

CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

REVISED

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, March 27, 2025**
Meeting Time: **10:30 AM**

1. Open Space Subdivision for Trittech Engineering Corp, (Owner: 210 Tolend Road, LLC), Assessor's Map F, Lot 3, zoned R-40, located at 210 Tolend Road. (Proposal is for an Open Space Subdivision that will create five lots, including one lot for the development of 29 cluster units, one lot with an existing single-family home, one buildable vacant lot, and two lots to be conserved as open space areas.) *(SUBD-2025-0001)



PLAN SNAPSHOT REPORT SUBD-2025-0001 FOR CITY OF DOVER, N.H.

Plan Type: Subdivision Plan - Major	Project:	App Date: 03/06/2025
Work Class: New Construction	District: None	Exp Date: 05/10/2025
Status: Fees Due	Square Feet: 0.00	Completed: NOT COMPLETED
Valuation: \$0.00	Assigned To: Blonigen, Rachel	Approval
Description: 31 Unit Open Space Subdivision		Expire Date:

Parcel: F0003-000000	Main	Address: 210 Tolend Rd Dover, NH	Main	Zone: R-40(Residential - Rural)
-----------------------------	------	--	------	--

Owner 210 Tolend Road, LLC John O'Neill 42 J Dover Point Road Dover, NH 03820 Business: (978) 375-3153	Applicant Tritech Engineering Corp. 755 Central Avenue Dover, NH 03820 Business: (603) 742-8107	Engineer Tritech Engineering Corp. 755 Central Avenue Dover, NH 03820 Business: (603) 742-8107	Surveyor Tritech Engineering Corp. 755 Central Avenue Dover, NH 03820 Business: (603) 742-8107
--	--	---	---

Plan Custom Fields

Proposed Number of New Lots	31	Existing Number of Lots1		Parcel Map/Lot	F/3
Parcel Zoning Overlay	Wetlands Protection & Secondary Groundwater	Select Subdivision Type	Open Space	Parcel Zoning	R-40
Property Address	210 Tolend Road	Existing Parcel Size (Ac)	55.698	Existing Parcel Size (sqft)	2.4262e+006
Proposed Use Detail	The applicant proposes to develop Map F Lot 3 by utilizing the City of Dover Open Space Subdivision Regulations. Specifically, we propose to create 5 fee simple lots; • Lot 3 contains the existing single-family home and is 26.295 acres. • Lot 3-1 is proposed as an R-40 building lot and has 3.060 acres. • Both Lots 3 & 3-1 will use the existing gravel driveway to access Tolend Road and will be serviced by municipal water and on-site septic. • Lot 3-OPN is proposed as part of the City of Dover Open Space requirements. This lot will be jointly owned by lots 3 & 3-1 and protected under a conservation easement. This open space lot will only be for the benefit of Lots 3 & 3-1 and will allow for certain uses described in the HOA documents. • Lot 3-2-OPN is proposed as the balance of the City of Dover Open Space requirement. This lot will be owned by the HOA and protected by a conservation easement. This lot will be for the benefit of all HOA members. • Lot 3-2 will be developed with 29 cluster units and will include the construction of an 1816-foot roadway with associated infrastructure. This roadway will to Emerald Lane. This roadway is proposed as a private road and does not meet the City of Dover public roadway standards as shown. • The proposed Open Space (3-OPN & 3-2-OPN) contains adequate Open Space for the development of 31 units (Lot 3, 3-1 & 29 Units on 3-2).				
				Owner Name	210 Tolend Road, LLC

PLAN SNAPSHOT REPORT (SUBD-2025-0001)

Deed Page	26	Deed Book	5166	Owner Address	42J Dover Point Road, Dover, NH 03820
Deed Date	02/15/2024	Refuse Removal	Private	Estimated Construction Value	2000000.00
Owner Phone	978-375-3153	Parcel Feedback		Owner EMail	johnoneill.nh@gmail.com
Existing Use Detail	Single Family Residential	TDR Detail		subroadtype	Municipal
Water Source?	Municipal	Distance to City Water (ft)	0	Distance to City Sewer (ft)	0
Sewer Service?	Municipal	Proposed Road Length (ft)	1816	Subdivision Regulations	157-21 F (4) & 157-31 A section(s) to be waived
Justification for waiver request(s)					

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Robert_Stowell_3/6/2025.jpg	03/06/2025 13:39	Stowell, Robert		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025011526	Planning Subdivision Application Fee	\$200.00	\$0.00
	Planning Subdivision Lot Fee	\$4,650.00	\$0.00
Total for Invoice INV-2025011526		\$4,850.00	\$0.00
Grand Total for Plan		\$4,850.00	\$0.00

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	03/27/2025	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	03/11/2025	03/27/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Dove, Annie	In Review	03/11/2025	04/08/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	In Review	03/11/2025	03/27/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	In Review	03/11/2025	04/08/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	In Review	03/11/2025	03/27/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	In Review	03/11/2025	03/27/2025	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Coordinator	Police	Speidel, Marn	In Review	03/11/2025	03/27/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		03/06/2025	17:05
Confirm application complete v.1	Generic Action		03/06/2025 17:05
Technical Review Committee Meeting Agenda v.1	Task	03/06/2025 17:05	03/11/2025 11:19
Land Use Plan Technical Review v.1	Receive Submittal	03/11/2025	0:00
Technical Review Committee Meeting v.1	Hold Meeting	03/11/2025	11:23

PLAN SNAPSHOT REPORT (SUBD-2025-0001)

Planning Board v.1

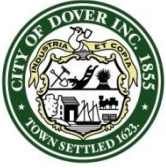
Planning Board Agenda v.1	Task
Invoice for Notices v.1	Task
Send Notices v.1	Task
Planner Creates Staff Recommendations v.1	Plan Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Plan Activity
NOD Sent to Applicant v.1	Create Report

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 SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

Office Use Only

Project #: _____

Date Received: _____

Amount Paid: _____

Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: 210 Tolend Road, LLC Telephone # 978-375-3153

Address of Applicant: 42J Dover Point Road

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

Address of Property Owner: _____

E-Mail Address: johnoneill.nh@gmail.com

PROPERTY INFORMATION

Address of Property: 210 Tolend Road

Assessor's Map # F Lot(s) # 3

Zoning District(s) R-40 Overlay District(s) Wetlands protection & Secondary Groundwater Protection

Size of Parcel: 55.698 Ac Property Deed: Book 5166 Page: 26

Existing Use of Property: Residential

SUBDIVISION INFORMATION

Subdivision Type: Conventional: _____ Open Space: ☒ TDR: _____

Existing Number of Lots: 1 Proposed Number of Lots: 31 Units

TDR Relief sought (Check All That Apply): ☐ Lot Size ☐ Frontage ☐ Setback ☐ 30' Buffer ☐ Purchase _____ units

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

Circle one for each category:

Water: City/Well (circle one) How far is city water from the property? _____

Sewer: City/Septic (circle one) How far is city sewer from the property? _____

Highway Access City Street/State Highway (circle one) | Roadway Public or Private Road (circle one)

Refuse removal: Public, Private (circle one) | Estimated Length of Proposed Road: 1835 feet

Estimated value of construction: \$2,000,000 New impervious area (in s.f.): 134,600

WAIVER REQUESTSSubdivision Regulations section(s) to be waived: Road Width & Perimeter BufferJustification for waiver request(s) (*attach additional sheets as needed*): _____**SURVEYOR INFORMATION**Name of Surveyor and Company (Licensed in N.H.) Tritech Engineering CorporationAddress 755 Central Ave Telephone #: 603-742-8107Professional License #: 884 E-mail address: rjs@tritecheng.com**ENGINEER INFORMATION**Name of Engineer and Company (Licensed in N.H.) Tritech Engineering CorporationAddress 755 Central Ave Telephone #: 603-742-8107Professional License #: 9903 E-mail address: rjs@tritecheng.com**LANDSCAPE ARCHITECT INFORMATION**Name of Landscape Architect and Company (Licensed in N.H.) Terrain Planning & Design, LLCAddress 31 Kast Hill Road, Hopkinton, NH Telephone #: 603-746-3512Professional License #: 086 E-mail address: romy@terrainplanning.com**SOIL SCIENTIST INFORMATION**Name of Soil Scientist and Company (Licensed in N.H.) Highland Soil ServicesAddress 75 Prospect Street, Somersworth, NH Telephone #: 603-692-4457Professional License #: 76 E-mail address: highlandsoilservices@comcast.net**CONSERVATION EASEMENT HOLDER**Name of Easement Holder: N/A Telephone #: _____

Address Easement Holder: _____

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/We submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take

place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner:

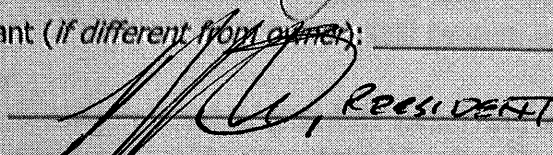


Date: 3/6/2025

Signature of Applicant (if different from owner):

Date:

Signature of Agent:

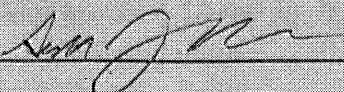
 RESIDENT

Date: 03/06/25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner:



Date: 3/6/25

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner:



Date: 3/6/2025

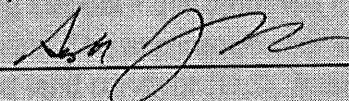
Signature of Applicant (if different from owner):

Date:

CERTIFICATION OF FEES

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

Signature of Property Owner:



Date: 3/6/25

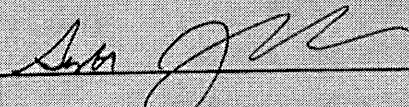
Signature of Applicant (if different from owner):

Date:

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

I, and my successors, hereby certify that I understand that the acceptance of a roadway as a public road is an action of the City Council in its sole and complete discretion. In order for the City Council to consider accepting a road as public, it must be free of encumbrances. No roadway with private utility easements shall be accepted as a public road by the City unless the easements are expunged prior to the transfer of land to the City. License agreements for any and all private utilities within the right of way may be granted by the City upon acceptance of the unencumbered roadway consistent with applicable state law.

Signature of Property Owner:



Date: 3/6/25

Signature of Applicant (if different from owner):

Date:

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

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

A. Plan Review Fees

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

- ☒ SUBDIVISION Application fee \$200.00 + \$150.00 x # 31 new lots created = \$ 4850
- ☐ LOT LINE ADJUSTMENT Application fee \$200.00 + \$100.00 X # of lots involved = \$
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee \$200.00 = \$
- ☐ SITE REVIEW – RESIDENTIAL Application fee \$200.00+ \$100.00 x # per dwelling unit = \$
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee \$200.00 + (not to exceed \$10,000)
 - ☐ New construction \$.15 sq. ft. x # sq. ft. = \$
 - ☐ Additions (new floor space) \$.10 per sq. ft. x # sq. ft. = \$
- ☐ MOTEL/HOTEL \$35.00 x # per lodging unit = \$
- ☐ CHANGE OF USE Application fee \$200.00 + (not to exceed \$5,000)
 - ☐ Existing floor spaces \$.10 per sq. ft. x # sq. ft. = \$
- ☐ CONDITIONAL USE PERMIT Application fee \$200.00 x # per Application = \$
- ☐ GRAVEL PIT/ EXCAVATIONS
 - ☐ Application fee \$50.00 = \$
 - ☐ Permit fee \$75.00 = \$
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee \$200.00 = \$
- ☐ REQUEST FOR REZONING Application fee \$200.00 = \$
- ☐ DRIVEWAY WAIVER Application fee \$200.00 = \$

2. TOTAL IMPERVIOUS PAVED AREA (for new development, roadways or additions to

existing parking lots, (not to exceed \$10,000)) Application fee of \$200.00 is N/A if it is part

of a Site Review or Subdivision Plan. \$200.00 + \$.07 per sq. ft. x # 134,600 sq. ft. = \$ 9422

SUBTOTAL PLAN REVIEW FEE (A) = \$ 14,272

AND

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

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

C. Foster's newspaper public notice fee \$100.00 x # 1 applications = \$ 120

SUBTOTAL NOTICE FEE (B & C) = \$

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

PLAN REVIEW FEE COLLECTED/PAID = \$

BALANCE DUE = \$

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



City of Dover, New Hampshire SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 2019]

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

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 subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: 210 Tolend, LLC File Number: _____

PROJECT TITLE: Ambrose Woods

PROPERTY LOCATION: 210 Tolend Road Tax Map: F Lot: 3

	Where/How Provided	Reviewed
1. Completed and signed Application form	Enclosed	
2. Plan Review Fees are provided	Enclosed	
3. Electronic copy of the surveyed plat layout	E-mail	
4. Electronic copy of supplementary materials and application	E-mail	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Enclosed	
6. Waiver requests to the Subdivision Regulations, with written justification	N/A	
7. Conditional Use Permit applications	N/A	
8. Narrative describing yield plan and cost analysis	Enclosed	
9. Folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	Enclosed	
Location map at appropriate scale	S-1	
Proposed subdivision name and title and Planning File #	T-1	
Date, north arrow and scale	S-1	
Names of all abutting property owners	S-1	
Name and address of owners and/or applicants	S-1	
Signature & stamp of NH licensed land surveyor and/or engineer	S-1	
Zoning District boundaries, including any special or overlay districts	S-1	
Location of Conservation District areas	C-1 thru C-1e	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks		
Location and widths of existing & proposed easements & right of ways		
Location and widths of existing and proposed sidewalks	SP-1	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	S-2 Thru S-5	
Existing and proposed lot areas in square feet	S-1	
Existing and proposed topographic information at two foot intervals	SSS-1	
Minimum building setbacks or build to lines on all lots	S-1	

	Explain How Provided	Reviewed
Existing and proposed buildings and structure locations	S-4	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities		
Existing and proposed water lines and fire hydrants, including materials and capacity needed		
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load		
Existing and proposed septic system, including test pit locations and results and NHDES subdivision permit number	S-6	
Existing and proposed stormwater lines and facilities		
Existing and proposed streetlights		
Location of Flood Hazard Zone	S-1	
Location of all bodies of water and watercourses	S-1	
Location of wetlands and buffers	S-1	
Neighborhood plan with aerial underlay showing how project relates to abutting uses	T-2	
Existing natural features and/or significant vegetation on property	S-1	
Depict existing contours up to 100 ft. beyond project limits	SSS-1	
Soil types	SSS-1	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	S-1	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	S-1	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	S-1	
Location, material and size of existing and proposed permanent monuments	S-2 Thru S-5	
Existing railroad lines	N/A	
Note regarding solid waste disposal	SN-1	
All applicable Dover Common Subdivision notes	SN-1	
10. Construction Detail Sheets shall contain the following:		
Profiles showing existing & proposed elevations along the center lines of proposed streets & within 100' of intersections with existing streets		
Profiles showing the locations & a typical cross-section detail of streets		
Location of street trees, street lighting poles and street signs		
Location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants		
Location and size of all water, gas and other underground utilities		
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing and proposed storm drainage system and engineered drainage analysis		
Stormwater Management System Operation and Maintenance Plan		
Letter to Serve from Public and Private Utilities		
Erosion and Sedimentation Control Plan		
Perimeter Landscaping Plan	LA-1	
Proposed restrictive covenants or homeowners association documents		
Dates and permit numbers of all required state and federal permits	SN-1	
If wetland buffer, indicate placards locations, as applicable		
Hydrogeologic study if located in Groundwater Protection Zone	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required		

REVIEWED BY: _____ DATE _____ TRC DATE _____

TRITECH

ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

TELEPHONE 603.742.8107
FACSIMILE 603.742.3830

March 6, 2025

Donna Benton, AICP
Director of Planning & Community Development
City of Dover, Planning Department
288 Central Avenue
Dover, New Hampshire 03820

Subject: Ambrose Woods
Dover Tax F Map 3
210 Tolend Road & Emerald Drive
Dover, New Hampshire
Job No. 2118

Dear Donna:

Project Narrative

On behalf of the applicant / property owner 210 Tolend Road, LLC we are submitting an Application for Open Space Subdivision (OSS). The property is shown as City of Dover Tax Map F Lot 3 and is located at 210 Tolend Road and Emerald Lane. The property contains 55.698 acres of which approximately 15.5 acres are wetlands and is located in the R-40 Zoning District.

On December 10, 2024, the Planning Board full vetted the Yield Plan and requested the reduction in the total yield to 31 Units. The Yield Plan has been revised and is included in the submittal.

The applicant proposes to develop Map F Lot 3 by utilizing the City of Dover Open Space Subdivision Regulations. Specifically, we propose to create 5 fee simple lots;

- Lot 3 contains the existing single-family home and is 26.295 acres.
- Lot 3-1 is proposed as an R-40 building lot and has 3.060 acres.
- Both Lots 3 & 3-1 will use the existing gravel driveway to access Tolend Road and will be serviced by municipal water and on-site septic.
- Lot 3-OPN is proposed as part of the City of Dover Open Space requirements. This lot will be jointly owned by lots 3 & 3-1 and protected under a conservation easement. This open space lot will only be for the benefit of Lots 3 & 3-1 and will allow for certain uses described in the HOA documents.
- Lot 3-2-OPN is proposed as the balance of the City of Dover Open Space requirement. This lot will be owned by the HOA and protected by a conservation easement. This lot will be for the benefit of all HOA members.
- Lot 3-2 will be developed with 29 cluster units and will include the construction of an 1816-foot roadway with associated infrastructure. This roadway will access Emerald Lane. This roadway is proposed as a private road and does not meet the City of Dover public roadway standards as shown.
- The proposed Open Space (3-OPN & 3-2-OPN) contains adequate Open Space for the development of 31 units (Lot 3, 3-1 & 29 Units on 3-2).

There no wetland or wetland buffer impacts.

We are requesting a waiver to allow for a 24-foot roadway with no parking on one side of the road, where 28 feet is required. We are also requesting a waiver to the 50-foot perimeter buffer adjacent to the Ezra Green Open Space for the construction of drainage infrastructure.

We look forward to meeting with the TRC at their March 27th meeting to discuss this Project.

Attached please find the supporting documentation:

- 4 Copies of this Project Narrative.
- 4 Copies of the Subdivision Application.
- 4 Copies of the Waiver Requests.
- 4 Copies of the Traffic Impact Analysis.
- 4 Copies of the Water & Sewer Demand Calculations.
- 4 Copies of the Landscape Operations & Maintenance Plan.
- 4 Copies full size of the Open Space Subdivision Plan set.
- 1 Copy of the Stormwater Analysis.
- Electronic submission of all to online portal

Please advise should you have any questions.

Very truly yours,
TRITECH ENGINEERING CORP.

A handwritten signature in dark ink, appearing to be 'RJS', is written over the company name.

Robert J. Stowell, P.E., L.L.S.
President

RJS / cmp

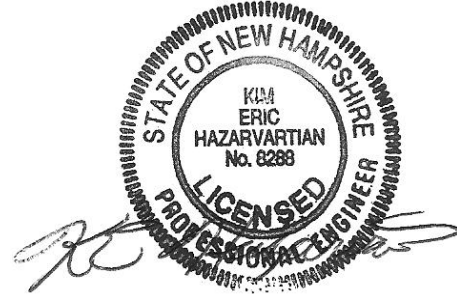
Attachments

\\23118_AmbroseTRC1Submittal.docx

MEMORANDUM

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

Ref: 1736
Subject: Traffic-Assessment
Ambrose Woods
Dover, New Hampshire
From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
keh@teppllc.com
Date: March 6, 2025

**INTRODUCTION**

Tritech Engineering Corporation has retained TEPP LLC to prepare this traffic-assessment memorandum (TAM). This TAM regards the proposed Ambrose Woods development in the City of Dover, New Hampshire.

This TAM considers a proposed residential development that will include:

- 29 detached residential condominium units
- a proposed road intersecting the east side of Emerald Lane

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 for the Emerald Lane/proposed road intersection will be adequate
- the proposed project is not anticipated to add significant new traffic to the area

EXISTING SITE DESCRIPTION

The site:

- is east of Emerald Lane and south of Tolend Road
- has an area of about 55 acres
- is largely wooded and undeveloped
- to the north, is bounded by residential development along Tolend Road
- to the east, is bounded by Paradise Farm
- to the south, is bounded by the Ezra Green open space
- to the west, is bounded by the Indian Ridge residential development and associated open space

PROPOSED PROJECT DESCRIPTION

This TAM considers a proposed residential development that will include:

- 29 detached residential condominium units
- a proposed road intersecting the east side of Emerald Lane¹

ROAD DESCRIPTION

Emerald Lane near the site:

- is a local street under the jurisdiction of the City
- has a curvilinear horizontal alignment
- includes moderate grades
- has a travelway about 24 feet (ft) wide
- has asphalt cement concrete pavement in good condition
- has curb and sidewalk
- has underground utilities
- is lined with residential development

¹ One existing single-family-attached dwelling unit has a driveway to Tolend Road. This TAM does not consider the existing dwelling unit, the driveway, or a second proposed single-family-detached dwelling unit that will share the driveway.

PUBLIC TRANSIT

Scheduled public transit is not available within one-quarter mile of the project site.

SIGHT DISTANCES

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for sight distances at unsignalized intersections.

At unsignalized intersections, stopping sight distance (SSD):

- provides for safety
- is fundamental to intersection operation
- enables drivers to perceive and react to vehicles entering or crossing the major road²
- conservatively encompasses a wide range of break-reaction times and deceleration rates³

Tritech Engineering Corporation states that relevant sight distances at the Emerald Lane/proposed road intersection will be over 200 ft for both directions along Emerald Lane. These distances provide design SSD for Emerald Lane approach speeds of over 30 miles per hour.

TRIP GENERATION

The Institute of Transportation Engineers (ITE) publishes trip-generation information in the authoritative *Trip Generation Manual*.⁴ 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.⁵

Table 1 shows calculated vehicle-trips due to the project as:

- weekday daily, 323 (total of in and out)
- weekday AM-street-peak hour, 24 (6 in and 18 out)
- weekday PM-street-peak hour, 31 (20 in and 11 out)
- Saturday daily, 289 (total of in and out)
- Saturday site-peak hour 35 (19 in and 16 out)

² AASHTO, *A Policy on Geometric Design of Highways and Streets*, 7th Edition (Washington, DC, 2018), pages 9-26.

³ AASHTO, pages 3-2 to 3-6.

⁴ ITE, *Trip Generation Manual*, 11th Edition (Washington DC, September 2021).

⁵ ITE, *Trip Generation Manual*, Volume 3, pages 218 to 236.

Table 1. Calculated trip generation.

	Vehicle-Trips ^a		
	Total	In	Out
Weekday Daily	323	---	---
Weekday AM-Street-Peak Hour	24	6	18
Weekday PM-Street-Peak Hour	31	20	11
Saturday Daily	289	---	---
Saturday Site-Peak Hour	35	19	16

^aBased on ITE, *Trip Generation Manual*, land use 210, single-family-detached housing, 29 dwelling units.

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations will not be sensitive to trip distribution/assignment. Trips will use Emerald Lane and split amongst area streets.

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.⁶ Tabulated peak-hour trip generation of the project is well below this national ITE threshold. The project is not anticipated to add significant new traffic to the area.

CONCLUSION

This TAM concludes that.

- relevant sight distances for the Emerald Lane/proposed road intersection will be adequate
- the proposed project is not anticipated to add significant new traffic to the area

⁶ ITE, *Manual of Transportation Engineering Studies* (Prentice Hall: Englewood Cliffs, New Jersey, 2000), page 144.

Water and Sewer Demand

for

AMBROSE WOODS

210 Tolend Road and
Emerald Drive

Dover, New Hampshire

March 2025

Water and Sewer Demand for Ambrose Woods Dover, NH

29 Proposed 4 Bedroom Houses:

29 Houses X 4 Bedrooms each x 150 gal/day per BDR =

17,400 gal/day

Total estimated Design Flow = 17,400 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

AMBROSE WOODS

210 Tolend Road and Emerald Drive
Dover, New Hampshire
March 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.

LANDSCAPE OPERATION & MAINTENANCE PLAN

for

AMBROSE WOODS

210 Tolend Road and Emerald Drive
Dover, New Hampshire
March 2025

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.

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

AMBROSE WOODS

210 TOLEND ROAD AND EMERALD LANE

DOVER, NEW HAMPSHIRE

MARCH, 2025

PREPARED FOR

210 TOLEND ROAD, LLC

42 J DOVER POINT ROAD

DOVER, NEW HAMPSHIRE 03820

PREPARED BY

TRITECH ENGINEERING CORPORATION

755 CENTRAL AVENUE

DOVER, NEW HAMPSHIRE 03820

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025
TABLE OF CONTENTS

Section I Narrative

1. Project Description
2. Methodology
3. Stormwater Runoff Peak Rates & Volumes
4. Stormwater Runoff Quality
5. Conclusions
6. Soils
7. Wetlands
8. Adjacent Areas
9. Critical Areas
10. Erosion and Sediment Control Practices
11. Construction Sequence
12. Maintenance

Section II Computations

1. Pre-Construction Drainage Plan (D-1)
2. Pre-Development Watershed Diagram
3. Pre-Development Area & Soils Listings
4. Pre-Development Drainage Node Summary (2 year storm)
5. Pre-Development Drainage Node Summary (10 year storm)
6. Pre-Development Drainage Node Summary (25 year storm)
7. Pre-Development Drainage Node Summary (50 year storm)
8. Pre-Development Drainage Full Computations (10 year storm)
9. Post-Construction Drainage Plans (D-2)
10. Post-Development Watershed Diagram
11. Post-Development Area & Soils Listings
12. Post-Development Drainage Node Summary (2 year storm)
13. Post-Development Drainage Node Summary (10 year storm)
14. Post-Development Drainage Node Summary (25 year storm)
15. Post-Development Drainage Node Summary (50 year storm)
16. Post-Development Drainage Full Computations (10 year storm)

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

Section III Exhibits

1. USGS Dover Quadrangle (7.5 minute series)
2. Boundaries for SCS Rainfall Distributions
3. Extreme Precipitation Table
4. Filtration BMP Design Criteria Worksheets Bio #101-104
5. Groundwater Recharge Volume Calculation Worksheet
6. Infiltration Analysis
7. Riprap Calculations
8. Site Specific Soils Plan (SSS-1)
9. Soil Report by Highland Soil Services
10. Hydrologic Soil Groups
11. Runoff Curve Numbers
12. Manning's Number Tables
13. Broad Crested Weir Coefficients
14. Culvert Entrance Loss Coefficients
15. Sheet Flow Roughness Coefficients
16. Velocity Factors
17. Stormwater Management, Inspection, & Maintenance Plan

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

AMBROSE WOODS

210 TOLEND ROAD AND EMERALD LANE

DOVER, NEW HAMPSHIRE

MARCH 2025

SECTION I

NARRATIVE

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

PROJECT DESCRIPTION

The attached Open Space Subdivision (OSS) Plans are for Ambrose Woods and show the development of an approximately 55.7-acre parcel of which 15.5 acres are wetlands. This site is located on the Southern side of Tolend Road in Dover, New Hampshire. The site is identified on Dover Property as Map F Lot 3 and is located in the R-40 Zoning District. There is an existing single family residence located on the lot.

Five fee simple lots will be created under the City of Dover Open Space Subdivision requirements. Lot 3-2 will be developed with 29 cluster units. The development will include the construction of an 1,816 foot roadway with associated infrastructure which will be accessed through Emerald Lane. The roadway will be private and does not meet the City of Dover public roadway standards.

Included in the stormwater management system is the construction of four Bioretention Areas. The Bioretention Areas are 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 Open Space Subdivision Plans for Ambrose Property as prepared by Trittech Engineering Corporation. Site and Construction plans are based upon an actual on-ground survey performed by Trittech Engineering Corporation, and on-site Wetland & Site Specific Soil delineation performed by Highland Soil Services.

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 10.20-6a, by Applied Microcomputer Systems. Analysis and design were performed for the Two-Year, Ten-Year, Twenty-Five-Year and Fifty Year Storm Events.

Subcat 3 is the flow leaving our site to Indian Ridge Open Space which is 44.56 acres. Subcat 5 is the flow to the existing Indian Ridge bioretention system and shows there will be no impact to the current system. Subcats 1,2,4 & 6 are the total flow which leaves our site to the Ezra Green Open Space which is 63.47 acres.

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

Peak Rate of Runoff (CFS)

Year	<u>2</u>		<u>10</u>		<u>25</u>		<u>50</u>	
Analysis Pt.	PRE	POST	PRE	POST	PRE	POST	PRE	POST
3	2.49	2.39	6.34	5.36	9.79	7.83	13.27	10.74
Total to Indian Ridge Open Space	2.49	2.39	6.34	5.36	9.79	7.83	13.27	10.74
5	0.46	0.42	1.09	0.97	1.63	1.45	2.17	1.91
Total to Indian Ridge Bioretention	0.46	0.42	1.09	0.97	1.63	1.45	2.17	1.91
1	0.35	0.47	1.24	1.31	2.09	2.07	2.97	2.84
2	2.67	2.35	7.02	6.20	10.92	9.76	14.88	13.76
4	10.52	10.70	25.44	25.61	38.66	39.10	52.08	52.19
6	0.09	0.07	0.44	0.24	0.81	0.39	1.21	0.55
Total to Ezra Green Open Space	13.63	13.59	34.14	33.36	52.48	51.32	71.14	69.34

Volume Comparison (Acre Feet)

Year	<u>2</u>	
Analysis Pt.	PRE	POST
3	0.436	0.511
Total to Indian Ridge Open Space	0.436	0.511
5	0.047	0.040
Total to Indian Ridge Bioretention	0.047	0.040
1	0.048	0.052
2	0.446	0.332
4	3.704	3.741
6	0.019	0.007
Total to Ezra Green Open Space	4.217	4.132

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

STORMWATER RUNOFF QUALITY

Stormwater runoff from the site is collected in a closed drainage system of pipes and catch basins, pretreated via sediment forebays, and treated, detained, and infiltrated via the Bioretention areas.

CONCLUSIONS

Treatment of drainage occurs in Sediment Forebays and Bioretention Practices. 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.

SOIL TYPES

Upland soils are bedrock controlled loamy to sandy glacial till ranging from well drained to somewhat poorly drained. The predominant soils in the uplands are moderately well drained with depth to bedrock ranging from 10 inches to greater than six feet. Typically, the shallower soils are found on ridgetops with depth to bedrock increasing through the lower sideslopes. Many test pits showed rock fragments of various percentages in the lower B and C horizons. A flagstone (flaggy texture modifier) is a thin fragment of sandstone, limestone, slate, shale, or (rarely) schist, 6 to 15 inches long. A channer (channery texture modifier) is a similar fragment that is less than 6 inches long. A soil that is described as extremely flaggy and channery still has enough fine particles to be considered a soil. All soft bedrock – bedrock that can be excavated – was classified as bedrock.

Wetland soils are mostly loamy to sandy over clayey and poorly drained around the perimeter and similar very poorly drained soils with an organic surface in the center.

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

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. 15% has been added to the extreme precipitation values.

We have used the interactive web tool for extreme precipitation analysis published by Cornell University. On February 24, 2025, we submitted our site location (longitude 70.917° West, Latitude 43.198° North). A table with the resulting rainfall data is provided in the appendix.

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. The wetlands are depicted on the project plan. Highland Soil Services also completed a site-specific soil survey, the results of which are depicted on sheets SSS-1, D-1, D-2 & D-3.

ADJACENT AREA

The site has an area of about 55 acres and is largely wooded and undeveloped. To the north the site is bounded by residential development along Tolend Road. To the east, the site is bounded by Paradise Farm. To the south, the site is bounded by the Ezra Green open space. To the west, the site is bounded by the Indian Ridge residential development and associated open space.

CRITICAL AREAS

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

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

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.

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

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.

STORMWATER ANALYSIS
and
Erosion & Sediment Control Plan
NARRATIVE
for
AMBROSE WOODS
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 2025

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. See the New Hampshire Stormwater Manual for additional information.
- E. Construct Stormwater Bioretention Basins #1-4. Do not direct runoff to the practice until the practice and contributing areas are fully stabilized.
- F. Construct 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.

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.

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

AMBROSE WOODS

210 TOLEND ROAD AND EMERALD LANE

DOVER, NEW HAMPSHIRE

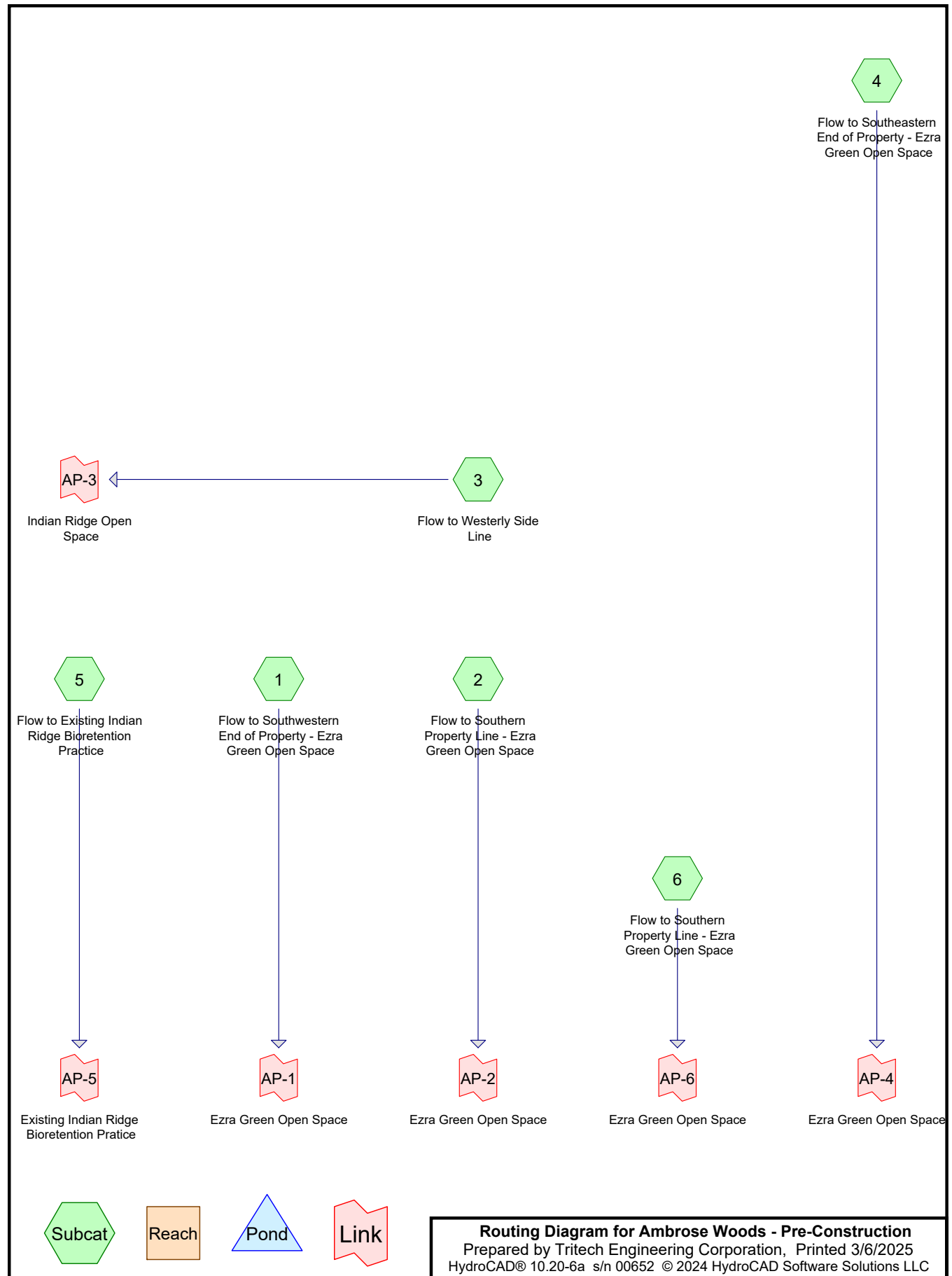
MARCH 2025

SECTION II

COMPUTATIONS



SHEET No. D-1	PRE-CONSTRUCTION DRAINAGE PLAN AMBROSE WOODS 210 TOLEND ROAD & EMERALD LANE DOVER, NEW HAMPSHIRE MARCH 6, 2025 JOB No. 23118 SCALE: 1" = 100'	
	REVISIONS DATE: DESCRIPTION:	
TRITECH ENGINEERING CORPORATION 755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE 603 742 8107 FAX 603 742 3630		



Ambrose Woods - Pre-Construction

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.857	61	>75% Grass cover, Good, HSG B (4)
1.082	74	>75% Grass cover, Good, HSG C (4, 5)
1.070	80	>75% Grass cover, Good, HSG D (4)
0.127	96	Gravel surface, HSG B (4)
0.018	96	Gravel surface, HSG C (4)
0.048	98	Roofs, HSG B (4)
0.148	98	Roofs, HSG C (4)
16.103	55	Woods, Good, HSG B (1, 2, 3, 4, 5, 6)
13.560	70	Woods, Good, HSG C (1, 2, 3, 4, 5, 6)
21.996	77	Woods, Good, HSG D (2, 3, 4)
58.006	68	TOTAL AREA

Ambrose Woods - Pre-Construction

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
20.134	HSG B	1, 2, 3, 4, 5, 6
14.807	HSG C	1, 2, 3, 4, 5, 6
23.066	HSG D	2, 3, 4
0.000	Other	
58.006		TOTAL AREA

Ambrose Woods - Pre-Construction*Type III 24-hr 2-YR SEACOAST Rainfall=3.60"*

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Flow to Southwestern End Runoff Area=43,973 sf 0.00% Impervious Runoff Depth=0.58"
Flow Length=430' Tc=16.2 min CN=60 Runoff=0.35 cfs 0.048 af

Subcatchment2: Flow to Southern Runoff Area=272,501 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=945' Tc=40.7 min CN=66 Runoff=2.67 cfs 0.446 af

Subcatchment3: Flow to Westerly Side Runoff Area=251,107 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=815' Tc=46.0 min CN=67 Runoff=2.49 cfs 0.436 af

Subcatchment4: Flow to Southeastern Runoff Area=1,910,416 sf 0.45% Impervious Runoff Depth>1.01"
Flow Length=2,625' Tc=139.2 min CN=69 Runoff=10.52 cfs 3.704 af

Subcatchment5: Flow to Existing Indian Runoff Area=23,065 sf 0.00% Impervious Runoff Depth=1.07"
Flow Length=323' Tc=15.1 min CN=70 Runoff=0.46 cfs 0.047 af

Subcatchment6: Flow to Southern Property Runoff Area=25,697 sf 0.00% Impervious Runoff Depth=0.38"
Flow Length=278' Tc=23.9 min CN=55 Runoff=0.09 cfs 0.019 af

Link AP-1: Ezra Green Open Space Inflow=0.35 cfs 0.048 af
Primary=0.35 cfs 0.048 af

Link AP-2: Ezra Green Open Space Inflow=2.67 cfs 0.446 af
Primary=2.67 cfs 0.446 af

Link AP-3: Indian Ridge Open Space Inflow=2.49 cfs 0.436 af
Primary=2.49 cfs 0.436 af

Link AP-4: Ezra Green Open Space Inflow=10.52 cfs 3.704 af
Primary=10.52 cfs 3.704 af

Link AP-5: Existing Indian Ridge Bioretention Practice Inflow=0.46 cfs 0.047 af
Primary=0.46 cfs 0.047 af

Link AP-6: Ezra Green Open Space Inflow=0.09 cfs 0.019 af
Primary=0.09 cfs 0.019 af

Ambrose Woods - Pre-Construction*Type III 24-hr 10-YR SEACOAST Rainfall=5.43"*

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Flow to Southwestern End Runoff Area=43,973 sf 0.00% Impervious Runoff Depth=1.56"
Flow Length=430' Tc=16.2 min CN=60 Runoff=1.24 cfs 0.131 af

Subcatchment2: Flow to Southern Runoff Area=272,501 sf 0.00% Impervious Runoff Depth=2.03"
Flow Length=945' Tc=40.7 min CN=66 Runoff=7.02 cfs 1.057 af

Subcatchment3: Flow to Westerly Side Runoff Area=251,107 sf 0.00% Impervious Runoff Depth=2.11"
Flow Length=815' Tc=46.0 min CN=67 Runoff=6.34 cfs 1.013 af

Subcatchment4: Flow to Southeastern Runoff Area=1,910,416 sf 0.45% Impervious Runoff Depth>2.27"
Flow Length=2,625' Tc=139.2 min CN=69 Runoff=25.44 cfs 8.309 af

Subcatchment5: Flow to Existing Indian Runoff Area=23,065 sf 0.00% Impervious Runoff Depth=2.36"
Flow Length=323' Tc=15.1 min CN=70 Runoff=1.09 cfs 0.104 af

Subcatchment6: Flow to Southern Property Runoff Area=25,697 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=278' Tc=23.9 min CN=55 Runoff=0.44 cfs 0.059 af

Link AP-1: Ezra Green Open Space Inflow=1.24 cfs 0.131 af
Primary=1.24 cfs 0.131 af

Link AP-2: Ezra Green Open Space Inflow=7.02 cfs 1.057 af
Primary=7.02 cfs 1.057 af

Link AP-3: Indian Ridge Open Space Inflow=6.34 cfs 1.013 af
Primary=6.34 cfs 1.013 af

Link AP-4: Ezra Green Open Space Inflow=25.44 cfs 8.309 af
Primary=25.44 cfs 8.309 af

Link AP-5: Existing Indian Ridge Bioretention Practice Inflow=1.09 cfs 0.104 af
Primary=1.09 cfs 0.104 af

Link AP-6: Ezra Green Open Space Inflow=0.44 cfs 0.059 af
Primary=0.44 cfs 0.059 af

Ambrose Woods - Pre-Construction*Type III 24-hr 25-YR SEACOAST Rainfall=6.85"*

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Flow to Southwestern End Runoff Area=43,973 sf 0.00% Impervious Runoff Depth=2.50"
Flow Length=430' Tc=16.2 min CN=60 Runoff=2.09 cfs 0.210 af

Subcatchment2: Flow to Southern Runoff Area=272,501 sf 0.00% Impervious Runoff Depth=3.09"
Flow Length=945' Tc=40.7 min CN=66 Runoff=10.92 cfs 1.609 af

Subcatchment3: Flow to Westerly Side Runoff Area=251,107 sf 0.00% Impervious Runoff Depth=3.19"
Flow Length=815' Tc=46.0 min CN=67 Runoff=9.79 cfs 1.531 af

Subcatchment4: Flow to Southeastern Runoff Area=1,910,416 sf 0.45% Impervious Runoff Depth>3.39"
Flow Length=2,625' Tc=139.2 min CN=69 Runoff=38.66 cfs 12.385 af

Subcatchment5: Flow to Existing Indian Runoff Area=23,065 sf 0.00% Impervious Runoff Depth=3.49"
Flow Length=323' Tc=15.1 min CN=70 Runoff=1.63 cfs 0.154 af

Subcatchment6: Flow to Southern Property Runoff Area=25,697 sf 0.00% Impervious Runoff Depth=2.03"
Flow Length=278' Tc=23.9 min CN=55 Runoff=0.81 cfs 0.100 af

Link AP-1: Ezra Green Open Space Inflow=2.09 cfs 0.210 af
Primary=2.09 cfs 0.210 af

Link AP-2: Ezra Green Open Space Inflow=10.92 cfs 1.609 af
Primary=10.92 cfs 1.609 af

Link AP-3: Indian Ridge Open Space Inflow=9.79 cfs 1.531 af
Primary=9.79 cfs 1.531 af

Link AP-4: Ezra Green Open Space Inflow=38.66 cfs 12.385 af
Primary=38.66 cfs 12.385 af

Link AP-5: Existing Indian Ridge Bioretention Practice Inflow=1.63 cfs 0.154 af
Primary=1.63 cfs 0.154 af

Link AP-6: Ezra Green Open Space Inflow=0.81 cfs 0.100 af
Primary=0.81 cfs 0.100 af

Ambrose Woods - Pre-Construction*Type III 24-hr 50-YR SEACOAST Rainfall=8.20"*

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Flow to Southwestern End Runoff Area=43,973 sf 0.00% Impervious Runoff Depth=3.48"
Flow Length=430' Tc=16.2 min CN=60 Runoff=2.97 cfs 0.293 af

Subcatchment2: Flow to Southern Runoff Area=272,501 sf 0.00% Impervious Runoff Depth=4.17"
Flow Length=945' Tc=40.7 min CN=66 Runoff=14.88 cfs 2.175 af

Subcatchment3: Flow to Westerly Side Runoff Area=251,107 sf 0.00% Impervious Runoff Depth=4.29"
Flow Length=815' Tc=46.0 min CN=67 Runoff=13.27 cfs 2.060 af

Subcatchment4: Flow to Southeastern Runoff Area=1,910,416 sf 0.45% Impervious Runoff Depth>4.52"
Flow Length=2,625' Tc=139.2 min CN=69 Runoff=52.08 cfs 16.508 af

Subcatchment5: Flow to Existing Indian Runoff Area=23,065 sf 0.00% Impervious Runoff Depth=4.64"
Flow Length=323' Tc=15.1 min CN=70 Runoff=2.17 cfs 0.205 af

Subcatchment6: Flow to Southern Property Runoff Area=25,697 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=278' Tc=23.9 min CN=55 Runoff=1.21 cfs 0.144 af

Link AP-1: Ezra Green Open Space Inflow=2.97 cfs 0.293 af
Primary=2.97 cfs 0.293 af

Link AP-2: Ezra Green Open Space Inflow=14.88 cfs 2.175 af
Primary=14.88 cfs 2.175 af

Link AP-3: Indian Ridge Open Space Inflow=13.27 cfs 2.060 af
Primary=13.27 cfs 2.060 af

Link AP-4: Ezra Green Open Space Inflow=52.08 cfs 16.508 af
Primary=52.08 cfs 16.508 af

Link AP-5: Existing Indian Ridge Bioretention Practice Inflow=2.17 cfs 0.205 af
Primary=2.17 cfs 0.205 af

Link AP-6: Ezra Green Open Space Inflow=1.21 cfs 0.144 af
Primary=1.21 cfs 0.144 af

Ambrose Woods - Pre-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 1: Flow to Southwestern End of Property - Ezra Green Open Space

Runoff = 1.24 cfs @ 12.25 hrs, Volume= 0.131 af, Depth= 1.56"
 Routed to Link AP-1 : Ezra Green Open Space

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
14,893	70	Woods, Good, HSG C
29,080	55	Woods, Good, HSG B
43,973	60	Weighted Average
43,973		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0800	0.14		Sheet Flow, Sheet Woods
					Woods: Light underbrush n= 0.400 P2= 3.60"
0.9	85	0.1000	1.58		Shallow Concentrated Flow, SC Woods
					Woodland Kv= 5.0 fps
3.7	245	0.0500	1.12		Shallow Concentrated Flow, SC Woods
					Woodland Kv= 5.0 fps
16.2	430	Total			

Summary for Subcatchment 2: Flow to Southern Property Line - Ezra Green Open Space

Runoff = 7.02 cfs @ 12.61 hrs, Volume= 1.057 af, Depth= 2.03"
 Routed to Link AP-2 : Ezra Green Open Space

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
70,502	70	Woods, Good, HSG C
110,650	55	Woods, Good, HSG B
91,349	77	Woods, Good, HSG D
272,501	66	Weighted Average
272,501		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0400	0.11		Sheet Flow, Sheet Woods
					Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	205	0.0800	1.41		Shallow Concentrated Flow, SC Woods
					Woodland Kv= 5.0 fps
5.8	275	0.0250	0.79		Shallow Concentrated Flow, SC Woods
					Woodland Kv= 5.0 fps
17.2	365	0.0200	0.35		Shallow Concentrated Flow, SC Wet
					Forest w/Heavy Litter Kv= 2.5 fps
40.7	945	Total			

Ambrose Woods - Pre-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 3: Flow to Westerly Side Line

Runoff = 6.34 cfs @ 12.67 hrs, Volume= 1.013 af, Depth= 2.11"
 Routed to Link AP-3 : Indian Ridge Open Space

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
66,743	70	Woods, Good, HSG C
91,126	55	Woods, Good, HSG B
93,238	77	Woods, Good, HSG D
251,107	67	Weighted Average
251,107		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0400	0.11		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
5.7	340	0.0400	1.00		Shallow Concentrated Flow, Sc Woods Woodland Kv= 5.0 fps
25.0	375	0.0100	0.25		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
46.0	815	Total			

Summary for Subcatchment 4: Flow to Southeastern End of Property - Ezra Green Open Space

Runoff = 25.44 cfs @ 13.92 hrs, Volume= 8.309 af, Depth> 2.27"
 Routed to Link AP-4 : Ezra Green Open Space

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
423,035	70	Woods, Good, HSG C
41,000	74	>75% Grass cover, Good, HSG C
6,440	98	Roofs, HSG C
770	96	Gravel surface, HSG C
443,407	55	Woods, Good, HSG B
5,530	96	Gravel surface, HSG B
2,075	98	Roofs, HSG B
168,000	61	>75% Grass cover, Good, HSG B
773,559	77	Woods, Good, HSG D
46,600	80	>75% Grass cover, Good, HSG D
1,910,416	69	Weighted Average
1,901,901		99.55% Pervious Area
8,515		0.45% Impervious Area

Ambrose Woods - Pre-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1200	0.17		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
12.7	540	0.0200	0.71		Shallow Concentrated Flow, Sc Woods Woodland Kv= 5.0 fps
19.1	350	0.0150	0.31		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
17.5	435	0.0275	0.41		Shallow Concentrated Flow, Sc Wet Forest w/Heavy Litter Kv= 2.5 fps
80.0	1,200	0.0100	0.25		Shallow Concentrated Flow, Sc Wet Forest w/Heavy Litter Kv= 2.5 fps
139.2	2,625	Total			

Summary for Subcatchment 5: Flow to Existing Indian Ridge Bioretention Practice

Runoff = 1.09 cfs @ 12.21 hrs, Volume= 0.104 af, Depth= 2.36"
 Routed to Link AP-5 : Existing Indian Ridge Bioretention Practice

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
14,623	70	Woods, Good, HSG C
6,120	74	>75% Grass cover, Good, HSG C
2,322	55	Woods, Good, HSG B
23,065	70	Weighted Average
23,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0800	0.14		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
1.4	88	0.0450	1.06		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
2.1	135	0.0450	1.06		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
15.1	323	Total			

Summary for Subcatchment 6: Flow to Southern Property Line - Ezra Green Open Space

Runoff = 0.44 cfs @ 12.40 hrs, Volume= 0.059 af, Depth= 1.20"
 Routed to Link AP-6 : Ezra Green Open Space

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Ambrose Woods - Pre-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Tritech Engineering Corporation

Printed 3/10/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area (sf)	CN	Description
856	70	Woods, Good, HSG C
24,841	55	Woods, Good, HSG B
25,697	55	Weighted Average
25,697		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	68	0.0450	0.11		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
9.1	32	0.0150	0.06		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	90	0.0150	0.61		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
1.6	88	0.0350	0.94		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
23.9	278	Total			

Summary for Link AP-1: Ezra Green Open Space

Inflow Area = 1.009 ac, 0.00% Impervious, Inflow Depth = 1.56" for 10-YR SEACOAST event
 Inflow = 1.24 cfs @ 12.25 hrs, Volume= 0.131 af
 Primary = 1.24 cfs @ 12.25 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-2: Ezra Green Open Space

Inflow Area = 6.256 ac, 0.00% Impervious, Inflow Depth = 2.03" for 10-YR SEACOAST event
 Inflow = 7.02 cfs @ 12.61 hrs, Volume= 1.057 af
 Primary = 7.02 cfs @ 12.61 hrs, Volume= 1.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-3: Indian Ridge Open Space

Inflow Area = 5.765 ac, 0.00% Impervious, Inflow Depth = 2.11" for 10-YR SEACOAST event
 Inflow = 6.34 cfs @ 12.67 hrs, Volume= 1.013 af
 Primary = 6.34 cfs @ 12.67 hrs, Volume= 1.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-4: Ezra Green Open Space

Inflow Area = 43.857 ac, 0.45% Impervious, Inflow Depth > 2.27" for 10-YR SEACOAST event
 Inflow = 25.44 cfs @ 13.92 hrs, Volume= 8.309 af
 Primary = 25.44 cfs @ 13.92 hrs, Volume= 8.309 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-5: Existing Indian Ridge Bioretention Practice

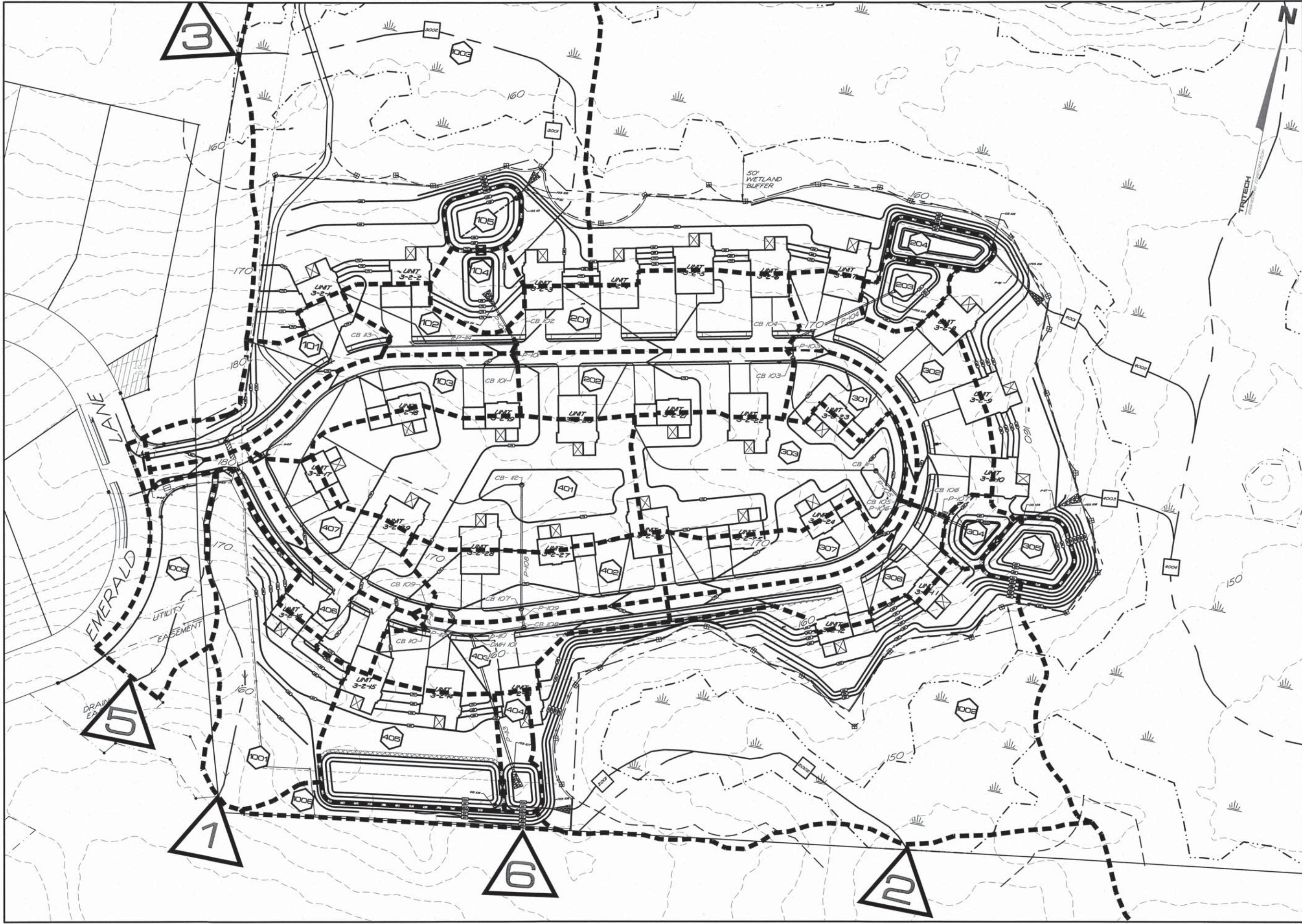
Inflow Area = 0.529 ac, 0.00% Impervious, Inflow Depth = 2.36" for 10-YR SEACOAST event
Inflow = 1.09 cfs @ 12.21 hrs, Volume= 0.104 af
Primary = 1.09 cfs @ 12.21 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

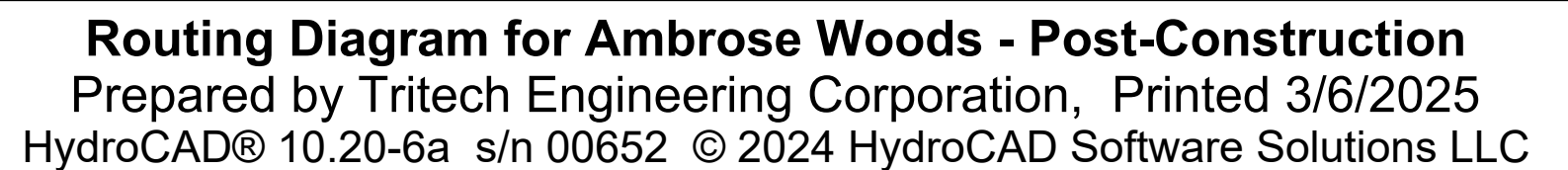
Summary for Link AP-6: Ezra Green Open Space

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 1.20" for 10-YR SEACOAST event
Inflow = 0.44 cfs @ 12.40 hrs, Volume= 0.059 af
Primary = 0.44 cfs @ 12.40 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs



SHEET No.	D-3	POST-CONSTRUCTION DRAINAGE PLAN		TRITECH ENGINEERING CORPORATION
		AMBROSE WOODS 210 TOLEND ROAD & EMERALD LANE DOVER, NEW HAMPSHIRE MARCH 6, 2025 JOB No. 2318 SCALE: 1" = 50'		
REVISIONS		DATE: DESCRIPTION:		755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03860 TELEPHONE 603 742 8107 FAX 603 742 9530



Ambrose Woods - Post-Construction

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
8.642	61	>75% Grass cover, Good, HSG B (101, 102, 103, 104, 105, 201, 202, 203, 204, 301, 302, 303, 304, 305, 306, 307, 401, 402, 403, 404, 405, 406, 407, 1001, 1002, 1003, 1004, 1005, 1006)
3.278	74	>75% Grass cover, Good, HSG C (101, 103, 202, 301, 302, 303, 307, 401, 402, 405, 406, 407, 1001, 1004, 1005)
1.489	80	>75% Grass cover, Good, HSG D (104, 105, 403, 404, 405, 1002, 1003, 1004)
0.135	96	Gravel surface, HSG B (101, 1004)
0.018	96	Gravel surface, HSG C (1004)
1.316	98	Paved parking, HSG B (101, 102, 103, 201, 202, 301, 302, 306, 307, 402, 403, 406, 407)
0.487	98	Paved parking, HSG C (101, 103, 202, 301, 302, 307, 402, 406, 407, 1005)
0.003	98	Paved parking, HSG D (403)
0.666	98	Roofs, HSG B (101, 102, 103, 201, 202, 302, 303, 306, 307, 401, 402, 403, 404, 405, 406, 1001, 1002, 1003, 1004)
0.733	98	Roofs, HSG C (202, 301, 302, 303, 307, 401, 402, 403, 405, 406, 407, 1001, 1004)
0.080	98	Roofs, HSG D (201, 403, 404, 1002, 1003)
9.376	55	Woods, Good, HSG B (1001, 1002, 1003, 1004)
10.292	70	Woods, Good, HSG C (101, 1003, 1004, 1005)
21.493	77	Woods, Good, HSG D (1002, 1003, 1004)
58.007	71	TOTAL AREA

Ambrose Woods - Post-Construction

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
20.134	HSG B	101, 102, 103, 104, 105, 201, 202, 203, 204, 301, 302, 303, 304, 305, 306, 307, 401, 402, 403, 404, 405, 406, 407, 1001, 1002, 1003, 1004, 1005, 1006
14.807	HSG C	101, 103, 202, 301, 302, 303, 307, 401, 402, 403, 405, 406, 407, 1001, 1003, 1004, 1005
23.066	HSG D	104, 105, 201, 403, 404, 405, 1002, 1003, 1004
0.000	Other	
58.007		TOTAL AREA

Ambrose Woods - Post-Construction*Type III 24-hr 2-YR SEACOAST Rainfall=3.60"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101: ROADWAY TO STA	Runoff Area=16,667 sf 44.62% Impervious Runoff Depth=1.72" Flow Length=160' Tc=8.7 min CN=80 Runoff=0.70 cfs 0.055 af
Subcatchment102: ROADWAY STA 3+09 to	Runoff Area=8,357 sf 56.72% Impervious Runoff Depth=1.87" Flow Length=204' Tc=7.4 min CN=82 Runoff=0.40 cfs 0.030 af
Subcatchment103: ROADWAY STA 1+25	Runoff Area=17,147 sf 43.79% Impervious Runoff Depth=1.64" Flow Length=290' Tc=12.0 min CN=79 Runoff=0.62 cfs 0.054 af
Subcatchment104: FOREBAY #1 AREA	Runoff Area=7,361 sf 0.00% Impervious Runoff Depth=1.01" Tc=6.0 min CN=69 Runoff=0.18 cfs 0.014 af
Subcatchment105: BIO #1 AREA	Runoff Area=4,975 sf 0.00% Impervious Runoff Depth=1.72" Tc=6.0 min CN=80 Runoff=0.23 cfs 0.016 af
Subcatchment201: ROADWAY 4+50 TO	Runoff Area=23,987 sf 52.96% Impervious Runoff Depth=1.79" Flow Length=267' Tc=9.3 min CN=81 Runoff=1.03 cfs 0.082 af
Subcatchment202: ROADWAY 4+50 TO	Runoff Area=20,746 sf 44.13% Impervious Runoff Depth=1.72" Flow Length=250' Tc=7.4 min CN=80 Runoff=0.91 cfs 0.068 af
Subcatchment203: FOREBAY #2 AREA	Runoff Area=5,754 sf 0.00% Impervious Runoff Depth=0.62" Tc=6.0 min CN=61 Runoff=0.07 cfs 0.007 af
Subcatchment204: BIO #2 AREA	Runoff Area=4,542 sf 0.00% Impervious Runoff Depth=0.62" Tc=6.0 min CN=61 Runoff=0.06 cfs 0.005 af
Subcatchment301: ROADWAY STA 7.50 TO	Runoff Area=8,758 sf 52.33% Impervious Runoff Depth=2.02" Flow Length=295' Slope=0.0100 '/' Tc=11.6 min CN=84 Runoff=0.40 cfs 0.034 af
Subcatchment302: ROADWAY 7+50 TO	Runoff Area=25,067 sf 51.35% Impervious Runoff Depth=1.87" Flow Length=325' Tc=9.2 min CN=82 Runoff=1.13 cfs 0.089 af
Subcatchment303: INTERIOR EAST END	Runoff Area=34,670 sf 20.24% Impervious Runoff Depth=1.51" Flow Length=285' Tc=10.8 min CN=77 Runoff=1.18 cfs 0.100 af
Subcatchment304: FOREBAY #3 AREA	Runoff Area=4,075 sf 0.00% Impervious Runoff Depth=0.62" Tc=6.0 min CN=61 Runoff=0.05 cfs 0.005 af
Subcatchment305: BIO #3 AREA	Runoff Area=5,605 sf 0.00% Impervious Runoff Depth=0.62" Tc=6.0 min CN=61 Runoff=0.07 cfs 0.007 af
Subcatchment306: ROADWAY STA 12+00	Runoff Area=14,522 sf 58.68% Impervious Runoff Depth=1.94" Flow Length=128' Tc=6.7 min CN=83 Runoff=0.74 cfs 0.054 af
Subcatchment307: ROADWAY STA 12+00	Runoff Area=14,644 sf 51.67% Impervious Runoff Depth=1.87" Flow Length=315' Tc=7.2 min CN=82 Runoff=0.70 cfs 0.052 af

Ambrose Woods - Post-Construction*Type III 24-hr 2-YR SEACOAST Rainfall=3.60"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Subcatchment401: INTERIOR WEST END Runoff Area=44,807 sf 18.72% Impervious Runoff Depth=1.51"
Flow Length=240' Tc=14.1 min CN=77 Runoff=1.38 cfs 0.129 af

Subcatchment402: ROADWAY STA 12+00 Runoff Area=19,635 sf 42.05% Impervious Runoff Depth=1.87"
Flow Length=172' Tc=6.5 min CN=82 Runoff=0.97 cfs 0.070 af

Subcatchment403: ROADWAY STA 12+00 Runoff Area=16,739 sf 53.16% Impervious Runoff Depth=1.87"
Flow Length=165' Tc=6.4 min CN=82 Runoff=0.83 cfs 0.060 af

Subcatchment404: FOREBAY #4 AREA Runoff Area=5,000 sf 14.70% Impervious Runoff Depth=0.91"
Tc=6.0 min CN=67 Runoff=0.11 cfs 0.009 af

Subcatchment405: BIO #4 AREA Runoff Area=24,727 sf 10.65% Impervious Runoff Depth=0.81"
Tc=6.0 min CN=65 Runoff=0.46 cfs 0.038 af

Subcatchment406: ROADWAY END TO Runoff Area=13,522 sf 62.97% Impervious Runoff Depth=2.45"
Tc=6.0 min CN=89 Runoff=0.88 cfs 0.063 af

Subcatchment407: ROADWAY END TO Runoff Area=14,317 sf 47.88% Impervious Runoff Depth=2.02"
Flow Length=245' Tc=6.9 min CN=84 Runoff=0.76 cfs 0.055 af

Subcatchment1001: REMAINING AREA OF Runoff Area=34,071 sf 2.96% Impervious Runoff Depth=0.81"
Flow Length=365' Tc=14.5 min CN=65 Runoff=0.47 cfs 0.052 af

Subcatchment1002: REMAINING AREA Runoff Area=134,983 sf 2.00% Impervious Runoff Depth=1.13"
Flow Length=450' Tc=25.0 min CN=71 Runoff=2.35 cfs 0.291 af

Subcatchment1003: REMAINING AREA Runoff Area=174,590 sf 2.28% Impervious Runoff Depth=1.19"
Flow Length=577' Tc=52.7 min CN=72 Runoff=2.23 cfs 0.396 af

Subcatchment1004: REMAINING AREA Runoff Area=1,802,931 sf 0.47% Impervious Runoff Depth>1.07"
Flow Length=2,625' Tc=139.2 min CN=70 Runoff=10.60 cfs 3.688 af

Subcatchment1005: REMAINING AREA OF Runoff Area=18,470 sf 2.71% Impervious Runoff Depth=1.13"
Flow Length=255' Tc=12.5 min CN=71 Runoff=0.42 cfs 0.040 af

Subcatchment1006: REMAINING AREA OF Runoff Area=6,110 sf 0.00% Impervious Runoff Depth=0.62"
Flow Length=120' Tc=7.7 min CN=61 Runoff=0.07 cfs 0.007 af

Reach 2001: FLOW THROUGH WOODS Avg. Flow Depth=0.12' Max Vel=0.82 fps Inflow=0.32 cfs 0.041 af
n=0.070 L=70.0' S=0.0443 '/ Capacity=7.13 cfs Outflow=0.32 cfs 0.041 af

Reach 2002: FLOW THROUGH Avg. Flow Depth=0.10' Max Vel=0.32 fps Inflow=0.32 cfs 0.041 af
n=0.100 L=360.0' S=0.0178 '/ Capacity=9.52 cfs Outflow=0.28 cfs 0.041 af

Reach 3001: FLOW THROUGH WOODS Avg. Flow Depth=0.11' Max Vel=0.81 fps Inflow=0.30 cfs 0.116 af
n=0.070 L=72.0' S=0.0451 '/ Capacity=7.20 cfs Outflow=0.30 cfs 0.116 af

Reach 3002: FLOW THROUGH Avg. Flow Depth=0.13' Max Vel=0.22 fps Inflow=0.30 cfs 0.116 af
n=0.100 L=400.0' S=0.0056 '/ Capacity=5.36 cfs Outflow=0.28 cfs 0.115 af

Reach 4001: FLOW THROUGH WOODS Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.070 L=78.0' S=0.0756 '/ Capacity=9.32 cfs Outflow=0.00 cfs 0.000 af

Ambrose Woods - Post-Construction*Type III 24-hr 2-YR SEACOAST Rainfall=3.60"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Reach 4002: FLOW THROUGH Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.100 L=1,225.0' S=0.0117 '/' Capacity=7.71 cfs Outflow=0.00 cfs 0.000 af

Reach 4003: FLOW THROUGH WOODS Avg. Flow Depth=0.09' Max Vel=0.80 fps Inflow=0.19 cfs 0.053 af
n=0.070 L=64.0' S=0.0656 '/' Capacity=8.68 cfs Outflow=0.19 cfs 0.053 af

Reach 4004: FLOW THROUGH Avg. Flow Depth=0.09' Max Vel=0.23 fps Inflow=0.19 cfs 0.053 af
n=0.100 L=1,010.0' S=0.0109 '/' Capacity=10.10 cfs Outflow=0.16 cfs 0.053 af

Pond BIO #1: BIORETENTION#1 Peak Elev=166.14' Storage=1,158 cf Inflow=1.10 cfs 0.118 af
Outflow=0.30 cfs 0.116 af

Pond BIO #2: BIORETENTION#2 Peak Elev=160.58' Storage=49 cf Inflow=0.17 cfs 0.065 af
Discarded=0.17 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.065 af

Pond BIO #3: BIORETENTION#3 Peak Elev=161.02' Storage=5,827 cf Inflow=4.05 cfs 0.282 af
Discarded=0.15 cfs 0.177 af Primary=0.19 cfs 0.053 af Outflow=0.34 cfs 0.230 af

Pond BIO #4: BIORETENTION#4 Peak Elev=161.03' Storage=5,617 cf Inflow=4.92 cfs 0.361 af
Discarded=0.48 cfs 0.320 af Primary=0.32 cfs 0.041 af Outflow=0.80 cfs 0.361 af

Pond CB-101: CB-101 4+50 10 RIGHT Peak Elev=169.96' Inflow=0.62 cfs 0.054 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=0.62 cfs 0.054 af

Pond CB-102: CB-102 STA 4+50 10' LEFT Peak Elev=169.64' Inflow=1.67 cfs 0.138 af
18.0" Round Culvert n=0.012 L=46.0' S=0.0120 '/' Outflow=1.67 cfs 0.138 af

Pond CB-103: CB-103 STA 7+50 10' RIGHT Peak Elev=166.66' Inflow=0.91 cfs 0.068 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=0.91 cfs 0.068 af

Pond CB-104: CB-104 STA 7+50 10' LEFT Peak Elev=166.54' Inflow=1.92 cfs 0.150 af
18.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=1.92 cfs 0.150 af

Pond CB-105: CB-105 STA 10+00 10' RIGHT Peak Elev=163.89' Inflow=2.21 cfs 0.186 af
18.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=2.21 cfs 0.186 af

Pond CB-106: CB-106 STA 10+00 10' LEFT Peak Elev=163.82' Inflow=4.03 cfs 0.329 af
24.0" Round Culvert n=0.012 L=50.0' S=0.0100 '/' Outflow=4.03 cfs 0.329 af

Pond CB-107: CB-107 STA 14+59 10" RIGHT Peak Elev=165.14' Inflow=2.09 cfs 0.199 af
18.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=2.09 cfs 0.199 af

Pond CB-108: CB-108 STA 14+59 10' LEFT Peak Elev=164.77' Inflow=2.85 cfs 0.259 af
18.0" Round Culvert n=0.012 L=58.0' S=0.0103 '/' Outflow=2.85 cfs 0.259 af

Pond CB-109: CB-109 STA 15+65 10' RIGHT Peak Elev=167.01' Inflow=0.76 cfs 0.055 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=0.76 cfs 0.055 af

Pond CB-110: CB-110 STA 15+65 10' LEFT Peak Elev=166.67' Inflow=1.63 cfs 0.119 af
15.0" Round Culvert n=0.012 L=52.0' S=0.0529 '/' Outflow=1.63 cfs 0.119 af

Ambrose Woods - Post-Construction*Type III 24-hr 2-YR SEACOAST Rainfall=3.60"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Pond CB-111: CB-111Peak Elev=164.11' Inflow=1.18 cfs 0.100 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0200 '/' Outflow=1.18 cfs 0.100 af**Pond CB-112: CB-112**Peak Elev=167.57' Inflow=1.38 cfs 0.129 af
15.0" Round Culvert n=0.012 L=135.0' S=0.0185 '/' Outflow=1.38 cfs 0.129 af**Pond CB-113: CB-113 STA 3+09 10' LEFT**Peak Elev=171.52' Inflow=0.70 cfs 0.055 af
12.0" Round Culvert n=0.012 L=142.0' S=0.0137 '/' Outflow=0.70 cfs 0.055 af**Pond DMH-110: DMH-101 STA 15+15 14' LEFT**Peak Elev=164.20' Inflow=4.43 cfs 0.378 af
24.0" Round Culvert n=0.012 L=154.0' S=0.0110 '/' Outflow=4.43 cfs 0.378 af**Pond FB #2: FOREBAY #2**Peak Elev=166.54' Storage=4,366 cf Inflow=1.99 cfs 0.157 af
Outflow=0.17 cfs 0.059 af**Pond FB #3: FOREWAY #3**Peak Elev=163.73' Storage=2,980 cf Inflow=4.07 cfs 0.334 af
Outflow=3.98 cfs 0.275 af**Pond FB #4: FOREBAY #4**Peak Elev=163.24' Storage=3,171 cf Inflow=4.54 cfs 0.386 af
Outflow=4.48 cfs 0.323 af**Pond FB#1: FOREBAY #1**Peak Elev=169.12' Storage=2,439 cf Inflow=1.84 cfs 0.153 af
Outflow=1.01 cfs 0.102 af**Link AP-1: EZRA GREEN OPEN SPACE**Inflow=0.47 cfs 0.052 af
Primary=0.47 cfs 0.052 af**Link AP-2: EZRA GREEN OPEN SPACE**Inflow=2.35 cfs 0.332 af
Primary=2.35 cfs 0.332 af**Link AP-3: INDIAN RIDGE OPEN SPACE**Inflow=2.40 cfs 0.511 af
Primary=2.40 cfs 0.511 af**Link AP-4: EZRA GREEN OPEN SPACE**Inflow=10.70 cfs 3.741 af
Primary=10.70 cfs 3.741 af**Link AP-5: EXISTING INDIAN RIDGE BIORETENTION PRATICE**Inflow=0.42 cfs 0.040 af
Primary=0.42 cfs 0.040 af**Link AP-6: EZRA GREEN OPEN SPACE**Inflow=0.07 cfs 0.007 af
Primary=0.07 cfs 0.007 af**Total Runoff Area = 58.007 ac Runoff Volume = 5.572 af Average Runoff Depth = 1.15"**
94.34% Pervious = 54.722 ac 5.66% Impervious = 3.285 ac

Ambrose Woods - Post-Construction*Type III 24-hr 10-YR SEACOAST Rainfall=5.43"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101: ROADWAY TO STA	Runoff Area=16,667 sf 44.62% Impervious Runoff Depth=3.27" Flow Length=160' Tc=8.7 min CN=80 Runoff=1.34 cfs 0.104 af
Subcatchment102: ROADWAY STA 3+09 to	Runoff Area=8,357 sf 56.72% Impervious Runoff Depth=3.47" Flow Length=204' Tc=7.4 min CN=82 Runoff=0.74 cfs 0.055 af
Subcatchment103: ROADWAY STA 1+25	Runoff Area=17,147 sf 43.79% Impervious Runoff Depth=3.18" Flow Length=290' Tc=12.0 min CN=79 Runoff=1.20 cfs 0.104 af
Subcatchment104: FOREBAY #1 AREA	Runoff Area=7,361 sf 0.00% Impervious Runoff Depth=2.28" Tc=6.0 min CN=69 Runoff=0.44 cfs 0.032 af
Subcatchment105: BIO #1 AREA	Runoff Area=4,975 sf 0.00% Impervious Runoff Depth=3.27" Tc=6.0 min CN=80 Runoff=0.44 cfs 0.031 af
Subcatchment201: ROADWAY 4+50 TO	Runoff Area=23,987 sf 52.96% Impervious Runoff Depth=3.37" Flow Length=267' Tc=9.3 min CN=81 Runoff=1.94 cfs 0.155 af
Subcatchment202: ROADWAY 4+50 TO	Runoff Area=20,746 sf 44.13% Impervious Runoff Depth=3.27" Flow Length=250' Tc=7.4 min CN=80 Runoff=1.74 cfs 0.130 af
Subcatchment203: FOREBAY #2 AREA	Runoff Area=5,754 sf 0.00% Impervious Runoff Depth=1.63" Tc=6.0 min CN=61 Runoff=0.24 cfs 0.018 af
Subcatchment204: BIO #2 AREA	Runoff Area=4,542 sf 0.00% Impervious Runoff Depth=1.63" Tc=6.0 min CN=61 Runoff=0.19 cfs 0.014 af
Subcatchment301: ROADWAY STA 7.50 TO	Runoff Area=8,758 sf 52.33% Impervious Runoff Depth=3.67" Flow Length=295' Slope=0.0100 '/' Tc=11.6 min CN=84 Runoff=0.71 cfs 0.061 af
Subcatchment302: ROADWAY 7+50 TO	Runoff Area=25,067 sf 51.35% Impervious Runoff Depth=3.47" Flow Length=325' Tc=9.2 min CN=82 Runoff=2.09 cfs 0.166 af
Subcatchment303: INTERIOR EAST END	Runoff Area=34,670 sf 20.24% Impervious Runoff Depth=2.99" Flow Length=285' Tc=10.8 min CN=77 Runoff=2.37 cfs 0.198 af
Subcatchment304: FOREBAY #3 AREA	Runoff Area=4,075 sf 0.00% Impervious Runoff Depth=1.63" Tc=6.0 min CN=61 Runoff=0.17 cfs 0.013 af
Subcatchment305: BIO #3 AREA	Runoff Area=5,605 sf 0.00% Impervious Runoff Depth=1.63" Tc=6.0 min CN=61 Runoff=0.23 cfs 0.018 af
Subcatchment306: ROADWAY STA 12+00	Runoff Area=14,522 sf 58.68% Impervious Runoff Depth=3.57" Flow Length=128' Tc=6.7 min CN=83 Runoff=1.35 cfs 0.099 af
Subcatchment307: ROADWAY STA 12+00	Runoff Area=14,644 sf 51.67% Impervious Runoff Depth=3.47" Flow Length=315' Tc=7.2 min CN=82 Runoff=1.30 cfs 0.097 af

Ambrose Woods - Post-Construction*Type III 24-hr 10-YR SEACOAST Rainfall=5.43"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Subcatchment401: INTERIOR WEST END Runoff Area=44,807 sf 18.72% Impervious Runoff Depth=2.99"
Flow Length=240' Tc=14.1 min CN=77 Runoff=2.79 cfs 0.256 af

Subcatchment402: ROADWAY STA 12+00 Runoff Area=19,635 sf 42.05% Impervious Runoff Depth=3.47"
Flow Length=172' Tc=6.5 min CN=82 Runoff=1.79 cfs 0.130 af

Subcatchment403: ROADWAY STA 12+00 Runoff Area=16,739 sf 53.16% Impervious Runoff Depth=3.47"
Flow Length=165' Tc=6.4 min CN=82 Runoff=1.53 cfs 0.111 af

Subcatchment404: FOREBAY #4 AREA Runoff Area=5,000 sf 14.70% Impervious Runoff Depth=2.11"
Tc=6.0 min CN=67 Runoff=0.28 cfs 0.020 af

Subcatchment405: BIO #4 AREA Runoff Area=24,727 sf 10.65% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=65 Runoff=1.25 cfs 0.092 af

Subcatchment406: ROADWAY END TO Runoff Area=13,522 sf 62.97% Impervious Runoff Depth=4.18"
Tc=6.0 min CN=89 Runoff=1.47 cfs 0.108 af

Subcatchment407: ROADWAY END TO Runoff Area=14,317 sf 47.88% Impervious Runoff Depth=3.67"
Flow Length=245' Tc=6.9 min CN=84 Runoff=1.35 cfs 0.100 af

Subcatchment1001: REMAINING AREA OF Runoff Area=34,071 sf 2.96% Impervious Runoff Depth=1.95"
Flow Length=365' Tc=14.5 min CN=65 Runoff=1.31 cfs 0.127 af

Subcatchment1002: REMAINING AREA Runoff Area=134,983 sf 2.00% Impervious Runoff Depth=2.45"
Flow Length=450' Tc=25.0 min CN=71 Runoff=5.40 cfs 0.632 af

Subcatchment1003: REMAINING AREA Runoff Area=174,590 sf 2.28% Impervious Runoff Depth=2.53"
Flow Length=577' Tc=52.7 min CN=72 Runoff=5.01 cfs 0.846 af

Subcatchment1004: REMAINING AREA Runoff Area=1,802,931 sf 0.47% Impervious Runoff Depth>2.36"
Flow Length=2,625' Tc=139.2 min CN=70 Runoff=25.03 cfs 8.135 af

Subcatchment1005: REMAINING AREA OF Runoff Area=18,470 sf 2.71% Impervious Runoff Depth=2.45"
Flow Length=255' Tc=12.5 min CN=71 Runoff=0.97 cfs 0.086 af

Subcatchment1006: REMAINING AREA OF Runoff Area=6,110 sf 0.00% Impervious Runoff Depth=1.63"
Flow Length=120' Tc=7.7 min CN=61 Runoff=0.24 cfs 0.019 af

Reach 2001: FLOW THROUGH WOODS Avg. Flow Depth=0.26' Max Vel=1.39 fps Inflow=1.74 cfs 0.308 af
n=0.070 L=70.0' S=0.0443 '/ Capacity=7.13 cfs Outflow=1.74 cfs 0.308 af

Reach 2002: FLOW THROUGH Avg. Flow Depth=0.22' Max Vel=0.56 fps Inflow=1.74 cfs 0.308 af
n=0.100 L=360.0' S=0.0178 '/ Capacity=9.52 cfs Outflow=1.67 cfs 0.308 af

Reach 3001: FLOW THROUGH WOODS Avg. Flow Depth=0.15' Max Vel=0.95 fps Inflow=0.50 cfs 0.274 af
n=0.070 L=72.0' S=0.0451 '/ Capacity=7.20 cfs Outflow=0.50 cfs 0.274 af

Reach 3002: FLOW THROUGH Avg. Flow Depth=0.17' Max Vel=0.26 fps Inflow=0.50 cfs 0.274 af
n=0.100 L=400.0' S=0.0056 '/ Capacity=5.36 cfs Outflow=0.49 cfs 0.273 af

Reach 4001: FLOW THROUGH WOODS Avg. Flow Depth=0.01' Max Vel=0.17 fps Inflow=0.00 cfs 0.000 af
n=0.070 L=78.0' S=0.0756 '/ Capacity=9.32 cfs Outflow=0.00 cfs 0.000 af

Reach 4002: FLOW THROUGH	Avg. Flow Depth=0.00'	Max Vel=0.04 fps	Inflow=0.00 cfs	0.000 af
	n=0.100	L=1,225.0'	S=0.0117 '/'	Capacity=7.71 cfs Outflow=0.00 cfs 0.000 af
Reach 4003: FLOW THROUGH WOODS	Avg. Flow Depth=0.15'	Max Vel=1.19 fps	Inflow=0.68 cfs	0.309 af
	n=0.070	L=64.0'	S=0.0656 '/'	Capacity=8.68 cfs Outflow=0.68 cfs 0.309 af
Reach 4004: FLOW THROUGH	Avg. Flow Depth=0.16'	Max Vel=0.35 fps	Inflow=0.68 cfs	0.309 af
	n=0.100	L=1,010.0'	S=0.0109 '/'	Capacity=10.10 cfs Outflow=0.58 cfs 0.308 af
Pond BIO #1: BIORETENTION#1	Peak Elev=168.32'	Storage=4,840 cf	Inflow=3.84 cfs	0.276 af
			Outflow=0.50 cfs	0.274 af
Pond BIO #2: BIORETENTION#2	Peak Elev=164.52'	Storage=3,200 cf	Inflow=2.49 cfs	0.219 af
	Discarded=0.34 cfs	0.219 af	Primary=0.00 cfs	0.000 af Outflow=0.34 cfs 0.219 af
Pond BIO #3: BIORETENTION#3	Peak Elev=162.88'	Storage=12,474 cf	Inflow=7.89 cfs	0.593 af
	Discarded=0.21 cfs	0.214 af	Primary=0.68 cfs	0.309 af Outflow=0.89 cfs 0.523 af
Pond BIO #4: BIORETENTION#4	Peak Elev=162.01'	Storage=12,523 cf	Inflow=9.65 cfs	0.754 af
	Discarded=0.57 cfs	0.447 af	Primary=1.74 cfs	0.308 af Outflow=2.31 cfs 0.754 af
Pond CB-101: CB-101 4+50 10 RIGHT	Peak Elev=170.22'	Inflow=1.20 cfs	0.104 af	
	12.0" Round Culvert	n=0.012	L=20.0'	S=0.0200 '/' Outflow=1.20 cfs 0.104 af
Pond CB-102: CB-102 STA 4+50 10' LEFT	Peak Elev=169.92'	Inflow=3.19 cfs	0.264 af	
	18.0" Round Culvert	n=0.012	L=46.0'	S=0.0120 '/' Outflow=3.19 cfs 0.264 af
Pond CB-103: CB-103 STA 7+50 10' RIGHT	Peak Elev=167.11'	Inflow=1.74 cfs	0.130 af	
	12.0" Round Culvert	n=0.012	L=20.0'	S=0.0200 '/' Outflow=1.74 cfs 0.130 af
Pond CB-104: CB-104 STA 7+50 10' LEFT	Peak Elev=166.96'	Inflow=3.65 cfs	0.284 af	
	18.0" Round Culvert	n=0.012	L=120.0'	S=0.0125 '/' Outflow=3.65 cfs 0.284 af
Pond CB-105: CB-105 STA 10+00 10' RIGHT	Peak Elev=164.35'	Inflow=4.27 cfs	0.357 af	
	18.0" Round Culvert	n=0.012	L=20.0'	S=0.0200 '/' Outflow=4.27 cfs 0.357 af
Pond CB-106: CB-106 STA 10+00 10' LEFT	Peak Elev=164.10'	Inflow=7.62 cfs	0.622 af	
	24.0" Round Culvert	n=0.012	L=50.0'	S=0.0100 '/' Outflow=7.62 cfs 0.622 af
Pond CB-107: CB-107 STA 14+59 10" RIGHT	Peak Elev=165.61'	Inflow=4.12 cfs	0.386 af	
	18.0" Round Culvert	n=0.012	L=20.0'	S=0.0200 '/' Outflow=4.12 cfs 0.386 af
Pond CB-108: CB-108 STA 14+59 10' LEFT	Peak Elev=165.24'	Inflow=5.51 cfs	0.497 af	
	18.0" Round Culvert	n=0.012	L=58.0'	S=0.0103 '/' Outflow=5.51 cfs 0.497 af
Pond CB-109: CB-109 STA 15+65 10' RIGHT	Peak Elev=167.24'	Inflow=1.35 cfs	0.100 af	
	12.0" Round Culvert	n=0.012	L=20.0'	S=0.0200 '/' Outflow=1.35 cfs 0.100 af
Pond CB-110: CB-110 STA 15+65 10' LEFT	Peak Elev=166.91'	Inflow=2.82 cfs	0.209 af	
	15.0" Round Culvert	n=0.012	L=52.0'	S=0.0529 '/' Outflow=2.82 cfs 0.209 af

Ambrose Woods - Post-Construction*Type III 24-hr 10-YR SEACOAST Rainfall=5.43"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Pond CB-111: CB-111Peak Elev=164.57' Inflow=2.37 cfs 0.198 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0200 '/' Outflow=2.37 cfs 0.198 af**Pond CB-112: CB-112**Peak Elev=167.85' Inflow=2.79 cfs 0.256 af
15.0" Round Culvert n=0.012 L=135.0' S=0.0185 '/' Outflow=2.79 cfs 0.256 af**Pond CB-113: CB-113 STA 3+09 10' LEFT**Peak Elev=171.71' Inflow=1.34 cfs 0.104 af
12.0" Round Culvert n=0.012 L=142.0' S=0.0137 '/' Outflow=1.34 cfs 0.104 af**Pond DMH-110: DMH-101 STA 15+15 14' LEFT**Peak Elev=164.58' Inflow=8.25 cfs 0.706 af
24.0" Round Culvert n=0.012 L=154.0' S=0.0110 '/' Outflow=8.25 cfs 0.706 af**Pond FB #2: FOREBAY #2**Peak Elev=166.75' Storage=4,905 cf Inflow=3.88 cfs 0.302 af
Outflow=2.39 cfs 0.205 af**Pond FB #3: FOREWAY #3**Peak Elev=163.85' Storage=3,203 cf Inflow=7.77 cfs 0.635 af
Outflow=7.69 cfs 0.576 af**Pond FB #4: FOREBAY #4**Peak Elev=163.36' Storage=3,377 cf Inflow=8.52 cfs 0.726 af
Outflow=8.45 cfs 0.662 af**Pond FB#1: FOREBAY #1**Peak Elev=169.27' Storage=2,712 cf Inflow=3.60 cfs 0.296 af
Outflow=3.49 cfs 0.245 af**Link AP-1: EZRA GREEN OPEN SPACE**Inflow=1.31 cfs 0.127 af
Primary=1.31 cfs 0.127 af**Link AP-2: EZRA GREEN OPEN SPACE**Inflow=6.20 cfs 0.939 af
Primary=6.20 cfs 0.939 af**Link AP-3: INDIAN RIDGE OPEN SPACE**Inflow=5.39 cfs 1.119 af
Primary=5.39 cfs 1.119 af**Link AP-4: EZRA GREEN OPEN SPACE**Inflow=25.61 cfs 8.443 af
Primary=25.61 cfs 8.443 af**Link AP-5: EXISTING INDIAN RIDGE BIORETENTION PRATICE**Inflow=0.97 cfs 0.086 af
Primary=0.97 cfs 0.086 af**Link AP-6: EZRA GREEN OPEN SPACE**Inflow=0.24 cfs 0.019 af
Primary=0.24 cfs 0.019 af**Total Runoff Area = 58.007 ac Runoff Volume = 11.960 af Average Runoff Depth = 2.47"**
94.34% Pervious = 54.722 ac 5.66% Impervious = 3.285 ac

Ambrose Woods - Post-Construction*Type III 24-hr 25-YR SEACOAST Rainfall=6.85"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101: ROADWAY TO STA	Runoff Area=16,667 sf 44.62% Impervious Runoff Depth=4.56" Flow Length=160' Tc=8.7 min CN=80 Runoff=1.85 cfs 0.145 af
Subcatchment102: ROADWAY STA 3+09 to	Runoff Area=8,357 sf 56.72% Impervious Runoff Depth=4.78" Flow Length=204' Tc=7.4 min CN=82 Runoff=1.01 cfs 0.076 af
Subcatchment103: ROADWAY STA 1+25	Runoff Area=17,147 sf 43.79% Impervious Runoff Depth=4.45" Flow Length=290' Tc=12.0 min CN=79 Runoff=1.68 cfs 0.146 af
Subcatchment104: FOREBAY #1 AREA	Runoff Area=7,361 sf 0.00% Impervious Runoff Depth=3.39" Tc=6.0 min CN=69 Runoff=0.67 cfs 0.048 af
Subcatchment105: BIO #1 AREA	Runoff Area=4,975 sf 0.00% Impervious Runoff Depth=4.56" Tc=6.0 min CN=80 Runoff=0.60 cfs 0.043 af
Subcatchment201: ROADWAY 4+50 TO	Runoff Area=23,987 sf 52.96% Impervious Runoff Depth=4.67" Flow Length=267' Tc=9.3 min CN=81 Runoff=2.66 cfs 0.214 af
Subcatchment202: ROADWAY 4+50 TO	Runoff Area=20,746 sf 44.13% Impervious Runoff Depth=4.56" Flow Length=250' Tc=7.4 min CN=80 Runoff=2.40 cfs 0.181 af
Subcatchment203: FOREBAY #2 AREA	Runoff Area=5,754 sf 0.00% Impervious Runoff Depth=2.59" Tc=6.0 min CN=61 Runoff=0.39 cfs 0.029 af
Subcatchment204: BIO #2 AREA	Runoff Area=4,542 sf 0.00% Impervious Runoff Depth=2.59" Tc=6.0 min CN=61 Runoff=0.31 cfs 0.023 af
Subcatchment301: ROADWAY STA 7.50 TO	Runoff Area=8,758 sf 52.33% Impervious Runoff Depth=5.00" Flow Length=295' Slope=0.0100 '/' Tc=11.6 min CN=84 Runoff=0.96 cfs 0.084 af
Subcatchment302: ROADWAY 7+50 TO	Runoff Area=25,067 sf 51.35% Impervious Runoff Depth=4.78" Flow Length=325' Tc=9.2 min CN=82 Runoff=2.85 cfs 0.229 af
Subcatchment303: INTERIOR EAST END	Runoff Area=34,670 sf 20.24% Impervious Runoff Depth=4.23" Flow Length=285' Tc=10.8 min CN=77 Runoff=3.36 cfs 0.281 af
Subcatchment304: FOREBAY #3 AREA	Runoff Area=4,075 sf 0.00% Impervious Runoff Depth=2.59" Tc=6.0 min CN=61 Runoff=0.28 cfs 0.020 af
Subcatchment305: BIO #3 AREA	Runoff Area=5,605 sf 0.00% Impervious Runoff Depth=2.59" Tc=6.0 min CN=61 Runoff=0.38 cfs 0.028 af
Subcatchment306: ROADWAY STA 12+00	Runoff Area=14,522 sf 58.68% Impervious Runoff Depth=4.89" Flow Length=128' Tc=6.7 min CN=83 Runoff=1.83 cfs 0.136 af
Subcatchment307: ROADWAY STA 12+00	Runoff Area=14,644 sf 51.67% Impervious Runoff Depth=4.78" Flow Length=315' Tc=7.2 min CN=82 Runoff=1.78 cfs 0.134 af

Ambrose Woods - Post-Construction*Type III 24-hr 25-YR SEACOAST Rainfall=6.85"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Subcatchment401: INTERIOR WEST END Runoff Area=44,807 sf 18.72% Impervious Runoff Depth=4.23"
Flow Length=240' Tc=14.1 min CN=77 Runoff=3.95 cfs 0.363 af

Subcatchment402: ROADWAY STA 12+00 Runoff Area=19,635 sf 42.05% Impervious Runoff Depth=4.78"
Flow Length=172' Tc=6.5 min CN=82 Runoff=2.44 cfs 0.179 af

Subcatchment403: ROADWAY STA 12+00 Runoff Area=16,739 sf 53.16% Impervious Runoff Depth=4.78"
Flow Length=165' Tc=6.4 min CN=82 Runoff=2.09 cfs 0.153 af

Subcatchment404: FOREBAY #4 AREA Runoff Area=5,000 sf 14.70% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=67 Runoff=0.43 cfs 0.030 af

Subcatchment405: BIO #4 AREA Runoff Area=24,727 sf 10.65% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=65 Runoff=1.97 cfs 0.141 af

Subcatchment406: ROADWAY END TO Runoff Area=13,522 sf 62.97% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=89 Runoff=1.93 cfs 0.144 af

Subcatchment407: ROADWAY END TO Runoff Area=14,317 sf 47.88% Impervious Runoff Depth=5.00"
Flow Length=245' Tc=6.9 min CN=84 Runoff=1.83 cfs 0.137 af

Subcatchment1001: REMAINING AREA OF Runoff Area=34,071 sf 2.96% Impervious Runoff Depth=2.99"
Flow Length=365' Tc=14.5 min CN=65 Runoff=2.07 cfs 0.195 af

Subcatchment1002: REMAINING AREA Runoff Area=134,983 sf 2.00% Impervious Runoff Depth=3.60"
Flow Length=450' Tc=25.0 min CN=71 Runoff=8.01 cfs 0.929 af

Subcatchment1003: REMAINING AREA Runoff Area=174,590 sf 2.28% Impervious Runoff Depth=3.70"
Flow Length=577' Tc=52.7 min CN=72 Runoff=7.40 cfs 1.236 af

Subcatchment1004: REMAINING AREA Runoff Area=1,802,931 sf 0.47% Impervious Runoff Depth>3.49"
Flow Length=2,625' Tc=139.2 min CN=70 Runoff=37.73 cfs 12.042 af

Subcatchment1005: REMAINING AREA OF Runoff Area=18,470 sf 2.71% Impervious Runoff Depth=3.60"
Flow Length=255' Tc=12.5 min CN=71 Runoff=1.45 cfs 0.127 af

Subcatchment1006: REMAINING AREA OF Runoff Area=6,110 sf 0.00% Impervious Runoff Depth=2.59"
Flow Length=120' Tc=7.7 min CN=61 Runoff=0.39 cfs 0.030 af

Reach 2001: FLOW THROUGH WOODS Avg. Flow Depth=0.31' Max Vel=1.56 fps Inflow=2.53 cfs 0.549 af
n=0.070 L=70.0' S=0.0443 '/ Capacity=7.13 cfs Outflow=2.53 cfs 0.549 af

Reach 2002: FLOW THROUGH Avg. Flow Depth=0.27' Max Vel=0.63 fps Inflow=2.53 cfs 0.549 af
n=0.100 L=360.0' S=0.0178 '/ Capacity=9.52 cfs Outflow=2.49 cfs 0.549 af

Reach 3001: FLOW THROUGH WOODS Avg. Flow Depth=0.16' Max Vel=1.00 fps Inflow=0.59 cfs 0.405 af
n=0.070 L=72.0' S=0.0451 '/ Capacity=7.20 cfs Outflow=0.59 cfs 0.405 af

Reach 3002: FLOW THROUGH Avg. Flow Depth=0.18' Max Vel=0.27 fps Inflow=0.59 cfs 0.405 af
n=0.100 L=400.0' S=0.0056 '/ Capacity=5.36 cfs Outflow=0.58 cfs 0.404 af

Reach 4001: FLOW THROUGH WOODS Avg. Flow Depth=0.09' Max Vel=0.90 fps Inflow=0.23 cfs 0.056 af
n=0.070 L=78.0' S=0.0756 '/ Capacity=9.32 cfs Outflow=0.23 cfs 0.056 af

Reach 4002: FLOW THROUGH	Avg. Flow Depth=0.09'	Max Vel=0.24 fps	Inflow=0.23 cfs	0.056 af
	n=0.100	L=1,225.0'	S=0.0117 '/	Capacity=7.71 cfs Outflow=0.17 cfs 0.055 af
Reach 4003: FLOW THROUGH WOODS	Avg. Flow Depth=0.36'	Max Vel=2.11 fps	Inflow=4.39 cfs	0.543 af
	n=0.070	L=64.0'	S=0.0656 '/	Capacity=8.68 cfs Outflow=4.38 cfs 0.543 af
Reach 4004: FLOW THROUGH	Avg. Flow Depth=0.26'	Max Vel=0.48 fps	Inflow=4.38 cfs	0.543 af
	n=0.100	L=1,010.0'	S=0.0109 '/	Capacity=10.10 cfs Outflow=1.65 cfs 0.542 af
Pond BIO #1: BIORETENTION#1	Peak Elev=169.21'	Storage=7,933 cf	Inflow=5.40 cfs	0.407 af
			Outflow=0.59 cfs	0.405 af
Pond BIO #2: BIORETENTION#2	Peak Elev=165.61'	Storage=5,881 cf	Inflow=5.14 cfs	0.348 af
	Discarded=0.45 cfs	0.293 af	Primary=0.23 cfs	0.056 af Outflow=0.69 cfs 0.348 af
Pond BIO #3: BIORETENTION#3	Peak Elev=163.56'	Storage=15,490 cf	Inflow=11.00 cfs	0.852 af
	Discarded=0.24 cfs	0.234 af	Primary=4.39 cfs	0.543 af Outflow=4.62 cfs 0.777 af
Pond BIO #4: BIORETENTION#4	Peak Elev=162.72'	Storage=18,341 cf	Inflow=13.54 cfs	1.084 af
	Discarded=0.64 cfs	0.535 af	Primary=2.53 cfs	0.549 af Outflow=3.17 cfs 1.084 af
Pond CB-101: CB-101 4+50 10 RIGHT	Peak Elev=170.40'		Inflow=1.68 cfs	0.146 af
	12.0" Round Culvert	n=0.012 L=20.0'	S=0.0200 '/	Outflow=1.68 cfs 0.146 af
Pond CB-102: CB-102 STA 4+50 10' LEFT	Peak Elev=170.09'		Inflow=4.42 cfs	0.368 af
	18.0" Round Culvert	n=0.012 L=46.0'	S=0.0120 '/	Outflow=4.42 cfs 0.368 af
Pond CB-103: CB-103 STA 7+50 10' RIGHT	Peak Elev=167.70'		Inflow=2.40 cfs	0.181 af
	12.0" Round Culvert	n=0.012 L=20.0'	S=0.0200 '/	Outflow=2.40 cfs 0.181 af
Pond CB-104: CB-104 STA 7+50 10' LEFT	Peak Elev=167.32'		Inflow=5.03 cfs	0.395 af
	18.0" Round Culvert	n=0.012 L=120.0'	S=0.0125 '/	Outflow=5.03 cfs 0.395 af
Pond CB-105: CB-105 STA 10+00 10' RIGHT	Peak Elev=164.89'		Inflow=5.94 cfs	0.498 af
	18.0" Round Culvert	n=0.012 L=20.0'	S=0.0200 '/	Outflow=5.94 cfs 0.498 af
Pond CB-106: CB-106 STA 10+00 10' LEFT	Peak Elev=164.40'		Inflow=10.49 cfs	0.863 af
	24.0" Round Culvert	n=0.012 L=50.0'	S=0.0100 '/	Outflow=10.49 cfs 0.863 af
Pond CB-107: CB-107 STA 14+59 10" RIGHT	Peak Elev=166.10'		Inflow=5.76 cfs	0.542 af
	18.0" Round Culvert	n=0.012 L=20.0'	S=0.0200 '/	Outflow=5.76 cfs 0.542 af
Pond CB-108: CB-108 STA 14+59 10' LEFT	Peak Elev=165.65'		Inflow=7.66 cfs	0.695 af
	18.0" Round Culvert	n=0.012 L=58.0'	S=0.0103 '/	Outflow=7.66 cfs 0.695 af
Pond CB-109: CB-109 STA 15+65 10' RIGHT	Peak Elev=167.42'		Inflow=1.83 cfs	0.137 af
	12.0" Round Culvert	n=0.012 L=20.0'	S=0.0200 '/	Outflow=1.83 cfs 0.137 af
Pond CB-110: CB-110 STA 15+65 10' LEFT	Peak Elev=167.08'		Inflow=3.74 cfs	0.281 af
	15.0" Round Culvert	n=0.012 L=52.0'	S=0.0529 '/	Outflow=3.74 cfs 0.281 af

Ambrose Woods - Post-Construction*Type III 24-hr 25-YR SEACOAST Rainfall=6.85"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Pond CB-111: CB-111Peak Elev=165.21' Inflow=3.36 cfs 0.281 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0200 '/' Outflow=3.36 cfs 0.281 af**Pond CB-112: CB-112**Peak Elev=168.07' Inflow=3.95 cfs 0.363 af
15.0" Round Culvert n=0.012 L=135.0' S=0.0185 '/' Outflow=3.95 cfs 0.363 af**Pond CB-113: CB-113 STA 3+09 10' LEFT**Peak Elev=171.85' Inflow=1.85 cfs 0.145 af
12.0" Round Culvert n=0.012 L=142.0' S=0.0137 '/' Outflow=1.85 cfs 0.145 af**Pond DMH-110: DMH-101 STA 15+15 14' LEFT**Peak Elev=164.84' Inflow=11.30 cfs 0.976 af
24.0" Round Culvert n=0.012 L=154.0' S=0.0110 '/' Outflow=11.30 cfs 0.976 af**Pond FB #2: FOREBAY #2**Peak Elev=166.89' Storage=5,302 cf Inflow=5.40 cfs 0.423 af
Outflow=4.90 cfs 0.326 af**Pond FB #3: FOREWAY #3**Peak Elev=163.93' Storage=3,354 cf Inflow=10.75 cfs 0.883 af
Outflow=10.66 cfs 0.824 af**Pond FB #4: FOREBAY #4**Peak Elev=163.43' Storage=3,517 cf Inflow=11.72 cfs 1.006 af
Outflow=11.64 cfs 0.943 af**Pond FB#1: FOREBAY #1**Peak Elev=169.33' Storage=2,836 cf Inflow=5.03 cfs 0.415 af
Outflow=4.91 cfs 0.364 af**Link AP-1: EZRA GREEN OPEN SPACE**Inflow=2.07 cfs 0.195 af
Primary=2.07 cfs 0.195 af**Link AP-2: EZRA GREEN OPEN SPACE**Inflow=9.76 cfs 1.478 af
Primary=9.76 cfs 1.478 af**Link AP-3: INDIAN RIDGE OPEN SPACE**Inflow=7.89 cfs 1.641 af
Primary=7.89 cfs 1.641 af**Link AP-4: EZRA GREEN OPEN SPACE**Inflow=39.10 cfs 12.639 af
Primary=39.10 cfs 12.639 af**Link AP-5: EXISTING INDIAN RIDGE BIORETENTION PRATICE**Inflow=1.45 cfs 0.127 af
Primary=1.45 cfs 0.127 af**Link AP-6: EZRA GREEN OPEN SPACE**Inflow=0.39 cfs 0.030 af
Primary=0.39 cfs 0.030 af**Total Runoff Area = 58.007 ac Runoff Volume = 17.523 af Average Runoff Depth = 3.63"**
94.34% Pervious = 54.722 ac 5.66% Impervious = 3.285 ac

Ambrose Woods - Post-Construction*Type III 24-hr 50-YR SEACOAST Rainfall=8.20"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-28.00 hrs, dt=0.01 hrs, 2801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment101: ROADWAY TO STA Runoff Area=16,667 sf 44.62% Impervious Runoff Depth=5.81"
Flow Length=160' Tc=8.7 min CN=80 Runoff=2.34 cfs 0.185 af

Subcatchment102: ROADWAY STA 3+09 to Runoff Area=8,357 sf 56.72% Impervious Runoff Depth=6.05"
Flow Length=204' Tc=7.4 min CN=82 Runoff=1.27 cfs 0.097 af

Subcatchment103: ROADWAY STA 1+25 Runoff Area=17,147 sf 43.79% Impervious Runoff Depth=5.69"
Flow Length=290' Tc=12.0 min CN=79 Runoff=2.13 cfs 0.187 af

Subcatchment104: FOREBAY #1 AREA Runoff Area=7,361 sf 0.00% Impervious Runoff Depth=4.52"
Tc=6.0 min CN=69 Runoff=0.90 cfs 0.064 af

Subcatchment105: BIO #1 AREA Runoff Area=4,975 sf 0.00% Impervious Runoff Depth=5.81"
Tc=6.0 min CN=80 Runoff=0.77 cfs 0.055 af

Subcatchment201: ROADWAY 4+50 TO Runoff Area=23,987 sf 52.96% Impervious Runoff Depth=5.93"
Flow Length=267' Tc=9.3 min CN=81 Runoff=3.36 cfs 0.272 af

Subcatchment202: ROADWAY 4+50 TO Runoff Area=20,746 sf 44.13% Impervious Runoff Depth=5.81"
Flow Length=250' Tc=7.4 min CN=80 Runoff=3.04 cfs 0.231 af

Subcatchment203: FOREBAY #2 AREA Runoff Area=5,754 sf 0.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=61 Runoff=0.55 cfs 0.040 af

Subcatchment204: BIO #2 AREA Runoff Area=4,542 sf 0.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=61 Runoff=0.44 cfs 0.031 af

Subcatchment301: ROADWAY STA 7.50 TO Runoff Area=8,758 sf 52.33% Impervious Runoff Depth=6.29"
Flow Length=295' Slope=0.0100 '/' Tc=11.6 min CN=84 Runoff=1.20 cfs 0.105 af

Subcatchment302: ROADWAY 7+50 TO Runoff Area=25,067 sf 51.35% Impervious Runoff Depth=6.05"
Flow Length=325' Tc=9.2 min CN=82 Runoff=3.58 cfs 0.290 af

Subcatchment303: INTERIOR EAST END Runoff Area=34,670 sf 20.24% Impervious Runoff Depth=5.46"
Flow Length=285' Tc=10.8 min CN=77 Runoff=4.31 cfs 0.362 af

Subcatchment304: FOREBAY #3 AREA Runoff Area=4,075 sf 0.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=61 Runoff=0.39 cfs 0.028 af

Subcatchment305: BIO #3 AREA Runoff Area=5,605 sf 0.00% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=61 Runoff=0.54 cfs 0.039 af

Subcatchment306: ROADWAY STA 12+00 Runoff Area=14,522 sf 58.68% Impervious Runoff Depth=6.17"
Flow Length=128' Tc=6.7 min CN=83 Runoff=2.29 cfs 0.171 af

Subcatchment307: ROADWAY STA 12+00 Runoff Area=14,644 sf 51.67% Impervious Runoff Depth=6.05"
Flow Length=315' Tc=7.2 min CN=82 Runoff=2.23 cfs 0.169 af

Ambrose Woods - Post-Construction*Type III 24-hr 50-YR SEACOAST Rainfall=8.20"*

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Subcatchment401: INTERIOR WEST END Runoff Area=44,807 sf 18.72% Impervious Runoff Depth=5.46"
Flow Length=240' Tc=14.1 min CN=77 Runoff=5.07 cfs 0.468 af

Subcatchment402: ROADWAY STA 12+00 Runoff Area=19,635 sf 42.05% Impervious Runoff Depth=6.05"
Flow Length=172' Tc=6.5 min CN=82 Runoff=3.07 cfs 0.227 af

Subcatchment403: ROADWAY STA 12+00 Runoff Area=16,739 sf 53.16% Impervious Runoff Depth=6.05"
Flow Length=165' Tc=6.4 min CN=82 Runoff=2.62 cfs 0.194 af

Subcatchment404: FOREBAY #4 AREA Runoff Area=5,000 sf 14.70% Impervious Runoff Depth=4.29"
Tc=6.0 min CN=67 Runoff=0.58 cfs 0.041 af

Subcatchment405: BIO #4 AREA Runoff Area=24,727 sf 10.65% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=65 Runoff=2.69 cfs 0.192 af

Subcatchment406: ROADWAY END TO Runoff Area=13,522 sf 62.97% Impervious Runoff Depth=6.88"
Tc=6.0 min CN=89 Runoff=2.35 cfs 0.178 af

Subcatchment407: ROADWAY END TO Runoff Area=14,317 sf 47.88% Impervious Runoff Depth=6.29"
Flow Length=245' Tc=6.9 min CN=84 Runoff=2.27 cfs 0.172 af

Subcatchment1001: REMAINING AREA OF Runoff Area=34,071 sf 2.96% Impervious Runoff Depth=4.06"
Flow Length=365' Tc=14.5 min CN=65 Runoff=2.84 cfs 0.264 af

Subcatchment1002: REMAINING AREA Runoff Area=134,983 sf 2.00% Impervious Runoff Depth=4.75"
Flow Length=450' Tc=25.0 min CN=71 Runoff=10.59 cfs 1.227 af

Subcatchment1003: REMAINING AREA Runoff Area=174,590 sf 2.28% Impervious Runoff Depth=4.87"
Flow Length=577' Tc=52.7 min CN=72 Runoff=9.75 cfs 1.627 af

Subcatchment1004: REMAINING AREA Runoff Area=1,802,931 sf 0.47% Impervious Runoff Depth>4.63"
Flow Length=2,625' Tc=139.2 min CN=70 Runoff=50.51 cfs 15.981 af

Subcatchment1005: REMAINING AREA OF Runoff Area=18,470 sf 2.71% Impervious Runoff Depth=4.75"
Flow Length=255' Tc=12.5 min CN=71 Runoff=1.91 cfs 0.168 af

Subcatchment1006: REMAINING AREA OF Runoff Area=6,110 sf 0.00% Impervious Runoff Depth=3.60"
Flow Length=120' Tc=7.7 min CN=61 Runoff=0.55 cfs 0.042 af

Reach 2001: FLOW THROUGH WOODS Avg. Flow Depth=0.42' Max Vel=1.92 fps Inflow=5.00 cfs 0.802 af
n=0.070 L=70.0' S=0.0443 '/ Capacity=7.13 cfs Outflow=5.00 cfs 0.802 af

Reach 2002: FLOW THROUGH Avg. Flow Depth=0.36' Max Vel=0.77 fps Inflow=5.00 cfs 0.802 af
n=0.100 L=360.0' S=0.0178 '/ Capacity=9.52 cfs Outflow=4.76 cfs 0.802 af

Reach 3001: FLOW THROUGH WOODS Avg. Flow Depth=0.24' Max Vel=1.34 fps Inflow=1.54 cfs 0.534 af
n=0.070 L=72.0' S=0.0451 '/ Capacity=7.20 cfs Outflow=1.53 cfs 0.534 af

Reach 3002: FLOW THROUGH Avg. Flow Depth=0.25' Max Vel=0.33 fps Inflow=1.53 cfs 0.534 af
n=0.100 L=400.0' S=0.0056 '/ Capacity=5.36 cfs Outflow=1.15 cfs 0.533 af

Reach 4001: FLOW THROUGH WOODS Avg. Flow Depth=0.12' Max Vel=1.07 fps Inflow=0.41 cfs 0.110 af
n=0.070 L=78.0' S=0.0756 '/ Capacity=9.32 cfs Outflow=0.41 cfs 0.110 af

Reach 4002: FLOW THROUGH Avg. Flow Depth=0.11' Max Vel=0.28 fps Inflow=0.41 cfs 0.110 af
n=0.100 L=1,225.0' S=0.0117 '/' Capacity=7.71 cfs Outflow=0.27 cfs 0.109 af

Reach 4003: FLOW THROUGH WOODS Avg. Flow Depth=0.49' Max Vel=2.56 fps Inflow=8.21 cfs 0.781 af
n=0.070 L=64.0' S=0.0656 '/' Capacity=8.68 cfs Outflow=8.20 cfs 0.781 af

Reach 4004: FLOW THROUGH Avg. Flow Depth=0.40' Max Vel=0.65 fps Inflow=8.20 cfs 0.781 af
n=0.100 L=1,010.0' S=0.0109 '/' Capacity=10.10 cfs Outflow=4.30 cfs 0.779 af

Pond BIO #1: BIORETENTION#1 Peak Elev=169.61' Storage=9,467 cf Inflow=6.91 cfs 0.537 af
Outflow=1.54 cfs 0.534 af

Pond BIO #2: BIORETENTION#2 Peak Elev=166.52' Storage=8,837 cf Inflow=6.84 cfs 0.476 af
Discarded=0.56 cfs 0.366 af Primary=0.41 cfs 0.110 af Outflow=0.96 cfs 0.476 af

Pond BIO #3: BIORETENTION#3 Peak Elev=163.78' Storage=16,552 cf Inflow=14.00 cfs 1.106 af
Discarded=0.25 cfs 0.247 af Primary=8.21 cfs 0.781 af Outflow=8.45 cfs 1.028 af

Pond BIO #4: BIORETENTION#4 Peak Elev=163.23' Storage=22,953 cf Inflow=17.30 cfs 1.408 af
Discarded=0.69 cfs 0.606 af Primary=5.00 cfs 0.802 af Outflow=5.69 cfs 1.408 af

Pond CB-101: CB-101 4+50 10 RIGHT Peak Elev=170.57' Inflow=2.13 cfs 0.187 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=2.13 cfs 0.187 af

Pond CB-102: CB-102 STA 4+50 10' LEFT Peak Elev=170.25' Inflow=5.59 cfs 0.469 af
18.0" Round Culvert n=0.012 L=46.0' S=0.0120 '/' Outflow=5.59 cfs 0.469 af

Pond CB-103: CB-103 STA 7+50 10' RIGHT Peak Elev=168.19' Inflow=3.04 cfs 0.231 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=3.04 cfs 0.231 af

Pond CB-104: CB-104 STA 7+50 10' LEFT Peak Elev=167.58' Inflow=6.35 cfs 0.503 af
18.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=6.35 cfs 0.503 af

Pond CB-105: CB-105 STA 10+00 10' RIGHT Peak Elev=165.54' Inflow=7.54 cfs 0.637 af
18.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=7.54 cfs 0.637 af

Pond CB-106: CB-106 STA 10+00 10' LEFT Peak Elev=164.75' Inflow=13.25 cfs 1.098 af
24.0" Round Culvert n=0.012 L=50.0' S=0.0100 '/' Outflow=13.25 cfs 1.098 af

Pond CB-107: CB-107 STA 14+59 10" RIGHT Peak Elev=167.12' Inflow=7.35 cfs 0.695 af
18.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=7.35 cfs 0.695 af

Pond CB-108: CB-108 STA 14+59 10' LEFT Peak Elev=166.38' Inflow=9.73 cfs 0.889 af
18.0" Round Culvert n=0.012 L=58.0' S=0.0103 '/' Outflow=9.73 cfs 0.889 af

Pond CB-109: CB-109 STA 15+65 10' RIGHT Peak Elev=167.64' Inflow=2.27 cfs 0.172 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0200 '/' Outflow=2.27 cfs 0.172 af

Pond CB-110: CB-110 STA 15+65 10' LEFT Peak Elev=167.28' Inflow=4.62 cfs 0.350 af
15.0" Round Culvert n=0.012 L=52.0' S=0.0529 '/' Outflow=4.62 cfs 0.350 af

Ambrose Woods - Post-Construction*Type III 24-hr 50-YR SEACOAST Rainfall=8.20"*

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Pond CB-111: CB-111Peak Elev=166.07' Inflow=4.31 cfs 0.362 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0200 '/' Outflow=4.31 cfs 0.362 af**Pond CB-112: CB-112**Peak Elev=168.36' Inflow=5.07 cfs 0.468 af
15.0" Round Culvert n=0.012 L=135.0' S=0.0185 '/' Outflow=5.07 cfs 0.468 af**Pond CB-113: CB-113 STA 3+09 10' LEFT**Peak Elev=171.98' Inflow=2.34 cfs 0.185 af
12.0" Round Culvert n=0.012 L=142.0' S=0.0137 '/' Outflow=2.34 cfs 0.185 af**Pond DMH-110: DMH-101 STA 15+15 14' LEFT**Peak Elev=165.07' Inflow=14.21 cfs 1.239 af
24.0" Round Culvert n=0.012 L=154.0' S=0.0110 '/' Outflow=14.21 cfs 1.239 af**Pond FB #2: FOREBAY #2**Peak Elev=166.96' Storage=5,510 cf Inflow=6.88 cfs 0.542 af
Outflow=6.48 cfs 0.445 af**Pond FB #3: FOREWAY #3**Peak Elev=163.99' Storage=3,482 cf Inflow=13.61 cfs 1.126 af
Outflow=13.52 cfs 1.067 af**Pond FB #4: FOREBAY #4**Peak Elev=163.50' Storage=3,635 cf Inflow=14.78 cfs 1.280 af
Outflow=14.70 cfs 1.216 af**Pond FB#1: FOREBAY #1**Peak Elev=169.61' Storage=3,369 cf Inflow=6.41 cfs 0.533 af
Outflow=6.28 cfs 0.481 af**Link AP-1: EZRA GREEN OPEN SPACE**Inflow=2.84 cfs 0.264 af
Primary=2.84 cfs 0.264 af**Link AP-2: EZRA GREEN OPEN SPACE**Inflow=13.76 cfs 2.029 af
Primary=13.76 cfs 2.029 af**Link AP-3: INDIAN RIDGE OPEN SPACE**Inflow=10.82 cfs 2.160 af
Primary=10.82 cfs 2.160 af**Link AP-4: EZRA GREEN OPEN SPACE**Inflow=52.19 cfs 16.869 af
Primary=52.19 cfs 16.869 af**Link AP-5: EXISTING INDIAN RIDGE BIORETENTION PRATICE**Inflow=1.91 cfs 0.168 af
Primary=1.91 cfs 0.168 af**Link AP-6: EZRA GREEN OPEN SPACE**Inflow=0.55 cfs 0.042 af
Primary=0.55 cfs 0.042 af**Total Runoff Area = 58.007 ac Runoff Volume = 23.108 af Average Runoff Depth = 4.78"**
94.34% Pervious = 54.722 ac 5.66% Impervious = 3.285 ac

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 101: ROADWAY TO STA 3+09 LEFT

Runoff = 1.34 cfs @ 12.12 hrs, Volume= 0.104 af, Depth= 3.27"

Routed to Pond CB-113 : CB-113 STA 3-09 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
345	96	Gravel surface, HSG B
1,350	98	Roofs, HSG B
3,927	98	Paved parking, HSG B
6,205	61	>75% Grass cover, Good, HSG B
2,160	98	Paved parking, HSG C
1,760	74	>75% Grass cover, Good, HSG C
920	70	Woods, Good, HSG C
16,667	80	Weighted Average
9,230		55.38% Pervious Area
7,437		44.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	87	0.0225	0.18		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.3	13	0.0100	0.74		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.5	60	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
8.7	160	Total			

Summary for Subcatchment 102: ROADWAY STA 3+09 to 4+50 LEFT

Runoff = 0.74 cfs @ 12.11 hrs, Volume= 0.055 af, Depth= 3.47"

Routed to Pond CB-102 : CB-102 STA 4+50 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,350	98	Roofs, HSG B
3,390	98	Paved parking, HSG B
3,617	61	>75% Grass cover, Good, HSG B
8,357	82	Weighted Average
3,617		43.28% Pervious Area
4,740		56.72% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	46	0.0450	0.21		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.5	35	0.0200	1.18		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
2.5	20	0.0200	0.13		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, SC Sidewalk Paved Kv= 20.3 fps
0.8	98	0.0100	2.03		Shallow Concentrated Flow, SC Road Paved Kv= 20.3 fps
7.4	204	Total			

Summary for Subcatchment 103: ROADWAY STA 1+25 to 4+50 RIGHT

Runoff = 1.20 cfs @ 12.17 hrs, Volume= 0.104 af, Depth= 3.18"
Routed to Pond CB-101 : CB-101 4+50 10 RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,675	98	Roofs, HSG B
7,168	61	>75% Grass cover, Good, HSG B
4,813	98	Paved parking, HSG B
1,021	98	Paved parking, HSG C
2,470	74	>75% Grass cover, Good, HSG C
17,147	79	Weighted Average
9,638		56.21% Pervious Area
7,509		43.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	100	0.0150	0.16		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
1.6	190	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
12.0	290	Total			

Summary for Subcatchment 104: FOREBAY #1 AREA

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.032 af, Depth= 2.28"
Routed to Pond FB#1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area (sf)	CN	Description
3,132	80	>75% Grass cover, Good, HSG D
4,229	61	>75% Grass cover, Good, HSG B
7,361	69	Weighted Average
7,361		100.00% Pervious Area

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

Summary for Subcatchment 105: BIO #1 AREA

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.031 af, Depth= 3.27"
 Routed to Pond BIO #1 : BIORETENTION #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
75	61	>75% Grass cover, Good, HSG B
4,900	80	>75% Grass cover, Good, HSG D
4,975	80	Weighted Average
4,975		100.00% Pervious Area

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

Summary for Subcatchment 201: ROADWAY 4+50 TO 7+50 LEFT

Runoff = 1.94 cfs @ 12.13 hrs, Volume= 0.155 af, Depth= 3.37"
 Routed to Pond CB-104 : CB-104 STA 7+50 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
475	98	Roofs, HSG D
8,356	98	Paved parking, HSG B
11,283	61	>75% Grass cover, Good, HSG B
3,873	98	Roofs, HSG B
23,987	81	Weighted Average
11,283		47.04% Pervious Area
12,704		52.96% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.4	27	0.0200	1.12		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
2.0	15	0.0200	0.12		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.2	8	0.0200	0.88		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.1	5	0.0200	0.99		Shallow Concentrated Flow, SC Grass Short Grass Pasture Kv= 7.0 fps
1.3	162	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
9.3	267	Total			

Summary for Subcatchment 202: ROADWAY 4+50 TO 7+50 RIGHT

Runoff = 1.74 cfs @ 12.11 hrs, Volume= 0.130 af, Depth= 3.27"
 Routed to Pond CB-103 : CB-103 STA 7+50 10' RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
2,448	98	Roofs, HSG C
4,953	74	>75% Grass cover, Good, HSG C
947	98	Paved parking, HSG C
5,190	98	Paved parking, HSG B
571	98	Roofs, HSG B
6,637	61	>75% Grass cover, Good, HSG B
20,746	80	Weighted Average
11,590		55.87% Pervious Area
9,156		44.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	70	0.0350	0.21		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.6	30	0.0100	0.87		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
1.2	150	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
7.4	250	Total			

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 203: FOREBAY #2 AREA

Runoff = 0.24 cfs @ 12.10 hrs, Volume= 0.018 af, Depth= 1.63"
 Routed to Pond FB #2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
5,754	61	>75% Grass cover, Good, HSG B
5,754		100.00% Pervious Area

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

Summary for Subcatchment 204: BIO #2 AREA

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 0.014 af, Depth= 1.63"
 Routed to Pond BIO #2 : BIORETENTION #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
4,542	61	>75% Grass cover, Good, HSG B
4,542		100.00% Pervious Area

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

Summary for Subcatchment 301: ROADWAY STA 7.50 TO 10+00 RIGHT

Runoff = 0.71 cfs @ 12.16 hrs, Volume= 0.061 af, Depth= 3.67"
 Routed to Pond CB-105 : CB-105 STA 10+00 10' RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,448	61	>75% Grass cover, Good, HSG B
1,913	98	Paved parking, HSG B
2,727	74	>75% Grass cover, Good, HSG C
1,840	98	Paved parking, HSG C
830	98	Roofs, HSG C
8,758	84	Weighted Average
4,175		47.67% Pervious Area
4,583		52.33% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	73	0.0100	0.13		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.5	27	0.0100	0.85		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
1.6	195	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
11.6	295	Total			

Summary for Subcatchment 302: ROADWAY 7+50 TO 10+00 LEFT

Runoff = 2.09 cfs @ 12.13 hrs, Volume= 0.166 af, Depth= 3.47"
 Routed to Pond CB-106 : CB-106 STA 10+00 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
2,912	98	Paved parking, HSG C
3,141	74	>75% Grass cover, Good, HSG C
786	98	Roofs, HSG C
5,600	98	Paved parking, HSG B
9,053	61	>75% Grass cover, Good, HSG B
3,575	98	Roofs, HSG B
25,067	82	Weighted Average
12,194		48.65% Pervious Area
12,873		51.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	68	0.0200	0.17		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.6	32	0.0100	0.88		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
1.8	225	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
9.2	325	Total			

Summary for Subcatchment 303: INTERIOR EAST END

Runoff = 2.37 cfs @ 12.15 hrs, Volume= 0.198 af, Depth= 2.99"
 Routed to Pond CB-111 : CB-111

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area (sf)	CN	Description
6,392	98	Roofs, HSG C
23,260	74	>75% Grass cover, Good, HSG C
626	98	Roofs, HSG B
4,392	61	>75% Grass cover, Good, HSG B
34,670	77	Weighted Average
27,652		79.76% Pervious Area
7,018		20.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	100	0.0300	0.21		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
2.9	185	0.0225	1.05		Shallow Concentrated Flow, SC Grass Short Grass Pasture Kv= 7.0 fps
10.8	285	Total			

Summary for Subcatchment 304: FOREBAY #3 AREA

Runoff = 0.17 cfs @ 12.10 hrs, Volume= 0.013 af, Depth= 1.63"
Routed to Pond FB #3 : FOREWAY #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
4,075	61	>75% Grass cover, Good, HSG B
4,075		100.00% Pervious Area

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

Summary for Subcatchment 305: BIO #3 AREA

Runoff = 0.23 cfs @ 12.10 hrs, Volume= 0.018 af, Depth= 1.63"
Routed to Pond BIO #3 : BIORENTION #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
5,605	61	>75% Grass cover, Good, HSG B
5,605		100.00% Pervious Area

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

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 306: ROADWAY STA 12+00 TO 10+00 LEFT

Runoff = 1.35 cfs @ 12.10 hrs, Volume= 0.099 af, Depth= 3.57"

Routed to Pond CB-106 : CB-106 STA 10+00 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
6,000	61	>75% Grass cover, Good, HSG B
6,756	98	Paved parking, HSG B
1,766	98	Roofs, HSG B
14,522	83	Weighted Average
6,000		41.32% Pervious Area
8,522		58.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	43	0.0200	0.15		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.2	9	0.0200	0.90		Sheet Flow, Sheet Sidewalk Smooth surfaces n= 0.011 P2= 3.60"
0.8	5	0.0200	0.10		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.8	43	0.0100	0.93		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.2	28	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
6.7	128	Total			

Summary for Subcatchment 307: ROADWAY STA 12+00 TO 10+00 RIGHT

Runoff = 1.30 cfs @ 12.10 hrs, Volume= 0.097 af, Depth= 3.47"

Routed to Pond CB-105 : CB-105 STA 10+00 10' RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,145	98	Roofs, HSG C
485	98	Paved parking, HSG C
2,325	74	>75% Grass cover, Good, HSG C
842	98	Roofs, HSG B
5,094	98	Paved parking, HSG B
4,753	61	>75% Grass cover, Good, HSG B
14,644	82	Weighted Average
7,078		48.33% Pervious Area
7,566		51.67% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	65	0.0450	0.23		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.7	35	0.0100	0.90		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
1.8	215	0.0100	2.03		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
7.2	315	Total			

Summary for Subcatchment 401: INTERIOR WEST END

Runoff = 2.79 cfs @ 12.20 hrs, Volume= 0.256 af, Depth= 2.99"
Routed to Pond CB-112 : CB-112

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,865	98	Roofs, HSG B
5,500	61	>75% Grass cover, Good, HSG B
6,523	98	Roofs, HSG C
30,919	74	>75% Grass cover, Good, HSG C
44,807	77	Weighted Average
36,419		81.28% Pervious Area
8,388		18.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	100	0.0100	0.14		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
1.9	140	0.0300	1.21		Shallow Concentrated Flow, Sc Grass Short Grass Pasture Kv= 7.0 fps
14.1	240	Total			

Summary for Subcatchment 402: ROADWAY STA 12+00 TO 14+59 RIGHT

Runoff = 1.79 cfs @ 12.09 hrs, Volume= 0.130 af, Depth= 3.47"
Routed to Pond CB-107 : CB-107 STA 14+59 10" RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area (sf)	CN	Description
2,450	98	Roofs, HSG C
1,897	98	Paved parking, HSG C
7,478	74	>75% Grass cover, Good, HSG C
290	98	Roofs, HSG B
3,620	98	Paved parking, HSG B
3,900	61	>75% Grass cover, Good, HSG B
19,635	82	Weighted Average
11,378		57.95% Pervious Area
8,257		42.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	65	0.0300	0.19		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.5	35	0.0200	1.18		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.4	72	0.0200	2.87		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
6.5	172	Total			

Summary for Subcatchment 403: ROADWAY STA 12+00 TO 14+59 LEFT

Runoff = 1.53 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 3.47"
 Routed to Pond CB-108 : CB-108 STA 14+59 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
225	98	Roofs, HSG C
6,128	98	Paved parking, HSG B
6,970	61	>75% Grass cover, Good, HSG B
1,365	98	Roofs, HSG B
1,066	98	Roofs, HSG D
870	80	>75% Grass cover, Good, HSG D
115	98	Paved parking, HSG D
16,739	82	Weighted Average
7,840		46.84% Pervious Area
8,899		53.16% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	56	0.0250	0.18		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.4	30	0.0200	1.15		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.3	15	0.0200	1.00		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.4	64	0.0200	2.87		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
6.4	165	Total			

Summary for Subcatchment 404: FOREBAY #4 AREA

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.020 af, Depth= 2.11"
 Routed to Pond FB #4 : FOREBAY #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
650	98	Roofs, HSG D
140	80	>75% Grass cover, Good, HSG D
85	98	Roofs, HSG B
4,125	61	>75% Grass cover, Good, HSG B
5,000	67	Weighted Average
4,265		85.30% Pervious Area
735		14.70% Impervious Area

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

Summary for Subcatchment 405: BIO #4 AREA

Runoff = 1.25 cfs @ 12.09 hrs, Volume= 0.092 af, Depth= 1.95"
 Routed to Pond BIO #4 : BIORETENTION #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
21,770	61	>75% Grass cover, Good, HSG B
1,528	98	Roofs, HSG B
1,105	98	Roofs, HSG C
70	74	>75% Grass cover, Good, HSG C
254	80	>75% Grass cover, Good, HSG D
24,727	65	Weighted Average
22,094		89.35% Pervious Area
2,633		10.65% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

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

Summary for Subcatchment 406: ROADWAY END TO STA 15+65 LEFT

Runoff = 1.47 cfs @ 12.09 hrs, Volume= 0.108 af, Depth= 4.18"
Routed to Pond CB-110 : CB-110 STA 15+65 10' LEFT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
35	98	Roofs, HSG B
2,000	98	Paved parking, HSG B
175	61	>75% Grass cover, Good, HSG B
1,400	98	Roofs, HSG C
5,080	98	Paved parking, HSG C
4,832	74	>75% Grass cover, Good, HSG C
13,522	89	Weighted Average
5,007		37.03% Pervious Area
8,515		62.97% Impervious Area

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

Summary for Subcatchment 407: ROADWAY END TO STA 15+65 RIGHT

Runoff = 1.35 cfs @ 12.10 hrs, Volume= 0.100 af, Depth= 3.67"
Routed to Pond CB-109 : CB-109 STA 15+65 10' RIGHT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
1,930	98	Roofs, HSG C
4,370	98	Paved parking, HSG C
6,157	74	>75% Grass cover, Good, HSG C
555	98	Paved parking, HSG B
1,305	61	>75% Grass cover, Good, HSG B
14,317	84	Weighted Average
7,462		52.12% Pervious Area
6,855		47.88% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0150	0.14		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.7	55	0.0200	1.29		Sheet Flow, Sheet Pave Smooth surfaces n= 0.011 P2= 3.60"
0.7	145	0.0300	3.52		Shallow Concentrated Flow, SC Pave Paved Kv= 20.3 fps
6.9	245	Total			

Summary for Subcatchment 1001: REMAINING AREA OF SUBCAT #1

Runoff = 1.31 cfs @ 12.21 hrs, Volume= 0.127 af, Depth= 1.95"
Routed to Link AP-1 : EZRA GREEN OPEN SPACE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
750	98	Roofs, HSG B
25,537	61	>75% Grass cover, Good, HSG B
584	55	Woods, Good, HSG B
260	98	Roofs, HSG C
6,940	74	>75% Grass cover, Good, HSG C
34,071	65	Weighted Average
33,061		97.04% Pervious Area
1,010		2.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	100	0.1000	0.16		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
3.9	265	0.0525	1.15		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
14.5	365	Total			

Summary for Subcatchment 1002: REMAINING AREA OF SUBCAT #2

Runoff = 5.40 cfs @ 12.36 hrs, Volume= 0.632 af, Depth= 2.45"
Routed to Link AP-2 : EZRA GREEN OPEN SPACE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Area (sf)	CN	Description
84,512	77	Woods, Good, HSG D
3,577	80	>75% Grass cover, Good, HSG D
437	98	Roofs, HSG D
2,267	98	Roofs, HSG B
20,187	61	>75% Grass cover, Good, HSG B
24,003	55	Woods, Good, HSG B
134,983	71	Weighted Average
132,279		98.00% Pervious Area
2,704		2.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0300	0.10		Sheet Flow, Sheet Woods
					Woods: Light underbrush n= 0.400 P2= 3.60"
7.8	350	0.0225	0.75		Shallow Concentrated Flow, SC Wet
					Woodland Kv= 5.0 fps
25.0	450	Total			

Summary for Subcatchment 1003: REMAINING AREA OF SUBCAT #3

Runoff = 5.01 cfs @ 12.71 hrs, Volume= 0.846 af, Depth= 2.53"
Routed to Link AP-3 : INDIAN RIDGE OPEN SPACE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
53,530	70	Woods, Good, HSG C
78,403	77	Woods, Good, HSG D
5,395	80	>75% Grass cover, Good, HSG D
875	98	Roofs, HSG D
3,112	98	Roofs, HSG B
26,475	61	>75% Grass cover, Good, HSG B
6,800	55	Woods, Good, HSG B
174,590	72	Weighted Average
170,603		97.72% Pervious Area
3,987		2.28% Impervious Area

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	49	0.0400	0.21		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
0.4	10	0.4000	0.38		Sheet Flow, Sheet Grass Grass: Short n= 0.150 P2= 3.60"
6.9	41	0.0500	0.10		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
0.7	45	0.0450	1.06		Shallow Concentrated Flow, SC Woods Woodland Kv= 5.0 fps
40.7	432	0.0050	0.18		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
52.7	577	Total			

Summary for Subcatchment 1004: REMAINING AREA OF SUBCAT #4

Runoff = 25.03 cfs @ 13.92 hrs, Volume= 8.135 af, Depth> 2.36"
 Routed to Link AP-4 : EZRA GREEN OPEN SPACE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
381,600	70	Woods, Good, HSG C
41,087	74	>75% Grass cover, Good, HSG C
6,440	98	Roofs, HSG C
770	96	Gravel surface, HSG C
377,015	55	Woods, Good, HSG B
5,530	96	Gravel surface, HSG B
2,075	98	Roofs, HSG B
168,481	61	>75% Grass cover, Good, HSG B
773,333	77	Woods, Good, HSG D
46,600	80	>75% Grass cover, Good, HSG D
1,802,931	70	Weighted Average
1,794,416		99.53% Pervious Area
8,515		0.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1200	0.17		Sheet Flow, Sheet Woods Woods: Light underbrush n= 0.400 P2= 3.60"
12.7	540	0.0200	0.71		Shallow Concentrated Flow, Sc Woods Woodland Kv= 5.0 fps
19.1	350	0.0150	0.31		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
17.5	435	0.0275	0.41		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
80.0	1,200	0.0100	0.25		Shallow Concentrated Flow, SC Wet Forest w/Heavy Litter Kv= 2.5 fps
139.2	2,625	Total			

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Subcatchment 1005: REMAINING AREA OF SUBCAT #5

Runoff = 0.97 cfs @ 12.18 hrs, Volume= 0.086 af, Depth= 2.45"

Routed to Link AP-5 : EXISTING INDIAN RIDGE BIORETENTION PRATICE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
12,258	70	Woods, Good, HSG C
4,657	74	>75% Grass cover, Good, HSG C
500	98	Paved parking, HSG C
1,055	61	>75% Grass cover, Good, HSG B
18,470	71	Weighted Average
17,970		97.29% Pervious Area
500		2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	100	0.1100	0.16		Sheet Flow, Sheet Woods
					Woods: Light underbrush n= 0.400 P2= 3.60"
2.3	155	0.0500	1.12		Shallow Concentrated Flow, SC Woods
					Woodland Kv= 5.0 fps
12.5	255	Total			

Summary for Subcatchment 1006: REMAINING AREA OF SUBCAT #6

Runoff = 0.24 cfs @ 12.12 hrs, Volume= 0.019 af, Depth= 1.63"

Routed to Link AP-6 : EZRA GREEN OPEN SPACE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Area (sf)	CN	Description
6,110	61	>75% Grass cover, Good, HSG B
6,110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0350	0.23		Sheet Flow, Sheet Woods
					Grass: Short n= 0.150 P2= 3.60"
0.3	20	0.0250	1.11		Shallow Concentrated Flow, SC Grass
					Short Grass Pasture Kv= 7.0 fps
7.7	120	Total			

Summary for Reach 2001: FLOW THROUGH WOODS TO WETLANDS

Inflow Area = 3.185 ac, 31.92% Impervious, Inflow Depth = 1.16" for 10-YR SEACOAST event
Inflow = 1.74 cfs @ 12.60 hrs, Volume= 0.308 af
Outflow = 1.74 cfs @ 12.61 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.6 min
Routed to Reach 2002 : FLOW THROUGH WETLANDS TO AP-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.39 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 1.4 min

Peak Storage= 88 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 7.22'
Bank-Full Depth= 0.50' Flow Area= 3.3 sf, Capacity= 7.13 cfs

10.00' x 0.50' deep Parabolic Channel, n= 0.070 Medium-dense brush, winter
Length= 70.0' Slope= 0.0443 '/'
Inlet Invert= 157.50', Outlet Invert= 154.40'



Summary for Reach 2002: FLOW THROUGH WETLANDS TO AP-2

Inflow Area = 3.185 ac, 31.92% Impervious, Inflow Depth = 1.16" for 10-YR SEACOAST event
Inflow = 1.74 cfs @ 12.61 hrs, Volume= 0.308 af
Outflow = 1.67 cfs @ 12.82 hrs, Volume= 0.308 af, Atten= 4%, Lag= 12.3 min
Routed to Link AP-2 : EZRA GREEN OPEN SPACE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.56 fps, Min. Travel Time= 10.8 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 34.8 min

Peak Storage= 1,078 cf @ 12.82 hrs
Average Depth at Peak Storage= 0.22' , Surface Width= 20.07'
Bank-Full Depth= 0.50' Flow Area= 10.0 sf, Capacity= 9.52 cfs

30.00' x 0.50' deep Parabolic Channel, n= 0.100 Heavy timber, flow below branches
Length= 360.0' Slope= 0.0178 '/'
Inlet Invert= 154.40', Outlet Invert= 148.00'



Summary for Reach 3001: FLOW THROUGH WOODS TO WETLANDS

Inflow Area = 1.251 ac, 36.12% Impervious, Inflow Depth > 2.62" for 10-YR SEACOAST event
Inflow = 0.50 cfs @ 12.99 hrs, Volume= 0.274 af
Outflow = 0.50 cfs @ 13.00 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.9 min
Routed to Reach 3002 : FLOW THROUGH WETLANDS TO AP-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.95 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 2.0 min

Peak Storage= 38 cf @ 13.00 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 5.40'
Bank-Full Depth= 0.50' Flow Area= 3.3 sf, Capacity= 7.20 cfs

10.00' x 0.50' deep Parabolic Channel, n= 0.070 Medium-dense brush, winter
Length= 72.0' Slope= 0.0451 '/
Inlet Invert= 163.50', Outlet Invert= 160.25'

**Summary for Reach 3002: FLOW THROUGH WETLANDS TO AP-3**

Inflow Area = 1.251 ac, 36.12% Impervious, Inflow Depth > 2.62" for 10-YR SEACOAST event
Inflow = 0.50 cfs @ 13.00 hrs, Volume= 0.274 af
Outflow = 0.49 cfs @ 13.79 hrs, Volume= 0.273 af, Atten= 2%, Lag= 46.9 min
Routed to Link AP-3 : INDIAN RIDGE OPEN SPACE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.26 fps, Min. Travel Time= 25.9 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 40.5 min

Peak Storage= 766 cf @ 13.79 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 17.29'
Bank-Full Depth= 0.50' Flow Area= 10.0 sf, Capacity= 5.36 cfs

30.00' x 0.50' deep Parabolic Channel, n= 0.100 Heavy timber, flow below branches
Length= 400.0' Slope= 0.0056 '/
Inlet Invert= 160.25', Outlet Invert= 158.00'



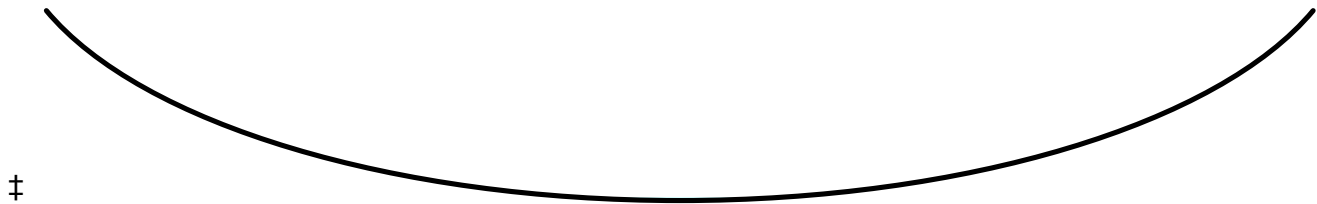
Summary for Reach 4001: FLOW THROUGH WOODS TO WETLANDS

Inflow Area = 1.263 ac, 39.72% Impervious, Inflow Depth = 0.00" for 10-YR SEACOAST event
Inflow = 0.00 cfs @ 13.63 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 13.72 hrs, Volume= 0.000 af, Atten= 9%, Lag= 5.6 min
Routed to Reach 4002 : FLOW THROUGH WETLANDS TO AP-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.17 fps, Min. Travel Time= 7.8 min
Avg. Velocity= 0.14 fps, Avg. Travel Time= 9.4 min

Peak Storage= 0 cf @ 13.72 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 1.11'
Bank-Full Depth= 0.50' Flow Area= 3.3 sf, Capacity= 9.32 cfs

10.00' x 0.50' deep Parabolic Channel, n= 0.070 Medium-dense brush, winter
Length= 78.0' Slope= 0.0756 '/
Inlet Invert= 162.20', Outlet Invert= 156.30'

**Summary for Reach 4002: FLOW THROUGH WETLANDS TO AP-4**

Inflow Area = 1.263 ac, 39.72% Impervious, Inflow Depth = 0.00" for 10-YR SEACOAST event
Inflow = 0.00 cfs @ 13.72 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 14.37 hrs, Volume= 0.000 af, Atten= 95%, Lag= 38.9 min
Routed to Link AP-4 : EZRA GREEN OPEN SPACE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.04 fps, Min. Travel Time= 569.9 min
Avg. Velocity= 0.04 fps, Avg. Travel Time= 569.9 min

Peak Storage= 1 cf @ 14.37 hrs
Average Depth at Peak Storage= 0.00' , Surface Width= 1.00'
Bank-Full Depth= 0.50' Flow Area= 10.0 sf, Capacity= 7.71 cfs

30.00' x 0.50' deep Parabolic Channel, n= 0.100 Heavy timber, flow below branches
Length= 1,225.0' Slope= 0.0117 '/
Inlet Invert= 156.30', Outlet Invert= 142.00'



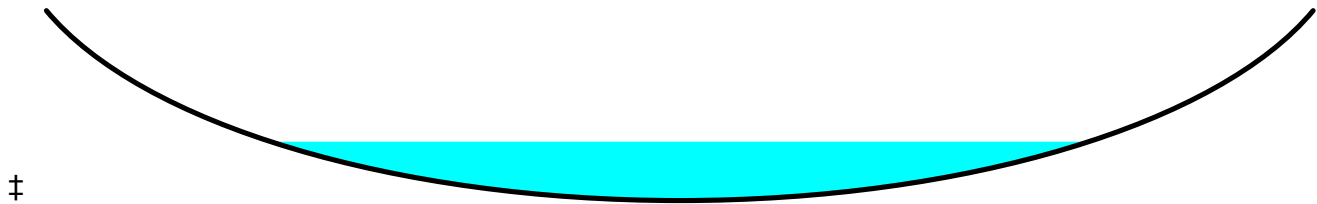
Summary for Reach 4003: FLOW THROUGH WOODS TO WETLANDS

Inflow Area = 2.464 ac, 37.79% Impervious, Inflow Depth = 1.50" for 10-YR SEACOAST event
Inflow = 0.68 cfs @ 13.07 hrs, Volume= 0.309 af
Outflow = 0.68 cfs @ 13.08 hrs, Volume= 0.309 af, Atten= 0%, Lag= 0.6 min
Routed to Reach 4004 : FLOW THROUGH WETLANDS TO AP-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 1.3 min

Peak Storage= 37 cf @ 13.08 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 5.56'
Bank-Full Depth= 0.50' Flow Area= 3.3 sf, Capacity= 8.68 cfs

10.00' x 0.50' deep Parabolic Channel, n= 0.070 Medium-dense brush, winter
Length= 64.0' Slope= 0.0656 '/
Inlet Invert= 157.20', Outlet Invert= 153.00'



Summary for Reach 4004: FLOW THROUGH WETLANDS TO AP-4

Inflow Area = 2.464 ac, 37.79% Impervious, Inflow Depth = 1.50" for 10-YR SEACOAST event
Inflow = 0.68 cfs @ 13.08 hrs, Volume= 0.309 af
Outflow = 0.58 cfs @ 14.12 hrs, Volume= 0.308 af, Atten= 14%, Lag= 62.1 min
Routed to Link AP-4 : EZRA GREEN OPEN SPACE

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 48.1 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 75.0 min

Peak Storage= 1,686 cf @ 14.12 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 15.54'
Bank-Full Depth= 0.60' Flow Area= 12.0 sf, Capacity= 10.10 cfs

30.00' x 0.60' deep Parabolic Channel, n= 0.100 Heavy timber, flow below branches
Length= 1,010.0' Slope= 0.0109 '/
Inlet Invert= 153.00', Outlet Invert= 142.00'



Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #1: BIORETENTION #1

Inflow Area = 1.251 ac, 36.12% Impervious, Inflow Depth = 2.64" for 10-YR SEACOAST event
 Inflow = 3.84 cfs @ 12.14 hrs, Volume= 0.276 af
 Outflow = 0.50 cfs @ 12.99 hrs, Volume= 0.274 af, Atten= 87%, Lag= 50.7 min
 Primary = 0.50 cfs @ 12.99 hrs, Volume= 0.274 af
 Routed to Reach 3001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 168.32' @ 12.99 hrs Surf.Area= 3,162 sf Storage= 4,840 cf
 Flood Elev= 170.00' Surf.Area= 4,315 sf Storage= 11,109 cf

Plug-Flow detention time= 111.3 min calculated for 0.274 af (99% of inflow)
 Center-of-Mass det. time= 106.6 min (963.2 - 856.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.24'	11,109 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)
164.24	1,840	0.0	0	0	1,840
164.25	1,840	40.0	7	7	1,842
165.24	1,840	40.0	729	736	1,992
165.25	1,840	40.0	7	743	1,994
165.49	1,840	40.0	177	920	2,030
165.50	1,840	20.0	4	924	2,032
166.99	1,840	20.0	548	1,472	2,258
167.00	1,840	100.0	18	1,490	2,260
168.00	2,965	100.0	2,380	3,871	3,398
170.00	4,315	100.0	7,238	11,109	4,813

Device	Routing	Invert	Outlet Devices
#1	Primary	164.20'	12.0" Round Culvert L= 18.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 164.20' / 164.00' S= 0.0111 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	169.50'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#3	Device 1	164.30'	6.0" Round UnderDrain L= 70.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 164.30' / 164.30' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#4	Device 3	164.24'	6.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'

Primary OutFlow Max=0.50 cfs @ 12.99 hrs HW=168.32' TW=163.65' (Dynamic Tailwater)

- 1=Culvert (Passes 0.50 cfs of 7.19 cfs potential flow)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=UnderDrain (Passes 0.50 cfs of 1.18 cfs potential flow)
- 4=Exfiltration (Exfiltration Controls 0.50 cfs)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #2: BIORETENTION #2

Inflow Area = 1.263 ac, 39.72% Impervious, Inflow Depth = 2.08" for 10-YR SEACOAST event
 Inflow = 2.49 cfs @ 12.25 hrs, Volume= 0.219 af
 Outflow = 0.34 cfs @ 13.63 hrs, Volume= 0.219 af, Atten= 86%, Lag= 82.7 min
 Discarded = 0.34 cfs @ 13.63 hrs, Volume= 0.219 af
 Primary = 0.00 cfs @ 13.63 hrs, Volume= 0.000 af
 Routed to Reach 4001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 164.52' @ 13.63 hrs Surf.Area= 2,093 sf Storage= 3,200 cf
 Flood Elev= 167.00' Surf.Area= 3,980 sf Storage= 10,647 cf

Plug-Flow detention time= 103.6 min calculated for 0.219 af (100% of inflow)
 Center-of-Mass det. time= 103.6 min (995.0 - 891.4)

Volume	Invert	Avail.Storage	Storage Description
#1	160.49'	10,647 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
160.49	1,300	0.0	0	0	1,300
160.50	1,300	40.0	5	5	1,301
161.74	1,300	40.0	645	650	1,460
161.75	1,300	20.0	3	653	1,461
163.24	1,300	20.0	387	1,040	1,651
163.25	1,300	100.0	13	1,053	1,653
164.00	1,765	100.0	1,145	2,198	2,129
166.00	3,180	100.0	4,876	7,074	3,587
167.00	3,980	100.0	3,573	10,647	4,414

Device	Routing	Invert	Outlet Devices
#1	Discarded	160.49'	6.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	163.00'	12.0" Round Culvert L= 56.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.00' / 162.70' S= 0.0054 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	166.50'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	164.50'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.34 cfs @ 13.63 hrs HW=164.52' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=0.00 cfs @ 13.63 hrs HW=164.52' TW=162.21' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.00 cfs of 3.30 cfs potential flow)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.48 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #3: BIORENTION #3

Inflow Area = 2.464 ac, 37.79% Impervious, Inflow Depth = 2.89" for 10-YR SEACOAST event
 Inflow = 7.89 cfs @ 12.14 hrs, Volume= 0.593 af
 Outflow = 0.89 cfs @ 13.07 hrs, Volume= 0.523 af, Atten= 89%, Lag= 55.9 min
 Discarded = 0.21 cfs @ 13.07 hrs, Volume= 0.214 af
 Primary = 0.68 cfs @ 13.07 hrs, Volume= 0.309 af
 Routed to Reach 4003 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 162.88' @ 13.07 hrs Surf.Area= 4,222 sf Storage= 12,474 cf
 Flood Elev= 164.00' Surf.Area= 5,080 sf Storage= 17,663 cf

Plug-Flow detention time= 234.4 min calculated for 0.523 af (88% of inflow)
 Center-of-Mass det. time= 179.6 min (1,023.5 - 843.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.24'	17,663 cf	Bioretention (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.24	1,750	0.0	0	0	1,750
157.25	1,750	40.0	7	7	1,751
158.74	1,750	40.0	1,043	1,050	1,972
158.75	1,750	20.0	3	1,053	1,974
158.99	1,750	20.0	84	1,138	2,010
159.00	1,750	100.0	17	1,155	2,011
160.00	2,300	100.0	2,019	3,174	2,584
162.00	3,600	100.0	5,852	9,025	3,939
164.00	5,080	100.0	8,638	17,663	5,490

Device	Routing	Invert	Outlet Devices
#1	Discarded	157.24'	2.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.40'	
			15.0" Round Culvert L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.40' / 157.95' S= 0.0100 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	163.50'	2.6" x 4.6" Horiz. Orifice/Grate X 8.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (66% open area)
#4	Device 2	160.65'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	162.75'	6.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.21 cfs @ 13.07 hrs HW=162.88' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.68 cfs @ 13.07 hrs HW=162.88' TW=157.35' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.68 cfs of 11.61 cfs potential flow)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.92 fps)

↑ **5=Orifice/Grate** (Orifice Controls 0.08 cfs @ 1.17 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #4: BIORETENTION #4

Inflow Area = 3.185 ac, 31.92% Impervious, Inflow Depth = 2.84" for 10-YR SEACOAST event
 Inflow = 9.65 cfs @ 12.12 hrs, Volume= 0.754 af
 Outflow = 2.31 cfs @ 12.60 hrs, Volume= 0.754 af, Atten= 76%, Lag= 29.3 min
 Discarded = 0.57 cfs @ 12.60 hrs, Volume= 0.447 af
 Primary = 1.74 cfs @ 12.60 hrs, Volume= 0.308 af
 Routed to Reach 2001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 162.01' @ 12.60 hrs Surf.Area= 7,712 sf Storage= 12,523 cf
 Flood Elev= 163.50' Surf.Area= 9,750 sf Storage= 25,509 cf

Plug-Flow detention time= 96.0 min calculated for 0.754 af (100% of inflow)
 Center-of-Mass det. time= 95.9 min (938.1 - 842.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	158.74'	25,509 cf	Bioretention (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
158.74	5,785	0.0	0	0	5,785
158.75	5,785	40.0	23	23	5,788
158.99	5,785	40.0	555	579	5,852
159.00	5,785	20.0	12	590	5,855
160.49	5,785	20.0	1,724	2,314	6,257
160.50	5,785	100.0	58	2,372	6,260
162.00	7,700	100.0	10,080	12,451	8,223
163.50	9,750	100.0	13,057	25,509	10,333

Device	Routing	Invert	Outlet Devices
#1	Discarded	158.74'	3.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.65'	
			L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.65' / 158.05' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	163.00'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	160.75'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	161.50'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.57 cfs @ 12.60 hrs HW=162.01' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.57 cfs)

Primary OutFlow Max=1.74 cfs @ 12.60 hrs HW=162.01' TW=157.76' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 1.74 cfs of 6.15 cfs potential flow)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Orifice Controls 1.12 cfs @ 5.03 fps)

↑ **5=Orifice/Grate** (Orifice Controls 0.62 cfs @ 2.79 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond CB-101: CB-101 4+50 10' RIGHT

Inflow Area = 0.394 ac, 43.79% Impervious, Inflow Depth = 3.18" for 10-YR SEACOAST event
Inflow = 1.20 cfs @ 12.17 hrs, Volume= 0.104 af
Outflow = 1.20 cfs @ 12.17 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 12.17 hrs, Volume= 0.104 af
Routed to Pond CB-102 : CB-102 STA 4+50 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 170.22' @ 12.15 hrs

Flood Elev= 173.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	169.55'	12.0" Round P-101 L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 169.55' / 169.15' S= 0.0200 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.17 hrs HW=170.21' TW=169.90' (Dynamic Tailwater)↑**1=P-101** (Outlet Controls 1.22 cfs @ 3.13 fps)**Summary for Pond CB-102: CB-102 STA 4+50 10' LEFT**

Inflow Area = 0.968 ac, 46.68% Impervious, Inflow Depth = 3.27" for 10-YR SEACOAST event
Inflow = 3.19 cfs @ 12.13 hrs, Volume= 0.264 af
Outflow = 3.19 cfs @ 12.13 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.13 hrs, Volume= 0.264 af
Routed to Pond FB#1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 169.92' @ 12.13 hrs

Flood Elev= 173.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	169.05'	18.0" Round P-102 L= 46.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 169.05' / 168.50' S= 0.0120 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.18 cfs @ 12.13 hrs HW=169.92' TW=169.26' (Dynamic Tailwater)↑**1=P-102** (Outlet Controls 3.18 cfs @ 4.29 fps)**Summary for Pond CB-103: CB-103 STA 7+50 10' RIGHT**

Inflow Area = 0.476 ac, 44.13% Impervious, Inflow Depth = 3.27" for 10-YR SEACOAST event
Inflow = 1.74 cfs @ 12.11 hrs, Volume= 0.130 af
Outflow = 1.74 cfs @ 12.11 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Primary = 1.74 cfs @ 12.11 hrs, Volume= 0.130 af
Routed to Pond CB-104 : CB-104 STA 7+50 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Peak Elev= 167.11' @ 12.15 hrs

Flood Elev= 170.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	166.15'	12.0" Round P-103 L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.15' / 165.75' S= 0.0200 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.62 cfs @ 12.11 hrs HW=167.07' TW=166.83' (Dynamic Tailwater)↑**1=P-103** (Outlet Controls 1.62 cfs @ 2.81 fps)**Summary for Pond CB-104: CB-104 STA 7+50 10' LEFT**

Inflow Area = 1.027 ac, 48.87% Impervious, Inflow Depth = 3.32" for 10-YR SEACOAST event
Inflow = 3.65 cfs @ 12.12 hrs, Volume= 0.284 af
Outflow = 3.65 cfs @ 12.12 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min
Primary = 3.65 cfs @ 12.12 hrs, Volume= 0.284 af
Routed to Pond FB #2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 166.96' @ 12.18 hrs

Flood Elev= 170.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	18.0" Round P-104 L= 120.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.65' / 164.15' S= 0.0125 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.43 cfs @ 12.12 hrs HW=166.87' TW=166.41' (Dynamic Tailwater)↑**1=P-104** (Outlet Controls 3.43 cfs @ 3.05 fps)**Summary for Pond CB-105: CB-105 STA 10+00 10' RIGHT**

Inflow Area = 1.333 ac, 33.01% Impervious, Inflow Depth = 3.21" for 10-YR SEACOAST event
Inflow = 4.27 cfs @ 12.13 hrs, Volume= 0.357 af
Outflow = 4.27 cfs @ 12.13 hrs, Volume= 0.357 af, Atten= 0%, Lag= 0.0 min
Primary = 4.27 cfs @ 12.13 hrs, Volume= 0.357 af
Routed to Pond CB-106 : CB-106 STA 10+00 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.35' @ 12.14 hrs

Flood Elev= 167.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	18.0" Round P-106 L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.50' / 162.10' S= 0.0200 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Primary OutFlow Max=4.25 cfs @ 12.13 hrs HW=164.35' TW=164.10' (Dynamic Tailwater)↑**1=P-106** (Inlet Controls 4.25 cfs @ 2.40 fps)**Summary for Pond CB-106: CB-106 STA 10+00 10' LEFT**

Inflow Area = 2.242 ac, 41.53% Impervious, Inflow Depth = 3.33" for 10-YR SEACOAST event

Inflow = 7.62 cfs @ 12.13 hrs, Volume= 0.622 af

Outflow = 7.62 cfs @ 12.13 hrs, Volume= 0.622 af, Atten= 0%, Lag= 0.0 min

Primary = 7.62 cfs @ 12.13 hrs, Volume= 0.622 af

Routed to Pond FB #3 : FOREWAY #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.10' @ 12.13 hrs

Flood Elev= 167.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	24.0" Round P-107 L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.50' S= 0.0100 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.54 cfs @ 12.13 hrs HW=164.09' TW=163.85' (Dynamic Tailwater)↑**1=P-107** (Inlet Controls 7.54 cfs @ 2.40 fps)**Summary for Pond CB-107: CB-107 STA 14+59 10" RIGHT**

Inflow Area = 1.479 ac, 25.83% Impervious, Inflow Depth = 3.13" for 10-YR SEACOAST event

Inflow = 4.12 cfs @ 12.14 hrs, Volume= 0.386 af

Outflow = 4.12 cfs @ 12.14 hrs, Volume= 0.386 af, Atten= 0%, Lag= 0.0 min

Primary = 4.12 cfs @ 12.14 hrs, Volume= 0.386 af

Routed to Pond CB-108 : CB-108 STA 14+59 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 165.61' @ 12.13 hrs

Flood Elev= 169.03'

Device	Routing	Invert	Outlet Devices
#1	Primary	164.40'	18.0" Round P-109 L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 164.40' / 164.00' S= 0.0200 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.18 cfs @ 12.14 hrs HW=165.61' TW=165.22' (Dynamic Tailwater)↑**1=P-109** (Outlet Controls 4.18 cfs @ 3.74 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond CB-108: CB-108 STA 14+59 10' LEFT

Inflow Area = 1.864 ac, 31.47% Impervious, Inflow Depth = 3.20" for 10-YR SEACOAST event
Inflow = 5.51 cfs @ 12.12 hrs, Volume= 0.497 af
Outflow = 5.51 cfs @ 12.12 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min
Primary = 5.51 cfs @ 12.12 hrs, Volume= 0.497 af
Routed to Pond DMH-110 : DMH-101 STA 15+15 14' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 165.24' @ 12.12 hrs

Flood Elev= 169.03'

Device	Routing	Invert	Outlet Devices
#1	Primary	163.90'	18.0" Round P-110 L= 58.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.90' / 163.30' S= 0.0103 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.53 cfs @ 12.12 hrs HW=165.24' TW=164.57' (Dynamic Tailwater)↑**1=P-110** (Outlet Controls 5.53 cfs @ 4.39 fps)**Summary for Pond CB-109: CB-109 STA 15+65 10' RIGHT**

Inflow Area = 0.329 ac, 47.88% Impervious, Inflow Depth = 3.67" for 10-YR SEACOAST event
Inflow = 1.35 cfs @ 12.10 hrs, Volume= 0.100 af
Outflow = 1.35 cfs @ 12.10 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 12.10 hrs, Volume= 0.100 af
Routed to Pond CB-110 : CB-110 STA 15+65 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 167.24' @ 12.10 hrs

Flood Elev= 170.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	166.55'	12.0" Round P-111 L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.55' / 166.15' S= 0.0200 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.36 cfs @ 12.10 hrs HW=167.24' TW=166.90' (Dynamic Tailwater)↑**1=P-111** (Outlet Controls 1.36 cfs @ 3.29 fps)**Summary for Pond CB-110: CB-110 STA 15+65 10' LEFT**

Inflow Area = 0.639 ac, 55.21% Impervious, Inflow Depth = 3.92" for 10-YR SEACOAST event
Inflow = 2.82 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 2.82 cfs @ 12.09 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min
Primary = 2.82 cfs @ 12.09 hrs, Volume= 0.209 af
Routed to Pond DMH-110 : DMH-101 STA 15+15 14' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Peak Elev= 166.91' @ 12.09 hrs

Flood Elev= 170.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	166.05'	15.0" Round P-112 L= 52.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.05' / 163.30' S= 0.0529 ' S= 0.0529 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.82 cfs @ 12.09 hrs HW=166.91' TW=164.56' (Dynamic Tailwater)↑**1=P-112** (Inlet Controls 2.82 cfs @ 3.15 fps)**Summary for Pond CB-111: CB-111**

Inflow Area = 0.796 ac, 20.24% Impervious, Inflow Depth = 2.99" for 10-YR SEACOAST event
Inflow = 2.37 cfs @ 12.15 hrs, Volume= 0.198 af
Outflow = 2.37 cfs @ 12.15 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min
Primary = 2.37 cfs @ 12.15 hrs, Volume= 0.198 af
Routed to Pond CB-105 : CB-105 STA 10+00 10' RIGHT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.57' @ 12.15 hrs

Flood Elev= 167.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	163.40'	15.0" Round P-105 L= 40.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.40' / 162.60' S= 0.0200 ' S= 0.0200 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.41 cfs @ 12.15 hrs HW=164.57' TW=164.34' (Dynamic Tailwater)↑**1=P-105** (Outlet Controls 2.41 cfs @ 2.62 fps)**Summary for Pond CB-112: CB-112**

Inflow Area = 1.029 ac, 18.72% Impervious, Inflow Depth = 2.99" for 10-YR SEACOAST event
Inflow = 2.79 cfs @ 12.20 hrs, Volume= 0.256 af
Outflow = 2.79 cfs @ 12.20 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min
Primary = 2.79 cfs @ 12.20 hrs, Volume= 0.256 af
Routed to Pond CB-107 : CB-107 STA 14+59 10" RIGHT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 167.85' @ 12.20 hrs

Flood Elev= 171.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	167.00'	15.0" Round P-108 L= 135.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 167.00' / 164.50' S= 0.0185 ' S= 0.0185 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Tritech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Primary OutFlow Max=2.79 cfs @ 12.20 hrs HW=167.85' TW=165.53' (Dynamic Tailwater)↑**1=P-108** (Inlet Controls 2.79 cfs @ 3.14 fps)**Summary for Pond CB-113: CB-113 STA 3+09 10' LEFT**

Inflow Area = 0.383 ac, 44.62% Impervious, Inflow Depth = 3.27" for 10-YR SEACOAST event

Inflow = 1.34 cfs @ 12.12 hrs, Volume= 0.104 af

Outflow = 1.34 cfs @ 12.12 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Primary = 1.34 cfs @ 12.12 hrs, Volume= 0.104 af

Routed to Pond CB-102 : CB-102 STA 4+50 10' LEFT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 171.71' @ 12.12 hrs

Flood Elev= 175.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	171.10'	12.0" Round P-114 L= 142.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 171.10' / 169.15' S= 0.0137 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.12 hrs HW=171.71' TW=169.92' (Dynamic Tailwater)↑**1=P-114** (Inlet Controls 1.33 cfs @ 2.66 fps)**Summary for Pond DMH-110: DMH-101 STA 15+15 14' LEFT**

Inflow Area = 2.503 ac, 37.53% Impervious, Inflow Depth = 3.38" for 10-YR SEACOAST event

Inflow = 8.25 cfs @ 12.11 hrs, Volume= 0.706 af

Outflow = 8.25 cfs @ 12.11 hrs, Volume= 0.706 af, Atten= 0%, Lag= 0.0 min

Primary = 8.25 cfs @ 12.11 hrs, Volume= 0.706 af

Routed to Pond FB #4 : FOREBAY #4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.58' @ 12.11 hrs

Flood Elev= 170.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	163.20'	24.0" Round P-113 L= 154.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.20' / 161.50' S= 0.0110 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.23 cfs @ 12.11 hrs HW=164.57' TW=163.35' (Dynamic Tailwater)↑**1=P-113** (Outlet Controls 8.23 cfs @ 5.04 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond FB #2: FOREBAY #2

Inflow Area = 1.159 ac, 43.30% Impervious, Inflow Depth = 3.13" for 10-YR SEACOAST event
 Inflow = 3.88 cfs @ 12.12 hrs, Volume= 0.302 af
 Outflow = 2.39 cfs @ 12.25 hrs, Volume= 0.205 af, Atten= 38%, Lag= 8.2 min
 Primary = 2.39 cfs @ 12.25 hrs, Volume= 0.205 af
 Routed to Pond BIO #2 : BIORETENTION #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 166.75' @ 12.25 hrs Surf.Area= 2,718 sf Storage= 4,905 cf
 Flood Elev= 167.00' Surf.Area= 2,940 sf Storage= 5,620 cf

Plug-Flow detention time= 170.0 min calculated for 0.204 af (68% of inflow)
 Center-of-Mass det. time= 71.2 min (893.1 - 821.9)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	5,620 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
164.00	1,060	0	0
166.00	2,060	3,120	3,120
167.00	2,940	2,500	5,620

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	8.0' long x 7.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78

Primary OutFlow Max=2.39 cfs @ 12.25 hrs HW=166.75' TW=161.94' (Dynamic Tailwater)
 1=Broad-Crested Rectangular Weir (Weir Controls 2.39 cfs @ 1.21 fps)

Summary for Pond FB #3: FOREWAY #3

Inflow Area = 2.336 ac, 39.87% Impervious, Inflow Depth = 3.26" for 10-YR SEACOAST event
 Inflow = 7.77 cfs @ 12.12 hrs, Volume= 0.635 af
 Outflow = 7.69 cfs @ 12.14 hrs, Volume= 0.576 af, Atten= 1%, Lag= 0.9 min
 Primary = 7.69 cfs @ 12.14 hrs, Volume= 0.576 af
 Routed to Pond BIO #3 : BIORETENTION #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.85' @ 12.14 hrs Surf.Area= 1,900 sf Storage= 3,203 cf
 Flood Elev= 164.00' Surf.Area= 1,970 sf Storage= 3,496 cf

Plug-Flow detention time= 69.1 min calculated for 0.576 af (91% of inflow)
 Center-of-Mass det. time= 23.1 min (843.1 - 820.0)

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	3,496 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
161.50	855	0	0
162.00	1,050	476	476
164.00	1,970	3,020	3,496

Device	Routing	Invert	Outlet Devices
#1	Primary	163.50'	15.0' long x 7.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78

Primary OutFlow Max=7.69 cfs @ 12.14 hrs HW=163.85' TW=160.99' (Dynamic Tailwater)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 7.69 cfs @ 1.47 fps)

Summary for Pond FB #4: FOREBAY #4

Inflow Area = 2.618 ac, 36.53% Impervious, Inflow Depth = 3.33" for 10-YR SEACOAST event
Inflow = 8.52 cfs @ 12.11 hrs, Volume= 0.726 af
Outflow = 8.45 cfs @ 12.12 hrs, Volume= 0.662 af, Atten= 1%, Lag= 0.8 min
Primary = 8.45 cfs @ 12.12 hrs, Volume= 0.662 af
Routed to Pond BIO #4 : BIORETENTION #4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Peak Elev= 163.36' @ 12.12 hrs Surf.Area= 1,767 sf Storage= 3,377 cf
Flood Elev= 163.50' Surf.Area= 1,830 sf Storage= 3,638 cf

Plug-Flow detention time= 66.8 min calculated for 0.662 af (91% of inflow)
Center-of-Mass det. time= 22.7 min (840.2 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	160.50'	3,638 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
160.50	660	0	0
162.00	1,180	1,380	1,380
163.50	1,830	2,258	3,638

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	16.0' long x 7.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78

Ambrose Woods - Post-Construction

Type III 24-hr 10-YR SEACOAST Rainfall=5.43"

Prepared by Trittech Engineering Corporation

Printed 3/6/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Primary OutFlow Max=8.45 cfs @ 12.12 hrs HW=163.36' TW=161.15' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 8.45 cfs @ 1.49 fps)

Summary for Pond FB#1: FOREBAY #1

Inflow Area = 1.137 ac, 39.74% Impervious, Inflow Depth = 3.12" for 10-YR SEACOAST event

Inflow = 3.60 cfs @ 12.12 hrs, Volume= 0.296 af

Outflow = 3.49 cfs @ 12.15 hrs, Volume= 0.245 af, Atten= 3%, Lag= 1.6 min

Primary = 3.49 cfs @ 12.15 hrs, Volume= 0.245 af

Routed to Pond BIO #1 : BIORETENTION #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 169.27' @ 12.15 hrs Surf.Area= 1,852 sf Storage= 2,712 cf

Flood Elev= 170.00' Surf.Area= 2,200 sf Storage= 4,195 cf

Plug-Flow detention time= 108.2 min calculated for 0.245 af (83% of inflow)

Center-of-Mass det. time= 37.3 min (861.6 - 824.2)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	4,195 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
167.00	240	0	0
168.00	1,250	745	745
170.00	2,200	3,450	4,195

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.49 cfs @ 12.15 hrs HW=169.27' TW=167.15' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 3.49 cfs @ 1.30 fps)

Summary for Link AP-1: EZRA GREEN OPEN SPACE

Inflow Area = 0.782 ac, 2.96% Impervious, Inflow Depth = 1.95" for 10-YR SEACOAST event

Inflow = 1.31 cfs @ 12.21 hrs, Volume= 0.127 af

Primary = 1.31 cfs @ 12.21 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-2: EZRA GREEN OPEN SPACE

Inflow Area = 6.284 ac, 17.17% Impervious, Inflow Depth = 1.79" for 10-YR SEACOAST event

Inflow = 6.20 cfs @ 12.41 hrs, Volume= 0.939 af

Primary = 6.20 cfs @ 12.41 hrs, Volume= 0.939 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-3: INDIAN RIDGE OPEN SPACE

Inflow Area = 5.259 ac, 10.33% Impervious, Inflow Depth > 2.55" for 10-YR SEACOAST event
Inflow = 5.39 cfs @ 12.76 hrs, Volume= 1.119 af
Primary = 5.39 cfs @ 12.76 hrs, Volume= 1.119 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-4: EZRA GREEN OPEN SPACE

Inflow Area = 45.117 ac, 3.61% Impervious, Inflow Depth > 2.25" for 10-YR SEACOAST event
Inflow = 25.61 cfs @ 13.92 hrs, Volume= 8.443 af
Primary = 25.61 cfs @ 13.92 hrs, Volume= 8.443 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-5: EXISTING INDIAN RIDGE BIORETENTION PRATICE

Inflow Area = 0.424 ac, 2.71% Impervious, Inflow Depth = 2.45" for 10-YR SEACOAST event
Inflow = 0.97 cfs @ 12.18 hrs, Volume= 0.086 af
Primary = 0.97 cfs @ 12.18 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Summary for Link AP-6: EZRA GREEN OPEN SPACE

Inflow Area = 0.140 ac, 0.00% Impervious, Inflow Depth = 1.63" for 10-YR SEACOAST event
Inflow = 0.24 cfs @ 12.12 hrs, Volume= 0.019 af
Primary = 0.24 cfs @ 12.12 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

STORMWATER ANALYSIS

and

Erosion & Sediment Control Plan

NARRATIVE

for

AMBROSE WOODS

210 TOLEND ROAD AND EMERALD LANE

DOVER, NEW HAMPSHIRE

MARCH 2025

SECTION III

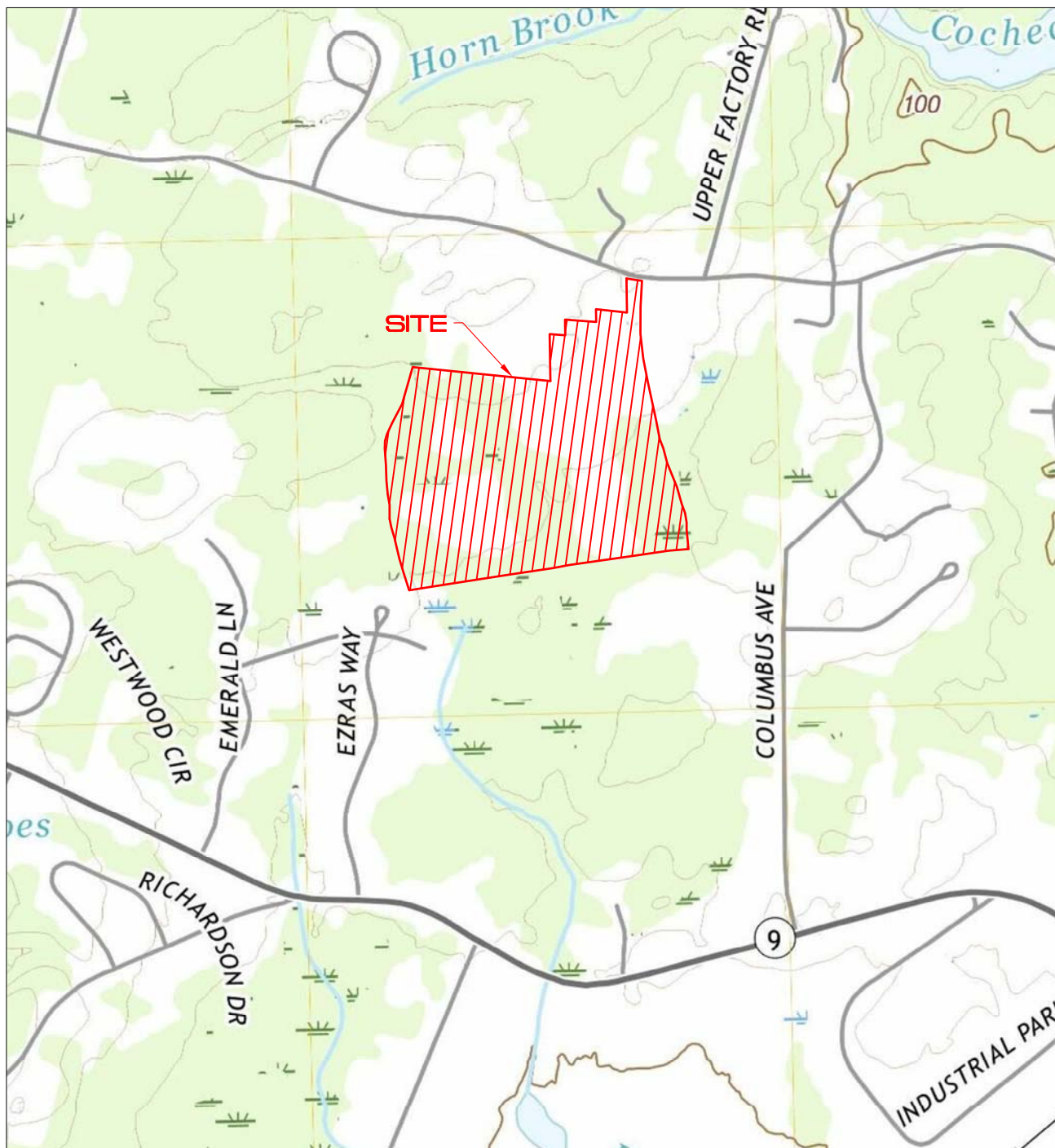
EXHIBITS

N

TRITECH
ENGINEERING CORPORATION

NOTE:

THIS PLAN SHOWS PORTIONS OF THE U.S.G.S.: DOVER QUADRANGLE, NEW HAMPSHIRE 7.5 MINUTE SERIES 2015 MAP. SITE LOCATION IS APPROXIMATE.



SHEET NO.

LOCUS-1

*USGS PLAN
AMBROSE PROPERTY*

210 TOLEND ROAD

TAX MAP F3, LOT 0

DOVER, NEW HAMPSHIRE

FEBRUARY 24, 2025

JOB No. 23118

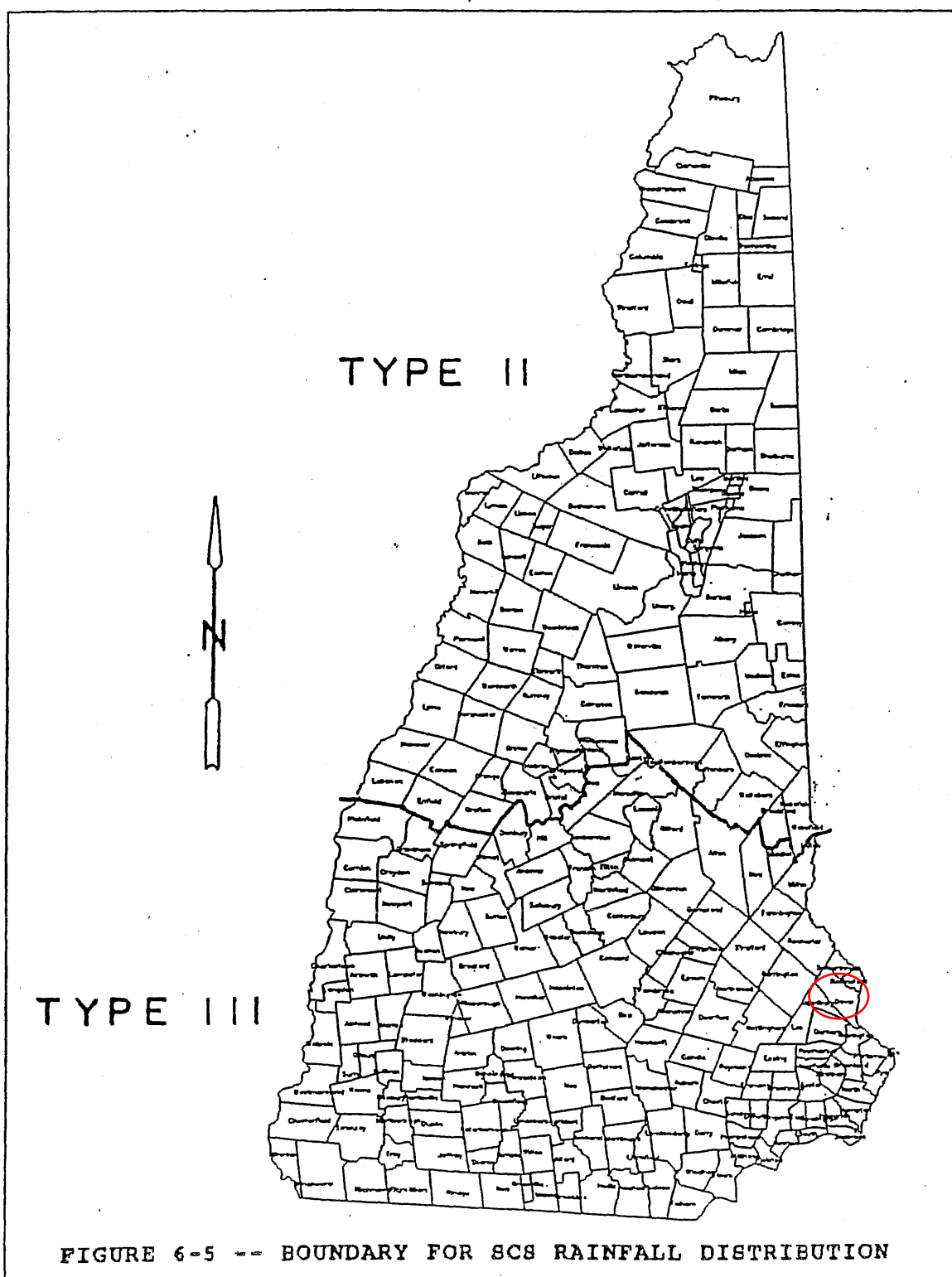
SCALE: 1" = 1,000'

TRITECH

ENGINEERING CORPORATION

765 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

TELEPHONE 603 742 8107
FAX 603 742 9890



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	43.198 degrees North
Longitude	70.92 degrees West
Elevation	40 feet
Date/Time	Mon Feb 24 2025 08:49:44 GMT-0500 (Eastern Standard 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	1.54	1.99	2.59	2.85	1yr	2.29	2.74	3.14	3.87	4.43	1yr
2yr	0.32	0.49	0.61	0.81	1.01	1.28	2yr	0.87	1.17	1.50	1.91	2.44	3.13	3.48	2yr	2.77	3.35	3.84	4.57	5.21	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.58	5yr	1.06	1.44	1.85	2.38	3.06	3.95	4.45	5yr	3.50	4.28	4.90	5.77	6.53	5yr
10yr	0.40	0.63	0.80	1.09	1.41	1.84	10yr	1.22	1.69	2.17	2.81	3.64	4.72	5.37	10yr	4.17	5.17	5.90	6.89	7.75	10yr
25yr	0.46	0.74	0.94	1.29	1.72	2.26	25yr	1.48	2.09	2.69	3.51	4.58	5.96	6.89	25yr	5.28	6.62	7.54	8.71	9.73	25yr
50yr	0.51	0.83	1.06	1.48	1.99	2.66	50yr	1.72	2.45	3.17	4.17	5.46	7.13	8.32	50yr	6.31	8.00	9.08	10.40	11.56	50yr
100yr	0.58	0.93	1.20	1.70	2.31	3.11	100yr	2.00	2.88	3.73	4.93	6.49	8.52	10.05	100yr	7.54	9.66	10.94	12.43	13.75	100yr
200yr	0.64	1.04	1.36	1.95	2.69	3.66	200yr	2.32	3.39	4.41	5.86	7.75	10.19	12.14	200yr	9.01	11.67	13.18	14.85	16.36	200yr
500yr	0.75	1.24	1.61	2.34	3.29	4.52	500yr	2.84	4.20	5.47	7.33	9.76	12.91	15.60	500yr	11.42	15.00	16.88	18.82	20.59	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	0.91	1.25	1.54	2.03	2.47	1yr	1.79	2.38	2.94	3.38	4.08	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.18	2yr	0.86	1.15	1.36	1.83	2.35	3.04	3.38	2yr	2.69	3.25	3.73	4.45	5.07	2yr
5yr	0.35	0.54	0.67	0.91	1.16	1.40	5yr	1.00	1.37	1.61	2.15	2.78	3.69	4.11	5yr	3.27	3.95	4.58	5.39	6.09	5yr
10yr	0.38	0.59	0.73	1.02	1.31	1.60	10yr	1.13	1.56	1.82	2.45	3.13	4.25	4.77	10yr	3.76	4.59	5.30	6.22	6.99	10yr
25yr	0.44	0.66	0.83	1.18	1.55	1.91	25yr	1.34	1.87	2.11	2.85	3.66	5.08	5.78	25yr	4.50	5.56	6.47	7.53	8.39	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.19	50yr	1.52	2.14	2.36	3.21	4.11	5.84	6.67	50yr	5.16	6.42	7.52	8.69	9.62	50yr
100yr	0.54	0.81	1.02	1.47	2.02	2.51	100yr	1.74	2.46	2.64	3.60	4.59	6.69	7.69	100yr	5.92	7.40	8.75	10.03	11.00	100yr
200yr	0.60	0.90	1.14	1.65	2.30	2.88	200yr	1.99	2.81	2.95	4.03	5.13	7.67	8.88	200yr	6.79	8.54	10.17	11.58	12.60	200yr
500yr	0.70	1.04	1.34	1.94	2.76	3.47	500yr	2.38	3.39	3.43	4.68	5.96	9.15	10.71	500yr	8.10	10.30	12.41	14.01	15.01	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	1yr	0.75	1.05	1.23	1.74	2.21	2.81	3.05	1yr	2.49	2.93	3.36	4.16	4.74	1yr
2yr	0.33	0.51	0.62	0.84	1.04	1.24	2yr	0.90	1.22	1.47	1.95	2.50	3.23	3.59	2yr	2.86	3.45	3.96	4.71	5.37	2yr
5yr	0.39	0.60	0.75	1.03	1.31	1.58	5yr	1.13	1.54	1.85	2.49	3.19	4.21	4.80	5yr	3.72	4.61	5.24	6.17	6.94	5yr
10yr	0.45	0.70	0.87	1.21	1.56	1.91	10yr	1.35	1.87	2.22	3.03	3.84	5.18	5.98	10yr	4.58	5.75	6.56	7.57	8.44	10yr
25yr	0.55	0.84	1.05	1.49	1.96	2.46	25yr	1.69	2.41	2.86	3.94	4.92	6.84	8.01	25yr	6.05	7.71	8.74	9.95	10.99	25yr
50yr	0.64	0.97	1.21	1.74	2.34	2.97	50yr	2.02	2.90	3.47	4.80	5.97	8.42	10.03	50yr	7.45	9.64	10.89	12.23	13.43	50yr
100yr	0.74	1.12	1.40	2.03	2.78	3.58	100yr	2.40	3.50	4.21	5.87	7.25	10.37	12.54	100yr	9.18	12.06	13.56	15.06	16.43	100yr
200yr	0.86	1.29	1.64	2.37	3.31	4.34	200yr	2.85	4.24	5.12	7.18	8.79	12.81	15.72	200yr	11.34	15.11	16.88	18.52	20.12	200yr
500yr	1.05	1.56	2.01	2.92	4.15	5.56	500yr	3.58	5.44	6.60	9.38	11.36	16.98	21.17	500yr	15.03	20.36	22.58	24.39	26.33	500yr



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

BIO 1

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

	Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).				
1.25	ac	A = Area draining to the practice			
0.45	ac	A _I = Impervious area draining to the practice			
0.36	decimal	I = Percent impervious area draining to the practice, in decimal form			
0.38	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)			
0.47	ac-in	WQV = 1" x Rv x A			
1,704	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")			
426	cf	25% x WQV (check calc for sediment forebay volume)			
1,278	cf	75% x WQV (check calc for surface sand filter volume)			
Forebay		Method of Pretreatment? (not required for clean or roof runoff)			
3,154	cf	V _{SED} = Sediment forebay volume, if used for pretreatment			≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:					
	sf	A _{SA} = Surface area of the practice			
	iph	Ksat _{DESIGN} = Design infiltration rate ¹			
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?			
	Yes/No	(Use the calculations below)			
-	hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})			≤ 72-hrs
Calculate time to drain if system IS underdrained:					
167.11	ft	E _{WQV} = Elevation of WQV (attach stage-storage table)			
0.33	cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)			
2.87	hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}			≤ 72-hrs
165.50	feet	E _{FC} = Elevation of the bottom of the filter course material ²			
164.30	feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable			
163.90	feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)			
159.20	feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)			
1.20	feet	D _{FC to UD} = Depth to UD from the bottom of the filter course			≥ 1'
6.30	feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course			≥ 1'
1.60	feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course			≥ 1'
169.61	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)			
170.00	ft	Elevation of the top of the practice			
YES		50 peak elevation ≤ Elevation of the top of the practice			← yes
If a surface sand filter or underground sand filter is proposed:					
YES	ac	Drainage Area check.			< 10 ac
	cf	V = Volume of storage ³ (attach a stage-storage table)			≥ 75%WQV
	inches	D _{FC} = Filter course thickness			18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.			
Yes/No		Access grate provided?			← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
12,196	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
18.0	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet	SP-4	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	> 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A _{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). Ksat_{design} includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

STORAGE

Forebay #1 = 3154 cf

Bio #1 = 9042 cf

TOTAL = 12,196 cf

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit A

Surface Elevation = 165.20

00 - 11"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
11 - 16"	Light olive brown (2.5Y5/6) fine sandy loam; weak fine granular structure; moist, friable.
16 - 26"	Light olive brown (2.5Y5/4) very fine sandy loam; common redox concentrations in 7.5YR5/8 and few depletions in 10YR6/1; massive structure; moist, friable.
26 - 36"	Olive gray (2.5Y5/2) very fine sandy loam; many redox concentrations and depletions as above; massive structure; moist, friable
36 - 49"	Yellowish brown (10YR5/6) loamy fine sand; many redox depletions in 10YR6/1; massive structure; moist, friable
49 - 60"	Olive gray (2.5Y5/2) silt loam; many redox concentrations in 7.5YR5/8 and few in 2.5YR4/6; few redox depletions in 10YR6/1; moderate medium blocky structure; moist, firm
60 - 72"	Yellowish brown (10YR5/6) loamy fine sand; few redox depletions in 10YR6/1; massive structure; moist, friable

Series: Swanton

Estimated seasonal high water table: 16"

Observed water: none

Restrictive layer: 49"

Soil Hydrologic Group C

S.H.W.T Elevation = 163.90 used

Test Pit B

Surface Elevation = 165.05

00 - 4"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
4 - 11"	Strong brown (2.5Y5/6) sandy loam; weak fine granular structure; moist, friable.
11 - 20"	Yellowish brown (10YR5/6) loamy fine sand; massive structure; moist, friable.
20 - 35"	Light olive brown (2.5Y5/4) very fine sandy loam; many redox concentrations in 7.5YR5/8 and many depletions in 10YR6/1; massive structure; moist, friable
35 - 55"	Olive gray (2.5Y5/2) silt loam; many redox concentrations in 7.5YR5/8 and few in 2.5YR4/6; few redox depletions in 10YR6/1; moderate medium blocky structure; moist, firm
60 - 72"	Yellowish brown (10YR5/6) loamy fine sand; few redox depletions in 10YR6/1; massive structure; moist, friable

Series: Swanton

Estimated seasonal high water table: 20"

Observed water: none

Restrictive layer: 35"

Bedrock: none

Soil Hydrologic Group C

S.H.W.T Elevation = 163.40

Summary for Pond BIO #1: BIORETENTION #1

[80] Warning: Exceeded Pond FB#1 by 0.01' @ 12.41 hrs (2.29 cfs 0.031 af)

Inflow Area = 1.251 ac, 36.12% Impervious, Inflow Depth = 5.15" for 50-YR SEACOAST event
Inflow = 6.91 cfs @ 12.14 hrs, Volume= 0.537 af
Outflow = 1.54 cfs @ 12.58 hrs, Volume= 0.534 af, Atten= 78%, Lag= 26.9 min
Primary = 1.54 cfs @ 12.58 hrs, Volume= 0.534 af
Routed to Reach 3001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Peak Elev= 169.61' @ 12.58 hrs Surf.Area= 4,029 sf Storage= 9,467 cf
Flood Elev= 170.00' Surf.Area= 4,315 sf Storage= 11,109 cf

Plug-Flow detention time= 164.9 min calculated for 0.534 af (100% of inflow)
Center-of-Mass det. time= 162.3 min (1,000.5 - 838.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.24'	11,109 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)
164.24	1,840	0.0	0	0	1,840
164.25	1,840	40.0	7	7	1,842
165.24	1,840	40.0	729	736	1,992
165.25	1,840	40.0	7	743	1,994
165.49	1,840	40.0	177	920	2,030
165.50	1,840	20.0	4	924	2,032
166.99	1,840	20.0	548	1,472	2,258
167.00	1,840	100.0	18	1,490	2,260
168.00	2,965	100.0	2,380	3,871	3,398
170.00	4,315	100.0	7,238	11,109	4,813

Device	Routing	Invert	Outlet Devices
#1	Primary	164.20'	12.0" Round Culvert L= 18.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 164.20' / 164.00' S= 0.0111 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	169.50'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Lowest invert Limited to weir flow at low heads
#3	Device 1	164.30'	6.0" Round UnderDrain L= 70.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 164.30' / 164.30' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#4	Device 3	164.24'	6.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'

Primary OutFlow Max=1.54 cfs @ 12.58 hrs HW=169.61' TW=163.74' (Dynamic Tailwater)

- 1=Culvert (Passes 1.54 cfs of 8.38 cfs potential flow)
- 2=Orifice/Grate (Weir Controls 0.91 cfs @ 1.07 fps)
- 3=UnderDrain (Passes 0.63 cfs of 1.39 cfs potential flow)
- 4=Exfiltration (Exfiltration Controls 0.63 cfs)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Tritech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
169.12	1,782	2,443	169.65	2,034	3,454
169.13	1,787	2,461	169.66	2,038	3,474
169.14	1,791	2,479	169.67	2,043	3,495
169.15	1,796	2,497	169.68	2,048	3,515
169.16	1,801	2,515	169.69	2,053	3,536
169.17	1,806	2,533	169.70	2,057	3,556
169.18	1,811	2,551	169.71	2,062	3,577
169.19	1,815	2,569	169.72	2,067	3,598
169.20	1,820	2,587	169.73	2,072	3,618
169.21	1,825	2,605	169.74	2,077	3,639
169.22	1,829	2,623	169.75	2,081	3,660
169.23	1,834	2,642	169.76	2,086	3,681
169.24	1,839	2,660	169.77	2,091	3,702
169.25	1,844	2,679	169.78	2,096	3,722
169.26	1,848	2,697	169.79	2,100	3,743
169.27	1,853	2,716	169.80	2,105	3,765
169.28	1,858	2,734	169.81	2,110	3,786
169.29	1,863	2,753	169.82	2,114	3,807
169.30	1,868	2,771	169.83	2,119	3,828
169.31	1,872	2,790	169.84	2,124	3,849
169.32	1,877	2,809	169.85	2,129	3,870
169.33	1,882	2,828	169.86	2,134	3,892
169.34	1,887	2,846	169.87	2,138	3,913
169.35	1,891	2,865	169.88	2,143	3,934
169.36	1,896	2,884	169.89	2,148	3,956
169.37	1,901	2,903	169.90	2,153	3,977
169.38	1,905	2,922	169.91	2,157	3,999
169.39	1,910	2,941	169.92	2,162	4,021
169.40	1,915	2,961	169.93	2,167	4,042
169.41	1,920	2,980	169.94	2,171	4,064
169.42	1,924	2,999	169.95	2,176	4,086
169.43	1,929	3,018	169.96	2,181	4,107
169.44	1,934	3,037	169.97	2,186	4,129
169.45	1,939	3,057	169.98	2,190	4,151
169.46	1,944	3,076	169.99	2,195	4,173
169.47	1,948	3,096	170.00	2,200	4,195
169.48	1,953	3,115	<u>Lowest Outlet Bio #1</u>		
169.49	1,958	3,135			
169.50	1,963	3,154			
169.51	1,967	3,174			
169.52	1,972	3,194			
169.53	1,977	3,213			
169.54	1,981	3,233			
169.55	1,986	3,253			
169.56	1,991	3,273			
169.57	1,996	3,293			
169.58	2,001	3,313			
169.59	2,005	3,333			
169.60	2,010	3,353			
169.61	2,015	3,373			
169.62	2,020	3,393			
169.63	2,024	3,414			
169.64	2,029	3,434			

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

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

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
168.48	3,266	3,713	5,365
168.50	3,279	3,727	5,431
168.52	3,292	3,740	5,497
168.54	3,305	3,754	5,563
168.56	3,318	3,768	5,629
168.58	3,331	3,781	5,695
168.60	3,343	3,795	5,762
168.62	3,356	3,808	5,829
168.64	3,370	3,822	5,896
168.66	3,383	3,836	5,964
168.68	3,396	3,849	6,032
168.70	3,409	3,863	6,100
168.72	3,422	3,877	6,168
168.74	3,435	3,891	6,237
168.76	3,448	3,905	6,305
168.78	3,461	3,918	6,374
168.80	3,475	3,932	6,444
168.82	3,488	3,946	6,513
168.84	3,501	3,960	6,583
168.86	3,515	3,974	6,654
168.88	3,528	3,988	6,724
168.90	3,541	4,002	6,795
168.92	3,555	4,016	6,866
168.94	3,568	4,030	6,937
168.96	3,581	4,044	7,008
168.98	3,595	4,058	7,080
169.00	3,608	4,073	7,152
169.02	3,622	4,087	7,224
169.04	3,635	4,101	7,297
169.06	3,649	4,115	7,370
169.08	3,663	4,129	7,443
169.10	3,676	4,144	7,516
169.12	3,690	4,158	7,590
169.14	3,704	4,172	7,664
169.16	3,717	4,187	7,738
169.18	3,731	4,201	7,813
169.20	3,745	4,215	7,887
169.22	3,758	4,230	7,962
169.24	3,772	4,244	8,038
169.26	3,786	4,259	8,113
169.28	3,800	4,273	8,189
169.30	3,814	4,288	8,265
169.32	3,828	4,302	8,342
169.34	3,842	4,317	8,418
169.36	3,856	4,332	8,495
169.38	3,869	4,346	8,573
169.40	3,883	4,361	8,650
169.42	3,898	4,376	8,728
169.44	3,912	4,390	8,806
169.46	3,926	4,405	8,884
169.48	3,940	4,420	8,963
169.50	3,954	4,435	9,042
169.52	3,968	4,450	9,121

Lowest Outlet Bio #1

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

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

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
166.36	1,840	2,162	1,240
166.38	1,840	2,165	1,248
166.40	1,840	2,168	1,255
166.42	1,840	2,171	1,262
166.44	1,840	2,175	1,270
166.46	1,840	2,178	1,277
166.48	1,840	2,181	1,284
166.50	1,840	2,184	1,292
166.52	1,840	2,187	1,299
166.54	1,840	2,190	1,306
166.56	1,840	2,193	1,314
166.58	1,840	2,196	1,321
166.60	1,840	2,199	1,328
166.62	1,840	2,202	1,336
166.64	1,840	2,205	1,343
166.66	1,840	2,208	1,351
166.68	1,840	2,211	1,358
166.70	1,840	2,214	1,365
166.72	1,840	2,217	1,373
166.74	1,840	2,220	1,380
166.76	1,840	2,223	1,387
166.78	1,840	2,226	1,395
166.80	1,840	2,229	1,402
166.82	1,840	2,232	1,409
166.84	1,840	2,235	1,417
166.86	1,840	2,238	1,424
166.88	1,840	2,241	1,432
166.90	1,840	2,244	1,439
166.92	1,840	2,248	1,446
166.94	1,840	2,251	1,454
166.96	1,840	2,254	1,461
166.98	1,840	2,257	1,468
167.00	1,840	2,260	1,490
167.02	1,860	2,280	1,527
167.04	1,880	2,300	1,565
167.06	1,900	2,320	1,603
167.08	1,920	2,341	1,641
167.10	1,940	2,361	1,679
167.12	1,961	2,382	1,718
167.14	1,981	2,403	1,758
167.16	2,002	2,424	1,798
167.18	2,023	2,445	1,838
167.20	2,044	2,466	1,879
167.22	2,065	2,487	1,920
167.24	2,086	2,508	1,961
167.26	2,107	2,530	2,003
167.28	2,128	2,551	2,045
167.30	2,149	2,573	2,088
167.32	2,171	2,594	2,131
167.34	2,193	2,616	2,175
167.36	2,214	2,638	2,219
167.38	2,236	2,660	2,264
167.40	2,258	2,683	2,309

ELEV. of WQV

Stage-Discharge for Pond BIO #1: BIORETENTION #1 (continued)

ELEV. of
WQV

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
166.36	0.30	166.89	0.31	167.42	0.38	167.95	0.46
166.37	0.30	166.90	0.31	167.43	0.38	167.96	0.46
166.38	0.30	166.91	0.31	167.44	0.38	167.97	0.47
166.39	0.30	166.92	0.31	167.45	0.38	167.98	0.47
166.40	0.30	166.93	0.31	167.46	0.38	167.99	0.47
166.41	0.30	166.94	0.31	167.47	0.38	168.00	0.47
166.42	0.30	166.95	0.31	167.48	0.39	168.01	0.47
166.43	0.30	166.96	0.31	167.49	0.39	168.02	0.47
166.44	0.30	166.97	0.31	167.50	0.39	168.03	0.47
166.45	0.30	166.98	0.31	167.51	0.39	168.04	0.48
166.46	0.30	166.99	0.31	167.52	0.39	168.05	0.48
166.47	0.30	167.00	0.31	167.53	0.39	168.06	0.48
166.48	0.30	167.01	0.32	167.54	0.39	168.07	0.48
166.49	0.30	167.02	0.32	167.55	0.40	168.08	0.48
166.50	0.30	167.03	0.32	167.56	0.40	168.09	0.48
166.51	0.30	167.04	0.32	167.57	0.40	168.10	0.48
166.52	0.30	167.05	0.32	167.58	0.40	168.11	0.48
166.53	0.30	167.06	0.32	167.59	0.40	168.12	0.48
166.54	0.30	167.07	0.32	167.60	0.40	168.13	0.48
166.55	0.30	167.08	0.33	167.61	0.41	168.14	0.48
166.56	0.30	167.09	0.33	167.62	0.41	168.15	0.49
166.57	0.30	167.10	0.33	167.63	0.41	168.16	0.49
166.58	0.30	167.11	0.33	167.64	0.41	168.17	0.49
166.59	0.31	167.12	0.33	167.65	0.41	168.18	0.49
166.60	0.31	167.13	0.33	167.66	0.41	168.19	0.49
166.61	0.31	167.14	0.33	167.67	0.42	168.20	0.49
166.62	0.31	167.15	0.34	167.68	0.42	168.21	0.49
166.63	0.31	167.16	0.34	167.69	0.42	168.22	0.49
166.64	0.31	167.17	0.34	167.70	0.42	168.23	0.49
166.65	0.31	167.18	0.34	167.71	0.42	168.24	0.49
166.66	0.31	167.19	0.34	167.72	0.42	168.25	0.49
166.67	0.31	167.20	0.34	167.73	0.43	168.26	0.50
166.68	0.31	167.21	0.34	167.74	0.43	168.27	0.50
166.69	0.31	167.22	0.35	167.75	0.43	168.28	0.50
166.70	0.31	167.23	0.35	167.76	0.43	168.29	0.50
166.71	0.31	167.24	0.35	167.77	0.43	168.30	0.50
166.72	0.31	167.25	0.35	167.78	0.43	168.31	0.50
166.73	0.31	167.26	0.35	167.79	0.44	168.32	0.50
166.74	0.31	167.27	0.35	167.80	0.44	168.33	0.50
166.75	0.31	167.28	0.35	167.81	0.44	168.34	0.50
166.76	0.31	167.29	0.36	167.82	0.44	168.35	0.50
166.77	0.31	167.30	0.36	167.83	0.44	168.36	0.50
166.78	0.31	167.31	0.36	167.84	0.44	168.37	0.51
166.79	0.31	167.32	0.36	167.85	0.45	168.38	0.51
166.80	0.31	167.33	0.36	167.86	0.45	168.39	0.51
166.81	0.31	167.34	0.36	167.87	0.45	168.40	0.51
166.82	0.31	167.35	0.36	167.88	0.45	168.41	0.51
166.83	0.31	167.36	0.37	167.89	0.45	168.42	0.51
166.84	0.31	167.37	0.37	167.90	0.45	168.43	0.51
166.85	0.31	167.38	0.37	167.91	0.46	168.44	0.51
166.86	0.31	167.39	0.37	167.92	0.46	168.45	0.51
166.87	0.31	167.40	0.37	167.93	0.46	168.46	0.51
166.88	0.31	167.41	0.37	167.94	0.46	168.47	0.51



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

BIO 2

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
1.26	ac	A = Area draining to the practice	
0.50	ac	A_i = Impervious area draining to the practice	
0.40	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.41	unitless	R_v = Runoff coefficient = $0.05 + (0.9 \times I)$	
0.51	ac-in	WQV = 1" x R_v x A	
1,869	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
467	cf	25% x WQV (check calc for sediment forebay volume)	
1,402	cf	75% x WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
4,260	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	$\geq 25\%WQV$
Calculate time to drain if system IS NOT underdrained:			
3,980	sf	A_{SA} = Surface area of the practice	
4.00	iph	K_{sat_DESIGN} = Design infiltration rate ¹	
		If K_{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
NO	Yes/No	(Use the calculations below)	
1.4	hours	T_{DRAIN} = Drain time = $V / (A_{SA} * I_{DESIGN})$	$\leq 72\text{-hrs}$
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = $2WQV/Q_{WQV}$	$\leq 72\text{-hrs}$
161.75	feet	E_{FC} = Elevation of the bottom of the filter course material ²	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
160.75	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
157.30	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
161.75	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	$\geq 1'$
4.45	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	$\geq 1'$
1.00	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	$\geq 1'$
166.52	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
167.00	ft	Elevation of the top of the practice	
YES		50 peak elevation $\leq$ Elevation of the top of the practice	$\leftarrow$ yes
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	< 10 ac
	cf	V = Volume of storage ³ (attach a stage-storage table)	$\geq 75\%WQV$
	inches	D_{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes/No		Access grate provided?	$\leftarrow$ yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
7,418	cf	$V = \text{Volume of storage}^3$ (attach a stage-storage table)	≥ WQV
18.0	inches	$D_{FC} = \text{Filter course thickness}$	18", or 24" if within GPA
Sheet	SP-5	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	> 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

	acres	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
		$A_{SA} = \text{Surface area of the pervious pavement}$	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	$D_{FC} = \text{Filter course thickness}$	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). $K_{sat_{design}}$ includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

STORAGE

Forebay #2 = 4260 cf

Bio #2 = 3158 cf

TOTAL = 7418 cf

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit C

Surface Elevation = 163.30

00 - 05"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
05 - 31"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
31 - 60"	Light olive brown (2.5Y5/4) gravelly loamy sand; common redox depletions in 10YR6/1; moderate medium platy structure; moist, firm
60 - 72"	Yellowish brown (10YR5/6) gravelly sand; few redox depletions in 10YR6/1; single grain; moist, loose

Series: Acton

Estimated seasonal high water table: 31"

Observed water: none

Restrictive layer: 31"

Bedrock: none

Soil Hydrologic Group B

S.H.W.T Elevation = 160.75 used

Test Pit D

Surface Elevation = 163.50

00 - 07"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
07 - 18"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
18 - 40"	Yellowish brown (10YR4/6) gravelly loamy sand; moderate fine granular structure; moist, friable
40 - 64"	Yellowish brown (10YR5/6) sand; single grain; moist, loose
64 - 72"	Yellowish brown (10YR5/6) sand; few redox depletions; single grain; moist, loose

Series: Gloucester

Estimated seasonal high water table: 64"

Observed water: none

Restrictive layer: none

Bedrock: none

Soil Hydrologic Group A

S.H.W.T Elevation = 158.15

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #2: BIORETENTION #2

Inflow Area = 1.263 ac, 39.72% Impervious, Inflow Depth = 4.52" for 50-YR SEACOAST event
 Inflow = 6.84 cfs @ 12.14 hrs, Volume= 0.476 af
 Outflow = 0.96 cfs @ 12.84 hrs, Volume= 0.476 af, Atten= 86%, Lag= 41.9 min
 Discarded = 0.56 cfs @ 12.84 hrs, Volume= 0.366 af
 Primary = 0.41 cfs @ 12.84 hrs, Volume= 0.110 af
 Routed to Reach 4001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 166.52' @ 12.84 hrs Surf.Area= 3,586 sf Storage= 8,837 cf

Flood Elev= 167.00' Surf.Area= 3,980 sf Storage= 10,647 cf

Plug-Flow detention time= 133.3 min calculated for 0.476 af (100% of inflow)

Center-of-Mass det. time= 133.3 min (983.1 - 849.7)

Volume	Invert	Avail.Storage	Storage Description
#1	160.49'	10,647 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
160.49	1,300	0.0	0	0	1,300
160.50	1,300	40.0	5	5	1,301
161.74	1,300	40.0	645	650	1,460
161.75	1,300	20.0	3	653	1,461
163.24	1,300	20.0	387	1,040	1,651
163.25	1,300	100.0	13	1,053	1,653
164.00	1,765	100.0	1,145	2,198	2,129
166.00	3,180	100.0	4,876	7,074	3,587
167.00	3,980	100.0	3,573	10,647	4,414

Device	Routing	Invert	Outlet Devices
#1	Discarded	160.49'	6.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	163.00'	12.0" Round Culvert L= 56.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.00' / 162.70' S= 0.0054 ' / S= 0.0054 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	166.50'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	164.50'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.56 cfs @ 12.84 hrs HW=166.52' (Free Discharge)Lowest invert↑ **1=Exfiltration** (Exfiltration Controls 0.56 cfs)**Primary OutFlow** Max=0.41 cfs @ 12.84 hrs HW=166.52' TW=162.32' (Dynamic Tailwater)↑ **2=Culvert** (Passes 0.41 cfs of 6.11 cfs potential flow)↑ **3=Orifice/Grate** (Weir Controls 0.08 cfs @ 0.48 fps)↑ **4=Orifice/Grate** (Orifice Controls 0.33 cfs @ 6.63 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Tritech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond FB #2: FOREBAY #2 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
166.12	2,166	3,374	166.65	2,632	4,645
166.13	2,174	3,395	166.66	2,641	4,671
166.14	2,183	3,417	166.67	2,650	4,698
166.15	2,192	3,439	166.68	2,658	4,724
166.16	2,201	3,461	166.69	2,667	4,751
166.17	2,210	3,483	166.70	2,676	4,778
166.18	2,218	3,505	166.71	2,685	4,804
166.19	2,227	3,527	166.72	2,694	4,831
166.20	2,236	3,550	166.73	2,702	4,858
166.21	2,245	3,572	166.74	2,711	4,885
166.22	2,254	3,594	166.75	2,720	4,913
166.23	2,262	3,617	166.76	2,729	4,940
166.24	2,271	3,640	166.77	2,738	4,967
166.25	2,280	3,663	166.78	2,746	4,994
166.26	2,289	3,685	166.79	2,755	5,022
166.27	2,298	3,708	166.80	2,764	5,050
166.28	2,306	3,731	166.81	2,773	5,077
166.29	2,315	3,754	166.82	2,782	5,105
166.30	2,324	3,778	166.83	2,790	5,133
166.31	2,333	3,801	166.84	2,799	5,161
166.32	2,342	3,824	166.85	2,808	5,189
166.33	2,350	3,848	166.86	2,817	5,217
166.34	2,359	3,871	166.87	2,826	5,245
166.35	2,368	3,895	166.88	2,834	5,274
166.36	2,377	3,919	166.89	2,843	5,302
166.37	2,386	3,942	166.90	2,852	5,330
166.38	2,394	3,966	166.91	2,861	5,359
166.39	2,403	3,990	166.92	2,870	5,388
166.40	2,412	4,014	166.93	2,878	5,416
166.41	2,421	4,039	166.94	2,887	5,445
166.42	2,430	4,063	166.95	2,896	5,474
166.43	2,438	4,087	166.96	2,905	5,503
166.44	2,447	4,112	166.97	2,914	5,532
166.45	2,456	4,136	166.98	2,922	5,561
166.46	2,465	4,161	166.99	2,931	5,591
166.47	2,474	4,185	167.00	2,940	5,620
166.48	2,482	4,210			
166.49	2,491	4,235			
166.50	2,500	4,260			
166.51	2,509	4,285			
166.52	2,518	4,310			
166.53	2,526	4,335			
166.54	2,535	4,361			
166.55	2,544	4,386			
166.56	2,553	4,412			
166.57	2,562	4,437			
166.58	2,570	4,463			
166.59	2,579	4,489			
166.60	2,588	4,514			
166.61	2,597	4,540			
166.62	2,606	4,566			
166.63	2,614	4,592			
166.64	2,623	4,619			

Forebay #2 Weir Elev.

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Tritech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #2: BIORETENTION #2 (continued)

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
163.67	1,552	1,911	1,651
163.69	1,564	1,923	1,682
163.71	1,577	1,936	1,714
163.73	1,589	1,949	1,745
163.75	1,602	1,962	1,777
163.77	1,615	1,975	1,809
163.79	1,628	1,988	1,842
163.81	1,640	2,002	1,874
163.83	1,653	2,015	1,907
163.85	1,666	2,028	1,941
163.87	1,679	2,041	1,974
163.89	1,692	2,055	2,008
163.91	1,705	2,068	2,042
163.93	1,719	2,082	2,076
163.95	1,732	2,095	2,111
163.97	1,745	2,109	2,145
163.99	1,758	2,122	2,180
164.01	1,771	2,135	2,216
164.03	1,783	2,148	2,251
164.05	1,795	2,160	2,287
164.07	1,808	2,173	2,323
164.09	1,820	2,186	2,359
164.11	1,832	2,198	2,396
164.13	1,844	2,211	2,433
164.15	1,857	2,224	2,470
164.17	1,869	2,237	2,507
164.19	1,882	2,249	2,544
164.21	1,894	2,262	2,582
164.23	1,907	2,275	2,620
164.25	1,919	2,288	2,658
164.27	1,932	2,301	2,697
164.29	1,945	2,314	2,736
164.31	1,957	2,327	2,775
164.33	1,970	2,340	2,814
164.35	1,983	2,353	2,853
164.37	1,996	2,367	2,893
164.39	2,008	2,380	2,933
164.41	2,021	2,393	2,974
164.43	2,034	2,407	3,014
164.45	2,047	2,420	3,055
164.47	2,060	2,433	3,096
164.49	2,073	2,447	3,137
164.51	2,087	2,460	3,179
164.53	2,100	2,474	3,221
164.55	2,113	2,488	3,263
164.57	2,126	2,501	3,305
164.59	2,139	2,515	3,348
164.61	2,153	2,529	3,391
164.63	2,166	2,542	3,434
164.65	2,180	2,556	3,478
164.67	2,193	2,570	3,521
164.69	2,206	2,584	3,565
164.71	2,220	2,598	3,610

Lowest Outlet Bio #2



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

BIO 3

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
2.46	ac	A = Area draining to the practice	
0.93	ac	A _I = Impervious area draining to the practice	
0.38	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.39	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.96	ac-in	WQV = 1" x R _v x A	
3,489	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
872	cf	25% x WQV (check calc for sediment forebay volume)	
2,617	cf	75% x WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
2,569	cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
5,080	sf	A _{SA} = Surface area of the practice	
4.00	iph	K _{sat} _{DESIGN} = Design infiltration rate ¹	
		If K _{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
NO	Yes/No	(Use the calculations below)	
2.1	hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
	ft	E _{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	
-	hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}	≤ 72-hrs
157.50	feet	E _{FC} = Elevation of the bottom of the filter course material ²	
	feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable	
155.90	feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
155.90	feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
157.50	feet	D _{FC to UD} = Depth to UD from the bottom of the filter course	≥ 1'
1.60	feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course	≥ 1'
1.60	feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course	≥ 1'
163.78	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
164.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	< 10 ac
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ 75%WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes/No		Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
7,154	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
18.0	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet	SP-5	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	> 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A _{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). Ksat_{design} includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

STORAGE

Forebay #3 = 2569 cf

Bio #3 = 4794 cf

TOTAL = 7363 cf

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit E

Surface Elevation = 159.90

00 - 05" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable

05 - 48" Yellowish brown (10YR5/6) very channery and flaggy sandy loam; weak fine granular structure; moist, friable.

@48" Bedrock

Note: Description is the pit face at the grade stake. At 10' upslope, bedrock is at 24" (Tunbridge soil)

Series: Charlton
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 48"
Soil Hydrologic Group B

S.H.W.T = Elevation = 155.90

used

Test Pit F

Surface Elevation = 157.30

00 - 05" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable

05 - 19" Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.

19 - 36" Yellowish brown (10YR5/6) gravelly loamy sand; moderate medium granular structure; moist, friable

36 - 51" Light olive brown (2.5Y5/4) channery and flaggy sandy loam; common redox features in 7.5YR5/8 and 10YR6/1; moderate medium granular structure; moist, friable

@ 51" Bedrock

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Bedrock: 51"
Soil Hydrologic Group B

S.H.W.T = 154.30

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #3: BIORENTION #3

Inflow Area = 2.464 ac, 37.79% Impervious, Inflow Depth = 5.39" for 50-YR SEACOAST event
 Inflow = 14.00 cfs @ 12.13 hrs, Volume= 1.106 af
 Outflow = 8.45 cfs @ 12.29 hrs, Volume= 1.028 af, Atten= 40%, Lag= 9.3 min
 Discarded = 0.25 cfs @ 12.29 hrs, Volume= 0.247 af
 Primary = 8.21 cfs @ 12.29 hrs, Volume= 0.781 af
 Routed to Reach 4003 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.78' @ 12.29 hrs Surf.Area= 4,903 sf Storage= 16,552 cf
 Flood Elev= 164.00' Surf.Area= 5,080 sf Storage= 17,663 cf

Plug-Flow detention time= 159.3 min calculated for 1.028 af (93% of inflow)
 Center-of-Mass det. time= 122.8 min (945.5 - 822.6)

Volume	Invert	Avail.Storage	Storage Description
#1	157.24'	17,663 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.24	1,750	0.0	0	0	1,750
157.25	1,750	40.0	7	7	1,751
158.74	1,750	40.0	1,043	1,050	1,972
158.75	1,750	20.0	3	1,053	1,974
158.99	1,750	20.0	84	1,138	2,010
159.00	1,750	100.0	17	1,155	2,011
160.00	2,300	100.0	2,019	3,174	2,584
162.00	3,600	100.0	5,852	9,025	3,939
164.00	5,080	100.0	8,638	17,663	5,490

Device	Routing	Invert	Outlet Devices
#1	Discarded	157.24'	2.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.40'	15.0" Round Culvert L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.40' / 157.95' S= 0.0100 ' /' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	163.50'	2.6" x 4.6" Horiz. Orifice/Grate X 8.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (66% open area)
#4	Device 2	160.65'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	162.75'	6.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads Lowest Invert

Discarded OutFlow Max=0.25 cfs @ 12.29 hrs HW=163.78' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=8.20 cfs @ 12.29 hrs HW=163.78' TW=157.69' (Dynamic Tailwater)

↳ **2=Culvert** (Passes 8.20 cfs of 12.88 cfs potential flow)
 ↳ **3=Orifice/Grate** (Orifice Controls 6.74 cfs @ 2.54 fps)
 ↳ **4=Orifice/Grate** (Orifice Controls 0.72 cfs @ 8.28 fps)
 ↳ **5=Orifice/Grate** (Orifice Controls 0.74 cfs @ 4.46 fps)

Stage-Area-Storage for Pond FB #3: FOREWAY #3 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	
162.56	1,308	1,136	163.09	1,551	1,894	
162.57	1,312	1,149	163.10	1,556	1,910	
162.58	1,317	1,163	163.11	1,561	1,925	
162.59	1,321	1,176	163.12	1,565	1,941	
162.60	1,326	1,189	163.13	1,570	1,956	
162.61	1,331	1,202	163.14	1,574	1,972	
162.62	1,335	1,216	163.15	1,579	1,988	
162.63	1,340	1,229	163.16	1,584	2,004	
162.64	1,344	1,242	163.17	1,588	2,020	
162.65	1,349	1,256	163.18	1,593	2,036	
162.66	1,354	1,269	163.19	1,597	2,051	
162.67	1,358	1,283	163.20	1,602	2,067	
162.68	1,363	1,297	163.21	1,607	2,083	
162.69	1,367	1,310	163.22	1,611	2,100	
162.70	1,372	1,324	163.23	1,616	2,116	
162.71	1,377	1,338	163.24	1,620	2,132	
162.72	1,381	1,351	163.25	1,625	2,148	
162.73	1,386	1,365	163.26	1,630	2,164	
162.74	1,390	1,379	163.27	1,634	2,181	
162.75	1,395	1,393	163.28	1,639	2,197	
162.76	1,400	1,407	163.29	1,643	2,213	
162.77	1,404	1,421	163.30	1,648	2,230	
162.78	1,409	1,435	163.31	1,653	2,246	
162.79	1,413	1,449	163.32	1,657	2,263	
162.80	1,418	1,463	163.33	1,662	2,280	
162.81	1,423	1,478	163.34	1,666	2,296	
162.82	1,427	1,492	163.35	1,671	2,313	
162.83	1,432	1,506	163.36	1,676	2,330	
162.84	1,436	1,521	163.37	1,680	2,346	
162.85	1,441	1,535	163.38	1,685	2,363	
162.86	1,446	1,549	163.39	1,689	2,380	
162.87	1,450	1,564	163.40	1,694	2,397	
162.88	1,455	1,578	163.41	1,699	2,414	
162.89	1,459	1,593	163.42	1,703	2,431	
162.90	1,464	1,608	163.43	1,708	2,448	
162.91	1,469	1,622	163.44	1,712	2,465	
162.92	1,473	1,637	163.45	1,717	2,482	
162.93	1,478	1,652	163.46	1,722	2,500	
162.94	1,482	1,666	163.47	1,726	2,517	
162.95	1,487	1,681	163.48	1,731	2,534	
162.96	1,492	1,696	163.49	1,735	2,551	
162.97	1,496	1,711	163.50	1,740	2,569	<u>Forebay #3 Weir</u>
162.98	1,501	1,726	163.51	1,745	2,586	<u>Elevation</u>
162.99	1,505	1,741	163.52	1,749	2,604	
163.00	1,510	1,756	163.53	1,754	2,621	
163.01	1,515	1,771	163.54	1,758	2,639	
163.02	1,519	1,787	163.55	1,763	2,656	
163.03	1,524	1,802	163.56	1,768	2,674	
163.04	1,528	1,817	163.57	1,772	2,692	
163.05	1,533	1,832	163.58	1,777	2,709	
163.06	1,538	1,848	163.59	1,781	2,727	
163.07	1,542	1,863	163.60	1,786	2,745	
163.08	1,547	1,879	163.61	1,791	2,763	

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #3: BIORENTION #3 (continued)

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
160.42	2,549	2,843	4,192
160.44	2,561	2,856	4,243
160.46	2,573	2,868	4,294
160.48	2,586	2,881	4,346
160.50	2,598	2,894	4,397
160.52	2,610	2,907	4,450
160.54	2,622	2,920	4,502
160.56	2,635	2,933	4,554
160.58	2,647	2,945	4,607
160.60	2,660	2,958	4,660
160.62	2,672	2,971	4,714
160.64	2,684	2,984	4,767
160.66	2,697	2,997	4,821
160.68	2,709	3,010	4,875
160.70	2,722	3,023	4,929
160.72	2,735	3,037	4,984
160.74	2,747	3,050	5,039
160.76	2,760	3,063	5,094
160.78	2,773	3,076	5,149
160.80	2,785	3,089	5,205
160.82	2,798	3,103	5,261
160.84	2,811	3,116	5,317
160.86	2,823	3,129	5,373
160.88	2,836	3,143	5,430
160.90	2,849	3,156	5,486
160.92	2,862	3,169	5,544
160.94	2,875	3,183	5,601
160.96	2,888	3,196	5,659
160.98	2,901	3,210	5,716
161.00	2,914	3,223	5,775
161.02	2,927	3,237	5,833
161.04	2,940	3,251	5,892
161.06	2,953	3,264	5,951
161.08	2,966	3,278	6,010
161.10	2,979	3,291	6,069
161.12	2,992	3,305	6,129
161.14	3,005	3,319	6,189
161.16	3,019	3,333	6,249
161.18	3,032	3,347	6,310
161.20	3,045	3,360	6,370
161.22	3,059	3,374	6,431
161.24	3,072	3,388	6,493
161.26	3,085	3,402	6,554
161.28	3,099	3,416	6,616
161.30	3,112	3,430	6,678
161.32	3,125	3,444	6,741
161.34	3,139	3,458	6,803
161.36	3,152	3,472	6,866
161.38	3,166	3,486	6,929
161.40	3,180	3,500	6,993
161.42	3,193	3,515	7,057
161.44	3,207	3,529	7,121
161.46	3,220	3,543	7,185

Lowest Outlet



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

BIO 4

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
3.19	ac	A = Area draining to the practice	
1.02	ac	A_i = Impervious area draining to the practice	
0.32	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.34	unitless	R_v = Runoff coefficient = $0.05 + (0.9 \times I)$	
1.07	ac-in	$WQV = 1'' \times R_v \times A$	
3,899	cf	WQV conversion (ac-in $\times$ 43,560 sf/ac $\times$ 1ft/12")	
975	cf	25% $\times$ WQV (check calc for sediment forebay volume)	
2,924	cf	75% $\times$ WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
2,777	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	$\geq 25\%WQV$
Calculate time to drain if system IS NOT underdrained:			
9,750	sf	A_{SA} = Surface area of the practice	
4.00	iph	K_{sat_DESIGN} = Design infiltration rate ¹	
		If K_{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
NO	Yes/No	(Use the calculations below)	
1.2	hours	$T_{DRAIN} = \text{Drain time} = V / (A_{SA} * I_{DESIGN})$	$\leq 72\text{-hrs}$
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	$T_{DRAIN} = \text{Drain time} = 2WQV/Q_{WQV}$	$\leq 72\text{-hrs}$
159.00	feet	E_{FC} = Elevation of the bottom of the filter course material ²	
	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
158.00	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
158.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
159.00	feet	$D_{FC \text{ to } UD}$ = Depth to UD from the bottom of the filter course	$\geq 1'$
1.00	feet	$D_{FC \text{ to } ROCK}$ = Depth to bedrock from the bottom of the filter course	$\geq 1'$
1.00	feet	$D_{FC \text{ to } SHWT}$ = Depth to SHWT from the bottom of the filter course	$\geq 1'$
163.23	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
163.50	ft	Elevation of the top of the practice	
YES		50 peak elevation $\leq$ Elevation of the top of the practice	$\leftarrow$ yes
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	< 10 ac
	cf	V = Volume of storage ³ (attach a stage-storage table)	$\geq 75\%WQV$
	inches	D_{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes/No		Access grate provided?	$\leftarrow$ yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
6,572	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
18.0	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet	SP-6	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	> 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A _{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). Ksat_{design} includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

STORAGE

Forebay #4 = 2777 cf

Bio #4 = 3795 cf

TOTAL = 6572 cf

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit G

Surface Elevation = 161.00

00 - 05" Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
05 - 15" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
15 - 36" Yellowish brown (10YR5/6) channery and flaggy sandy loam; moderate medium granular structure; moist, friable
36 - 62" Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; common redox features in 7.5YR5/8 and 10YR6/1; moderate medium granular structure; moist, friable
@ 62" Bedrock

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Bedrock: 36"
Soil Hydrologic Group B

S.H.W.T Elevation = 158.00

used

Test Pit H

Surface Elevation = 161.2

00 - 04" Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
04 - 18" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
18 - 39" Light olive brown (2.5Y5/4) channery and flaggy fine sandy loam; weak fine granular structure; moist, friable
39 - 60" Light olive brown (2.5Y5/4) very channery and flaggy loamy sand; many redox concentrations in 10YR5/6 and 7.5YR5/8; few redox depletions in 10YR6/1; moderate medium granular structure; moist, friable

Series: Acton
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Bedrock: 60
Soil Hydrologic Group B

S.H.W.T Elevation = 157.95

Test Pit Descriptions

Ambrose Property
Toilend Road
Dover NH
Described: 02/13/2025

Test pits to classify soil series and drainage class only or
to determine depth to bedrock.

Test Pit 201 to determine drainage class & depth to clayey subsoil

00 - 08"	Dark brown (10YR4/3) very fine sandy loam; massive structure; moist, friable
08- 19"	Light olive brown (2.5Y5/4) fine sandy loam; many redox features; weak fine granular structure; moist, friable
19 - 30"	Olive gray (2.5Y5/2) silty clay loam; strong medium blocky structure; moist, very firm

Series: Swanton, somewhat poorly drained
Estimated seasonal high water table: 8"
Observed water: none
Restrictive layer: 19"
Soil Hydrologic Group D

Surface Elevation = 162.2

Test Pit 202 to determine depth to bedrock & seasonal high water table

00 - 09"	Dark brown (10YR4/3) fine sandy loam; massive structure; moist, friable
09- 60"	Shaly to extremely channery and flaggy sandy loam; no redox features
@ 60"	Bedrock

Series: Charlton
Estimated seasonal high water table: none to 60"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group: A

E.H.W.T = 157.2

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #4: BIORETENTION #4

Inflow Area = 3.185 ac, 31.92% Impervious, Inflow Depth = 5.31" for 50-YR SEACOAST event
 Inflow = 17.30 cfs @ 12.11 hrs, Volume= 1.408 af
 Outflow = 5.69 cfs @ 12.50 hrs, Volume= 1.408 af, Atten= 67%, Lag= 23.2 min
 Discarded = 0.69 cfs @ 12.50 hrs, Volume= 0.606 af
 Primary = 5.00 cfs @ 12.50 hrs, Volume= 0.802 af
 Routed to Reach 2001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.23' @ 12.50 hrs Surf.Area= 9,367 sf Storage= 22,953 cf
 Flood Elev= 163.50' Surf.Area= 9,750 sf Storage= 25,509 cf

Plug-Flow detention time= 94.4 min calculated for 1.408 af (100% of inflow)
 Center-of-Mass det. time= 94.4 min (916.0 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	158.74'	25,509 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
158.74	5,785	0.0	0	0	5,785
158.75	5,785	40.0	23	23	5,788
158.99	5,785	40.0	555	579	5,852
159.00	5,785	20.0	12	590	5,855
160.49	5,785	20.0	1,724	2,314	6,257
160.50	5,785	100.0	58	2,372	6,260
162.00	7,700	100.0	10,080	12,451	8,223
163.50	9,750	100.0	13,057	25,509	10,333

Device	Routing	Invert	Outlet Devices
#1	Discarded	158.74'	3.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.65'	12.0" Round Culvert L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.65' / 158.05' S= 0.0100 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	163.00'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	160.75'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 <u>Lowest Invert</u> Limited to weir flow at low heads
#5	Device 2	161.50'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.69 cfs @ 12.50 hrs HW=163.23' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.69 cfs)

Primary OutFlow Max=5.00 cfs @ 12.50 hrs HW=163.23' TW=157.92' (Dynamic Tailwater)
 ↳ **2=Culvert** (Passes 5.00 cfs of 7.31 cfs potential flow)
 ↳ **3=Orifice/Grate** (Orifice Controls 2.03 cfs @ 2.32 fps)
 ↳ **4=Orifice/Grate** (Orifice Controls 1.63 cfs @ 7.33 fps)
 ↳ **5=Orifice/Grate** (Orifice Controls 1.34 cfs @ 6.02 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond FB #4: FOREBAY #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
160.50	660	0	163.15	1,678	3,024
160.55	677	33	163.20	1,700	3,108
160.60	695	68	163.25	1,722	3,194
160.65	712	103	163.30	1,743	3,280
160.70	729	139	163.35	1,765	3,368
160.75	747	176	163.40	1,787	3,457
160.80	764	214	163.45	1,808	3,547
160.85	781	252	163.50	1,830	3,638
160.90	799	292			
160.95	816	332			
161.00	833	373			
161.05	851	415			
161.10	868	458			
161.15	885	502			
161.20	903	547			
161.25	920	593			
161.30	937	639			
161.35	955	686			
161.40	972	734			
161.45	989	783			
161.50	1,007	833			
161.55	1,024	884			
161.60	1,041	936			
161.65	1,059	988			
161.70	1,076	1,042			
161.75	1,093	1,096			
161.80	1,111	1,151			
161.85	1,128	1,207			
161.90	1,145	1,264			
161.95	1,163	1,321			
162.00	1,180	1,380			
162.05	1,202	1,440			
162.10	1,223	1,500			
162.15	1,245	1,562			
162.20	1,267	1,625			
162.25	1,288	1,689			
162.30	1,310	1,754			
162.35	1,332	1,820			
162.40	1,353	1,887			
162.45	1,375	1,955			
162.50	1,397	2,024			
162.55	1,418	2,095			
162.60	1,440	2,166			
162.65	1,462	2,239			
162.70	1,483	2,312			
162.75	1,505	2,387			
162.80	1,527	2,463			
162.85	1,548	2,540			
162.90	1,570	2,618			
162.95	1,592	2,697			
163.00	1,613	2,777			
163.05	1,635	2,858			
163.10	1,657	2,940			

Forebay #3 Weir Elevation

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #4: BIORETENTION #4

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
158.74	5,785	5,785	0
158.84	5,785	5,812	231
158.94	5,785	5,839	463
159.04	5,785	5,866	636
159.14	5,785	5,893	752
159.24	5,785	5,920	868
159.34	5,785	5,947	983
159.44	5,785	5,974	1,099
159.54	5,785	6,001	1,215
159.64	5,785	6,028	1,331
159.74	5,785	6,055	1,446
159.84	5,785	6,082	1,562
159.94	5,785	6,109	1,678
160.04	5,785	6,136	1,793
160.14	5,785	6,162	1,909
160.24	5,785	6,189	2,025
160.34	5,785	6,216	2,140
160.44	5,785	6,243	2,256
160.54	5,833	6,308	2,604
160.64	5,952	6,431	3,193
160.74	6,073	6,555	3,795
160.84	6,195	6,680	4,408
160.94	6,318	6,807	5,034
161.04	6,443	6,934	5,672
161.14	6,569	7,063	6,322
161.24	6,696	7,193	6,986
161.34	6,824	7,325	7,662
161.44	6,953	7,457	8,350
161.54	7,084	7,591	9,052
161.64	7,215	7,727	9,767
161.74	7,348	7,863	10,495
161.84	7,483	8,001	11,237
161.94	7,618	8,139	11,992
162.04	7,752	8,276	12,760
162.14	7,881	8,410	13,542
162.24	8,012	8,544	14,337
162.34	8,143	8,680	15,144
162.44	8,276	8,816	15,965
162.54	8,410	8,954	16,800
162.64	8,545	9,093	17,648
162.74	8,681	9,233	18,509
162.84	8,818	9,374	19,384
162.94	8,956	9,516	20,273
163.04	9,096	9,659	21,175
163.14	9,236	9,804	22,092
163.24	9,377	9,949	23,022
163.34	9,520	10,096	23,967
163.44	9,663	10,243	24,926

Lowest Invert



GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

-	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
1.94	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
1.07	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
0.08	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.19 inches		Rd = Weighted groundwater recharge depth	
0.5926 ac-in		GRV = AI * Rd	
2,151 cf		GRV conversion (ac-in x 43,560 sf/ac x 1ft/12")	

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

HSG-B Impervious Pre-Construction = 0.175 ac
HSG-B Impervious Post-Construction = 2.117 ac
Area of HSG B replaced by impervious cover = 1.94 ac
HSG-C Impervious Pre-Construction = 0.166 ac
HSG-C Impervious Post-Construction = 1.238 ac
Area of HSG C replaced by impervious cover = 1.07 ac
HSG-D Impervious Pre-Construction = 0 ac
HSG-D Impervious Post-Construction = 0.08 ac
Area of HSG D replaced by impervious cover = 0.08 ac
BIORETENTION #102 - 3158 CF
BIORETENTION #103 - 4794 CF
BIORETENTION #104 - 3795 CF
TOTAL GRV = 11,747 CF where 2,151 CF is required

Summary for Pond BIO #2: BIORETENTION #2

Inflow Area = 1.263 ac, 39.72% Impervious, Inflow Depth = 4.52" for 50-YR SEACOAST event
Inflow = 6.84 cfs @ 12.14 hrs, Volume= 0.476 af
Outflow = 0.96 cfs @ 12.84 hrs, Volume= 0.476 af, Atten= 86%, Lag= 41.9 min
Discarded = 0.56 cfs @ 12.84 hrs, Volume= 0.366 af
Primary = 0.41 cfs @ 12.84 hrs, Volume= 0.110 af
Routed to Reach 4001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
Peak Elev= 166.52' @ 12.84 hrs Surf.Area= 3,586 sf Storage= 8,837 cf
Flood Elev= 167.00' Surf.Area= 3,980 sf Storage= 10,647 cf

Plug-Flow detention time= 133.3 min calculated for 0.476 af (100% of inflow)
Center-of-Mass det. time= 133.3 min (983.1 - 849.7)

Volume	Invert	Avail.Storage	Storage Description
#1	160.49'	10,647 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
160.49	1,300	0.0	0	0	1,300
160.50	1,300	40.0	5	5	1,301
161.74	1,300	40.0	645	650	1,460
161.75	1,300	20.0	3	653	1,461
163.24	1,300	20.0	387	1,040	1,651
163.25	1,300	100.0	13	1,053	1,653
164.00	1,765	100.0	1,145	2,198	2,129
166.00	3,180	100.0	4,876	7,074	3,587
167.00	3,980	100.0	3,573	10,647	4,414

Device	Routing	Invert	Outlet Devices
#1	Discarded	160.49'	6.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	163.00'	12.0" Round Culvert L= 56.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.00' / 162.70' S= 0.0054 ' /' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	166.50'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	164.50'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.56 cfs @ 12.84 hrs HW=166.52' (Free Discharge) Lowest invert
1=Exfiltration (Exfiltration Controls 0.56 cfs)

Primary OutFlow Max=0.41 cfs @ 12.84 hrs HW=166.52' TW=162.32' (Dynamic Tailwater)
2=Culvert (Passes 0.41 cfs of 6.11 cfs potential flow)
3=Orifice/Grate (Weir Controls 0.08 cfs @ 0.48 fps)
4=Orifice/Grate (Orifice Controls 0.33 cfs @ 6.63 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Tritech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #2: BIORETENTION #2 (continued)

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
163.67	1,552	1,911	1,651
163.69	1,564	1,923	1,682
163.71	1,577	1,936	1,714
163.73	1,589	1,949	1,745
163.75	1,602	1,962	1,777
163.77	1,615	1,975	1,809
163.79	1,628	1,988	1,842
163.81	1,640	2,002	1,874
163.83	1,653	2,015	1,907
163.85	1,666	2,028	1,941
163.87	1,679	2,041	1,974
163.89	1,692	2,055	2,008
163.91	1,705	2,068	2,042
163.93	1,719	2,082	2,076
163.95	1,732	2,095	2,111
163.97	1,745	2,109	2,145
163.99	1,758	2,122	2,180
164.01	1,771	2,135	2,216
164.03	1,783	2,148	2,251
164.05	1,795	2,160	2,287
164.07	1,808	2,173	2,323
164.09	1,820	2,186	2,359
164.11	1,832	2,198	2,396
164.13	1,844	2,211	2,433
164.15	1,857	2,224	2,470
164.17	1,869	2,237	2,507
164.19	1,882	2,249	2,544
164.21	1,894	2,262	2,582
164.23	1,907	2,275	2,620
164.25	1,919	2,288	2,658
164.27	1,932	2,301	2,697
164.29	1,945	2,314	2,736
164.31	1,957	2,327	2,775
164.33	1,970	2,340	2,814
164.35	1,983	2,353	2,853
164.37	1,996	2,367	2,893
164.39	2,008	2,380	2,933
164.41	2,021	2,393	2,974
164.43	2,034	2,407	3,014
164.45	2,047	2,420	3,055
164.47	2,060	2,433	3,096
164.49	2,073	2,447	3,137
164.51	2,087	2,460	3,179
164.53	2,100	2,474	3,221
164.55	2,113	2,488	3,263
164.57	2,126	2,501	3,305
164.59	2,139	2,515	3,348
164.61	2,153	2,529	3,391
164.63	2,166	2,542	3,434
164.65	2,180	2,556	3,478
164.67	2,193	2,570	3,521
164.69	2,206	2,584	3,565
164.71	2,220	2,598	3,610

Lowest Outlet Bio #2

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #3: BIORENTION #3

Inflow Area = 2.464 ac, 37.79% Impervious, Inflow Depth = 5.39" for 50-YR SEACOAST event
 Inflow = 14.00 cfs @ 12.13 hrs, Volume= 1.106 af
 Outflow = 8.45 cfs @ 12.29 hrs, Volume= 1.028 af, Atten= 40%, Lag= 9.3 min
 Discarded = 0.25 cfs @ 12.29 hrs, Volume= 0.247 af
 Primary = 8.21 cfs @ 12.29 hrs, Volume= 0.781 af
 Routed to Reach 4003 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.78' @ 12.29 hrs Surf.Area= 4,903 sf Storage= 16,552 cf
 Flood Elev= 164.00' Surf.Area= 5,080 sf Storage= 17,663 cf

Plug-Flow detention time= 159.3 min calculated for 1.028 af (93% of inflow)
 Center-of-Mass det. time= 122.8 min (945.5 - 822.6)

Volume	Invert	Avail.Storage	Storage Description
#1	157.24'	17,663 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.24	1,750	0.0	0	0	1,750
157.25	1,750	40.0	7	7	1,751
158.74	1,750	40.0	1,043	1,050	1,972
158.75	1,750	20.0	3	1,053	1,974
158.99	1,750	20.0	84	1,138	2,010
159.00	1,750	100.0	17	1,155	2,011
160.00	2,300	100.0	2,019	3,174	2,584
162.00	3,600	100.0	5,852	9,025	3,939
164.00	5,080	100.0	8,638	17,663	5,490

Device	Routing	Invert	Outlet Devices
#1	Discarded	157.24'	2.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.40'	15.0" Round Culvert L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.40' / 157.95' S= 0.0100 ' /' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	163.50'	2.6" x 4.6" Horiz. Orifice/Grate X 8.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (66% open area)
#4	Device 2	160.65'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	162.75'	6.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads <u>Lowest Invert</u>

Discarded OutFlow Max=0.25 cfs @ 12.29 hrs HW=163.78' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=8.20 cfs @ 12.29 hrs HW=163.78' TW=157.69' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 8.20 cfs of 12.88 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 6.74 cfs @ 2.54 fps)
 ↑ **4=Orifice/Grate** (Orifice Controls 0.72 cfs @ 8.28 fps)
 ↑ **5=Orifice/Grate** (Orifice Controls 0.74 cfs @ 4.46 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #3: BIORENTION #3 (continued)

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
160.42	2,549	2,843	4,192
160.44	2,561	2,856	4,243
160.46	2,573	2,868	4,294
160.48	2,586	2,881	4,346
160.50	2,598	2,894	4,397
160.52	2,610	2,907	4,450
160.54	2,622	2,920	4,502
160.56	2,635	2,933	4,554
160.58	2,647	2,945	4,607
160.60	2,660	2,958	4,660
160.62	2,672	2,971	4,714
160.64	2,684	2,984	4,767
160.66	2,697	2,997	4,821
160.68	2,709	3,010	4,875
160.70	2,722	3,023	4,929
160.72	2,735	3,037	4,984
160.74	2,747	3,050	5,039
160.76	2,760	3,063	5,094
160.78	2,773	3,076	5,149
160.80	2,785	3,089	5,205
160.82	2,798	3,103	5,261
160.84	2,811	3,116	5,317
160.86	2,823	3,129	5,373
160.88	2,836	3,143	5,430
160.90	2,849	3,156	5,486
160.92	2,862	3,169	5,544
160.94	2,875	3,183	5,601
160.96	2,888	3,196	5,659
160.98	2,901	3,210	5,716
161.00	2,914	3,223	5,775
161.02	2,927	3,237	5,833
161.04	2,940	3,251	5,892
161.06	2,953	3,264	5,951
161.08	2,966	3,278	6,010
161.10	2,979	3,291	6,069
161.12	2,992	3,305	6,129
161.14	3,005	3,319	6,189
161.16	3,019	3,333	6,249
161.18	3,032	3,347	6,310
161.20	3,045	3,360	6,370
161.22	3,059	3,374	6,431
161.24	3,072	3,388	6,493
161.26	3,085	3,402	6,554
161.28	3,099	3,416	6,616
161.30	3,112	3,430	6,678
161.32	3,125	3,444	6,741
161.34	3,139	3,458	6,803
161.36	3,152	3,472	6,866
161.38	3,166	3,486	6,929
161.40	3,180	3,500	6,993
161.42	3,193	3,515	7,057
161.44	3,207	3,529	7,121
161.46	3,220	3,543	7,185

Lowest Outlet

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Summary for Pond BIO #4: BIORETENTION #4

Inflow Area = 3.185 ac, 31.92% Impervious, Inflow Depth = 5.31" for 50-YR SEACOAST event
 Inflow = 17.30 cfs @ 12.11 hrs, Volume= 1.408 af
 Outflow = 5.69 cfs @ 12.50 hrs, Volume= 1.408 af, Atten= 67%, Lag= 23.2 min
 Discarded = 0.69 cfs @ 12.50 hrs, Volume= 0.606 af
 Primary = 5.00 cfs @ 12.50 hrs, Volume= 0.802 af
 Routed to Reach 2001 : FLOW THROUGH WOODS TO WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.23' @ 12.50 hrs Surf.Area= 9,367 sf Storage= 22,953 cf
 Flood Elev= 163.50' Surf.Area= 9,750 sf Storage= 25,509 cf

Plug-Flow detention time= 94.4 min calculated for 1.408 af (100% of inflow)
 Center-of-Mass det. time= 94.4 min (916.0 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	158.74'	25,509 cf	Bioretention (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
158.74	5,785	0.0	0	0	5,785
158.75	5,785	40.0	23	23	5,788
158.99	5,785	40.0	555	579	5,852
159.00	5,785	20.0	12	590	5,855
160.49	5,785	20.0	1,724	2,314	6,257
160.50	5,785	100.0	58	2,372	6,260
162.00	7,700	100.0	10,080	12,451	8,223
163.50	9,750	100.0	13,057	25,509	10,333

Device	Routing	Invert	Outlet Devices
#1	Discarded	158.74'	3.000 in/hr Exfiltration over Wetted area Phase-In= 0.10'
#2	Primary	158.65'	12.0" Round Culvert L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 158.65' / 158.05' S= 0.0100 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	163.00'	0.5" x 4.5" Horiz. Orifice/Grate X 14.00 columns X 4 rows C= 0.600 in 24.0" x 24.0" Grate (22% open area) Limited to weir flow at low heads
#4	Device 2	160.75'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 <u>Lowest Invert</u> Limited to weir flow at low heads
#5	Device 2	161.50'	8.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.69 cfs @ 12.50 hrs HW=163.23' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.69 cfs)

Primary OutFlow Max=5.00 cfs @ 12.50 hrs HW=163.23' TW=157.92' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 5.00 cfs of 7.31 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 2.03 cfs @ 2.32 fps)

↑ **4=Orifice/Grate** (Orifice Controls 1.63 cfs @ 7.33 fps)

↑ **5=Orifice/Grate** (Orifice Controls 1.34 cfs @ 6.02 fps)

Ambrose Woods - Post-Construction

Type III 24-hr 50-YR SEACOAST Rainfall=8.20"

Prepared by Trittech Engineering Corporation

Printed 3/7/2025

HydroCAD® 10.20-6a s/n 00652 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BIO #4: BIORETENTION #4

Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
158.74	5,785	5,785	0
158.84	5,785	5,812	231
158.94	5,785	5,839	463
159.04	5,785	5,866	636
159.14	5,785	5,893	752
159.24	5,785	5,920	868
159.34	5,785	5,947	983
159.44	5,785	5,974	1,099
159.54	5,785	6,001	1,215
159.64	5,785	6,028	1,331
159.74	5,785	6,055	1,446
159.84	5,785	6,082	1,562
159.94	5,785	6,109	1,678
160.04	5,785	6,136	1,793
160.14	5,785	6,162	1,909
160.24	5,785	6,189	2,025
160.34	5,785	6,216	2,140
160.44	5,785	6,243	2,256
160.54	5,833	6,308	2,604
160.64	5,952	6,431	3,193
160.74	6,073	6,555	3,795
160.84	6,195	6,680	4,408
160.94	6,318	6,807	5,034
161.04	6,443	6,934	5,672
161.14	6,569	7,063	6,322
161.24	6,696	7,193	6,986
161.34	6,824	7,325	7,662
161.44	6,953	7,457	8,350
161.54	7,084	7,591	9,052
161.64	7,215	7,727	9,767
161.74	7,348	7,863	10,495
161.84	7,483	8,001	11,237
161.94	7,618	8,139	11,992
162.04	7,752	8,276	12,760
162.14	7,881	8,410	13,542
162.24	8,012	8,544	14,337
162.34	8,143	8,680	15,144
162.44	8,276	8,816	15,965
162.54	8,410	8,954	16,800
162.64	8,545	9,093	17,648
162.74	8,681	9,233	18,509
162.84	8,818	9,374	19,384
162.94	8,956	9,516	20,273
163.04	9,096	9,659	21,175
163.14	9,236	9,804	22,092
163.24	9,377	9,949	23,022
163.34	9,520	10,096	23,967
163.44	9,663	10,243	24,926

Lowest Invert

Summary for Pond CB-102: CB-102 STA 4+50 10' LEFT

Inflow Area = 0.968 ac, 46.68% Impervious, Inflow Depth = 4.56" for 25-YR SEACOAST event
 Inflow = 4.42 cfs @ 12.13 hrs, Volume= 0.368 af
 Outflow = 4.42 cfs @ 12.13 hrs, Volume= 0.368 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.42 cfs @ 12.13 hrs, Volume= 0.368 af
 Routed to Pond FB#1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 170.09' @ 12.13 hrs

Flood Elev= 173.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	169.05'	18.0" Round P-102 L= 46.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 169.05' / 168.50' S= 0.0120 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.40 cfs @ 12.13 hrs HW=170.09' TW=169.33' (Dynamic Tailwater)

↑**1=P-102** (Outlet Controls 4.40 cfs @ 4.73 fps)

Riprap Sizing for P-102 (25 Year Storm Event)

Apron Length

$$La = (3.0 * Q / 1.5 * D) + 7 * D$$

Q = Flow

D = Inner diameter of Pipe

La = Length

Q = 4.4 cfs

D = 1.50 ft

La = 16.4 ft

Apron Width at End

$$W = (3 * D) + (0.4 * L)$$

L = Length

D = Inner diameter of Pipe

W = Width

L = 16.4 ft

D = 1.50 ft

W = 11.0 ft

Apron Width at Culvert

$$W = 3 * D$$

D = Inner diameter of Pipe

W = Width

D = 1.50 ft

W = 4.5 ft

Riprap Diameter

$$D_{50} = (.02 * Q^{(1.3)}) / (TW * D)$$

Q = Flow

TW = Tailwater Elevation

D = Inner diameter of Pipe

D₅₀ = Riprap Diameter

Q = 4.4 cfs

TW = 0.83 ft

D = 1.50 ft

D₅₀ = 1.32 in

Use 3" for D₅₀

Summary for Pond CB-104: CB-104 STA 7+50 10' LEFT

Inflow Area = 1.027 ac, 48.87% Impervious, Inflow Depth = 4.61" for 25-YR SEACOAST event
 Inflow = 5.03 cfs @ 12.12 hrs, Volume= 0.395 af
 Outflow = 5.03 cfs @ 12.12 hrs, Volume= 0.395 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.03 cfs @ 12.12 hrs, Volume= 0.395 af
 Routed to Pond FB #2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 167.32' @ 12.13 hrs

Flood Elev= 170.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	18.0" Round P-104 L= 120.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.65' / 164.15' S= 0.0125 ' / ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.94 cfs @ 12.12 hrs HW=167.31' TW=166.86' (Dynamic Tailwater)

↑**1=P-104** (Outlet Controls 4.94 cfs @ 3.14 fps)

Riprap Sizing for P-104 (25 Year Storm Event)

Apron Length

$$La = (3.0 * Q / 1.5 * D) + 7 * D$$

Q = Flow

D = Inner diameter of Pipe

La = Length

Q = 4.94 cfs

D = 1.50 ft

La = 17.1 ft

Apron Width at End

$$W = (3 * D) + (0.4 * L)$$

L = Length

D = Inner diameter of Pipe

W = Width

L = 17.1 ft

D = 1.50 ft

W = 11.3 ft

Apron Width at Culvert

$$W = 3 * D$$

D = Inner diameter of Pipe

W = Width

D = 1.50 ft

W = 4.5 ft

Riprap Diameter

$$D_{50} = (.02 * Q^{(1.3)}) / (TW * D)$$

Q = Flow

TW = Tailwater Elevation

D = Inner diameter of Pipe

D₅₀ = Riprap Diameter

Q = 4.94 cfs

TW = 2.71 ft

D = 1.50 ft

D₅₀ = 0.47 in

Use 3" for D₅₀

Summary for Pond CB-106: CB-106 STA 10+00 10' LEFT

Inflow Area = 2.242 ac, 41.53% Impervious, Inflow Depth = 4.62" for 25-YR SEACOAST event
 Inflow = 10.49 cfs @ 12.12 hrs, Volume= 0.863 af
 Outflow = 10.49 cfs @ 12.12 hrs, Volume= 0.863 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.49 cfs @ 12.12 hrs, Volume= 0.863 af
 Routed to Pond FB #3 : FOREWAY #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.40' @ 12.13 hrs

Flood Elev= 167.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	24.0" Round P-107 L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.50' S= 0.0100 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.43 cfs @ 12.12 hrs HW=164.40' TW=163.93' (Dynamic Tailwater)

↑**1=P-107** (Inlet Controls 10.43 cfs @ 3.32 fps)

Riprap Sizing for P-107 (25 Year Storm Event)

Apron Length

$$La = (3.0 * Q / 1.5 * D) + 7 * D$$

Q = Flow

D = Inner diameter of Pipe

La = Length

Q = 10.43 cfs

D = 2.00 ft

La = 24.4 ft

Apron Width at End

$$W = (3 * D) + (0.4 * L)$$

L = Length

D = Inner diameter of Pipe

W = Width

L = 24.4 ft

D = 2.00 ft

W = 15.8 ft

Apron Width at Culvert

$$W = 3 * D$$

D = Inner diameter of Pipe

W = Width

D = 2.00 ft

W = 6.0 ft

Riprap Diameter

$$D_{50} = (.02 * Q^{(1.3)}) / (TW * D)$$

Q = Flow

TW = Tailwater Elevation

D = Inner diameter of Pipe

D₅₀ = Riprap Diameter

Q = 10.43 cfs

TW = 2.43 ft

D = 2.00 ft

D₅₀ = 1.04 in

Use 3" for D₅₀

Summary for Pond DMH-110: DMH-101 STA 15+15 14' LEFT

Inflow Area = 2.503 ac, 37.53% Impervious, Inflow Depth = 4.68" for 25-YR SEACOAST event
Inflow = 11.30 cfs @ 12.11 hrs, Volume= 0.976 af
Outflow = 11.30 cfs @ 12.11 hrs, Volume= 0.976 af, Atten= 0%, Lag= 0.0 min
Primary = 11.30 cfs @ 12.11 hrs, Volume= 0.976 af
Routed to Pond FB #4 : FOREBAY #4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.01 hrs

Peak Elev= 164.84' @ 12.11 hrs

Flood Elev= 170.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	163.20'	24.0" Round P-113 L= 154.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 163.20' / 161.50' S= 0.0110 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.27 cfs @ 12.11 hrs HW=164.83' TW=163.43' (Dynamic Tailwater)

↑**1=P-113** (Outlet Controls 11.27 cfs @ 5.58 fps)

Riprap Sizing for P-113 (25 Year Storm Event)

Apron Length

$$La = (3.0 * Q / 1.5 * D) + 7 * D$$

Q = Flow

D = Inner diameter of Pipe

La = Length

Q = 11.27 cfs

D = 2.00 ft

La = 25.3 ft

Apron Width at End

$$W = (3 * D) + (0.4 * L)$$

L = Length

D = Inner diameter of Pipe

W = Width

L = 25.3 ft

D = 2.00 ft

W = 16.1 ft

Apron Width at Culvert

$$W = 3 * D$$

D = Inner diameter of Pipe

W = Width

D = 2.00 ft

W = 6.0 ft

Riprap Diameter

$$D_{50} = (.02 * Q^{(1.3)}) / (TW * D)$$

Q = Flow

TW = Tailwater Elevation

D = Inner diameter of Pipe

D₅₀ = Riprap Diameter

Q = 11.27 cfs

TW = 1.93 ft

D = 2.00 ft

D₅₀ = 1.45 in

Use 3" for D₅₀



SOILS NOTES

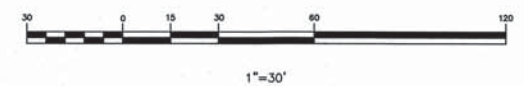
- 1.) SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT. SSSNNE SPECIAL PUBLICATION NO. 3, VERSION 7.0, JULY 2021. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE SUBMISSION TO NH DES ALTERATION OF 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 FEBRUARY 2024 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 MARCH AND APRIL OF 2024, AND JANUARY AND FEBRUARY OF 2025.

LEGEND

99 TUNBRIDGE
100 UDORTHENTS, WET SUBSTRATUM
134 MAYBID, VERY POORLY DRAINED
438 SWANTON, POORLY DRAINED
444 NEWFIELDS
936 SWANTON, SOMEWHAT POORLY DRAINED
○ TEST PIT

SLOPE CLASS

A 0 - 3%
B 3 - 8%
C 8 - 15%
D 15 - 25%
E 25 - 50%
F >50%



TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03801
TELEPHONE 603 742 8907
FAX 603 742 3830

REVISIONS	DATE	DESCRIPTION

SITE SPECIFIC SOILS PLAN

AMBROSE WOODS
TAX MAP F LOT 3
210 TOLAND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025 JOB No. 23118
SCALE: 1" = 100'

SHEET No.

SSS-1

SOIL REPORT

210 Tolend Road
Dover NH
Tax Map F Lot 3

February 20, 2025

Purpose: The site- specific soil map was prepared for a proposed subdivision of land. The residential subdivision will have access off Emerald Lane and will be served by municipal water and sewer.

Landscape: The total lot area is approximately 56 acres with 40.2 acres of rolling northern hardwood forest and 15.5 acres of wetlands. The area around the existing house is open with selective clearing. Slopes are mostly 3 to 15 percent with some steeper slopes down to the wetlands.

Soils: Upland soils are bedrock controlled loamy to sandy glacial till ranging from well drained to somewhat poorly drained. The predominant soils in the uplands are moderately well drained with depth to bedrock ranging from 10 inches to greater than six feet. Typically, the shallower soils are found on ridgetops with depth to bedrock increasing through the lower sideslopes. Many test pits showed rock fragments of various percentages in the lower B and C horizons. A flagstone (flaggy texture modifier) is a thin fragment of sandstone, limestone, slate, shale, or (rarely) schist, 6 to 15 inches long. A channer (channery texture modifier) is a similar fragment that is less than 6 inches long. A soil that is described as extremely flaggy and channery still has enough fine particles to be considered a soil. All soft bedrock – bedrock that can be excavated – was classified as bedrock.

Wetland soils are mostly loamy to sandy over clayey and poorly drained around the perimeter and similar very poorly drained soils with an organic surface in the center.

Wetlands Wetlands were delineated in 2023 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. The wetland boundary was flagged in pink and numbered for location by Trittech Engineering, Dover NH.

The wetlands are mostly palustrine forested wetlands subject to seasonal saturation, (PFOE). At the easterly end of the large wetland, south of the house at 210 Tolend Road, are areas of persistent emergent wetlands that are seasonally saturated (PEM1E).

There are two existing old farm road crossings, one at a narrow wetland just south of the SE corner of Map F Lot 3D, and one at the SE corner of the subject property.

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Note: Alteration of any wetland requires a permit from the NH Wetlands Bureau. The City of Dover has a wetland ordinance that should be consulted for setbacks, etc.

Methodology The Site-Specific Soil Survey was prepared in accordance with Site Specific Soil Mapping Standards for New Hampshire and Vermont, Special Publication No. 3 - Version 5.0 by the Soil Science Society of Northern New England and the USDA NRCS, July 2021. The soil survey map, report, and soil descriptions were prepared by Michael Mariano, NH Certified Soil Scientist #076.

A plan provided by Trittech Engineering at a scale of 1" = 100' with 2' contours was used as a base map. Existing monumentation, survey-located test pits, survey transects, and topographic features were used as control. Pits were dug by an excavator in March & April 2024 and January & February, 2025.

Soil boundaries were observed throughout their length and their placement corresponds to changes in soil properties or landform. The identification of soil is at the series level with accompanying phase terms, if needed.

Map unit purity:

- Map units 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 similar taxa.
- No one dissimilar soil is greater than the named taxa
- Individual dissimilar inclusions are less than 1/8 acre in area. Dissimilar inclusions may total no more than 25% per map unit delineation in the aggregate, if not continuous.
- The soil legend includes both the series name of each mapping unit and the corresponding designation used on the map.

See Soil Description sheets for similar soils and for dissimilar inclusions for each mapping unit

Complex – a soil map unit with two or more series (taxa) occurring in a regularly repeating pattern so intricate that the individual soil series cannot be delineated separately at the scale of mapping. There are no mapping unit complexes for this project.

Soil Drainage Classes:

Very Poorly Drained: Water is removed from the soil so slowly that free water remains at or near the ground surface during much of the growing season. The occurrence of internal free water is very shallow and persistent or permanent. Unless the soil is artificially drained, most mesophytic crops cannot be grown. The soils are commonly level or in depressions. Some are frequently ponded

- ***134 Maybid.*** This soil occupies the interior of the large wetland in a mostly forested wetland. Maybid soils are finely textured throughout. Major inclusions of Biddeford soil are similar with a thick organic surface. Other inclusions may have loamy to sandy surfaces underlain by clayey subsoil

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Poorly Drained: Water is removed from the soil so slowly that the water table remains at or above the surface most of the year, at least October through July in most years and possibly throughout the year in some years. These soils may have a thin organic surface up to 4 inches thick and support a wetland plant community.

- **438 Swanton, poorly drained.** This soil occupies the outside edges of the wetlands between the very poorly drained Maybid soils and the wetland/upland boundary. Swanton soils have a loamy to sandy surface underlain by a clayey subsoil.

Somewhat Poorly Drained: Water is removed slowly enough to keep the soil wet for significant periods of time, but not the entire year. A seasonal high water table ranges from 7-15 inches in depth from October to May, but may recede to over 30 inches in depth during the summer.

- **936 Swanton, somewhat poorly drained.** This transitional soil is found in a narrow band between the wetlands and the moderately well drained soils just upslope.

Moderately Well Drained: Water is removed from the soil somewhat slowly so there is a seasonal high water table at 15-40 inches from November through May. There are few limitations that can't be overcome.

- **444 Newfields** Newfields soils are found on the ridgetops and sideslopes and are the predominant soil on the property. They consist of loamy to sandy glacial till with a seasonal high water table at 15 – 40 inches. Bedrock is often present but at depths greater than 40 inches.

Well Drained: Water is removed from the soil readily but not rapidly. Internal free water occurrence commonly is deep or very deep; annual duration is not specified. Water is available to plants throughout most of the growing season. Wetness does not inhibit growth of roots for significant periods during most growing seasons. The soils are mainly deep to redoximorphic features that are related to wetness.

- **99 Tunbridge** Tunbridge soils are found on ridgetops and upper sideslopes but can be inclusions in the Newfields mapping units. Depth to bedrock is between 20 and 40 inches and typically there is no seasonal high water table.

Excessively Drained: 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 or are very shallow.

- While there are no named mapping units of excessively drained soils, there are some small inclusions of these soils in the Newfields mapping unit.

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Soil Depth Classes:

Outcrop: Bedrock exposed at surface. Very minor inclusions in the Tunbridge mapping unit

Shallow: Depth to bedrock at less than 20". Hollis – minor inclusions in the Tunbridge mapping unit

Moderately Deep: Depth to bedrock at 20-40". Tunbridge

Very Deep: Depth to bedrock at >40": Newfields, Swanton, Maybid

Soil Legend

99	Tunbridge
100	Udorthents, wet substratum
134	Maybid, very poorly drained
438	Swanton, poorly drained
444	Newfields
936	Swanton, somewhat poorly drained

Slope Class

A	0-3%
B	3-8%
C	8-15%
D	15-25%
E	25-50%
F	>50%

"This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product produced by a private soil consultant and is not a product of the USDA Natural Resources Conservation Service. There is map that accompanies this report.



Michael Mariano

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Tunbridge

NH Numerical Legend: 99

Setting

Parent Material:	Glacial till
Landform:	Glaciated uplands
Position on Landscape:	Riidgetops & sideslopes
Slope Range:	3 to 25%

Composition and Soil Characteristics

Drainage Class:	Well drained; no seasonal high water table to depth of bedrock
Hydrologic Group:	C
Surface Runoff	Moderate
Permeability	Moderate
Depth to Bedrock	Moderately deep: 20-40"
Hydric conditions	No

Inclusions Within Mapping Unit

Similar:	Hollis – bedrock at <20"
Contrasting:	Newfields and inclusions: bedrock >40" moderately well drained Swanton on lower sideslopes; SP drained; sandy over clayey

Use and Management

This soil is well suited to development. Depth to bedrock is the limiting factor. Subsurface wastewater disposal is permitted. See test pit 2-5+00 for typical description.

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Udorthents

NH Numerical Soil Legend: 100, wet substratum

Setting

Parent Material:	Mixed
Landform:	Fill
Position on Landscape:	Old farm crossing at wetland
Slope Range:	0-3 percent

Composition and Soil Characteristics

Drainage Class:	Excessively to well drained; seasonal high water table generally >40".
Hydrologic Group:	Undetermined
Surface Runoff	Moderate
Permeability	Moderate
Depth to Bedrock	>60 inches
Hydric conditions	No

Inclusions Within Mapping Unit

Similar:	None
Contrasting:	None

Use and Management

This mapping unit is only for an existing old farm road crossing of approximately 300 square feet in the SE property corner. Formerly called Made Land, now Udorthents, wet substratum

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Maybid

NH Numerical Legend: 134

Setting

Parent Material:	Silty marine sediments
Landform:	Nearly level lowlands
Position on Landscape:	Depressions, drainageways, wetlands
Slope Range:	0 to 3 percent

Composition and Soil Characteristics

Drainage Class:	Very poorly drained; seasonal high water table at 0”.
Hydrologic Group:	D
Surface Runoff	Slow
Permeability	Slow. Very slow in subsoil
Depth to Bedrock	> 40 inches
Hydric conditions	Yes

Inclusions within Mapping Unit

Similar:	Scitico - poorly drained Biddeford – thicker organic surface
Contrasting:	Swanton, poorly drained, loamy to sandy surface

Use and Management

This soil is poorly suited to development. Areas mapped as Maybid are classified as wetlands and permitting is required for any activity in those wetlands. Wetness is the limiting factor with a water table at or near the surface during most months of the year.

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Newfields

NH Numerical Legend: 444

Setting

Parent Material:	Glacial till
Landform:	Glaciated uplands
Position on Landscape:	Ridgetops & sideslopes.
Slope Range:	3 to 25%

Composition and Soil Characteristics

Drainage Class:	Moderately well drained; seasonal high water table at 15 to 40 inches
Hydrologic Group:	B
Surface Runoff	Moderate
Permeability	Moderate
Depth to Bedrock	very deep at > 40 inches
Hydric conditions	No

Inclusions Within Mapping Unit

Similar:	Charlton (well drained) – minor inclusion, Acton, Sunapee
Contrasting:	Woodbridge – dense hardpan in subsoil – very minor inclusion Tunbridge – bedrock at 20-40”

Use and Management

This soil is well suited to development. A seasonal high water table is present at 15 to 40”. Bedrock is commonly present but at depths >40”. Subsurface wastewater disposal is permitted. See test pit 1+00 for typical description.

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Swanton

NH Numerical Legend: 438 – Poorly Drained
936 – Somewhat Poorly Drained

Setting

Parent Material: Glacial outwash over silty marine sediments
Landform: Outwash plains
Position on Landscape: 936 on lower sideslopes; 438 in wetland
Slope Range: 0-15 percent

Composition and Soil Characteristics

Drainage Class: 936: Somewhat poorly drained; seasonal high water table at 7 to 15 inches
438 Poorly drained; SHWT at 0 to 6”
Hydrologic Group: D
Surface Runoff: Moderate
Permeability: Moderate – slow in silty subsoil
Depth to Bedrock: > 40 inches
Hydric conditions: 438 – yes; 936 - inclusions

Inclusions Within Mapping Unit

Similar: Eldridge – moderately well drained
Contrasting: Boxford– silty throughout
Newfields – moderately well drained glacial till

Use and Management

This soil is moderately well suited to development. A seasonal high water table is the limiting factor. Typical descriptions: 438 – TP 204; 936 – TP B

Highland Soil Services

75 Prospect Street, Somersworth NH 03878 (603) 692-4457

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 1+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam fill; weak fine granular structure: moist, friable
04 - 10"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
10 - 32"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
32 - 54"	Yellowish brown (10YR5/6) extremely channery and flaggy sandy loam; soft shale in dark gray, soil matrix in 10YR5/6; weak medium granular structure; moist, friable.
@54"	Bedrock

Series: Newfields
Estimated seasonal high water table: 32"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 2+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 13"	Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
13 - 20"	Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable
20 - 30"	Yellowish brown (10YR5/6) very shaly sandy loam; moderate medium granular structure; moist, friable.
30 - 48"	Yellowish brown (10YR5/6) very channery and flaggy sandy loam; many redox depletions in 10YR6/1; moderate medium granular structure; moist, friable.
@48"	Bedrock

Series: Newfields
Estimated seasonal high water table: 30"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 3+00

00 - 03"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 14"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
14 - 25"	Yellowish brown (10YR5/6) loamy sand; weak fine granular structure; moist, friable
25 - 46"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; moderate medium granular structure; moist, friable.
@46"	Bedrock

Series: Newfields
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 4+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 15"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
15 - 21"	Yellowish brown (10YR5/6) loamy sand; weak fine granular structure; moist, friable
21 - 31"	Light olive brown (2.5Y5/4) loamy sand; few redox depletions in 10YR6/1; moderate medium granular structure; moist, friable.
31 - 60"	Light olive brown (2.5Y5/4) channery and flaggy loamy sand; many redox depletions in 10YR6/1 & common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable.

Notes: 1 face of pit had extremely shaly loamy sand at 24"
Series: Acton
Estimated seasonal high water table: 21"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 5+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 10"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
10 - 20"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
20 - 36"	Yellowish brown (10YR5/6) loamy sand; weak fine granular structure; moist, friable
36 – 39"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; moderate medium granular structure; moist, friable.
39 – 60"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; few redox depletions in 10YR6/1 & few redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable.

Series: Newfields
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 6+00

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 16"	Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
16 - 26"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable
26 - 39"	Light olive brown (2.5Y5/4) loamy sand; weak fine granular structure; moist, friable
39 – 65"	Light olive brown (2.5Y5/4) channery and flaggy loamy sand ; few redox depletions in 10YR6/1 & many redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable.

Series: Acton
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 7+00

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 09"	Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
09 - 22"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
22 - 38"	Light olive brown (2.5Y5/4) loamy sand; weak fine granular structure; moist, friable
38 – 60"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; few redox depletions in 10YR6/1 & many redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable.

Series: Newfields
Estimated seasonal high water table: 38"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 8+00

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 14"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
14 - 24"	Yellowish brown (10YR5/6) loamy sand; weak fine granular structure; moist, friable
24 - 36"	Light olive brown (2.5Y5/4) gravelly loamy sand; weak fine granular structure; moist, friable
38 – 60"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; few redox depletions in 10YR6/1 & common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable.

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 9+00

00 - 03"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 20"	Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
20 - 39"	Light olive brown (2.5Y5/4) extremely channery and flaggy loamy sand; weak fine granular structure; moist, friable
@39"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock at 39"
Soil Hydrologic Group

Test Pit 10+00

00 - 03"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 15"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
15 - 23"	Yellowish brown (10YR5/6) loamy sand; weak fine granular structure; moist, friable
23 - 39"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; moderate medium granular structure; moist, friable.
39 – 51"	Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
@51"	Bedrock

Series: Newfields
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 11+00

00 - 03" Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 22" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
22 - 38" Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
38 - 60" Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable

@60" Bedrock

Series: Newfields
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 12+00

00 - 03" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 14" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
14 - 26" Light olive brown (2.5Y5/6) sandy loam; weak fine granular structure; moist, friable
26 - 36" Light olive brown (2.5Y5/6) very channery and flaggy sandy loam; weak fine granular structure; moist, friable
36 - 48" Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable

@48" Bedrock

Series: Newfields
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 13+00

00 - 04" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable

04 - 24" Strong brown (7.5YR5/8) shaly fine sandy loam; weak fine granular structure; moist, friable.

24 - 38" Yellowish brown (10YR5/6) very channery and flaggy sandy loam; weak fine granular structure; moist, friable

38 - 48" Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable

@48" Bedrock

Series: Newfields
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 14+00

00 - 04" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable

04 - 30" Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.

@30" Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Note: depth to bedrock at 24" on shallow end of pit

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 15+00

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 23"	Yellowish brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
23 - 35"	Olive gray (2.5Y5/2) sandy loam; few redox features in 10YR6/1 and 7.5YR5/8; weak fine granular structure; moist, friable
35 - 60"	Gray (10YR6/1) & olive gray (2.5Y5/2) sandy loam; many redox concentrations; moderate medium granular structure; moist, friable

Series: Newfields
Estimated seasonal high water table: 23"
Observed water: 35"
Restrictive layer: none
Soil Hydrologic Group C

Test Pit 16+00

00 - 06"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
06 - 12"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
12 - 23"	Yellowish brown (10YR5/6) loamy fine sand; massive structure; moist, friable
23 - 37"	Light olive brown (2.5Y5/6) very channery and flaggy loamy sand; few redox features in 10YR6/1 and 7.5YR5/8; weak fine granular structure; moist, friable
37 - 55"	Light olive brown (2.5Y5/4) & strong brown (7.5YR5/8) very channery and flaggy sand; many redox depletions in 10YR6/1; moderate medium granular structure; wet, non-sticky, non-plastic
37 - 55"	Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
55 - 60"	Light olive brown (2.5Y5/4), olive gray (2.5Y5/2) extremely channery and flaggy loamy very fine sand; many redox concentrations in 7.5YR5/8; massive structure; moist, friable
@60"	Bedrock

Series: Acton
Estimated seasonal high water table: 23"
Observed water: 37"
Restrictive layer: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 17+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 19"	Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
19 - 30"	Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable
30 - 40"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; moderate medium granular structure; moist, friable
@40"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: 30"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group B

Test Pit 18+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 20"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
20 - 40"	Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; moderate medium granular structure; moist, friable
@40"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit SW 1

00 - 03"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 09"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
09 - 16"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
16 – 35"	Light olive brown (2.5Y5/4) loamy sand; many redox depletions in 10YR6/1 & many concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
35 – 60"	Olive gray (2.5Y5/2) loamy sand; a few small spheroidal masses of olive gray (2.5Y5/2) silty clay loam; many redox depletions and concentrations moderate medium platy structure; moist, firm.

Series: Acton
Estimated seasonal high water table: 16"
Observed water: 35"
Restrictive layer: 35"
Soil Hydrologic Group B

Test Pit SW 2

00 - 06"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
06 - 16"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
16 - 23"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
23 – 46"	Light olive brown (2.5Y5/4) loamy sand; many redox depletions in 10YR6/1 & many concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
46 – 60"	Light olive brown (2.5Y5/4) & strong brown (7.5YR5/8) sand; many redox depletions in 10YR6/1; single grain; wet, non-sticky. Non-plastic.

Series: Acton
Estimated seasonal high water table: 23"
Observed water: 46"
Restrictive layer: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit SW 3

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 23"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
23 - 37"	Yellowish brown (10YR5/6) sandy loam; few redox concentrations in 7.5YR5/8; weak fine granular structure; moist, friable
37 - 47"	Light olive brown (2.5Y5/4) fine sandy loam; few small pockets of sand (2.5Y5/4); many redox depletions in 10YR6/1 & many concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
47 - 60"	Light olive brown (2.5Y5/4) sandy loam; a few small pockets of sand (2.5Y5/4); many redox depletions and concentrations moderate medium platy structure; moist, firm.

Series: Newfields
Estimated seasonal high water table: 23"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Test Pit SW 4

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 17"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
17 - 22"	Light olive brown (2.5Y5/4) sandy loam; weak fine granular structure; moist, friable
22 - 36"	Light olive brown (2.5Y5/4) loamy sand; common redox depletions in 10YR6/1 & common concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
36 - 60"	Light olive brown (2.5Y5/4) sandy loam; many redox depletions in 10YR6/1 & many concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable

Series: Newfields
Estimated seasonal high water table: 22"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit SW 5

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 09"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
09 - 17"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable
17 - 48"	Light olive brown (2.5Y5/4) loamy sand; common redox depletions in 10YR6/1 & common concentrations in 7.5YR5/8 increasing with depth; moderate medium granular structure; moist, friable

Series: Acton
Estimated seasonal high water table: 17"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Test Pit SW 6

00 - 03"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 15"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
15 - 18"	Light olive brown (2.5Y5/4) sandy loam; common redox depletions in 10YR6/1 & common concentrations in 7.5YR5/8 weak fine granular structure; moist, friable
18 - 26"	Gray (10YR6/1) loamy sand; many redox concentrations in 7.5YR5/8; moderate medium granular structure; moist, friable
26 - 48"	Light olive brown (2.5Y5/4) loamy sand; many redox depletions in 10YR6/1 & many concentrations in 7.5YR5/8 and 10YR5/6; moderate medium granular structure; moist, friable

Series: Acton
Estimated seasonal high water table: 15"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 03-20-2024
Re-correlated on 02-03-2025

Test Pit 101

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 16"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
16 – 30"	Yellowish brown (10YR5/6) extremely channery and flaggy sandy loam; weak fine granular structure; moist, friable
@30"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Soil Hydrologic Group C

Note: 16 – 30" is mostly weathered shale with small pockets of sandy loam as described

Test Pit 102

00 - 07"	Black (10YR2/1) loamy very fine sand; weak fine granular structure: moist, friable
07 - 13"	Gray (N6/) loamy sand; many black stains from above; weak fine granular structure; moist, friable.
13 – 24"	Olive gray (2.5Y5/2) silty clay loam; many redox features; strong medium blocky structure; moist, very firm

Series: Swanton
Estimated seasonal high water table: 0"
Observed water: 0"
Restrictive layer: 13"
Soil Hydrologic Group D

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

No test pit at Tolend Road station 1+00

Test Pit 2-2+00

00 - 12"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
12 - 20"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
20 - 30"	Yellowish brown (10YR5/6) loamy sand; weak medium granular structure; moist, friable.
30 - 50"	Light olive brown (2.5Y5/4) sandy loam; many redox concentrations in 10YR5/6 and 7.5YR5/8; few redox depletions in 10YR6/1; weak medium granular structure; moist, friable.
@50"	Bedrock

Series: Newfields
Estimated seasonal high water table: 30"
Observed water: none
Restrictive layer: none
Bedrock: 50"
Soil Hydrologic Group B

Test Pit 2-3+00

00 - 10"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
10 - 23"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
23 - 33"	Light olive brown (2.5Y5/4) fine sandy loam; weak fine granular structure; moist, friable
33 - 44"	Light olive brown (2.5Y5/4) fine sandy loam; few redox concentrations in 7.5YR5/8; weak fine granular structure; moist, friable
44 - 65"	Light olive gray (2.5Y5/2) loamy fine sand; many redox concentrations in 7.5YR5/8; massive structure; moist, friable to 50" then wet, non-sticky, non-plastic.

Series: Newfields
Estimated seasonal high water table: 33"
Observed water: 50"
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-4+00

00 - 10"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
10 - 23"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
23 - 36"	Yellowish brown (10YR5/6) loamy sand; weak medium granular structure; moist, friable.
36 - 56"	Light olive brown (2.5Y5/4) gravelly loamy sand; few redox concentrations in 10YR5/6 and 7.5YR5/8; few redox depletions in 10YR6/1; weak medium granular structure; moist, friable.
36 - 66"	Light olive brown (2.5Y5/4) sandy loam; many redox concentrations in 10YR5/6 and 7.5YR5/8; few redox depletions in 10YR6/1; weak medium granular structure; moist, friable.

Series: Acton
Estimated seasonal high water table: 36"
Observed water: 44"
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group B

Test Pit 2-5+00

00 - 11"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
11 - 25"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
25 - 34"	Light olive brown (2.5Y5/4) sandy loam; weak fine granular structure; moist, friable
@34"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 34"
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-6+00

00 - 05"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 25"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
25 - 33"	Light olive brown (2.5Y5/4) very channery and flaggy loamy sand; weak fine granular structure; moist, friable
33 - 45"	Strong brown (7.5YR5/8) sand; single grain; moist, loose
45 - 50"	Light olive brown (2.5Y5/4) very channery and flaggy loamy sand; weak fine granular structure; moist, friable
50 - 65"	Light olive brown (2.5Y5/4) extremely channery and flaggy loamy sand; few redox concentrations in 7.5YR5/8
@ 65"	Bedrock

Series: Canton
Estimated seasonal high water table: 50"
Observed water: none
Restrictive layer: none
Bedrock: 65"
Soil Hydrologic Group B

Test Pit 2-7+00

00 - 32"	Dark brown (10YR4/3) fine sandy loam, disturbed; weak fine granular structure: moist, friable
32 - 37"	Yellowish brown (10YR5/6) shaly sandy loam; weak fine granular structure; moist, friable.
37 - 56"	Light olive brown (2.5Y5/4) and yellowish brown (10YR5/6) very channery and flaggy sand; many redox concentrations in 7.5YR5/8 and many redox depletions in 10YR6/1); single grain; moist, loose
@ 56"	Bedrock

Series: Acton
Estimated seasonal high water table: 37"
Observed water: none
Restrictive layer: none
Bedrock: 56"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-8+00

00 - 09"	Dark brown (10YR4/3) fine sandy loam fill; weak fine granular structure: moist, friable
09 - 26"	Light olive brown (2.5Y5/4) fine sandy loam; weak fine granular structure; moist, friable.
26 - 53"	Light olive brown (2.5Y5/4) very fine sandy loam; many redox concentrations and depletions in 7.5YR5/8 and 10YR6/1; massive structure; moist, friable.
53 - 65"	Yellowish brown (10YR5/6) and light olive brown (2.5Y5/4) sand; many redox concentrations and depletions as above; single grain; moist, loose.
@65"	Bedrock

Series: Acton
Estimated seasonal high water table: 26"
Observed water: 60"
Restrictive layer: none
Bedrock: 65"
Soil Hydrologic Group B

Test Pit 2-9+00

00 - 05"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 12"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
12 - 26"	Light olive brown (2.5Y5/4) sandy loam; weak fine granular structure; moist, friable
26 - 38"	Light olive brown (2.5Y5/4) loamy sand; weak fine granular structure; moist, friable.
38 - 50"	Light olive brown (2.5Y5/4) channery and flaggy loamy sand; many redox features in 7.5YR5/8 and 10YR6/1; weak medium granular structure; moist, friable
50 - 60"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8 and few redox depletions in 10YR6/1; moderate medium granular structure; moist, friable.

Series: Acton
Estimated seasonal high water table: 38"
Observed water: none
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-10+00

00 - 06" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
06 - 26" Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
26 - 58" Strong brown (7.5YR5/8) very channery and flaggy loamy sand; many redox features in 10YR4/1, 10YR6/1 and 2.5YR4/6; moderate medium granular structure; moist, friable
@58" Bedrock

Series: Acton
Estimated seasonal high water table: 26"
Observed water: 45"
Restrictive layer: none
Bedrock: 58"
Soil Hydrologic Group B

Road station 11+00 staked at culvert – no test pit

Test Pit 2-12+00

00 - 05" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 22" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
22 - 34" Yellowish brown (10YR5/6) extremely channery and flaggy sandy loam; weak fine granular structure; moist, friable
@ 34" Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 34"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-13+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 20"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
20 - 26"	Light olive brown (2.5Y5/4) sandy loam; weak fine granular structure; moist, friable
26 - 39"	Light olive brown (2.5Y5/4) sandy loam; few redox features in 7.5YR5/8 and 10YR6/1; weak fine granular structure; moist, friable
39 – 60"	Light olive brown (2.5Y5/4) sandy loam; many redox concentrations in 7.5YR5/8 and common features in 10YR5/6 and 10YR6/1; moderate medium platy structure; moist, firm

Series: Woodbridge
Estimated seasonal high water table: 26"
Observed water: none
Restrictive layer: 39"
Bedrock: none
Soil Hydrologic Group B

Test Pit 2-14+00

00 - 04"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 33"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
@ 33"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 33"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-15+00

00 - 04" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 20" Dark yellowish brown (10YR5/4) sandy loam; weak fine granular structure; moist, friable.
20 - 36" Yellowish brown (10YR5/6) extremely channery and flaggy sandy loam; moderate medium granular structure; moist, friable
@ 36" Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 36"
Soil Hydrologic Group B

Test Pit 2-16+00

00 - 03" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
03 - 31" Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
31 - 45" Light olive brown (2.5Y5/4) loamy sand; common redox features in 7.5YR5/8 and 10YR6/1; weak fine granular structure; moist, friable
45 - 60" Light olive brown (2.5Y5/4) loamy sand; many redox concentrations in 10YR5/6 and 7.5YR5/8; common redox depletions in 10YR6/1; weak fine granular structure; moist, friable

Note: partial Bx horizon at 45" on one pit face
Series: Acton
Estimated seasonal high water table: 31"
Observed water: none
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-17+00

00 - 04"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
04 - 18"	Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
18 - 36"	Light olive brown (2.5Y5/4) extremely shaly loamy sand; weak fine granular structure; moist, friable
36 - 60"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; common redox concentrations in 7.5YR5/8; weak medium granular structure; moist, friable

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group B

Test Pit 2-18+00

00 - 04"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
04 - 27"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
@ 27"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 27"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-19+00

00 - 04" Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
04 - 27" Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
@ 27" Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 27"
Soil Hydrologic Group B

Test Pit 2-20+00

00 - 03" Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
03 - 10" Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
@ 10" Bedrock

Series: Hollis
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 10"
Soil Hydrologic Group D

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 2-21+00

00 - 04" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 20" Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
20 - 24" Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable
@ 24" Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 24"
Soil Hydrologic Group C

Test Pit 2-22+00

00 - 04" Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
04 - 21" Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
21 - 40" Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; common redox features increasing with depth; weak medium granular structure; moist, friable
@40" Bedrock

Series: Tunbridge
Estimated seasonal high water table: 21"
Observed water: none
Restrictive layer: none
Bedrock: 40"
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit 104

00 - 06"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
06 - 34"	Yellowish brown (7.5YR5/8) channery and flaggy sandy loam; weak fine granular structure; moist, friable.
@ 34"	Bedrock

Series: Tunbridge
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 34"
Soil Hydrologic Group C

Test Pit SW 7

00 - 09"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
09 - 26"	Yellowish brown (10YR5/6) channery and flaggy sandy loam; weak fine granular structure; moist, friable.
26 - 46"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; weak fine granular structure; moist, friable
@ 46"	Bedrock

Series: Tunbridge, deep phase
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 46"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 04-17-24
Re-correlated on 02-03-25

Test Pit SW 8

00 - 05"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 16"	Strong brown (7.5YR5/8) channery and flaggy sandy loam; weak fine granular structure; moist, friable.
16 - 32"	Yellowish brown (10YR5/6) very channery and flaggy sandy loam; weak fine granular structure; moist, friable
32 – 58"	Light olive brown (2.5Y5/4) extremely channery and flaggy sandy loam; moderate medium granular structure; moist, friable
@58"	Bedrock

Series: Newfields
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 58"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit A

00 - 11"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
11 - 16"	Light olive brown (2.5Y5/6) fine sandy loam; weak fine granular structure; moist, friable.
16 - 26"	Light olive brown (2.5Y5/4) very fine sandy loam; common redox concentrations in 7.5YR5/8 and few depletions in 10YR6/1; massive structure; moist, friable.
26 - 36"	Olive gray (2.5Y5/2) very fine sandy loam; many redox concentrations and depletions as above; massive structure; moist, friable
36 – 49"	Yellowish brown (10YR5/6) loamy fine sand; many redox depletions in 10YR6/1; massive structure; moist, friable
49 – 60"	Olive gray (2.5Y5/2) silt loam; many redox concentrations in 7.5YR5/8 and few in 2.5YR4/6; few redox depletions in 10YR6/1; moderate medium blocky structure; moist, firm
60 – 72"	Yellowish brown (10YR5/6) loamy fine sand; few redox depletions in 10YR6/1; massive structure; moist, friable

Series: Swanton
Estimated seasonal high water table: 16"
Observed water: none
Restrictive layer: 49"
Soil Hydrologic Group C

Test Pit B

00 - 4"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
4 - 11"	Strong brown (2.5Y5/6) sandy loam; weak fine granular structure; moist, friable.
11 - 20"	Yellowish brown (10YR5/6) loamy fine sand; massive structure; moist, friable.
20 - 35"	Light olive brown (2.5Y5/4) very fine sandy loam; many redox concentrations in 7.5YR5/8 and many depletions in 10YR6/1; massive structure; moist, friable
35 – 55"	Olive gray (2.5Y5/2) silt loam; many redox concentrations in 7.5YR5/8 and few in 2.5YR4/6; few redox depletions in 10YR6/1; moderate medium blocky structure; moist, firm
60 – 72"	Yellowish brown (10YR5/6) loamy fine sand; few redox depletions in 10YR6/1; massive structure; moist, friable

Series: Swanton
Estimated seasonal high water table: 20"
Observed water: none
Restrictive layer: 35"
Bedrock: none
Soil Hydrologic Group C

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit C

00 - 05"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
05 - 31"	Strong brown (7.5YR5/8) loamy sand; weak fine granular structure; moist, friable.
31 - 60"	Light olive brown (2.5Y5/4) gravelly loamy sand; common redox depletions in 10YR6/1; moderate medium platy structure; moist, firm
60 – 72"	Yellowish brown (10YR5/6) gravelly sand; few redox depletions in 10YR6/1; single grain; moist, loose

Series: Acton
Estimated seasonal high water table: 31"
Observed water: none
Restrictive layer: 31"
Bedrock: none
Soil Hydrologic Group B

Test Pit D

00 - 07"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
07 - 18"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
18 - 40"	Yellowish brown (10YR4/6) gravelly loamy sand; moderate fine granular structure; moist, friable
40 – 64"	Yellowish brown (10YR5/6) sand; single grain; moist, loose
64 – 72"	Yellowish brown (10YR5/6) sand; few redox depletions; single grain; moist, loose

Series: Gloucester
Estimated seasonal high water table: 64"
Observed water: none
Restrictive layer: none
Bedrock: none
Soil Hydrologic Group A

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit E

00 - 05"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 48"	Yellowish brown (10YR5/6) very channery and flaggy sandy loam; weak fine granular structure; moist, friable.
@48"	Bedrock

Note: Description is the pit face at the grade stake. At 10' upslope, bedrock is at 24" (Tunbridge soil)

Series: Charlton
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock: 48"
Soil Hydrologic Group B

Test Pit F

00 - 05"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
05 - 19"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
19 - 36"	Yellowish brown (10YR5/6) gravelly loamy sand; moderate medium granular structure; moist, friable
36 - 51"	Light olive brown (2.5Y5/4) channery and flaggy sandy loam; common redox features in 7.5YR5/8 and 10YR6/1; moderate medium granular structure; moist, friable
@ 51"	Bedrock

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Bedrock: 51"
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Tolend Road
Dover NH
Described: 01-29-2025

Test Pit G

00 - 05"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
05 - 15"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
15 - 36"	Yellowish brown (10YR5/6) channery and flaggy sandy loam; moderate medium granular structure; moist, friable
36 - 62"	Light olive brown (2.5Y5/4) very channery and flaggy sandy loam; common redox features in 7.5YR5/8 and 10YR6/1; moderate medium granular structure; moist, friable
@ 62"	Bedrock

Series: Newfields
Estimated seasonal high water table: 36"
Observed water: none
Restrictive layer: none
Bedrock: 36"
Soil Hydrologic Group B

Test Pit H

00 - 04"	Dark brown (10YR4/3) sandy loam; weak fine granular structure: moist, friable
04 - 18"	Strong brown (7.5YR5/8) sandy loam; weak fine granular structure; moist, friable.
18 - 39"	Light olive brown (2.5Y5/4) channery and flaggy fine sandy loam; weak fine granular structure; moist, friable
39 - 60"	Light olive brown (2.5Y5/4) very channery and flaggy loamy sand; many redox concentrations in 10YR5/6 and 7.5YR5/8; few redox depletions in 10YR6/1; moderate medium granular structure; moist, friable

Series: Acton
Estimated seasonal high water table: 39"
Observed water: none
Restrictive layer: none
Bedrock: 60
Soil Hydrologic Group B

Test Pit Descriptions

Ambrose Property
Toilend Road
Dover NH
Described: 02/13/2025

Test pits to classify soil series and drainage class only or
to determine depth to bedrock.

Test Pit 201 to determine drainage class & depth to clayey subsoil

00 - 08"	Dark brown (10YR4/3) very fine sandy loam; massive structure; moist, friable
08- 19"	Light olive brown (2.5Y5/4) fine sandy loam; many redox features; weak fine granular structure; moist, friable
19 - 30"	Olive gray (2.5Y5/2) silty clay loam; strong medium blocky structure; moist, very firm

Series: Swanton, somewhat poorly drained
Estimated seasonal high water table: 8"
Observed water: none
Restrictive layer: 19"
Soil Hydrologic Group D

Test Pit 202 to determine depth to bedrock & seasonal high water table

00 - 09"	Dark brown (10YR4/3) fine sandy loam; massive structure; moist, friable
09- 60"	Shaly to extremely channery and flaggy sandy loam; no redox features
@ 60"	Bedrock

Series: Charlton
Estimated seasonal high water table: none to 60"
Observed water: none
Restrictive layer: none
Soil Hydrologic Group: A

Test Pit Descriptions

Ambrose Property
Toilend Road
Dover NH
Described: 02/13/2025

Test Pit 203 to determine drainage class & depth to clayey subsoil

00 - 09"	Dark brown (10YR4/3) very fine sandy loam; few redox features below 5"; massive structure; moist, friable
09- 19"	Light olive brown (2.5Y5/4) fine sandy loam; many redox features; weak fine granular structure; moist, friable
19 - 30"	Light olive brown (2.5Y5/4) loamy sand; many redox features; weak fine granular structure; moist, friable
@ 30"	Olive gray (2.5Y5/2) silty clay loam; strong medium blocky structure; moist, very firm

Series: Swanton, poorly drained
Estimated seasonal high water table: 5"
Observed water: none
Restrictive layer: 30"
Soil Hydrologic Group D

Test Pit 204 to determine drainage class & depth to clayey subsoil

00 - 04"	Black (5YR2.5/1) mucky peat
05- 18"	Light olive brown (2.5Y5/4) loamy sand; many redox features; weak fine granular structure; moist, friable
@ 30"	Olive gray (2.5Y5/2) silty clay loam; strong medium blocky structure; moist, very firm

Series: Swanton, poorly drained
Estimated seasonal high water table: 0"
Observed water: 18"
Restrictive layer: 18"
Soil Hydrologic Group D

Test Pit Descriptions

Ambrose Property
Toilend Road
Dover NH
Described: 02/13/2025

Test Pit 205 to establish 4K area for subsurface wastewater disposal

00 - 07"	Dark brown (10YR4/3) fine sandy loam; weak fine granular structure: moist, friable
07 - 27"	Yellowish brown (10YR5/6) sandy loam; weak fine granular structure; moist, friable.
27 - 39"	Light yellowish brown (10YR6/4) loamy sand; many redox concentrations in 7.5YR5/8; common redox depletions in 10YR6/1; weak fine granular structure; moist, friable
39 - 66"	Light olive brown (2.5Y5/4) very channery and flaggy loamy sand; many redox concentrations in 7.5YR5/8; common redox depletions in 10YR6/1; weak fine granular structure; moist, friable.

Series: Newfields

Estimated seasonal high water table: 27"

Observed water: none

Restrictive layer: none

Bedrock: none

Soil Hydrologic Group C

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
Action	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 & phyllite	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
Chatham Var.	289	0.6	6.0	0.60	6.0	B	3	Loose till, bedrock	mesic	loamy	no	mwd to swp/d
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					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	C	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
Hernon	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	channeery 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, ^{reg}	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	20.00	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
Medonak	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	gravely 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
Millisite	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	loamy over sandy, sandy-skeletal	yes	gravely 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
Mooslauke	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	gravely 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 & phyllite	frigid	loamy	no	organic over loam
Peml	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	
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 mineral)	crvic	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	crvic	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	gravely sand in 2C
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Sctuate	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	gravely coarse sand
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	crvic	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

Sorted by Soil Series
K_{sat} B and C horizons
SSSNNE special pub no. 5

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 dystrupt
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	crvic	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	Frable 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	loamy over slate gravel
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	
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	Frable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Winooski	9	0.6	6.0	0.60	6.0	B	4	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	Average percent impervious area ²	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP			
		A	B	C	D
<u>FULLY DEVELOPED URBAN AREAS¹ (Vegetation Established)</u>					
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. Streets and roads; paved with curbs and storm sewers		98	98	98	98
gravel		98	98	98	98
dirt		76	85	89	91
paved with open ditches		72	82	87	89
		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
<u>DEVELOPING URBAN AREAS³ (No vegetation Established)</u>					
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.

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		Hydrologic condition ⁴	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP			
Cover type and hydrologic condition			A	B	C	D
			<u>CULTIVATED AGRICULTURAL LAND</u>			
Fallow	Bare soil					
	Crop residue cover (CR)	poor good	77 76 74	86 85 83	91 90 88	94 93 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
Small grain	C&T & CR	poor	65	73	79	81
	C&T & CR	good	61	70	77	80
	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
Close-seeded Legumes or Rotation Meadow ⁵	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
	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.

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.

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

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

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

Appendix C: Manning's Number Table

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	0.016	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	0.013
2. Rough	0.016	0.016	0.016
j. Vegetal lining	0.030		0.500

This table reprinted from OPEN CHANNEL HYDRAULICS by Ven Te Chow, Copyright 1959 by McGraw-Hill, with the permission of the publisher.

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
VALUES OF THE ROUGHNESS COEFFICIENT n (continued)			
Type of channel and description	Minimum	Normal	Maximum
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

This table reprinted from OPEN CHANNEL HYDRAULICS by Ven Te Chow, Copyright 1959 by McGraw-Hill, with the permission of the publisher.

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	1.82	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	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	1.89	1.90	1.88	1.88	1.90		
40		1.76	1.92	1.98	2.06	2.04	2.04		
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							

Reprinted from PRACTICAL HYDRAULICS by Andrew L. Simon, Copyright 1981 by John Wiley & Sons with the permission of the publisher.

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.

This table reprinted from the CONCRETE PIPE HANDBOOK, Copyright 1981 by the American Concrete Pipe Association, with the permission of the publisher.

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

Copyright © 2011 HydroCAD Software Solutions LLC. All rights reserved.

HydroCAD[®] is a registered trademark of HydroCAD Software Solutions LLC.
Other trademarks are the property of their respective owners.

HydroCAD Software Solutions LLC
P.O. Box 477
Chocorua, NH 03817

1-800-927-7246
Tel: (603) 323-8666
Fax: (603) 323-7467

www.hydrocad.net

ISBN 978-0-913633-15-1

AMBROSE WOODS

Stormwater Management, Inspection & Maintenance Plan

210 Tolend Road & Emerald Lane
Dover, New Hampshire

March 2025

Prepared for: 210 Tolend Road, LLC
42 J Dover Point Road
Dover, New Hampshire 03820

Contact: John O'Neill
Johnoneill.nh@gmail.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 Ambrose Woods, located on southern side of Tolend Road, Dover, New Hampshire. The intent of this plan is to provide 210 Tolend Road, LLC 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, 210 Tolend Road LLC, 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.

210 Tolend Road LLC, 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 Ambrose Property 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 roofs, paved areas and lawns and infiltrate stormwater back into the water table. Stormwater is collected in a catch basins before being routed to Sediment Forebays for pretreatment and Bioretention areas for treatment and infiltration.

Sediment Forebays

The sediment forebay is designed to remove particular pollutants from the runoff from the roadway and driveways. The flow velocity is decreased and the time of concentration (flow time) is increased. The slowing down of the stormwater runoff allows sediments to "fall out" of their entrainment, thereby removing the sediment from the runoff.

Bioretention Basins

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

Inspection & Maintenance Plan

By implementing the following procedures, 210 Tolend Road, LLC 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.
Bioretention Basins and Forebays:	Inspect detention basins twice annually for floatables and remove as required. Inspect forebays, detention basins, outlet structures, and outlet weirs 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 210 Tolend Road, LLC for the inspection and maintenance of the Ambrose Property 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.

Woody Plants	Method of Reproducing	Methods of Disposal
Norway maple <i>(Acer platanoides)</i> European barberry <i>(Berberis vulgaris)</i> Japanese barberry <i>(Berberis thunbergii)</i> autumn olive <i>(Elaeagnus umbellata)</i> burning bush <i>(Euonymus alatus)</i> Morrow's honeysuckle <i>(Lonicera morrowii)</i> Tatarian honeysuckle <i>(Lonicera tatarica)</i> showy bush honeysuckle <i>(Lonicera x bella)</i> common buckthorn <i>(Rhamnus cathartica)</i> glossy buckthorn <i>(Frangula alnus)</i>	Fruit and Seeds 	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.
		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.
oriental bittersweet <i>(Celastrus orbiculatus)</i> multiflora rose <i>(Rosa multiflora)</i>	Fruits, Seeds, Plant Fragments	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.
		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.

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard (<i>Alliaria petiolata</i>) spotted knapweed (<i>Centaurea maculosa</i>) ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort (<i>Cynanchum nigrum</i>) ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort (<i>Cynanchum rossicum</i>) giant hogweed (<i>Heracleum mantegazzianum</i>) ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket (<i>Hesperis matronalis</i>) perennial pepperweed (<i>Lepidium latifolium</i>) purple loosestrife (<i>Lythrum salicaria</i>) Japanese stilt grass (<i>Microstegium vimineum</i>) mile-a-minute weed (<i>Polygonum perfoliatum</i>)	Fruits and Seeds 	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. 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.
common reed (<i>Phragmites australis</i>) Japanese knotweed (<i>Polygonum cuspidatum</i>) Bohemian knotweed (<i>Polygonum x bohemicum</i>)	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.	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.

Stormwater Management System

Inspection & Maintenance Checklist

AMBROSE WOODS

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	Check for sediment accumulation in sump and on sock.	≥ 2 ft. sediment depth.
Drainage Pipes	1 time per month	Check for floatable contaminants.	≥ 3 in. floatable depth.
	1 time per 2 years	Check for sediment accumulation/clogging.	≥ 2 in. sediment depth.
Forebays & Bioretention Systems	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

Inspection & Maintenance Log

[illegible]

Stormwater Management System

Deicing Log

AMBROSE WOODS

[illegible]

CERTIFICATE OF UNDERSTANDING

Stormwater Management, Inspection & Maintenance Plan

Project: Ambrose Woods
210 Tolend Road & Emerald Lane
Dover, New Hampshire
March 2025

Owner: 210 Tolend Road, LLC
42 J Dover Point Road
Dover, New Hampshire 03820

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

Project Reference Plans:

Open Space Subdivision Plans for:
Ambrose Woods
210 Tolend Road
Dover, New Hampshire
Dated March 6, 2025

Specifically:

T-1, T-2, SN-1, EX-1, Y-1, S-1 thru S-6, SSS-1, SP-1 thru SP-13, C-1 thru C-1e, LA-1, LA-2, TR-1 & SD-1.

Project Drainage Analysis References:

Stormwater Analysis & Erosion and Sediment Control Plan Narrative for:
Ambrose Woods
210 Tolend Road & Emerald Lane
Dover, New Hampshire
Dated March 2025

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

Conditional Use Permit was granted by the Somersworth Planning Board Pending

Alteration of Terrain Permit was granted by NHDES Pending

I, John O'Neill, 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).

John O'Neill, Owner

Date

OPEN SPACE SUBDIVISION PLANS

AMBROSE WOODS

210 TOLEND ROAD & EMERALD LANE
DOVER, NEW HAMPSHIRE

LIST OF PLANS

- T-1 - TITLE SHEET

T-2 - NEIGHBORHOOD PLAN

SN-1 - STANDARD NOTES PLAN

EX-1 - EXISTING CONDITIONS PLAN (1"=100')

Y-1 - YIELD PLAN (1"=100')

S-1 - OPEN SPACE SUBDIVISION PLAN (1"=100')

S-2 - OPEN SPACE SUBDIVISION PLAN (1"=50')

S-3 - OPEN SPACE SUBDIVISION PLAN (1"=50')

S-4 - OPEN SPACE SUBDIVISION PLAN (1"=50')

S-5 - OPEN SPACE SUBDIVISION PLAN (1"=50')

S-6 - NHDES SUBDIVISION PLAN (1"=60')

SSS-1 - SITE SPECIFIC SOILS PLAN (1"=100')

SP-1 - GENERAL SITE PLAN (1"=40')

SP-1a - GENERAL SITE PLAN (1"=20')

SP-2 - SITE UTILITY PLAN (1"=40')

SP-2a - SITE UTILITY PLAN (1"=20')

SP-2b - SITE UTILITY PLAN (1"=20')

SP-2c - SITE UTILITY PLAN (1"=20')

SP-2d - SITE UTILITY PLAN (1"=20')

SP-3 - GRADING AND DRAINAGE PLAN (1"=40')

SP-3a - GRADING AND DRAINAGE PLAN (1"=20')

SP-3b - GRADING AND DRAINAGE PLAN (1"=20')
- SP-3c - GRADING AND DRAINAGE PLAN (1"=20')

SP-3d - GRADING AND DRAINAGE PLAN (1"=20')

SP-4 - BIORETENSION DETAILS (BIO #1)

SP-5 - BIORETENSION DETAILS (BIO #2 & BIO #3)

SP-6 - BIORETENSION DETAILS (BIO #4)

SP-7 - CONSTRUCTION DETAILS

SP-8 - CONSTRUCTION DETAILS

SP-9 - CONSTRUCTION DETAILS

SP-10 - CONSTRUCTION DETAILS

SP-11 - CONSTRUCTION DETAILS

SP-12 - SEWER DETAILS

SP-13 - SEWER DETAILS

C-1 - ROADWAY LAYOUT PLAN (1"=40')

C-1a - ROAD PLAN AND PROFILE (STA 0+00 TO 5+00) (1"=20')

C-1b - ROAD PLAN AND PROFILE (STA 5+00 TO 10+00) (1"=20')

C-1c - ROAD PLAN AND PROFILE (STA 10+00 TO 14+00) (1"=20')

C-1d - ROAD PLAN AND PROFILE (STA 14+00 TO END) (1"=20')

C-1e - ROAD PLAN AND PROFILE (X-COUNTRY SEWER) (1"=20')

La-1 - LANDSCAPE PLAN

La-2 - LANDSCAPE DETAILS

TR-1 - FIRE TRUCK TURNING PLAN

SD-1 - SITE DISTANCE PLAN (1"=20')

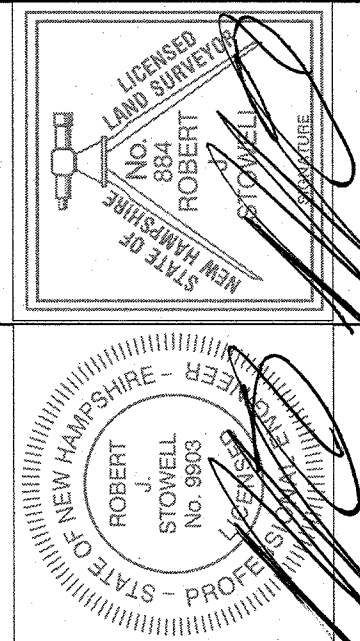
OWNER / APPLICANT 210 TOLEND ROAD LLC. 42 J DOVER POINT ROAD DOVER, NEW HAMPSHIRE	CIVIL ENGINEER - SURVEYOR TRITECH ENGINEERING CORPORATION 755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE	WETLAND & SOIL SCIENTIST HIGHLAND SOILS SERVICES 75 PROSPECT STREET SOMERSWORTH, NEW HAMPSHIRE	LANDSCAPE ARCHITECT TERRAIN PLANNING & DESIGN LLC 31 EAST 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 8707
FAX 603 742 9630

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



TITLE SHEET

AMBROSE WOODS

TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

SHEET No.

T-1



SHEET No.

T-2

NEIGHBORHOOD PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 2318
SCALE: 1" = 200'

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:

TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

DOVER SITE PLAN REVIEW NOTES:

1. PLAN INTENT: To subdivide Dover Tax Map F Lot 3 under the City of Dover open space subdivision regulations. Specifically, we propose to create 5 fee simple lots; Lot 3 contains the existing single family home and is 26,295 acres. Lot 3-1 is proposed as an R-40 building lot and has 3,080 acres. Both Lots 3 & 3-1 will use the existing driveway to access Tolend Road and will be serviced by municipal water and on-site septic. Lot 3-OPN is proposed as part of the City of Dover open space requirements. This lot will be jointly owned by lots 3 & 3-1 and protected under a conservation easement. This open space lot will only be for the benefit of Lots 3 & 3-1 and will allow for certain uses described in the HOA documents. Lot 3-2-OPN is proposed as the balance of the City of Dover open space requirement. This lot will be owned by the HOA and protected by a conservation easement. This lot will be for the benefit of all HOA members. Lot 3-2 will be developed with 29 cluster units and includes the construction of an 1816 foot roadway with associated infrastructure with access to Emerald Lane. This roadway is proposed as a private road and does not meet the City of Dover public roadway standards as shown. The proposed Open Space (3-OPN & 3-2-OPN) contains adequate open space for the development of 31 units (Lot 3, 3-1 & 29 Units on 3-2).
2. OWNERS OF RECORD: 210 TOLEND ROAD, LLC
42 J DOVER POINT ROAD
DOVER, N.H. 03820
3. THE PARCEL IS SHOWN AS: LOT 3, MAP F OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL CONTAINS 55.698 ACRES (2,426,198 SQ. FT.) OF LAND. ____ ACRES ARE CURRENTLY IN CURRENT USE.
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5166, PAGE NO. 26.
6. REFERENCE PLANS:
SUBDIVISION PLAN, INDIAN RIDGE, EMERALD LANE, DOVER, NEW HAMPSHIRE, TRITECH ENGINEERING CORPORATION, AUG. 28, 2014, SCRD: #110-70
BOUNDARY PLAN, LAND OF LIONEL & KRISTINA PARADIS, TOLEND ROAD, DOVER, N.H., TAX MAP F LOT 2, BERRY SURVEYING, JULY 23, 2012, SCRD #104-61
PLAN OF ALTERNATIVE DESIGN SUBDIVISION, LITTLEWORTH RD., DOVER, N.H., FOR EZRA GREEN'S FARM LLC., NORWAY PLAINS ASSOCIATES, INC., MARCH 2000, SCRD 58-49
PLAN OF LAND CARLTON W. HAM, DOVER, N.H., FREDERICK E. DREW, SEPT. 1991. SCRD 40-47, BERRY SURVEYING
PLAN OF SUBDIVISION, FOR ELLIOTT BERKOWITZ, TOLEND ROAD, DOVER, NEW HAMPSHIRE, MOORE & STAPLES. OCT. 1986, SCRD 30-62
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-40
SUB-DISTRICT: NONE
ZONING OVERLAY DISTRICTS: WETLAND PROTECTION AND SECONDARY GROUNDWATER PROTECTION
DIMENSIONAL REQUIREMENTS:
REQUIRED: PROVIDED:
MINIMUM LOT SIZE: 40,000 SQ. FT. 40,000 SQ. FT.
MINIMUM LOT FRONTAGE: 150 FT. 150 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:
FRONT 40 FT. 40 FT.
SIDE 25 FT. 25 FT.
REAR 15 FT. 15 FT.
ABUT-A-STREET 40 FT. 40 FT.
MAXIMUM/MINIMUM LOT COVERAGE 10% 10%
MINIMUM/MAXIMUM BLDG. HEIGHT 35 FT. 35 FT.
9. OFF STREET PARKING REQUIREMENTS:
MAXIMUM: PROVIDED:
PARKING DIMENSIONS: 9'x18' 9'x18'
AISLE DIMENSIONS: 24' 24'
MAXIMUM PARKING ALLOWED
ACCESSIBLE PARKING:
10. SEE SHEET Y-1 FOR UNIT CALCULATION THAT DETERMINES THE MAXIMUM NUMBER OF OPEN SPACE UNITS.
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 DURING OCTOBER 2023, WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
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 NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C 0310E, EFFECTIVE DATE: SEPTEMBER 30, 2015.
16. TOPOGRAPHIC SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION DURING OCTOBER 2023.
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 AUGUST, 2023.
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 PRIVATE INDIVIDUAL SEWAGE DISPOSAL SYSTEM.
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, SATURDAY, 9 AM- 4 PM. 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 ON-LINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. [HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP](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 PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM, AS 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
	TEST PIT
	EXISTING STREET LIGHT
	EXISTING STONEWALL
	EXISTING 2 FT CONTOUR
	EXISTING 10 FT CONTOUR
	EXISTING GAS LINE
	EXISTING WATER LINE OR SERVICE
	EXISTING WATER SHUTOFF
	EXISTING WATER GATE VALVE
	PROPOSED PROPERTY LINE
	PROPOSED EDGE OF PAVEMENT
	PROPOSED EDGE OF GRAVEL
	PROPOSED CONTOUR
	PROPOSED HYDRANT
	PROPOSED END CAP WITH THRUST BLOCK
	PROPOSED WATER GATE VALVE
	PROPOSED WATER SHUTOFF
	PROPOSED WATER LINE OR SERVICE
	PROPOSED VINYL STOCKADE FENCE
	PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
	PROPOSED OVERHEAD ELECTRIC & TELEPHONE
	PROPOSED ELECTRICAL TRANSFORMER
	PROPOSED ELECTRICAL JUNCTION BOX
	PROPOSED STREET LIGHT
	PROPOSED UTILITY POLE
	PROPOSED DRAIN LINE
	PROPOSED CATCH BASIN
	PROPOSED DRAIN MANHOLE
	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

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	DATE:	DESCRIPTION:

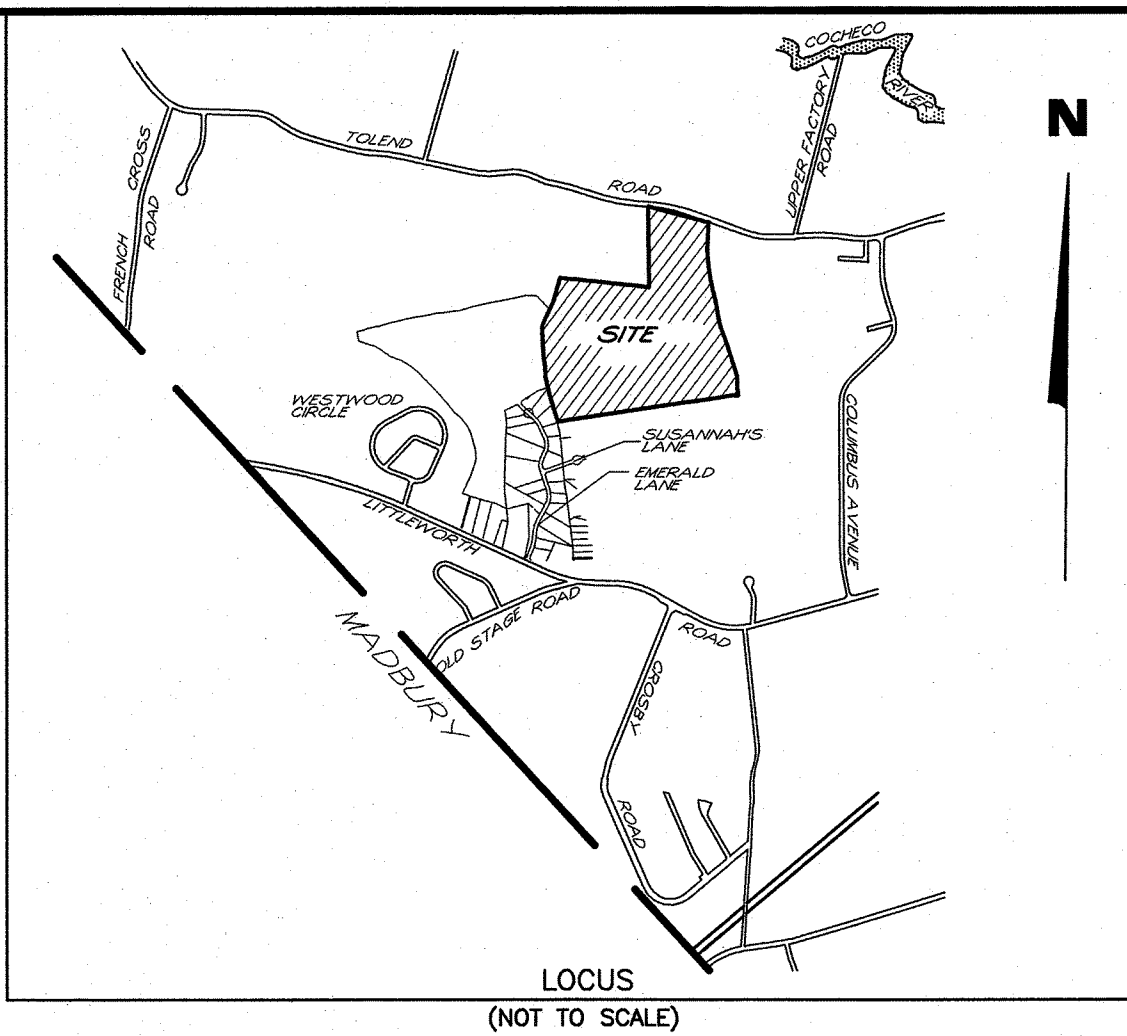
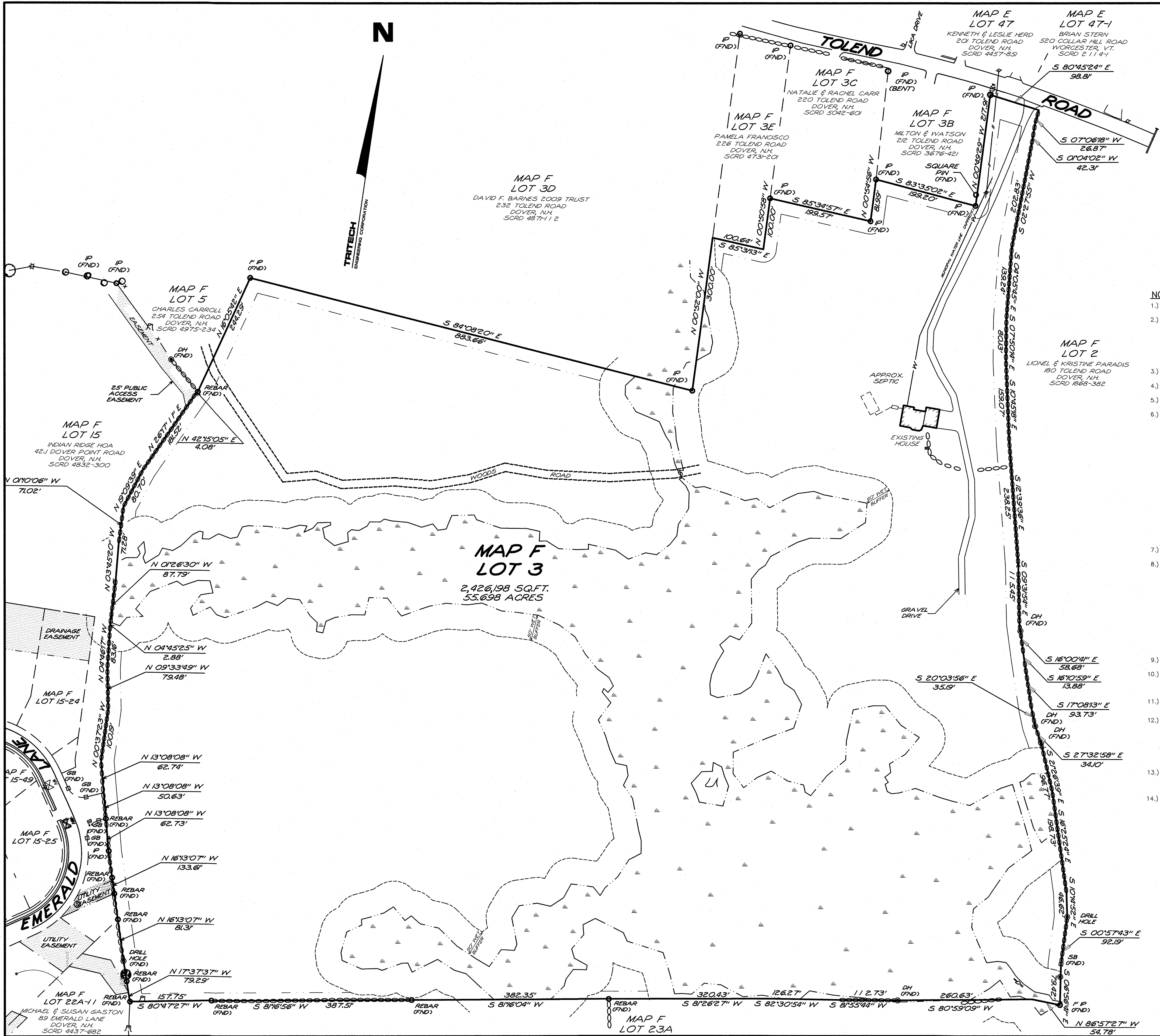
STANDARD NOTES
AMBROSE WOODS

TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

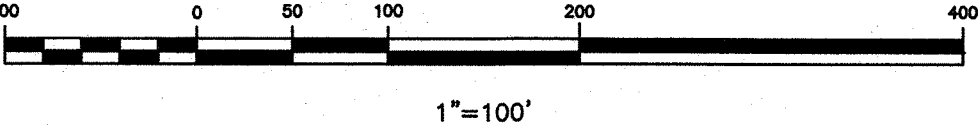
MARCH 6, 2025
JOB No. 23118

SHEET No.

SN-1



- NOTES**
- INTENT: TO SHOW THE EXISTING CONDITIONS OF DOVER TAX MAP F LOT 3.
 - CURRENT OWNER OF RECORD: 210 TOLEND ROAD LLC, 42 J DOVER POINT ROAD, DOVER, NEW HAMPSHIRE
 - TAX MAP F LOT 3.
 - TOTAL LOT AREA: 2,426,198 SQ.FT. — 55.698 ACRES
 - PROJECT DEED REFERENCE: BOOK 5166 PAGE 26
 - PROJECT PLAN REFERENCE: SUBDIVISION PLAN
INDIAN RIDGE EMERALD LANE DOVER, NH
TRITECH ENGINEERING CORPORATION
AUG. 28, 2014 SCRD: #110-70
PLAN OF LAND LIONEL & KRISTINA PARADIS DOVER, N.H. TAX MAP F LOT 2 BERRY SURVEYING JULY 23, 2012 SCRD #104-61
PLAN OF ALTERNATIVE DESIGN SUBDIVISION LITTLEWORTH RD. DOVER, N.H. FOR EZRA GREEN'S FARM LLC. NORWAY PLAINS ASSOCIATES, INC. MARCH 2000 SCRD 59-48
PLAN OF LAND CARLTON W. HAM DOVER, N.H. FREDERICK E. DREW SEPT. 1991 SCRD 40-47
PLAN OF SUBDIVISION FOR ELLIOTT BERKOWITZ TOLEND ROAD DOVER, NEW HAMPSHIRE K.E. MOORE & B.G. STAPLES OCT. 1986 SCRD 30-62
 - PROPERTY IS SUBJECT TO NET&T EASEMENT DESCRIBED IN BOOK 506 PAGE 14.
 - ZONING: R-40 OPEN SPACE SUBDIVISION
MIN. LOT SIZE: 40,000 SQ.FT. MIN. FRONTAGE: 150 FT. MIN. SETBACKS: 40 FT. FRONT: 40 FT. SIDE: 25 FT. REAR: 15 FT.
R-40 OPEN SPACE SUBDIVISION
MIN. LOT SIZE: 20,000 SQ.FT. MIN. FRONTAGE: 40 FT. MIN. SETBACKS: 40 FT. FRONT: 20 FT. SIDE: 20 FT. REAR: 20 FT. EXTERNAL BOUNDARIES: 50 FT. EXISTING BUILDINGS: 100 FT.
 - IN ADDITION TO R-40, THIS PROPERTY FALLS WITHIN SEVERAL ZONING OVERLAY DISTRICTS:
— WETLANDS PROTECTION DISTRICT
— SECONDARY GROUND WATER PROTECTION DISTRICT
 - VARIANCES, SPECIAL EXCEPTIONS OR CONDITIONAL USE PERMITS GRANTED: NONE
 - 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 OCTOBER, 2023.
 - SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD. FIRM PANEL NO. 33017C 0310E, OCTOBER 30, 2015.
 - DURING AUGUST 2013, HIGHLAND SOILS CONDUCTED AN ON-SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE IDENTIFIED 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.
 - BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON AUGUST 29, 2023 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON AUGUST 31, 2023. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (NAVD 88).
 - PLANS RECORDED IN SCRD #104-61 AND #40-47 BOTH SHOW AN APPROXIMATE LOCATION OF AN EARLY SETTLERS GRAVE AREA LOCATED ON MAP F LOT 2, ALONG THE COMMON BOUNDARY LINE BETWEEN MAP F LOT 2 AND MAP F LOT 3.



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

EXISTING CONDITIONS PLAN
210 TOLEND ROAD LLC.
TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 100'

SHEET No.

EX-1

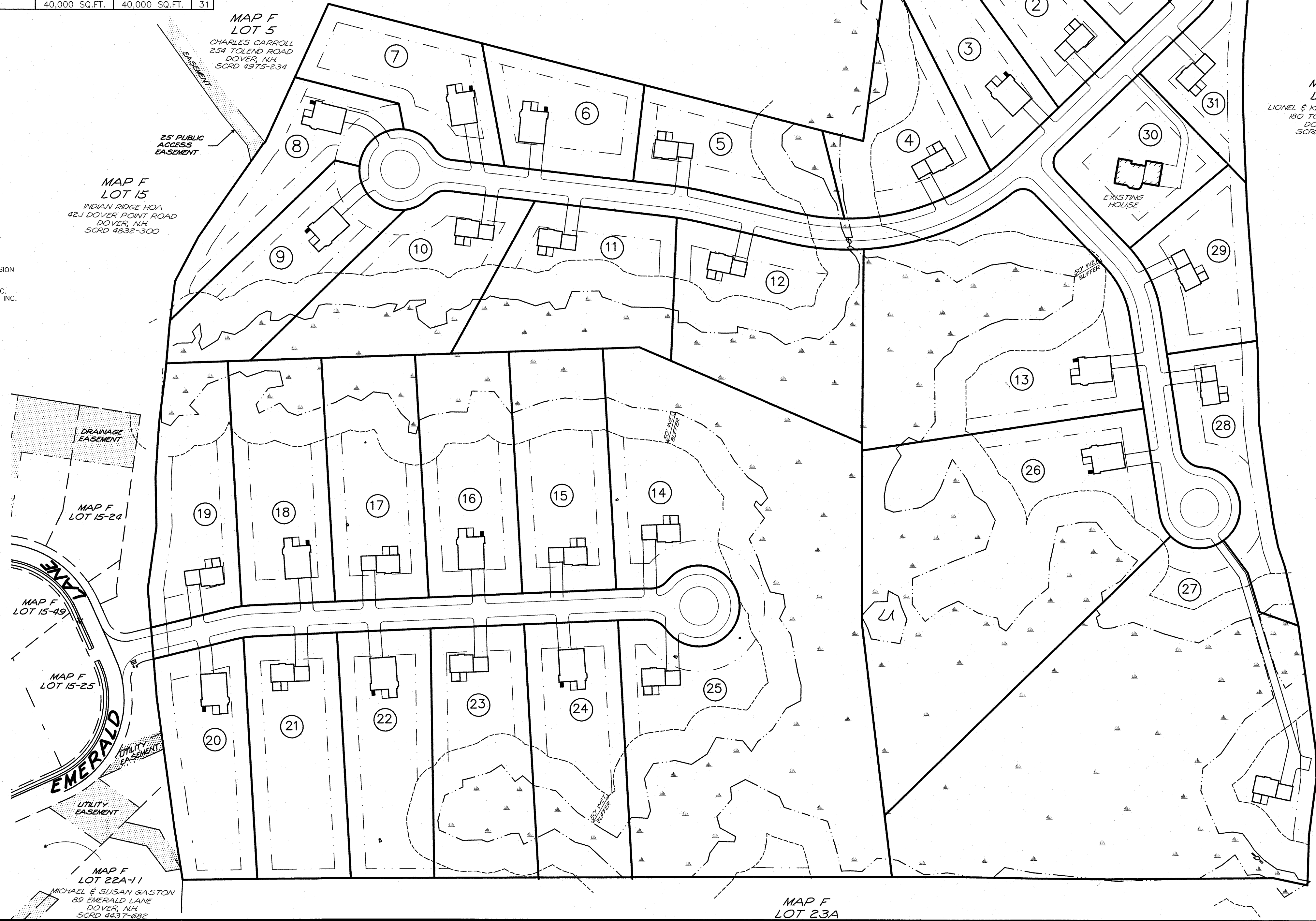
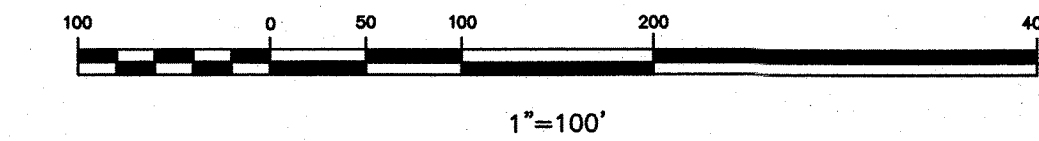
REVISIONS
DATE: DESCRIPTION:

755 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03800
TELEPHONE 603 742 8107
FAX 603 742 9830

YIELD CHART		FRONTAGE		USEABLE		NON-BUFFER		NET AREA		LOT	
LOT	TOTAL AREA	WETLAND	UPLAND AREA	FRONTAGE	BUFFER	BUFFER	NON-BUFFER	NET AREA	LOT	FRONTAGE	NET AREA
1	40,000 SQ.FT.	0	40,000 SQ.FT.	249'	0	0	40,000 SQ.FT.	40,000 SQ.FT.	1	249'	40,000 SQ.FT.
2	40,000 SQ.FT.	0	40,000 SQ.FT.	150'	0	0	40,000 SQ.FT.	40,000 SQ.FT.	2	150'	40,000 SQ.FT.
3	40,000 SQ.FT.	0	40,000 SQ.FT.	150'	132 SQ.FT.	132 SQ.FT.	39,868 SQ.FT.	40,000 SQ.FT.	3	150'	40,000 SQ.FT.
4	50,630 SQ.FT.	3,790 SQ.FT.	46,840 SQ.FT.	270'	18,400 SQ.FT.	16,000 SQ.FT.	28,444 SQ.FT.	44,444 SQ.FT.	4	270'	44,444 SQ.FT.
5	45,440 SQ.FT.	5,416 SQ.FT.	40,024 SQ.FT.	350'	10,206 SQ.FT.	29,818 SQ.FT.	29,818 SQ.FT.	40,024 SQ.FT.	5	350'	40,024 SQ.FT.
6	40,000 SQ.FT.	0	40,000 SQ.FT.	235'	0	0	40,000 SQ.FT.	40,000 SQ.FT.	6	235'	40,000 SQ.FT.
7	46,530 SQ.FT.	0	46,530 SQ.FT.	179'	0	0	46,530 SQ.FT.	46,530 SQ.FT.	7	179'	46,530 SQ.FT.
8	42,650 SQ.FT.	0	42,650 SQ.FT.	150'	775 SQ.FT.	775 SQ.FT.	41,875 SQ.FT.	42,650 SQ.FT.	8	150'	42,650 SQ.FT.
9	52,150 SQ.FT.	7,815 SQ.FT.	44,335 SQ.FT.	150'	14,400 SQ.FT.	14,400 SQ.FT.	29,900 SQ.FT.	44,335 SQ.FT.	9	150'	44,335 SQ.FT.
10	84,285 SQ.FT.	22,250 SQ.FT.	62,035 SQ.FT.	215'	16,000 SQ.FT.	16,000 SQ.FT.	25,750 SQ.FT.	41,750 SQ.FT.	10	215'	41,750 SQ.FT.
11	66,400 SQ.FT.	26,135 SQ.FT.	40,265 SQ.FT.	227'	15,715 SQ.FT.	15,715 SQ.FT.	24,600 SQ.FT.	40,265 SQ.FT.	11	227'	40,265 SQ.FT.
12	80,620 SQ.FT.	36,700 SQ.FT.	43,920 SQ.FT.	300'	19,800 SQ.FT.	16,000 SQ.FT.	24,060 SQ.FT.	40,060 SQ.FT.	12	300'	40,060 SQ.FT.
13	137,810 SQ.FT.	52,864 SQ.FT.	84,946 SQ.FT.	694'	37,924 SQ.FT.	16,000 SQ.FT.	46,927 SQ.FT.	62,927 SQ.FT.	13	694'	62,927 SQ.FT.
14	135,440 SQ.FT.	74,125 SQ.FT.	61,315 SQ.FT.	250'	24,675 SQ.FT.	16,000 SQ.FT.	36,420 SQ.FT.	52,420 SQ.FT.	14	250'	52,420 SQ.FT.
15	71,192 SQ.FT.	17,540 SQ.FT.	53,652 SQ.FT.	190'	29,540 SQ.FT.	16,000 SQ.FT.	24,105 SQ.FT.	40,105 SQ.FT.	15	190'	40,105 SQ.FT.
16	40,600 SQ.FT.	0	40,600 SQ.FT.	150'	0	0	40,600 SQ.FT.	40,600 SQ.FT.	16	150'	40,600 SQ.FT.
17	40,300 SQ.FT.	0	40,300 SQ.FT.	150'	0	0	40,300 SQ.FT.	40,300 SQ.FT.	17	150'	40,300 SQ.FT.
18	41,017 SQ.FT.	0	41,017 SQ.FT.	380'	315 SQ.FT.	315 SQ.FT.	40,700 SQ.FT.	41,015 SQ.FT.	18	380'	41,015 SQ.FT.
19	40,000 SQ.FT.	0	40,000 SQ.FT.	150'	0	0	40,000 SQ.FT.	40,000 SQ.FT.	19	150'	40,000 SQ.FT.
20	40,185 SQ.FT.	0	40,185 SQ.FT.	1575'	0	0	40,185 SQ.FT.	40,185 SQ.FT.	20	1575'	40,185 SQ.FT.
21	51,500 SQ.FT.	6,450 SQ.FT.	45,050 SQ.FT.	150'	8,450 SQ.FT.	8,450 SQ.FT.	36,000 SQ.FT.	44,450 SQ.FT.	21	150'	44,450 SQ.FT.
22	58,850 SQ.FT.	8,400 SQ.FT.	50,450 SQ.FT.	150'	11,600 SQ.FT.	11,600 SQ.FT.	38,850 SQ.FT.	50,450 SQ.FT.	22	150'	50,450 SQ.FT.
23	58,600 SQ.FT.	11,400 SQ.FT.	47,200 SQ.FT.	150'	9,916 SQ.FT.	9,916 SQ.FT.	37,285 SQ.FT.	47,181 SQ.FT.	23	150'	47,181 SQ.FT.
24	58,400 SQ.FT.	12,740 SQ.FT.	45,660 SQ.FT.	150'	9,730 SQ.FT.	9,730 SQ.FT.	35,925 SQ.FT.	45,655 SQ.FT.	24	150'	45,655 SQ.FT.
25	163,000 SQ.FT.	81,350 SQ.FT.	81,650 SQ.FT.	240'	44,265 SQ.FT.	16,000 SQ.FT.	37,385 SQ.FT.	53,385 SQ.FT.	25	240'	53,385 SQ.FT.
26	193,538 SQ.FT.	103,708 SQ.FT.	89,830 SQ.FT.	178'	52,011 SQ.FT.	16,000 SQ.FT.	33,961 SQ.FT.	49,961 SQ.FT.	26	178'	49,961 SQ.FT.
27	254,325 SQ.FT.	182,541 SQ.FT.	71,784 SQ.FT.	150'	44,254 SQ.FT.	16,000 SQ.FT.	27,530 SQ.FT.	43,530 SQ.FT.	27	150'	43,530 SQ.FT.
28	41,590 SQ.FT.	1,165 SQ.FT.	40,425 SQ.FT.	350'	2,800 SQ.FT.	2,800 SQ.FT.	37,625 SQ.FT.	40,425 SQ.FT.	28	350'	40,425 SQ.FT.
29	40,100 SQ.FT.	0	40,100 SQ.FT.	180'	0	0	40,100 SQ.FT.	40,100 SQ.FT.	29	180'	40,100 SQ.FT.
30	40,450 SQ.FT.	0	40,450 SQ.FT.	400'	0	0	40,450 SQ.FT.	40,450 SQ.FT.	30	400'	40,450 SQ.FT.
31	40,000 SQ.FT.	0	40,000 SQ.FT.	500'	0	0	40,000 SQ.FT.	40,000 SQ.FT.	31	500'	40,000 SQ.FT.

NOTES

- 1.) INTENT: THIS OPEN SPACE SUBDIVISION YIELD PLAN IS INTENDED TO BE THE SUBMITTED YIELD PLAN PER SUBDIVISION REGULATIONS 157:21 (D)(1) TO DETERMINE THE MAXIMUM NUMBER OF DWELLING UNITS PERMITTED FOR THIS OPEN SPACE SUBDIVISION, (31).
- 2.) CURRENT OWNER OF RECORD: 210 TOLEND ROAD LLC, 42 J DOVER POINT ROAD DOVER, NEW HAMPSHIRE
- APPLICANT: 210 TOLEND ROAD LLC, 42 J DOVER POINT ROAD DOVER, NEW HAMPSHIRE
- 3.) TAX MAP F LOT 3.
- 4.) TOTAL LOT AREA: 2,426,198 SQ.FT. - 55,698 ACRES
- 5.) PROJECT DEED REFERENCE: BOOK 5166 PAGE 26
- 6.) PROJECT PLAN REFERENCE: SUBDIVISION PLAN INDIAN RIDGE EMERALD LANE DOVER, NEW HAMPSHIRE TRITECH ENGINEERING INC. AUG. 28, 2014. SORD #110-70
- BOUNDARY PLAN LAND OF LIONEL & KRISTINA PARADIS TOLEND ROAD DOVER, N.H. TAX MAP F LOT 2 BERRY SURVEYING JULY 23, 2012 SORD #104-61
- PLAN OF ALTERNATIVE DESIGN SUBDIVISION LITTLEWORTH RD. DOVER, N.H. FOR EZRA GREEN'S FARM LLC, NORWAY PLAINS ASSOCIATES, INC. MARCH 2000 SORD 59-49
- PLAN OF LAND CARLTON W. HAM DOVER, N.H. FREDERICK E. DREW SEPT. 1991 SORD 40-47 BERRY SURVEYING
- PLAN OF SUBDIVISION FOR ELLIOTT BERKOWITZ TOLEND ROAD DOVER, NEW HAMPSHIRE K.E. MOORE & B.G. STAPLES OCT. 1986 SORD 50-82
- 7.) PROPERTY IS SUBJECT TO NET&T EASEMENT DESCRIBED IN BOOK 508 PAGE 14.
- 8.) ZONING: R-40
MIN. LOT SIZE: 40,000 SQ.FT.
MIN. FRONTAGE: 150 FT
MIN. SETBACKS:
FRONT: 40 FT
SIDE: 25 FT
REAR: 15 FT
- OPEN SPACE SUBDIVISION
R-40
MIN. LOT SIZE: 20,000 SQ.FT.
MIN. FRONTAGE: 40 FT
MIN. SETBACKS:
FRONT: 20 FT
SIDE: 20 FT
REAR: 20 FT
EXTERNAL BOUNDARIES: 50 FT
EXISTING BUILDINGS: 100 FT
- IN ADDITION TO R-40, THIS PROPERTY FALLS WITHIN SEVERAL ZONING OVERLAY DISTRICTS:
- WETLANDS PROTECTION DISTRICT
- SECONDARY GROUND WATER PROTECTION DISTRICT
- 9.) VARIANCES, SPECIAL EXCEPTIONS OR CONDITIONAL USE PERMITS GRANTED: NONE
- 10.) 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 OCTOBER, 2023.
- 11.) SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD. FIRM PANEL NO. 33017C 0310E, OCTOBER 30, 2015.
- 12.) DURING THE MONTH OF AUGUST 2023, 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 IDENTIFIED 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.
- 13.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON AUGUST 29, 2023 USING TOPCON HIPER SR RECEIVERS AND GPS CORRECTED ON AUGUST 31, 2023. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2500 NH). (NAD83 88).
- 14.) PLANS RECORDED IN SORD #104-61 AND #40-47 BOTH SHOW AN APPROXIMATE LOCATION OF AN EARLY SETTLERS GRAVE AREA LOCATED ON MAP F LOT 2, ALONG THE COMMON BOUNDARY LINE BETWEEN MAP F LOT 2 AND MAP F LOT 3.
- 15.) WETLAND IMPACT
TOTAL WETLAND: 674,247 SQ.FT.
WETLAND IMPACT: 700 SQ.FT.
% IMPACT: 0.10 %
- BUFFER IMPACT
TOTAL BUFFER: 381,392 SQ.FT.
BUFFER IMPACT: 6,400 SQ.FT.
% IMPACT: 1.68 %



TRITECH
ENGINEERING CORPORATION

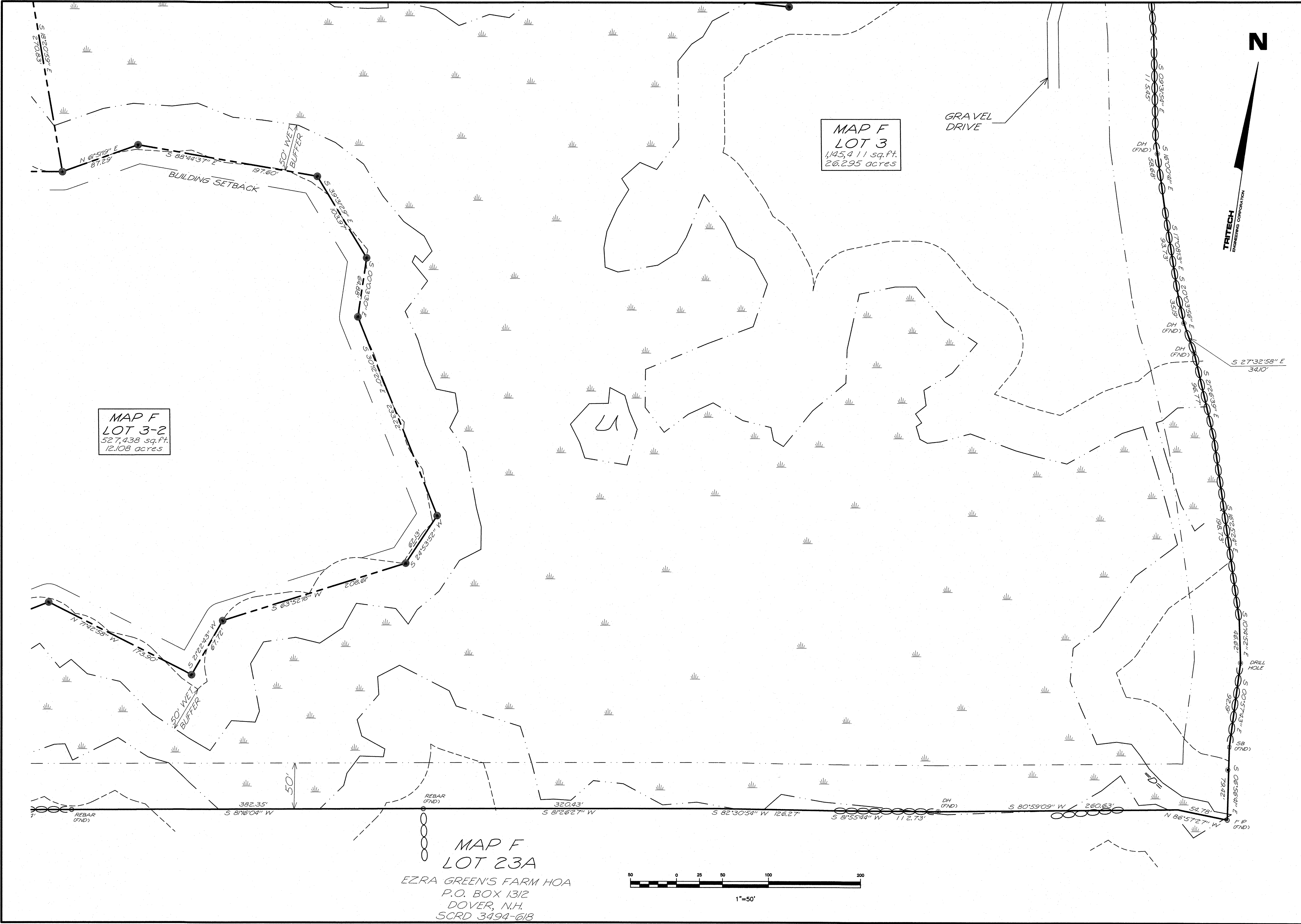
ISSUED FOR TRC REVIEW
March 6, 2025

YIELD PLAN
AMBROSE WOODS
TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 100'

SHEET No.

Y-1

(P25-)



TRITECH

ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW

March 6, 2025

OPEN SPACE SUBDIVISION PLAN

AMBROSE WOODS

TAX MAP F LOT 3

210 TOLEND ROAD AND EMERALD LANE

DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

SCALE: 1" = 50'

SHEET No.

0-3

REVISIONS

DATE:	DESCRIPTION:

STATE OF NEW HAMPSHIRE

LAND SURVEYOR

NO. 884

ROBERT J. BROWN

EXPIRES 12/31/2025

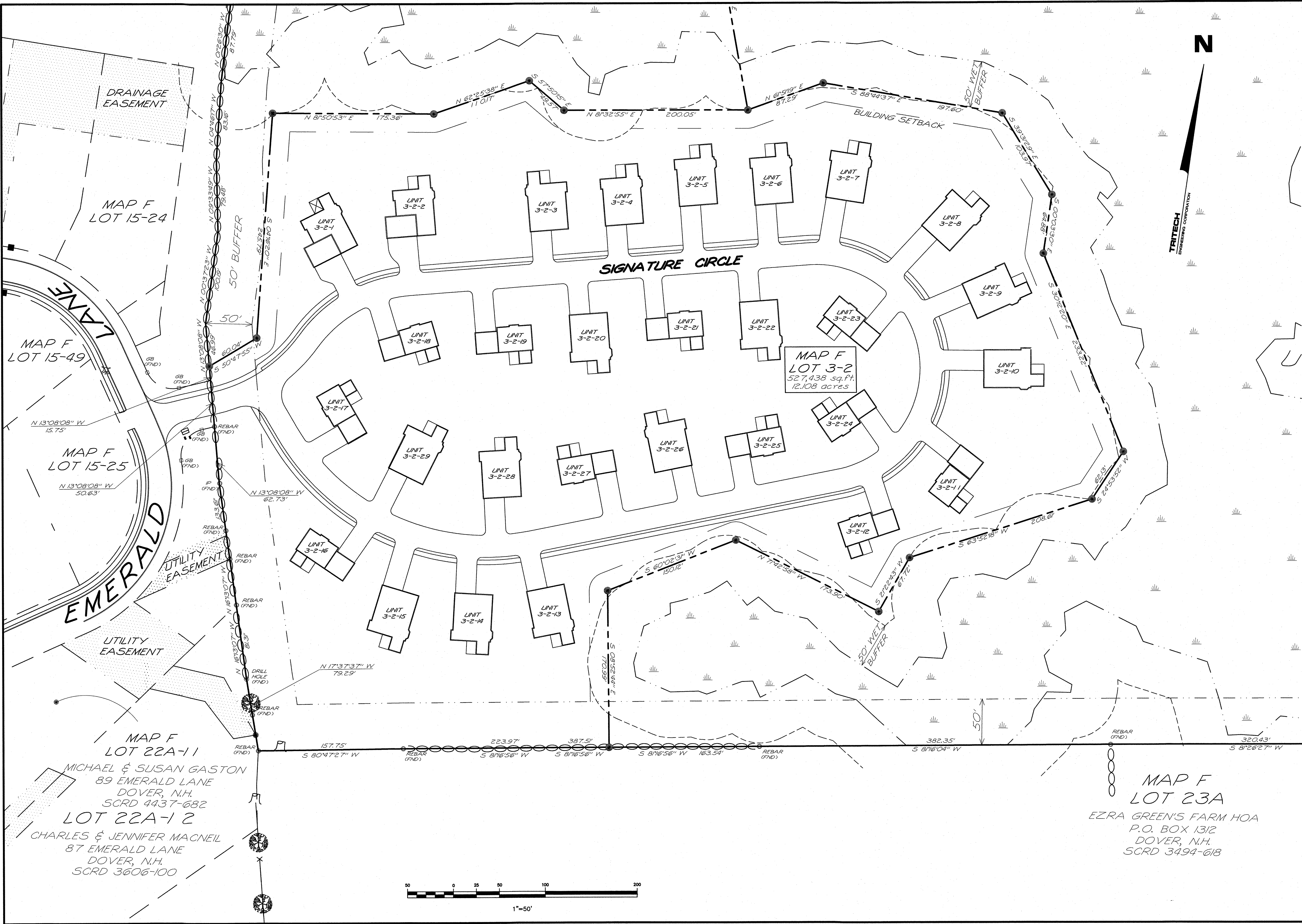
755 CENTRAL AVENUE

DOVER, NEW HAMPSHIRE 03880

TELEPHONE 603 742 8107

FAX 603 742 3650

(P25-)



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS

DATE	DESCRIPTION

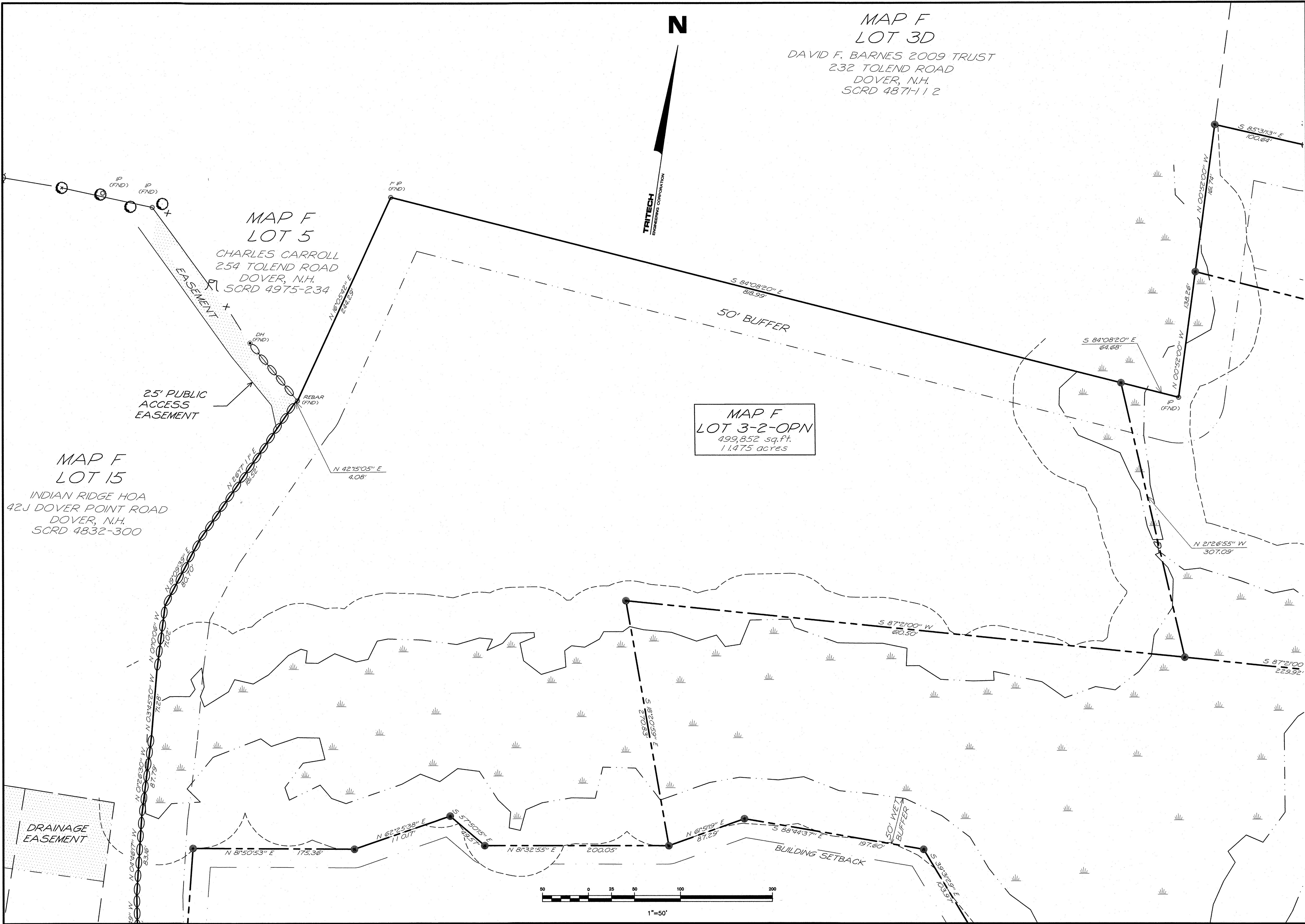
STATE OF
NEW HAMPSHIRE
LICENSED
LAND SURVEYOR
ROBERT
JOHN
JONES

OPEN SPACE SUBDIVISION PLAN
AMBROSE WOODS
TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025 JOB No. 23118
SCALE: 1" = 50'

SHEET No.

6-4

(P25-)



MAP F
LOT 3D
DAVID F. BARNES 2009 TRUST
232 TOLEND ROAD
DOVER, N.H.
SCRD 487H112

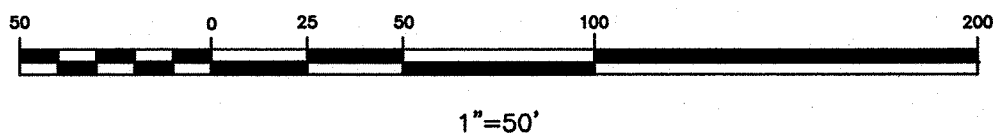
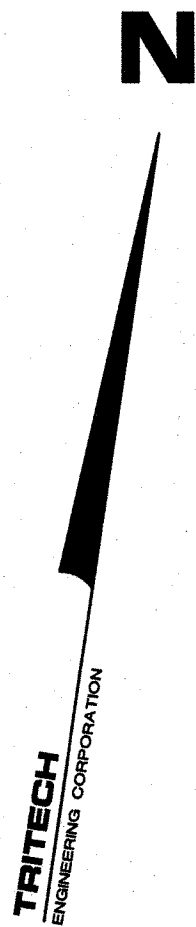
MAP F
LOT 5

CHARLES CARROLL
254 TOLEND ROAD
DOVER, N.H.
SCRD 4975-234

MAP F
LOT 15

INDIAN RIDGE HOA
42J DOVER POINT ROAD
DOVER, N.H.
SCRD 4832-300

MAP F
LOT 3-2-OPN
499,852 sq. ft.
1.1475 acres

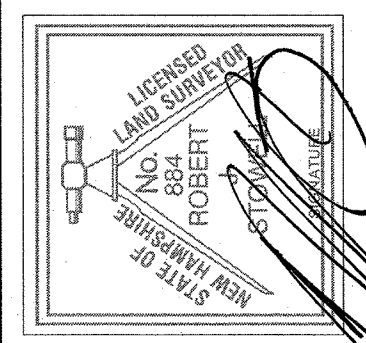


TRITECH

ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	DATE	DESCRIPTION



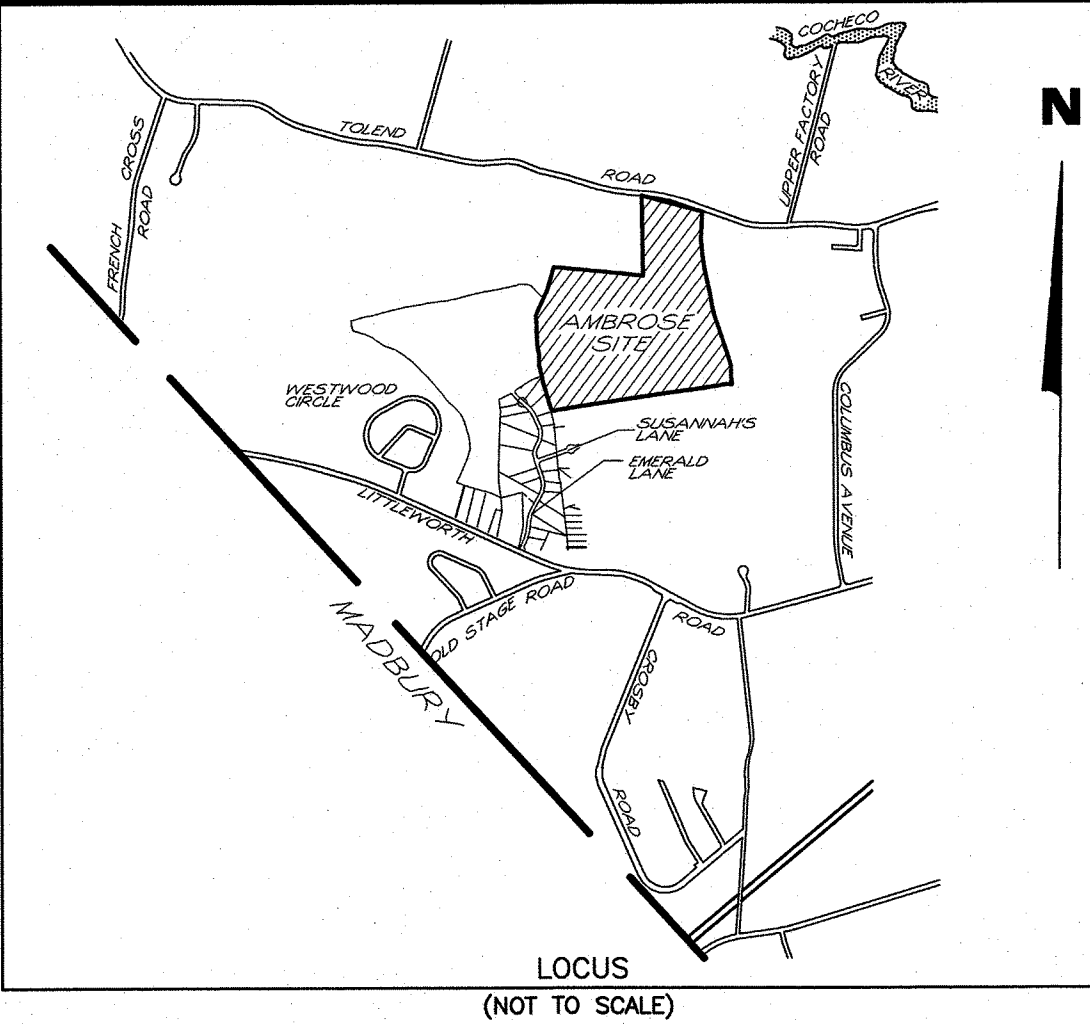
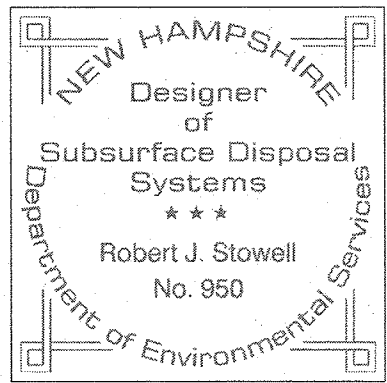
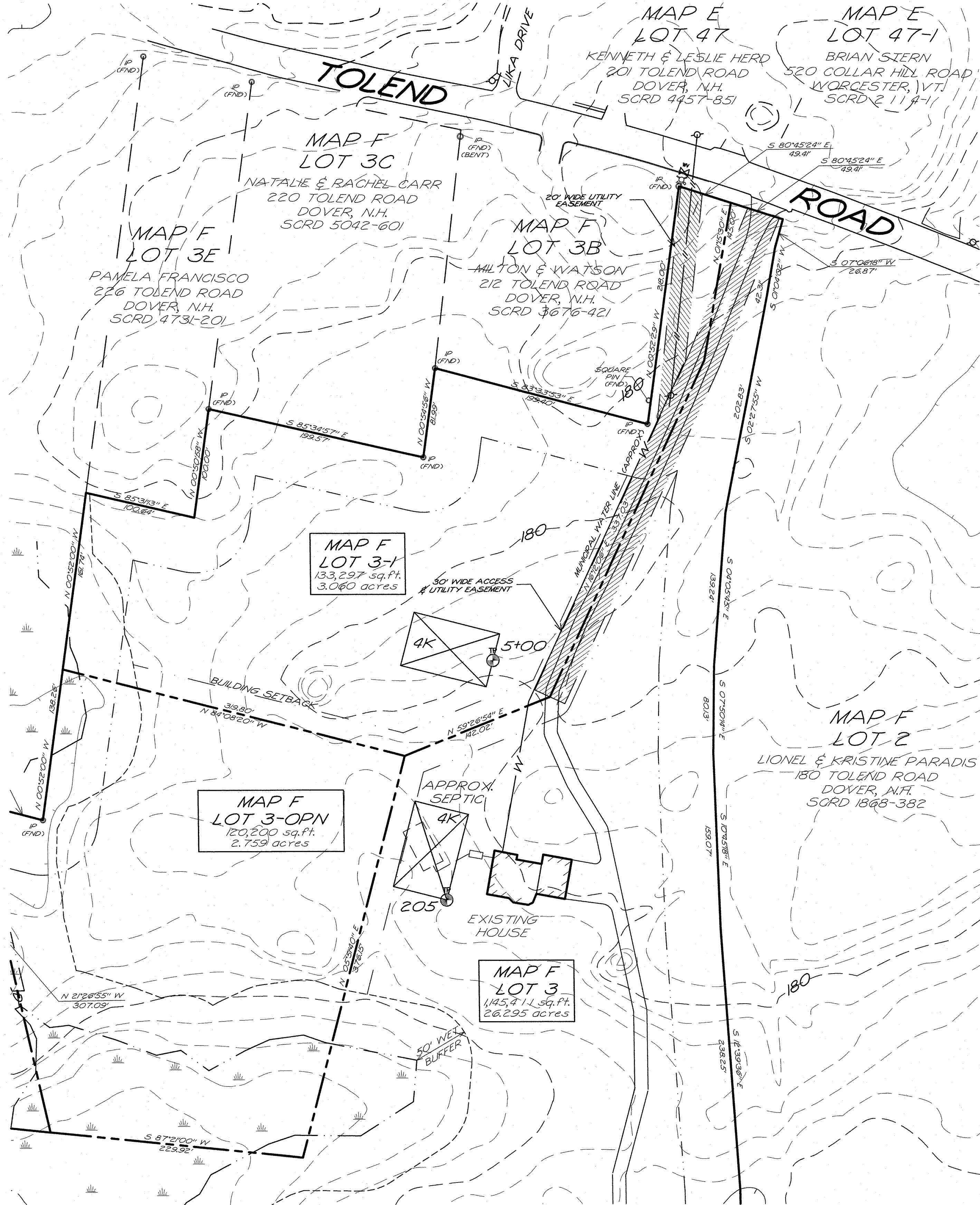
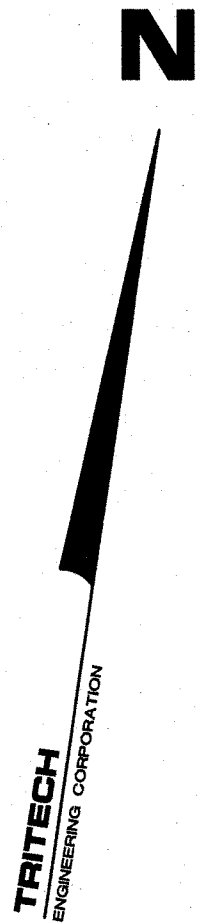
OPEN SPACE SUBDIVISION PLAN

AMBROSE WOODS

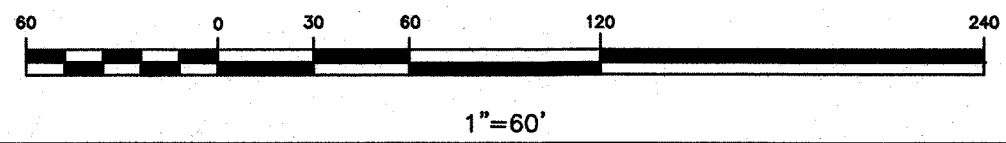
TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025 JOB No. 23118
SCALE: 1" = 50'

6-5

788 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3650



- NOTES**
- 1.) INTENT: TO SUBDIVIDE DOVER TAX MAP F LOT 3, UNDER THE CITY OF DOVER OPEN SPACE SUBDIVISION REGULATIONS. THIS PLAN SHOWS THE ONE LOT, (LOT 3-1) THAT REQUIRES NHDES SUBDIVISION APPROVAL.
 - 2.) CURRENT OWNER OF RECORD: 210 TOLEND ROAD LLC, 42 J DOVER POINT ROAD, DOVER, NEW HAMPSHIRE
 - 3.) TAX MAP F LOT 3.
 - 4.) TOTAL LOT AREA: 2,426,198 SQ.FT. - 55.698 ACRES
 - 5.) PROJECT DEED REFERENCE: BOOK 5166 PAGE 26
 - 6.) PROJECT PLAN REFERENCE: SUBDIVISION PLAN INDIAN RIDGE, EMERALD LANE, DOVER, NEW HAMPSHIRE, TRITECH ENGINEERING CORPORATION AUG. 28, 2014, SCRD #115-70
 - 7.) PROPERTY IS SUBJECT TO NET&T EASEMENT DESCRIBED IN BOOK 506 PAGE 14.
 - 8.) ZONING: R-40 MIN. LOT SIZE: 40,000 SQ.FT. MIN. FRONTAGE: 150 FT. MIN. SETBACKS: FRONT: 40 FT. SIDE: 25 FT. REAR: 15 FT.
 - 9.) VARIANCES, SPECIAL EXCEPTIONS OR CONDITIONAL USE PERMITS GRANTED: NONE
 - 10.) 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 OCTOBER, 2023.
 - 11.) SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD, FIRM PANEL NO. 33017C 0310E, OCTOBER 30, 2015.
 - 12.) DURING AUGUST 2013, HIGHLAND SOILS CONDUCTED AN ON-SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE IDENTIFIED 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.
 - 13.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON AUGUST 29, 2023 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON AUGUST 31, 2023. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (NAVD 88).
 - 14.) PLANS RECORDED IN SCRD #104-61 AND #40-47 BOTH SHOW AN APPROXIMATE LOCATION OF AN EARLY SETTLERS GRAVE AREA LOCATED ON MAP F LOT 2, ALONG THE COMMON BOUNDARY LINE BETWEEN MAP F LOT 2 AND MAP F LOT 3.
 - 15.) LOTS 3 AND 3-1 AND THE UNITS CONTAINED THEREON WILL BE SERVICED BY MUNICIPAL WATER AND PRIVATE INDIVIDUAL SEWAGE DISPOSAL SYSTEMS.



ISSUED FOR TRC REVIEW
March 6, 2025

NHDES SUBDIVISION PLAN
AMBROSE WOODS

TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE
MARCH 6, 2025 JOB No. 23118
SCALE: 1" = 60'

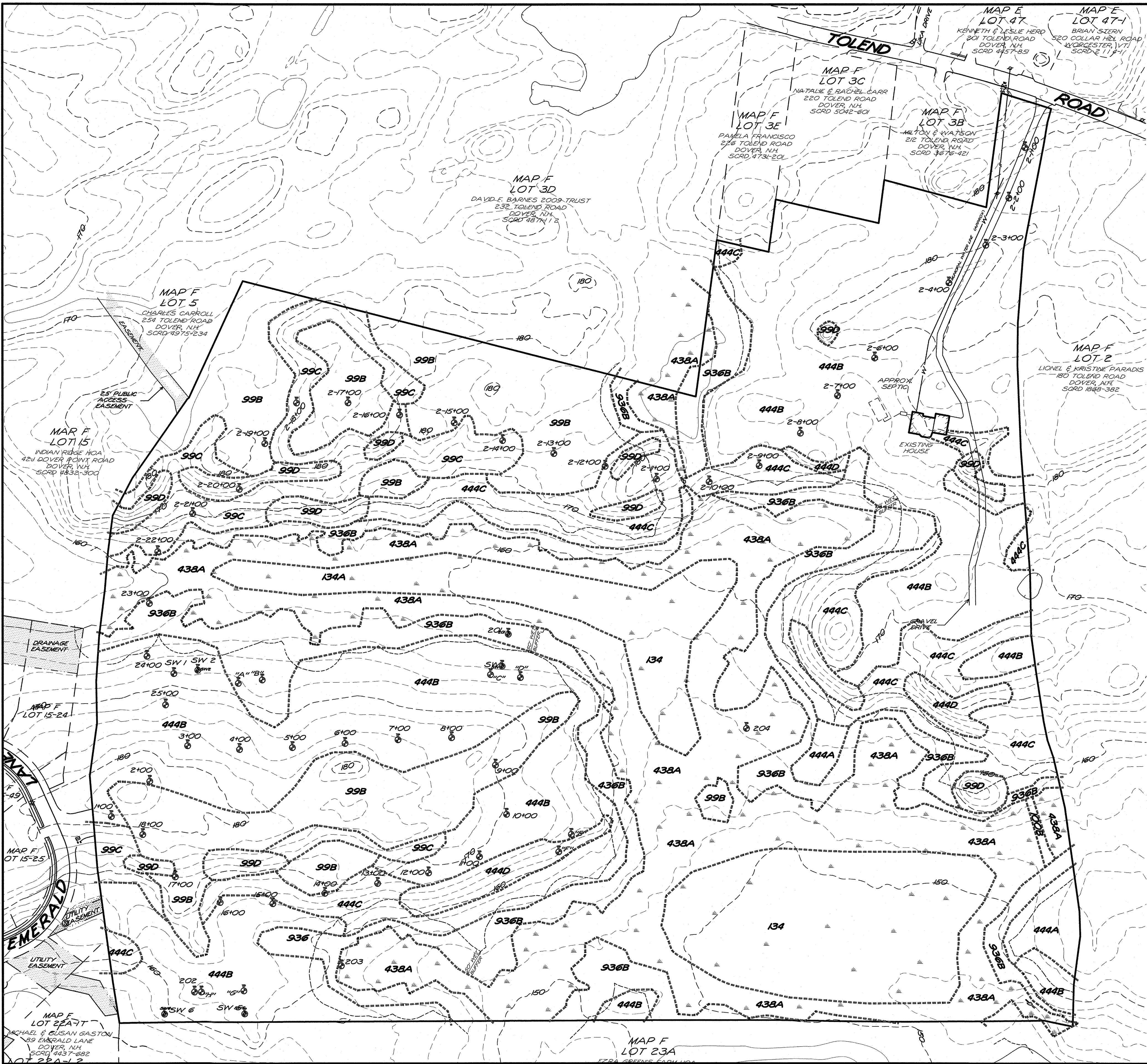
SHEET No.

6-6

TRITECH

ENGINEERING CORPORATION

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



SOILS NOTES

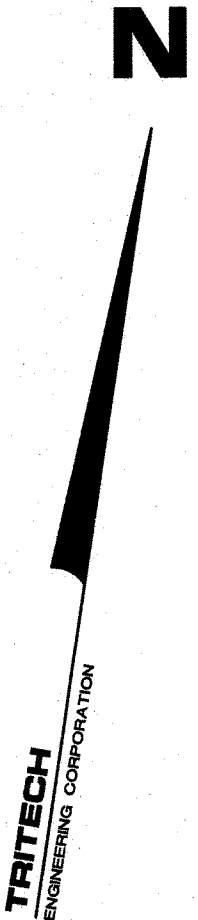
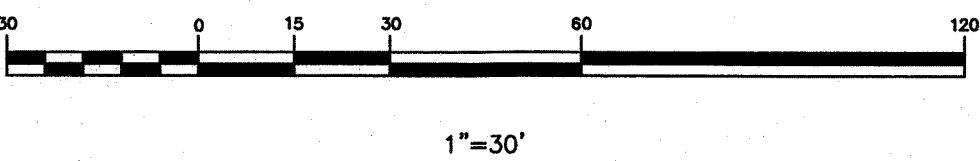
- 1.) SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT. SSSNIE SPECIAL PUBLICATION NO. 3, VERSION 7.0, JULY 2021. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE SUBMISSION TO NH DES ALTERATION OF 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 FEBRUARY 2024 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, NORTH-CENTRAL 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 MARCH AND APRIL OF 2024, AND JANUARY AND FEBRUARY OF 2025.

LEGEND

- 99 TUNBRIDGE
100 UDORTHENTS, WET SUBSTRATUM
134 MAYBID, VERY POORLY DRAINED
438 SWANTON, POORLY DRAINED
444 NEWFIELDS
936 SWANTON, SOMEWHAT POORLY DRAINED
TEST PIT

SLOPE CLASS

- A 0 - 3%
B 3 - 8%
C 8 - 15%
D 15 - 25%
E 25 - 50%
F >50%



TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8907
FAX 603 742 1580

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	
DATE	DESCRIPTION

SITE SPECIFIC SOILS PLAN

AMBROSE WOODS

TAX MAP F LOT 3

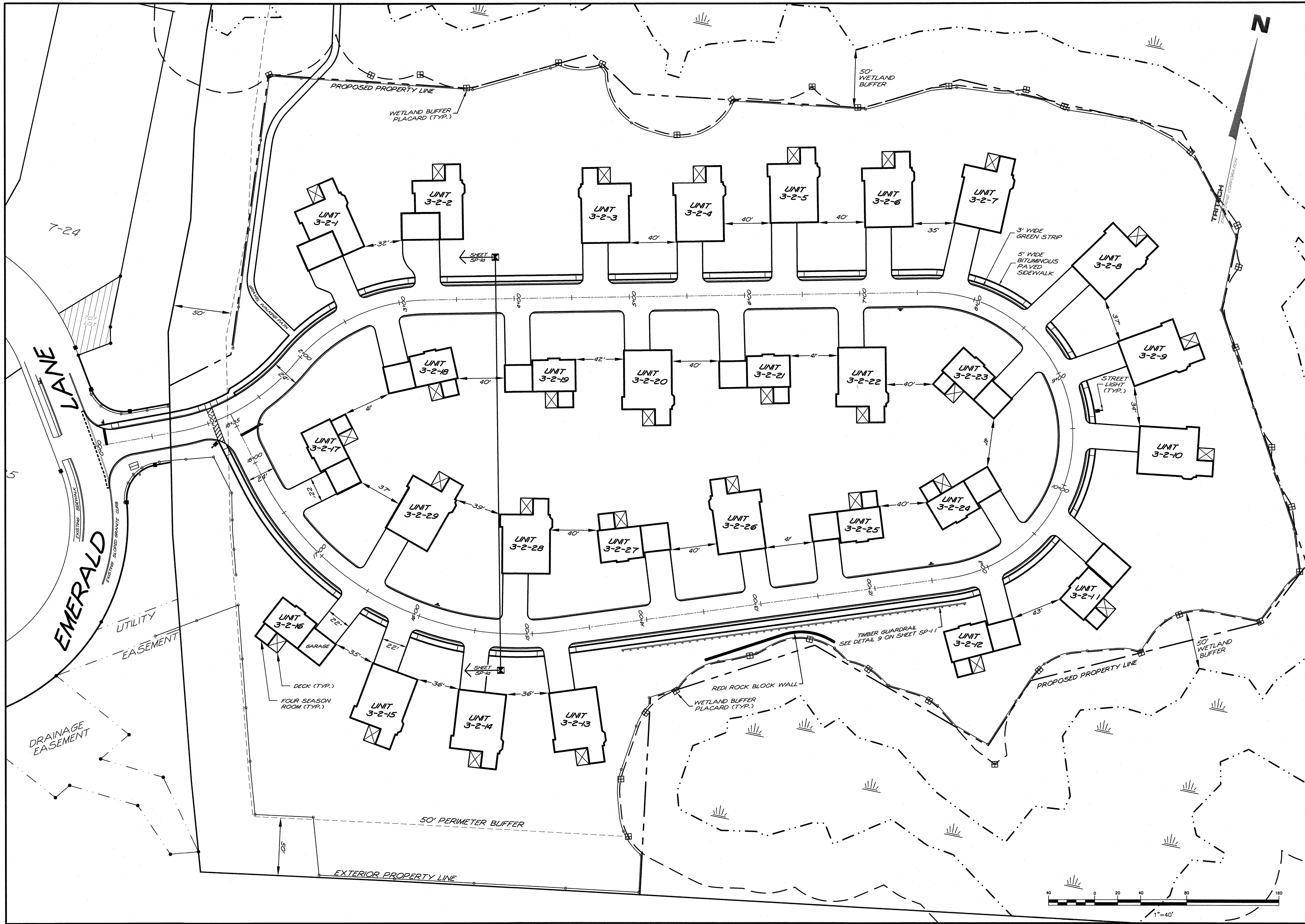
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

SCALE: 1" = 100'

SHEET No.

666-1



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

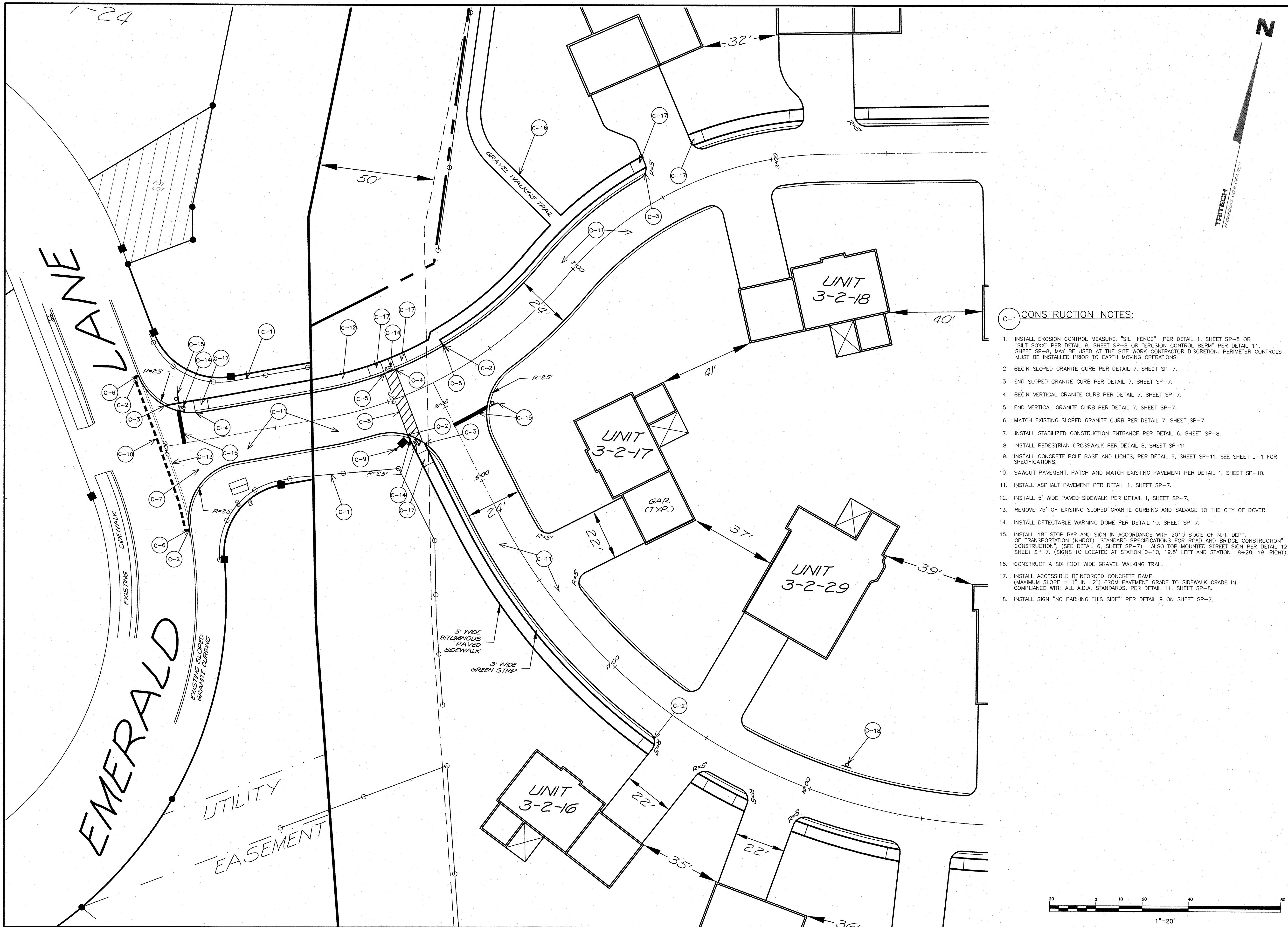
GENERAL SITE PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 231/B
SCALE: 1" = 40'

SHEET No.
SP-1

REVISIONS	DATE	DESCRIPTION

STATE OF NEW HAMPSHIRE - BEING
ROBERT J. STOWELL
PROFESSIONAL ENGINEER
No. 12345

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9830



C-1 CONSTRUCTION NOTES:

1. INSTALL EROSION CONTROL MEASURE, "SILT FENCE" PER DETAIL 1, SHEET SP-8 OR "SILT SOXX" PER DETAIL 9, SHEET SP-8 OR "EROSION CONTROL BERM" PER DETAIL 11, SHEET SP-8, MAY BE USED AT THE SITE WORK CONTRACTOR DISCRETION, PERIMETER CONTROLS MUST BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
2. BEGIN SLOPED GRANITE CURB PER DETAIL 7, SHEET SP-7.
3. END SLOPED GRANITE CURB PER DETAIL 7, SHEET SP-7.
4. BEGIN VERTICAL GRANITE CURB PER DETAIL 7, SHEET SP-7.
5. END VERTICAL GRANITE CURB PER DETAIL 7, SHEET SP-7.
6. MATCH EXISTING SLOPED GRANITE CURB PER DETAIL 7, SHEET SP-7.
7. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 6, SHEET SP-8.
8. INSTALL PEDESTRIAN CROSSWALK PER DETAIL 8, SHEET SP-11.
9. INSTALL CONCRETE POLE BASE AND LIGHTS, PER DETAIL 6, SHEET SP-11. SEE SHEET LI-1 FOR SPECIFICATIONS.
10. SAWCUT PAVEMENT, PATCH AND MATCH EXISTING PAVEMENT PER DETAIL 1, SHEET SP-10.
11. INSTALL ASPHALT PAVEMENT PER DETAIL 1, SHEET SP-7.
12. INSTALL 5' WIDE PAVED SIDEWALK PER DETAIL 1, SHEET SP-7.
13. REMOVE 75' OF EXISTING SLOPED GRANITE CURBING AND SALVAGE TO THE CITY OF DOVER.
14. INSTALL DETECTABLE WARNING DOME PER DETAIL 10, SHEET SP-7.
15. INSTALL 18" STOP BAR AND SIGN IN ACCORDANCE WITH 2010 STATE OF N.H. DEPT. OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (SEE DETAIL 6, SHEET SP-7). ALSO TOP MOUNTED STREET SIGN PER DETAIL 12, SHEET SP-7. (SIGNS TO LOCATED AT STATION 0+10, 19.5' LEFT AND STATION 18+28, 19' RIGHT).
16. CONSTRUCT A SIX FOOT WIDE GRAVEL WALKING TRAIL.
17. 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 11, SHEET SP-8.
18. INSTALL SIGN "NO PARKING THIS SIDE" PER DETAIL 9 ON SHEET SP-7.

GENERAL SITE PLAN

AMBROSE WOODS

TOLEND ROAD
DOVER, NEW HAMPSHIRE

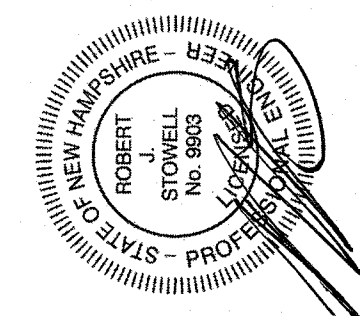
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 20'

SHEET No.

SP-1a

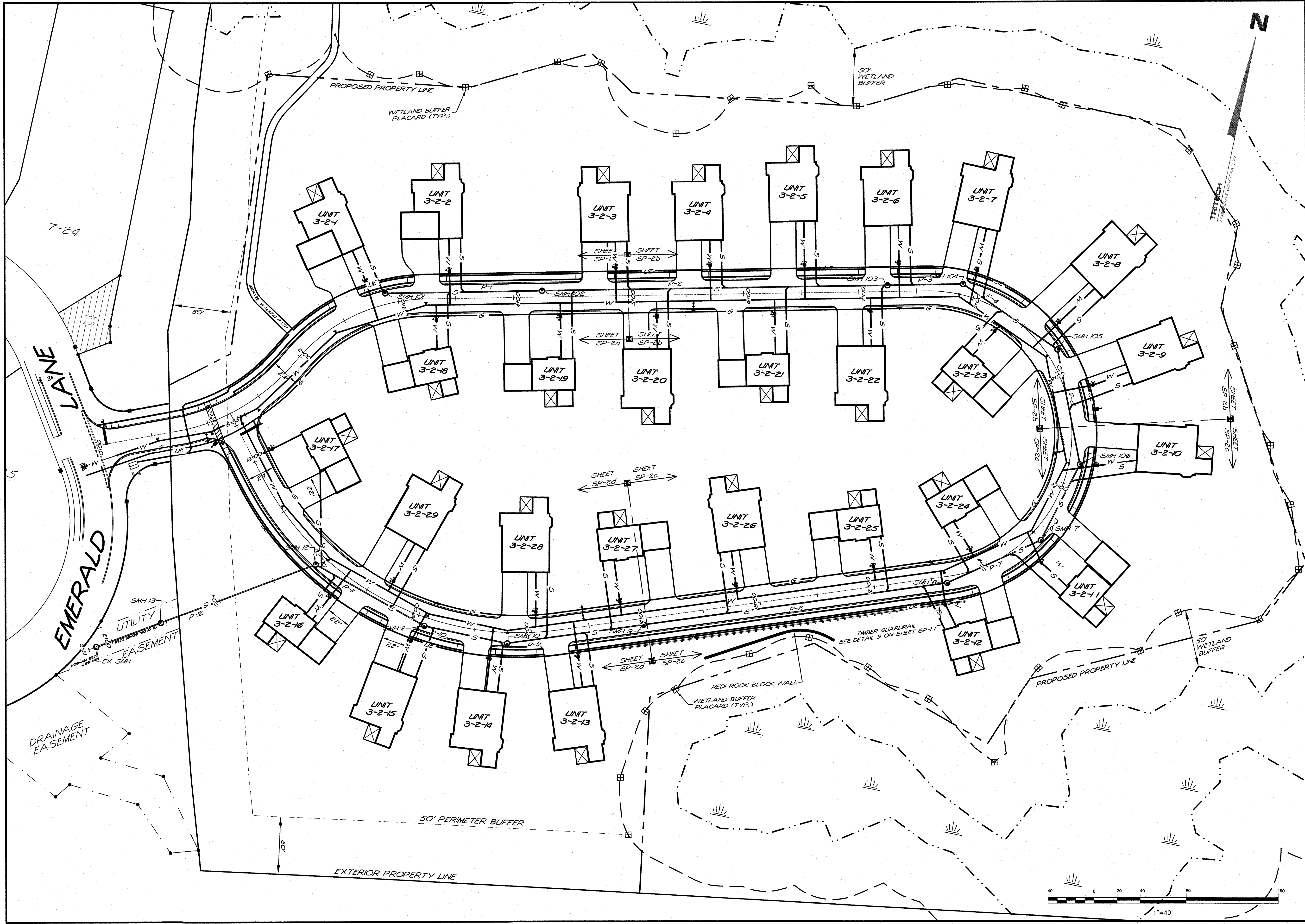
ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9830



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

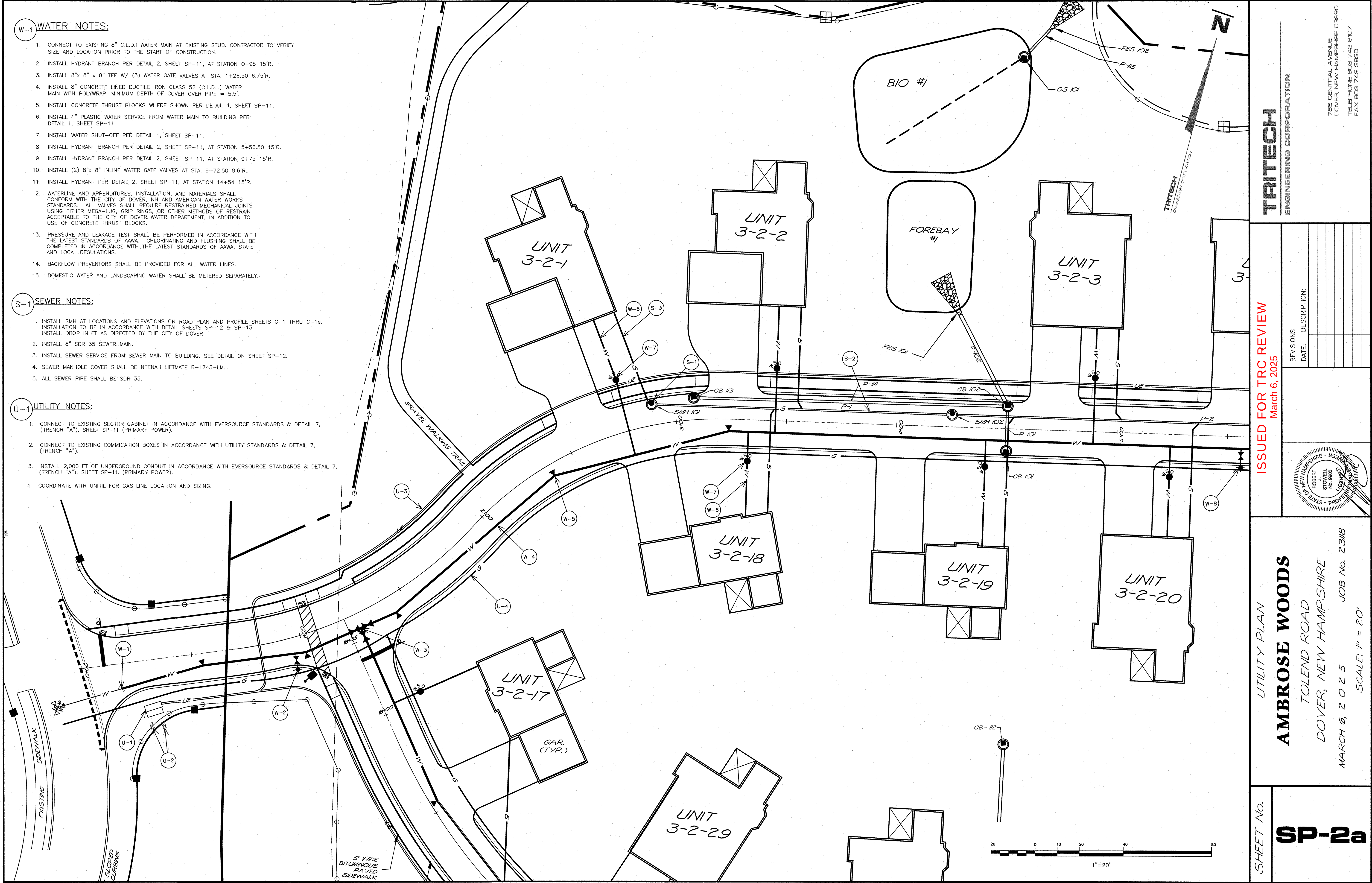
GENERAL UTILITY PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 2318
SCALE: 1" = 40'

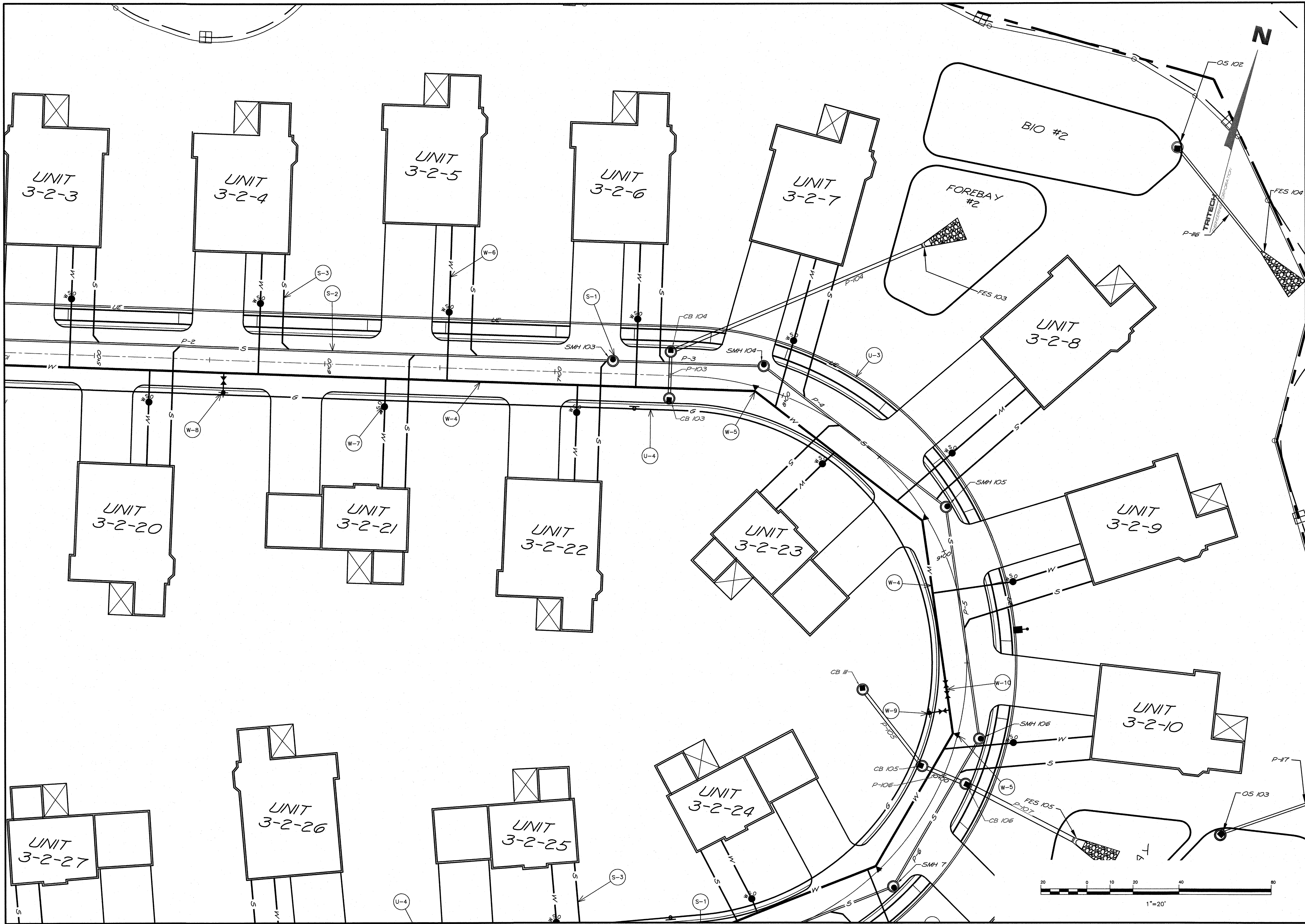
SHEET No.
SP-2

REVISIONS	DATE	DESCRIPTION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 8630

SEAL
STATE OF NEW HAMPSHIRE
ROBERT STOWELL
REGISTERED PROFESSIONAL ENGINEER
NO. 10457
EXPIRATION DATE 12/31/2025





TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE
ROBERT J. STOWELL
No. 8603
Professional Seal

UTILITY PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 231/B
SCALE: 1" = 20'

SP-2b

D-1 DRAINAGE NOTES

BIORETENTION #1

1. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=4.5', We=12', Lg=17', D=6", D(50)=3"
2. INSTALL 10' LONG X 10' WIDE BROAD CRESTED WEIR
AT ELEV. 169.00' SEE DETAIL 2 ON SHEET SP-10.
3. INSTALL UNDERDRAIN, PER DETAIL SHEET SP-4.
4. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=3', We=7', Lg=10', D=6", D(50)=3"

BIORETENTION #2

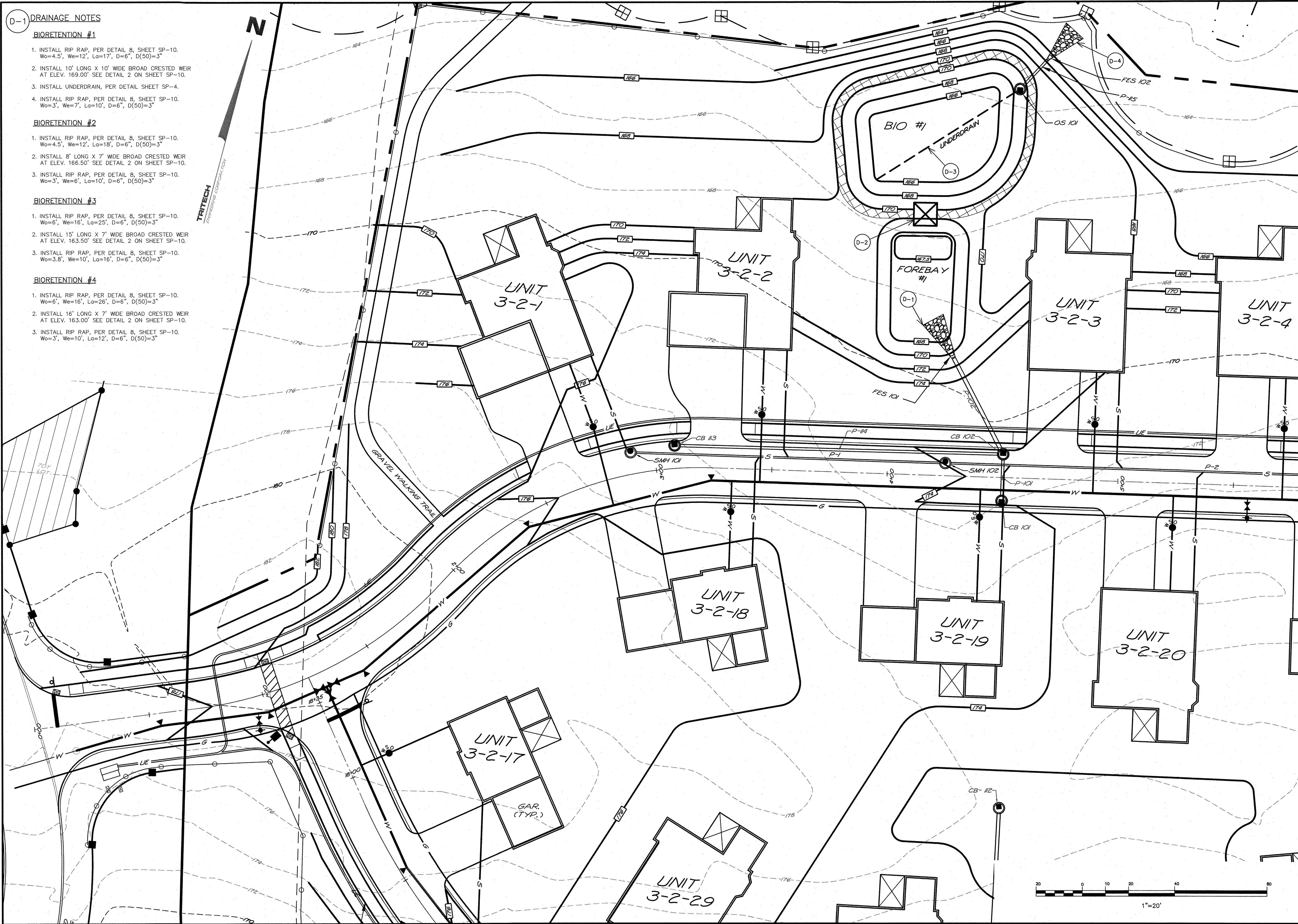
1. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=4.5', We=12', Lg=18', D=6", D(50)=3"
2. INSTALL 8' LONG X 7' WIDE BROAD CRESTED WEIR
AT ELEV. 166.50' SEE DETAIL 2 ON SHEET SP-10.
3. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=3', We=6', Lg=10', D=6", D(50)=3"

BIORETENTION #3

1. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=6', We=16', Lg=25', D=6", D(50)=3"
2. INSTALL 15' LONG X 7' WIDE BROAD CRESTED WEIR
AT ELEV. 163.50' SEE DETAIL 2 ON SHEET SP-10.
3. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=3.8', We=10', Lg=16', D=6", D(50)=3"

BIORETENTION #4

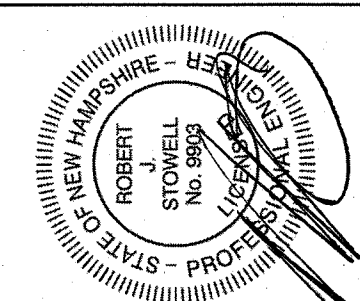
1. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=6', We=16', Lg=26', D=6", D(50)=3"
2. INSTALL 16' LONG X 7' WIDE BROAD CRESTED WEIR
AT ELEV. 163.00' SEE DETAIL 2 ON SHEET SP-10.
3. INSTALL RIP RAP, PER DETAIL 8, SHEET SP-10.
Wo=3', We=10', Lg=12', D=6", D(50)=3"



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



GRADING AND DRAINAGE PLAN

AMBROSE WOODS

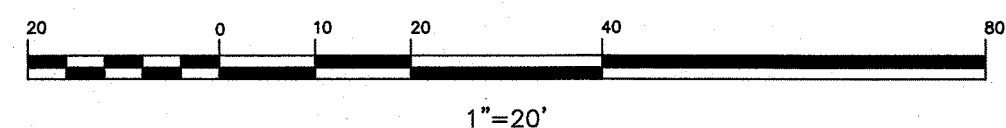
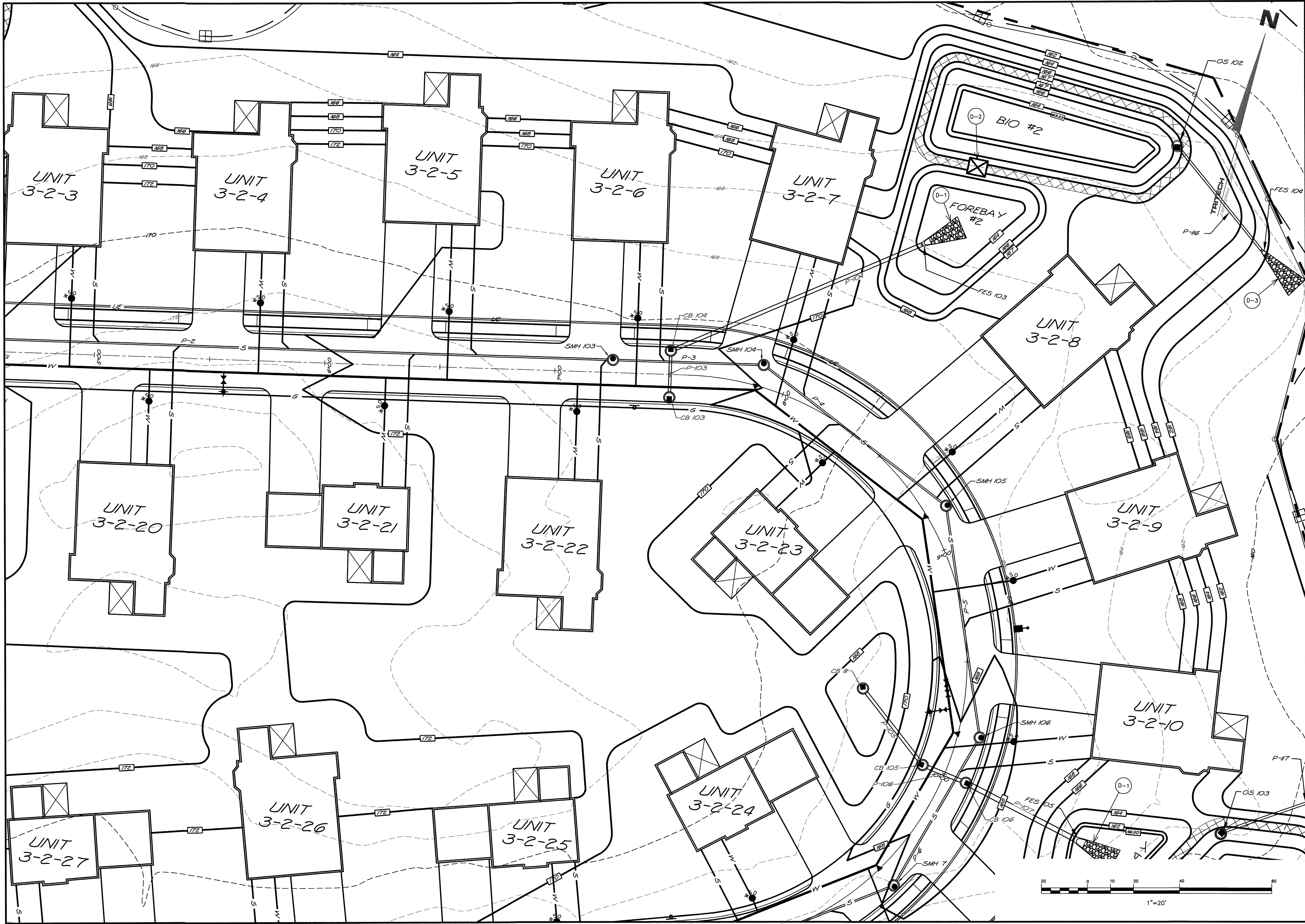
TOLEND ROAD
DOVER, NEW HAMPSHIRE

MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 20'

SHEET No.

SP-3a

7666 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9890



TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3930

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	DATE	DESCRIPTION

STATE OF NEW HAMPSHIRE - 653

ROBERT STOWELL
No. 8903
Professional Engineer

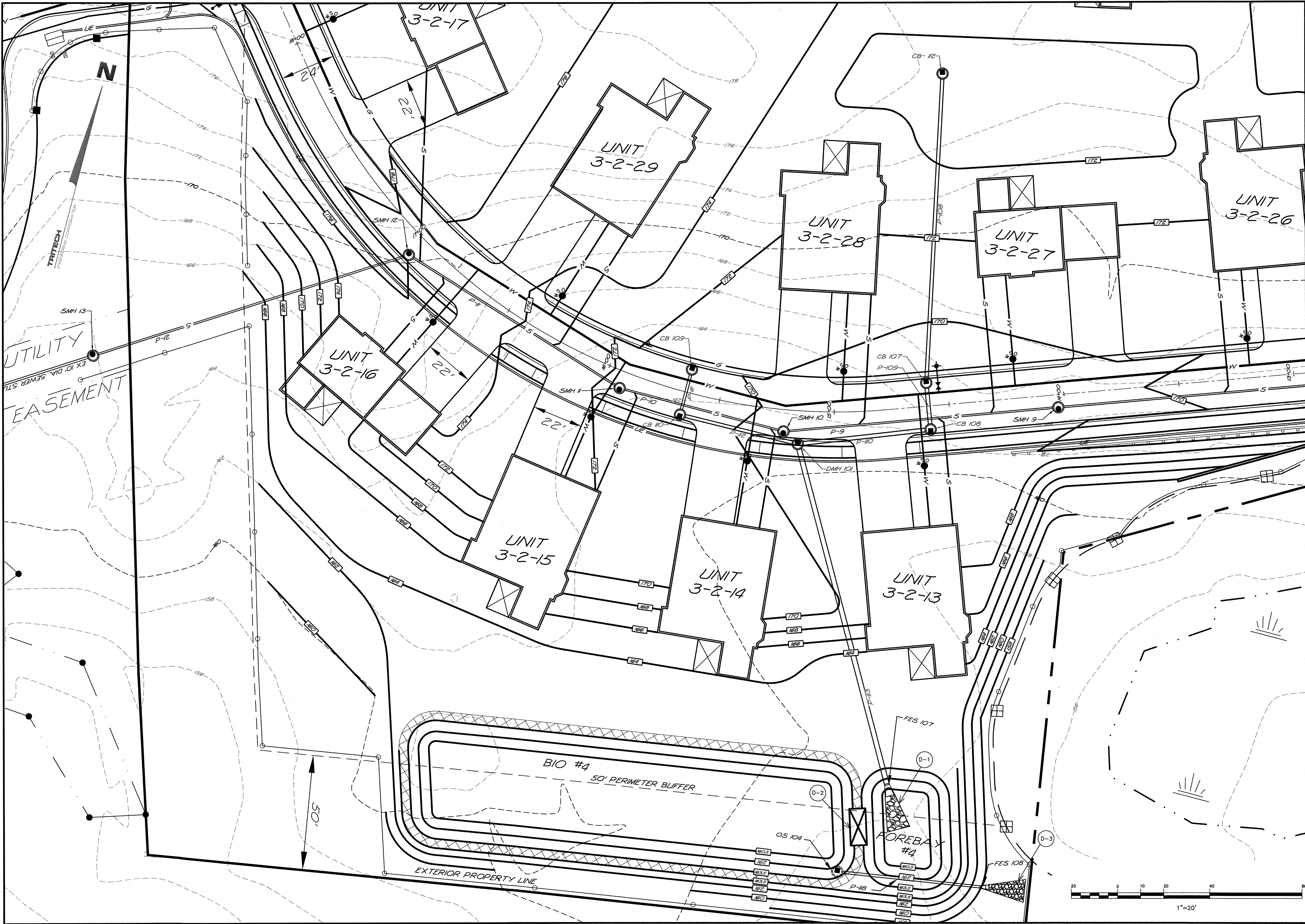
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118
SCALE: 1" = 20'

SHEET No.

SP-3b

GRADING AND DRAINAGE PLAN



TRITECH
ENGINEERING CORPORATION

7555 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 3830

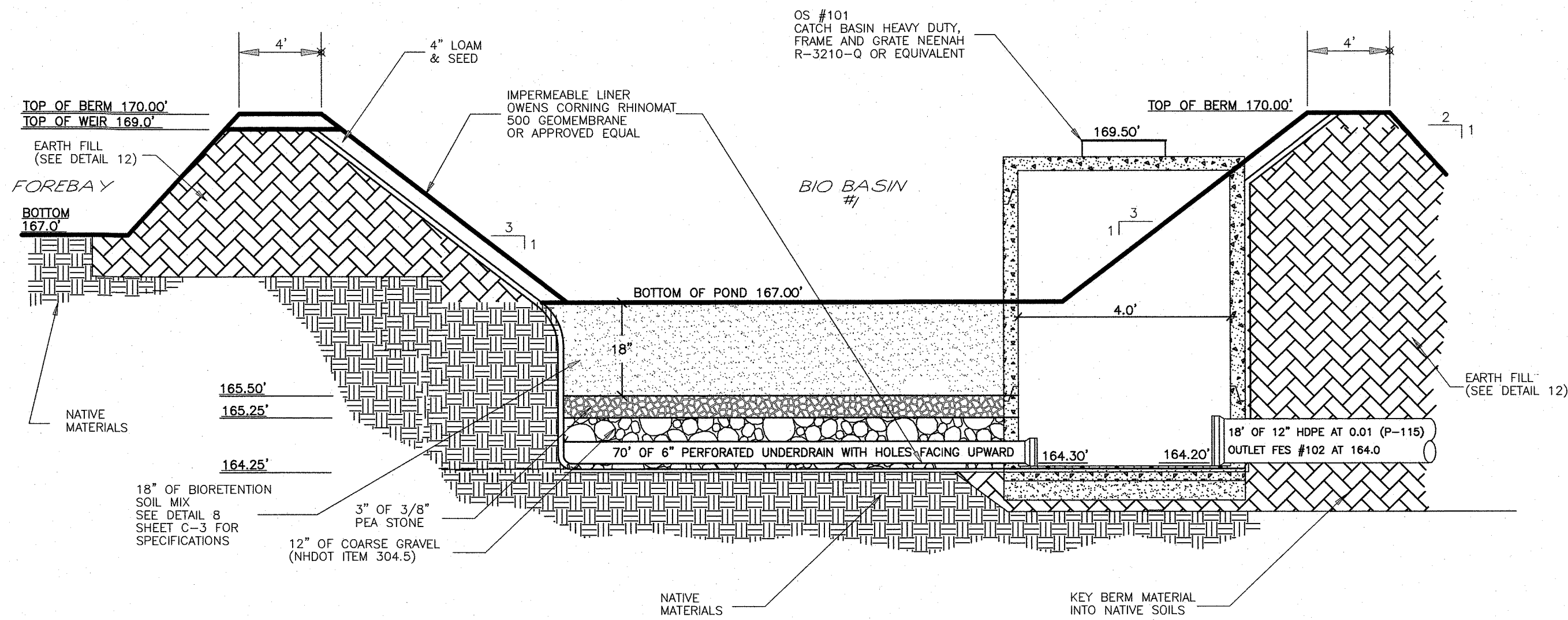
ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	DATE	DESCRIPTION

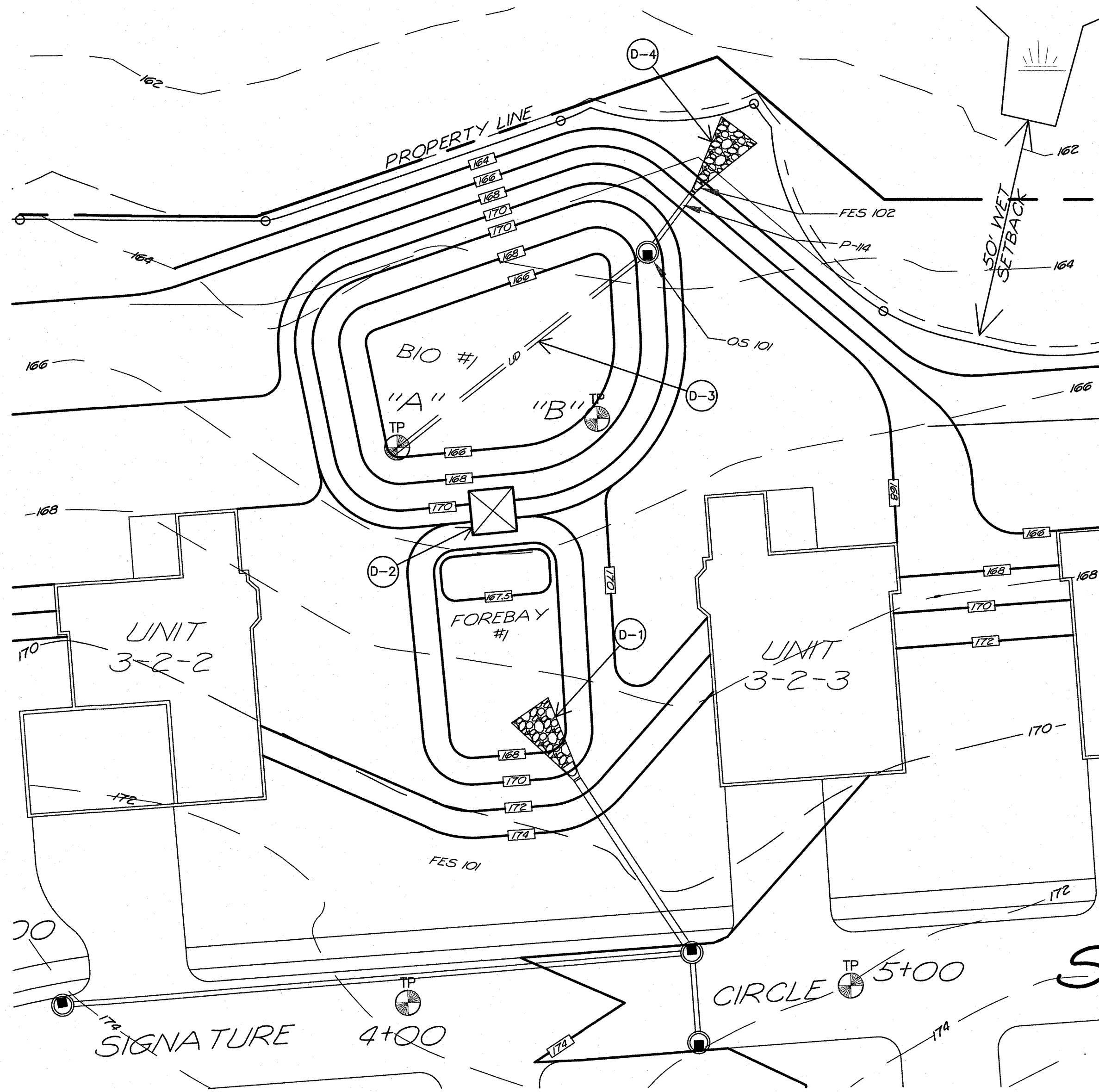
GRADING AND DRAINAGE PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 20'

SHEET No.

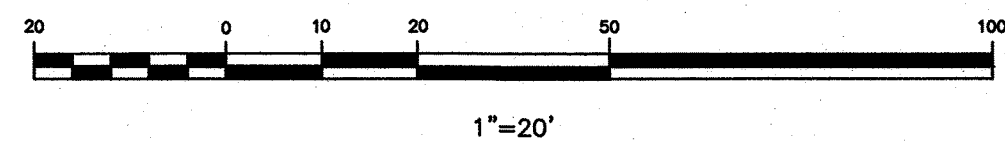
SP-3d



① **BIORETENTION #1 WITH OUTLET STRUCTURE**
NOT TO SCALE



⑤ **BIORETENTION #1 PLAN**
SCALE: 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

- PARTICLE SIZE DISTRIBUTION BY SEPARATES:
 - EXCLUDE ANY MATERIAL >4.76MM - 0%
 - VERY COARSE SAND/GRAVEL: GRAVEL (2.0 TO 4.76 mm) 5% MAXIMUM (% BY DRY WEIGHT)
 - SAND (0.42 TO 2.0 mm) 60% MAX (% BY DRY WEIGHT)
 - SILT (0.075 TO 0.42 mm) 20% MAXIMUM (% BY DRY WEIGHT)
 - CLAY (LESS THAN 0.075mm) 5% MAXIMUM (% BY DRY WEIGHT)
 - BARK MULCH (LESS THAN 5% PASSING #200) 15% MAX (% BY DRY WEIGHT)
 - 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

- FRAGMENT SIZE DISTRIBUTION:
 - STICKS AND ROOTS: SHOULD BE MINIMIZED AND PREFERABLY LIMITED TO NOTHING LARGER THAN 4.76mm
 - DEBRIS AND OTHER FOREIGN MATERIALS: SHOULD BE MINIMIZED
 - PERCENTAGE ORGANIC MATTER: MINIMUM 3% BY VOLUME AND MAXIMUM 8% BY VOLUME
 - SOIL REACTION: pH OF 6 TO 7
 - CEC OF TOTAL SOIL: MINIMUM 10 meq/100ml AT pH OF 7.0
 - BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS INDICATED ON DRAWINGS
 - BASIC PROPERTIES: MANUFACTURED SOIL SHALL NOT CONTAIN THE FOLLOWING:
 - 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 EXTRANEIOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
 - UNUSABLE 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.
 - LARGE MATERIALS: STONES, CLODS, ROOTS, CLAY LUMPS, AND POCKETS OF COARSE SAND EXCEEDING 0.187 INCHES (4.76mm) IN ANY DIMENSION
- ACCEPTABLE SOIL AMENDMENTS
 - NO COMPOST SHOULD BE USED IN THE PLANTING MIX
 - 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
 - WOOD DERIVATIVES: SHREDDED WOOD, WOOD CHIPS, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF STONES, STICKS, SOIL, OR TOXIC MATERIALS.
 - 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.

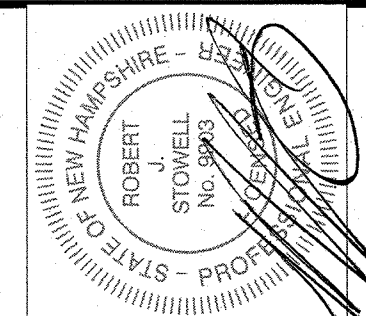
⑫ **EARTH FILL**
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION

766 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9890

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



BIORETENTION DETAILS

AMBROSE WOODS

TAX MAP F LOT 3

210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

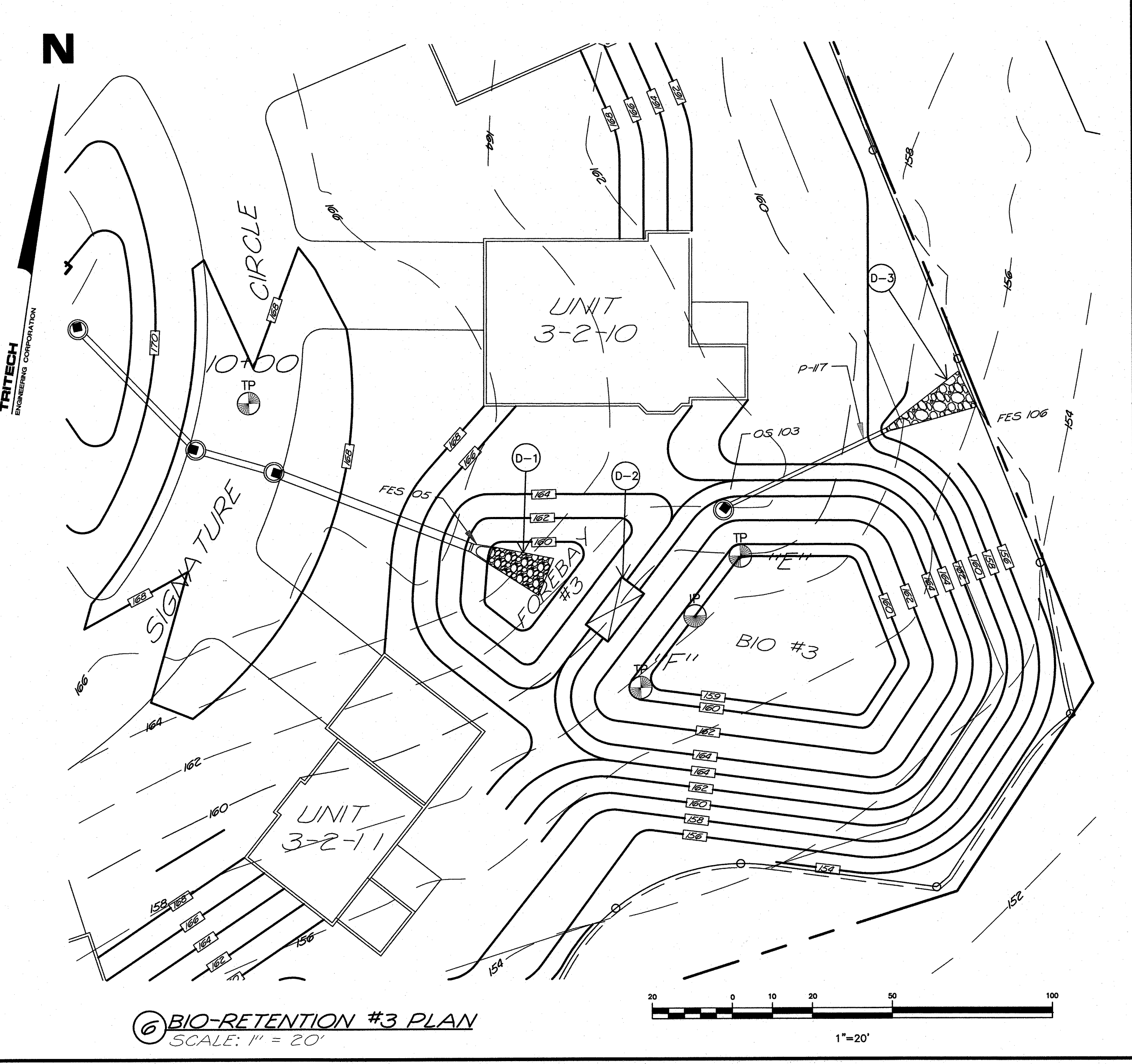
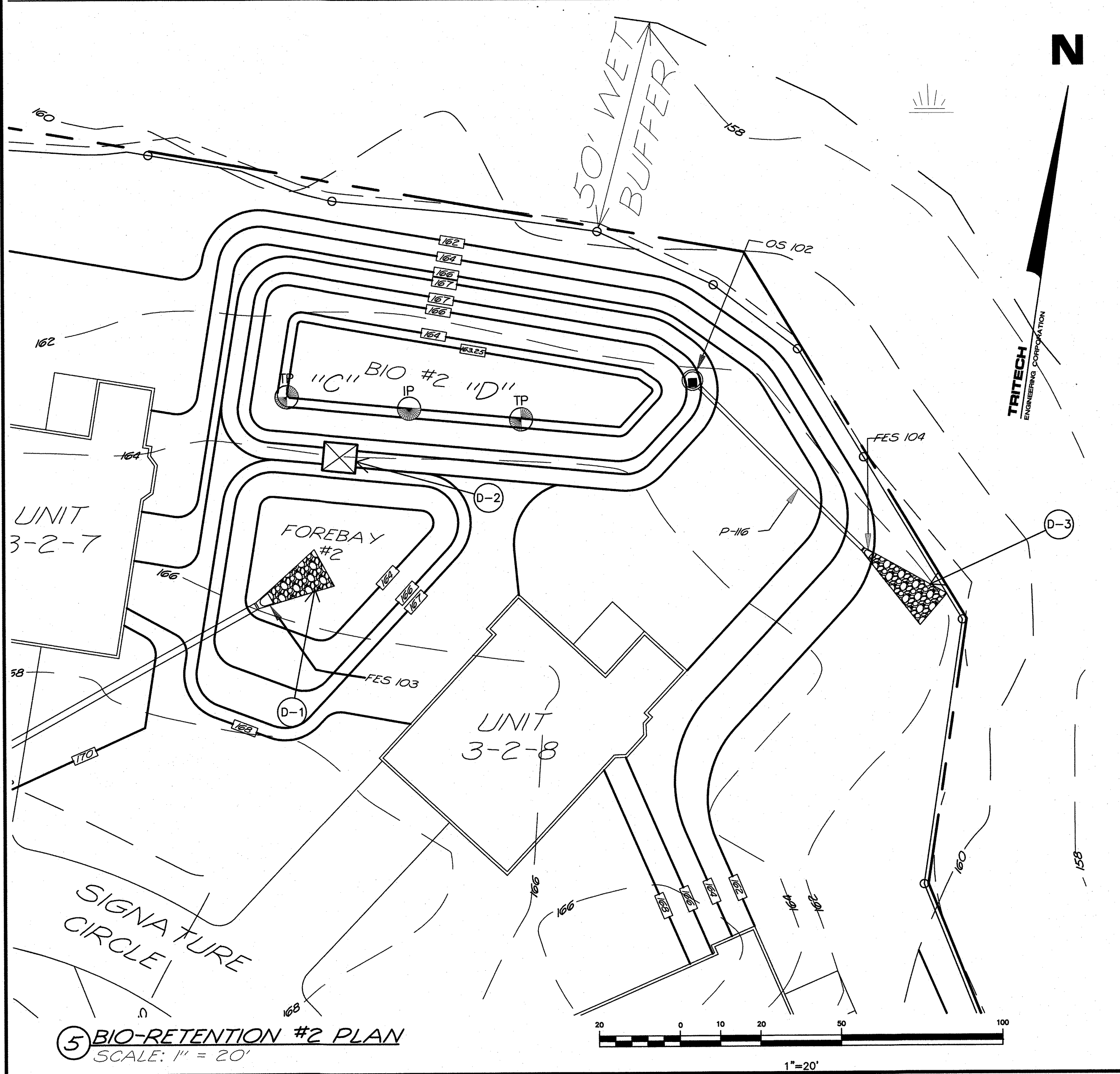
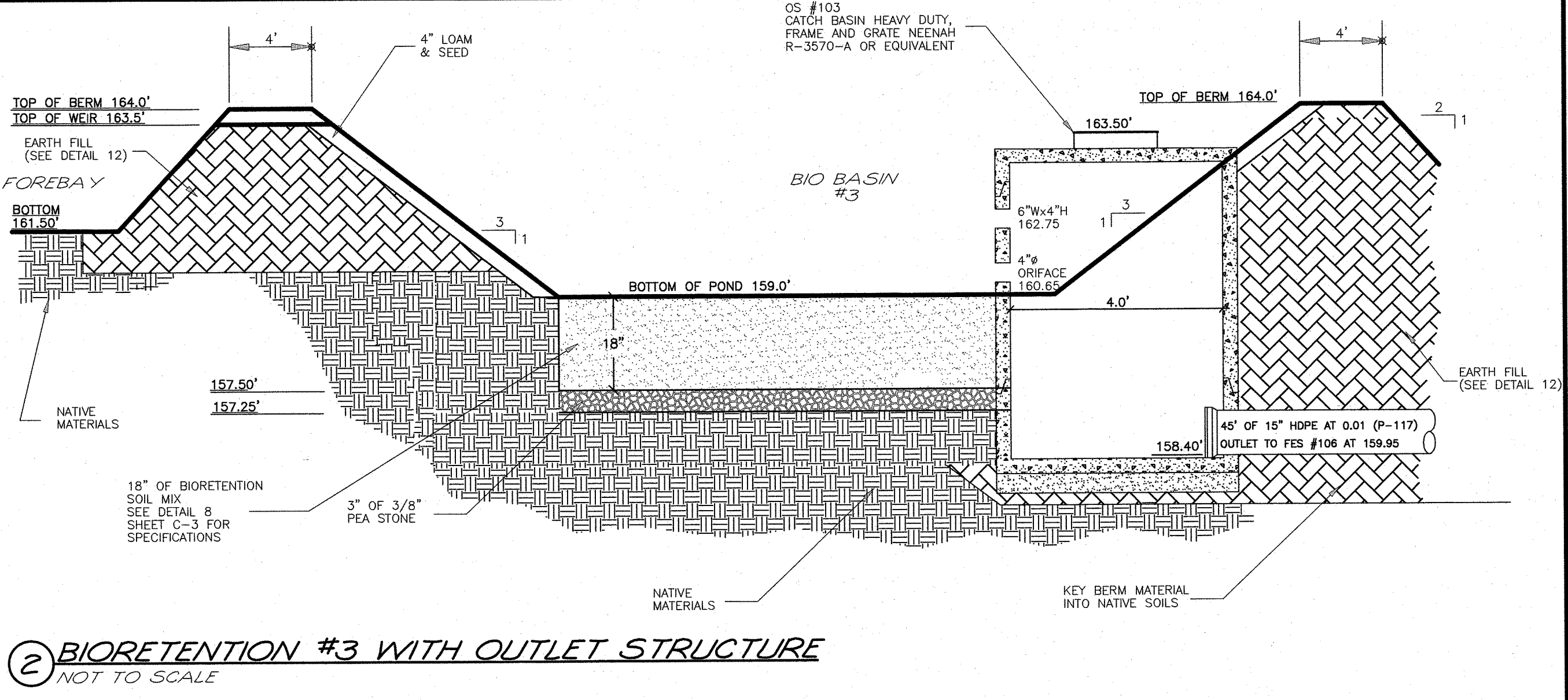
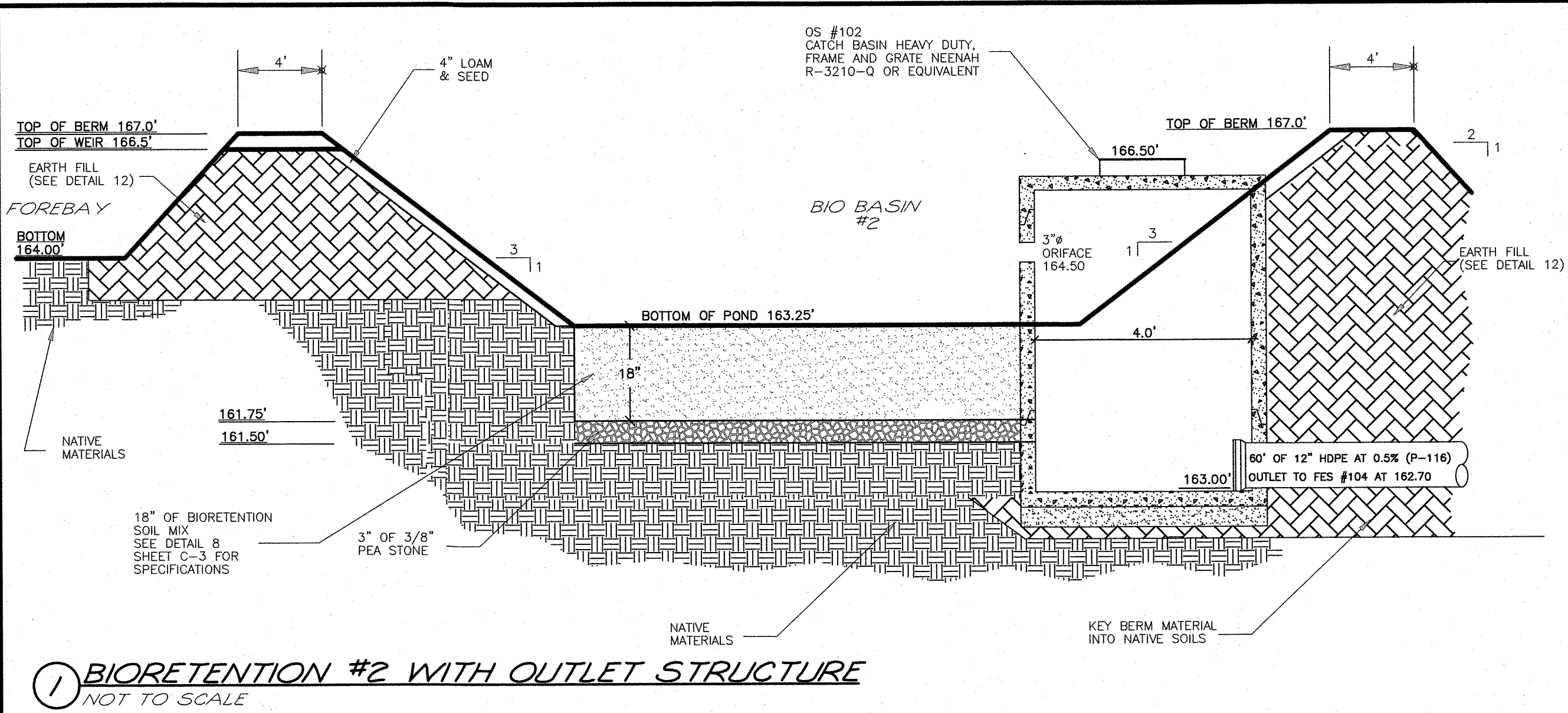
MARCH 6, 2025 JOB No. 23118

SCALE: 1" = 20'

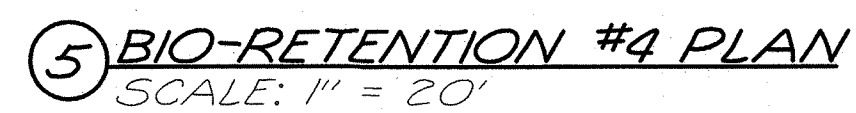
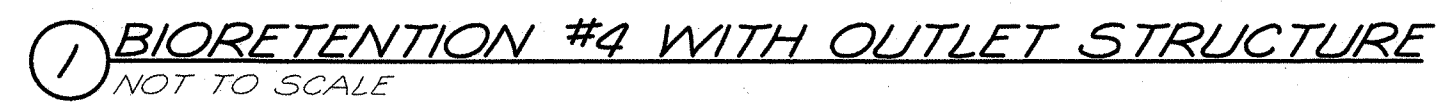
SHEET No.

SP-4

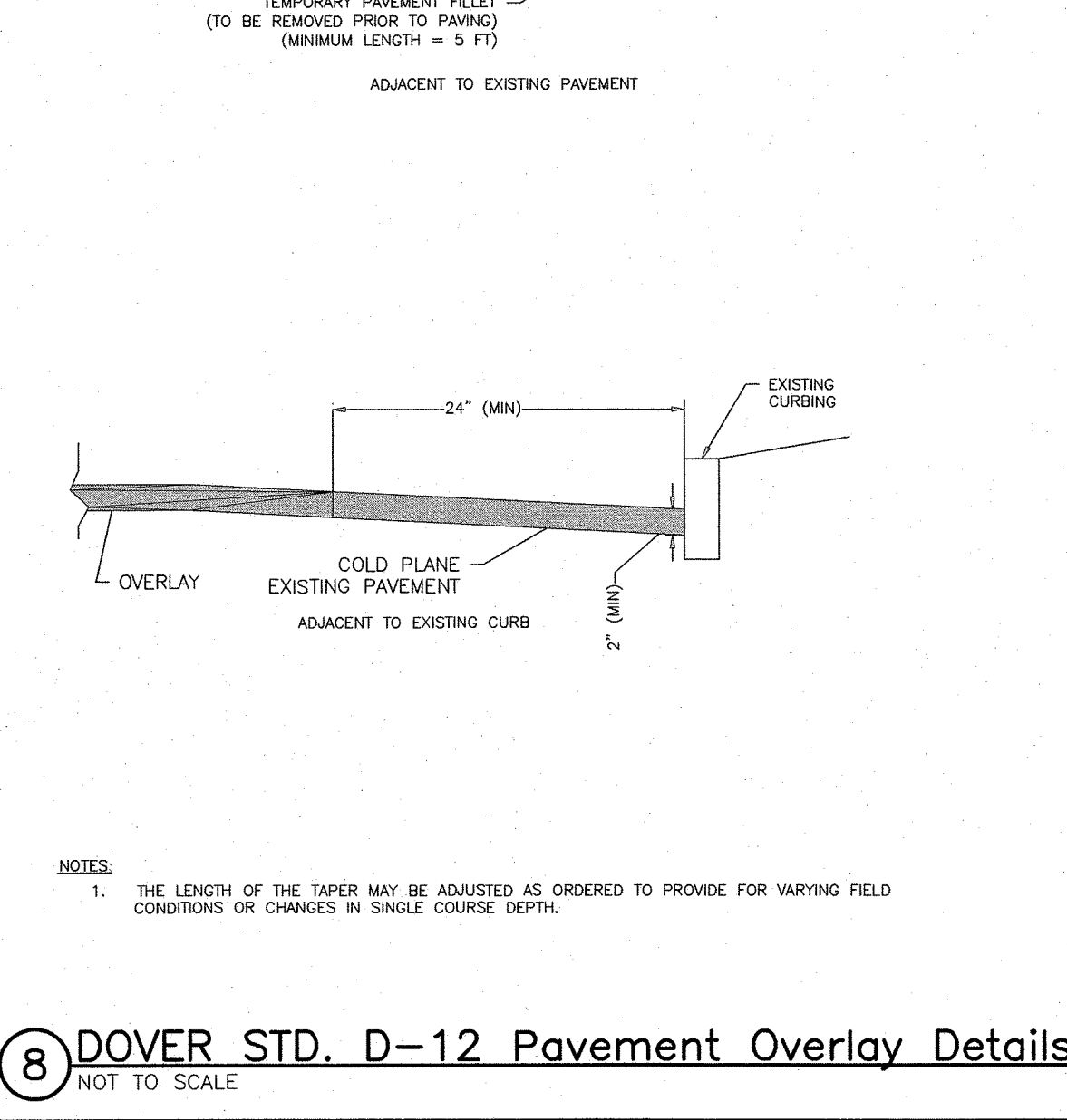
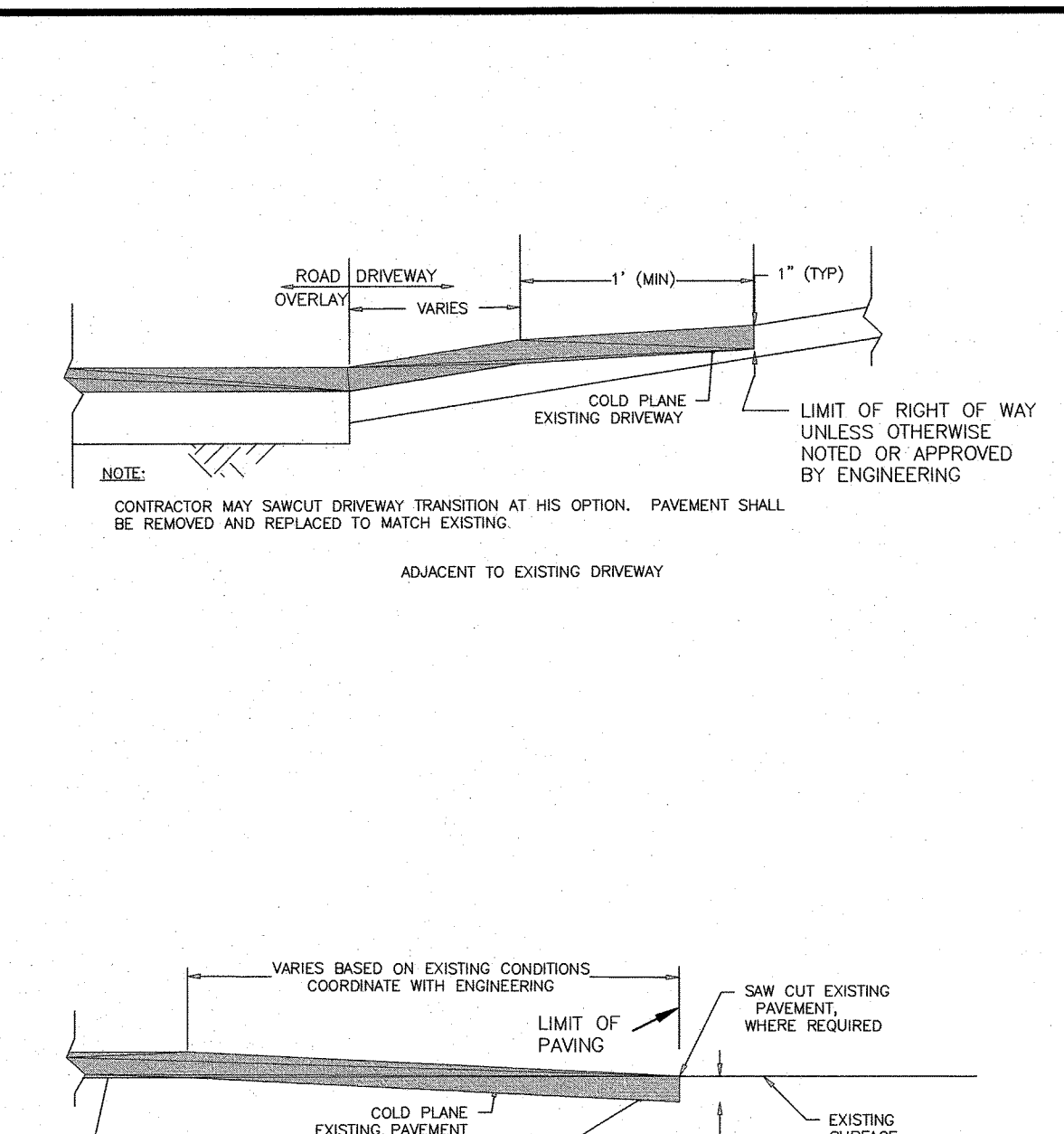
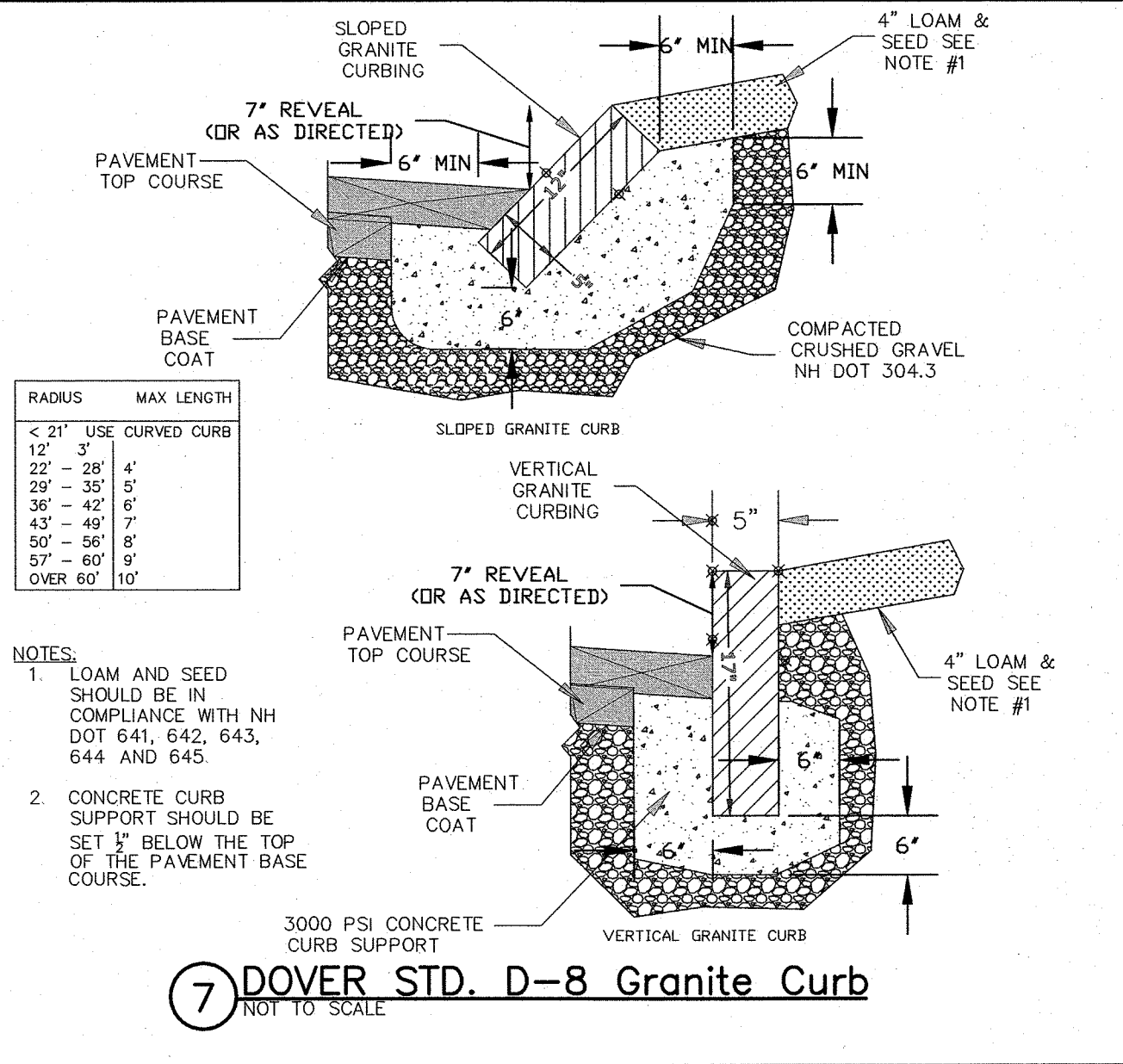
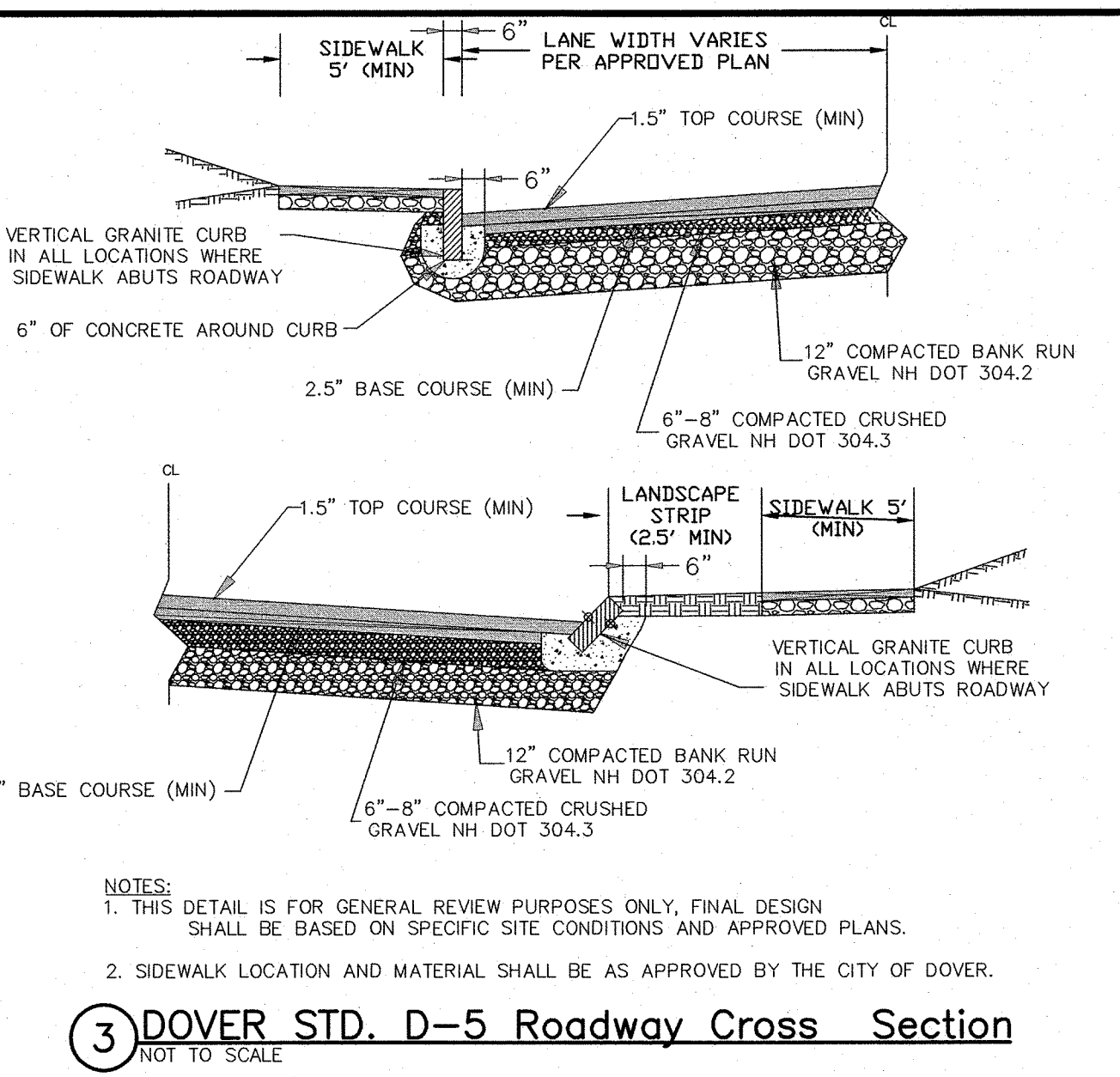
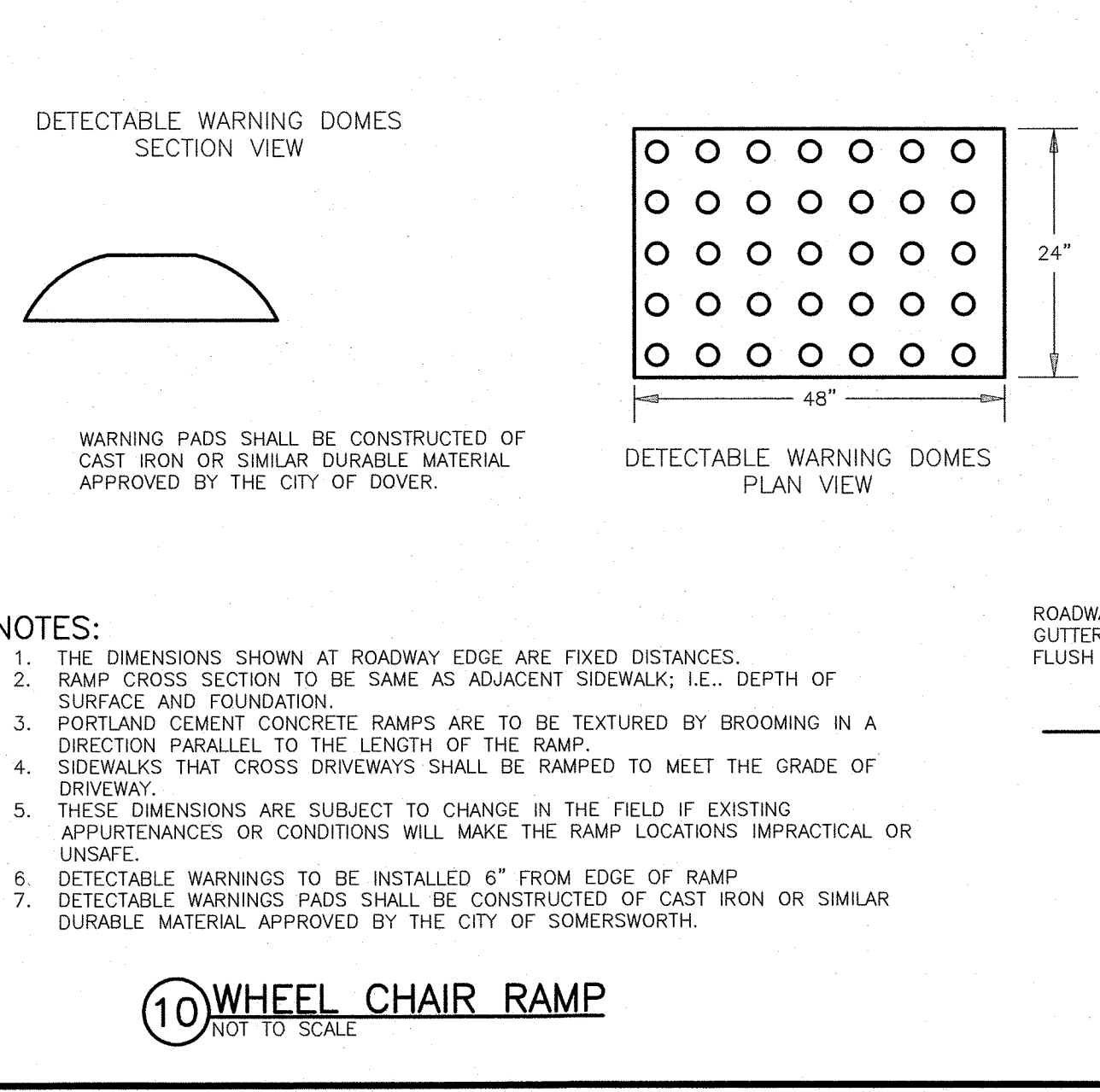
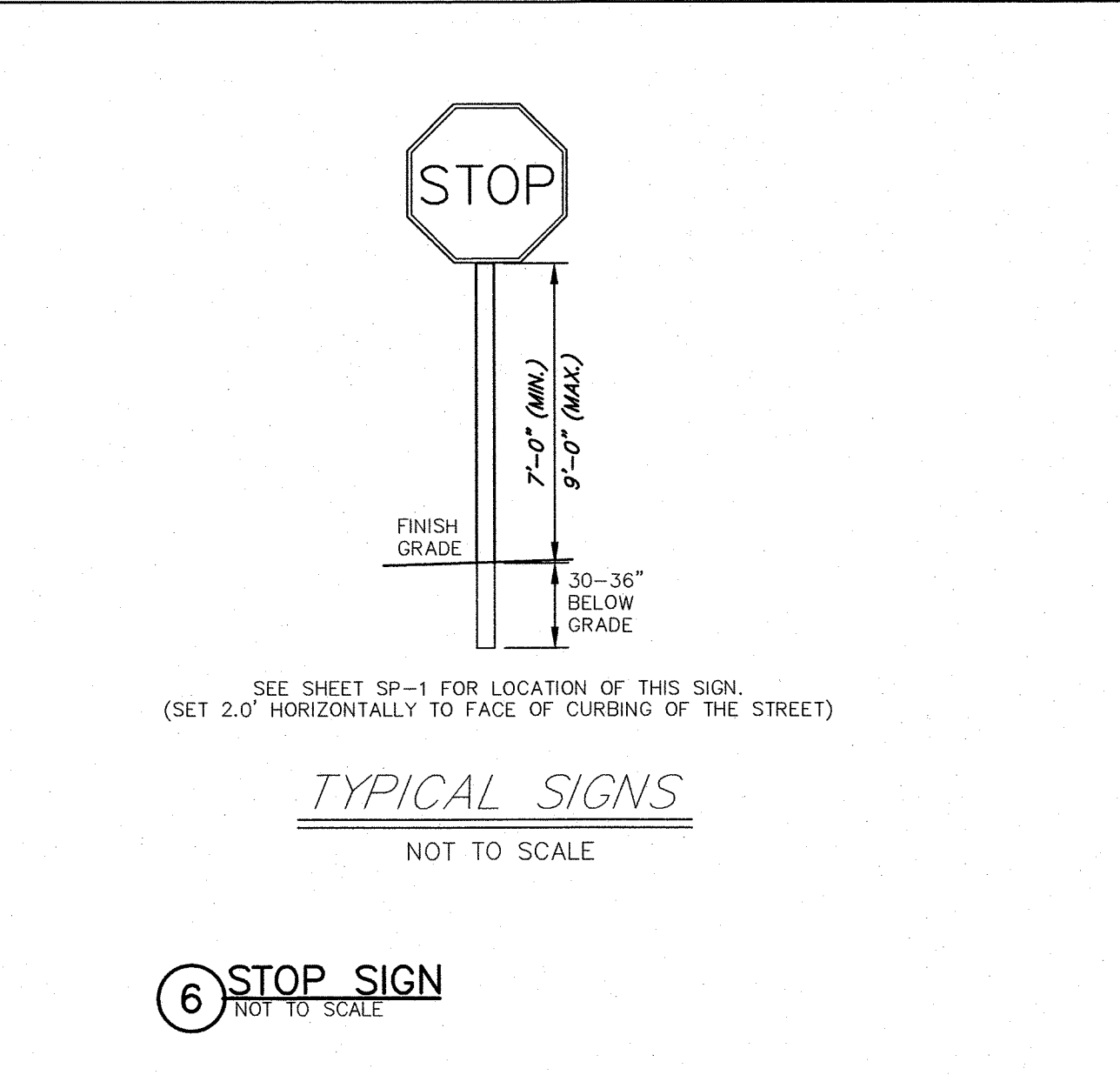
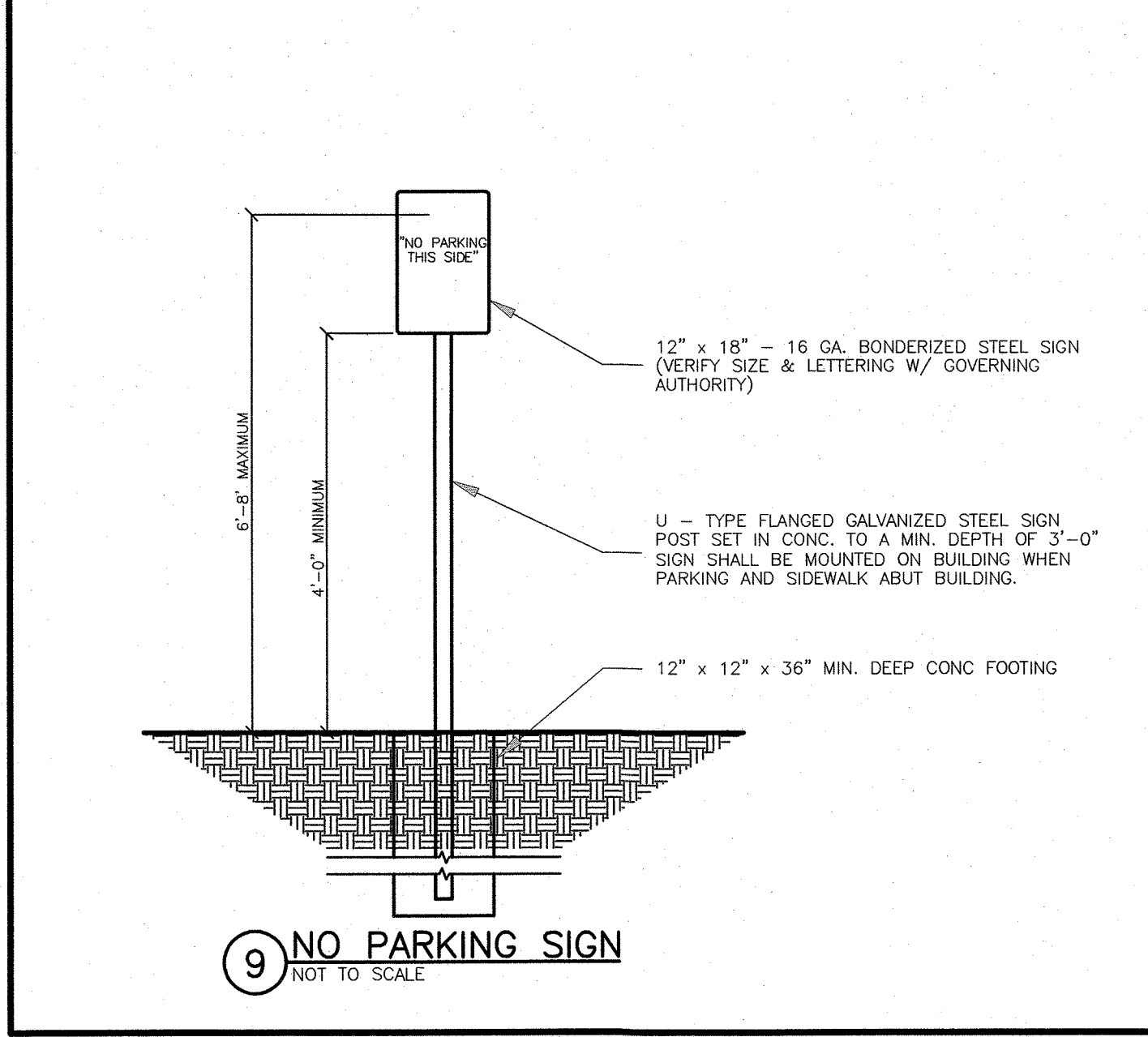
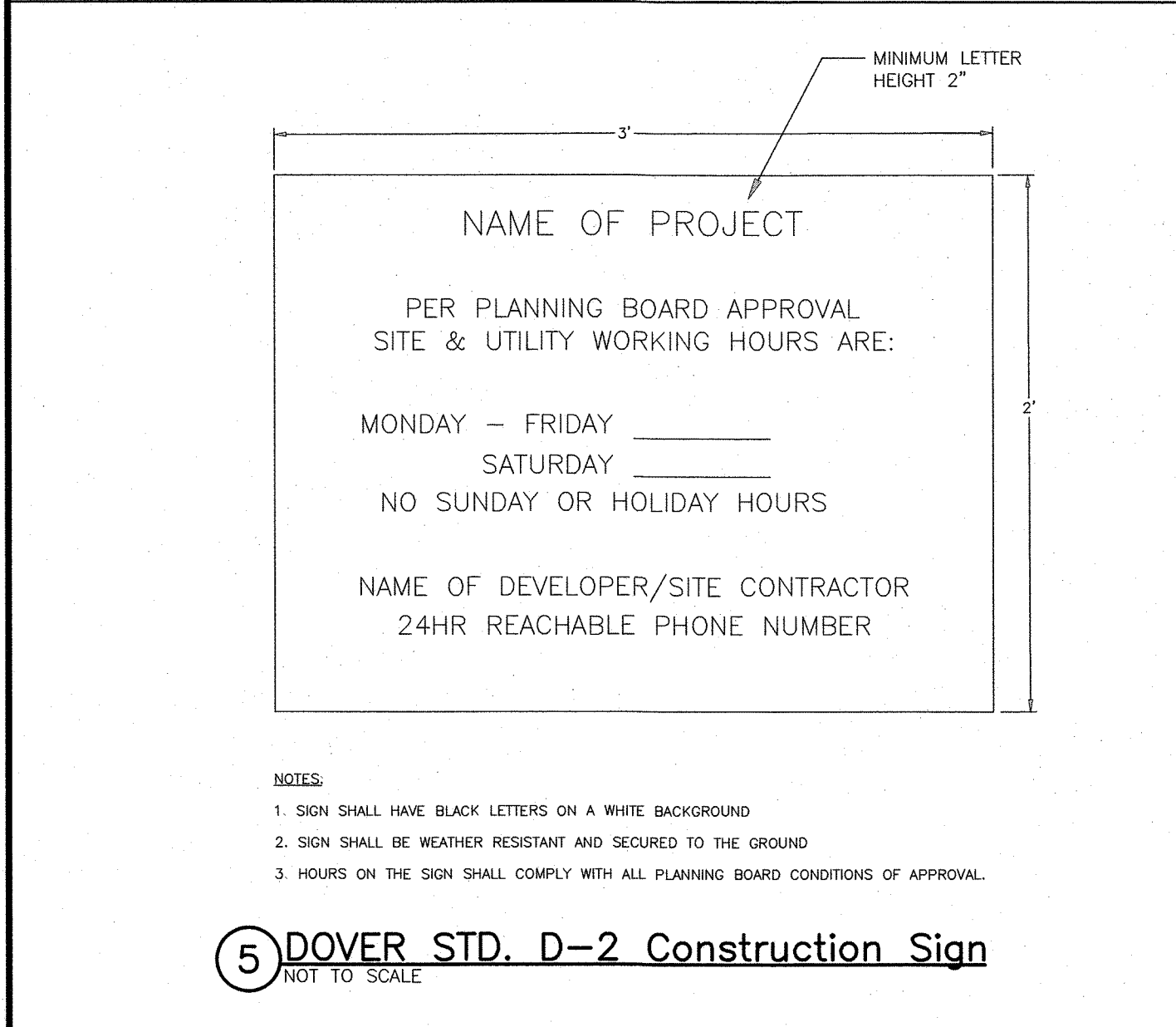
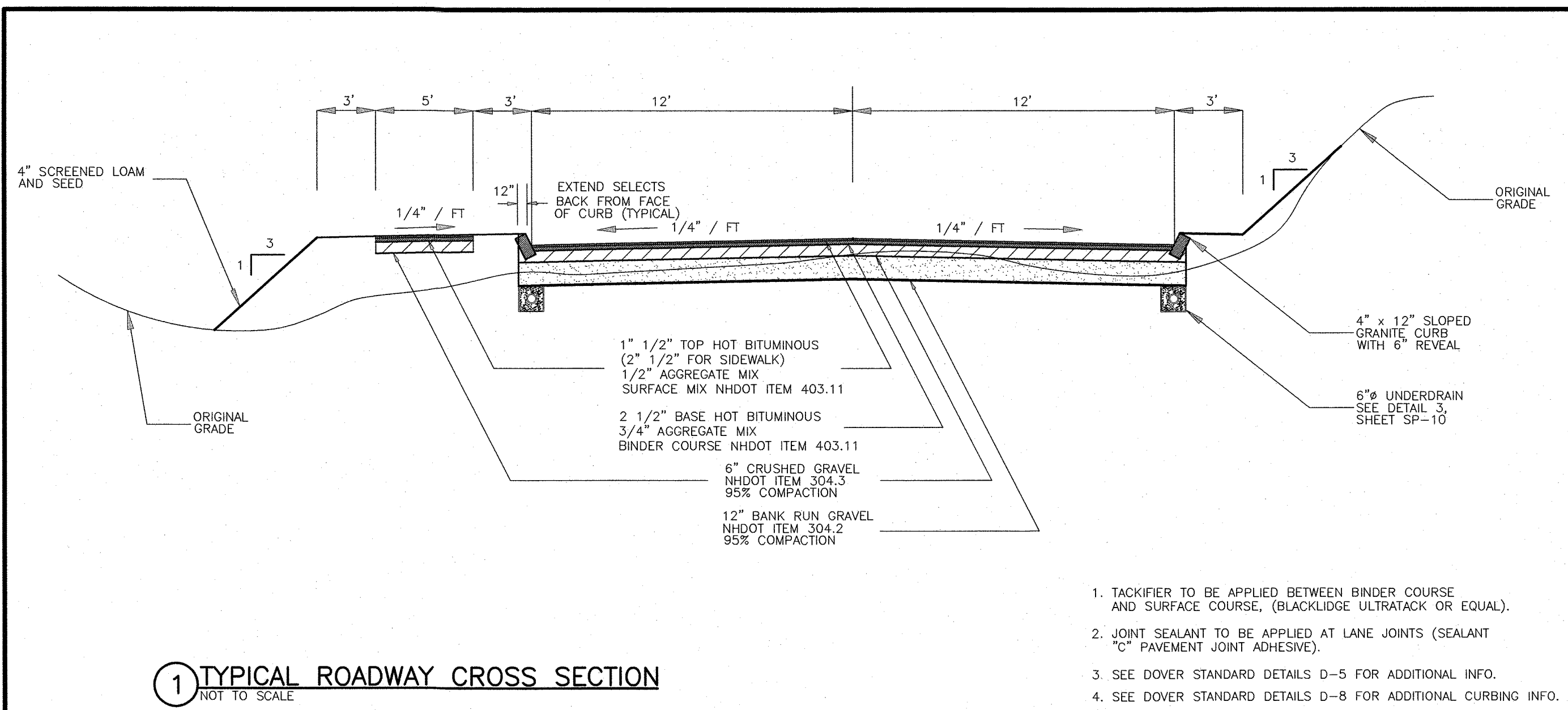
(P25-)



TRITECH ENGINEERING CORPORATION 755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03830 TELEPHONE 603 742 8107 FAX 603 742 9890	ISSUED FOR TRC REVIEW March 6, 2025	REVISIONS DATE: _____ DESCRIPTION: _____ DATE: _____ DESCRIPTION: _____ DATE: _____ DESCRIPTION: _____
	BIORETENTION DETAILS AMBROSE WOODS TAX MAP F LOT 3 210 TOLEND ROAD AND EMERALD LANE DOVER, NEW HAMPSHIRE MARCH 6, 2025 JOB No. 23118 SCALE: 1" = 20'	SHEET No. SP-5



SP-6



TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03800
TELEPHONE 603 748 8007
FAX 603 748 9890

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS

DATE	DESCRIPTION

STATE OF NEW HAMPSHIRE
ROBERT J. STOVELL
REGISTERED PROFESSIONAL ENGINEER
No. 10000

CONSTRUCTION DETAILS

AMBROSE WOODS

TAX MAP F LOT 3

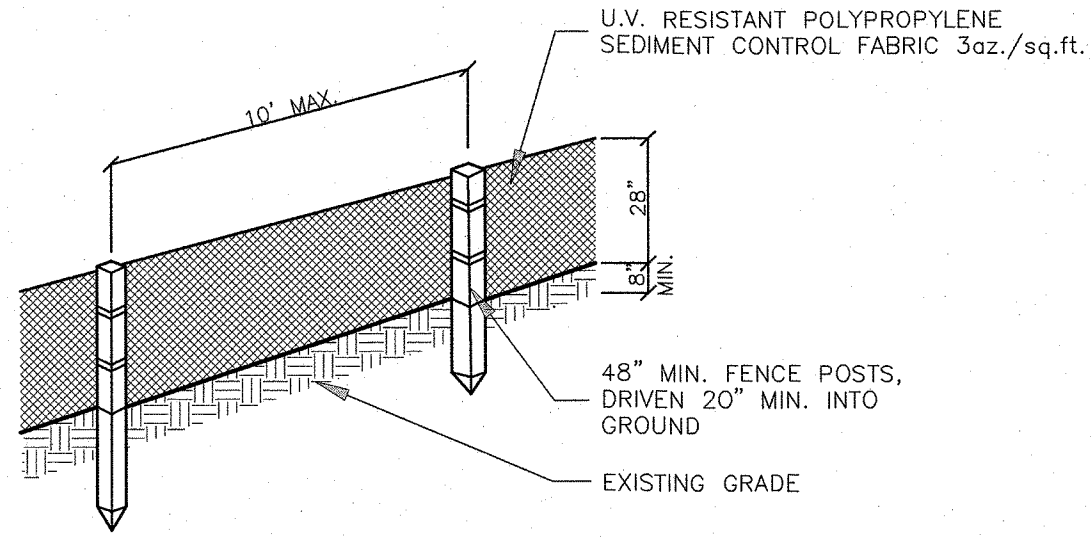
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

SHEET No.

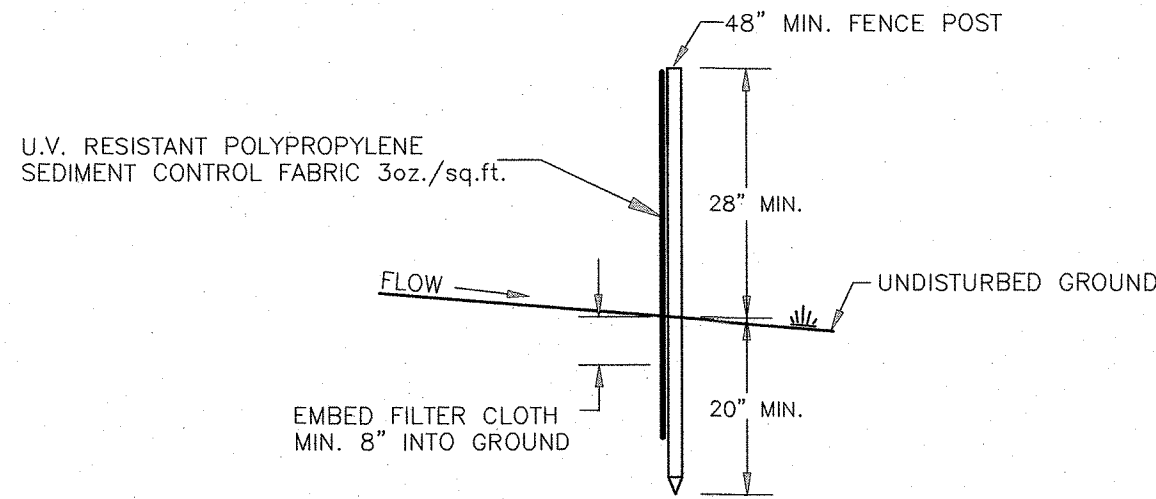
SP-7



PERSPECTIVE VIEW

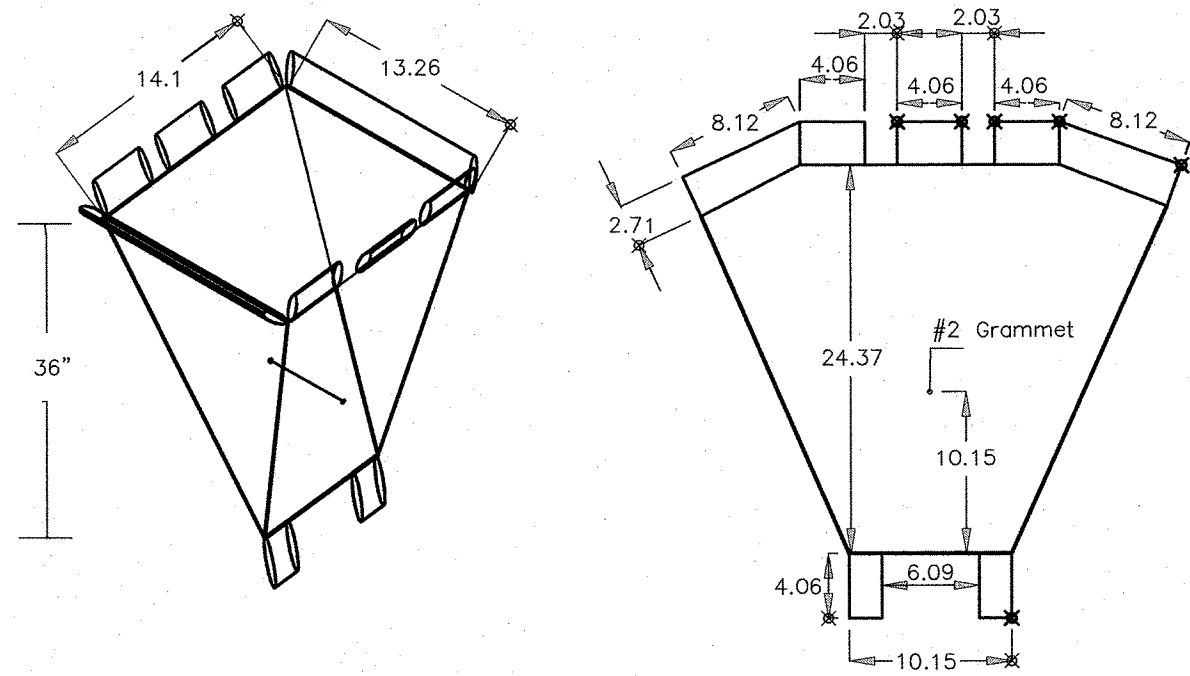
NOTES

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

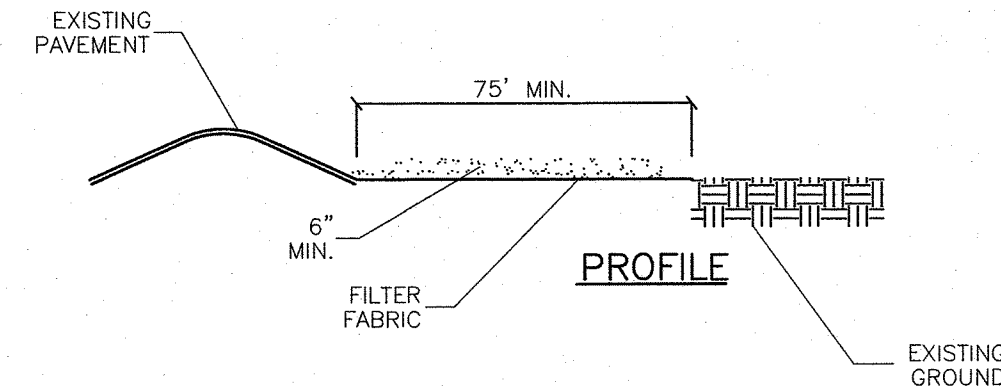


Specifications:

- 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.

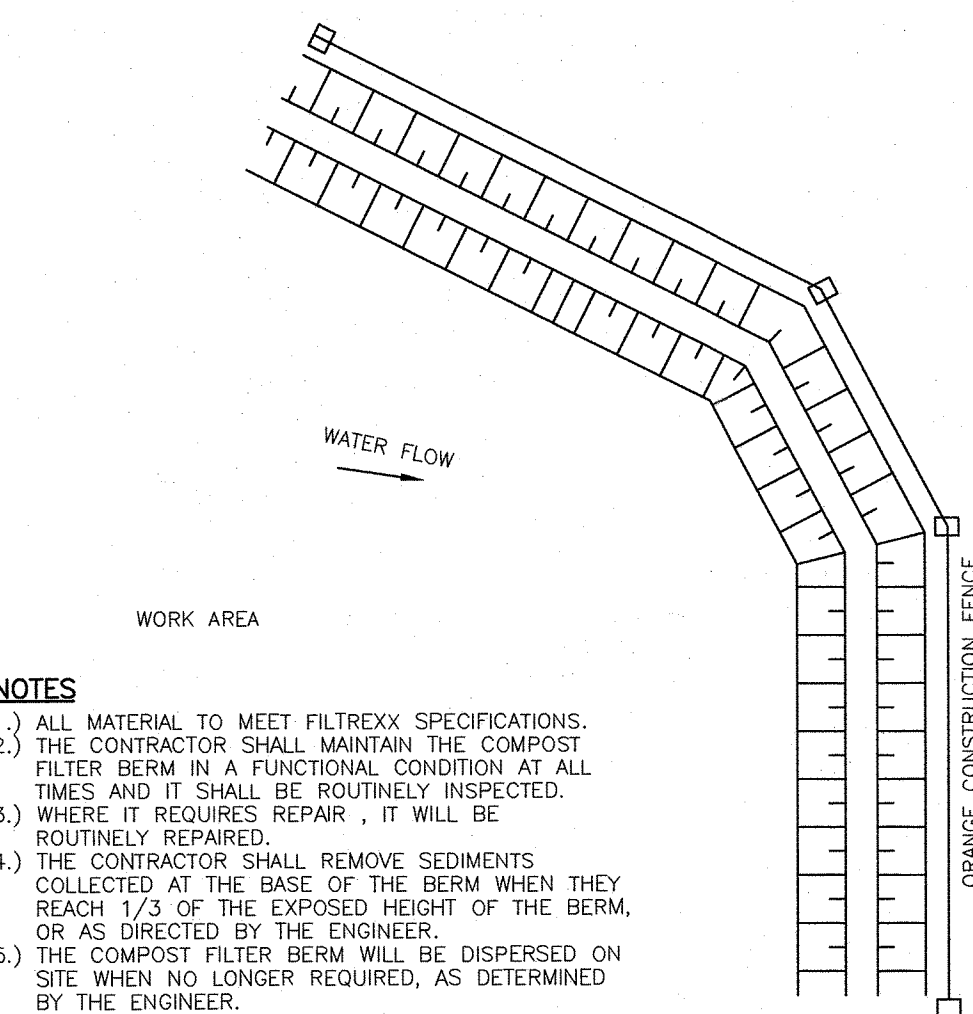
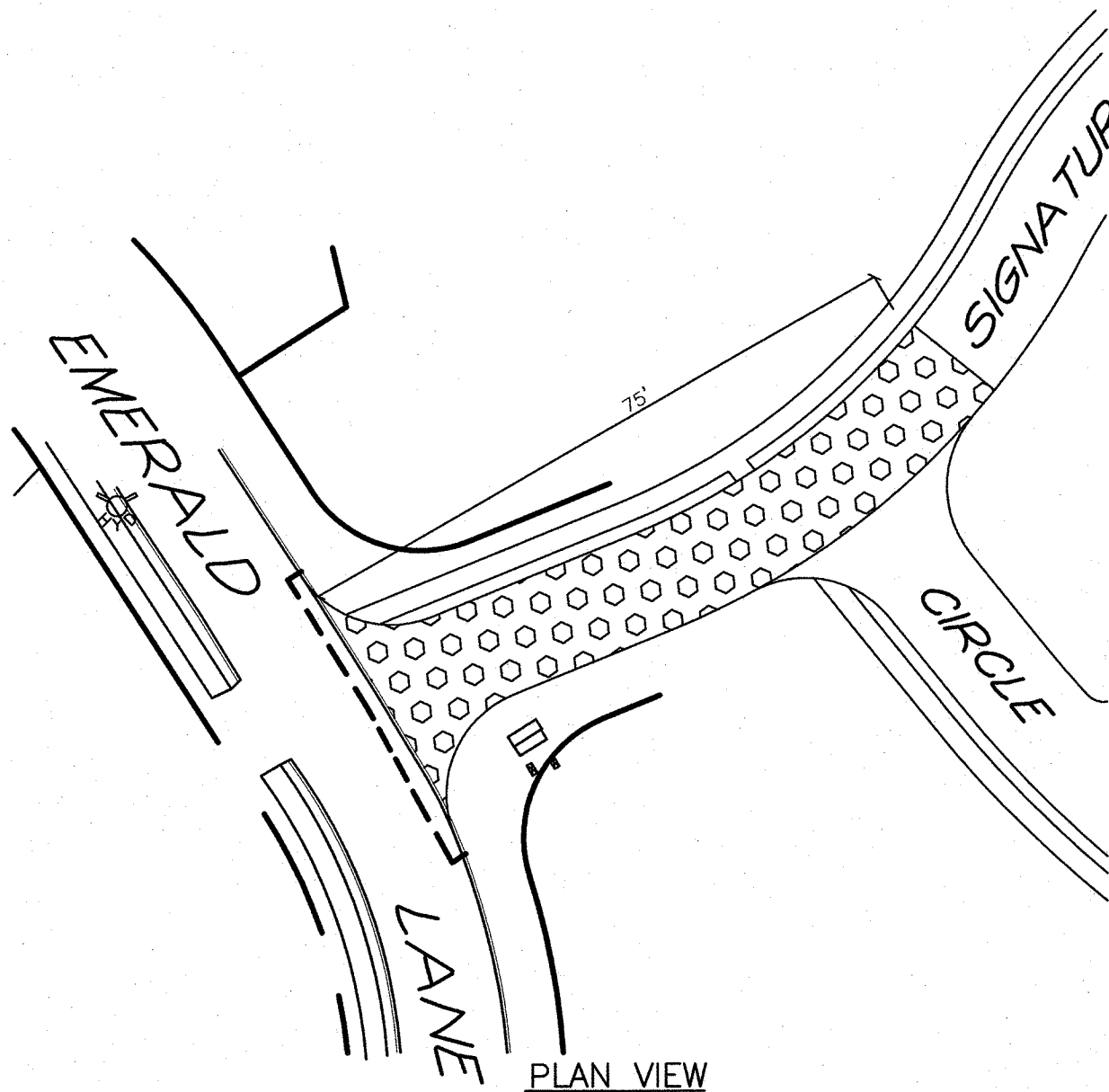
2 Hi Vis Hi Flow Silt Sack
NOT TO SCALE

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.



6 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

3 NOT USED
NOT TO SCALE



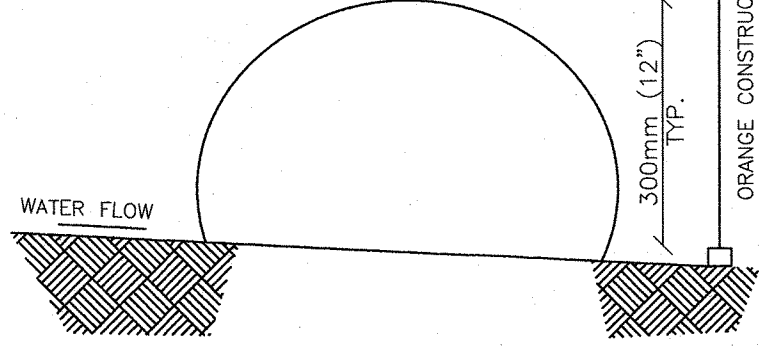
NOTES

- 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

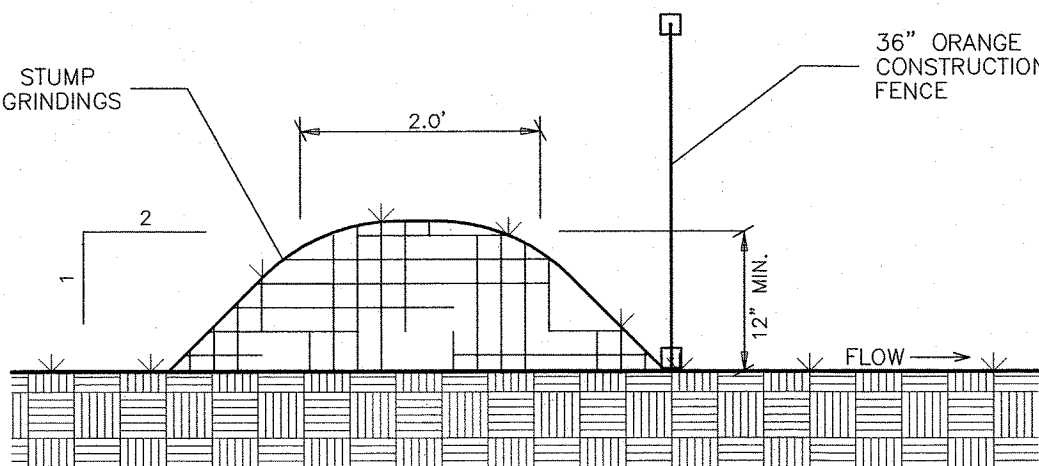
TYPICAL BERM FOR MINIMAL GRADES SHOWN. FOR STEEPER GRADES, I.E. 2:1 SLOPES INCREASE BERM SIZE AS DETERMINED ON SITE BY ENGINEER.

FILTREXX™ FILTER SOCK, SIZED TO SUIT CONDITIONS. 300mm TO 450mm (12" TO 18") TYPICAL.



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 bioretention 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. Frazen 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-erasive 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, SOS 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 pounds 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 sack 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 for additional information.
5. Construct stormwater Bioretention Practices #1 through #4. 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.

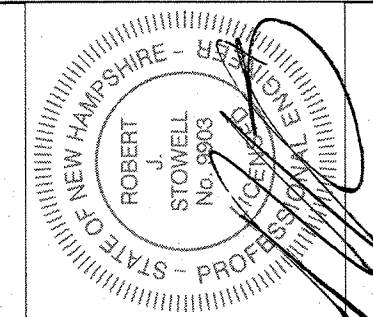
WINTER CONSTRUCTION NOTES

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, or which are disturbed after October 15th, shall be stabilized temporarily with stone or 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

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



CONSTRUCTION DETAILS

AMBROSE WOODS

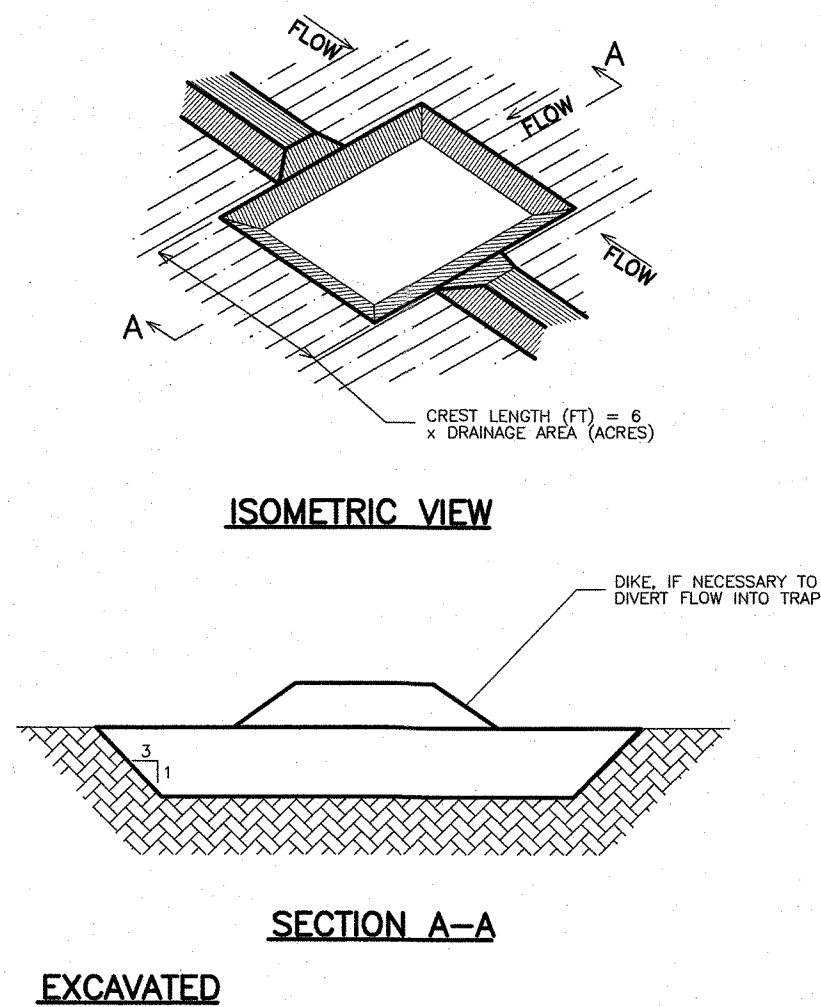
TAX MAP F LOT 3

210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

SHEET No.

SP-8



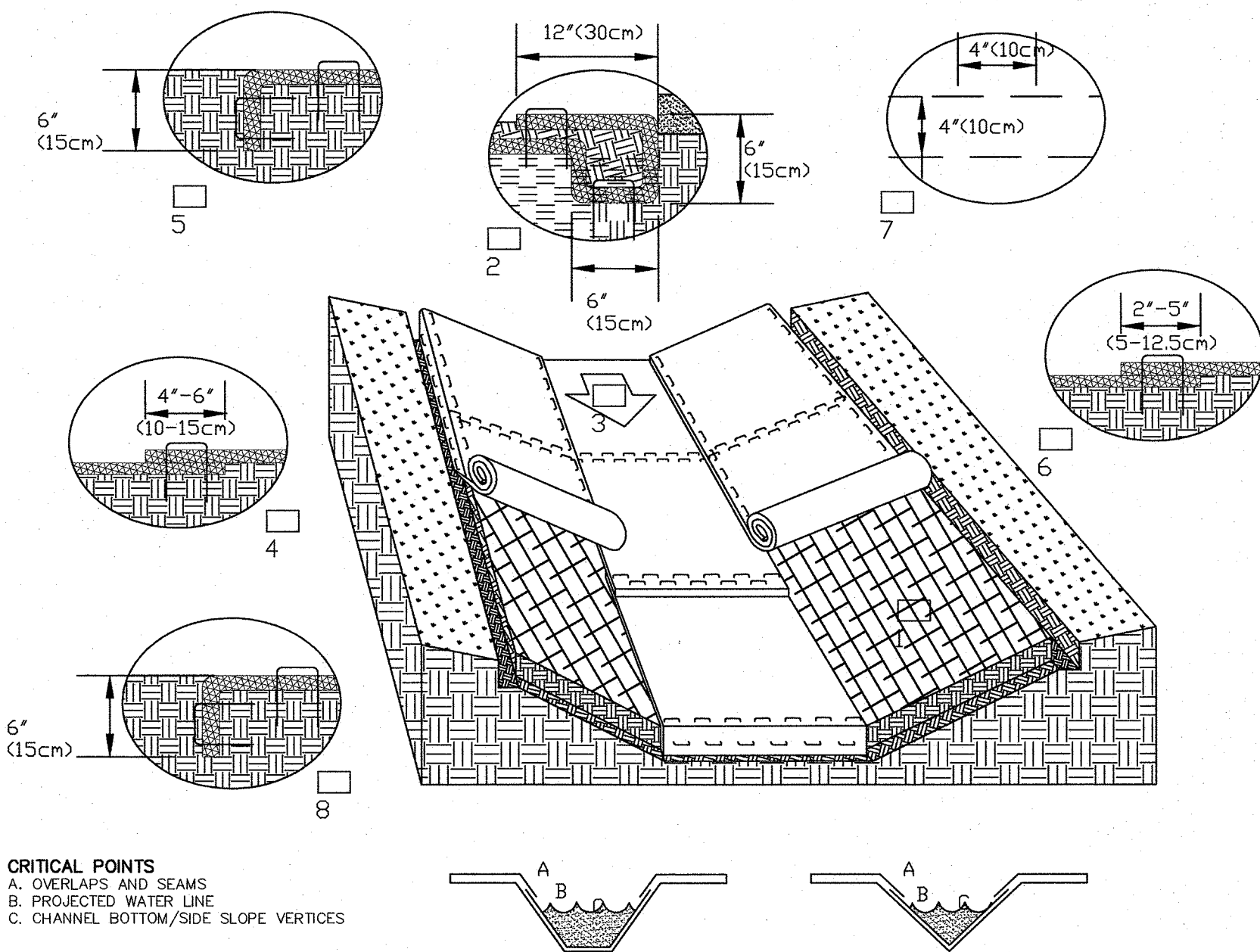
1 EARTH OUTLET SEDIMENT TRAP
NOT TO SCALE

SPECIFICATIONS

1. SEDIMENT TRAPS SHOULD BE LOCATED SO THAT THEY CAN BE INSTALLED PRIOR TO DISTURBING THE AREA THEY ARE TO PROTECT.
2. THE TRAP SHOULD BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
3. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHOULD BE LESS THAN 5 ACRES.
4. THE MINIMUM VOLUME OF THE TRAP SHOULD BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
5. THE SIDE SLOPES OF THE TRAP SHOULD BE 3:1 OR FLATTER, AND SHOULD BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
6. THE MAXIMUM HEIGHT OF THE SEDIMENT TRAP EMBANKMENT SHOULD BE 4 FEET WHEN MEASURED FROM THE LOWEST POINT OF NATURAL GROUND ON THE DOWNSTREAM SIDE OF THE EMBANKMENT.
7. THE MINIMUM TOP WIDTH OF THE EMBANKMENT SHOULD BE 6 FEET.
8. THE OUTLET SHOULD BE DESIGNED, CONSTRUCTED AND MAINTAINED IN SUCH A MANNER THAT SEDIMENT DOES NOT LEAVE THE TRAP AND THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
9. OUTLETS SHOULD BE DESIGNED SO THAT THE TOP OF THE EMBANKMENT IS A MINIMUM OF 1 FOOT ABOVE THE GREST ELEVATION OF THE OUTLET. THE OUTLET OF THE TRAP SHOULD BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP.
10. THE OUTLET SHOULD DISCHARGE TO A STABILIZED AREA. THE OUTLETS MUST EMPTY ONTO UNDISTURBED GROUND, INTO A WATERCOURSE, STABILIZED CHANNEL OR A STORM SEWER SYSTEM.

MAINTENANCE

1. SEDIMENT TRAPS SHOULD BE INSPECTED AT LEAST WEEKLY DURING CONSTRUCTION AND AFTER EVERY STORM (OR DAILY DURING PROLONGED RAINFALL PERIODS), TO INSURE THAT THEY ARE FUNCTIONING PROPERLY AND ARE NOT DAMAGED. REPAIRS SHOULD BE MADE IMMEDIATELY.
2. SEDIMENT SHOULD BE REMOVED AND THE TRAP RESTORED TO ORIGINAL CAPACITY WHEN SEDIMENT HAS ACCUMULATED TO 50% OF THE ORIGINAL VOLUME.
3. THE MATERIALS REMOVED FROM THE TRAP SHOULD BE PROPERLY DISPOSED OF AND STABILIZED.
4. SEDIMENT TRAP OUTLETS SHOULD BE EXAMINED AT THE TIME OF INSPECTION FOR ANY DAMAGE, AND REPAIRED IMMEDIATELY IF ANY SUCH DAMAGE IS OBSERVED.
5. GEOTEXTILE FABRIC OR STONE USED AROUND A PIPE-OUTLET RISER SHOULD BE CHECKED PERIODICALLY AND REPLACED WHEN THE MATERIAL HAS BECOME CLOGGED WITH SEDIMENT.



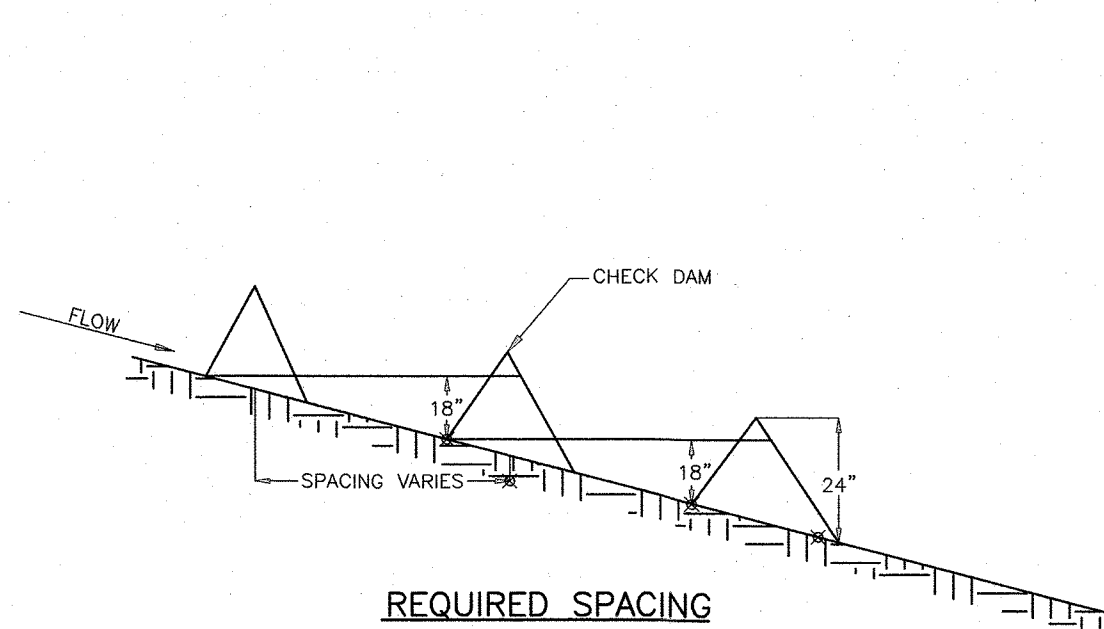
3 EROSION CONTROL BLANKET – NORTH AMERICAN GREEN – SC150BN
NOT TO SCALE

NOTES

1. PREPARE SOIL BEFORE IN STALLING ROLLED EROSION CONTROL PRODUCTS (RECPs) INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL, BY ANCHORING THE RECPs IN A 6" (15cm) DEEP x 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30 cm) OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. USE SHOREMAX MAT AT THE CHANNEL/CULVERT OUTLET AS SUPPLEMENTAL SCOUR PROTECTION AS NEEDED. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" (30 cm) PORTION OF RECPs BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPs.
3. ROLL CENTER RECPs IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE RECPs END-OVER-END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECPs.
5. FULL LENGTH EDGE OF RECPs AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP x 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECPs MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5-12cm) (DEPENDING ON RECPs TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECPs MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP x 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. THERE SHALL BE NO PLASTIC, OR MULTI FILAMENT, OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED. (NOT APPLICABLE TO TURF REINFORCEMENT MATS).
10. TURF REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.
11. TO BE USED ON SLOPES OF GREATER THAN 3 TO 1 AND IN THE PROPOSED DRAINAGE SWALES.

NOTES

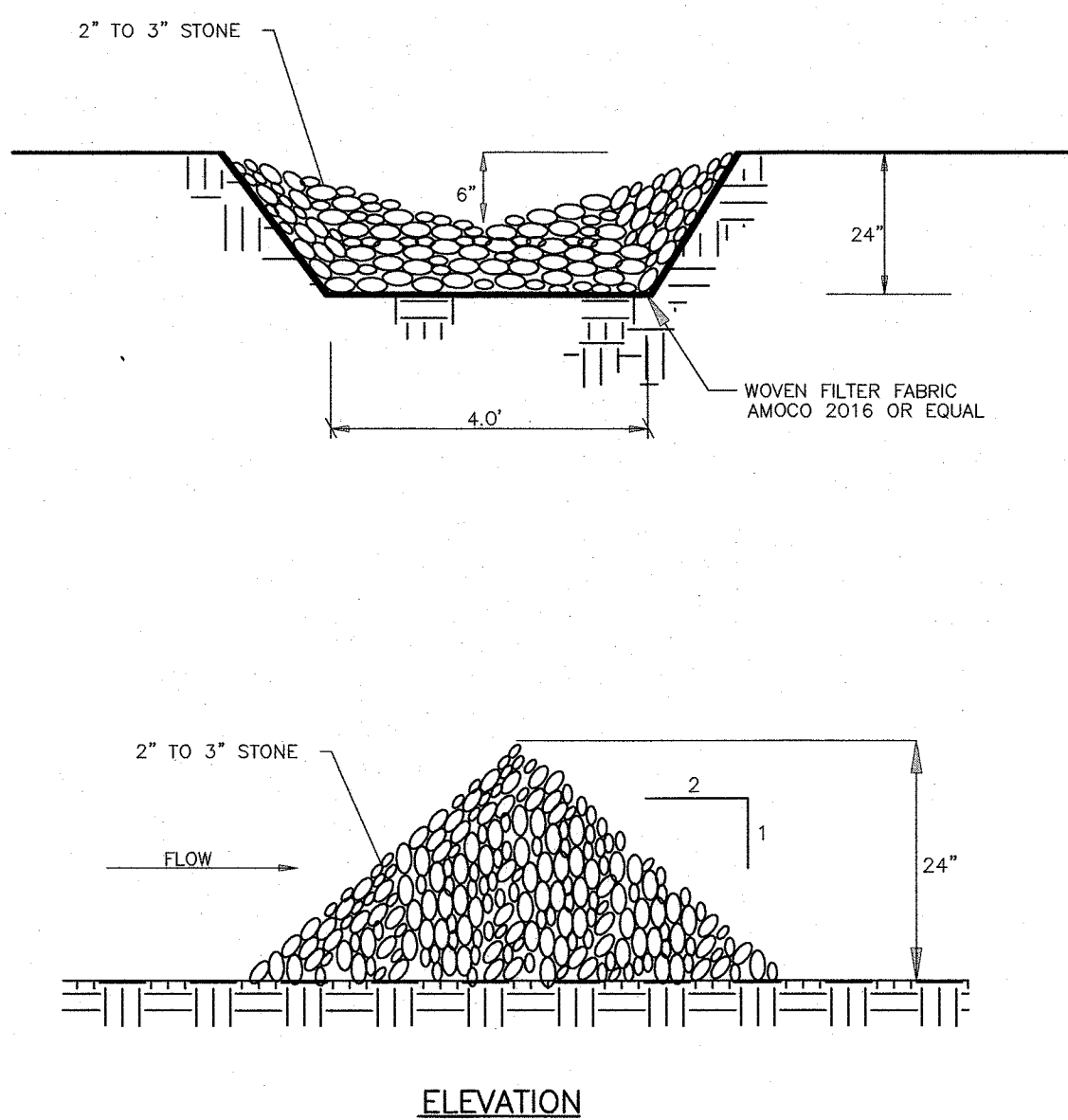
- *HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
- **IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE RECPs.



CONSTRUCTION SPECIFICATIONS

1. CHECK DAMS TO BE SPACED SO THAT THE BOTTOM OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE DOWNSTREAM OVERFLOW.

5 STONE CHECK DAM
NOT TO SCALE



7 NOT USED
NOT TO SCALE

8 NOT USED
NOT TO SCALE

PIPE	START	INV.	END	INV.	SIZE	L.F.	SLOPE
P-101	CB 101	169.55	CB 102	169.15	12"	20'	2.00%
P-102	CB 102	169.05	FES 101	168.50	18"	46'	1.20%
P-103	CB 103	166.15	CB 104	165.75	12"	20'	2.00%
P-104	CB 104	165.65	FES 103	164.15	18"	120'	1.25%
P-105	CB 111	163.40	CB 105	162.60	15"	40'	2.00%
P-106	CB 105	162.50	CB 106	162.10	18"	20'	2.00%
P-107	CB 106	162.00	FES 105	161.50	24"	50'	1.00%
P-108	CB 112	167.00	CB 107	164.50	15"	135'	1.85%
P-109	CB 107	164.40	CB 108	164.00	18"	20'	2.00%
P-110	CB 108	163.90	DMH 101	163.30	18"	58'	1.03%
P-111	CB 109	166.55	CB 110	166.15	12"	20'	2.00%
P-112	CB 110	166.05	DMH 101	163.30	15"	52'	5.29%
P-113	DMH 101	163.20	FES 107	161.50	24"	154'	1.10%
P-114	CB 113	171.10	CB 102	169.15	12"	142'	1.37%
P-115	OS 101	164.20	FES 102	164.00	12"	18'	1.11%
P-116	OS 102	163.00	FES 104	162.70	12"	56'	0.54%
P-117	OS 103	158.40	FES 106	157.95	15"	45'	1.00%
P-118	OS 104	158.65	FES 108	158.05	12"	60'	1.00%

10 DRAIN PIPE TABLE
NOT TO SCALE

STRUCTURE	RM ELEV.	INVERT IN	INVERT OUT	SUMP	NOTES
CB 101	173.62		169.55	166.55	
CB 102	173.62	169.15 (P-101) 169.15 (P-114)	169.05	166.05	
CB 103	170.25		166.15	163.15	
CB 104	170.25	165.75 (P-103)	165.65	162.65	
CB 105	167.71	162.60 (P-105)	162.50	159.50	6" DIAMETER STRUCTURE W/ DOUBLE GRATE (2) R-3571
CB 106	167.71	162.10 (P-106)	162.00	159.00	6" DIAMETER STRUCTURE W/ DOUBLE GRATE (2) R-3571
CB 107	169.03	164.50 (P-108)	164.40	161.40	6" DIAMETER STRUCTURE W/ DOUBLE GRATE (2) R-3571
CB 108	169.03	164.00 (P-109)	163.90	160.90	6" DIAMETER STRUCTURE W/ DOUBLE GRATE (2) R-3571
CB 109	170.67		166.55	163.55	
CB 110	170.67	166.15 (P-111)	166.05	163.05	
CB 111	167.00		163.40	160.40	
CB 112	171.00		167.00	164.00	BEEHIVE GRATE R-2561
CB 113	175.20		171.10	168.10	BEEHIVE GRATE R-2561
DMH 101	170.00	163.30 (P-110) 163.30 (P-112)	163.20	160.20	
FES 101		168.50 (P-102)			
FES 102		164.00 (P-115)			
FES 103		164.15 (P-104)			
FES 104		162.70 (P-116)			
FES 105		161.50 (P-107)			
FES 106		157.95 (P-117)			
FES 107		161.50 (P-113)			
FES 108		158.00 (P-118)			
OS 101	169.50		164.20		
OS 102	166.50		163.00		
OS 103	163.50		158.40		
OS 104	163.00		158.65		

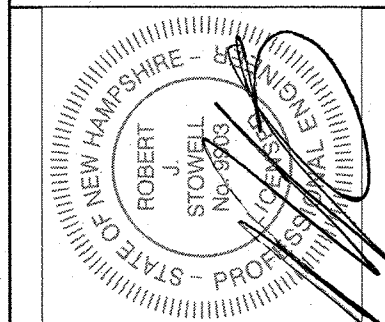
11 STRUCTURE TABLE
NOT TO SCALE

12 NOT USED
NOT TO SCALE

9 NOT USED
NOT TO SCALE

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



CONSTRUCTION DETAILS

AMBROSE WOODS

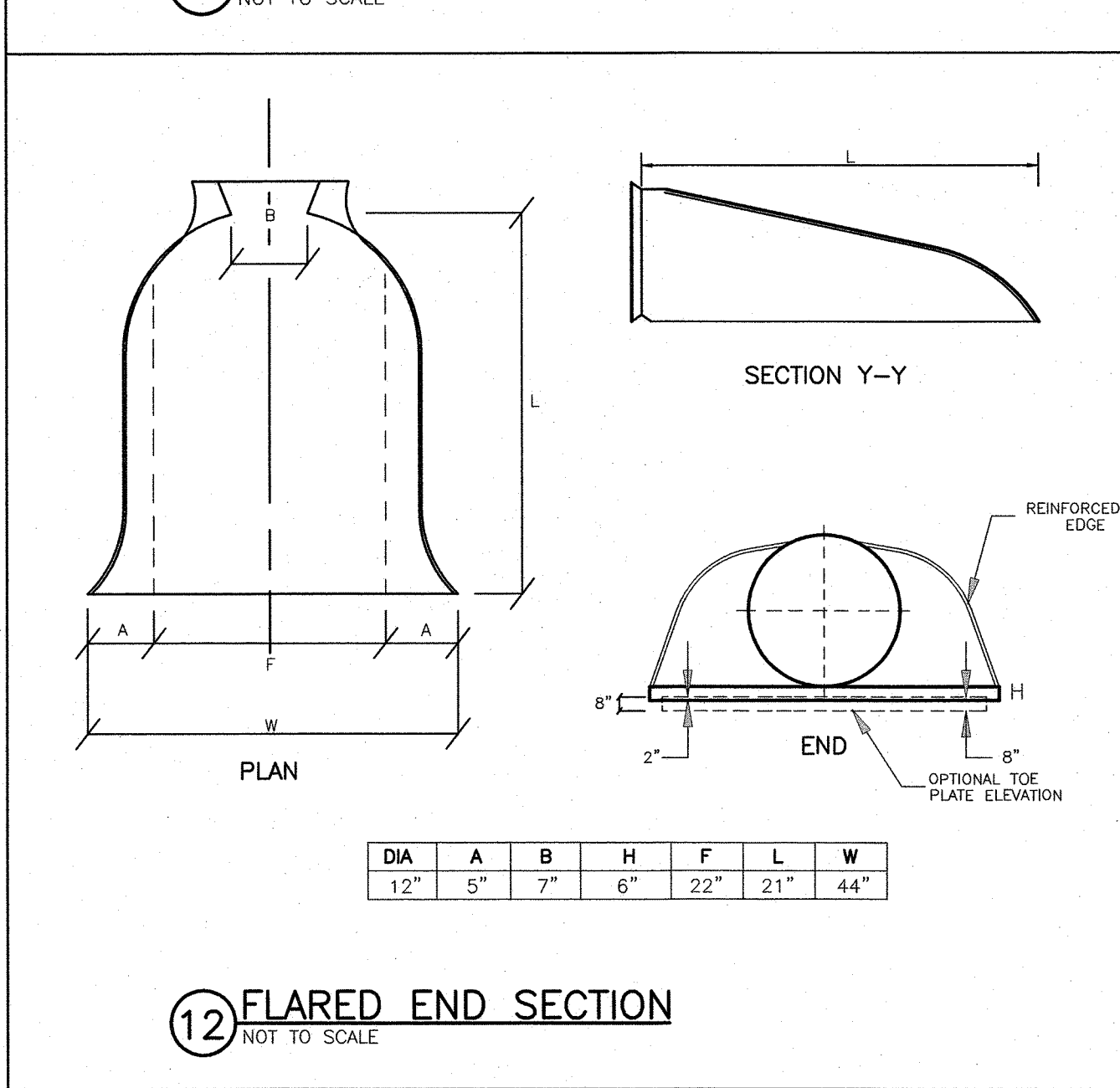
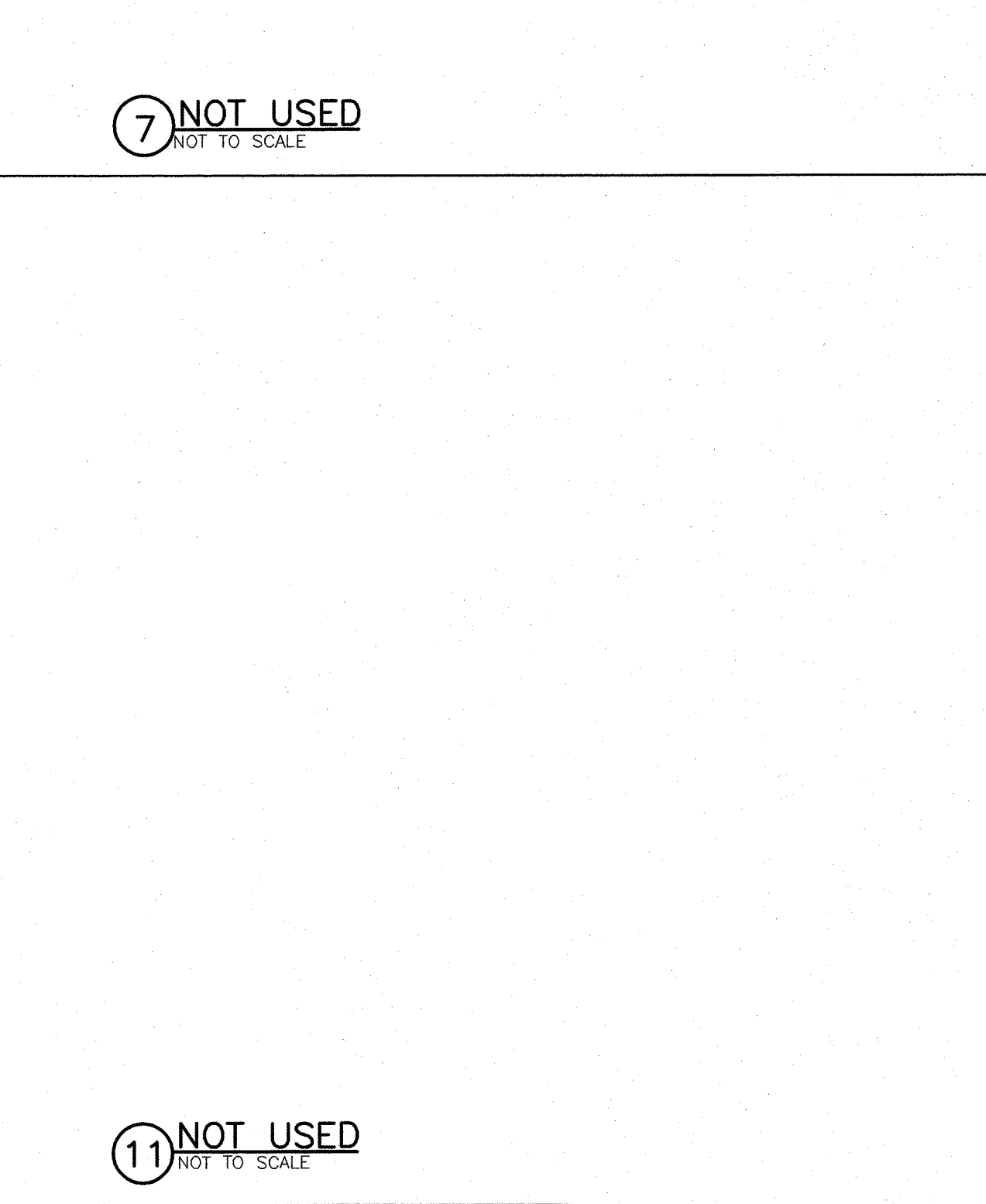
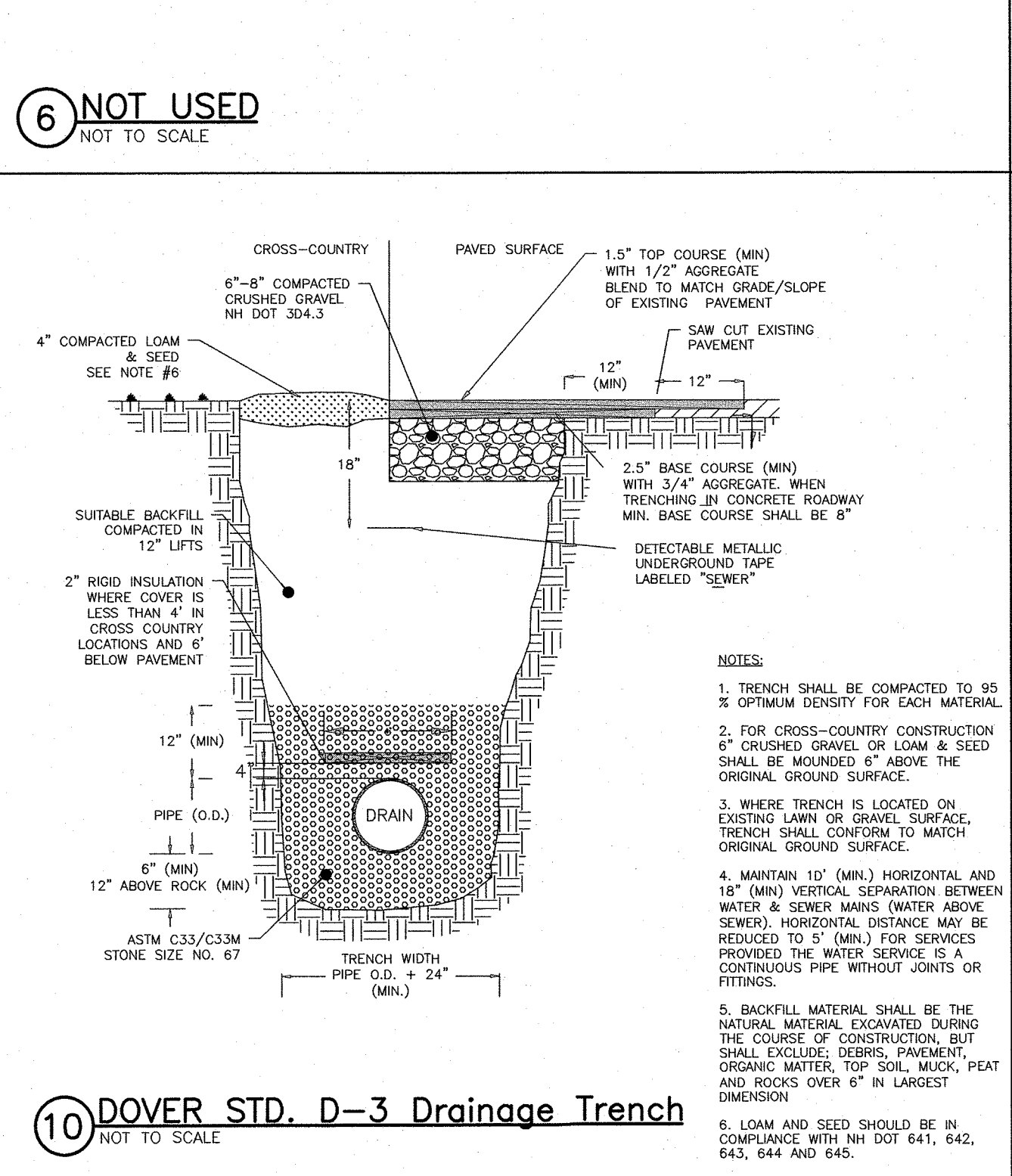
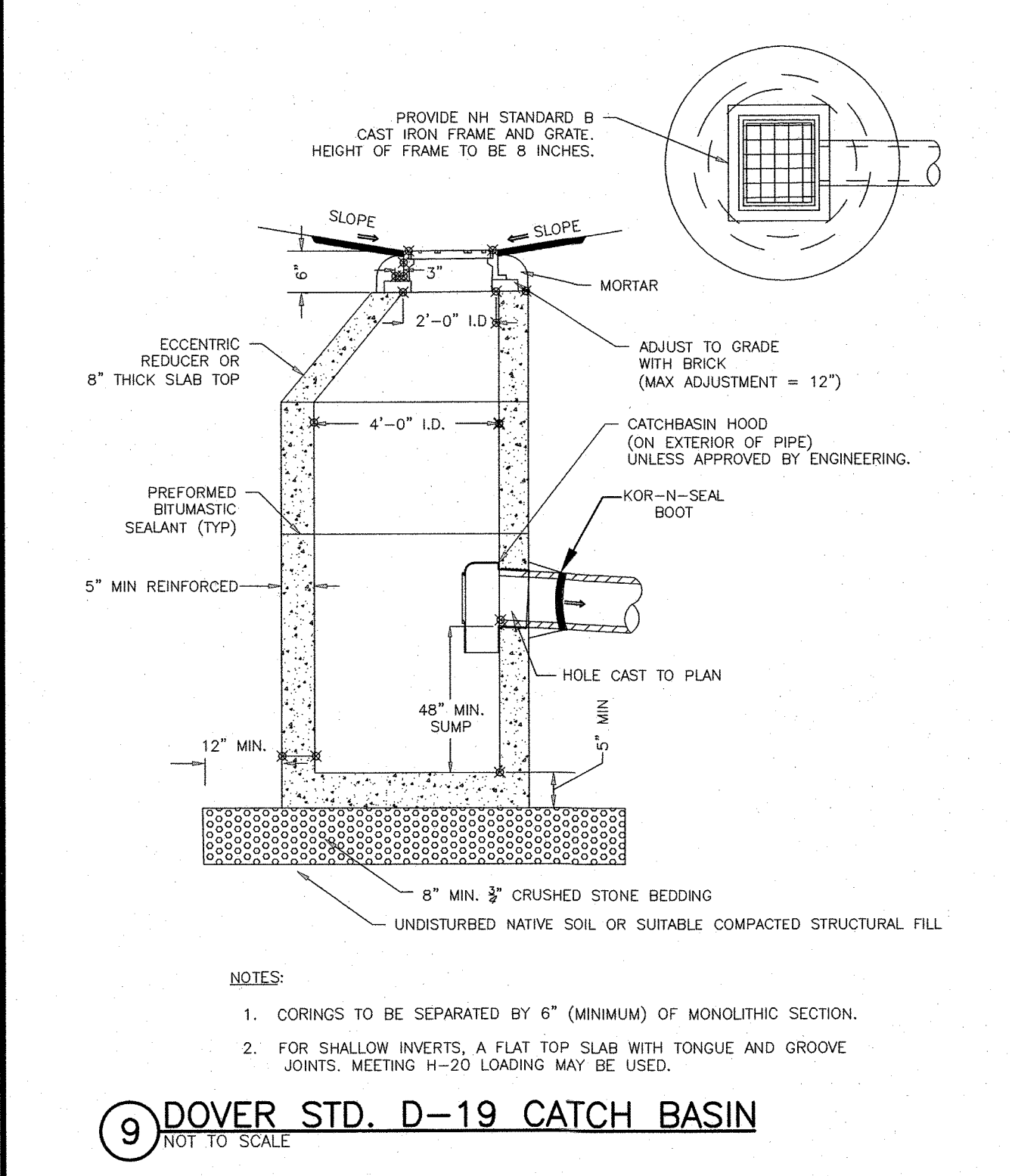
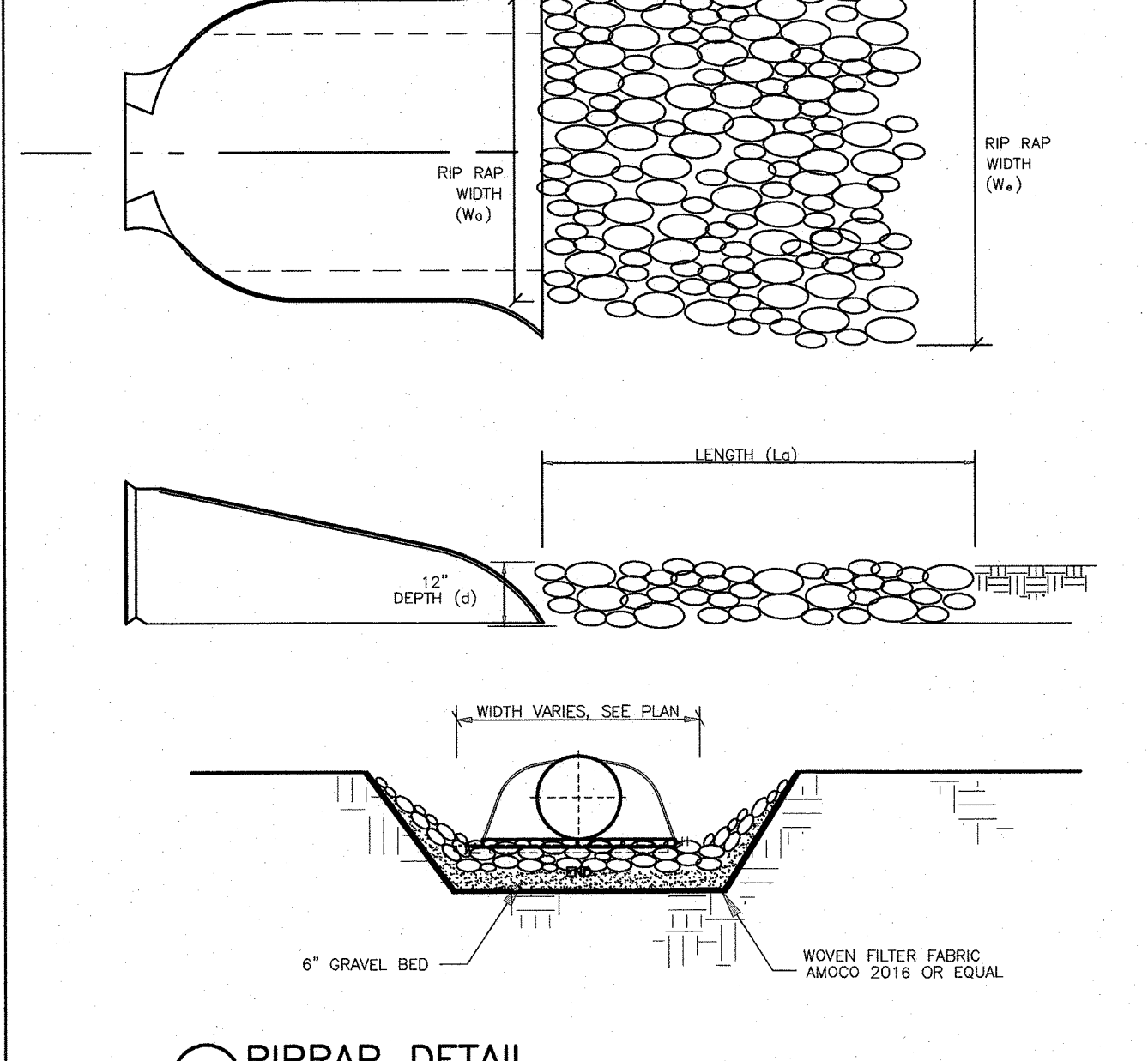
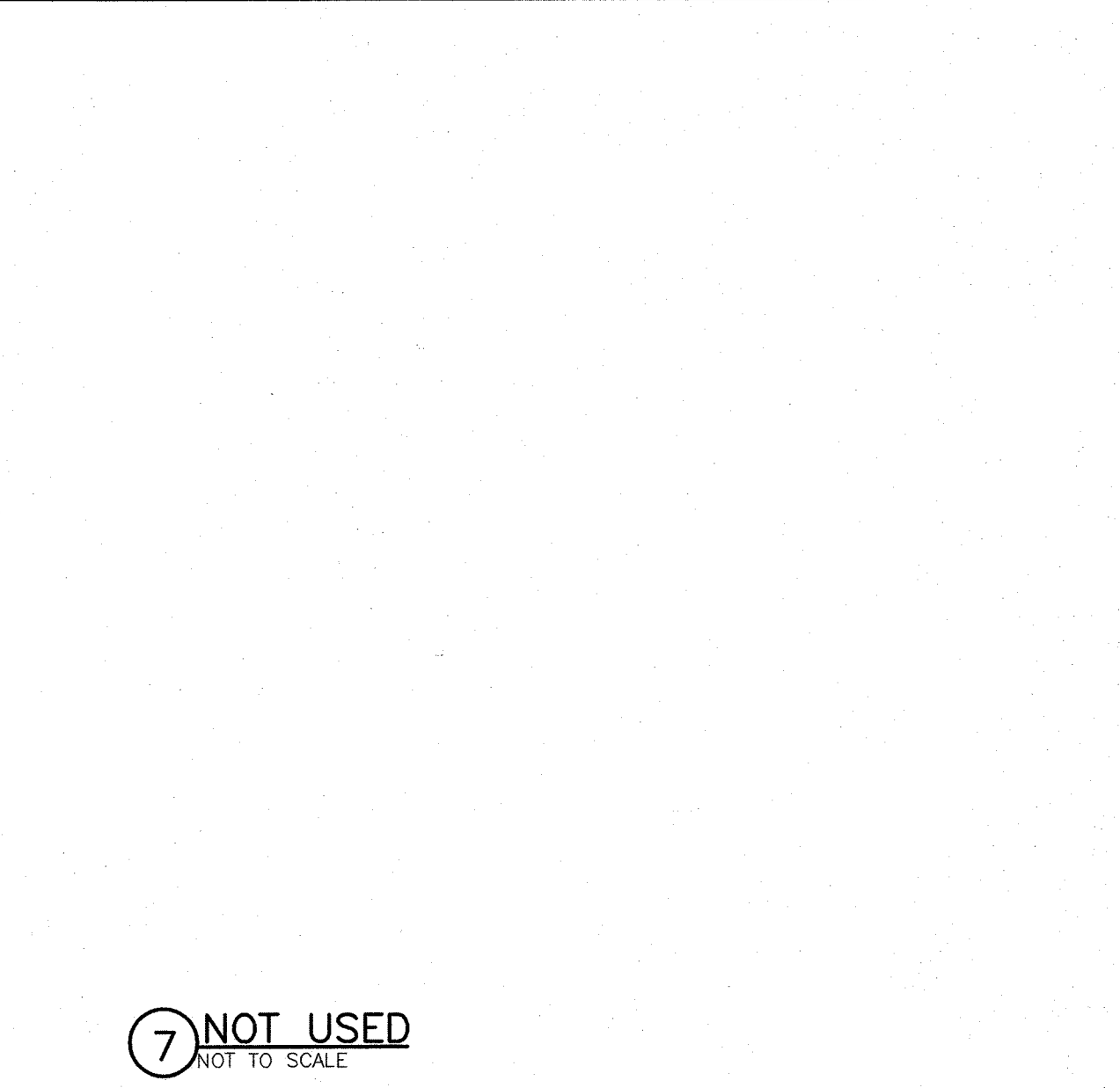
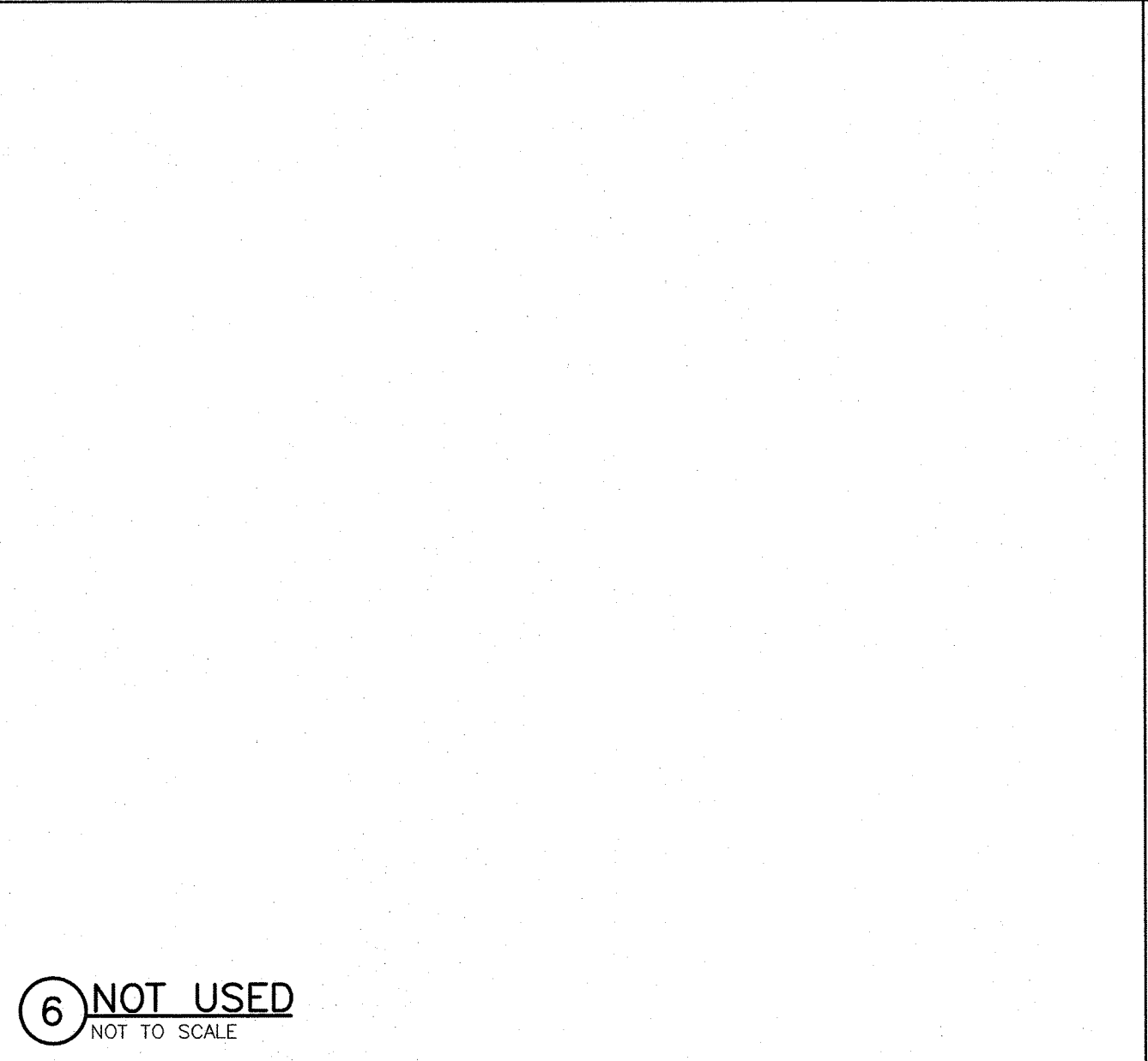
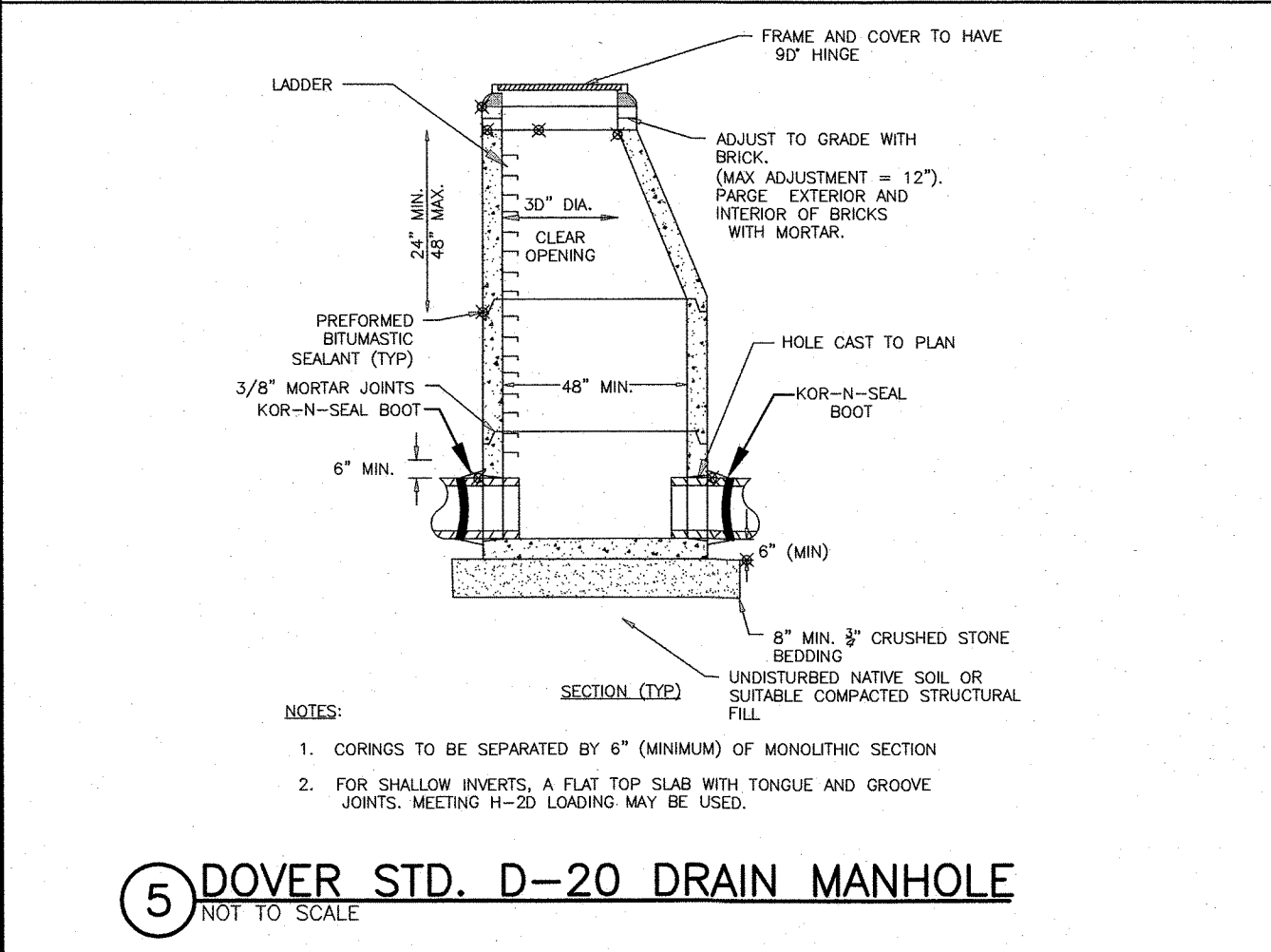
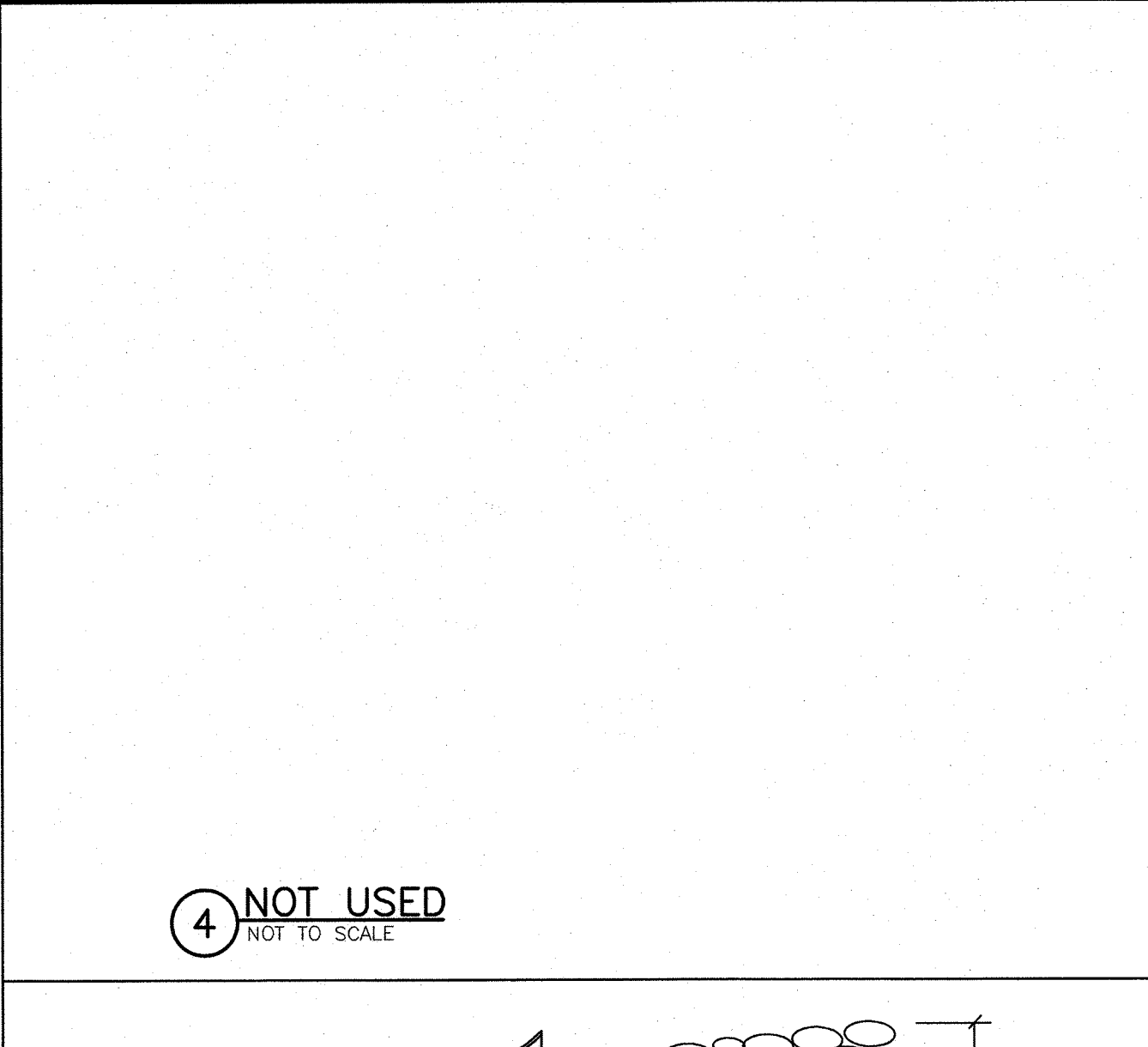
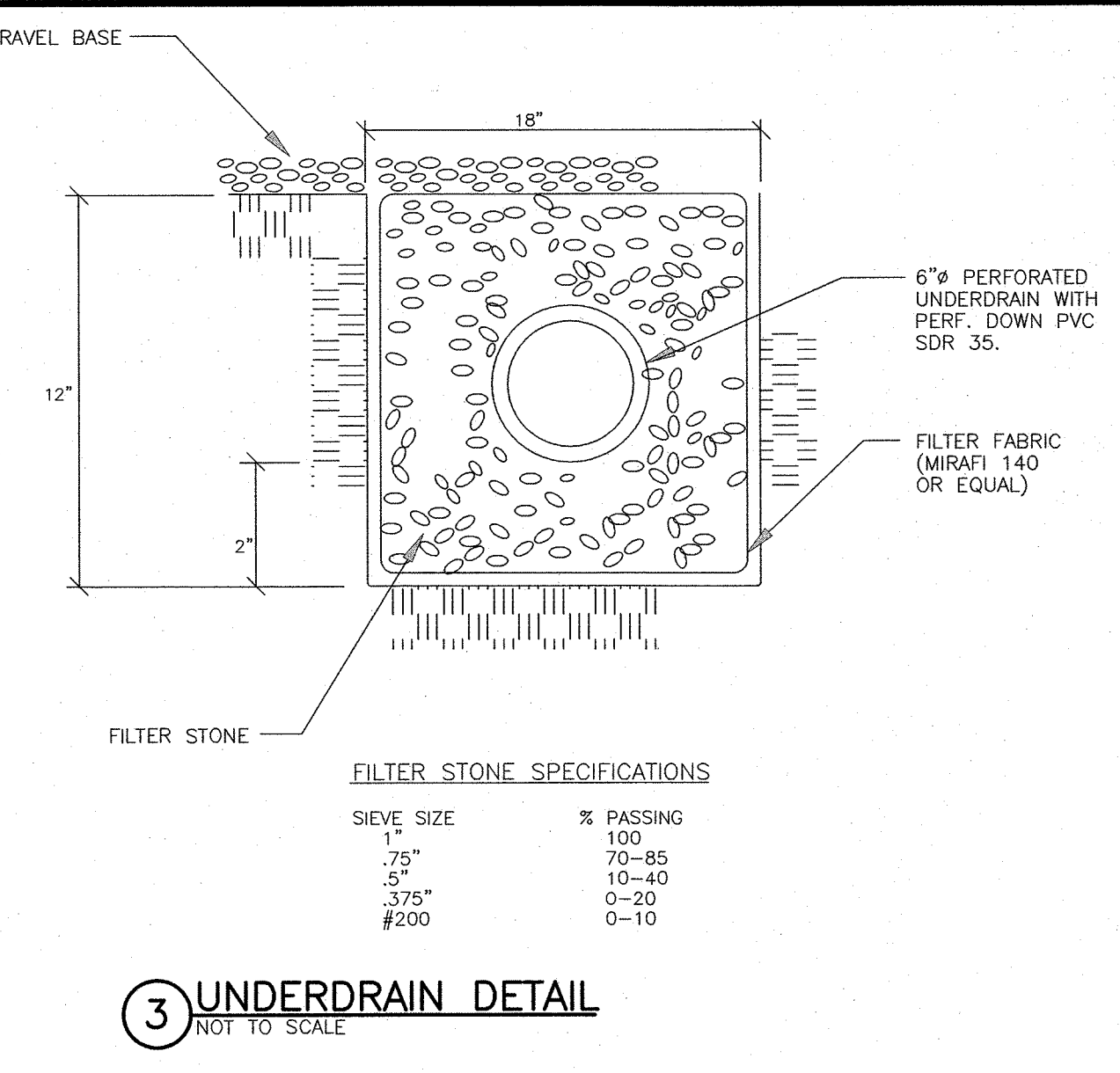
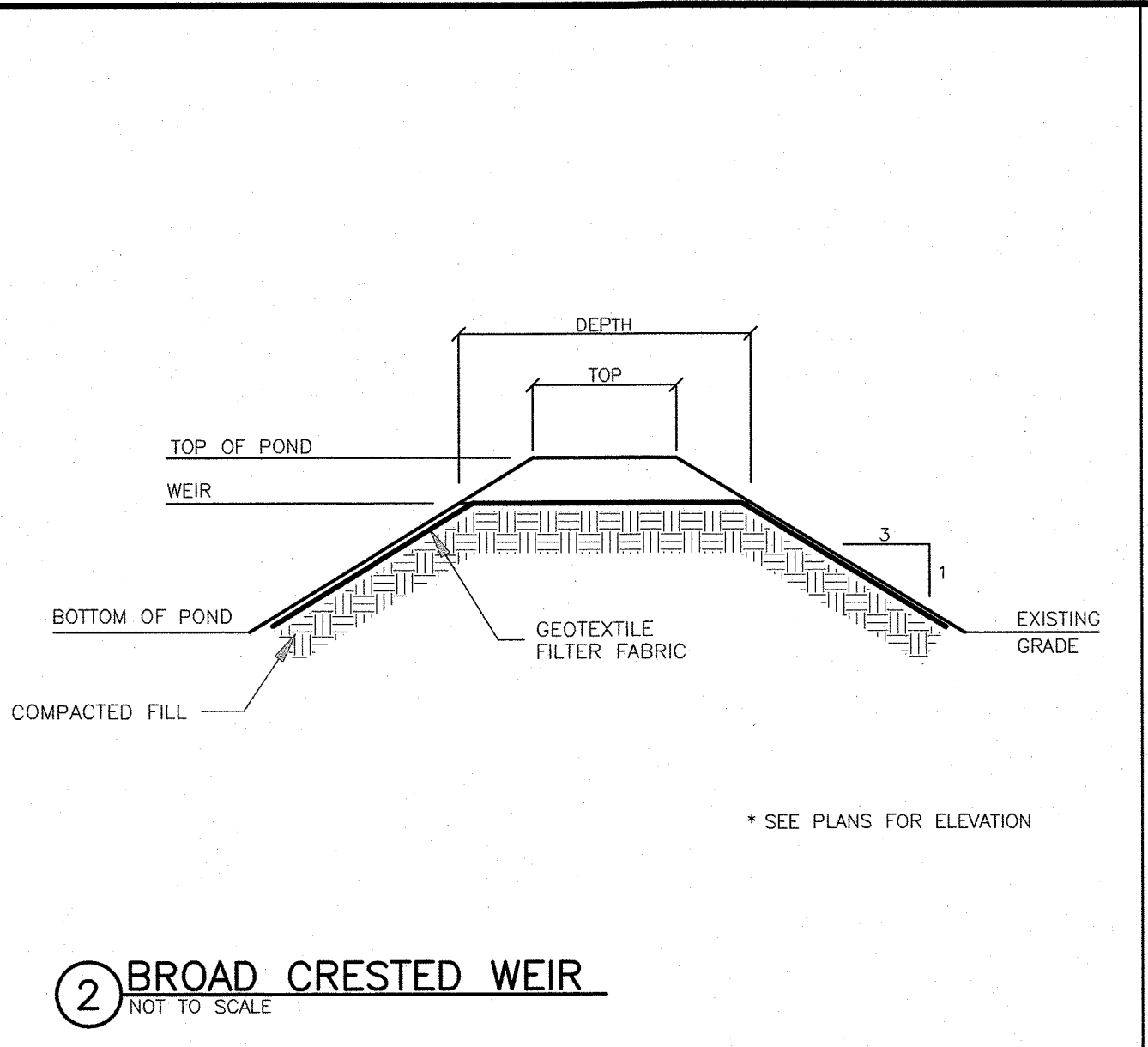
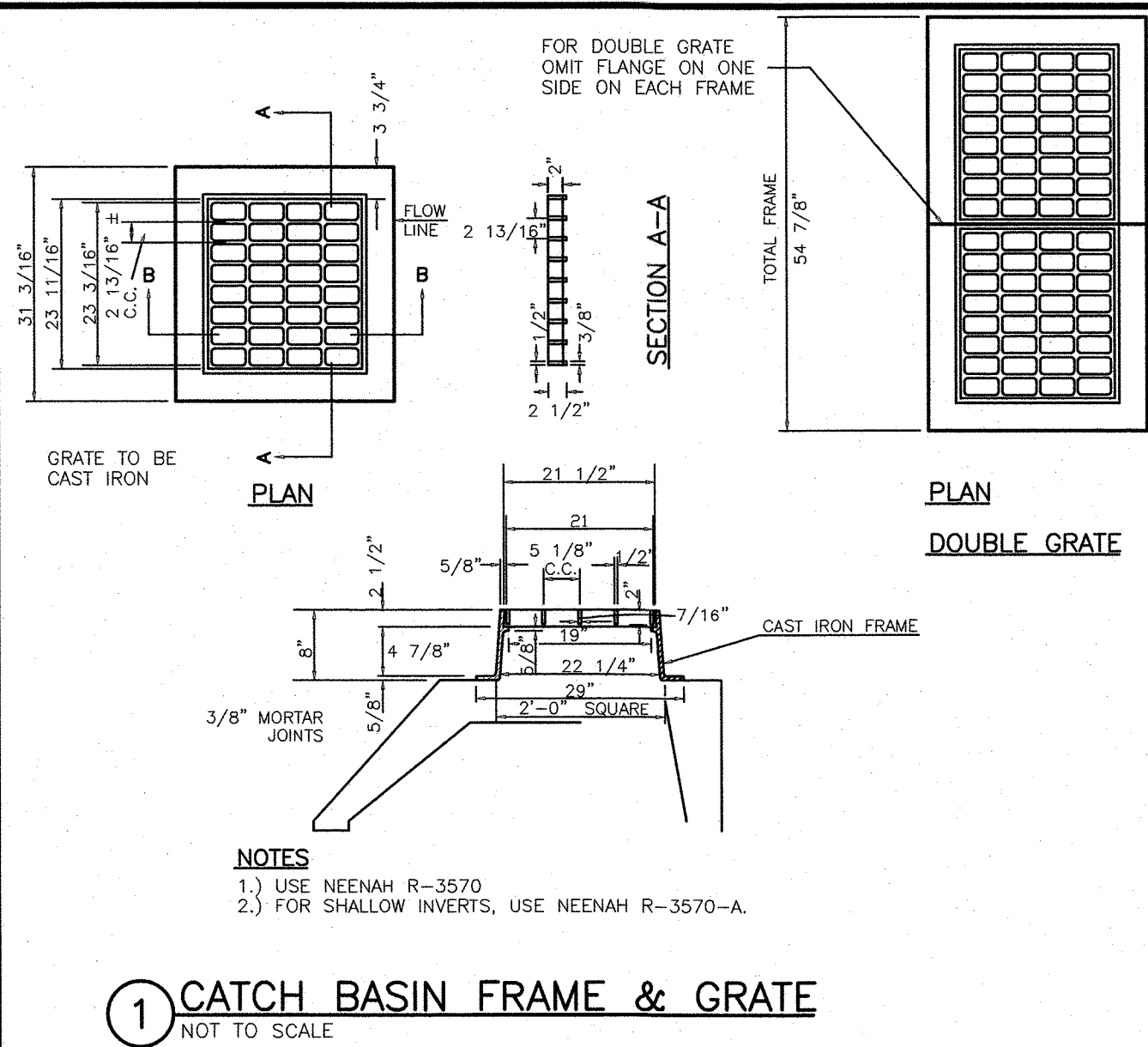
TAX MAP F LOT 3

210 TOLAND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

SHEET No.

SP-9



TRITECH
ENGINEERING CORPORATION

795 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03860
TELEPHONE 603 748 8907
FAX 603 748 9890

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS

DATE	DESCRIPTION

STATE OF NEW HAMPSHIRE - PROFESSIONAL SEAL

ROBERT J. STOVELL
No. 8903

CONSTRUCTION DETAILS

AMBROSE WOODS

TAX MAP F LOT 3

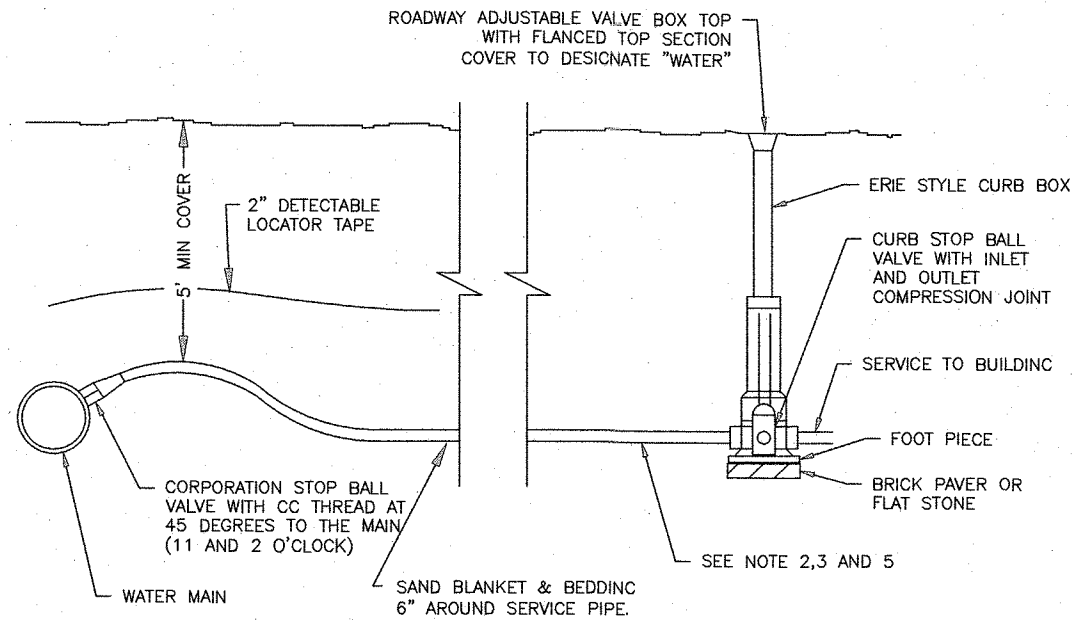
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

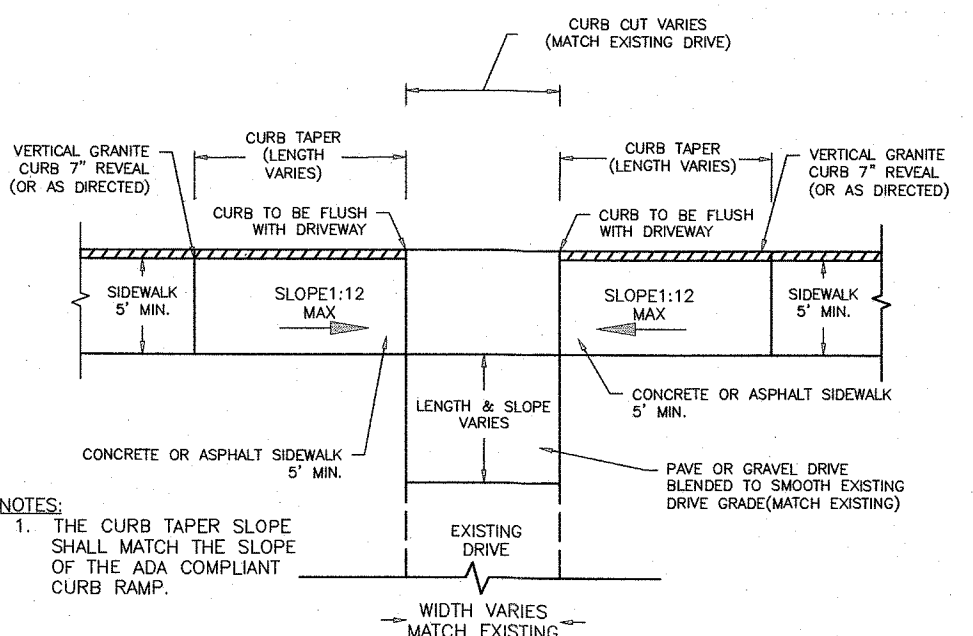
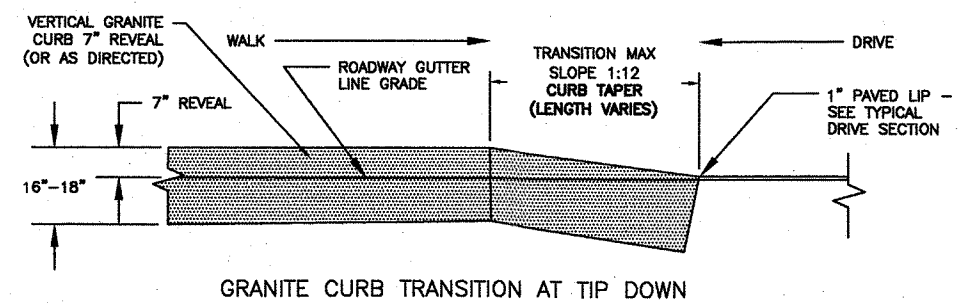
SHEET No.

SP-10

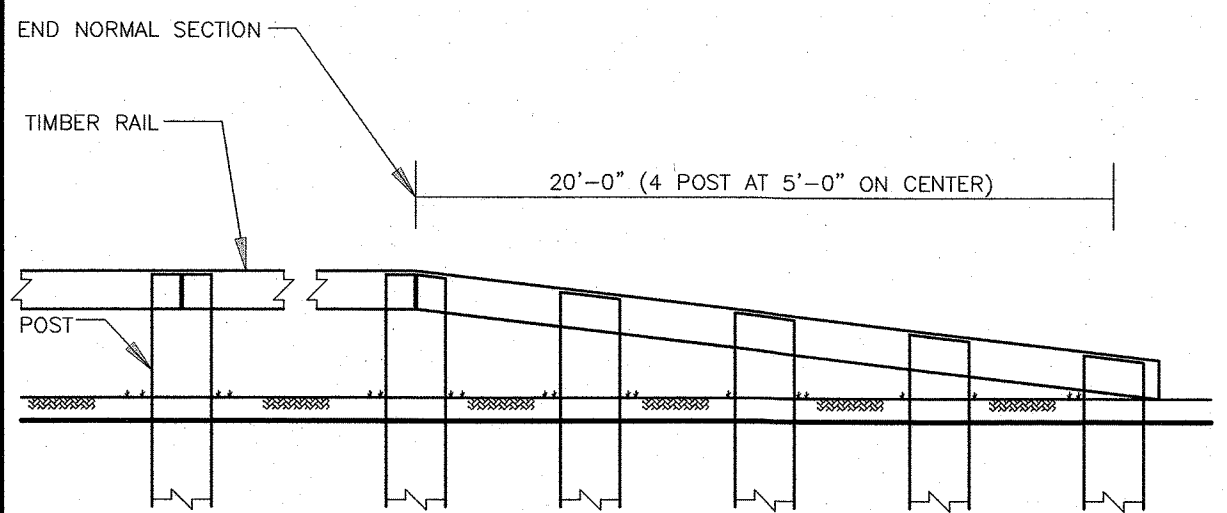


- NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
 2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
 3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC 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:
2" - 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.

① DOVER STD. D-13 WATER SERVICE CONNECTION
NOT TO SCALE

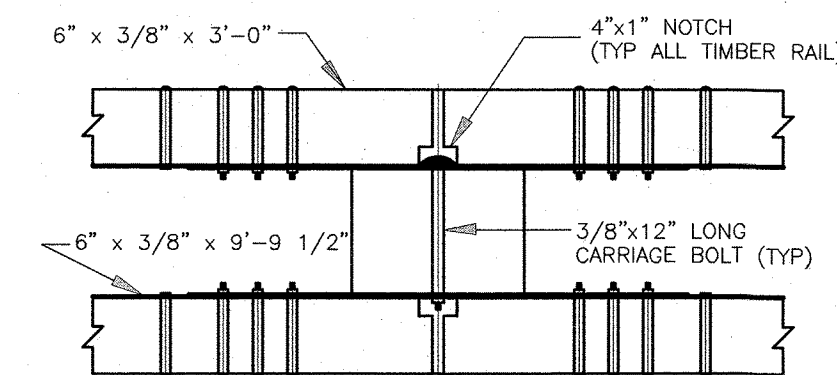


⑤ DOVER STD. D-9 Sidewalk Tip Down At Driveway
NOT TO SCALE



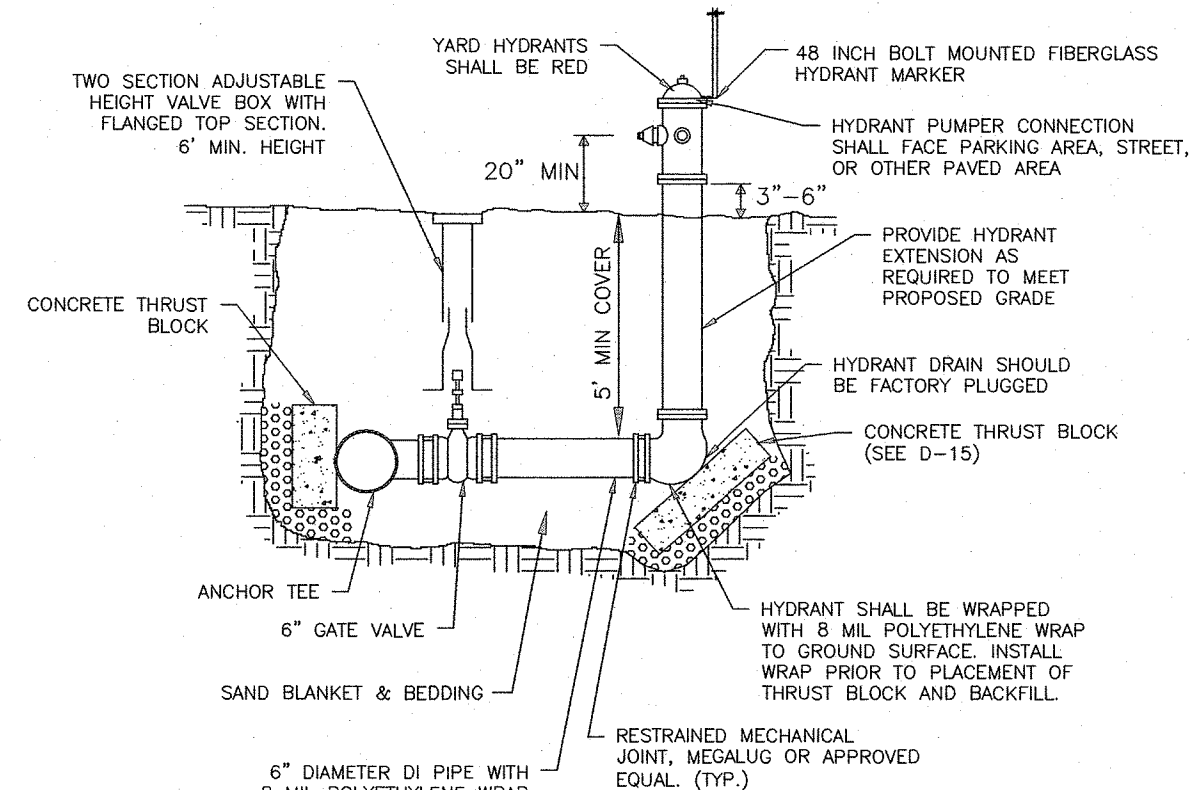
- NOTES
1. POST TYPE: 10" x 12" WOOD
 2. BEAM TYPE: 6" x 10" WOOD
 3. POST SPACING: 5'-0" O.C.
 4. NORMAL BARRIER HEIGHT: 27"

STEEL BACKED WOOD GUARD RAIL
TERMINAL UNIT DETAIL



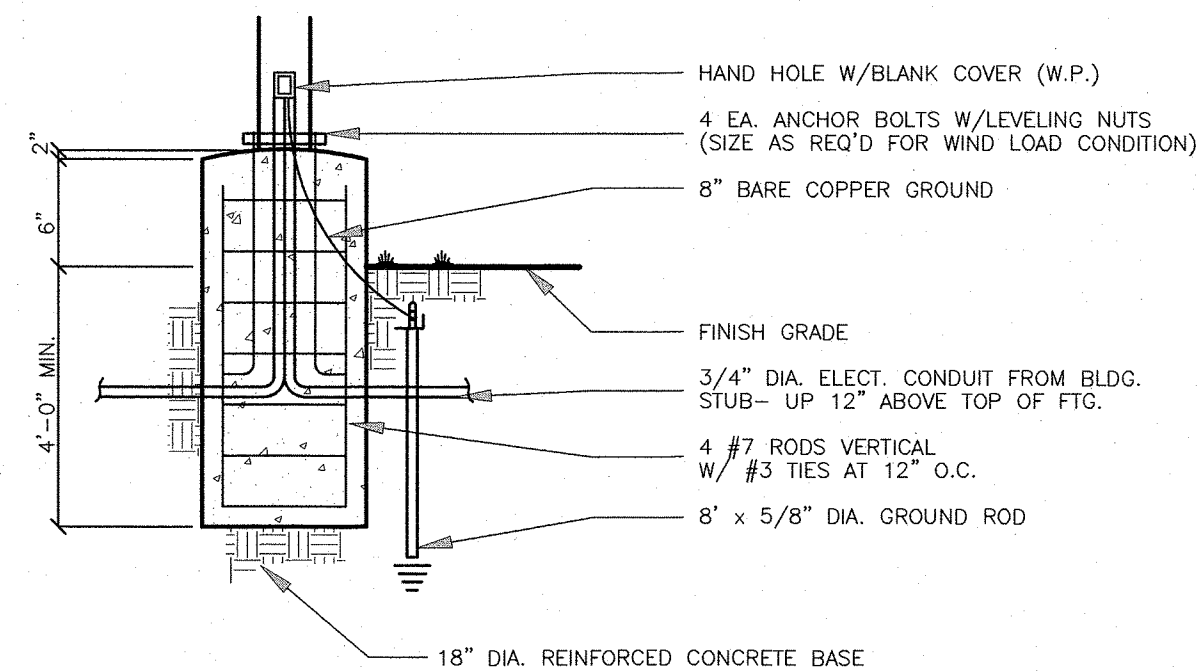
- NOTES
1. POST TYPE: 10" x 12" WOOD
 2. BEAM TYPE: 6" x 10" WOOD WITH STEEL PLATE BACKING
 3. POST SPACING: 10'-0" O.C.
 4. NORMAL BARRIER HEIGHT: 27"
 5. STEEL PLATE BACKING AND SPLICE PLATE-A36 GALVANIZED STEEL
 6. ALL BOLTS & WASHERS TO BE GALVANIZED

⑨ GUARD RAIL STEEL PLATE BACKED (WOODEN RAIL)
NOT TO SCALE

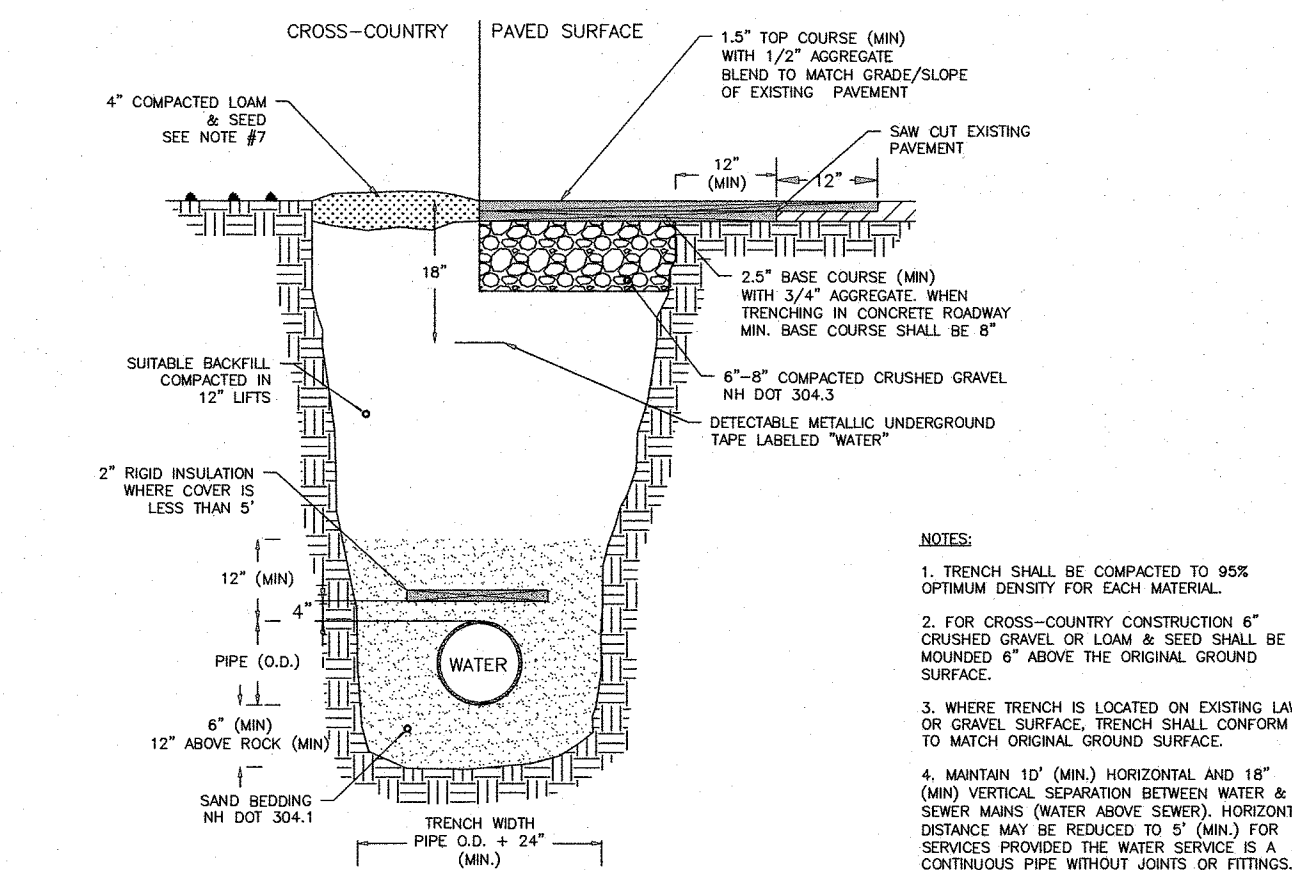


- NOTES:
1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
 2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
 3. HYDRANT SHALL OPEN LEFT.
 4. HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E-ZGUIDE PRODUCTS OR APPROVED EQUAL.
 5. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD WATER TRENCH DETAIL D-4.

② DOVER STD. D-14 FIRE HYDRANT
NOT TO SCALE

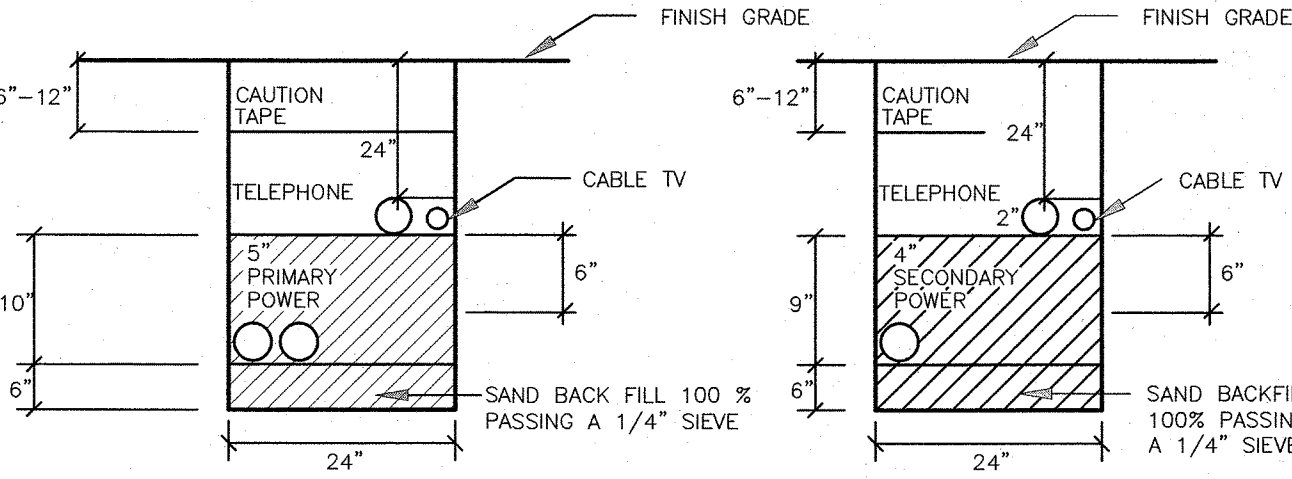


⑥ SITE LIGHTING BASE
NOT TO SCALE



- 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 MOUNTED 4' 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 12" (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 4" 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.

③ DOVER STD. D-4 Water Trench
NOT TO SCALE

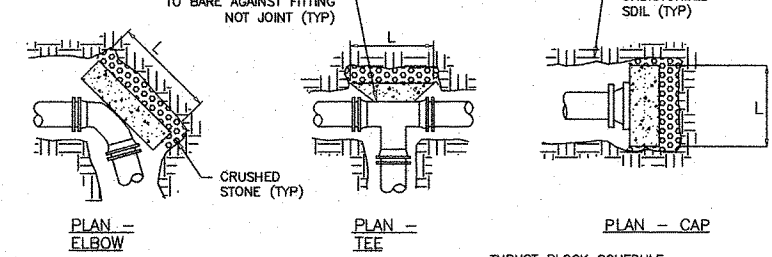


ELECTRICAL TRENCH "A"
NOT TO SCALE

ELECTRICAL TRENCH "B"
NOT TO SCALE

1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 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.

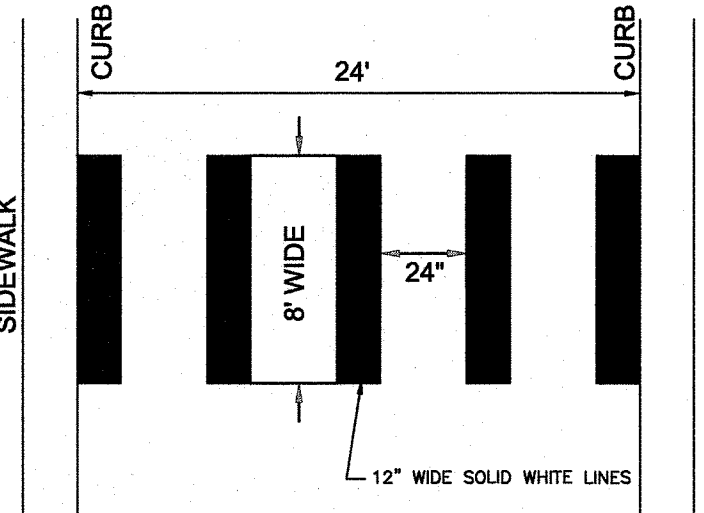
⑦ ELECTRICAL TRENCH
NOT TO SCALE



THRUST BLOCK SCHEDULE		PIPE SIZE	
MINIMUM BEARING AREA (SQUARE FEET)		4	6
Pipe Fittings		5.18	7.96
90 Degree Bends		4.11	7.33
45 Degree Bends		6.10	8.75
22-1/2 Degree Bends		4.46	7.62
11-1/4 Degree Bends		4.46	7.62

- NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
 2. 2'x2'x2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 45F REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
 3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
 4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
 5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
 6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
 7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
 8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

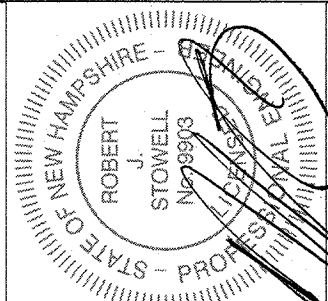
④ DOVER STD. D-15 THRUST BLOCK
NOT TO SCALE



⑧ PEDESTRIAN CROSSWALK
NOT TO SCALE

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS	DESCRIPTION:
DATE:	



CONSTRUCTION DETAILS

AMBROSE WOODS

TAX MAP F LOT 3

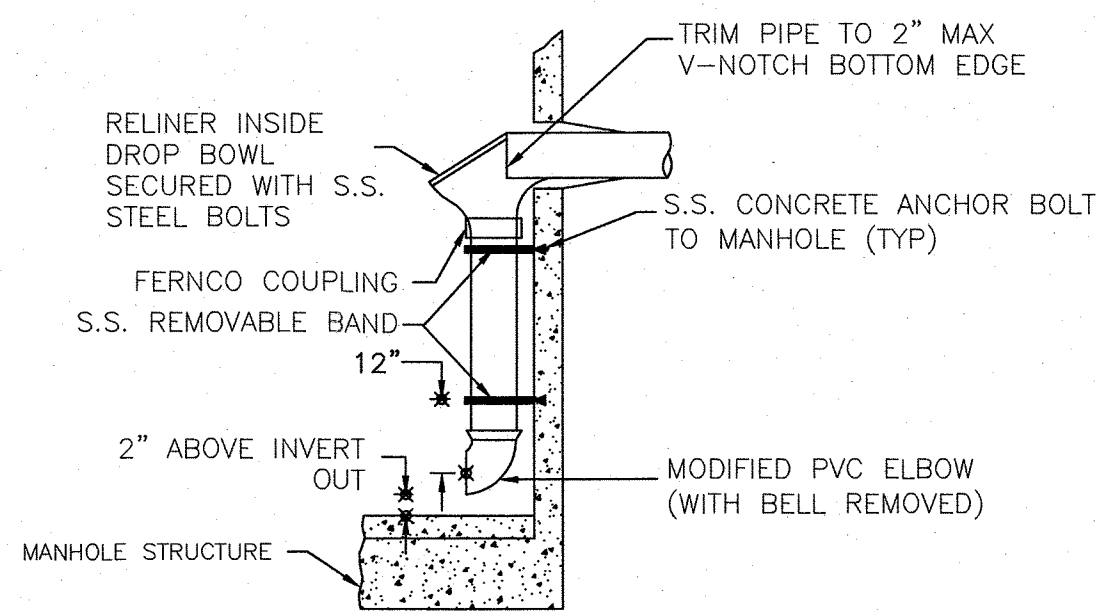
210 TOLAND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

SHEET No.

SP-11

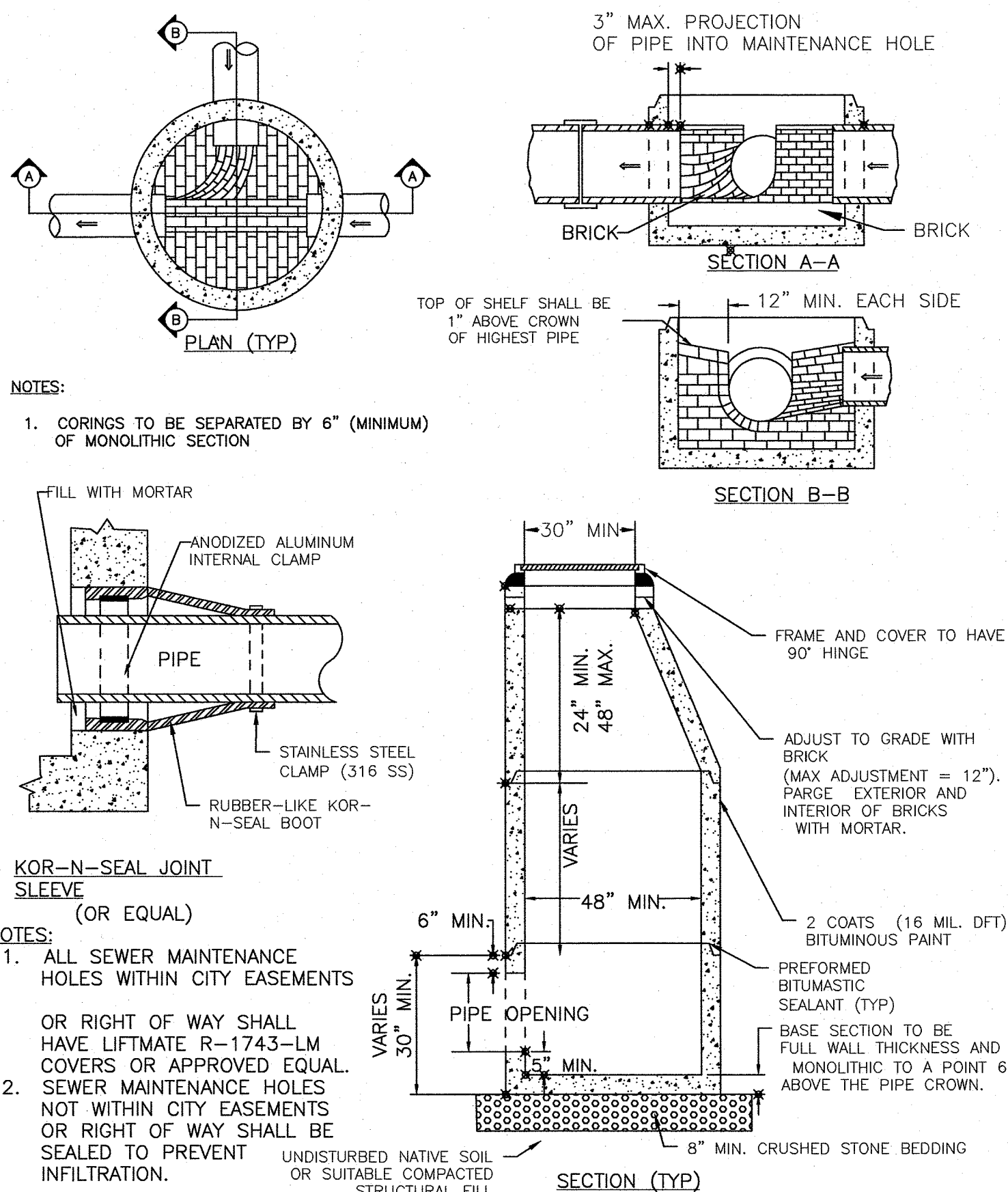
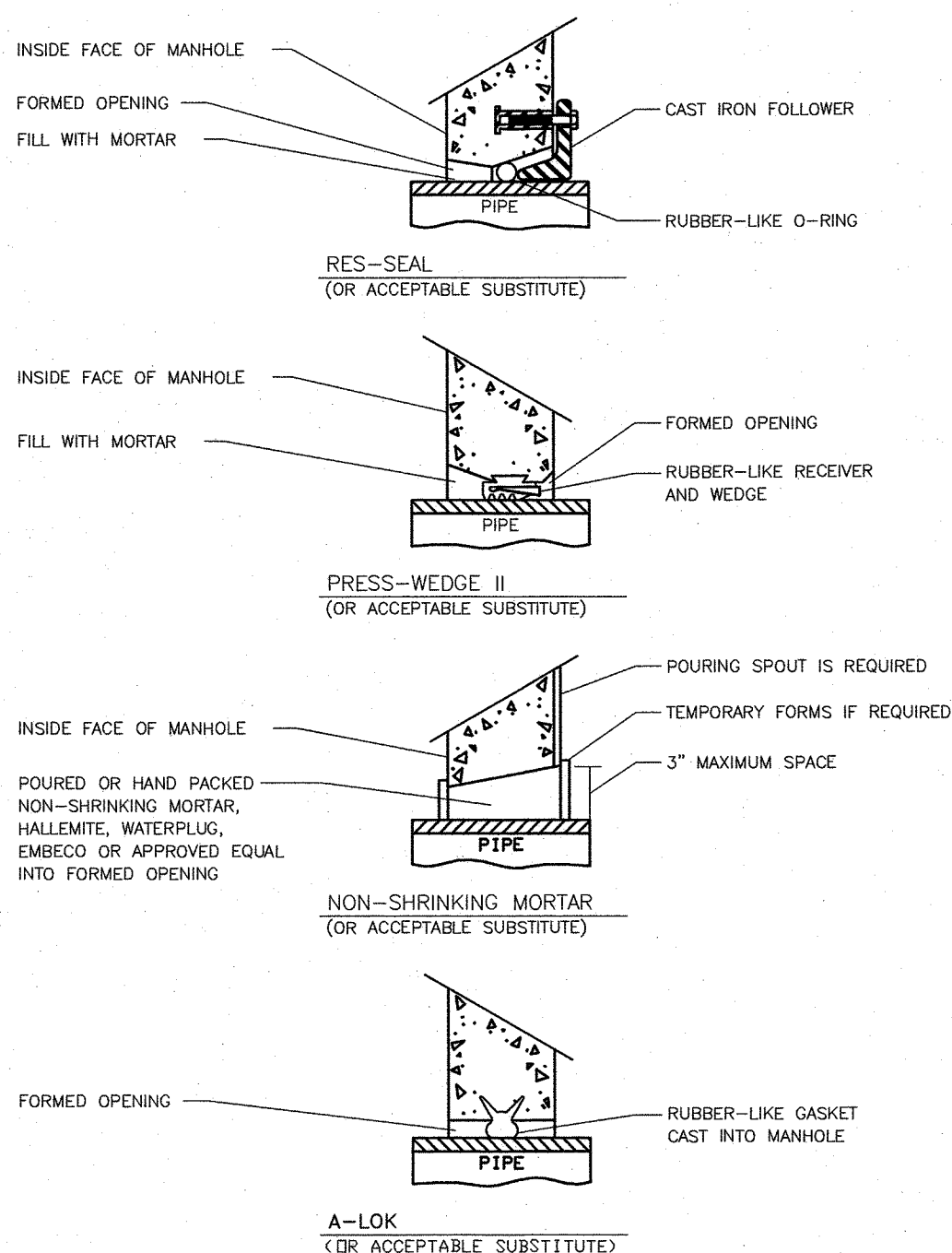
(P25-00)



INTERNAL DROP

- NOTES:
- INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
 - IF DROP IS FOR AN EXISTING MANHOLE, REWORK SHELF TO FORM NEW CHANNEL FOR NEW DROP CONNECTIONS.
 - BRICK INVERT NOT SHOWN ON DETAIL.

DOVER STD. D-18 MH DROP INLET
NOT TO SCALE



- NOTES:
- CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION
- KOR-N-SEAL JOINT SLEEVE (OR EQUAL)
- NOTES:
- ALL SEWER MAINTENANCE HOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
 - 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

- GENERAL NOTES
- 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.
 - BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE.
 - PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.
 - LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - 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.
 - 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
 - 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 1/2 INCH SCREEN 0-5% PASSING #8 SIEVE
20-55% PASSING 3/4 INCH SCREEN
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 INCH SHALL BE USED.
 - FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDE WITHIN THE FOLLOWING DISTANCES: RCP & CI PIPE - ALL SIZES - 48"
 - 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.
 - 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:
 - 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.
 - 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.
 - THE STEPS SHALL BE OF THE DROP TYPE WITH A DEPRESSED SECTION FOR HANDHOLD. APPROXIMATELY 14"x10" IN DIMENSION.
 - 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
 - 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.

SEWER DETAILS

AMBROSE WOODS

TAX MAP F LOT 3
210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

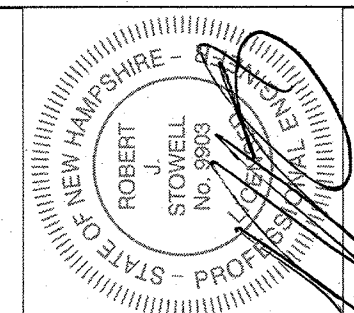
SHEET No.

SP-12

ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS

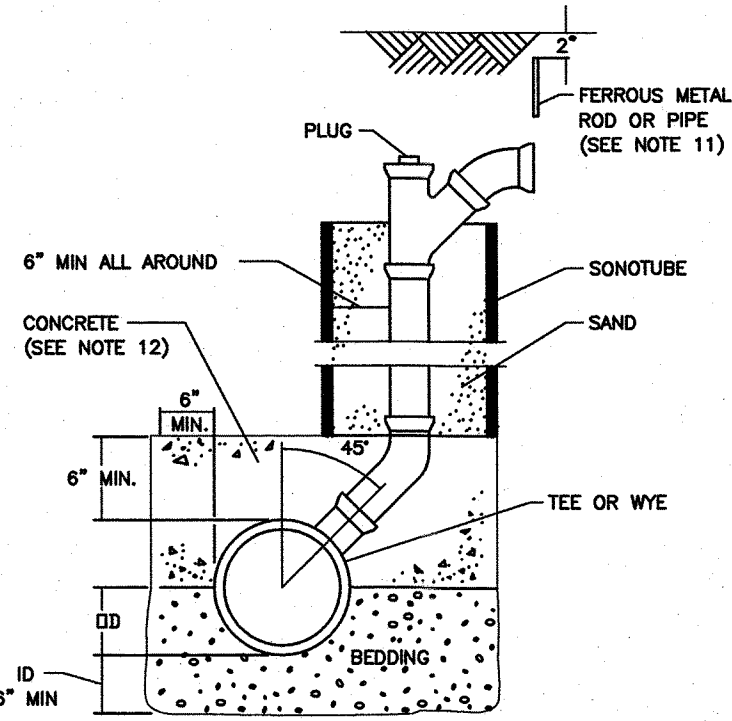
DATE:	DESCRIPTION:



TRITECH

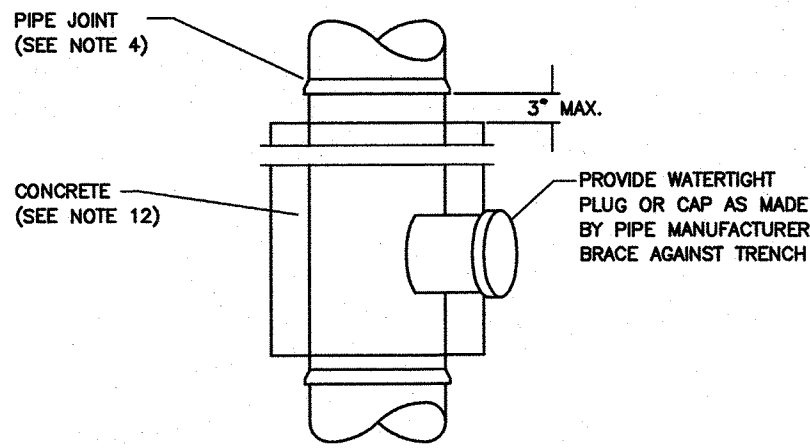
ENGINEERING CORPORATION

795 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03801
TELEPHONE 603 748 8007
FAX 603 748 8830

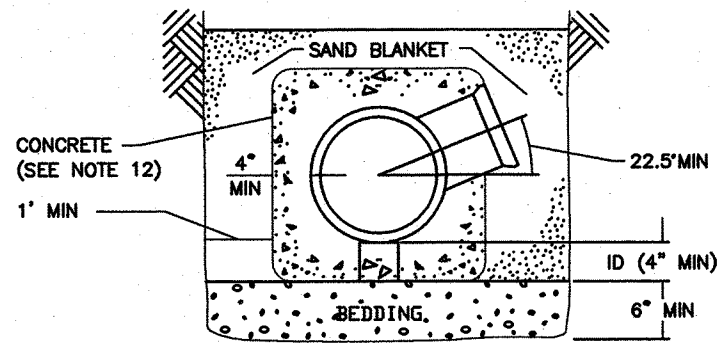


NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE 13)
NOT TO SCALE



PLAN



SECTION

CONCRETE FULL ENCASEMENT
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)
F799	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 1/4 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 FLUORESCENCE 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.

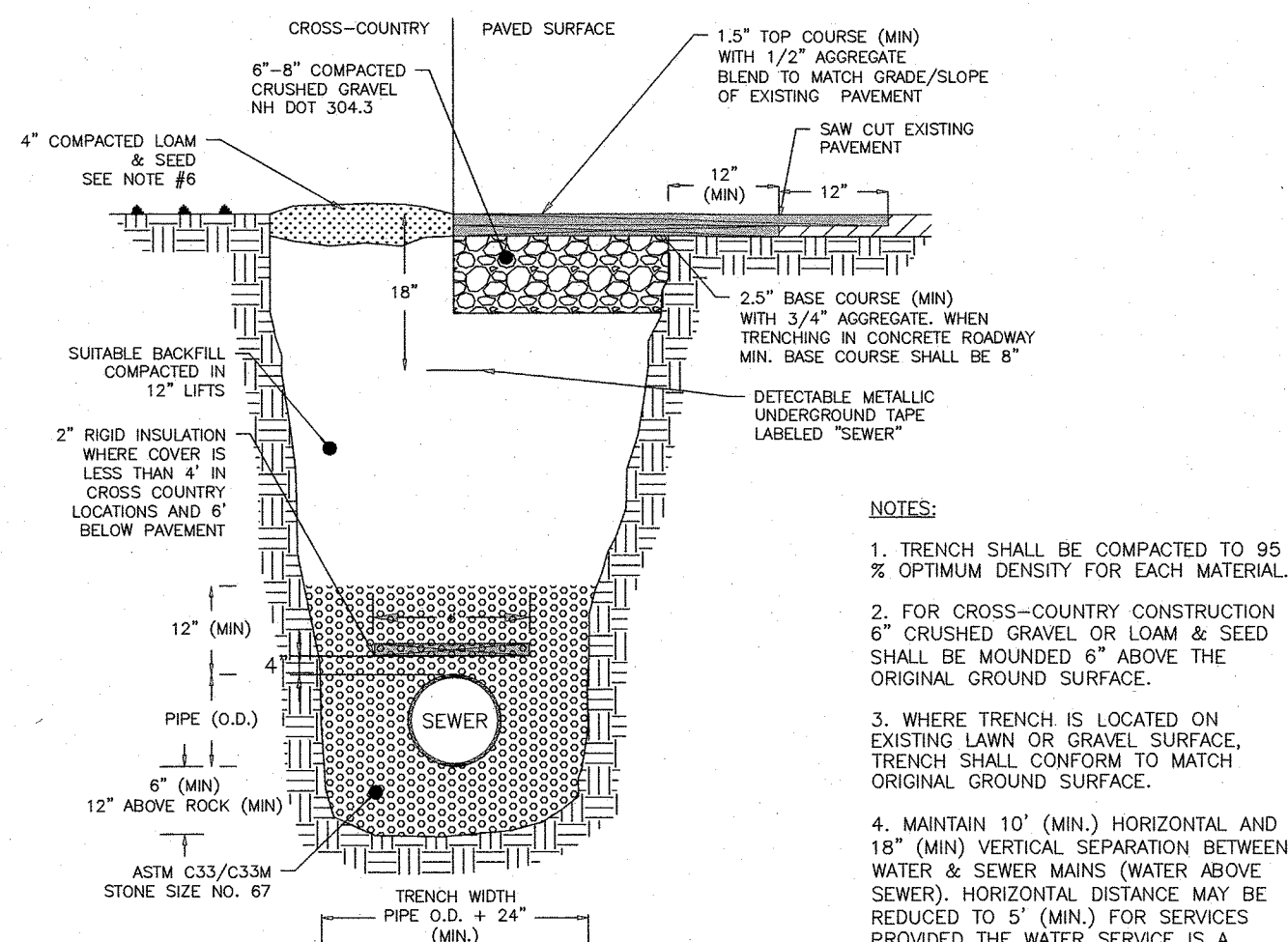
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

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:

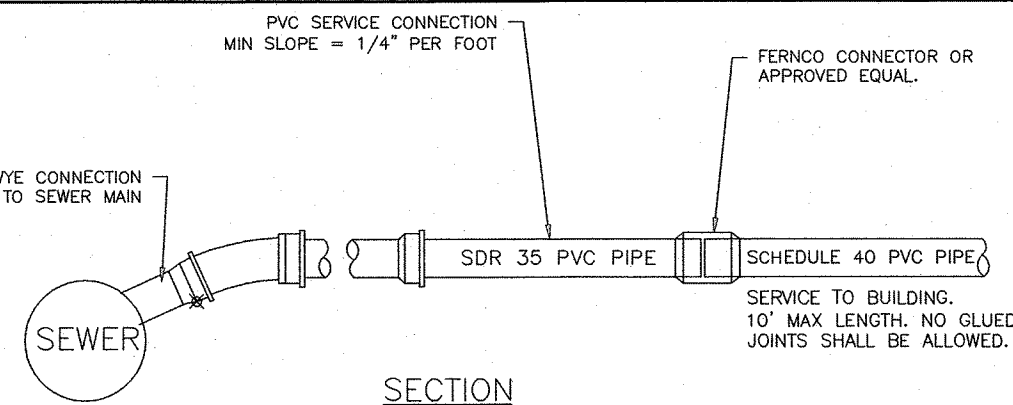
CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

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.

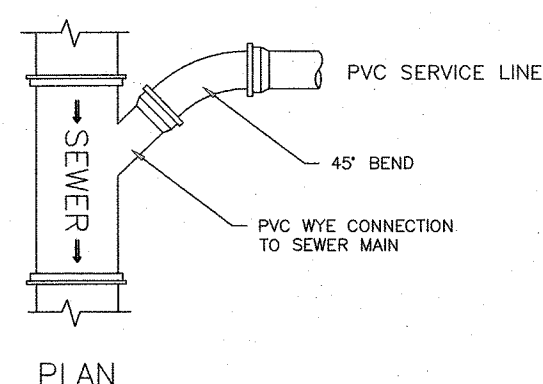
14) MAINTAIN A 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER LINES, AND AN 18" VERTICAL SEPARATION AT SEWER AND WATER CROSSINGS, WITH WATER OVER SEWER.



DOVER STD. D-3 Sewer Trench
NOT TO SCALE



SECTION



PLAN

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
4. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD SEWER TRENCH DETAIL D-3.

DOVER STD. D-17 SEWER SERVICE
NOT TO SCALE

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 THAN 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.

SEWER DETAILS

AMBROSE WOODS

TAX MAP F LOT 3

210 TOLEND ROAD AND EMERALD LANE
DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

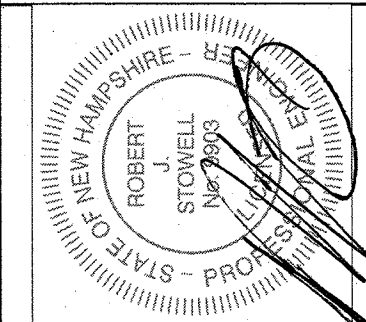
SHEET No.

SP-13

ISSUED FOR TRC REVIEW

March 6, 2025

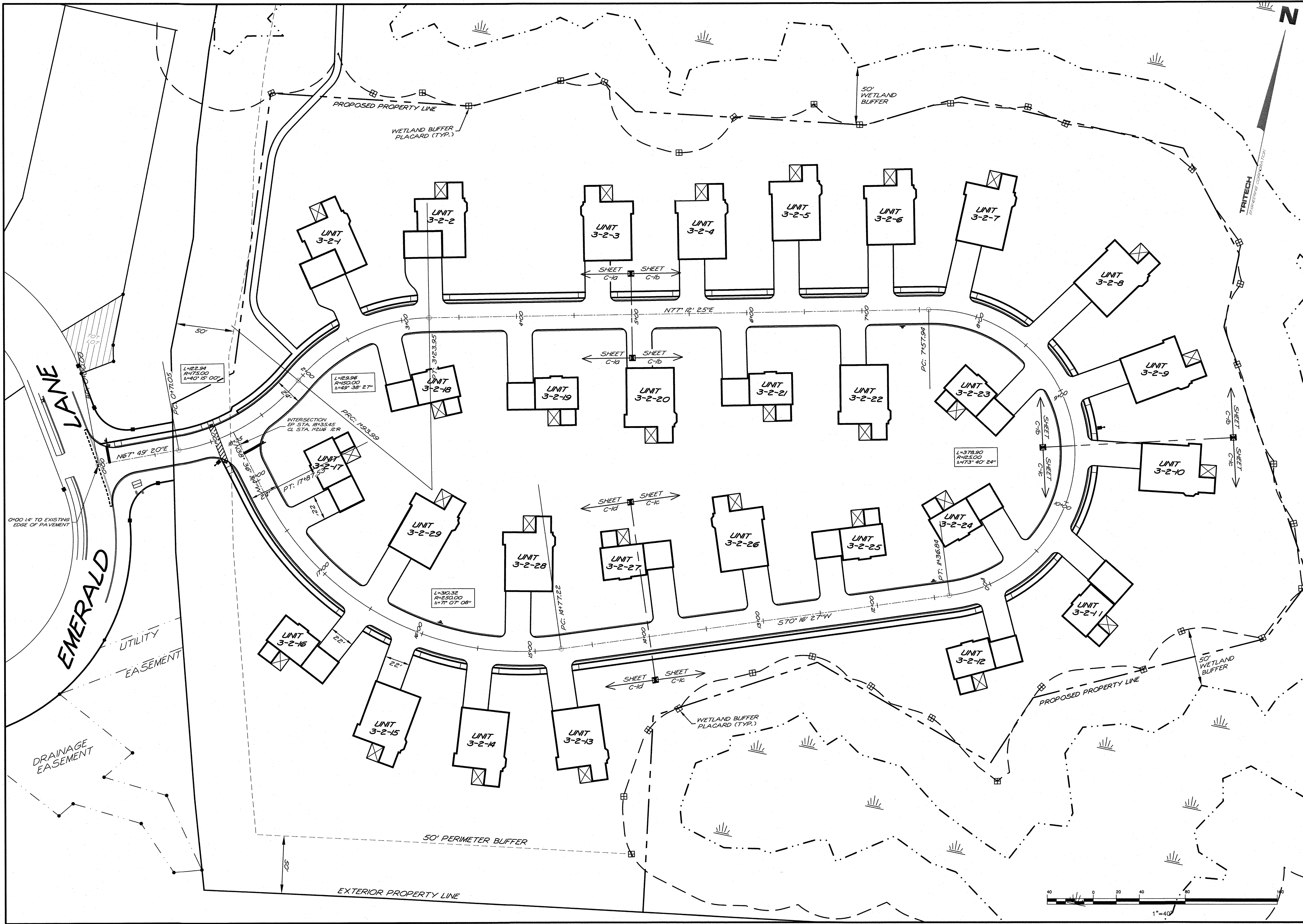
REVISIONS
DATE: DESCRIPTION:



TRITECH

ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03860
TELEPHONE 603 748 8107
FAX 603 748 3830



TRITECH
ENGINEERING CORPORATION

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

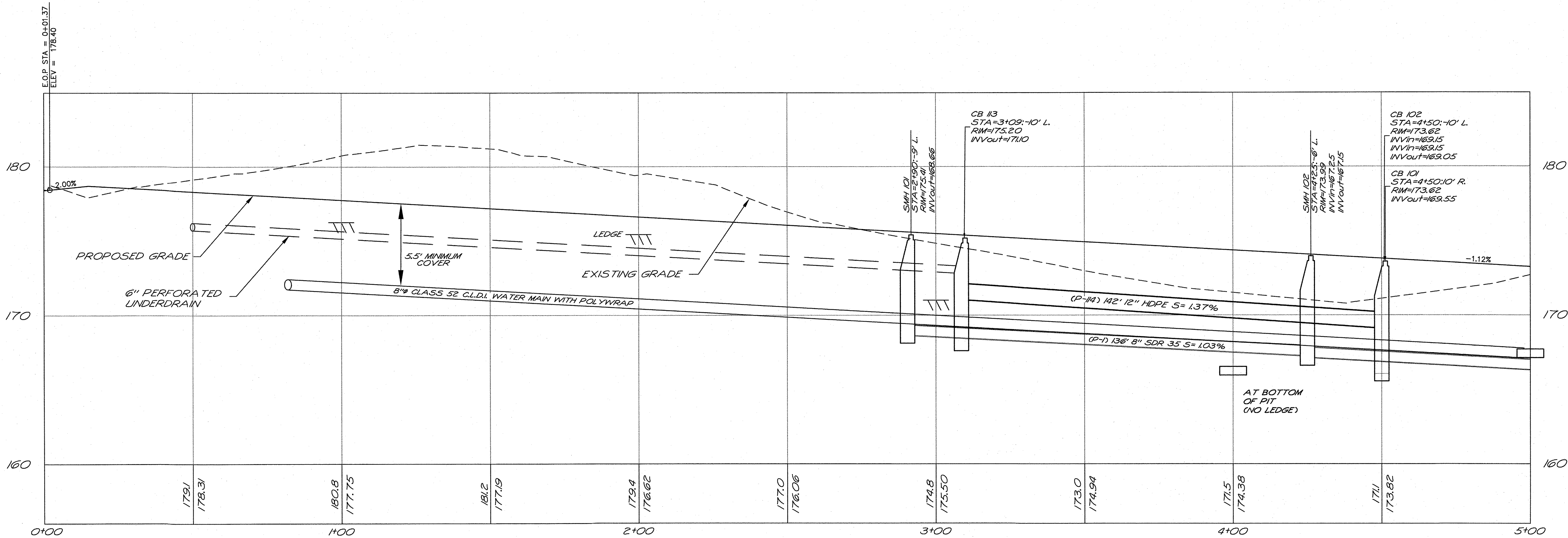
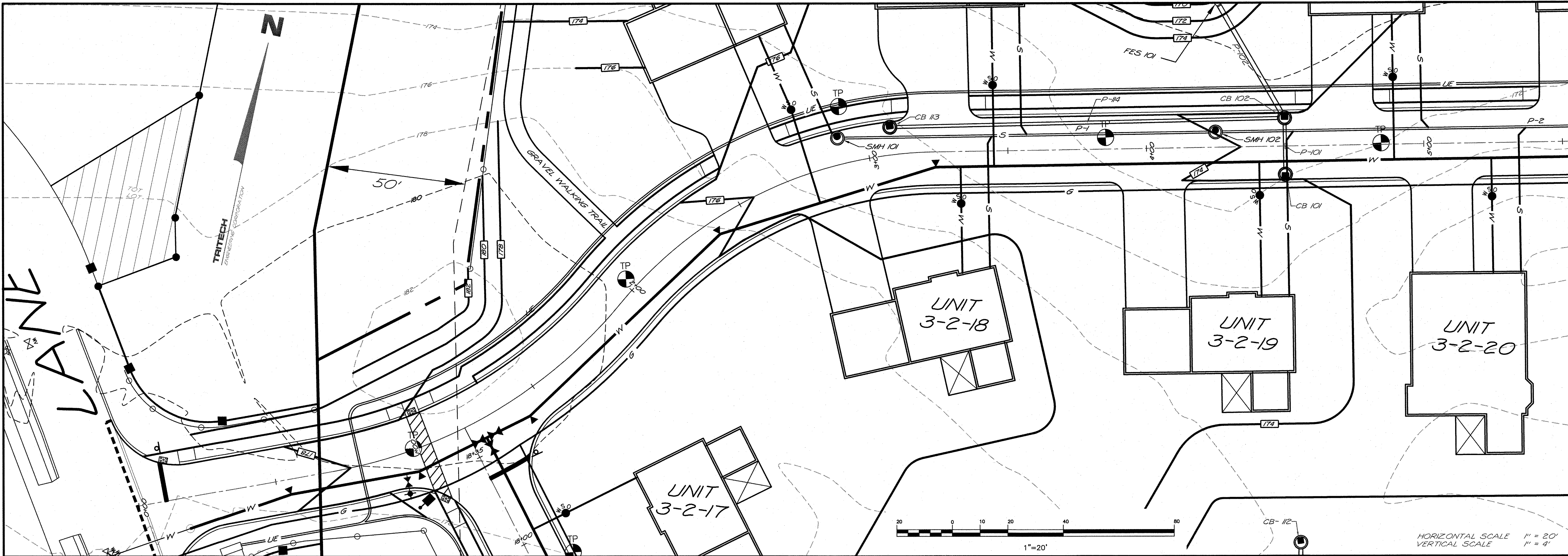
ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:

ROBERT
STOWELL
No. 8983
STATE OF NEW HAMPSHIRE
PROFESSIONAL ENGINEER

ROAD LAYOUT PLAN
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 40'

SHEET No.
C-1



STA. 0+00-5+00

ROAD PLAN AND PROFILE

AMBROSE WOODS

TOLEND ROAD

DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

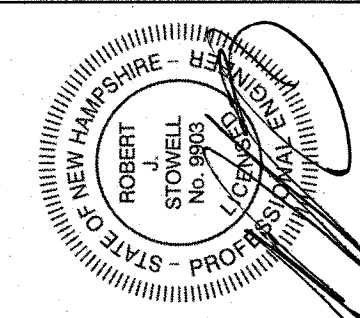
SCALE: 1" = 20'

SHEET No.

C-1a

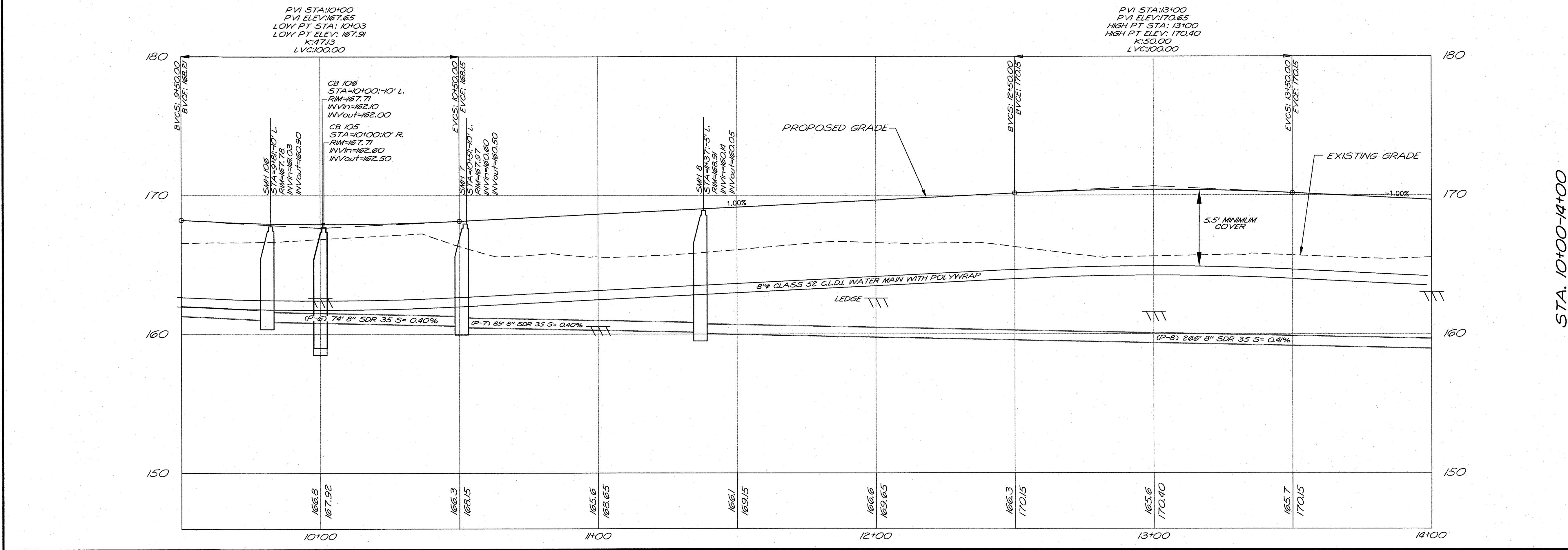
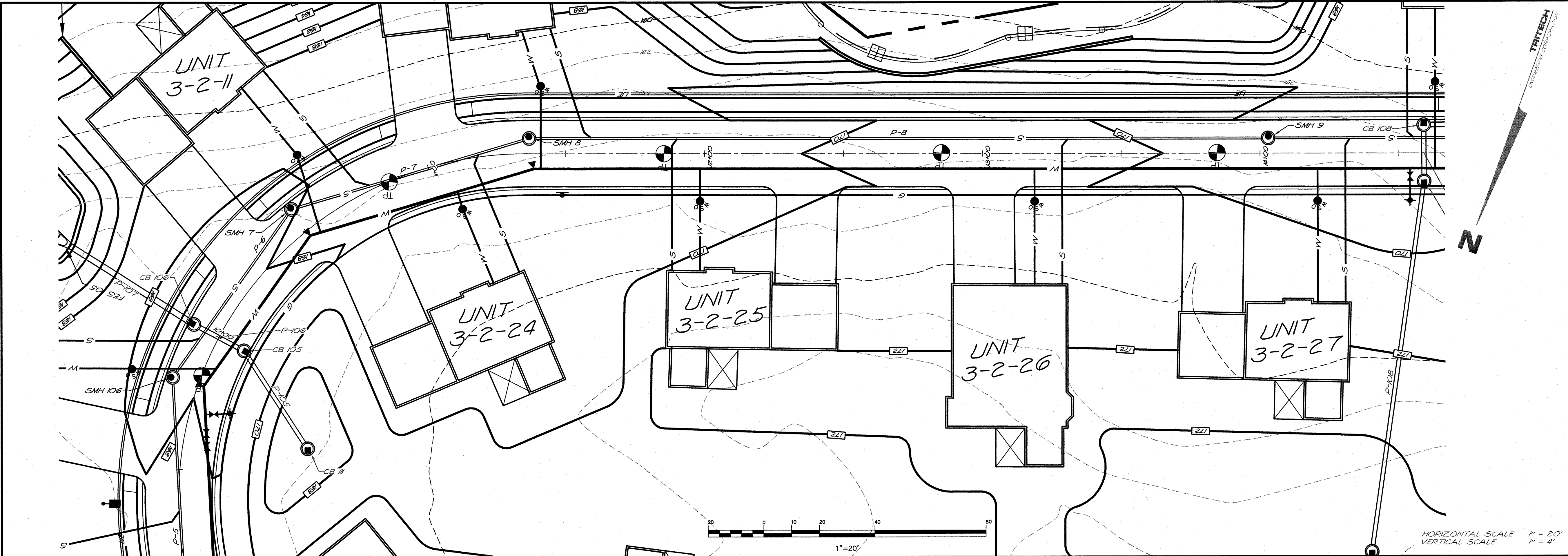
ISSUED FOR TRC REVIEW
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9830



TRITECH
ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW
March 6, 2025

STA. 10+00-14+00
ROAD PLAN AND PROFILE
AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 2318
SCALE: 1" = 20'

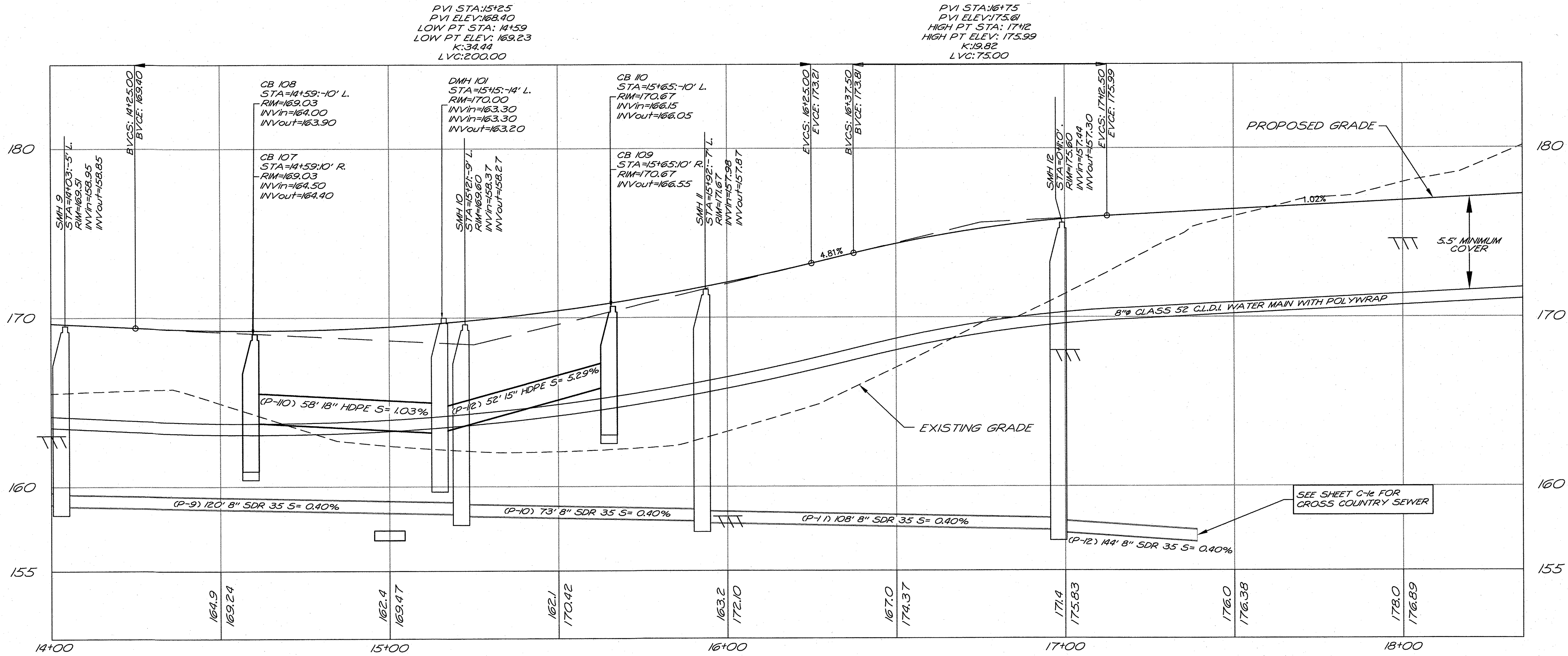
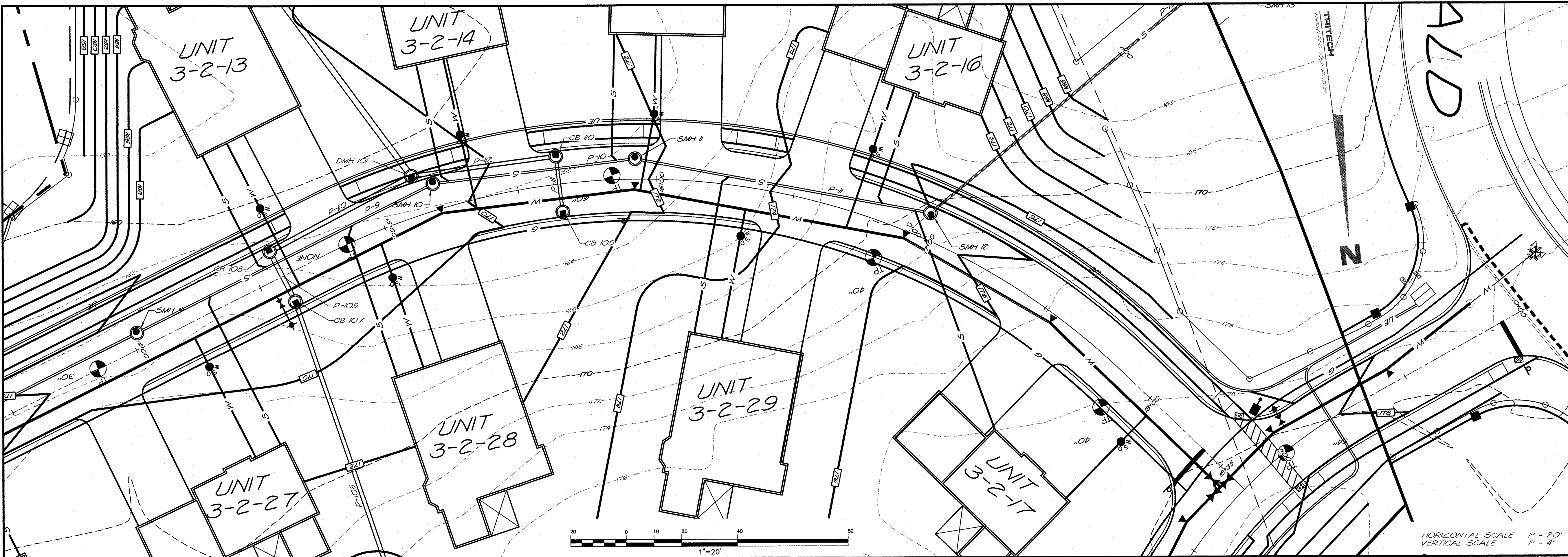
SHEET No.

C-1c

REVISIONS
DATE: DESCRIPTION:

PROPOSED
STATE OF NEW HAMPSHIRE - 853
ROBERT STOWELL
No. 8868
Professional Seal

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9890



STA. 14+00-END

ROAD PLAN AND PROFILE

AMBROSE WOODS

TOLEND ROAD

DOVER, NEW HAMPSHIRE

MARCH 6, 2025 JOB No. 23118

SCALE: 1" = 20'

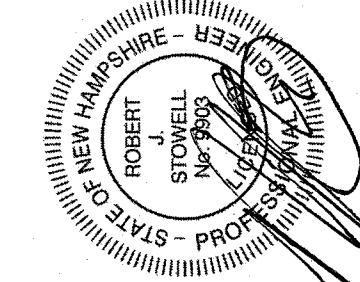
SHEET No.

C-1d

ISSUED FOR TRC REVIEW

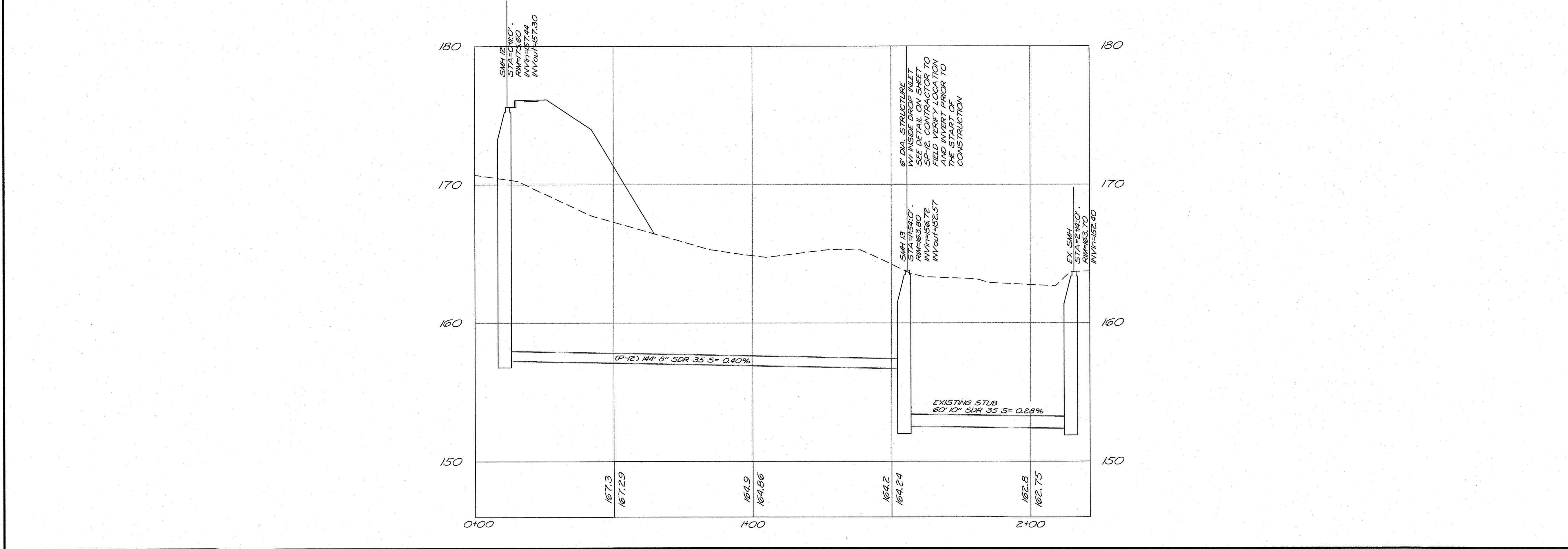
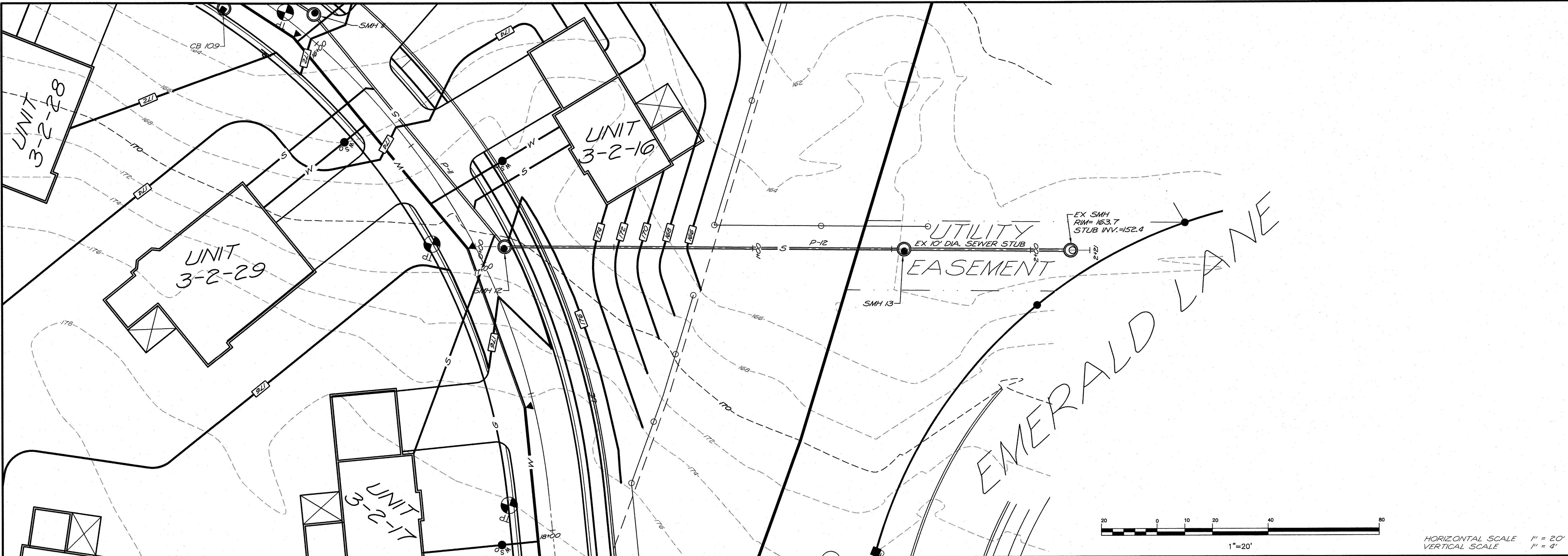
March 6, 2025

REVISIONS
DATE: DESCRIPTION:



TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 9830



TRITECH

ENGINEERING CORPORATION

ISSUED FOR TRC REVIEW

March 6, 2025

CROSS-COUNTRY SEWER PROFILE

AMBROSE WOODS

TOLEND ROAD

DOVER, NEW HAMPSHIRE

MARCH 6, 2025

JOB No. 23118

SCALE: 1" = 20'

SHEET No.

C-1e

REVISIONS

DATE	DESCRIPTION

PROF. SEAL

ROBERT STOWELL

REGISTERED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE

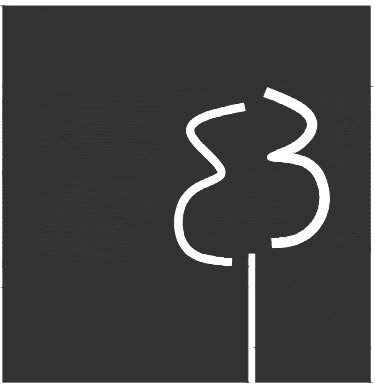
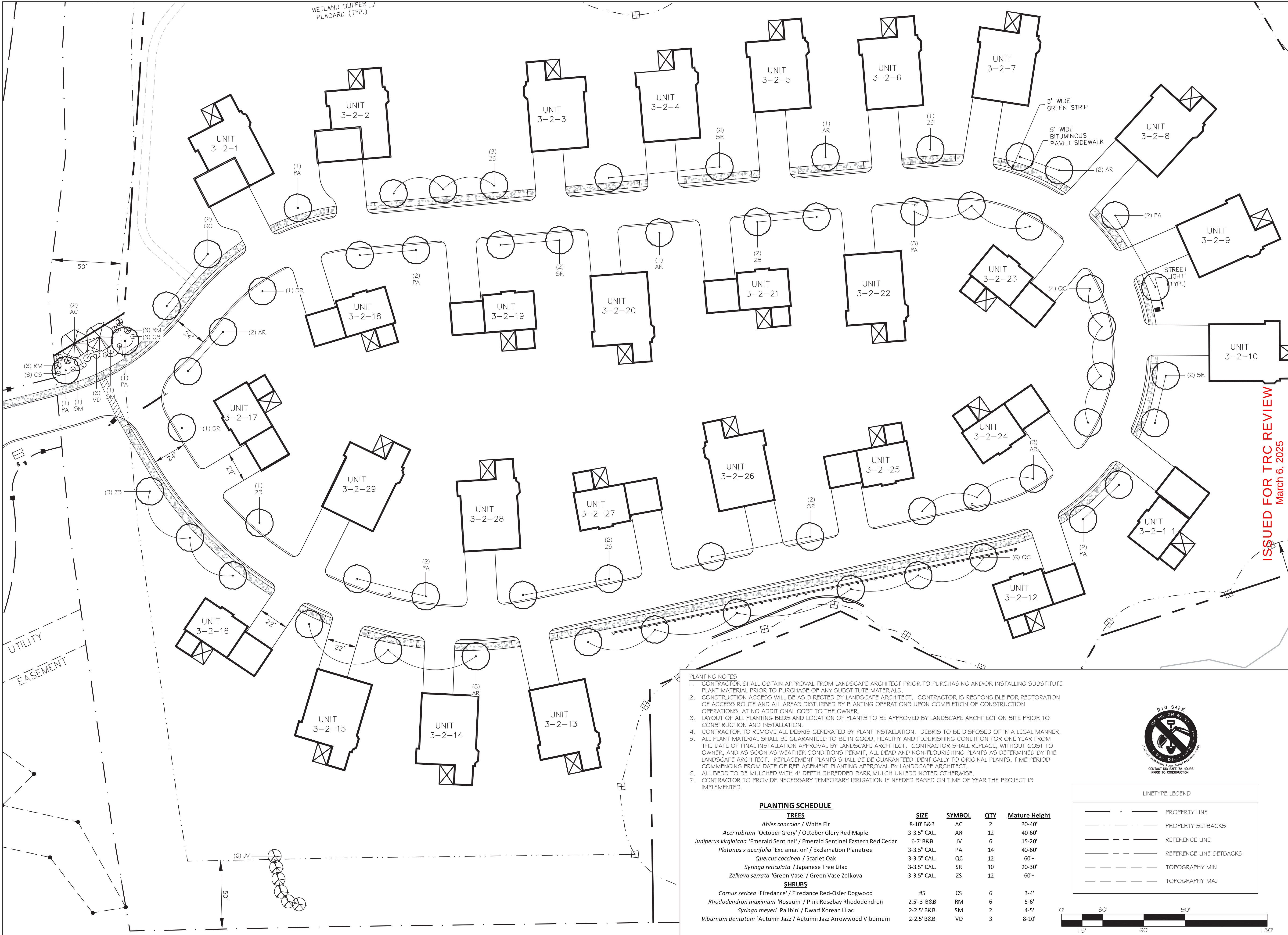
NO. 10965

785 CENTRAL AVENUE

DOVER, NEW HAMPSHIRE 03801

TELEPHONE 603 742 8107

FAX 603 742 9890



terrain
planning & design llc

311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com

**AMBROSE
WOODS**

Site Location:
Tolend Road
Dover, NH 03820
Tax Map:
Lot #:

Prepared For:
Tritech Engineering Corp.
755 Central Avenue
Dover, NH 03820

LANDSCAPE PLAN

DATE: 03 - 03 - 25

SCALE: 1" = 30'

PROJECT #: 25011

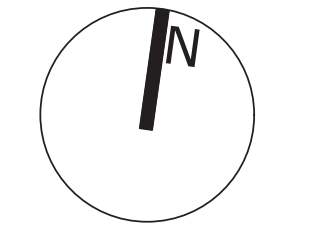
Drawn By: RNM

Checked By: ERB

REVISIONS: DATE:
Issued for Client Review

This plan is the property of
Terrain Planning & Design LLC.
Use or reproduction of this plan
by any means without
permission or purchase from
Terrain Planning & Design LLC
is prohibited.

L - 1



- PLANTING NOTES**
- CONTRACTOR SHALL OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO PURCHASING AND/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
 - 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.
 - LAYOUT OF ALL PLANTING BEDS AND LOCATION OF PLANTS TO BE APPROVED BY LANDSCAPE ARCHITECT ON SITE PRIOR TO CONSTRUCTION AND INSTALLATION.
 - CONTRACTOR TO REMOVE ALL DEBRIS GENERATED BY PLANT INSTALLATION. DEBRIS TO BE DISPOSED OF IN A LEGAL MANNER.
 - 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 GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY LANDSCAPE ARCHITECT.
 - ALL BEDS TO BE MULCHED WITH 4" DEPTH SHREDDED BARK MULCH UNLESS NOTED OTHERWISE.
 - CONTRACTOR TO PROVIDE NECESSARY TEMPORARY IRRIGATION IF NEEDED BASED ON TIME OF YEAR THE PROJECT IS IMPLEMENTED.

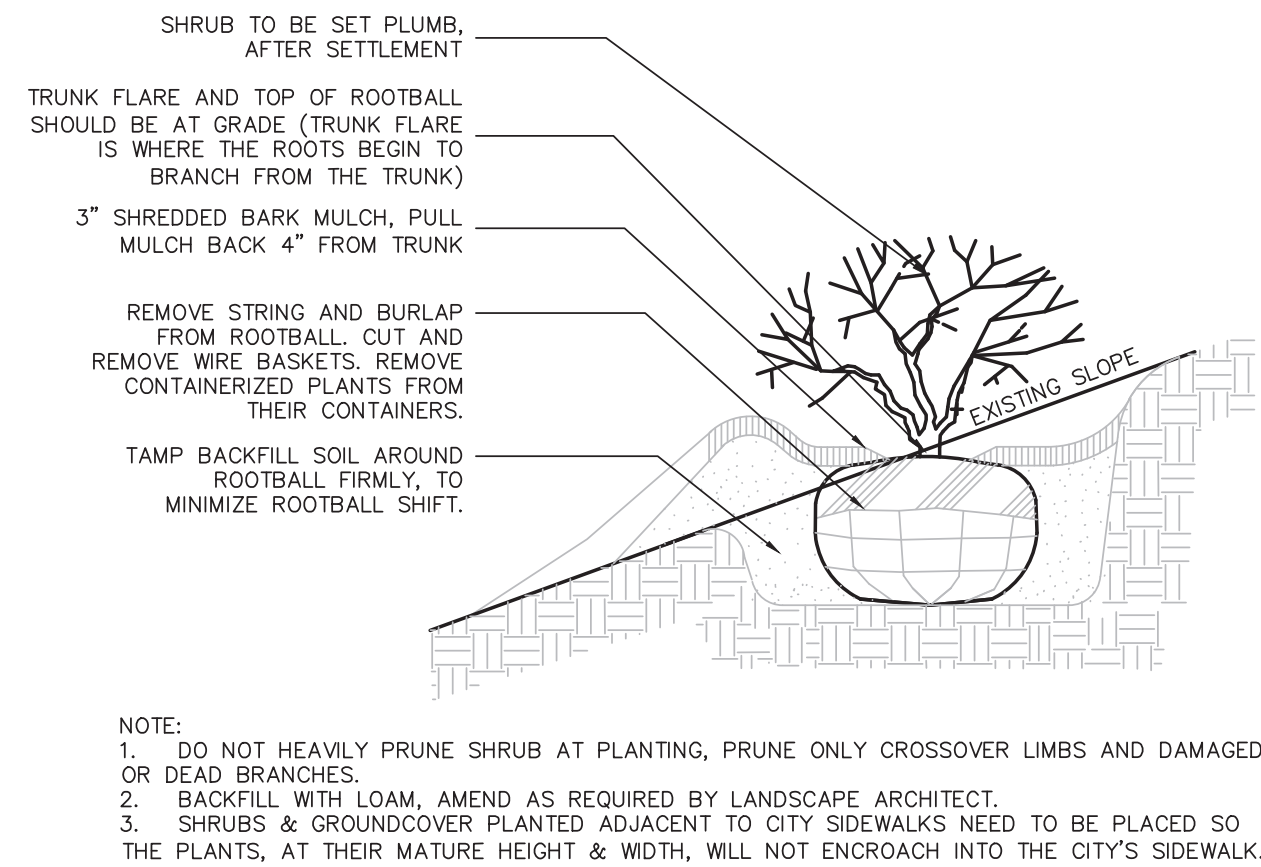
PLANTING SCHEDULE

TREES	SIZE	SYMBOL	QTY	Mature Height
<i>Abies concolor</i> / White Fir	8-10' B&B	AC	2	30-40'
<i>Acer rubrum</i> 'October Glory' / October Glory Red Maple	3-3.5" CAL.	AR	12	40-60'
<i>Juniperus virginiana</i> 'Emerald Sentinel' / Emerald Sentinel Eastern Red Cedar	6-7' B&B	JV	6	15-20'
<i>Platanus x acerifolia</i> 'Exclamation' / Exclamation Planetree	3-3.5" CAL.	PA	14	40-60'
<i>Quercus coccinea</i> / Scarlet Oak	3-3.5" CAL.	QC	12	60+
<i>Syringa reticulata</i> / Japanese Tree Lilac	3-3.5" CAL.	SR	10	20-30'
<i>Zelkova serrata</i> 'Green Vase' / Green Vase Zelkova	3-3.5" CAL.	ZS	12	60+
SHRUBS				
<i>Cornus sericea</i> 'Firedance' / Firedance Red-Osier Dogwood	#5	CS	6	3-4'
<i>Rhododendron maximum</i> 'Roseum' / Pink Rosebay Rhododendron	2.5'-3' B&B	RM	6	5-6'
<i>Syringa meyeri</i> 'Palibin' / Dwarf Korean Lilac	2-2.5' B&B	SM	2	4-5'
<i>Viburnum dentatum</i> 'Autumn Jazz' / Autumn Jazz Arrowwood Viburnum	2-2.5' B&B	VD	3	8-10'

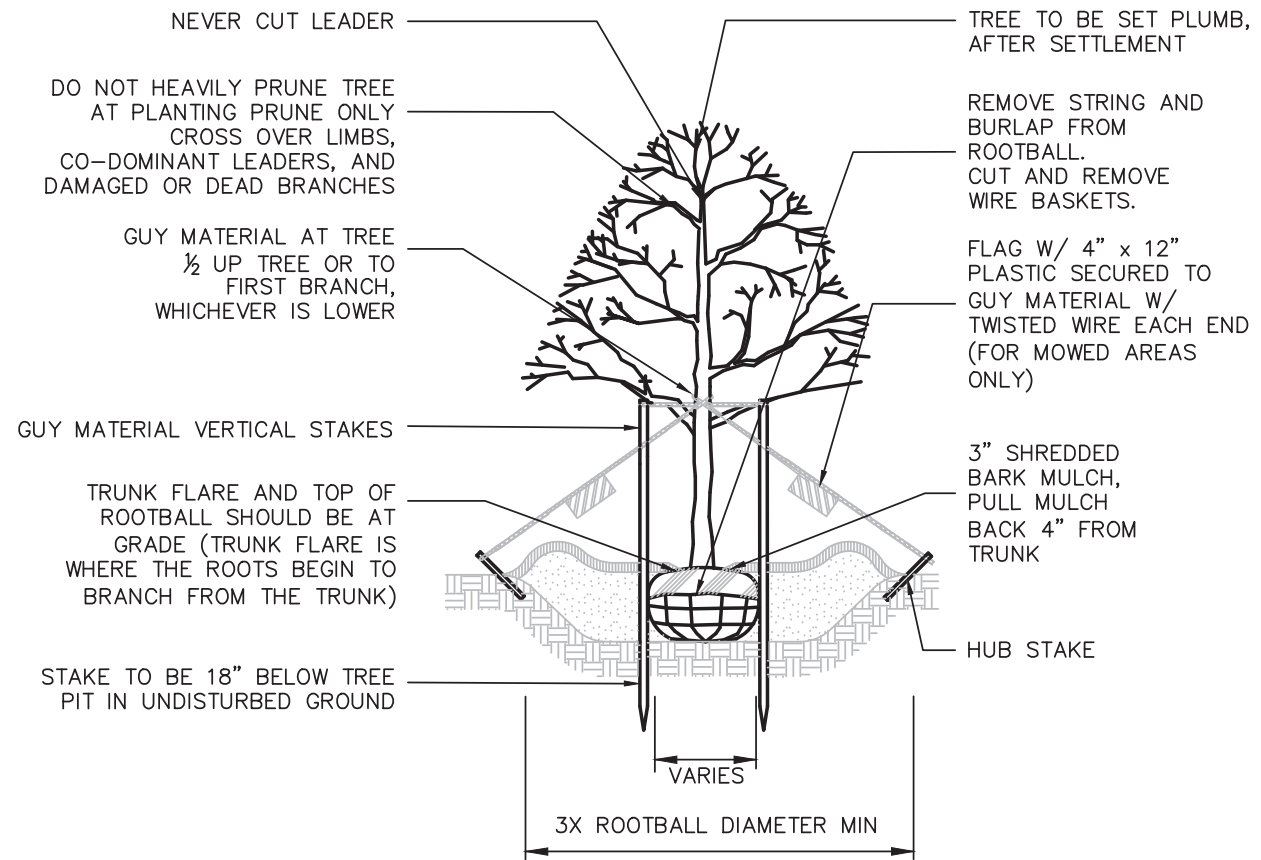


LINETYPE LEGEND	
---	PROPERTY LINE
- - - - -	PROPERTY SETBACKS
---	REFERENCE LINE
- - - - -	REFERENCE LINE SETBACKS
---	TOPOGRAPHY MIN
---	TOPOGRAPHY MAJ



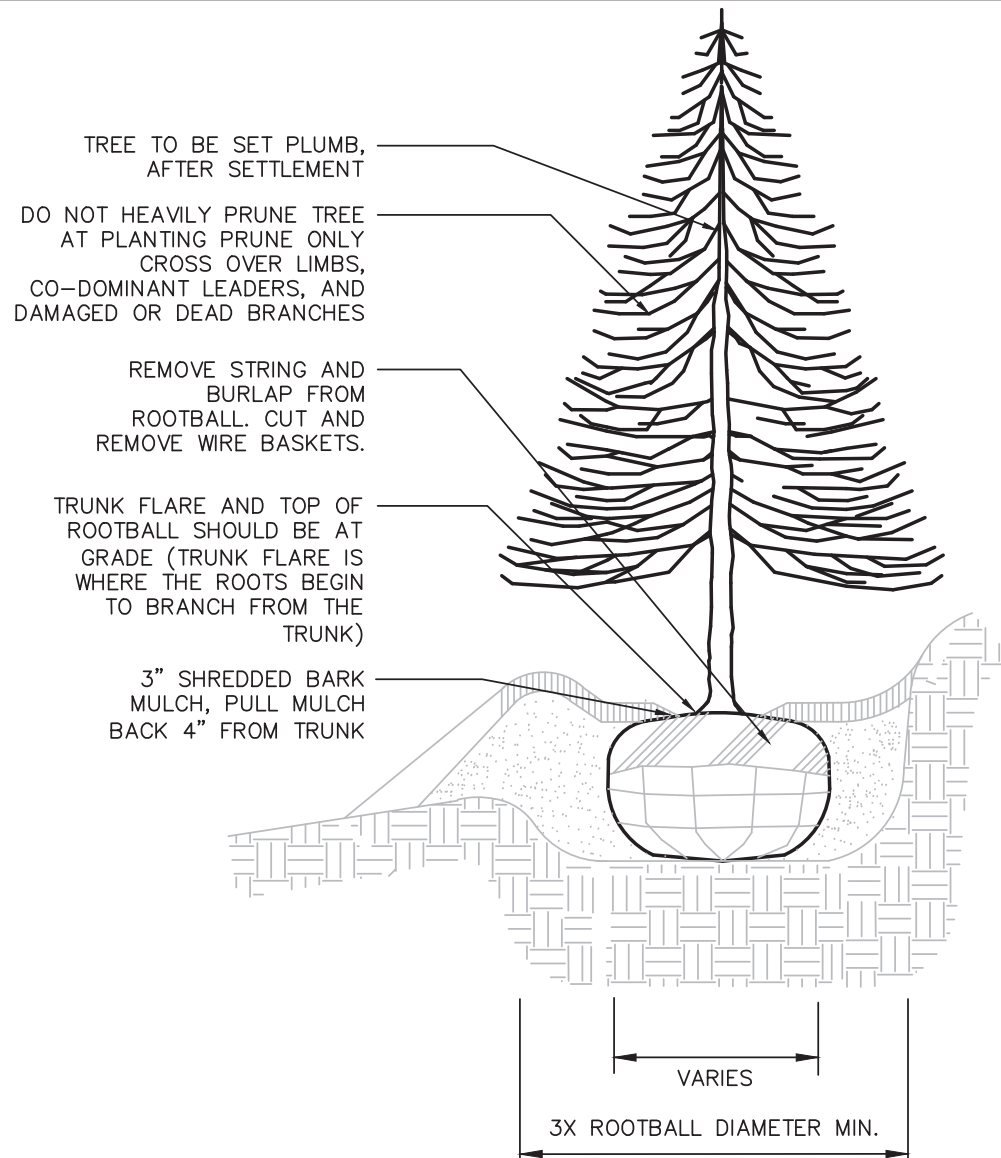


TYPICAL SHRUB PLANTING
NO SCALE



- 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 WRAP 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.

DECIDIOUS TREE PLANTING
NO SCALE



- 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



311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com

AMBROSE
WOODS

Site Location:
Tolend Road
Dover, NH 03820
Tax Map:
Lot #:

Prepared For:
Tritech Engineering Corp.
755 Central Avenue
Dover, NH 03820

CONSTRUCTION
DETAILS

DATE: 03 - 03 - 25

SCALE: AS NOTED

PROJECT #: 25011

Drawn By: RNM

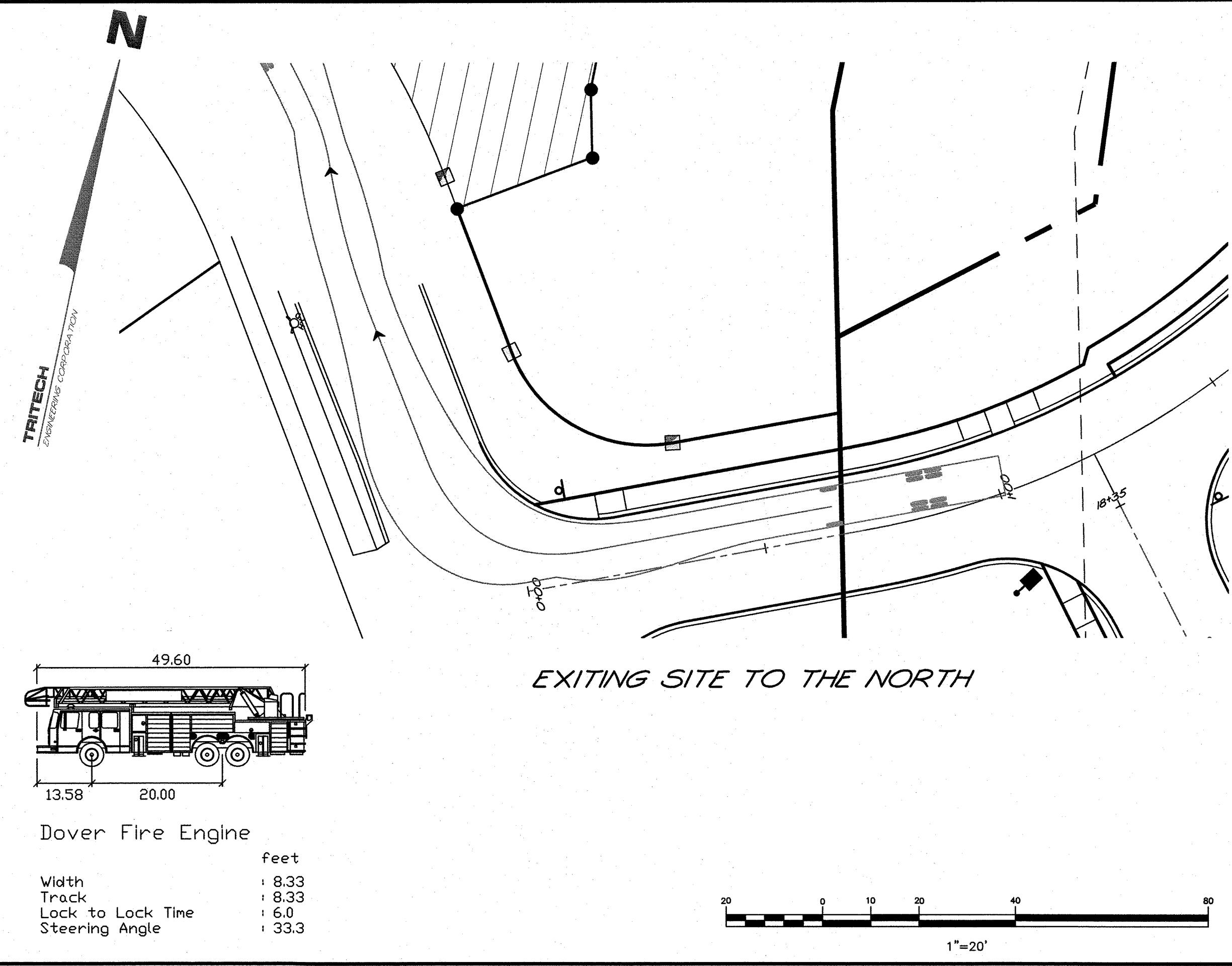
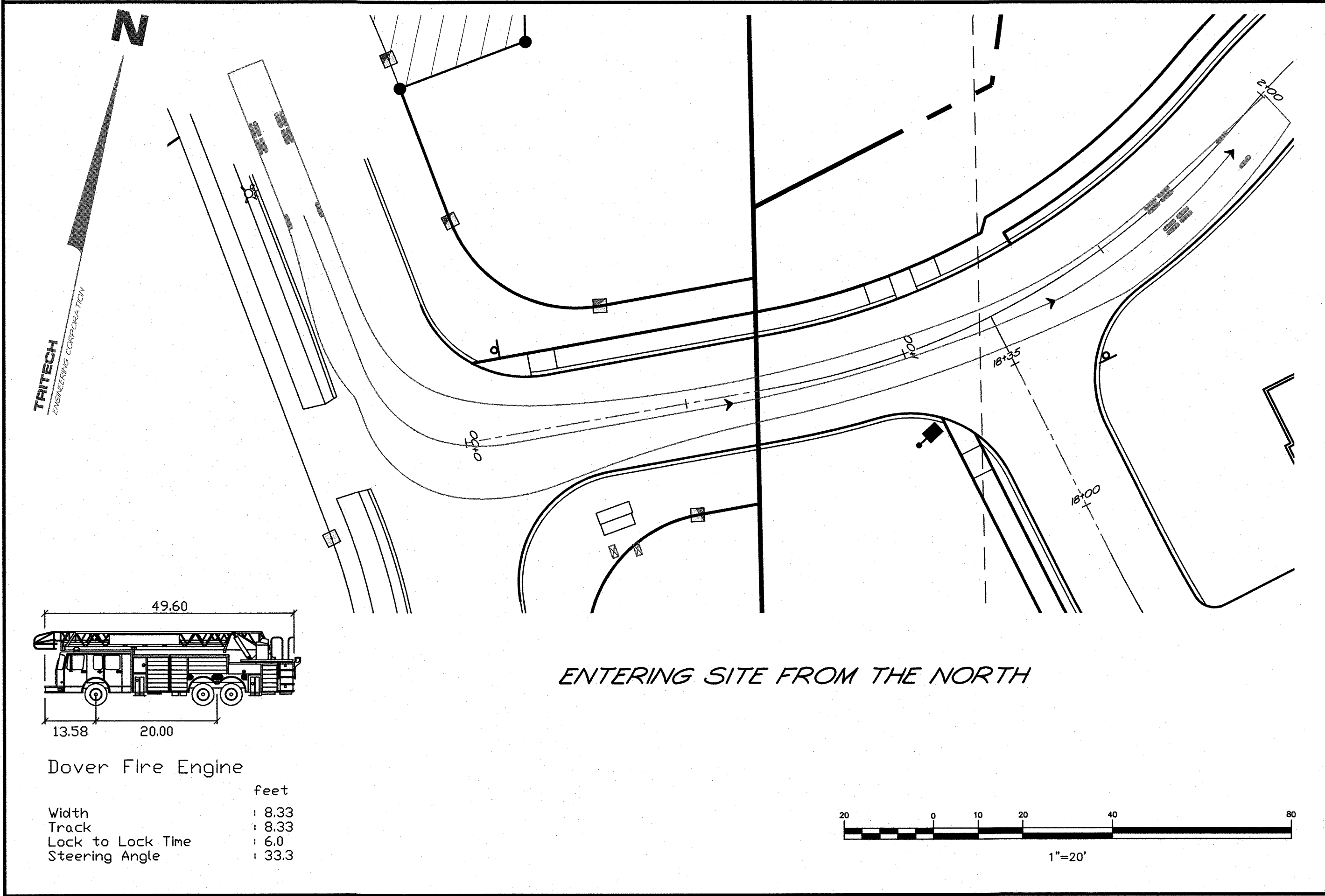
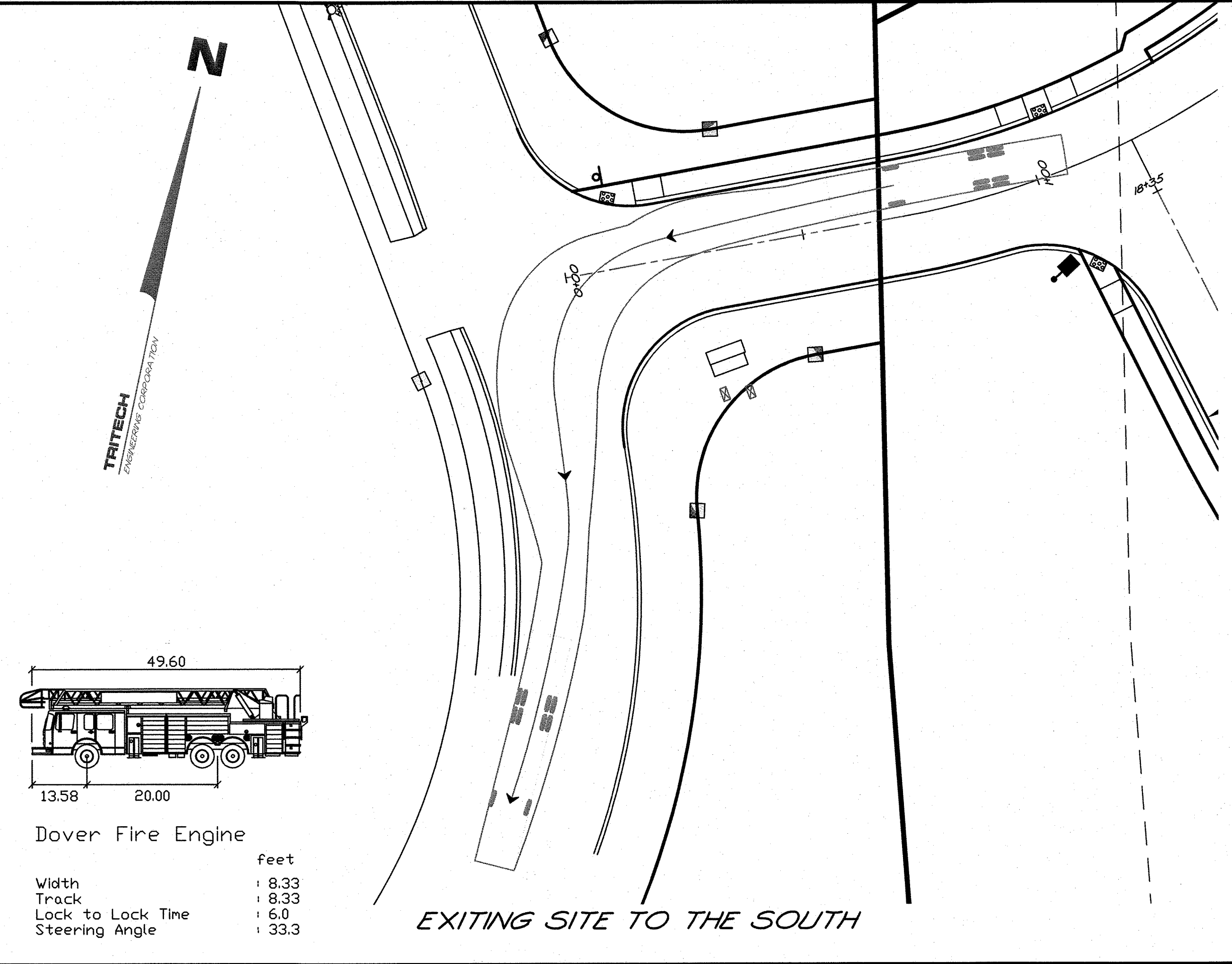
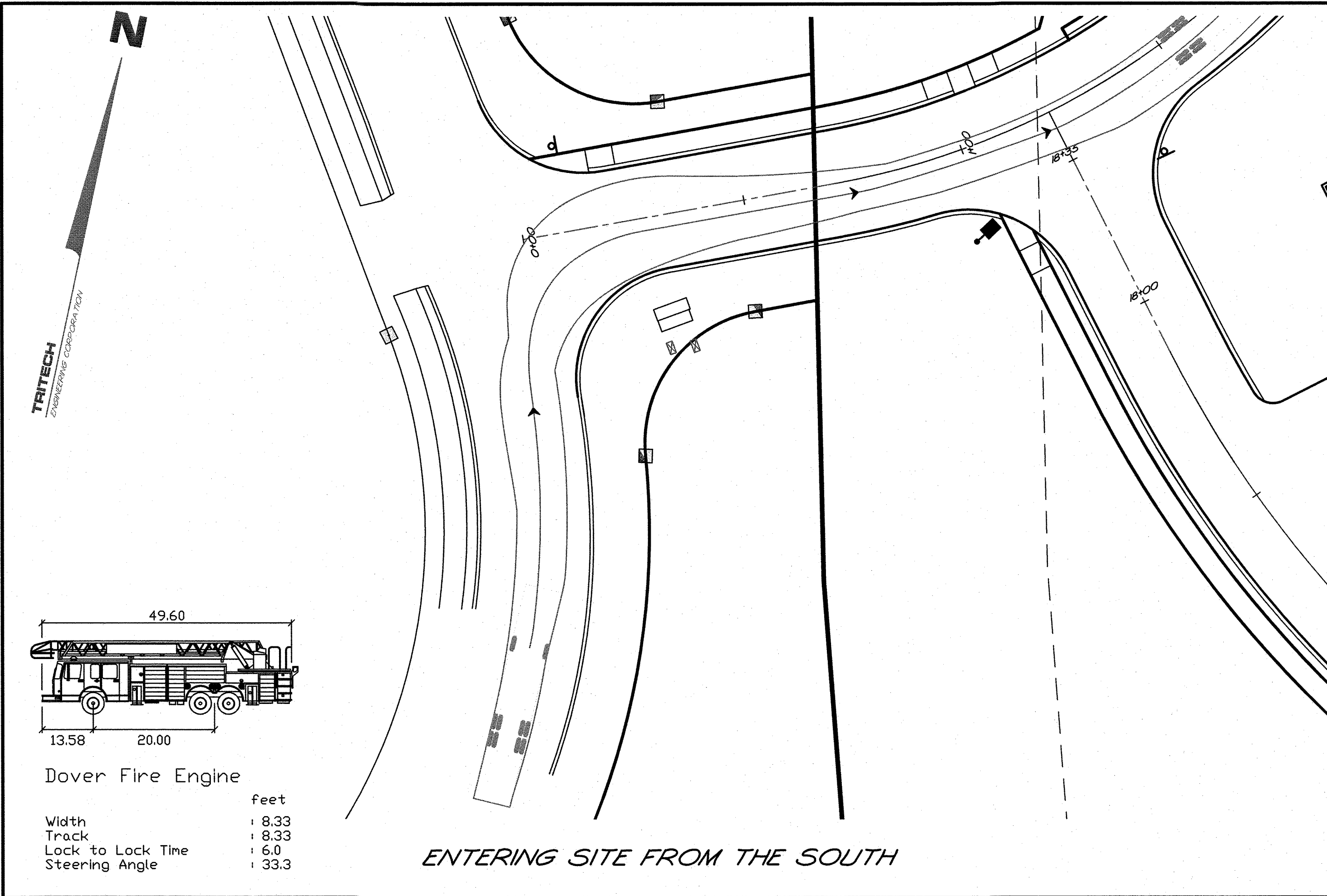
Checked By: ERB

REVISIONS: DATE:
Issued for Client Review

This plan is the property of
Terrain Planning & Design LLC.
Use or reproduction of this plan
by any means without
permission or purchase from
Terrain Planning & Design LLC
is prohibited.

L - 2





TRITECH
ENGINEERING CORPORATION

785 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 9890

ISSUED FOR TRC REVIEW
March 6, 2025

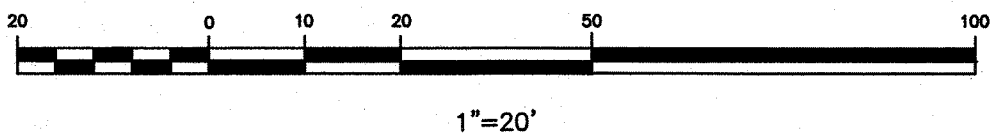
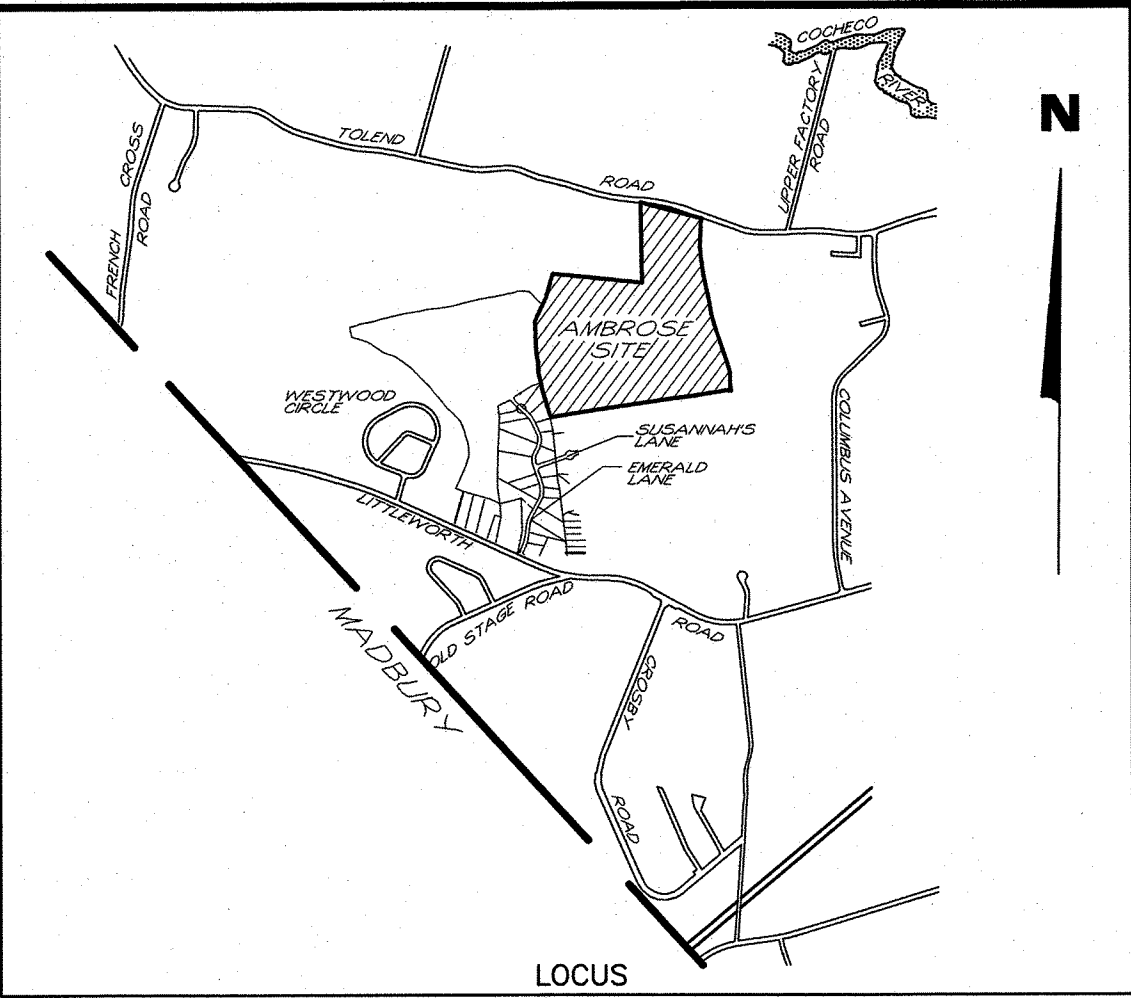
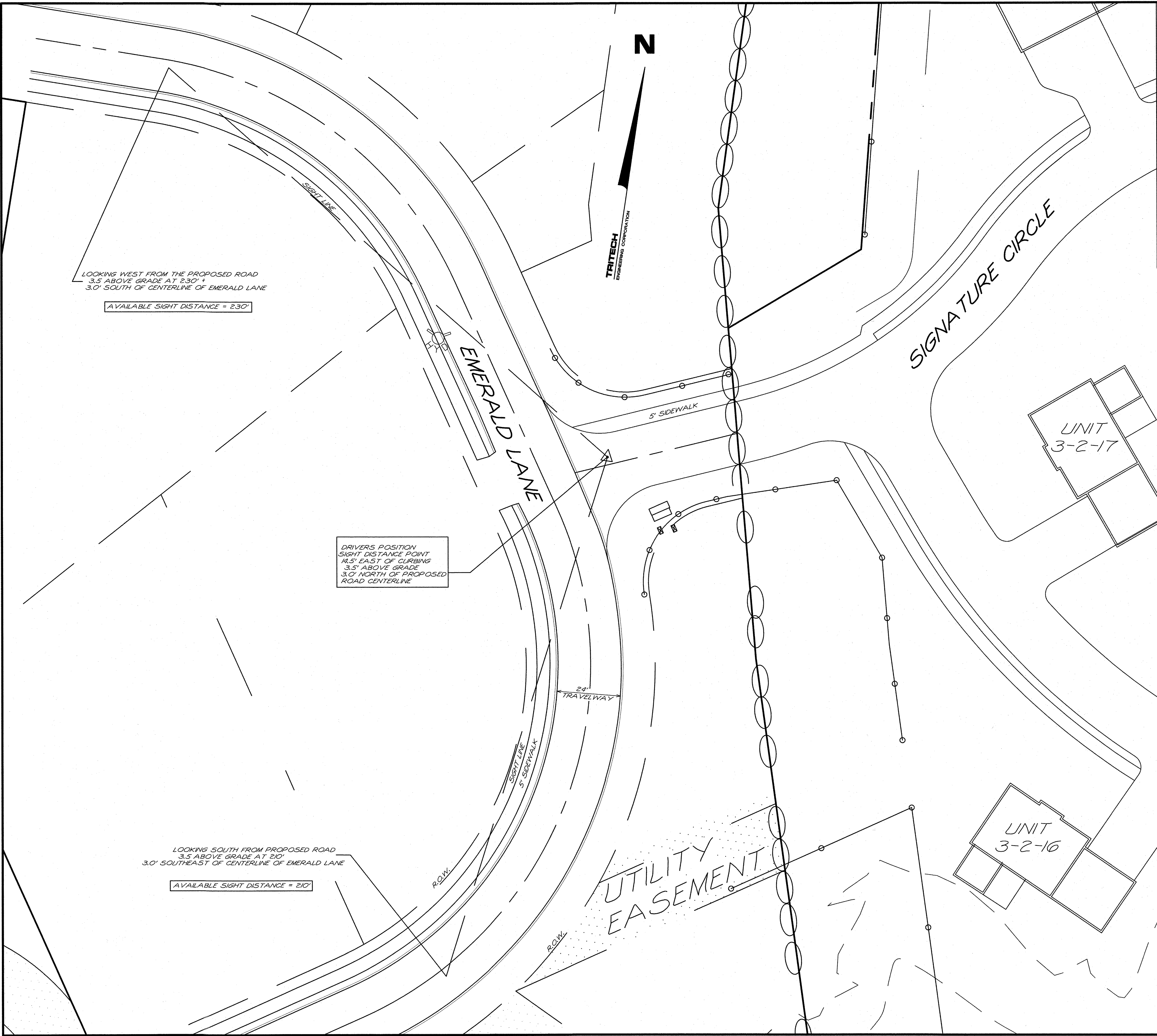
REVISIONS	DATE	DESCRIPTION

FIRE TRUCK TURNING EXHIBITS

AMBROSE WOODS
TOLEND ROAD
DOVER, NEW HAMPSHIRE
MARCH 6, 2025
JOB No. 23118
SCALE: 1" = 20'

SHEET No.

TR-1



SHEET No.	SD-1	
	SIGHT DISTANCE PLAN AMBROSE WOODS TAX MAP F LOT 3 210 TOLEND ROAD AND EMERALD LANE DOVER, NEW HAMPSHIRE MARCH 6, 2025 JOB No. 23118 SCALE: 1" = 20'	
ISSUED FOR TRC REVIEW March 6, 2025		
REVISIONS DATE: DESCRIPTION:		
TRITECH ENGINEERING CORPORATION 755 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE 603 742 8107 FAX 603 742 9830		