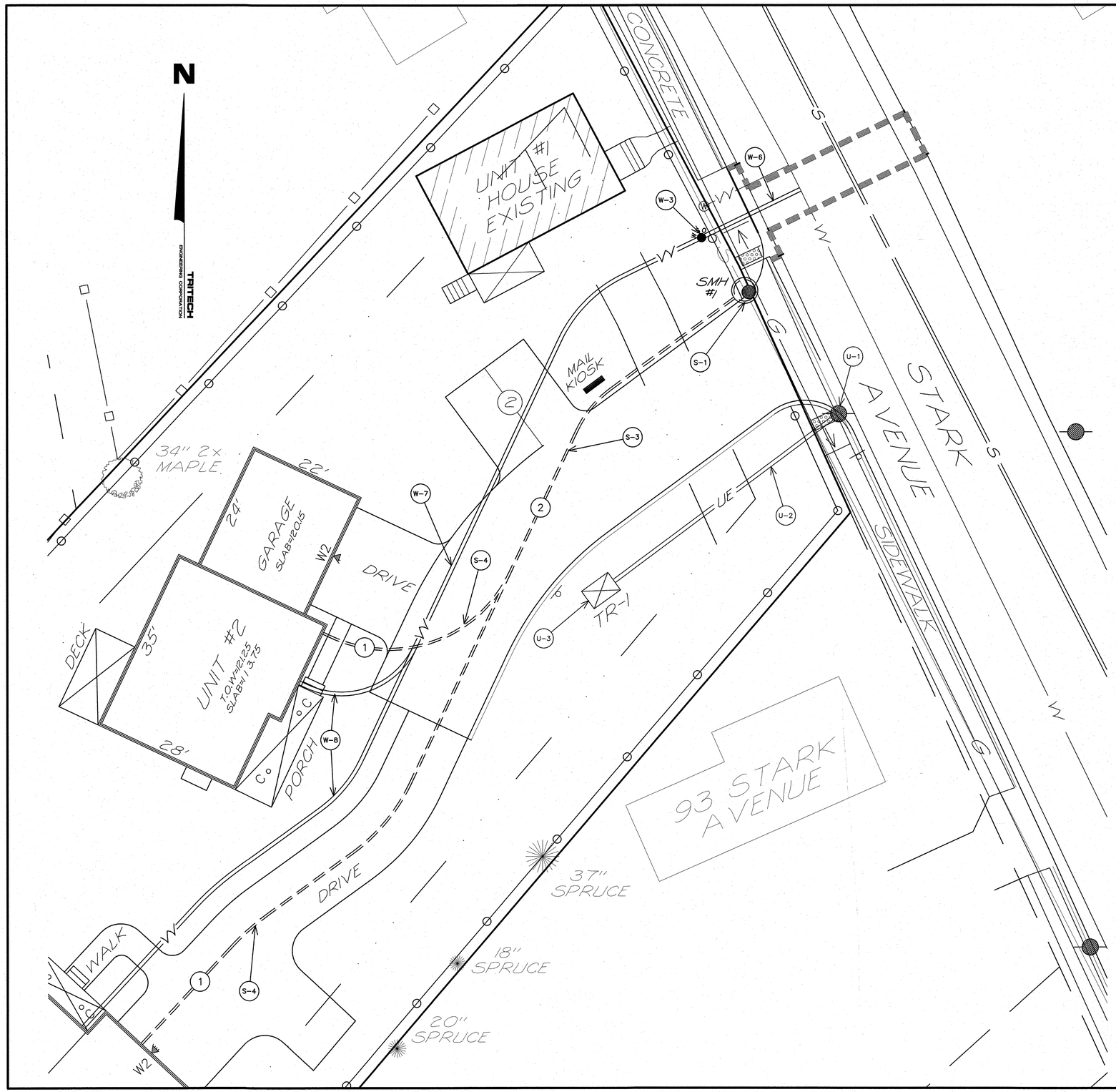
SITE DEVELOPMENT PLAN

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136
SCALE: 1" = 20'

SHEET No. SP-2

(P26-0000)



WATER NOTES:

1. WATERLINE AND APPENDITURES, INSTALLATION, AND MATERIALS SHALL CONFORM WITH THE CITY OF DOVER, NH AND AMERICAN WATER WORKS STANDARDS. ALL VALVES SHALL REQUIRE RESTRAINED MECHANICAL JOINTS USING EITHER MEGA-LUG, GRIP RINGS, OR OTHER METHODS OF RESTRAIN ACCEPTABLE TO THE CITY OF DOVER WATER DEPARTMENT, IN ADDITION TO USE OF CONCRETE THRUST BLOCKS.
2. PRESSURE AND LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST STANDARDS OF AAWA. CHLORINATING AND FLUSHING SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STANDARDS OF AAWA, STATE AND LOCAL REGULATIONS.
3. INSTALL (2) 2" WATER SHUT-OFFS PER DETAIL 9, SHEET SP-8.
4. BACKFLOW PREVENTORS SHALL BE PROVIDED FOR ALL WATER LINES.
5. NOT USED.
6. NOT USED.
7. INSTALL (2) 2" PLASTIC WATER SERVICE FROM WATER MAIN SPLIT TO BUILDING. CONNECT PER DETAIL 9, SHEET SP-9.
8. INSTALL (1) 2" PLASTIC WATER SERVICE FROM WATER MAIN SPLIT TO BUILDING. CONNECT PER DETAIL 9, SHEET SP-9.
9. DOMESTIC WATER AND LANDSCAPING WATER SHALL BE METERED SEPARATELY.

SEWER NOTES:

1. INSTALL SMH AT STA. 0+05 11'L INLINE WITH EXISTING SEWER LINE
   RIM ELEV. AT GRADE APPROXIMATELY AT 121.9'
   INVERT IN EL=115.50' (8" VCP)
   INVERT OUT EL=115.60' (8" SDR 35)
2. SEWER MANHOLE COVER SHALL BE NEENAH LIFTMATE R-1743-LM.
3. INSTALL (2) 2" SDR 26 SEWER PIPE FROM SMH #1 TO SPLIT TO BUILDING.
4. INSTALL (1) 2" PVC INDIVIDUAL HOUSE SEWER DISCHARGE PIPES FROM SPLIT TO PROPOSED HOUSES.

UTILITY NOTES:

1. CONNECT TO EXISTING UTILITY POLE IN ACCORDANCE WITH EVERSOURCE STANDARDS & DETAIL 4, (TRENCH "A"), SHEET SP-9. (PRIMARY POWER)
2. INSTALL 50 FT OF UNDERGROUND CONDUIT IN ACCORDANCE WITH EVERSOURCE STANDARDS & DETAIL 4, (TRENCH "A"), SHEET SP-9 FROM EXISTING UTILITY POLE TO PROPOSED TRANSFORMER (TR-1). (PRIMARY POWER)
3. INSTALL TRANSFORMER (TR-1) IN ACCORDANCE WITH EVERSOURCE STANDARDS & DETAIL 4, (TRENCH "B"), SHEET SP-9.

LEGEND

- EXISTING UTILITY POLE
- W — EXISTING WATER LINE
- EXISTING HYDRANT
- EXISTING WATER GATE VALVE
- PROPOSED CATCH BASIN (CB)
- W — PROPOSED 6" CLDI WATER MAIN
- U E — PROPOSED UNDERGROUND ELECTRICAL, TELEPHONE & CATV.
- PROPOSED TRANSFORMER PAD
- D — PROPOSED DRAIN LINE
- PROPOSED WATER GATE VALVE
- PROPOSED THRUST BLOCK
- PROPOSED HYDRANT
- 200 — PROPOSED FINISH CONTOUR
- 200 × PROPOSED FINISH GRADE
- STOP SIGN & STOP BAR
- PROPOSED STONE DRIP EDGE

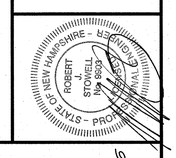
10 0 5 10 20 40

1"=10'

TRITECH
ENGINEERING CORPORATION
735 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 6107
FAX 603 742 3890

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:



UTILITIES PLAN

COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 14, 2026

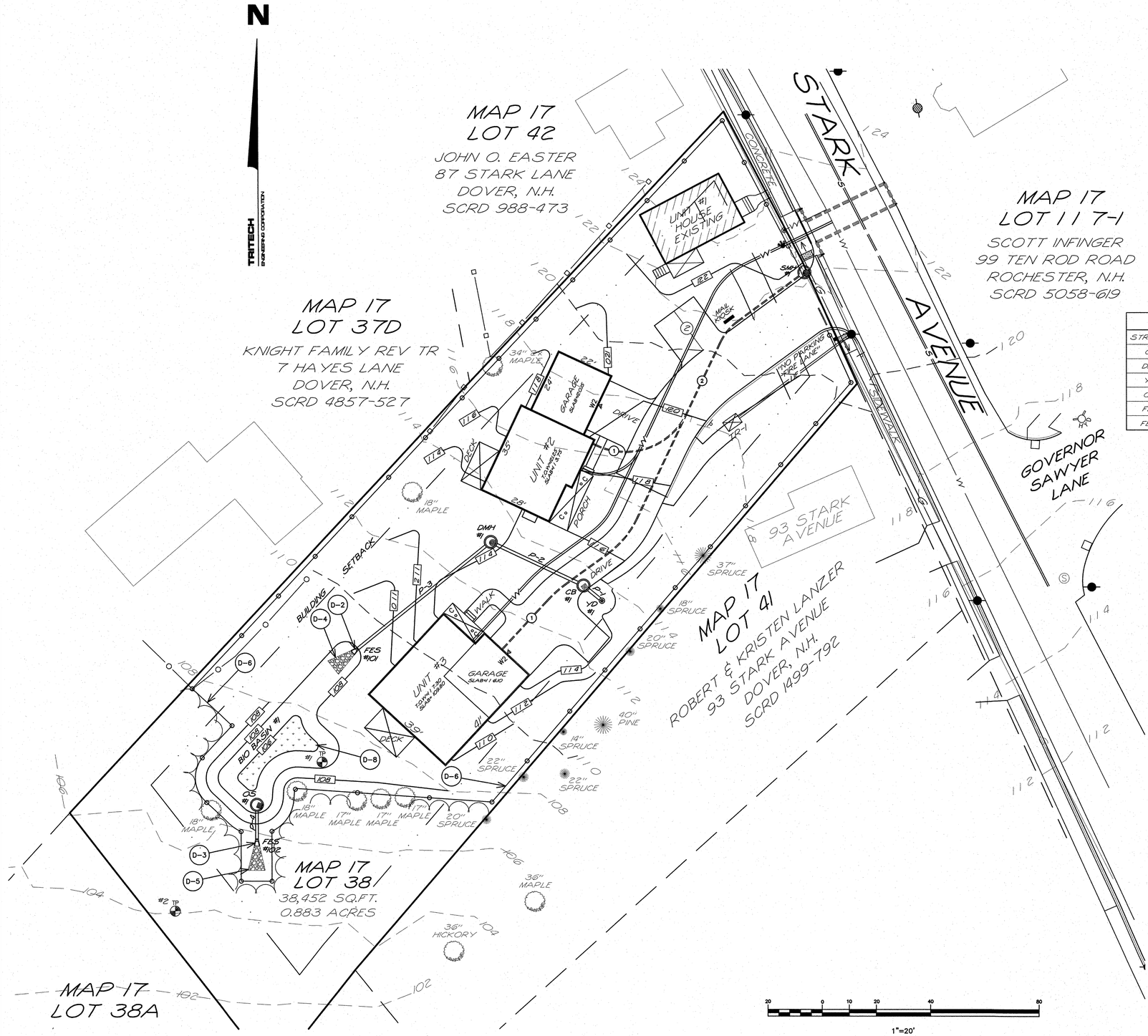
JOB No. 25136

SCALE: 1" = 10'

SHEET NO.

SP-3

(P26-0000)



DRAINAGE STRUCTURE TABLE

STRUCTURE	RIM ELEV.	INVERT IN	INVERT OUT	SUMP	NOTES
CB #1	115.40	109.70 (P-1)	109.60 (P-2)	105.60	HOODED, DEEP SUMP, SEE DETAIL 1, SHEET SP-8
DMH #1	113.80	109.20 (P-2)	109.10 (P-3)		
YD #1	113.80		109.80 (P-1)		NYLOPLAST YARD DRAIN STRUCTURE WITH FRAME AND GRATE
OS #1	107.95		106.00 (P-4)		
FES #101		108.00 (P-3)			
FES #102		105.90 (P-4)			

DRAIN PIPE TABLE

PIPE	START	INV.	END	INV.	SIZE	L.F.	SLOPE
P-1	YD #1	109.80	CB #1	109.70	12"	6'	1.67%
P-2	CB #1	109.60	DMH #1	109.20	12"	38'	1.05%
P-3	DMH #1	109.10	FES #101	108.00	12"	63'	1.75%
P-4	OS #1	106.00	FES #102	105.90	6"	10'	1.00%

LEGEND

- EXISTING UTILITY POLE
- W — EXISTING WATER LINE
- EXISTING HYDRANT
- EXISTING WATER GATE VALVE
- PROPOSED CATCH BASIN (CB)
- W — PROPOSED 8" CLDI WATER MAIN
- U E — PROPOSED UNDERGROUND ELECTRICAL, TELEPHONE & CATV.
- PROPOSED TRANSFORMER PAD
- D — PROPOSED DRAIN LINE
- PROPOSED WATER GATE VALVE
- PROPOSED THRUST BLOCK
- PROPOSED HYDRANT
- 104 — PROPOSED FINISH CONTOUR
- 104 X — PROPOSED FINISH GRADE
- STOP SIGN & STOP BAR
- PROPOSED STONE DRIP EDGE

TRITECH
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DOVER, NEW HAMPSHIRE 03820
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FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - ROBERT J. STOWELL - NO. 9893 - REGISTERED PROFESSIONAL ENGINEER

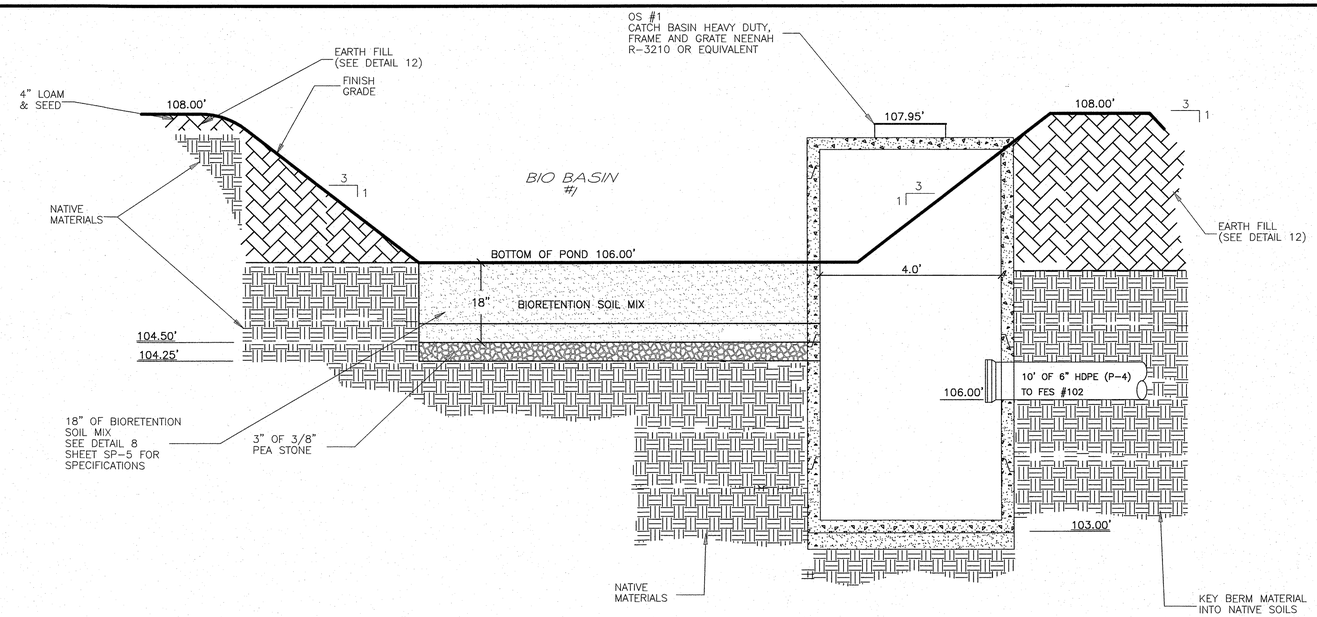
GRADING AND DRAINAGE PLAN

COREY MACKOUL

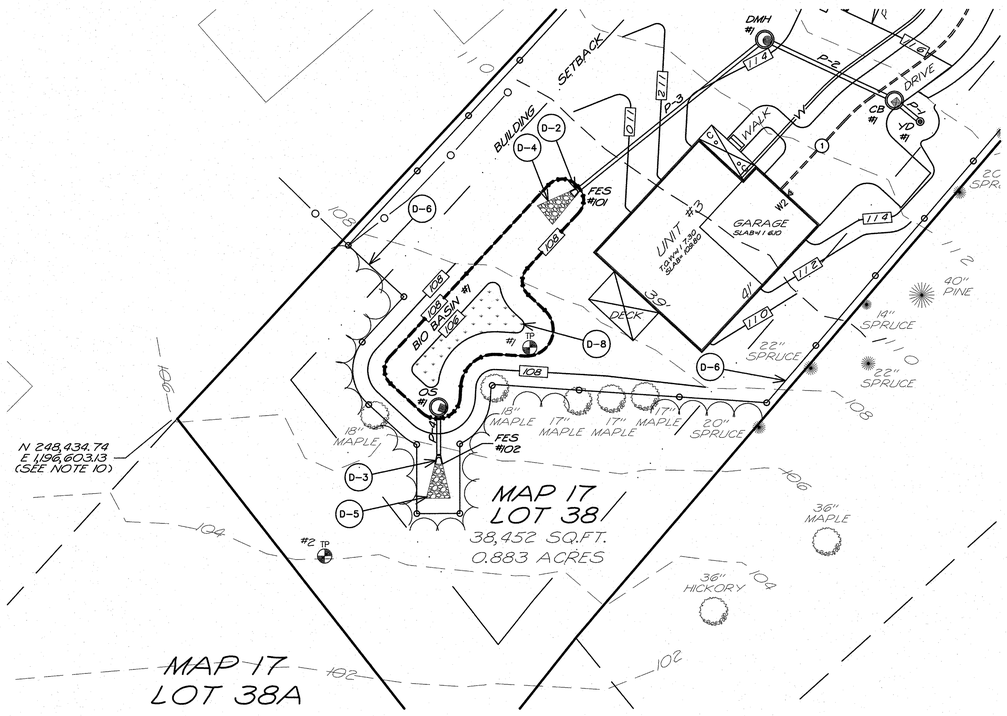
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 2513.6
SCALE: 1" = 20'

SHEET No. SP-4

(P26-0000)



1 BIO-RETENTION #1 CROSS SECTION WITH OUTLET STRUCTURE
NOT TO SCALE



5 BIORETENTION BASIN #1
SCALE: 1" = 20'

DRAINAGE NOTES

1. INSTALL HI VIS HI FLOW SILT SACK PER DETAIL 2, SHEET SP-7 AT ALL PROPOSED CATCH BASINS.
2. INSTALL FLARED END SECTION #1 PER DETAIL 12, SHEET SP-8.
3. INSTALL FLARED END SECTION #2 PER DETAIL 12, SHEET SP-8.
4. INSTALL RIP RAP PER DETAIL 8, SHEET SP-8. Wo=3.0', Ws=8.7', La=12.3', D=12", D(50)=6"
5. INSTALL RIP RAP PER DETAIL 8, SHEET SP-8. Wo=3.0', Ws=86.8', La=9.4', D=12", D(50)=6"
6. INSTALL EROSION CONTROL MEASURE "SILT FENCE" PER DETAIL 1, SHEET SP-7 OR "SILT SOX" PER DETAIL 9, SHEET SP-7 OR "EROSION CONTROL BERM" PER DETAIL 11, SHEET SP-7, MAY BE USED AT THE SITE WORK CONTRACTOR DISCRETION PERIMETER CONTROLS MUST BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
7. ALL PROPOSED STORMWATER PIPE SHALL BE HDPE.
8. LIMITS OF BIO-MEDIA & STONE.

20 0 10 20 40 80
1"=20'

NEW ENGLAND WETLAND PLANTS INC.
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

THE MIX MAY BE APPLIED BY HAND, BY MECHANICAL SPREADER, OR BY HYDRO-SEEDER. AFTER SOWING, LIGHTLY RAKE, ROLL, OR CULTIPACK TO INSURE GOOD SEED-TO-SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE FALL AND WINTER DORMANT SEEDING REQUIRES AN INCREASE IN THE APPLICATION RATE. A LIGHT MULCHING OF CLEAN, WEED-FREE STRAW IS RECOMMENDED.

NEW ENGLAND WETLAND PLANTS INC.
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES MAY BE APPLIED BY HYDRO SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL-SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE SPRING THROUGH MID-SUMMER SEEDING WILL BENEFIT FROM A LIGHT MULCHING OF WEED-FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING WILL BE REQUIRED. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE. PREPARATION OF A CLEAN WEED FREE SEED BASE IS NECESSARY FOR OPTIMAL RESULTS.

ANYWHERE ON THE SITE THAT EXISTING VEGETATION IS TO BE REMOVED WILL REQUIRE IMMEDIATE EROSION CONTROL TREATMENT. SPECIAL CARE SHOULD BE TAKEN WHERE RUNOFF ENTERS WETLANDS. ALL STORM WATER AREAS SHALL BE STABILIZED PRIOR TO DIRECTING STORM WATER TO THEM; SPECIFICALLY ALL BIORETENTION BASINS AND ALL INFILTRATION AREAS.

SEEDING LEGEND

- 50/50 BLEND OF NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES AND NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES.
  BOTH MIXES FROM NEW ENGLAND WETLAND PLANTS INC.
  APPLY: 35 LBS/ACRE : 1250 SQ FT/LB
- LIMITS OF BIORETENTION SOIL MIX

4 BIORETENTION SEEDING
NOT TO SCALE

1. PARTICLE SIZE DISTRIBUTION BY SEPARATES:
   a. EXCLUDE ANY MATERIAL >4.76MM – 0%
   b. VERY COARSE SAND/GRAVEL: GRAVEL (2.0 TO 4.76 mm) 5% MAXIMUM (% BY DRY WEIGHT)
   c. SAND (0.42 TO 2.0 mm) 60% MAX (% BY DRY WEIGHT)
   d. SILT (0.075 TO 0.42 mm) 20% MAXIMUM (% BY DRY WEIGHT)
   e. CLAY (LESS THAN 0.075mm) 5% MAXIMUM (% BY DRY WEIGHT)
   f. BARK MULCH (LESS THAN 5% PASSING #200) 15% MAX (% BY DRY WEIGHT)
   g. LOAM (LESS THAN 5% PASSING #200) 20% TO 40% (% BY DRY WEIGHT)

ACCEPTABLE PARTICLE SIZE DISTRIBUTION OF FINAL BIORETENTION SOIL MIX:

SIEVE	% PASSING
#4	100
#10	95
#40	40 – 15
#200	10 – 20
<#200	0 – 5

2. FRAGMENT SIZE DISTRIBUTION:
   a. STICKS AND ROOTS: SHOULD BE MINIMIZED AND PREFERABLY LIMITED TO NOTHING LARGER THAN 4.76mm
   b. DEBRIS AND OTHER FOREIGN MATERIALS: SHOULD BE MINIMIZED
3. PERCENTAGE ORGANIC MATTER: MINIMUM 3% BY VOLUME AND MAXIMUM 8% BY VOLUME
4. SOIL REACTION: pH OF 6 TO 7
5. CEC OF TOTAL SOIL: MINIMUM 10 meq/100mL AT pH OF 7.0
6. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS INDICATED ON DRAWINGS
7. BASIC PROPERTIES: MANUFACTURED SOIL SHALL NOT CONTAIN THE FOLLOWING:
   a. UNACCEPTABLE MATERIALS: CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, ASPHALT, BRICKS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, SOLID WASTE, AND OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
   b. UNSUITABLE MATERIALS: STONES, ROOTS, PLANTS, SOD, CLAY LUMPS, AND POCKETS OF COARSE SAND THAT EXCEED A COMBINED MAXIMUM OF 5% BY DRY WEIGHT OF THE MANUFACTURED SOIL.
   c. LARGE MATERIALS: STONES, CLODS, ROOTS, CLAY LUMPS, AND POCKETS OF COARSE SAND EXCEEDING 0.187 INCHES (4.76mm) IN ANY DIMENSION

ACCEPTABLE SOIL AMENDMENTS
A. NO COMPOST SHOULD BE USED IN THE PLANTING MIX
B. SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR OF GRANULAR TEXTURE WITH 100% PASSING THROUGH THE 1/2-INCH (13mm) SIEVE, A pH OF 3.4 TO 4.8
C. WOOD DERIVATIVES: SHREDDED WOOD, WOOD CHIPS, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF STONES, STICKS, SOIL, OR TOXIC MATERIALS.
D. MEDIA AMENDMENTS SUCH AS ZERO-VALENT IRON AND/OR DRINKING WATER TREATMENT RESIDUALS (ALUM) TO ENHANCE PHOSPHORUS SORPTION AS SPECIFIED BY ENGINEER.

8 BIORETENTION SOIL MIX
NOT TO SCALE

FILL MATERIAL SHOULD BE TAKEN FROM AN APPROVED, DESIGNATED BORROW AREA. IT SHOULD BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6 INCHES, AND FROZEN OR OTHER OBJECTIONABLE MATERIALS.

AREAS ON WHICH FILL IS TO BE PLACED SHOULD BE SCARIFIED BEFORE PLACEMENT. FILL MATERIAL SHOULD BE PLACED IN LAYERS A MAXIMUM OF 8 INCHES THICK (BEFORE COMPACTION), WHICH SHOULD BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL.

FILL MATERIAL SHOULD BE COMPACTED WITH APPROPRIATE COMPACTION EQUIPMENT SUCH AS SHEEPSFOOT, RUBBER-TIRED, OR VIBRATORY ROLLER.

A MINIMUM REQUIRED DENSITY IS 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM. EACH LAYER OF THE FILL SHOULD BE COMPACTED AS NECESSARY TO OBTAIN MINIMUM DENSITY.

12 EARTH FILL
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 749 9107
FAX 603 742 3330

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:

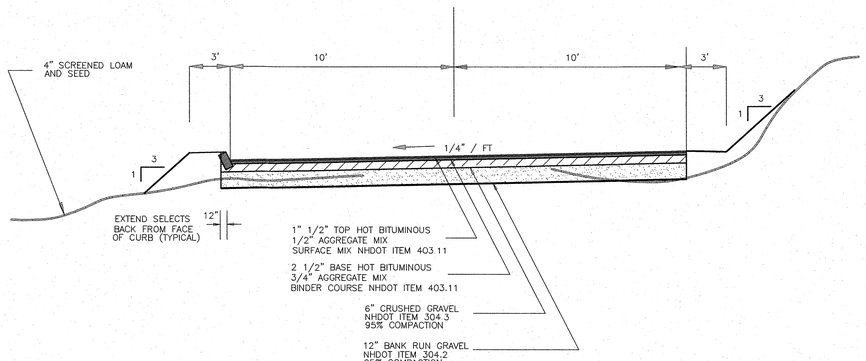
NEW HAMPSHIRE – STATE OF – PROFESSIONAL ENGINEER
ROBERT J. STOWELL No. 9583

BIORETENTION DETAILS

COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026 JOB No. 25136
SCALE: 1" = 10'

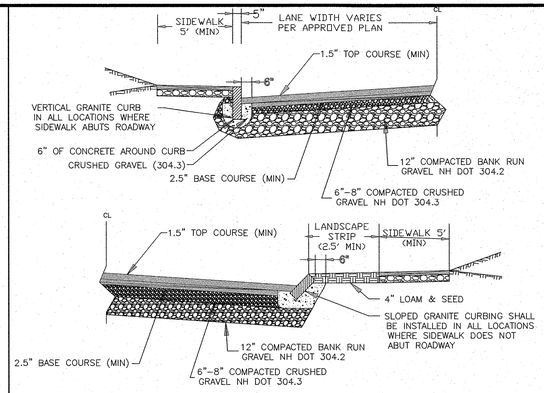
SHEET No. SP-5

(P26-0000)



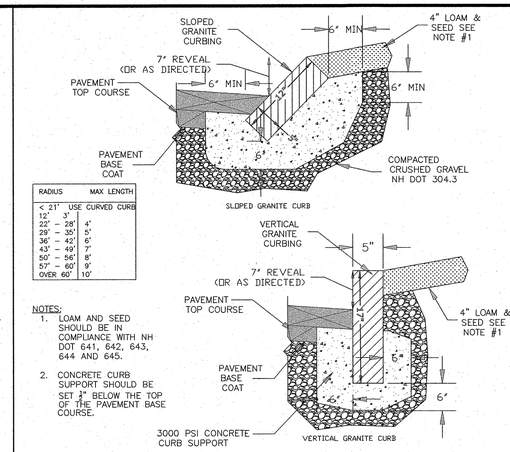
1. TACKIFIER TO BE APPLIED BETWEEN BINDER COURSE AND SURFACE COURSE, (BLACKLIDGE ULTRATACK OR EQUAL).
2. JOINT SEALANT TO BE APPLIED AT LANE JOINTS (SEALANT "C" PAVEMENT JOINT ADHESIVE).
3. SEE DOVER STANDARD DETAILS D-5 FOR ADDITIONAL INFO.
4. SEE DOVER STANDARD DETAILS D-8 FOR ADDITIONAL CURBING INFO.

1 TYPICAL DRIVEWAY-1 CROSS SECTION
NOT TO SCALE



NOTES:
1. THIS DETAIL IS FOR GENERAL REVIEW PURPOSES ONLY. FINAL DESIGN SHALL BE BASED ON SPECIFIC SITE CONDITIONS AND APPROVED PLANS.
2. SIDEWALK LOCATION AND MATERIAL SHALL BE AS APPROVED BY THE CITY OF DOVER.

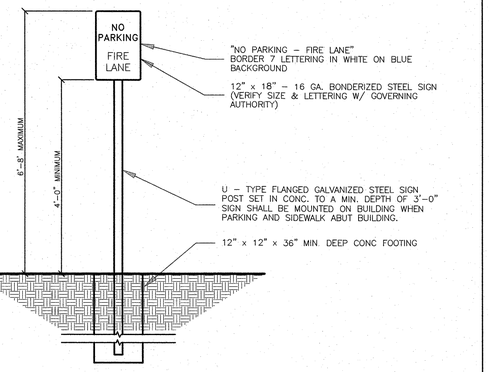
3 DOVER STD. D-5 Roadway Cross Section
NOT TO SCALE



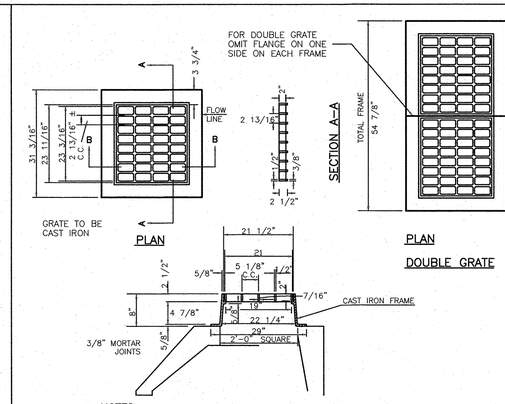
RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

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 1" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

4 DOVER STD. D-8 Granite Curb
NOT TO SCALE

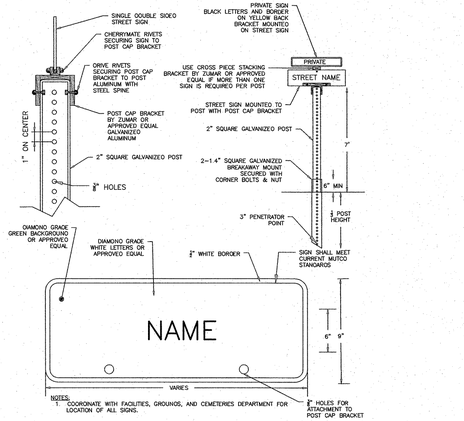


5 NO PARKING - FIRE LANE SIGN
NOT TO SCALE



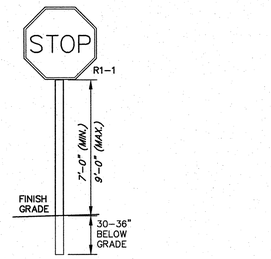
NOTES
1.) USE NEENAH R-3570
2.) FOR SHALLOW INVERTS, USE NEENAH R-3570-A.

9 CATCH BASIN FRAME & GRATE
NOT TO SCALE



NOTES
1. COORDINATE WITH FACILITIES, GROUNDS, AND CEMETERIES DEPARTMENT FOR LOCATION OF ALL SIGNS.

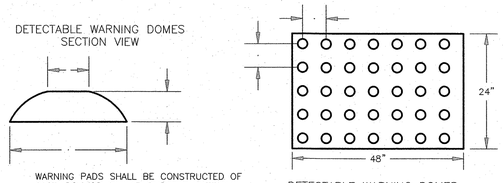
7 DOVER STD. D-1 Street Sign
NOT TO SCALE

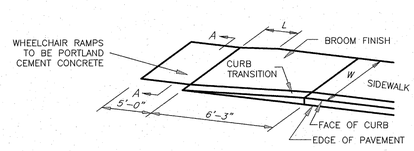


SEE SHEET SP-1 FOR LOCATION OF THIS SIGN.
(SET 2.0' HORIZONTALLY TO FACE OF CURBING OF THE STREET)

TYPICAL SIGNS
NOT TO SCALE

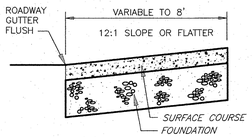
8 STOP SIGN
NOT TO SCALE





4. INSTALL ACCESSIBLE REINFORCED CONCRETE RAMP (MAXIMUM SLOPE = 1" IN 12") FROM PAVEMENT GRADE TO SIDEWALK GRADE IN COMPLIANCE WITH ALL A.D.A. STANDARDS, PER DETAIL 6, SHEET SP-5.

NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; I.E., DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF DRIVEWAY
5. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.
6. DETECTABLE WARNINGS TO BE INSTALLED 6" FROM EDGE OF RAMP
7. DETECTABLE WARNINGS PADS SHALL BE CONSTRUCTED OF CAST IRON OR SIMILAR DURABLE MATERIAL APPROVED BY THE CITY OF DOVER



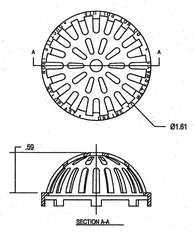
SECTION A-A

W	L	S.Y.
5'-0"	2'-9"±	6.3
6'-0"	2'-0"±	7.2
7'-0"	1'-3"±	8.0
8'-0"	0'-0"	8.1

11 WHEEL CHAIR RAMP
NOT TO SCALE

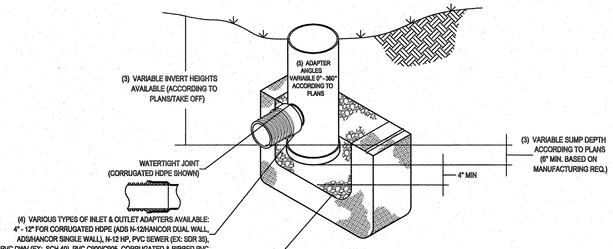
1299CGD

APPROX. DRAIN AREA = 82.87 SQ IN
APPROX. WEIGHT = 18.50 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST

NYLOPLAST 12" DRAIN BASIN: 2812AG _ _ X



1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-005
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0°TO 360° TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

11 ADS NYLOPLAST DRAIN BASIN & GRATE DETAIL
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

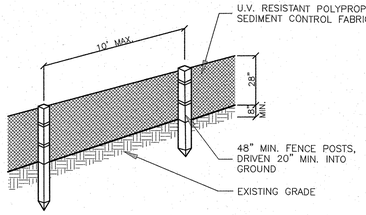
REVISIONS	DESCRIPTION:
DATE:	

ROBERT J. STOWELL 9756 - STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER

CONSTRUCTION DETAILS
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

SHEET NO.
SP-6

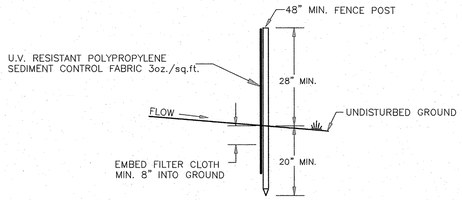
(P26-0000)



PERSPECTIVE VIEW

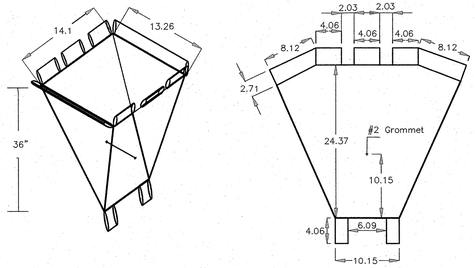
NOTES

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR BEST MANAGEMENT PRACTICE FOR SILT FENCES, OF THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, DATED AUGUST 1992.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 20 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQ.IN..
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.
6. REMOVE BY HAND AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING FENCE.



SECTION

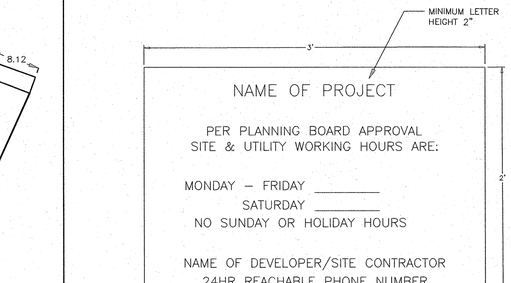
1 SILT FENCE
NOT TO SCALE



Specifications:

a) Fabric used should not be laminated.
b) Silt sack to have two #2 grommets, one on each of the two sides, 15" from the bottom of the silt sack
c) Tie 1/4" wide yellow rope 19" long through the grommets on two sides of the silt sack.

2 Hi Vis Hi Flow Silt Sack
NOT TO SCALE

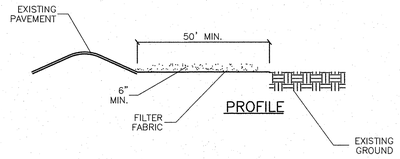


NOTES:

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.

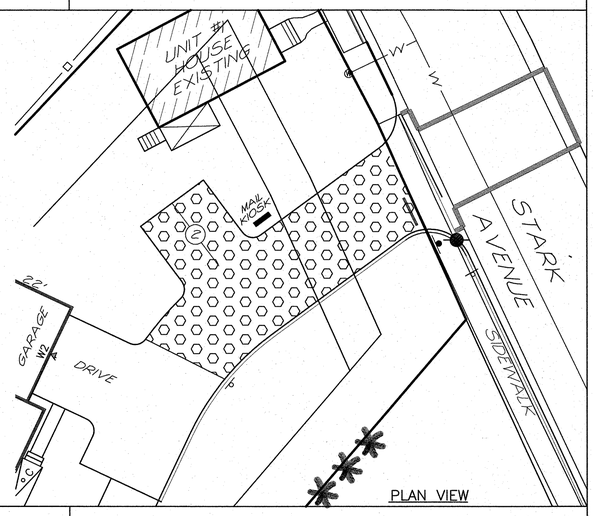
3 DOVER STD. D–2 Construction Sign
NOT TO SCALE

1. GRADE AND COMPACT ACCESS ROAD ENTRANCE AS NECESSARY. PLACE FILTER FABRIC (MIRAFI OR EQUAL) AND PLACE 6" OF 1" – 2" STONE TO MATCH SLOPE OF EXISTING ROAD
2. PROVIDE NECESSARY SWALES OR DIVERSIONS TO MINIMIZE DIRECT FLOW OF WATER ONTO STONE AREA.
3. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS NECESSARY TO REMOVE SILT FROM TIRES PRIOR TO ENTERING PUBLIC ROADS. A SMALL SWALE SHALL BE CONSTRUCTED ON THE DOWN GRADIENT SIDE TO TRAP ANY SILT WASHED FROM THE STONE.
4. HAYBALES OR SILT FENCE SHALL BE PLACED ON THE DOWN GRADIENT SIDE AS SHOWN ON THE EROSION CONTROL PLAN.

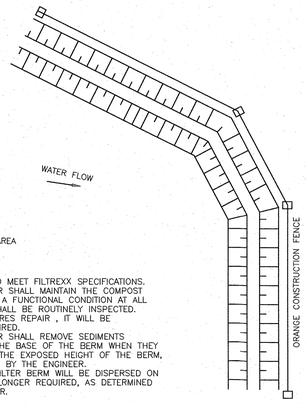


PROFILE

5 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



PLAN VIEW

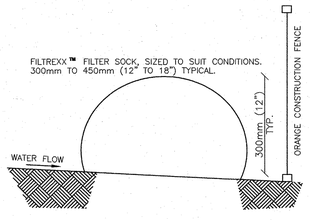


NOTES

1.) ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2.) THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTER BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
3.) WHERE IT REQUIRES REPAIR , IT WILL BE ROUTINELY REPAIRED.
4.) THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE BERM WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE BERM, OR AS DIRECTED BY THE ENGINEER.
5.) THE COMPOST FILTER BERM WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

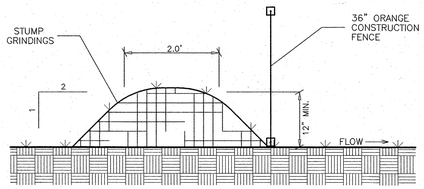
9 FILTREXX SOCK – SILT FENCE
NOT TO SCALE

TYPICAL BERM FOR MINIMAL GRADES SHOWN. FOR STEEPER GRADES, I.E. 2:1 SLOPES INCREASE BERM SIZE AS DETERMINED ON SITE BY ENGINEER.



FILTER COMPOST MATERIAL AS PER SPECIFICATIONS.

1. BERMS SHALL BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE WILL BE 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 CLOSE AS POSSIBLE.
3. THE BERMS SHALL BE INSTALLED ON SLOPES OF LESS THAN 5%.
4. THE MIX SHALL HAVE AN ORGANIC PORTION BETWEEN 80 AND 100%, DRY MASS WEIGHT BASIS, AND BE FIBEROUS 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 MATERIALS.
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.



11 EROSION CONTROL MULCH BERM
NOT TO SCALE

1. THE PROJECT SHALL BE MANAGED TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
2. FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV–A 1000.

CRITICAL AREAS

Anywhere on the site that existing vegetation is to be removed will require immediate erosion control treatment. Special care should be taken where runoff enters wetlands. All storm water practices areas shall be stabilized prior to directing storm water to them; specifically all bioretntion basins and all infiltration practices.

EROSION AND SEDIMENT CONTROL PRACTICES

Erosion and sediment control practices will include the use of rip–rap, and silt fence check dams. All erosion and sediment control practices will be constructed and maintained according to the minimum standards and specifications contained in the "New Hampshire Stormwater Manual, Volume 2".

A. Erosion and Sediment Control Measures

1. The erosion control procedures shall conform to Section 645 of the "Standard Specifications for Road and Bridge Construction" of the NH DOT, and the "New Hampshire Stormwater Manual."
2. During Construction and thereafter, erosion control measures are to be implemented as noted. The smallest practical area of land should be exposed at any one time during development. The amount of exposed areas which are temporarily stabilized without permanent stabilization shall be limited to 5 acres.
3. During grading operations, install stone check dams at 50 foot intervals in drainage swales and at drain inlets where shown. Barriers are to be maintained and cleaned until disturbed areas are stabilized.
4. Any disturbed areas which are to be left temporarily, and which will be regraded later during construction shall be machine hay mulched and seeded with rye grass to prevent erosion.
5. Silt fences and other erosion control measures shall be inspected weekly and after every 0.25" rainfall event during the life of the project. All damaged silt fences shall be repaired. Sediment deposits shall periodically be removed.
6. Avoid the use of future open spaces (loam and seed areas) wherever possible during the construction. Construction traffic shall use the roadbeds of future roads and parking areas.
7. Topsoil required for the establishment of vegetation shall be stock piled in amounts necessary to complete finished grading of all exposed areas.
8. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. Stumps shall be disposed by grinding or fill in an approved facility.
9. All fills shall be placed and compacted to reduce erosion, slippage settlement, subsidence or other related problems.
10. All fill shall be placed and compacted in layers not to exceed 8 inches in thickness.
11. Frozen material or soft, mucky or highly compressible material shall not be incorporated into fills.
12. Fill material shall not be placed on a frozen foundation subgrade.
13. Disturbed areas shall be seeded immediately following finished grading.
14. Limit of exposed area that is temporarily stabilized without permanent stabilization is 5 acres or less.
15. All areas not stabilized by Nov. 1st must be protected by Erosion Control Blankets or equivalent and mulched/seeded with winter rye or oats.
16. All disturbed areas must be seed and mulched within 3 days of final grading, permanently stabilized within 15 days of final grading or temporarily stabilized within 45 days of initial disturbance.
17. All ditches and swales are to be stabilized prior to directing runoff to these features.
18. All cut and fill slopes shall be seeded immediately.
19. An area shall be considered stable if one of the following has occurred:
    a.) Base course gravels are installed in areas to be paved
    b.) A minimum of 85% vegetated growth has been established
    c.) A minimum of 3" of non–erosive material such as stone or riprap has been installed
    d.) Erosion control blankets have been properly installed.

B. Vegetative Practice

All ground areas opened up for construction will be regraded, loamed, seeded and mulched in the shortest practical time. All Temporary and Permanent Seeding must be applied prior to October 1st. Employ temporary erosion and sedimentation control devices as detailed in this plan as necessary until adequate stabilization has been assured.

A. Temporary Seeding & Hay Mulching

1. At no time shall any disturbed area remain unstabilized for longer than 30 days. All areas where construction is not completed within 30 days of the initial disturbance shall receive temporary seeding measures.
2. Fertilizer shall be spread on the top layer of loam and worked into the surface. Fertilizer application rate shall be 300 pounds per acre of 10–10–10 fertilizer.
3. Seed shall be Winter Rye, 112 LBS. per acre.
4. Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope whenever practical.
5. If seeding between May 15th and August 15th, hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook.
6. The surface shall be watered and kept moist with a fine spray as required without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds are removed.

B. Permanent Seeding & Hay Mulching

1. All disturbed areas shall be loamed (4") and limed. Lime shall be thoroughly incorporated into the loam layer at a rate of 2 tons per acre.
2. Fertilizer shall be spread on the top layer of loam and worked into then surface. Fertilizer application rate shall be 500 pounds per acre of 10–20–20 fertilizer.
3. Seed shall be 48 lbs. per acre, SCS mixture "c" (20 lbs tall fescue, 20 lbs. creeping red fescue and 8 lbs. birds foot trefoil = 48 lbs total.) The soil shall be lightly raked immediately before seeding. One half the seed shall be sown in one direction and the other half at right angles to the original direction. It shall be lightly raked in to the soil to a depth not over 1/4 inch and rolled with hand roller weighing not over 100 points per linear foot to width.
4. Hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook. The surface shall be watered and kept moist with a fine spray as required, without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds removed.

CONSTRUCTION SEQUENCE

1. Do not begin construction until all local, state and federal permits have been applied for and received.
2. Install silt fences filtrex sock as necessary to control erosion and prevent sediment contamination prior to any earth moving activities.
3. Cut and remove trees, shrubs, saplings, brush, vines and other debris and rubbish as specified for construction.
4. Care shall be taken to preserve the infiltration capacity of the infiltrating soil. See the New Hampshire Stormwater Manual far additional information.
5. Construct stormwater Bioretention Practice #1. Do not direct runoff to these practices until the practice and contributing areas are fully stabilized.
6. Building construction may begin.
7. Construct driveways, parking and utilities.
8. Loam and seed disturbed areas in accordance with vegetative practice and general construction notes. Cut and fill slopes shall be seeded immediately after their construction.
9. All areas receiving runoff, including but not limited to the stormwater infiltration shall be stabilized prior to directing runoff to them.
10. All soils that are finish graded must be stabilized within 72 hours of disturbance.
11. Maintain disturbed areas as necessary.

MAINTENANCE

During the period of construction and/or until long term vegetation is established:
1. Seeded areas will be fertilized and reseeded as necessary to insure vegetative establishment.
2. The side slopes will be checked after each significant rainfall.
3. The side slopes will be checked weekly and repaired when necessary until adequate vegetation is established.
4. The silt fence barriers will be checked regularly. Necessary repairs will be made to correct undermining or deterioration of the structures.

WINTER CONSTRUCTION NOTES

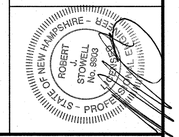
1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetation growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melts.
2. All ditches or swales which do not exhibit a minimum of 85% vegetation growth by October 15th, ar which are disturbed after October 15th, shall be stabilized temporarily with stone ar erosion control blankets appropriate for the design flow conditions.
3. After November 15th, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

12 EROSION AND SEDIMENT CONTROL NOTES

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

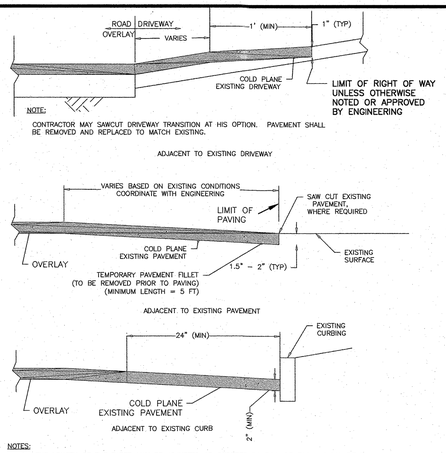
REVISIONS
DATE: DESCRIPTION:



CONSTRUCTION DETAILS
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136
SCALE: 1" = 30'

SHEET No.
SP-7

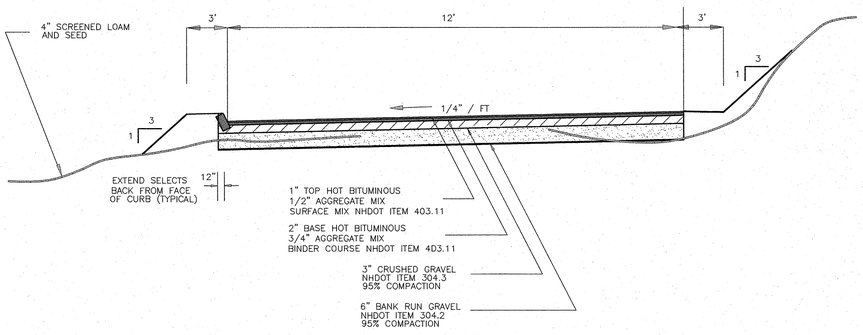
(P26-0000)



NOTES:

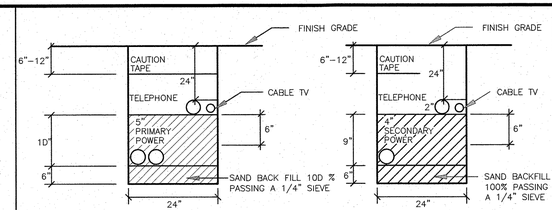
1. THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

1 DOVER STD. D-12 Pavement Overlay Details
NOT TO SCALE



1. TACKIFIER TO BE APPLIED BETWEEN BINDER COURSE AND SURFACE COURSE, (BLACKLIDGE ULTRATACK OR EQUAL).
2. JOINT SEALANT TO BE APPLIED AT LANE JOINTS (SEALANT "C" PAVEMENT JOINT ADHESIVE).
3. SEE DOVER STANDARD DETAILS D-5 FOR ADDITIONAL INFO.
4. SEE DOVER STANDARD DETAILS D-8 FOR ADDITIONAL CURBING INFO.

2 TYPICAL DRIVEWAY-2 CROSS SECTION
NOT TO SCALE



ELECTRICAL TRENCH "A"
NOT TO SCALE

ELECTRICAL TRENCH "B"
NOT TO SCALE

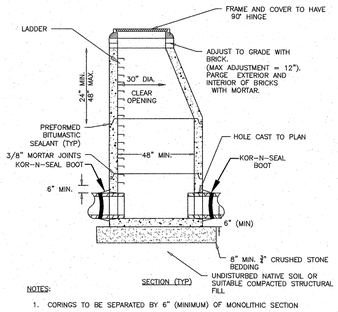
1.) TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 4D PVC, WITH STEEL SWEEPS AT RISER POLE, 90 BENDS AND AT BUILDING.

2.) LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.

3.) FOR COMPLETE SPECIFICATION SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".

4.) CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

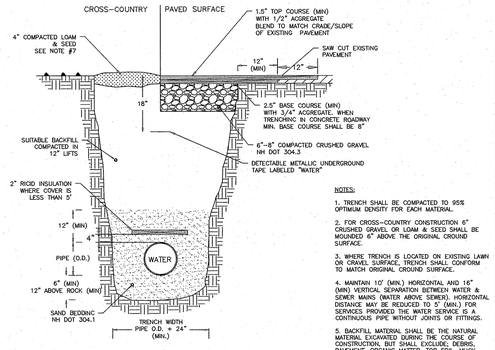
4 ELECTRICAL TRENCH
NOT TO SCALE



NOTES:

1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

5 DOVER STD. D-20 DRAIN MANHOLE
NOT TO SCALE

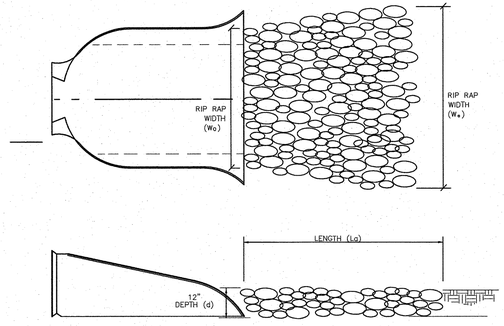


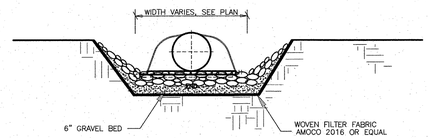
NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

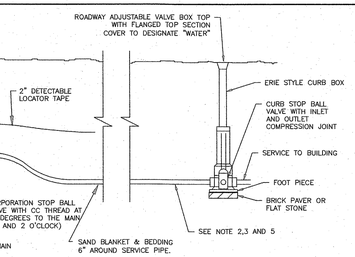
6 DOVER STD. D-4 Water Trench
NOT TO SCALE

7 NOT USED
NOT TO SCALE





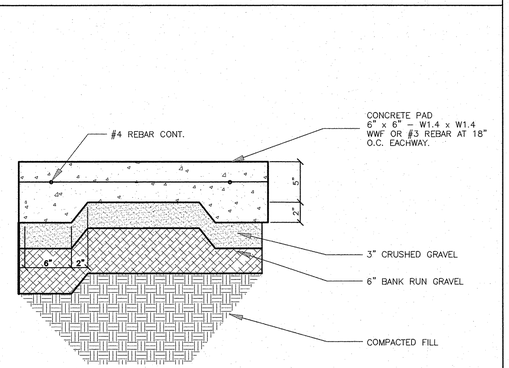
8 RIPRAP DETAIL
NOT TO SCALE



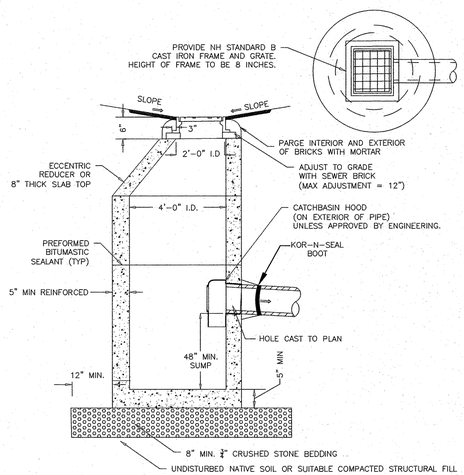
NOTES:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.
4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE
5. 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:
   ¾"- COPPER, CTS
   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.

9 DOVER STD. D-13 WATER SERVICE CONNECTION
NOT TO SCALE



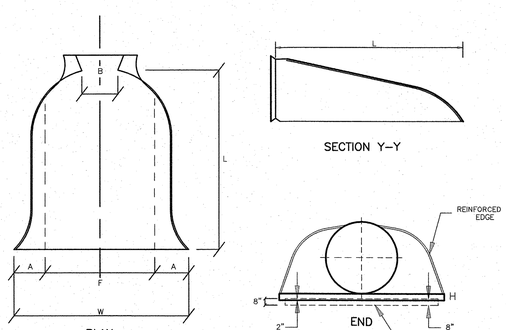
10 CONCRETE PAD DETAIL
NOT TO SCALE



NOTES:

1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.
2. CONTRACTOR SHALL HAVE OPTION TO USE 6" OR 8" PRECAST GRADE RINGS TO ADJUST GRADE.

11 DOVER STD. D-19 CATCH BASIN
NOT TO SCALE



DIA	A	B	H	F	L	W
12"	5"	7"	6"	22"	21"	44"

12 CMP FLARED END SECTION
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:

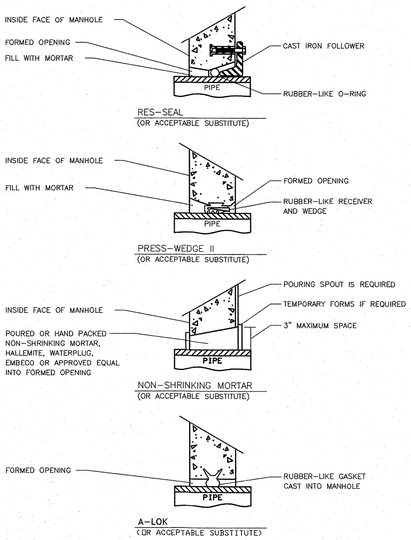
ISSUED FOR TRC REVIEW
May 14, 2026

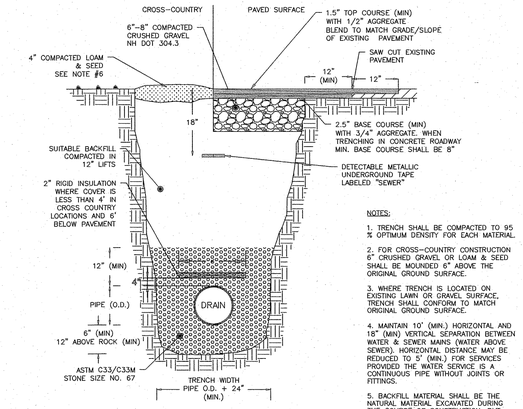
ROBERT J. STOWELL No. 9758 NEW HAMPSHIRE - STATE OF - PROFESSIONAL ENGINEER

CONSTRUCTION DETAILS
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

SHEET No.
SP-8

(P26-0000)





NOTES:

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2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
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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.

1 DOVER STD. D-3 Drainage Trench

NOT TO SCALE

GENERAL NOTES

1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF 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, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS(H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2) BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE.

3) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.

4) LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.

5) INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. 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. 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 OR PRECAST CONCRETE.

6) FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" FOR SEWERS AND "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER

7) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33, SIZE NUMBER 67.
100% PASSING 1 INCH SCREEN 0-10% PASSING #4 SIEVE
90-100% PASSING INCH SCREEN 0-5% PASSING #8 SIEVE
20-55% PASSING INCH SCREEN
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE INCH TO 1 INCH SHALL BE USED.

8) FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDE WITHIN THE FOLLOWING DISTANCES: RCP & CI PIPE - ALL SIZES - 48"

9) SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

10) MANHOLE STEPS MAY BE PERMITTED UPON REQUEST BY THE OWNER AS SECONDARY ADDITIONAL SAFETY FEATURE SUPPLEMENTARY TO THE PRIMARY PORTABLE LADDER ENTRY AND WHEN INSTALLED UNDER THE FOLLOWING CONDITIONS:

1. THE STEPS SHALL BE MANUFACTURED OF PLASTIC COVERED STEEL. THEY SHALL BE SHAPED SO THEY CANNOT BE PULLED OUT OF THE CONCRETE WALL IN WHICH THEY ARE EMBEDDED.
2. THE STEPS SHALL BE EMBEDDED IN THE CONCRETE BY THE MANUFACTURER DURING MANUFACTURE OR IMMEDIATELY FOLLOWING REMOVAL OF FORMS. SECURING THE STEPS WITH MORTAR IN DRILLED OR CAST HOLES, WILL NOT BE ACCEPTABLE.
3. THE STEPS SHALL BE OF THE DROP TYPE WITH A DEPRESSED SECTION FOR HANDHOLD. APPROXIMATELY 14"X10" IN DIMENSION.

11) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET. APPROVED ELASTOMERIC SEALANTS ARE: RAM-NEK
KENT SEAL NO.2
EZ

12) PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.

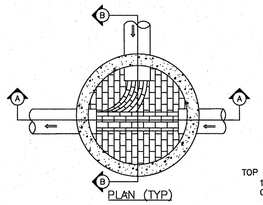
INTERNAL DROP

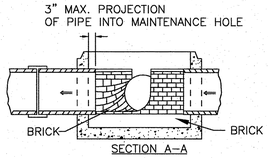
NOTES:

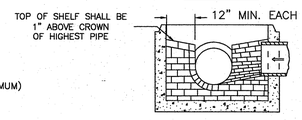
1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
2. A MINIMUM 5 FT DIAMETER MANHOLE IS REQUIRED FOR AN INTERNAL DROP.
3. IF A DROP IS PROPOSED FOR AN EXISTING MANHOLE, THE BRICK SHELF SHALL BE REWORKED TO FORM A NEW CHANNEL, FOR NEW DROP CONNECTIONS. IF STRUCTURE IS LESS THAN 5 FT IN DIAMETER, A NEW PRECAST MANHOLE SHALL BE INSTALLED.
4. BRICK INVERT NOT SHOWN ON DETAIL.
5. EXTERNAL DROPS ARE NOT PERMITTED UNLESS AUTHORIZED IN WRITING BY COMMUNITY SERVICES.

DOVER STD. D-18 MH DROP INLET

NOT TO SCALE

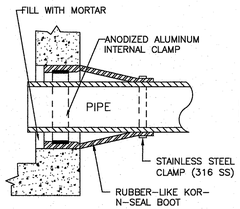




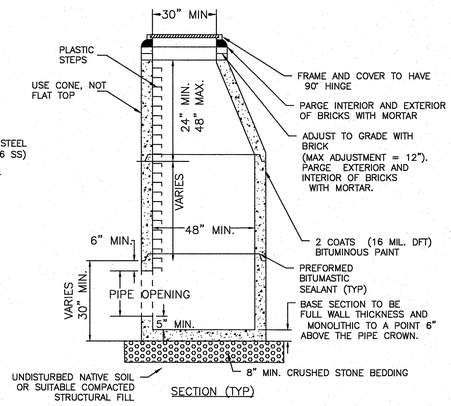


NOTES:

1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION



KOR-N-SEAL JOINT SLEEVE
(OR EQUAL)



NOTES:

1. ALL SEWER MAINTENANCE HOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
2. SEWER MAINTENANCE HOLES NOT WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL BE SEALED TO PREVENT INFILTRATION.

DOVER STD. D-16 SEWER MAIN

NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:

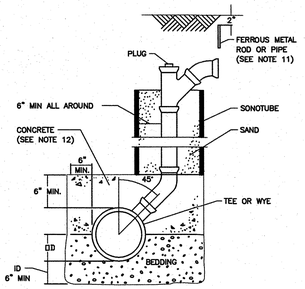
ISSUED FOR TRC REVIEW
May 14, 2026

NEW HAMPSHIRE - STATE OF - LICENSED PROFESSIONAL ENGINEER
ROBERT J. STOWELL
NO. 15958

SEWER DETAILS
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

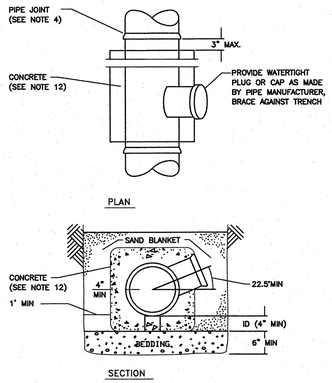
SHEET No.
SP-9

(P26-0000)

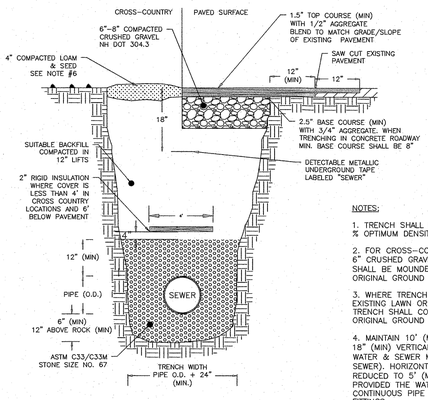


NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE 13)
NOT TO SCALE



CONCRETE FULL ENCASEMENT
NOT TO SCALE



NOTES:

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2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
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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.
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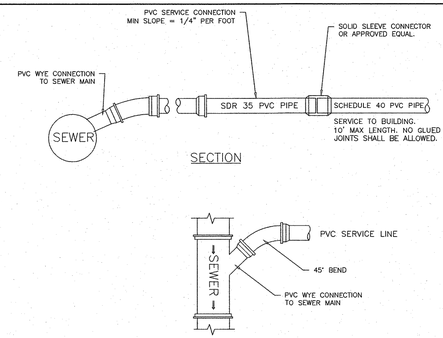
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

DOVER STD. D-3 Sewer Trench
NOT TO SCALE



NOTES:

1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

DOVER STD. D-17 SEWER SERVICE
NOT TO SCALE

GENERAL NOTES

1) MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

C. DRY FLUORESCENCED DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) HOUSE WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%- 55% PASSING	3/8 INCH SCREEN
0%- 10% PASSING	#4 SIEVE
0%- 5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

12) CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS AS FOLLOWS:

CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

13) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

14) MAINTAIN A 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER LINES, AND AN 18" VERTICAL SEPARATION AT SEWER AND WATER CROSSINGS, WITH WATER OVER SEWER.

15) GRAVITY SEWER PIPE TESTING SPECIFICATIONS PER ENV.WQ 704.06
GRAVITY SEWER PIPE TESTING
(A) ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.
(B) LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH THE FOLLOWING TESTING STANDARDS IN EFFECT AT THE TIME IS CONDUCTED:
(1) ASTM F1417 "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR", AVAILABLE AS NOTED IN APPENDIX D; OR
(2) UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE", AVAILABLE AS NOTED IN APPENDIX D.
(C) ALL NEW GRAVITY SEWERS SHALL BE:
(1) CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND
(2) TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
(D) ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.
(E) THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% PERCENT OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVISES.

GENERAL NOTES

1) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE NOTE 7.

2) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%- 55% PASSING	3/8 INCH SCREEN
0%- 10% PASSING	#4 SIEVE
0%- 5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

3) SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER SO GRADED THAT 90%-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAT 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.

4) SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALK-WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.

5) BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.

6) WOOD SHEETING, IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

7) W= MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES, FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

8) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

9) CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 LB) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS: CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

10) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.

TRITECH
ENGINEERING CORPORATION
750 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
May 14, 2026

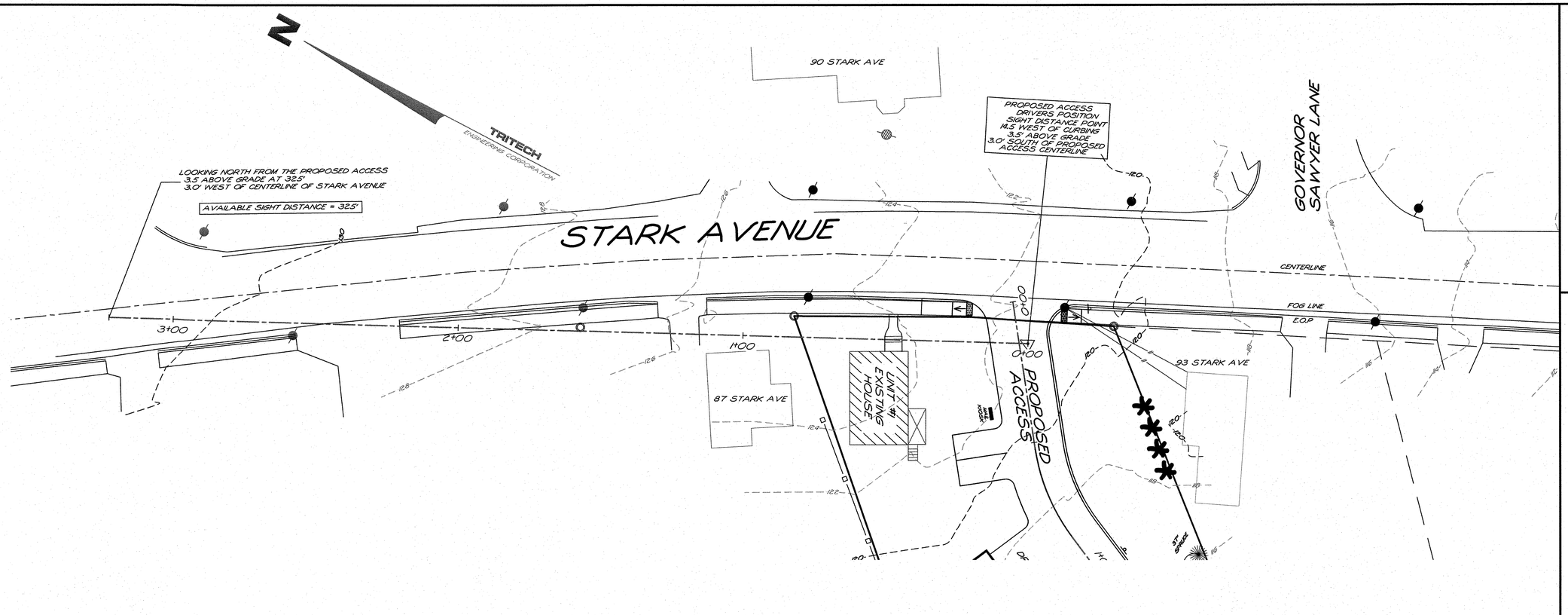
REVISIONS DESCRIPTION:
DATE:

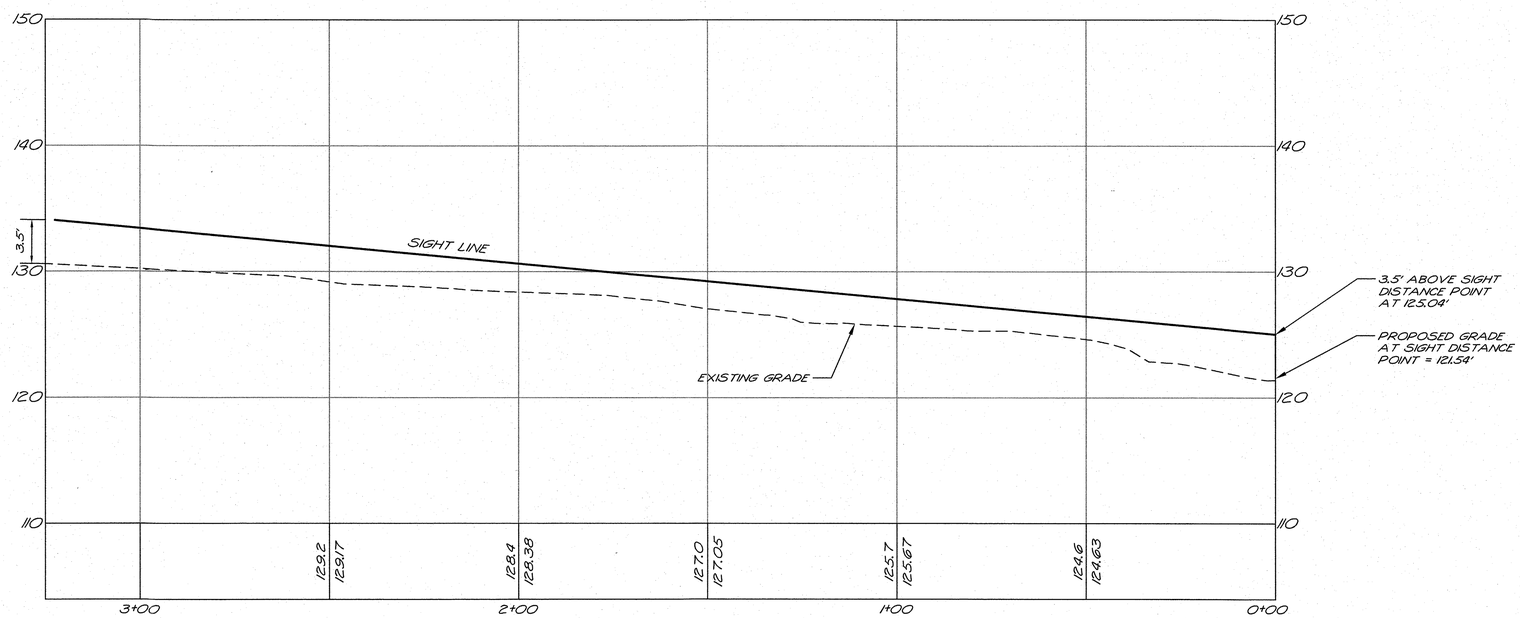
STATE OF NEW HAMPSHIRE ROBERT STOWELL NUMBER 13595 REGISTERED PROFESSIONAL ENGINEER

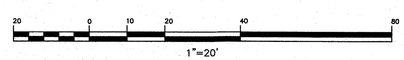
SEWER DETAILS
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136

SHEET No.
SP-10

(P26-0000)







TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
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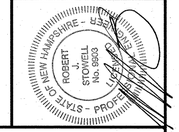
ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS
DATE: DESCRIPTION:



SIGHT DISTANCE PLAN & PROFILE
LOOKING NORTH

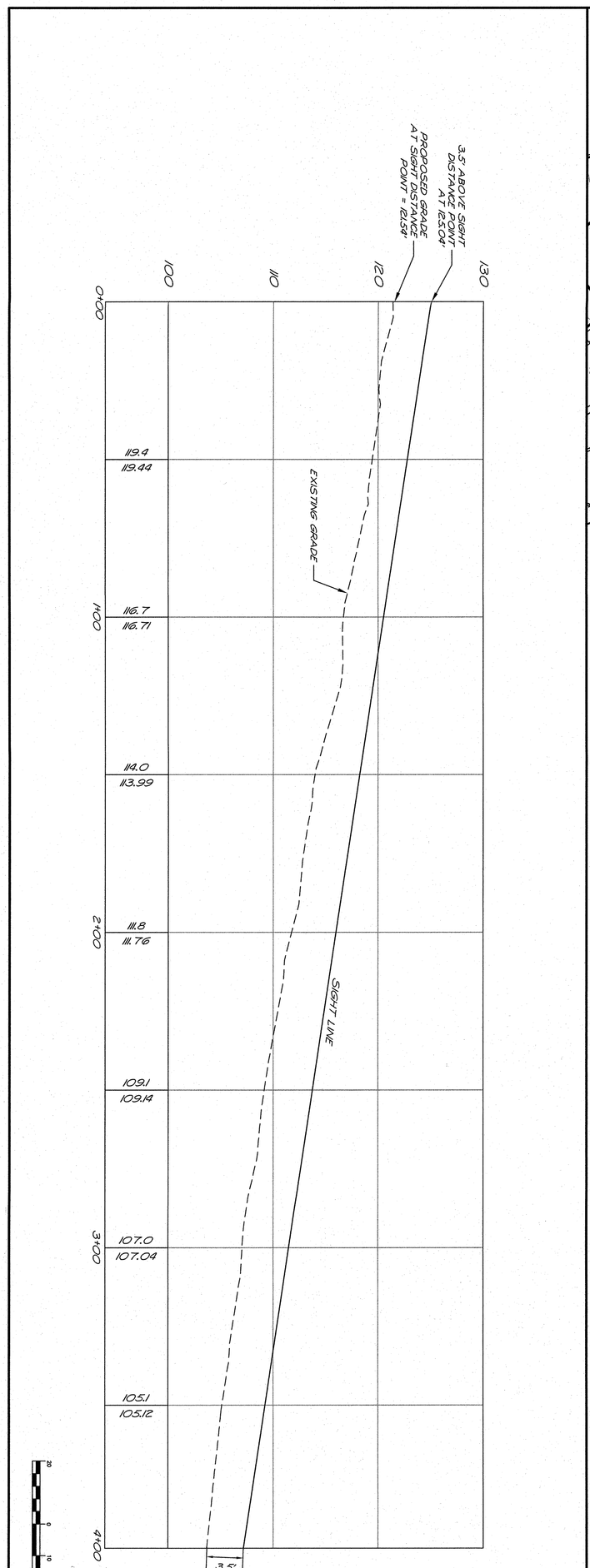
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

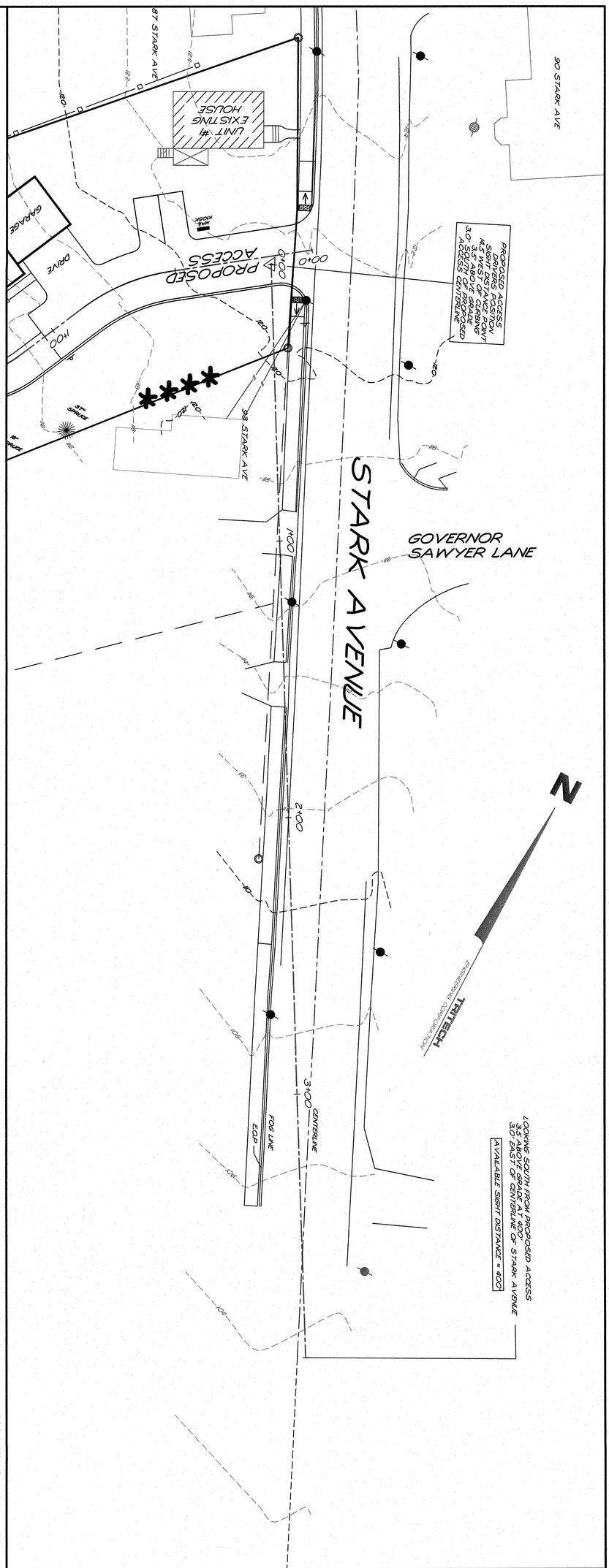
MAY 14, 2026 JOB No. 2513 6

SCALE: 1" = 20'

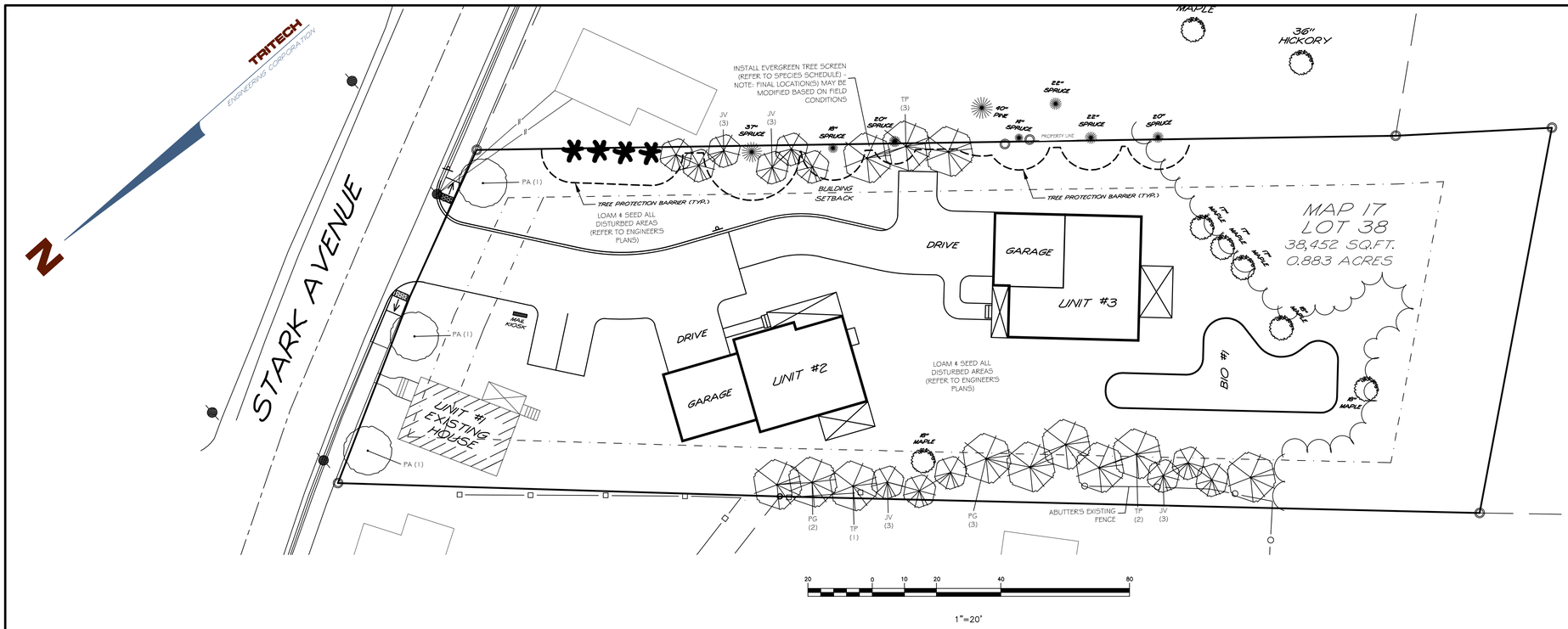
SHEET No.

SD-1





SHEET No.	SIGHT DISTANCE PLAN & PROFILE LOOKING WEST	ISSUED FOR TRC REVIEW May 14, 2026	TRITECH ENGINEERING CORPORATION
SD-2	COREY MACKOUL 89 STARK AVENUE DOVER, NEW HAMPSHIRE STRAFFORD COUNTY MAY 19, 2026 JOB No. 25136 SCALE: 1" = 20'	STATE OF NEW HAMPSHIRE ROBERT J. STOWELL No. 9803 PROFESSIONAL ENGINEER REVISIONS DATE: DESCRIPTION:	755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE 603 742 8107 FAX 603 742 3830



TRITECH
ENGINEERING CORPORATION

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hopkinton nh 03229
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DIG SAFE
CALL BEFORE YOU DIG
CALL 811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION

REVISIONS
DATE: DESCRIPTION:

LANDSCAPE PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MAY 14, 2026
JOB No. 25136
SCALE: 1" = 20'

SHEET No.
LA-1

GENERAL NOTES

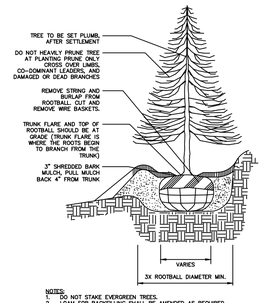
1. BASE PLAN DEVELOPED FROM INFORMATION PROVIDED BY TRITECH ENGINEERING CORPORATION, DRAWING TITLE: "CONCEPTUAL SITE PLAN," DATED: MARCH 31, 2026.
2. VERIFY LOCATIONS, ELEVATIONS, AND DIMENSIONS IN THE FIELD, PRIOR TO CONSTRUCTION. VERIFY FIELD CONDITIONS RELATING TO WORK TO BE INSTALLED. NOTIFY LANDSCAPE ARCHITECT OF ANY UNUSUAL OR DIFFICULT CONDITIONS IN A TIMELY FASHION PRIOR TO CONSTRUCTION CONCERNING THE CONDITION IN QUESTION.
3. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER AND STATE OF NEW HAMPSHIRE. NOTIFY APPROPRIATE AGENCIES AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK UNDER THEIR JURISDICTION.
4. CONTRACTOR IS RESPONSIBLE FOR SECURING AND PAYING FOR ALL CONSTRUCTION PERMITS AND LICENSES REQUIRED TO COMPLETE SITE WORK. CONTRACTOR IS RESPONSIBLE FOR ALL APPROPRIATE INSPECTIONS OF HIS/HER WORK.
5. ALL WORK SHALL BE OF WORKMANLIKE QUALITY AND IN CONFORMANCE WITH ALL APPLICABLE CODES. CONTRACTOR SHALL READ ALL ZONING AND ENVIRONMENTAL PERMITS WHICH PERTAIN TO THE PROJECT AND SHALL COMPLY WITH ALL THE CONDITIONS THEREIN.
6. NOTIFY LANDSCAPE ARCHITECT AT LEAST 72 HOURS PRIOR TO ANY ROUTINE REQUIRED FIELD OBSERVATION. OBTAIN LANDSCAPE ARCHITECTS APPROVAL OF THE LAYOUT OF ALL IMPROVEMENTS PRIOR TO CONSTRUCTION.
7. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF DAMAGE OR DISTURBANCE TO OTHER AREAS WHICH MAY OCCUR AS THE RESULT OF HIS/HER WORK WHETHER WITHIN OR OUTSIDE OF THE CONTRACT LIMIT LINES.
8. CONSTRUCTION SHALL FOLLOW THE SEQUENCES AND CONDITIONS ESTABLISHED IN THE SPECIFICATIONS AND PERMITS.
9. IT IS INTENDED THAT THE WORK BE EXECUTED IN ACCORDANCE WITH THE BEST CUSTOMARY BUILDING PRACTICES. IF WORK IS REQUIRED IN A MANNER TO MAKE IT IMPOSSIBLE TO PRODUCE FIRST-CLASS WORK OR IF ERRORS, CONFLICTS OR DISCREPANCIES APPEAR AMONG THE CONTRACT DOCUMENTS, INFORM THE LANDSCAPE ARCHITECT IMMEDIATELY AND REQUEST INTERPRETATION BEFORE PROCEEDING WITH THE WORK.
10. IF CONTRACTOR FAILS TO MAKE SUCH A STATEMENT AND REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED, NOR ADDITIONAL EXPENSE BE ACCEPTED, FOR FAILURE TO CARRY OUT WORK IN A SATISFACTORY MANNER. SHOULD CONFLICT OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATIONS, CONTRACTOR IS DEEMED TO HAVE ESTIMATED ON THE MORE EXPENSIVE WAY OF DOING WORK UNLESS HE/SHE SHALL HAVE OBTAINED A WRITTEN DECISION, BEFORE SUBMITTING HIS BID, AS TO WHICH METHOD OR MATERIALS WILL BE REQUIRED.
11. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS AND EQUIPMENT STORED AT SITE.
12. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK.
13. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK.
14. VISIBLE EXISTING CONDITIONS WHERE FIELD LOCATED, AND UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. SITE SUBCONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS, DIMENSIONS, AND GRADES PRIOR TO START OF ANY FOUNDATION OR UTILITY WORK.
15. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
16. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TERRAIN PLANNING & DESIGN LLC, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR,ENGINEER OR LANDSCAPE ARCHITECT HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
18. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL LANDSCAPE ARCHITECT. TERRAIN PLANNING & DESIGN LLC ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT OF RECORD.
19. TERRAIN PLANNING & DESIGN LLC ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.
20. SITE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO ANY EXCAVATION, 1-888-DIG-SAFE.

PLANTING NOTES

1. CONTRACTOR SHALL OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO PURCHASING AND/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
2. CONSTRUCTION ACCESS WILL BE AS DIRECTED BY LANDSCAPE ARCHITECT. 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 LANDSCAPE ARCHITECT 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 AND FLOURISHING CONDITION FOR ONE YEAR FROM THE DATE OF FINAL INSTALLATION APPROVAL BY LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE, WITHOUT COST TO OWNER, AND AS SOON AS WEATHER CONDITIONS PERMIT, ALL DEAD AND NON-FLOURISHING PLANTS AS DETERMINED BY THE LANDSCAPE ARCHITECT. REPLACEMENT PLANTS SHALL BE BE GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY LANDSCAPE ARCHITECT.
6. ALL BEDS TO BE MULCHED WITH 4" 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.

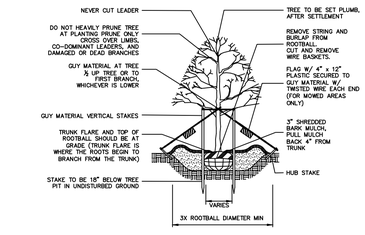
TREE PROTECTION NOTES:

1. TREE PROTECTION SHALL BE INSTALLED TO THE MAXIMUM EXTENT POSSIBLE AS SHOWN ON THE PLAN. MAKE SURE ALL WORKERS KNOW NOT TO DISTURB THE AREA WITHIN THE FENCE AND LEAVE THEM UP UNTIL WORK IS COMPLETE.
2. TEMPORARY 4FT HIGH ORANGE CONSTRUCTION FENCING SHALL BE PLACED AS SHOWN ON THE PLAN AROUND THE TREE(S) TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). TO INSTALL FENCE POSTS, AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
3. DEAD TREES, SCRUB, OR UNDERGROWTH SHALL BE CUT FLUSH WITH ADJACENT GRADE. THERE WILL BE NO SOIL DISTURBANCE UNDER THE DRIP LINE OF TREES TO BE PRESERVED.
4. PLACE 6 INCHES OF BARK MULCH AT AREAS NOT PROTECTED BY BARRIER.
5. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE INCH IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHOULD BE TEMPORARILY COVERED WITH DAMP BURLAP AND COVERED WITH SOIL OR MULCH AS SOON AS POSSIBLE TO PREVENT DRYING.
6. NO EQUIPMENT OR MACHINERY SHALL BE USED WITHIN THE PROTECTION FENCE. WORK WITHIN THE PROTECTION ZONE SHALL BE DONE MANUALLY. NO WASHING OF EQUIPMENT OR DUMPING OF CHEMICALS BY THE ROOT ZONE.
7. WATER THE TREE THROUGHOUT CONSTRUCTION WHEN THERE IS LESS THAN 1" OF RAINFALL IN A WEEK, AERATE & FERTILIZE THE TREE IF NECESSARY.
8. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE IS ALLOWED WITHIN THE LIMIT OF FENCING.



NOTES:
1. DO NOT STAKE EVERGREEN TREES.
2. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
3. TAMP BACKFILL SOIL AROUND ROOTBALL FIRMLY TO MINIMIZE ROOTBALL SHIFT.

EVERGREEN TREE PLANTING
NO SCALE



NOTES:
1. GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.
2. TYPICALLY ONLY TREES WITH A 3" OR GREATER CALIPER NEED TO BE STAKED. TREES WITH LESS THAN A 3" CALIPER NEED TO BE STAKED ONLY AS REQUIRED BY LANDSCAPE ARCHITECT.
3. ONLY HEAD TREE TRUNKS AS REQUIRED BY LANDSCAPE ARCHITECT.
4. TREE SHALL BE SET PLUMB, AFTER SETTLEMENT.
5. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
6. CITY TREES PLANTED ON PRIVATE PROPERTY, ADJACENT TO A PUBLIC RIGHT-OF-WAY, NEED TO BE PLANTED A MINIMUM OF 5 FEET FROM THE EDGE OF THE CITY SIDEWALK.

DECIDUOUS TREE PLANTING
NO SCALE

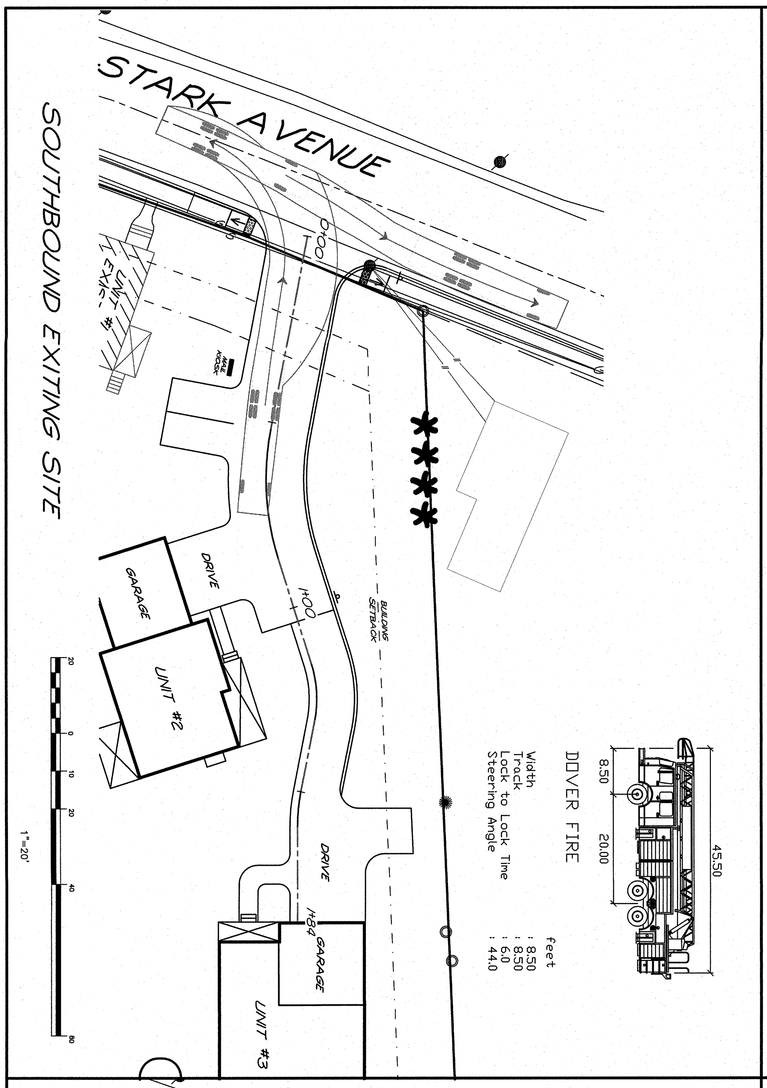
PLANTING SCHEDULE

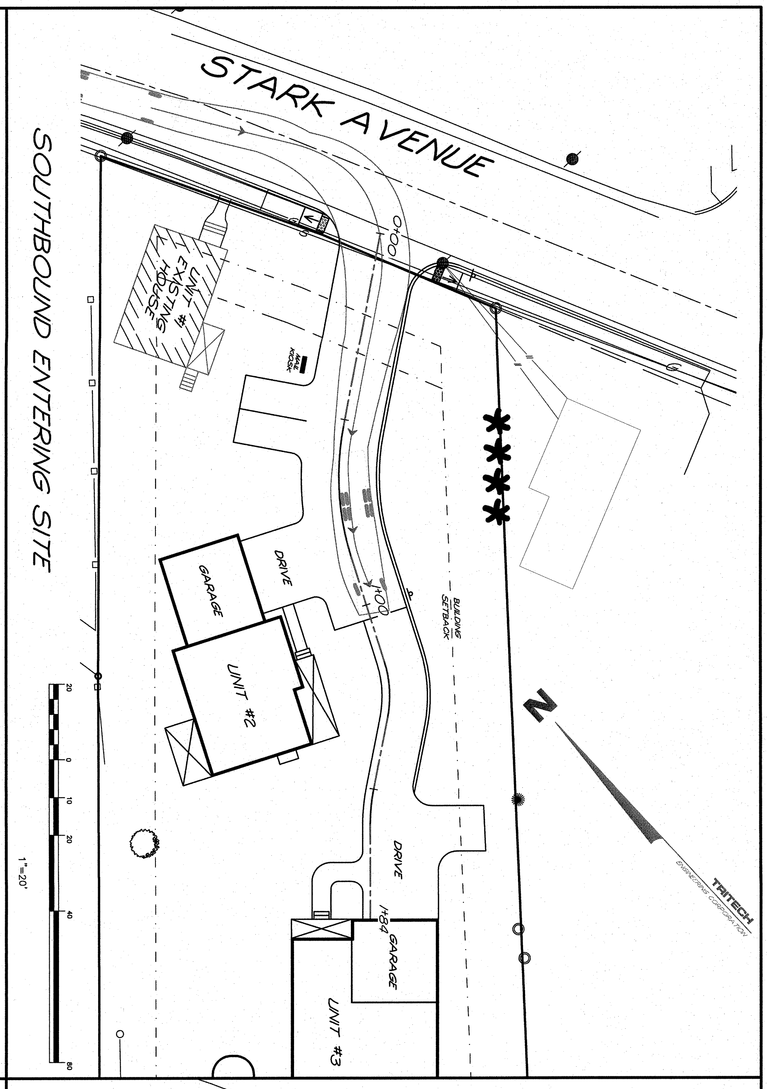
TREES	SIZE	SYMBOL	QTY
Juniperus virginiana 'Emerald Sentinel' / Emerald Sentinal Eastern Red Cedar	6-8' B&B	JV	12
Picea glauca / White Spruce	6-8' B&B	PG	5
Platanus x acerifolia 'Exclamation' / Exclamation Planetree	3-3.5" CAL.	PA	3
Thuja plicata 'Green Giant' / Green Giant Arborvitae	6-8' B&B	TP	6

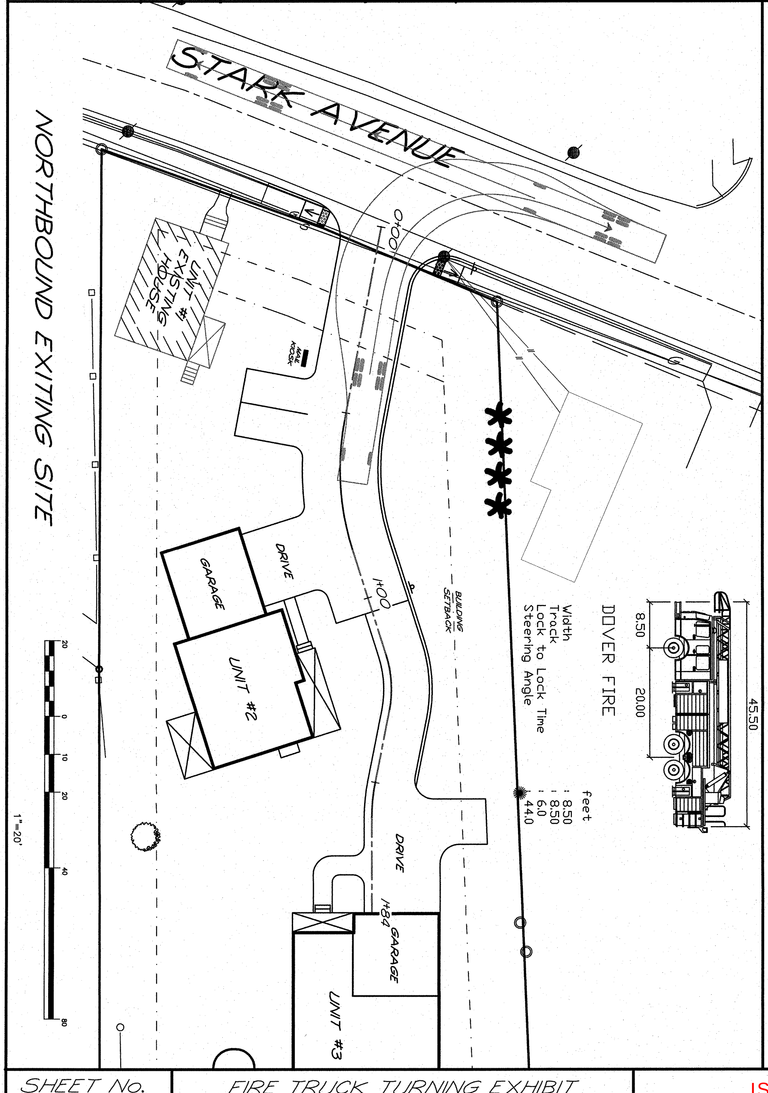
LANDSCAPE CALCULATIONS:

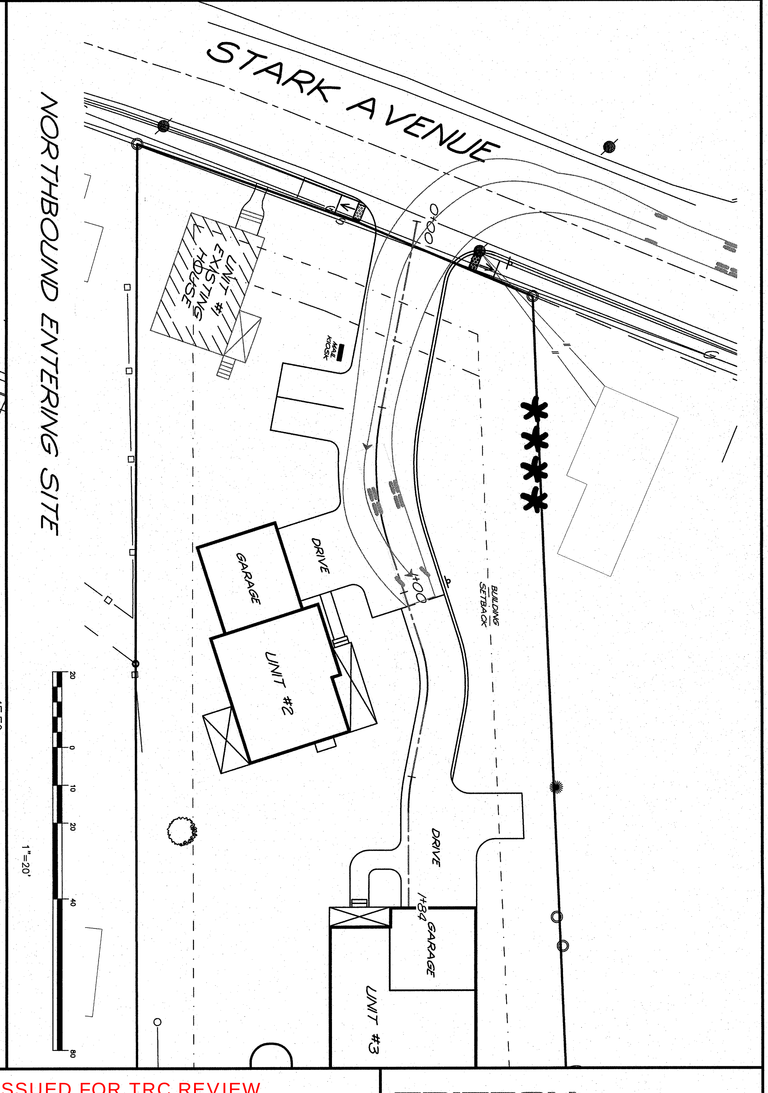
INTERIOR PARKING LOT LANDSCAPING:
NOT REQUIRED FOR PARKING LOTS WITH 0-20 SPACES

STREETSCAPE LANDSCAPING:
REQUIRED: 1 STREET TREE / 35' LINEAR FEET OF ADJACENT ROADWAY
112 L.F.OF ADJACENT ROADWAY (STARK AVENUE) / 35 = 3.2
= 3 STREET TREES REQUIRED
PROVIDED: 3 STREET TREES PROPOSED ALONG STARK AVENUE









SHEET No.

TR-1

FIRE TRUCK TURNING EXHIBIT

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 14, 2026 JOB No. 25136

SCALE: 1" = 20'

ISSUED FOR TRC REVIEW
May 14, 2026

REVISIONS	
DATE:	DESCRIPTION:

TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

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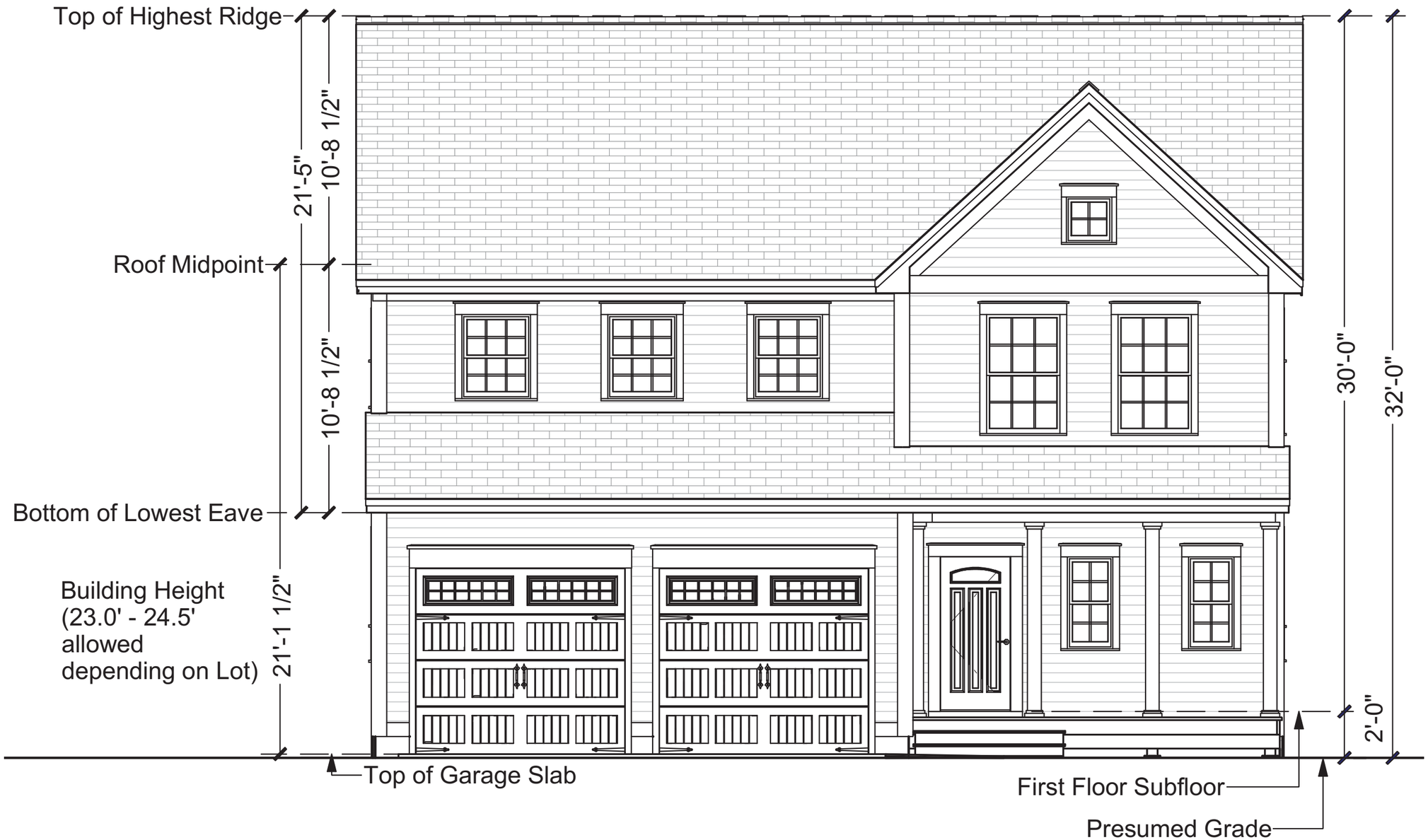
Top of Highest Ridge
Roof Midpoint
Bottom of Lowest Eave
Building Height
(23.0' - 24.5'
allowed
depending on Lot)
21'-5"
10'-8 1/2"
10'-8 1/2"
21'-1 1/2"
30'-0"
32'-0"
2'-0"
Top of Garage Slab
First Floor Subfloor
Presumed Grade


32'-0"
30'-1"
1'-11"
First Floor Subfloor
Presumed Grade