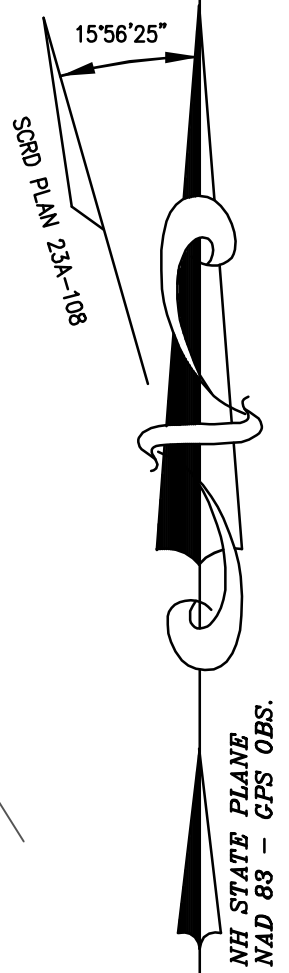
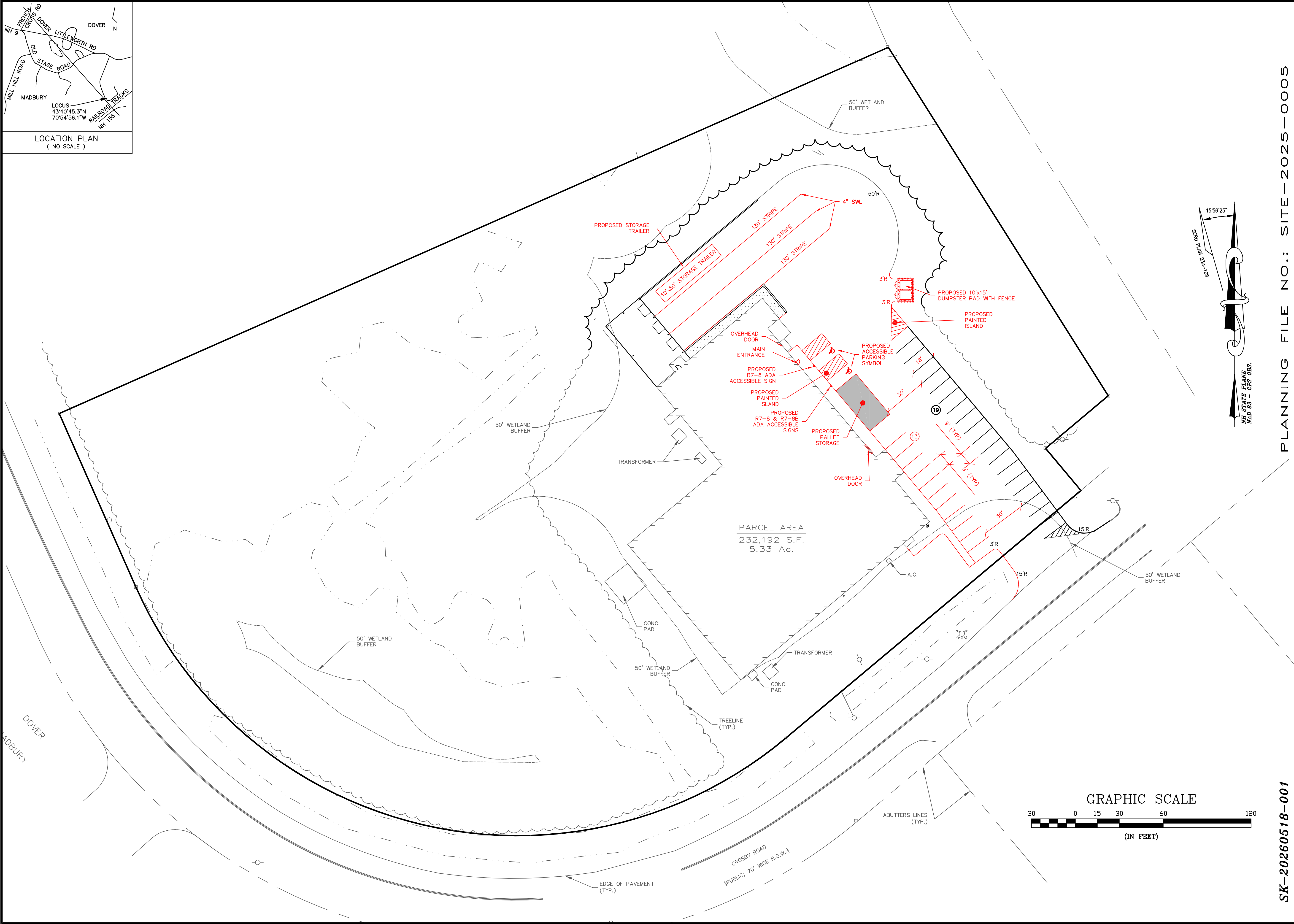
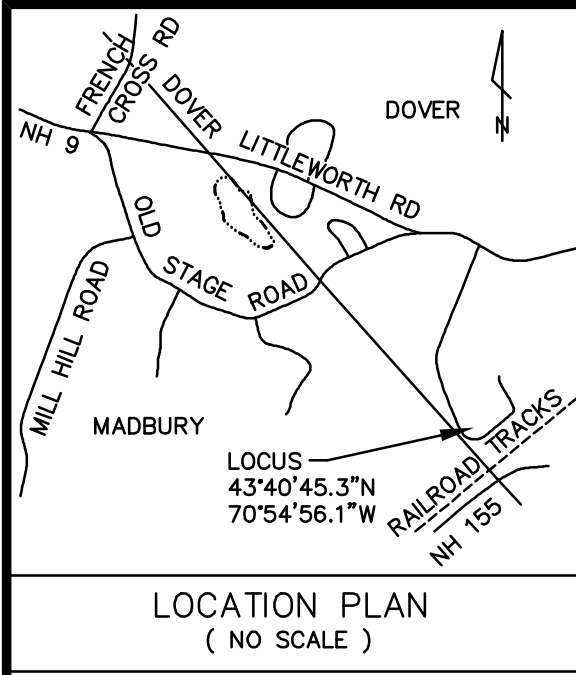


CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, May 28, 2026**
Meeting Time: **10:30 AM**

1. Site Plan for Crosby 180, LLC, Assessor's Map G, Lot 1-A, zoned CM, located at 180 Crosby Road. (Proposal is for administrative changes to previously approved parking layout and dumpster pad location.) (SITE-2025-0005)
2. Site Plan for 96 Broadway, LLC, Assessor's Map 27, Lot 169, Zoned G, located at 96 Broadway. (Proposal is to construct two (2) duplexes with associated parking area.) (SITE-2026-0007)

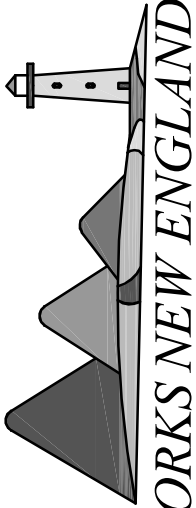


PLANNING FILE NO.: SITE-2025-0005

SK-20260518-001

PARKING & DUMPSTER RECONFIGURATION		CROSBY 180, LLC P.O. BOX 4064 PORTSMOUTH, NH 03802		SK-1	
DATE: 4-24-25	4	4	4	5-18-26	5-18-26
SCALE: 1"=30'	SRD	SRD	SRD	SRD	SRD
DESIGN BY: SRD	SRD	SRD	SRD	SRD	SRD
APPROVED BY: SRD	SRD	SRD	SRD	SRD	SRD
PROJECT NO: 24189	1	1	1	1	1
FILE: SITE-DEG	NO.	NO.	NO.	NO.	NO.
DUMPSTER & PARKING RECONFIGURATION		PLANNING BOARD SIGNATURE		DATE	
RELOCATED FDC		RELOCATED FDC		DATE	
PER TRC#1 COMMENTS		PER TRC#1 COMMENTS		DATE	
REVISION		REVISION		DATE	
APPD		APPD		DATE	

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY



CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, NH 03821
603.749.0443



City of Dover, New Hampshire SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only

Project #: _____

Date Received: _____

Amount Paid: _____

Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: 96 Broadway LLC; Ryan Eschbach Telephone # (248)225-6538

Address of Applicant: US Route 1, Apt. 1C, York, ME 03909

E-Mail Address: Ryansch@mac.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 96 Broadway, Dover NH

Assessor's Map # 27 Lot(s) # 169

Zoning District(s) Gateway District Overlay District(s) Central Business District

Size of Parcel: 15,429 sq. ft. 0.35 ac. Property Deed: Book 5339 Page: 197

Existing Use of Property: Multi Family Residentail

SITE PLAN INFORMATION

Describe Proposed Use: Multi Family Residentail

Area of Parcel to be Developed: 9,485 sq. ft.

If Multi-family Residential: Number of Units 4 additional units & Buildings Proposed 2 additional buildings

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

Number of Parking Spaces: Existing Approx. 5 Proposed 12

Highway Access (check where applicable): _____ City Street Hill Street State Highway

Number of Employees Total: _____ In Maximum Shift:

Dispostition of Parcel:

Building Setbacks:

Building Footprint 884, 1400, 1400 sq. ft.

Front Yard 5 ft.

Total Building Area 2147, 2800, 2800 sq. ft.

Rear Yard 44.7' ft.

Paved Area 4790 sq. ft.

Side Yard: Right 11.5 ft. Left 4.7' ft.

City Water? ☒ Yes ☐ No How far is city water from the property? _____

City Sewer? ☒ Yes ☐ No How far is city sewer from the property? _____

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

☐ Residential ☐ Residential (reduced size) ☐ Industrial | ☐ Purchase ☐ Land Preservation

Relief sought (Check All That Apply):

☐ Lot Size ☐ Frontage ☐ Setback ☐ 30' Buffer ☐ Increase by _____ units

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

BUILDING INFORMATION

Type of Building to be Built: 2 Duplexes

Height of Building: 28'-4" Finished Floor Elevation: 79.0'

Number of Seats (where applicable) N/A

Estimated value of construction: _____ Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Glenn Griswold, Norway Plains Associates Inc.
Address 2 Continental Boulevard, Rochester NH 03866 Telephone #: (603)335-3948
Professional License #: _____ E-mail address: GGriswold@NorwayPlains.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Hilary Badger, Norway Plains Associates Inc.
Address 2 Continental Boulevard, Rochester NH 03866 Telephone #: (603)335-3948
Professional License #: 18290 E-mail address: HBadger@NorwayPlains.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) Sarah Hourihane, Lassel Architects
Address PO Box 370, South Berwick, ME 03908 Telephone #: 207-384-2049
Professional License #: 4574 E-mail address: sarah@lasselarchitects.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Victoria Martel, Sea Laurel
Address 150 Blackberry Hill Road, Berwick, ME 03901 Telephone #: 207-599-6517
Professional License #: _____ E-mail address: vicky@sealaurel.com

SOIL SCIENTIST INFORMATION

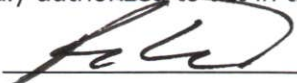
Name of Soil Scientist and Company (Licensed in N.H.) _____
Address _____ Telephone #: _____
Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone # _____
Address Easement Holder: _____

SIGNATURES

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

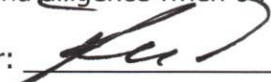
Signature of Property Owner:  Date: 4-7-26

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

Signature of Agent: _____ Date: _____

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: 4-7-26

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner:  Date: 4-7-26

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

CERTIFICATION OF FEES

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

Signature of Property Owner:  Date: 4-7-26

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

***CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS***

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
27	169	93 Broadway LLC	4 US Route 1 Unit 1C, York ME 03909

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Same as Owner		

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Hilary Badger, PE	Norway Plains Associates, Inc.	PO Box 249, Rochester NH 03866
Glenn Griswold, LLS	Norway Plains Associates, Inc.	PO Box 249, Rochester NH 03866
Sarah Hourihane, AIA	Lassel Architects	PO Box 370, South Berwick, ME 03908

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS



Norway Plains Associates, Inc.
2 Continental Blvd., PO Box 249
Rochester, NH 03866

Abutters List

Applicant: **L & R Family Holdings**

Proposed Project: **Site Plan Review**

Site Address: **96 Broadway Street, Dover NH**

Town Tax Map & Lot: **Map 7, Lot 15**

Town Tax Map & Lot #:		Abutter Name:	Mailing Address:
Map	Lot		
27	169	Owner: 96 Broadway LLC	4 US Route 1, Unit 1C York, ME 03909
27	168	Danielle & Tyler Sherman	5 Hill Street Dover, NH 03820
27	171	Robert C Carrier, Trustee	4 Florence Street Dover, NH 03820
27	170	Changxing Lin & Ling Yang	4 Captain Parker Drive Lee, NH 03861
26	7A	121 Broadway LLC	340 Central Ave, Suite 202 Dover, NH 03820
26	8	Paula & Kristin Ford	PO Box 724 Greenland, NH 03840
26	9	99-101 Broadway, LLC	91 ½ Henry Law Ave Dover, NH 03820
27	205	Gary R. Boisse	PO Box 755 Somersworth, NH 03878-0755
27	206	Lauren S. & Christopher J. Neugebauer	4 Hill Street Dover, NH 03820
Civil Engineers / Surveyor / Agent		Hilary Badger Norway Plains Associates, Inc.	PO Box 249 Rochester, NH 03866-0249

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee \$200.00 + \$150.00 x # _____ new lots created = \$ _____
- ☐ LOT LINE ADJUSTMENT Application fee \$200.00 + \$100.00 X # _____ of lots involved = \$ _____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee \$200.00 = \$ _____
- ☒ SITE REVIEW – RESIDENTIAL Application fee \$200.00+ \$100.00 x # 4 per dwelling unit = \$ 600.00
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee \$200.00 + (not to exceed \$10,000)
 - ☐ New construction \$.15 sq. ft. x # _____ sq. ft. = \$ _____
 - ☐ Additions (new floor space) \$.10 per sq. ft. x # _____ sq. ft. = \$ _____
- ☐ MOTEL/HOTEL \$35.00 x # _____ per lodging unit = \$ _____
- ☐ CHANGE OF USE Application fee \$200.00 + (not to exceed \$5,000)
 - ☐ Existing floor spaces \$.10 per sq. ft. x # _____ sq. ft. = \$ _____
- ☒ CONDITIONAL USE PERMIT Application fee \$200.00 x # 1 per Application = \$ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
 - ☐ Application fee \$50.00 = \$ _____
 - ☐ Permit fee \$75.00 = \$ _____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee \$200.00 = \$ _____
- ☐ REQUEST FOR REZONING Application fee \$200.00 = \$ _____
- ☐ DRIVEWAY WAIVER Application fee \$200.00 = \$ _____
- ☒ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed \$10,000)) Application fee of \$200.00 is N/A if it is part of a Site Review or Subdivision Plan. \$200.00 + \$.07 per sq. ft. x # 2,860 sq. ft. = \$ 200.20

SUBTOTAL PLAN REVIEW FEE = \$ 800.20

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 # 3 of x \$10.00 = \$ 30.00
- ☒ Certified letters fee: # of abutters 8 X \$10.00 = \$ 80.00
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X \$1.00 = \$ _____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x \$10.00 = \$ _____

C. Foster's newspaper public notice fee \$120.00 x # 1 applications = \$ 120

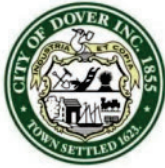
SUBTOTAL = \$ 230.00

TOTAL INVOICE AMOUNT = \$ 1,230.20

PLAN REVIEW FEE COLLECTED/PAID = \$ _____

BALANCE DUE = \$ _____

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



City of Dover, New Hampshire **SITE PLAN REVIEW SUBMISSION CHECKLIST**

[Revision Date: June 4, 2019]

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

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

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

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

APPLICANT: 96 Broadway LLC File Number: _____

PROJECT TITLE: 96 Broadway

PROPERTY LOCATION: 96 Broadway Tax Map: 27 Lot: 169

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

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Shown on plans	
Existing and proposed topographic information at two foot intervals	Included in all applicable plans	
Existing and proposed buildings and structure locations	Depicted on existing features and site plans	
Minimum building setbacks or build to lines on all lots	Shown on depicted lot	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Sheet C-3	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	Sheet C-3	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	Sheet C-3	
Existing and proposed stormwater lines and facilities	Stormwater management depicted on Site Plan	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	Sheet L-2	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	N/A	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Shown on Existing Features Plan	
Existing natural features and/or significant vegetation on property	Shown on Existing Features Plan	
Depict existing contours up to 100 ft. beyond project limits	USGS Map included with drainage report	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Sheet L-1	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Shown and noted in Site Plan	
Location, material and size of existing and proposed pavement area	Included in all applicable plans	
Location of proposed fire lanes	NA	
Specify finished floor elevations of buildings	shown on plans	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	Sheet C-1	
Depict all service, storage, loading bays and utility areas	NA	
All applicable Dover Common Site Plan notes	Sheet C-1	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Location depicted on Site Plan & details shown on Drainage Details Plan	
Stormwater Management System Operation and Maintenance Plan	Drainage report	
Letter to Serve from Public and Private Utilities		
Erosion and Sedimentation Control Plan	Shown on Temporary Erosion Plan & Permanent Erosion Plan	
Landscape Operation and Maintenance Plan		
Proposed restrictive covenants or homeowners association documents	NA	
Dates and permit numbers of all required state and federal permits	Cover Sheet	
If wetland buffer, indicate placards locations, as applicable	NA	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Sheets E-1 and C-2	
Location of proposed drive-in facilities	NA	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	Type text here	

REVIEWED BY: _____ DATE _____ TRC DATE _____

CITY OF DOVER PLANNING DEPARTMENT
Revised November 28, 2022

APPLICANT: _____ FILE NUMBER: _____

List of Common Site Plan Notes

The following list of commonly required notes is intended to be used as a guide to applicants and should not be construed as a comprehensive note requirement list for all projects. A preapplication conference with the Planning Department is suggested to help determine the actual notes that may be required.

1. The intent of this plan is to *(describe the purpose of the plan)*.
2. Owners of Record are: Name
 Street address
 Municipality, State, Zip Code

 Authorized Signature
3. The parcel(s) is *(are)* shown as Lot No. _____, Map _____ of the City of Dover Tax Assessor's Maps.
4. The subject parcel(s) contains _____ acres or _____ sq. ft. area of land.
5. Title reference for the project parcel(s) is the Strafford County Registry of Deeds, Book No. _____, Page No. _____.
6. Reference Plans: *(List all reference plans and their SCRD #)*
7. All applicable right-of-way, conservation, slope, construction, power line, cross travel, or other easements shall be referenced in a note.
8. Current zoning dimensional and density requirements in effect are as follows:

Required:

Provided:

- a. Zoning district _____ sub-district _____
- b. Minimum lot size: _____ acres (sq. ft.)
- c. Minimum lot frontage: _____ ft.
- d. Minimum yard setbacks/build-to-lines:
 Front _____ ft.
 Side _____ ft.
 Rear _____ ft.
 Abut-a-street _____ ft.
- e. Maximum/minimum lot coverage _____ %
- f. Minimum/maximum bldg. height _____ ft./stories

This property falls within the following zoning overlay districts: *(List districts)*

9. List any variances or special exceptions granted by the Zoning Board of Adjustment or Conditional Use Permits granted by the Planning Board for the proposed use or structure, including the case number and date of decision and any conditions.
10. Property line information has been obtained from a survey performed by *(surveyor)* on *(date)* with an error not greater than 1 in 10,000 *(or has been obtained from _____ Plan, prepared by (surveyor))*.
11. Subject parcel is *(is not)* located within a Federally designated flood hazard area (Community panel number 33017C0xxxD, Effective Date: September 30, 2015).
12. Wetlands were delineated by _____, Certified Wetlands Scientist, Certification Number _____, in accordance with Chapter 170-27.1 of the Zoning Ordinance, on _____, 20____.
13. As-built plans of the subdivision shall be submitted on paper and in digital format AutoCAD DWG, AutoCAD DXF or ESRI format to the City of Dover Engineer's Office upon completion of project if a street is proposed for City acceptance. 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.
14. The installation of electric power, cable television and telephone lines shall be underground throughout the site for which development is proposed.
15. The subject parcel(s) is (are) served by municipal water and sewer *(or is served by on-site well and septic system)*.
16. 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.
17. All erosion control notes shall include provisions for construction sequencing, temporary erosion control measures, and permanent standards such as loam spread rate for disturbed areas, rates of lime, type and rates for fertilizer, and seed and mulch mixture with rates of application.
18. The limits of construction disturbance that are located in or within the 50 ft. of Conservation and Wetland Districts shall be staked, flagged and clearly identified prior any earth disturbing activity occurs.
19. All treatment swales to be constructed shall have sod bottoms.
20. A letter of credit for the cost of revegetating all disturbed areas on the site shall be submitted, and the approved construction sign installed prior to any earth disturbing activity occurs.
21. A pre-construction conference with the developer, the design engineer, the earthwork contractor and the City Engineer shall occur prior to any earth disturbing activity.
22. Site Construction hours shall be limited to Monday-Friday 7 AM-6 PM, Saturday and Sunday 9 AM-4 PM. Hours of construction must be documented on a site construction sign along with the contact information for the general contractor. Said signage must be located and approved by the City Engineer or Planning Director.

23. Building addresses (including apt/unit numbers if applicable) shall be assigned by the Building Official at the time of issuance of a building permit.
24. The proposed use for the site (structure) is _____. (More specific uses are encouraged, such as single family, duplex, multi-family, restaurant, hotel, doctor's office, etc. Should more than one use be proposed, an indication of the percentage of each use is suggested.)
25. The following federal and state permits have been issued for the subject property: (*List permit type, number and date of issuance.*)
26. Commercial vehicle route during construction shall conform to Dover City Code or be coordinated with the Community Services Director.
27. Any retaining wall taller than four feet (4') requires issuance of a building permit from Inspection Services.
28. Any fence taller than seven feet (7') requires the issuance of a building permit from Inspection Services.
29. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal.
<https://www.unh.edu/unhsc/ptapp>
30. 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.
31. Fire department access road(s) shall be installed and maintained to support the imposed loads of fire apparatus in all weather conditions at all times.
32. The maximum parking space calculation is _____ (broken down) and _____ spaces are provided.
33. Exterior lighting shall be cut-off type fixtures per Chapter 153-14-E and shall provide lighting directed on-site only.
34. Topographic survey performed by _____ on (*dates*).
35. Elevations are based on U.S.G.S. NVD 1988 datum. (**or** Elevations depicted are based on information obtained from the City Engineer's Office and was derived from coordinates for control stations _____ and _____. These coordinates have not been adjusted to 1983 datum).
36. A security system shall be installed as required by Chapter 45, Article I, section 45-2 of the Code of the City of Dover. (*If a business establishment or multi-family dwelling contained in a new, altered or repaired structure*)
37. Approved backflow preventers shall be provided for both fire and domestic water lines.

- 38. The (*existing or proposed*) structure 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.
- 39. Sprinkler connections must be flushed in accordance with NFPA 24 and a Contractor’s Material and Test Certificate for Underground Piping form must be completed and approved by Inspection Services prior to connection of the backflow device.
- 40. 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.
- 41. 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.

REMARKS:

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (03867)
Rochester, NH 03866-0249
Phone (603) 335-3948
www.norwayplains.com



P. O. Box 268
31 Mooney St.
Alton, NH 03809
Phone & Fax (603) 875-3948

April 30, 2026

Erin Bassegio, City Planner
Planning Department
City of Dover
288 Central Avenue
Dover, NH 03820

Re: Traffic Impact Assessment; 96 Broadway LLC; 96 Broadway, Dover, NH, Map 27, Lot 169.

Dear Ms. Bassegio;

On behalf of 96 Broadway LLC and Ryan Eschbach, Norway Plains Associates, Inc. is pleased to submit a Traffic Impact Assessment for the parcel located on the corner of Broadway and Hill Street in the City of Dover.

The parcel, Tax Map 27, Lot 169, comprising 0.35 acres, is currently developed with a triplex and associated paved parking area. The existing entrance into the site is via a driveway on Hill Street that is 92-feet west of the intersection of Broadway.

The proposed development is the construction of two duplex buildings north of the existing building and installation of additional parking lot to accommodate parking associated with the new structures. Access to the site will continue to be from Hill Street, with no proposed modifications to the driveway. The existing parking area will be resurfaced, and dimensions will be adjusted to meet the City of Dover parking lot requirements.

All utilities for the proposed duplexes will be installed underground through Broadway. A 66.5-foot section of Broadway will be resurfaced after the utility installation. New stormwater management systems have been designed to treat the stormwater from the proposed impervious cover.

Pre-Existing Trip Generation:

The Institute of Traffic Engineers (ITE) publishes trip generation information for a wide variety of land uses (LU) based on extensive data and studies from throughout the country. The existing use of the property is multifamily residential, with three units on site at this time.

The peak hour trip generation for this Land Use can be determined by the number of units. The following is a breakdown of their respective ITE published peak hour trip generation rates.

Multifamily Housing Low Rise: Not Close to Rail Transit (#220)

Per Unit	Trip Generation rates	
	<u>Morning Peak Hour (7 – 9 am)</u>	<u>Afternoon Peak Hour (4 – 6 pm)</u>
	0.30 (10% entering, 90% exiting)	0.25 (90% entering, 10% exiting)
3 Units	Trip Generated	
	<u>Morning Peak Hour (7 – 9 am)</u>	<u>Afternoon Peak Hour (4 – 6 pm)</u>
	1 (0 entering, 1 exiting)	1 (1 entering, 0 exiting)

Based on the three units in the triplex, the number of trips during the morning peak is one exiting and afternoon peak is one entering.

Proposed Trip Generation:

The proposal is to construct two duplexes on the parcel, which will bring the total number of units to seven. The following peak hour trips generated for the sited would be:

Multifamily Housing Low Rise: Not Close to Rail Transit (#220)

Per Unit	Trip Generation rates	
	<u>Morning Peak Hour (7 – 9 am)</u>	<u>Afternoon Peak Hour (4 – 6 pm)</u>
	0.30 (10% entering, 90% exiting)	0.25 (90% entering, 10% exiting)
7 Units	Trip Generated	
	<u>Morning Peak Hour (7 – 9 am)</u>	<u>Afternoon Peak Hour (4 – 6 pm)</u>
	3 (0 entering, 3 exiting)	2 (2 entering, 0 exiting)

Based on the three units in the triplex and four units within the new duplexes, the number of trips during the morning peak is three exiting and afternoon peak is two entering. The overall impact of the development will be negligible.

Please don't hesitate to contact me if you have any questions, comments, or concerns. Thank you for your consideration.

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: 
Hilary Badger, PE, Project Engineer

cc: 96 Broadway, LLC

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

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Rochester, NH 03866-0249
Phone (603) 335-3948
www.norwayplains.com



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31 Mooney St.
Alton, NH 03809
Phone & Fax (603) 875-3948

April 28, 2026

Erin Bassegio, City Planner
Planning Department
City of Dover
288 Central Avenue
Dover, NH 03820

Re: Conditional Use Application; 96 Broadway LLC; 96 Broadway, Dover, NH, Map 27, Lot 169.

Dear Ms. Bassegio:

On behalf of 96 Broadway LLC, and Ryan Eschbach, we hereby submit a Multi-Family Residential Site Plan Application for a proposed expansion of multi-family housing located at 96 Broadway. The parcel, Tax Map 27, Lot 169, comprising 0.35 acres, is currently developed with a triplex and associated paved parking area.

The parcel is located within the Gateway (G) zoning district and Central Business Overlay District. Located northerly of the property are two residential lots, one of which is a duplex. West of the parcel is a single-family residence. South of the parcel is a multi-family lot, and two multi-family parcels to the east.

The parcel is currently developed with a triplex and a paved parking lot with access from Hill Street. The proposal is to construct two duplexes on the site and expand the existing parking area to support the additional residential units. A Conditional Use Permit is being requested to allow an increase in density.

Under the zoning district requirements, one dwelling unit is permitted per 4,000 square feet of lot area. With a total lot size of 15,429 square feet, the property is allowed 3.8 units by right. The proposed development would add four additional units, which represents a reasonable and appropriate increase in density given the parcel's size, configuration, and existing development pattern.

The placement of the new structures will comply with all applicable zoning standards, including setbacks and maximum build-out requirements. The surrounding neighborhood is fully developed with residential uses, and the proposed project is consistent with that character. No negative impacts to abutting properties are anticipated.

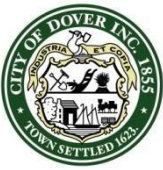
New Hampshire continues to face a significant housing shortage, and the creation of additional residential units on an already developed parcel supports the community's broader housing goals. This project represents an efficient use of land and existing infrastructure while contributing needed housing to the local market.

Thank you for your consideration Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: 
Hilary Badger, PE, Project Engineer

cc: 96 Broadway LLC



City of Dover, New Hampshire CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: 96 Broadway LLC; Ryan Eschbach Telephone # 248-225-6538

Address of Applicant: US Route 1, Apt 1C, York, ME 03909

E-Mail Address: Ryanesch@mac.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 27 Lot(s) # 169

Address of Property: 96 Broadway

Zoning District(s) Gateway District Overlay District(s) Central Business Overlay

Existing Use of Property: Multi family residential

CONDITIONAL USE PERMIT INFORMATION

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

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

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

The density of the parcel is intended to be 1 unit per 4,000 square feet, where the parcel is only 15,429 sf

7 units are proposed, including the existing 3 units on site. There will be no negative impact to the area

as the surrounding lots are all single and multi family residential.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Wastewater permit, not applied yet

Name of Professional That Prepared Plans: Hilary Badger, PE

Address PO Box 249, Rochester, NH 03867 Telephone #: 603-348-6656

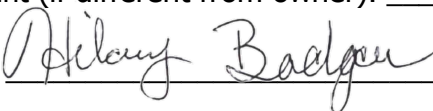
Professional License #: 18290 E-mail address: hbadger@norwayplains.com

SIGNATURES

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

Signature of Property Owner:  Date: 4-7-26

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

Signature of Agent:  Date: 4/16/26

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner:  Date: 4-7-26

DRAINAGE REPORT

**96 BROADWAY
PREPARED FOR:
RYAN ESCHBACH
96 BRAODWAY
DOVER, NH
STRAFFORD COUNTY**

April 2026

PREPARED BY:

NORWAY PLAINS ASSOCIATES, INC.

Hilary Badger , P.E. N.H. Reg. #18290

2 CONTINENTAL BOULEVARD, P.O. BOX 249, ROCHESTER, NEW HAMPSHIRE 03866-0249 (603) 335-3948

TABLE OF CONTENTS

1.0	INTRODUCTION:	1
1.1	REVISIONS:.....	1
2.0	SITE AND PROJECT DESCRIPTION:	1
2.1	PROJECT LOCATION:	1
2.2	EXISTING SITE FEATURES:.....	1
2.3	PROJECT DESCRIPTION:.....	2
3.0	METHODOLOGY:	2
3.1	REACH STRUCTURE PREFIXES:	2
3.2	POND STRUCTURE PREFIXES:	3
4.0	PRE-DEVELOPMENT DRAINAGE ANALYSIS:	3
5.0	POST-DEVELOPMENT DRAINAGE ANALYSIS:.....	3
5.1	STORMWATER CONTROL AND TREATMENT PRACTICES:.....	4
5.1.1	POROUS ASPHALT PAVEMENT	4
5.1.2	BIORETENTION BASIN:	4
6.0	COMPARISON AND CONCLUSION	4
6.1	COMPARISON	4
6.1.1	SUMMARY RESULTS AT THE POA'S:	4
6.2	CONCLUSION:.....	5

TABLES

TABLE 1:	PRE-DEVELOPMENT DRAINAGE ANALYSIS RESULTS SUMMARY:	3
TABLE 2:	POST-DEVELOPMENT DRAINAGE ANALYSIS RESULTS SUMMARY:.....	3
TABLE 3:	INFILTRATION BASIN SUMMARY:	4
TABLE 4:	COMPARISON; PRE- & POST-DEVELOPMENT POA'S:.....	5

APPENDICES

WEB SOIL SURVERY REPORT FOR STRAFFOD COUNTY, NEW HAMPSHIRE	A-1
PHOTOGRAPHS REPRESENTATIVE OF SITE	A-2
NHDES ALTERATION OF TERRAIN BMP WORKSHEETS FOR ALL TREATMENT PRACTICES.....	A-3
DRAINAGE ANALYSIS.....	A-4
• PRE-DEVELOPMENT, TYPE-III, 24-HR. ROUTING DIAGRAM, AREA AND SOILS LISTINGS..	A-4.1
• 2-YR., 10-YR, 25-YR. & 50-YR., PRE-DEVELOPMENT, TYPE-III, 24-HR. NODE LISTING	A-4.2
• 10-YR., PRE-DEVELOPMENT, TYPE-III, 24-HR. STORM DATA & HYDROGRAPHS	A-4.3
• POST-DEVELOPMENT, TYPE-III, 24-HR. ROUTING DIAGRAM, AREA AND SOILS LISTINGS	A-4.4
• 2-YR., 10-YR, 25-YR. & 50-YR., POST-DEVELOPMENT, TYPE-III, 24-HR. NODE LISTING.....	A-4.5
• 10-YR., PRE-DEVELOPMENT, TYPE-III, 24-HR. STORM DATA & HYDROGRAPHS	A-4.6
INSPECTION AND MAINTENANCE MANUAL WITH LONG TERM AGREEMENTS.....	A-5
ADDITIONAL REFERENCES USED IN ANALYSIS AND DESIGN	A-6
• EXTREME PRECIPITATION TABLES FROM NORTHEAST REGIONAL CLIMATE CENTER.....	A-6.1
• KSAT VALUES FOR NH SOILS SPECIAL PUBLICATION NO. 5 SEPTEMBER, 2009	A-6.2

FIGURES & PLANS

USGS MAP, 1:2,000 SCALE.....	FIGURE 1
CITY OF DOVER TAX MAP SKETCH.....	FIGURE 2
AERIAL PHOTOGRAPH.....	FIGURE 3
PRE-DEVELOPMENT DRAINAGE AREA PLAN	D-1 (POCKET)
POST-DEVELOPMENT DRAINAGE AREA PLAN.....	D-2 (POCKET)
DESIGN PLAN SET	(SEPARATE)

1.0 INTRODUCTION:

This drainage report has been prepared as a supporting document to the proposed 96 Broadway residential expansion.

The purpose of any drainage analysis is to apply current mathematical stormwater modeling techniques used in the fields of Civil and Environmental Engineering, to predict the effect of a proposed construction project will have on the subject parcel. Those parcels include directly abutting the project, any downstream property, and/or drainage structures such as culverts, closed drainage systems, etc.

A design that provides adequate control of stormwater, minimizing and/or eliminating impacts to any downstream drainage structures (i.e. municipal culverts, bridges, etc.), is arrived at through an iterative process using the modeling discussed above. The pre-development drainage analysis reflects the modeling performed for the pre-development surface drainage, and for the land in its existing state. The post-development drainage analysis reflects the results of the final drainage design, and provides surface drainage values to compare to the pre-development values. In this way, the design engineer and any review agents are provided the necessary information to decide if the proposed design is adequate.

1.1 REVISIONS:

2.0 SITE AND PROJECT DESCRIPTION:

2.1 PROJECT LOCATION:

The site is located on the west side of Broadway. Please refer to Figure 1 (USGS Map previous page) for a pictorial placement of the project area. The property is designated by the Dover Assessing Maps as Map 27, Lot 169, refer to figure 2.

2.2 EXISTING SITE FEATURES:

The parcel is currently developed with a triplex and associated parking lot. There is some existing landscaping and trees within the lot. The lot does not have any existing stormwater management. Most of the site drains to the back, southwest, corner toward Hill Street.

According to the Natural Resources Conservation Service (NRCS); Custom Soil Resource Report for Strafford County, New Hampshire; (Appendix A-1).

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	0.8	100.0%
Totals for Area of Interest		0.8	100.0%

2.3 PROJECT DESCRIPTION:

The proposed site development is to expand the existing lot by constructing two additional duplexes. This will include the installation of a larger parking lot and new stormwater management systems. All stormwater from the development will be directed into a stormwater system and will be treated prior to entering the City's closed drainage system.

The new parking area will be constructed utilizing porous pavement to provide treatment for all new paved areas. The roof runoff will be directed into a small bioretention system to treat the stormwater. Both systems will be constructed with underdrains, as infiltration is not possible on the site.

3.0 METHODOLOGY:

The drainage analysis is based on "Urban Hydrology for Small Watersheds", as written by the U.S. Soil Conservation Service (S.C.S.) and released as Technical Release 55, in June of 1986. A modified TR-20 method was used to generate runoff. The weighted-Q method was used instead of using composite CN values due to widely differing curve numbers present (e.g. pavement and good condition woods on HSG A soils). This modification to the TR-20 method is recommended by the NRCS for model accuracy over the composite CN method used in WinTR-20, especially when there is a wide difference in curve numbers and lower rainfall amounts (210-VI-NEH Part 630, Ch. 10, pg 10-16, July 2004). The computer analysis is based on the S.C.S. TR-20 and the stormwater modeling software HYDROCAD™ release 10.0, written by Applied Microcomputer Systems of Chocorua, New Hampshire, was used. The drainage analysis is based on information compiled from the following resources:

- 96 Broadway Plans;
- USGS Topographic Map – Dover, NH Quadrangle;
- Aerial Photographs – Google Earth;
- NRCS Custom Soil Resource Report for Strafford County, New Hampshire;
- "Pre- and Post-Development Drainage Plans"

As stated in the introduction, the purpose of this report is to provide information supporting the design of the stormwater control measures employed by this project. A number of sources of information were consulted to prepare the calculations for this infrastructure to check its sufficiency. The USGS Map, Aerial Photos, and the Site-Specific Soils Maps and Report, and NRCS Soils Maps for Strafford County were all consulted. A number of site visits were performed to confirm site conditions.

The 2, 10, 25 and 50-year storm events have been used to model the stormwater runoff and to determine the adequacy of the chosen stormwater control methods. See Appendix A-6.1 for Extreme Precipitation Tables and other references used in the design and analysis.

If a subcatchment is returned with Times of Concentration (Tc) below the minimum allowed by TR-55 (TR-55 minimum Tc = 0.1 hour = 6 minutes); then Tc values are set in HydroCAD to automatically return a Tc of 6 minutes to insure proper modeling.

A codified system was used to number the subcatchments, reaches, and ponds, in the drainage analyses. The following Table lists prefixes and their meanings.

3.1 REACH STRUCTURE PREFIXES:

Prefix	Explanation
POA	Point of Analysis

3.2 POND STRUCTURE PREFIXES:

Prefix	Explanation
BR	Bioretention Basin
PP	Porous Pavement
CB	Catch Basin

4.0 PRE-DEVELOPMENT DRAINAGE ANALYSIS:

Complete HydroCAD model data for the pre-development can be found in Appendix A-4. For a graphical depiction of the Watershed analyzed, flow paths; subcatchments and POA's refer to the Pre-Development Drainage Plan, Figure D-2 in the pocket at the rear of the report.

The site topography breaks the watershed into 10 subcatchments. These subcatchments drain to six Points of Analysis (POAs). There are three POAs that are onsite and three POAs offsite. The roof runoff (Subcatchment 3) is collected and reused in the production.

TABLE 1: PRE-DEVELOPMENT DRAINAGE ANALYSIS RESULTS SUMMARY:

	Area	2-yr Rate	2-yr Volume	10-yr Rate	10-yr Volume	25-yr Rate	25-yr Volume	50-yr Rate	50-yr Volume
	(Ac.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)
Subcatchment 1	0.44	0.6	0.06	1.2	0.10	1.6	0.14	2.1	0.18
Subcatchment 2	0.10	0.3	0.02	0.4	0.03	0.5	0.04	0.7	0.05
Total	0.54								
POA#1 (Hill Street)		0.6	0.06	1.2	0.10	1.6	0.14	2.1	0.18
POA#2 (Broadway)		0.3	0.02	0.4	0.03	0.5	0.04	0.7	0.05
Combined POAs		0.9	0.08	1.6	0.14	2.1	0.19	2.7	0.24

5.0 POST-DEVELOPMENT DRAINAGE ANALYSIS:

Complete HydroCAD model data for the post-development can be found in Appendix A-4. For a graphical depiction of the Watershed analyzed, flow paths; subcatchments and POA's refer to the Post-Development Drainage Plan, Figure D-3 in the pocket at the rear of the report.

TABLE 2: POST-DEVELOPMENT DRAINAGE ANALYSIS RESULTS SUMMARY:

	Area	2-yr Rate	2-yr Volume	10-yr Rate	10-yr Volume	25-yr Rate	25-yr Volume	50-yr Rate	50-yr Volume
	(Ac.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)
Subcatchment 1	0.15	0.3	0.02	0.5	0.04	0.7	0.05	0.9	0.07
Subcatchment 2	0.10	0.3	0.02	0.4	0.03	0.5	0.04	0.7	0.05
Subcatchment 3	0.03	0.1	0.01	0.1	0.01	0.2	0.02	0.2	0.02
Subcatchment 4	0.02	0.0	0.00	0.1	0.00	0.1	0.01	0.1	0.01
Subcatchment 5	0.03	0.1	0.01	0.1	0.01	0.2	0.02	0.2	0.02
Subcatchment 6	0.02	0.0	0.00	0.1	0.00	0.1	0.01	0.1	0.01
Subcatchment 7	0.02	0.0	0.00	0.1	0.01	0.1	0.01	0.1	0.01
Subcatchment 8	0.16	0.4	0.03	0.6	0.05	0.8	0.07	1.0	0.08
Total	0.54								
POA#1 (Hill Street)		0.4	0.03	0.6	0.05	0.8	0.07	1.0	0.08
POA#2 (Broadway)		0.6	0.06	1.1	0.10	1.4	0.14	1.7	0.17

	Area	2-yr Rate	2-yr Volume	10-yr Rate	10-yr Volume	25-yr Rate	25-yr Volume	50-yr Rate	50-yr Volume
	(Ac.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)	(cfs)	(Ac.ft.)
Combined POAs		1.0	0.09	1.7	0.15	2.2	0.21	2.7	0.26

5.1 STORMWATER CONTROL AND TREATMENT PRACTICES:

5.1.1 POROUS ASPHALT PAVEMENT

The stormwater management design employs porous asphalt for the new parking area. The porous asphalt pavement allows for the stormwater from these surfaces to flow through the aggregate and through the different layers of sand and stone below. The stormwater will be treated by the 12" filter and then it will enter 4" perforated pipes along the bottom of the practice. No infiltration is possible due to poor groundwater depth and underlying soil types. All stormwater entering the practice will be treated following the MS4 guidelines.

5.1.2 BIORETENTION BASIN:

This stormwater management design employs an open Bioretention Basin for the treatment of the roof runoff from the two proposed duplexes. The basin will be vegetated and will not overtop during the 50-year storm event. The basin will not include infiltration as it is not possible on the site, alternatively the basin will be lined with 4" perforated pipes laid flat under the bioretention media. An 8" standpipe will be installed and connected to the underdrains. The outlet will be connected to the existing drainage manhole on Broadway.

The table below is a summary of the inflow and out flow and freeboard of the bioretention basin.

TABLE 3: BIORETENTION BASIN SUMMARY:

	2-yr Storm			10-yr Storm			50-yr Storm		
	Q _{in}	Q _{out}	Freeboard	Q _{in}	Q _{out}	Freeboard	Q _{in}	Q _{out}	Freeboard
	(cfs)	(cfs)	(ft)	(cfs)	(cfs)	(ft)	(cfs)	(cfs)	(ft)
Infiltration Basin	0.3	0.2	0.15	0.5	0.4	0.09	0.8	0.7	0.03

*Q_{out} is the stormwater leaving the system

** Freeboard measured to the top of the earth berm.

BR Berm elevation = 78.0'

Details and specifications for the Bioretention Basin can be found on sheet C-5 of the plan set. A BMP Worksheet for the infiltration system practice can be found in Appendix A-3.

6.0 COMPARISON AND CONCLUSION

6.1 COMPARISON

The following table presents a comparison of the results of the pre-development drainage analysis and the post-development drainage analysis and the Points of Analysis.

6.1.1 SUMMARY RESULTS AT THE POA'S:

TABLE 4: COMPARISON; PRE- & POST-DEVELOPMENT POA'S:

	2-yr Rate	2-yr Volume	10-yr Rate	10-yr Volume	25-yr Rate	25-yr Volume	50-yr Rate	50-yr Volume
	(cfs)	(Ac.-ft.)	(cfs)	(Ac.-ft.)	(cfs)	(Ac.-ft.)	(cfs)	(Ac.-ft.)
POA#1 Pre (Hill Street)	0.6	0.06	1.2	0.10	1.6	0.14	2.1	0.18
POA#1 Post (Hill Street)	0.4	0.03	0.6	0.05	0.8	0.07	1.0	0.08
Change	-0.2	-0.03	-0.6	-0.05	-0.8	-0.07	-1.1	-0.10
POA#2 Pre (Broadway)	0.3	0.02	0.4	0.03	0.5	0.04	0.7	0.05
POA#2 Post (Broadway)	0.6	0.06	1.1	0.10	1.4	0.14	1.7	0.17
Change	+0.3	+0.04	+0.7	+0.07	+0.9	+0.10	+1.0	+0.12
Combined POAs Pre	0.9	0.08	1.6	0.14	2.1	0.19	2.7	0.24
Combined POAs Post	1.0	0.09	1.7	0.15	2.2	0.21	2.7	0.26
Change	+0.1	+0.01	+0.1	+0.01	+0.1	+0.02	0.0	+0.02

Due to no infiltration capacity within the underlying soils and high seasonal water tables throughout the property, infiltration is not possible. There will be increases in the volume of stormwater leaving the site. The proposed development redirects a large portion of the parcel directly into the City's closed drainage system, which will significantly decrease the stormwater sheet flowing onto Hill Street. The overall increases in the closed drainage system have been analyzed down grade of the site where the system connects to ensure minimal impact from the development.

6.2 CONCLUSION:

As seen in the preceding sections, through the implementation of effective stormwater controls, The stormwater generated from the development is appropriately treated prior to being discharged into the City of Dover's closed drainage system. Though there are increases in the volume and peak rate of runoff, the increases will not have a negative impact on abutting parcels and will not exceed the capacity of the closed drainage system.

This project does not propose any development within the 100-year floodplain (Env-Wq 1507.06(c)).

Temporary erosion control has been designed for the project during construction and this in concert with the permanent measures should maintain stormwater runoff quality down gradient, and maintain the sites contribution to offsite drainage systems at current levels. This design meets current Best Management Practices for stormwater control and provides a responsible stormwater management plan for the proposed work.

APPENDICES

WEB SOIL SURVERY REPORT FOR STRAFFOD COUNTY, NEW HAMPSHIRE	A-1
PHOTOGRAPHS REPRESENTATIVE OF SITE	A-2
NHDES ALTERATION OF TERRAIN BMP WORKSHEETS FOR ALL TREATMENT PRACTICES.....	A-3
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• 10-YR., PRE-DEVELOPMENT, TYPE-III, 24-HR. STORM DATA & HYDROGRAPHS	A-4.3
• POST-DEVELOPMENT, TYPE-III, 24-HR. ROUTING DIAGRAM, AREA AND SOILS LISTINGS	A-4.4
• 2-YR., 10-YR, 25-YR. & 50-YR., POST-DEVELOPMENT, TYPE-III, 24-HR. NODE LISTING.....	A-4.5
• 10-YR., PRE-DEVELOPMENT, TYPE-III, 24-HR. STORM DATA & HYDROGRAPHS	A-4.6
INSPECTION AND MAINTENANCE MANUAL WITH LONG TERM AGREEMENTS.....	A-5
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• EXTREME PRECIPITATION TABLES FROM NORTHEAST REGIONAL CLIMATE CENTER.....	A-6.1
• KSAT VALUES FOR NH SOILS SPECIAL PUBLICATION NO. 5 SEPTEMBER, 2009	A-6.2

FIGURES & PLANS

USGS MAP, 1:2,000 SCALE.....	FIGURE 1
CITY OF DOVER TAX MAP SKETCH.....	FIGURE 2
AERIAL PHOTOGRAPH.....	FIGURE 3
PRE-DEVELOPMENT DRAINAGE AREA PLAN	D-1 (POCKET)
POST-DEVELOPMENT DRAINAGE AREA PLAN.....	D-2 (POCKET)
DESIGN PLAN SET	(SEPARATE)

USGS QUADRANGLE

1" = 2000'

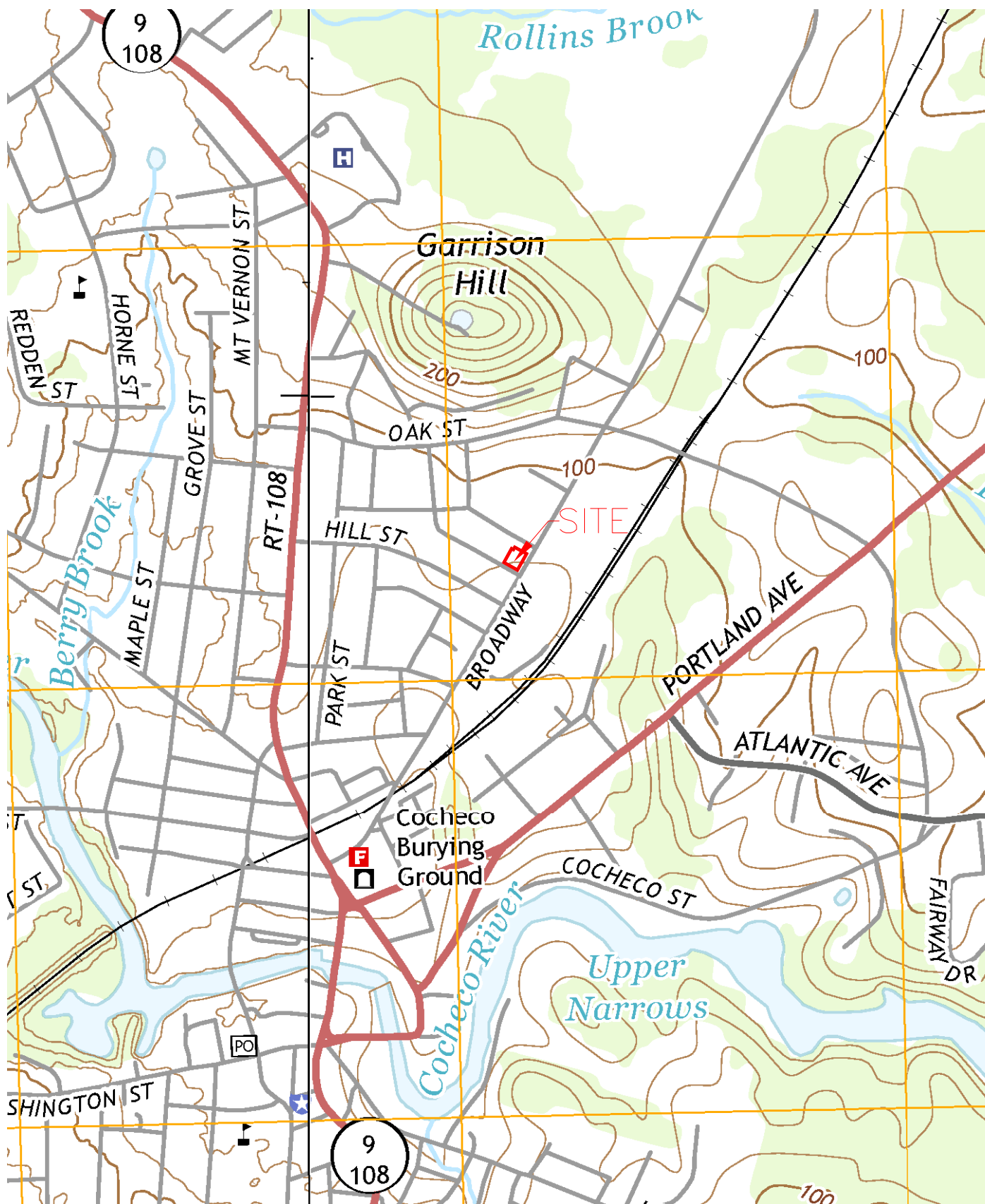
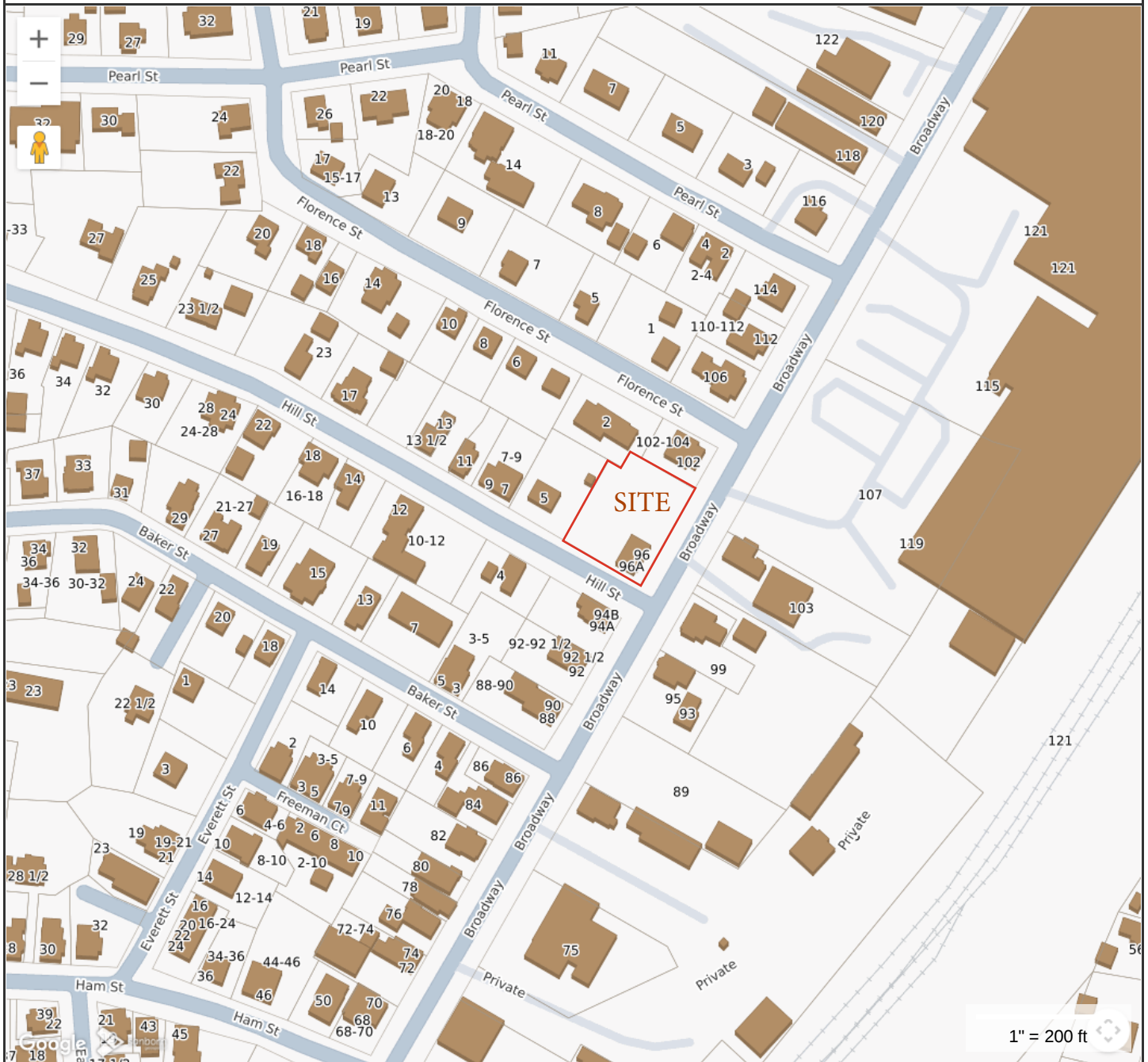


FIGURE 1

Tax Map 27, Lot 169

**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate.
Critical layout or measurement
activities should not be using
this resource.

NAIP AERIAL PHOTOGRAPH

1" = 1000'

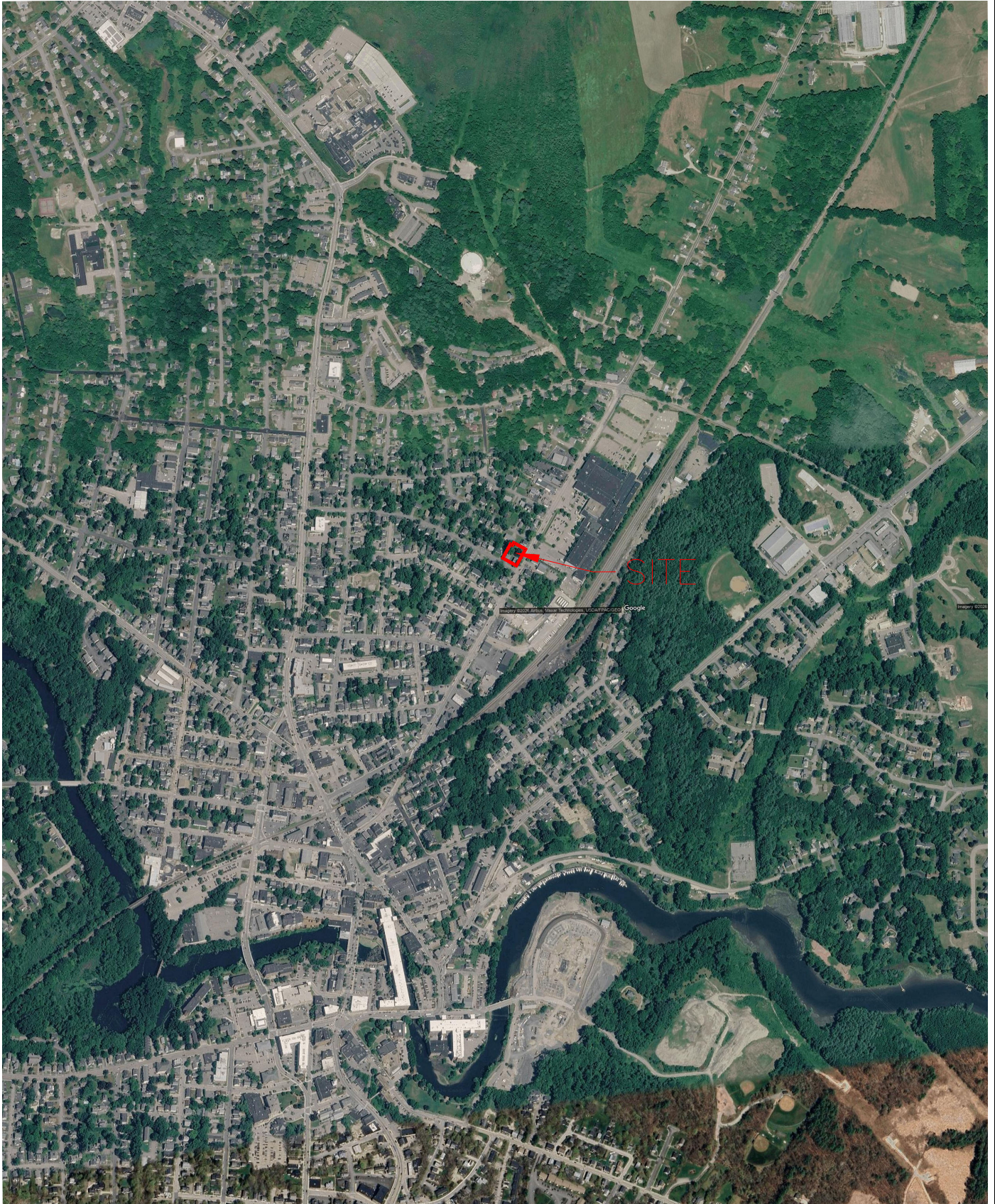


FIGURE 3

APPENDIX A 1



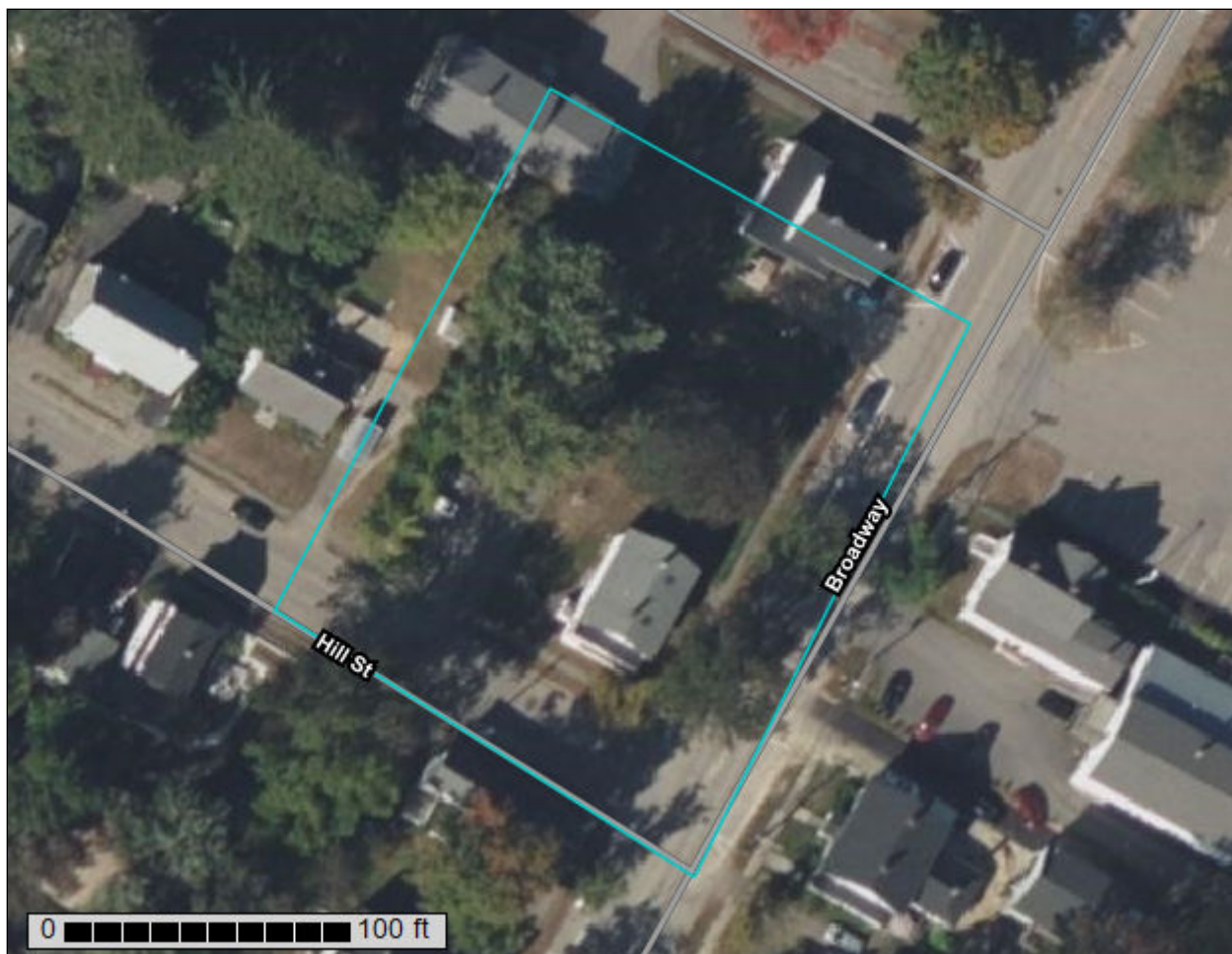
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Strafford County, New Hampshire



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface	2
Soil Map	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Strafford County, New Hampshire.....	10
BzB—Buxton silt loam, 3 to 8 percent slopes.....	10
References	12

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 26, Sep 9, 2025

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	0.8	100.0%
Totals for Area of Interest		0.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Strafford County, New Hampshire

BzB—Buxton silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d6p
Elevation: 0 to 260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buxton

Setting

Parent material: Glaciomarine

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 28 inches: silty clay loam
H3 - 28 to 43 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F145XY006CT - Semi-Rich Moist Lake Plain
Hydric soil rating: No

Minor Components

Elmwood

Percent of map unit: 10 percent
Hydric soil rating: No

Not named

Percent of map unit: 5 percent
Hydric soil rating: No

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Custom Soil Resource Report

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APPENDIX A 2

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

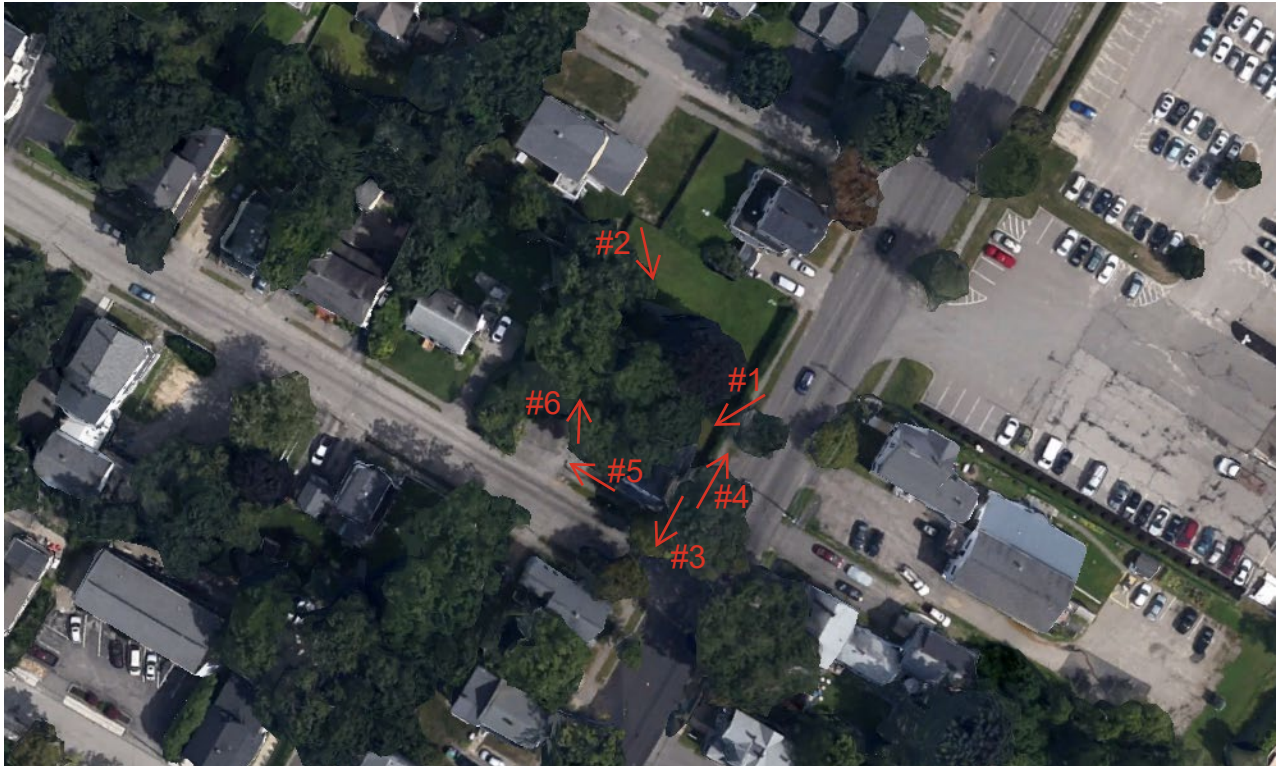
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PHOTO LOCATION KEY



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PHOTO EXHIBIT
RYAN ESCHBACH
96 BROADWAY STREET
DOVER, NH 03820
TAX MAP 27, LOT 169



Photo #1- Existing structure at the south corner of the subject parcel.
(January 07, 2026)



Photo #2 Looking at existing yard where two duplexes are proposed.
(January 07, 2026)



Photo #3 Facing south at the corner of Broadway Street and Hill Street from the Southerly corner of the lot.
(April 11, 2025)



Photo # 4 Facing North on Broadway Street from the Southerly corner of the subject parcel.
(July 31, 2023)



Photo #5 Showing entrance to parking at subject parcel. Access off of Hill Street.
(July 31, 2023)



Photo #6 Looking at existing parking area proposed to be extended into existing yard area
(April 11, 2025)

APPENDIX A 3

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.08)

Type/Node Name: Porous Pavement / PP

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

<u>Yes</u>		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.08(a).	
<u>0.15</u>	<u>ac</u>	A = Area draining to the practice	
<u>0.07</u>	<u>ac</u>	A _I = Impervious area draining to the practice	
<u>0.50</u>	<u>decimal</u>	I = Percent impervious area draining to the practice, in decimal form	
<u>0.50</u>	<u>unitless</u>	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
<u>0.07</u>	<u>ac-in</u>	WQV = 1" x R _v x A	
<u>269</u>	<u>cf</u>	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
<u>67</u>	<u>cf</u>	25% x WQV (check calc for sediment forebay volume)	
<u>201</u>	<u>cf</u>	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
<u>N/A</u>	<u>cf</u>	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
<u>2,392</u>	<u>sf</u>	A _{SA} = Surface area of the practice	
<u>-</u>	<u>iph</u>	K _{sat} _{DESIGN} = Design infiltration rate ¹	
<u>YES</u>	<u>Yes/No</u>	If K _{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
<u>-</u>	<u>hours</u>	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
<u>75.10</u>	<u>ft</u>	E _{WQV} = Elevation of WQV (attach stage-storage table)	
<u>0.30</u>	<u>cfs</u>	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	
<u>0.50</u>	<u>hours</u>	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}	≤ 72-hrs
<u>75.00</u>	<u>feet</u>	E _{FC} = Elevation of the bottom of the filter course material ²	
<u>74.50</u>	<u>feet</u>	E _{UD} = Invert elevation of the underdrain (UD), if applicable	
<u>76.79</u>	<u>feet</u>	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
<u>74.79</u>	<u>feet</u>	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
<u>0.50</u>	<u>feet</u>	D _{FC to UD} = Depth to UD from the bottom of the filter course	≥ 1'
<u>0.21</u>	<u>feet</u>	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course	≥ 1'
<u>(1.79)</u>	<u>feet</u>	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course	≥ 1'
<u>75.25</u>	<u>ft</u>	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
<u>76.68</u>	<u>ft</u>	Elevation of the top of the practice	
<u>YES</u>		50 peak elevation ≤ Elevation of the top of the practice	← yes
If a surface sand filter or underground sand filter is proposed:			
<u>YES</u>	<u>ac</u>	Drainage Area check.	< 10 ac
	<u>cf</u>	V = Volume of storage ³ (attach a stage-storage table)	≥ 75%WQV
	<u>inches</u>	D _{FC} = Filter course thickness	18", or 24" if within GPA
<u>Sheet</u>		Note what sheet in the plan set contains the filter course specification.	
<u>Yes/No</u>		Access grate provided?	← yes

25321 Post Development

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 50 yr Rainfall=7.17"

Printed 4/29/2026

Stage-Area-Storage for Pond PP: Proposed Porous Pavement

Elevation (feet)	Storage (cubic-feet)
74.50	0
74.55	3
74.60	8
74.65	13
74.70	19
74.75	24
74.80	28
74.85	49
74.90	97
74.95	145
75.00	193
75.05	241
75.10	288
75.15	336
75.20	384
75.25	432
75.30	480
75.35	528
75.40	575
75.45	623
75.50	671
75.55	719
75.60	767
75.65	815
75.70	862
75.75	910
75.80	958
75.85	1,006
75.90	1,054
75.95	1,102
76.00	1,149
76.05	1,173
76.10	1,197
76.15	1,221
76.20	1,245
76.25	1,269
76.30	1,317
76.35	1,365
76.40	1,413
76.45	1,460
76.50	1,508
76.55	1,556
76.60	1,585
76.65	1,585
76.70	1,585

25321 Post Development

Prepared by Norway Plains Associates, Inc.

HydroCAD® 10.10-5a s/n 01082 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 50 yr Rainfall=7.17"

Printed 4/29/2026

Stage-Discharge for Pond PP: Proposed Porous Pavement

Elevation (feet)	Primary (cfs)
74.50	0.0
74.55	0.0
74.60	0.0
74.65	0.0
74.70	0.0
74.75	0.1
74.80	0.1
74.85	0.1
74.90	0.2
74.95	0.2
75.00	0.3
75.05	0.3
75.10	0.3
75.15	0.4
75.20	0.4
75.25	0.4
75.30	0.5
75.35	0.5
75.40	0.5
75.45	0.6
75.50	0.6
75.55	0.6
75.60	0.7
75.65	0.7
75.70	0.7
75.75	0.7
75.80	0.8
75.85	0.8
75.90	0.8
75.95	0.8
76.00	0.8
76.05	0.9
76.10	0.9
76.15	0.9
76.20	0.9
76.25	0.9
76.30	0.9
76.35	0.9
76.40	1.0
76.45	1.0
76.50	1.0
76.55	1.0
76.60	1.0
76.65	1.0
76.70	1.0

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.08)

Type/Node Name: Bioretention Basin /BR

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes	Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.08(a).
0.13 ac	A = Area draining to the practice
0.07 ac	A _I = Impervious area draining to the practice
0.54 decimal	I = Percent impervious area draining to the practice, in decimal form
0.54 unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)
0.07 ac-in	WQV = 1" x R _v x A
248 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")
62 cf	25% x WQV (check calc for sediment forebay volume)
186 cf	75% x WQV (check calc for surface sand filter volume)
	Method of Pretreatment? (not required for clean or roof runoff)
N/A cf	V _{SED} = Sediment forebay volume, if used for pretreatment ≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:	
299 sf	A _{SA} = Surface area of the practice
- iph	K _{sat} _{DESIGN} = Design infiltration rate ¹
YES Yes/No	If K _{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)
- hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN}) ≤ 72-hrs
Calculate time to drain if system IS underdrained:	
77.60 ft	E _{WQV} = Elevation of WQV (attach stage-storage table)
0.01 cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)
13.80 hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV} ≤ 72-hrs
75.08 feet	E _{FC} = Elevation of the bottom of the filter course material ²
74.50 feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable
76.89 feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)
73.64 feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)
0.58 feet	D _{FC to UD} = Depth to UD from the bottom of the filter course ≥ 1'
1.44 feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course ≥ 1'
(1.81) feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course ≥ 1'
77.97 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)
78.00 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

25321 Post Development

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Type III 24-hr 50 yr Rainfall=7.17"

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Stage-Area-Storage for Pond BR: Bioretention Basin

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
74.50	0	77.15	159
74.55	1	77.20	161
74.60	2	77.25	162
74.65	3	77.30	163
74.70	5	77.35	170
74.75	6	77.40	186
74.80	7	77.45	203
74.85	10	77.50	221
74.90	16	77.55	240
74.95	22	77.60	260
75.00	28	77.65	281
75.05	34	77.70	302
75.10	39	77.75	325
75.15	42	77.80	349
75.20	44	77.85	374
75.25	47	77.90	401
75.30	50	77.95	428
75.35	53	78.00	456
75.40	56		
75.45	59		
75.50	62		
75.55	65		
75.60	68		
75.65	71		
75.70	74		
75.75	77		
75.80	80		
75.85	83		
75.90	86		
75.95	89		
76.00	92		
76.05	95		
76.10	98		
76.15	101		
76.20	104		
76.25	107		
76.30	110		
76.35	113		
76.40	116		
76.45	119		
76.50	122		
76.55	125		
76.60	128		
76.65	131		
76.70	134		
76.75	137		
76.80	140		
76.85	143		
76.90	146		
76.95	149		
77.00	152		
77.05	155		
77.10	158		

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Type III 24-hr 50 yr Rainfall=7.17"

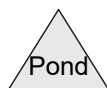
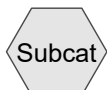
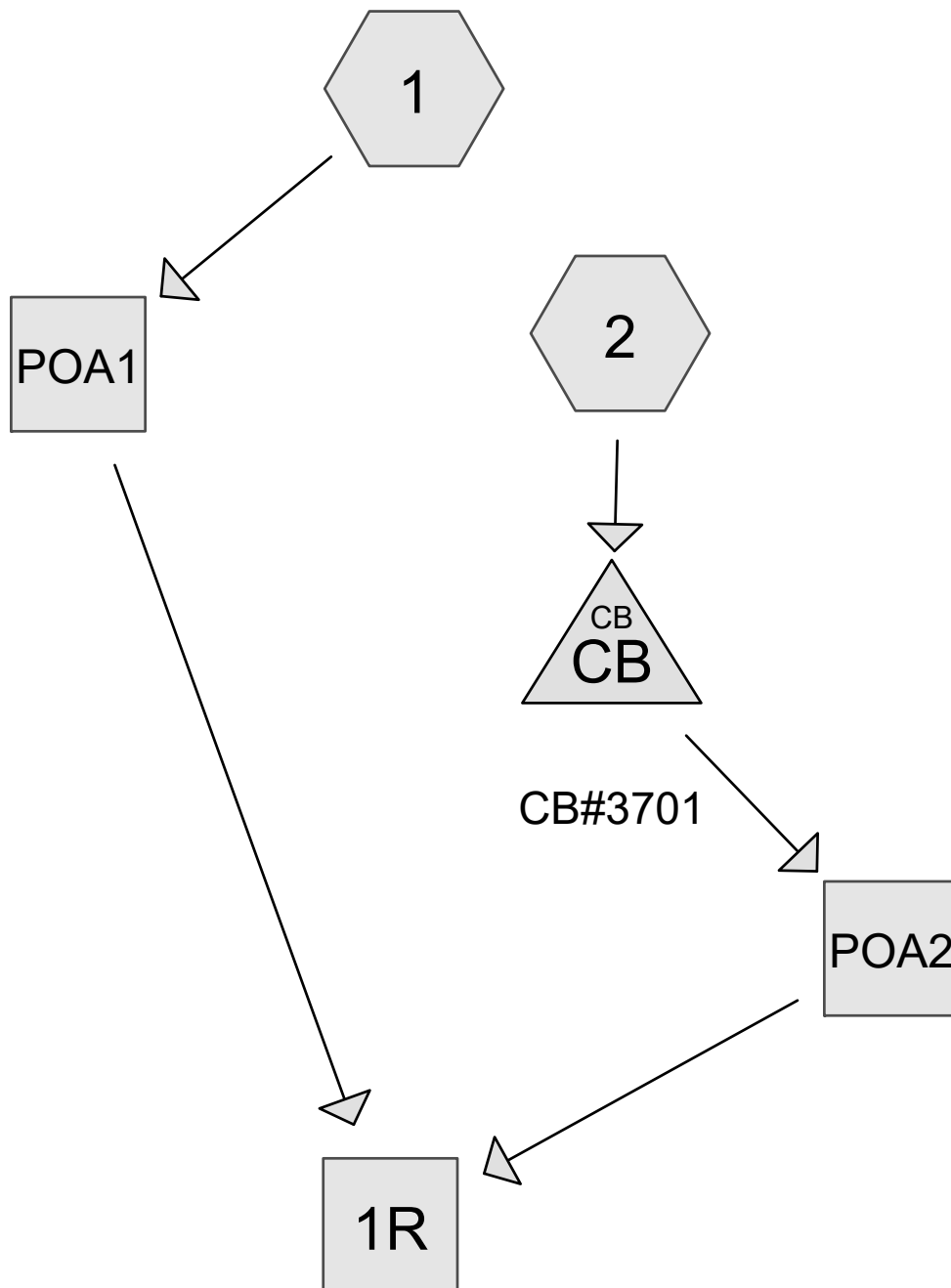
Printed 4/29/2026

Stage-Discharge for Pond BR: Bioretention Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
74.50	0.0	77.15	0.0
74.55	0.0	77.20	0.0
74.60	0.0	77.25	0.0
74.65	0.0	77.30	0.0
74.70	0.0	77.35	0.0
74.75	0.0	77.40	0.0
74.80	0.0	77.45	0.0
74.85	0.0	77.50	0.0
74.90	0.0	77.55	0.0
74.95	0.0	77.60	0.0
75.00	0.0	77.65	0.0
75.05	0.0	77.70	0.0
75.10	0.0	77.75	0.0
75.15	0.0	77.80	0.1
75.20	0.0	77.85	0.2
75.25	0.0	77.90	0.4
75.30	0.0	77.95	0.6
75.35	0.0	78.00	0.8
75.40	0.0		
75.45	0.0		
75.50	0.0		
75.55	0.0		
75.60	0.0		
75.65	0.0		
75.70	0.0		
75.75	0.0		
75.80	0.0		
75.85	0.0		
75.90	0.0		
75.95	0.0		
76.00	0.0		
76.05	0.0		
76.10	0.0		
76.15	0.0		
76.20	0.0		
76.25	0.0		
76.30	0.0		
76.35	0.0		
76.40	0.0		
76.45	0.0		
76.50	0.0		
76.55	0.0		
76.60	0.0		
76.65	0.0		
76.70	0.0		
76.75	0.0		
76.80	0.0		
76.85	0.0		
76.90	0.0		
76.95	0.0		
77.00	0.0		
77.05	0.0		
77.10	0.0		

APPENDIX A 4

APPENDIX A 4.1



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Soil Listing (all nodes)

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

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.280	74	>75% Grass cover, Good HSG C (1, 2)
0.008	65	Brush, Good, HSG C (1)
0.183	98	Paved parking HSG C (1, 2)
0.029	98	Roofs HSG C (1, 2)
0.039	72	Woods/grass comb., Good, HSG C (1)
0.539	83	TOTAL AREA

APPENDIX A 4.2

25321 Pre Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 2 yr Rainfall=3.15"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

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

Subcatchment 1:

Runoff Area=18,968 sf 30.80% Impervious Runoff Depth=1.58"
Flow Length=129' Tc=10.0 min CN=WQ Runoff=0.6 cfs 0.06 af

Subcatchment 2:

Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=WQ Runoff=0.3 cfs 0.02 af

Reach 1R:

Inflow=0.9 cfs 0.08 af
Outflow=0.9 cfs 0.08 af

Reach POA1:

Inflow=0.6 cfs 0.06 af
Outflow=0.6 cfs 0.06 af

Reach POA2:

Inflow=0.3 cfs 0.02 af
Outflow=0.3 cfs 0.02 af

Pond CB: CB#3701

Peak Elev=73.38' Inflow=0.3 cfs 0.02 af
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=0.3 cfs 0.02 af

Total Runoff Area = 0.539 ac Runoff Volume = 0.08 af Average Runoff Depth = 1.74"
60.68% Pervious = 0.327 ac 39.32% Impervious = 0.212 ac

25321 Pre Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

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

Subcatchment 1:

Runoff Area=18,968 sf 30.80% Impervious Runoff Depth=2.86"
Flow Length=129' Tc=10.0 min CN=WQ Runoff=1.2 cfs 0.10 af

Subcatchment 2:

Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=3.93"
Tc=6.0 min CN=WQ Runoff=0.4 cfs 0.03 af

Reach 1R:

Inflow=1.5 cfs 0.14 af
Outflow=1.5 cfs 0.14 af

Reach POA1:

Inflow=1.2 cfs 0.10 af
Outflow=1.2 cfs 0.10 af

Reach POA2:

Inflow=0.4 cfs 0.03 af
Outflow=0.4 cfs 0.03 af

Pond CB: CB#3701

Peak Elev=73.47' Inflow=0.4 cfs 0.03 af
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=0.4 cfs 0.03 af

Total Runoff Area = 0.539 ac Runoff Volume = 0.14 af Average Runoff Depth = 3.07"
60.68% Pervious = 0.327 ac 39.32% Impervious = 0.212 ac

25321 Pre Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 25 yr Rainfall=6.00"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

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

Subcatchment 1:

Runoff Area=18,968 sf 30.80% Impervious Runoff Depth=3.95"
Flow Length=129' Tc=10.0 min CN=WQ Runoff=1.6 cfs 0.14 af

Subcatchment 2:

Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=5.12"
Tc=6.0 min CN=WQ Runoff=0.5 cfs 0.04 af

Reach 1R:

Inflow=2.1 cfs 0.19 af
Outflow=2.1 cfs 0.19 af

Reach POA1:

Inflow=1.6 cfs 0.14 af
Outflow=1.6 cfs 0.14 af

Reach POA2:

Inflow=0.5 cfs 0.04 af
Outflow=0.5 cfs 0.04 af

Pond CB: CB#3701

Peak Elev=73.53' Inflow=0.5 cfs 0.04 af
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=0.5 cfs 0.04 af

Total Runoff Area = 0.539 ac Runoff Volume = 0.19 af Average Runoff Depth = 4.17"
60.68% Pervious = 0.327 ac 39.32% Impervious = 0.212 ac

25321 Pre Development

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96 Broadway
Type III 24-hr 50 yr Rainfall=7.17"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points

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

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

Subcatchment1:

Runoff Area=18,968 sf 30.80% Impervious Runoff Depth=5.00"
Flow Length=129' Tc=10.0 min CN=WQ Runoff=2.1 cfs 0.18 af

Subcatchment2:

Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=6.25"
Tc=6.0 min CN=WQ Runoff=0.7 cfs 0.05 af

Reach 1R:

Inflow=2.7 cfs 0.24 af
Outflow=2.7 cfs 0.24 af

Reach POA1:

Inflow=2.1 cfs 0.18 af
Outflow=2.1 cfs 0.18 af

Reach POA2:

Inflow=0.7 cfs 0.05 af
Outflow=0.7 cfs 0.05 af

Pond CB: CB#3701

Peak Elev=73.58' Inflow=0.7 cfs 0.05 af
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=0.7 cfs 0.05 af

Total Runoff Area = 0.539 ac Runoff Volume = 0.24 af Average Runoff Depth = 5.24"
60.68% Pervious = 0.327 ac 39.32% Impervious = 0.212 ac

APPENDIX A 4.3

25321 Pre Development

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 1:

CarlsonPlanXYPos|1196762.4616|257760.7829|

Runoff = 1.2 cfs @ 12.14 hrs, Volume= 0.10 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
1,084	98	Roofs HSG C
1,719	72	Woods/grass comb., Good, HSG C
4,758	98	Paved parking HSG C
11,079	74	>75% Grass cover, Good HSG C
328	65	Brush, Good, HSG C
18,968		Weighted Average
13,126		69.20% Pervious Area
5,842		30.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0500	0.1		Sheet Flow, A-->B Grass: Bermuda n= 0.410 P2= 3.15"
1.0	67	0.0500	1.1		Shallow Concentrated Flow, B-->C Woodland Kv= 5.0 fps
0.1	4	0.0200	1.0		Shallow Concentrated Flow, C-->D Short Grass Pasture Kv= 7.0 fps
0.0	5	0.0100	2.0		Shallow Concentrated Flow, D-->E Paved Kv= 20.3 fps
0.1	3	0.0100	0.7		Shallow Concentrated Flow, E-->F Short Grass Pasture Kv= 7.0 fps
10.0	129	Total			

25321 Pre Development

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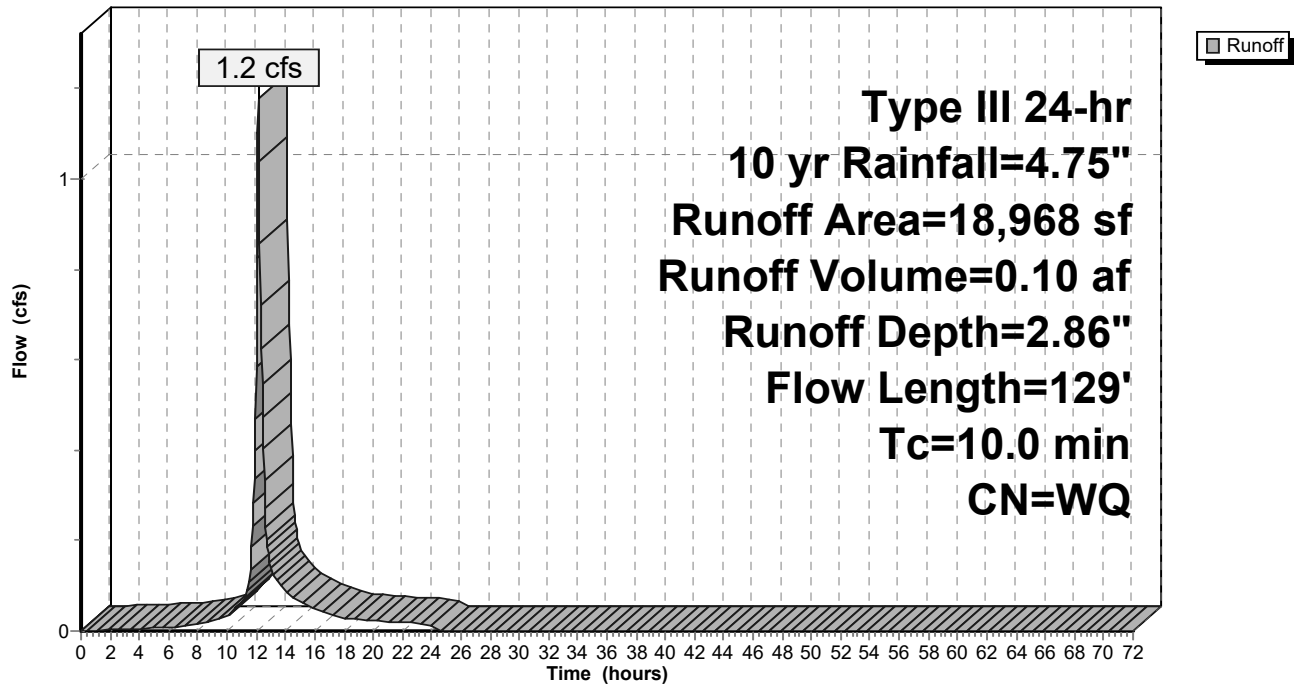
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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Subcatchment 1:

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 2:

CarlsonPlanXYPos|1196823.1142|257707.8244|

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af, Depth= 3.93"

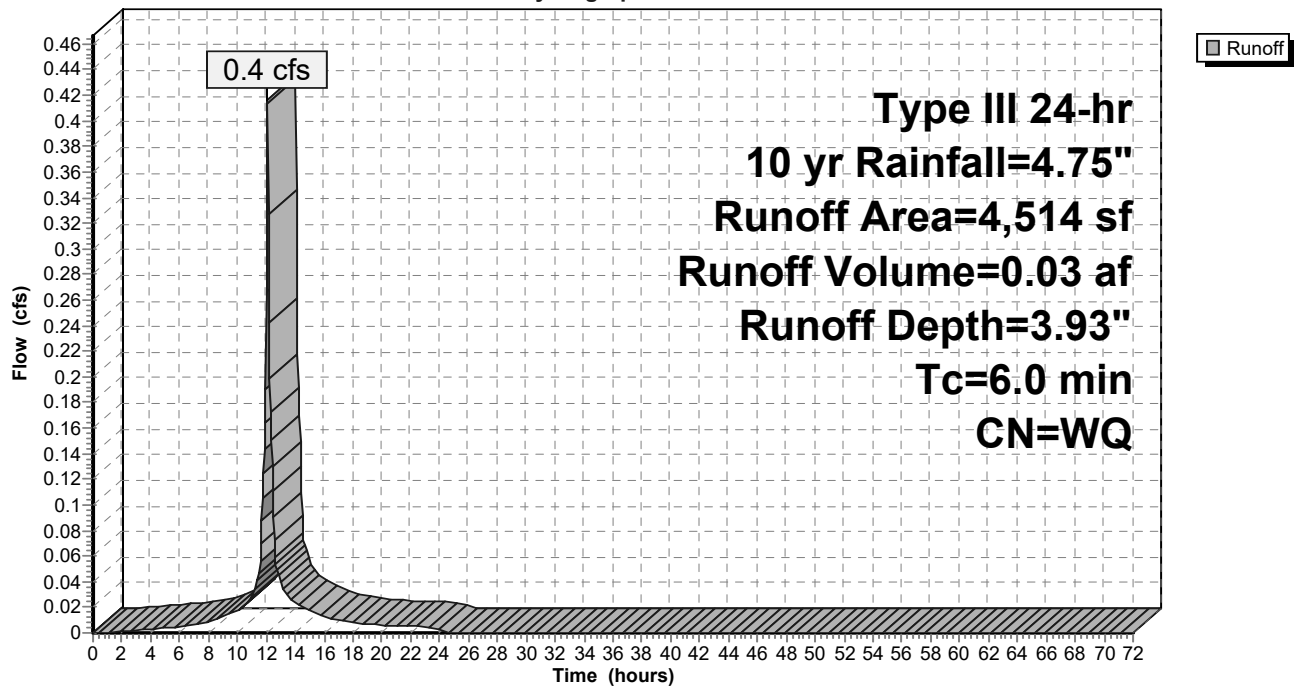
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
191	98	Roofs HSG C
3,201	98	Paved parking HSG C
1,122	74	>75% Grass cover, Good HSG C
4,514		Weighted Average
1,122		24.86% Pervious Area
3,392		75.14% Impervious Area

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

Subcatchment 2:

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

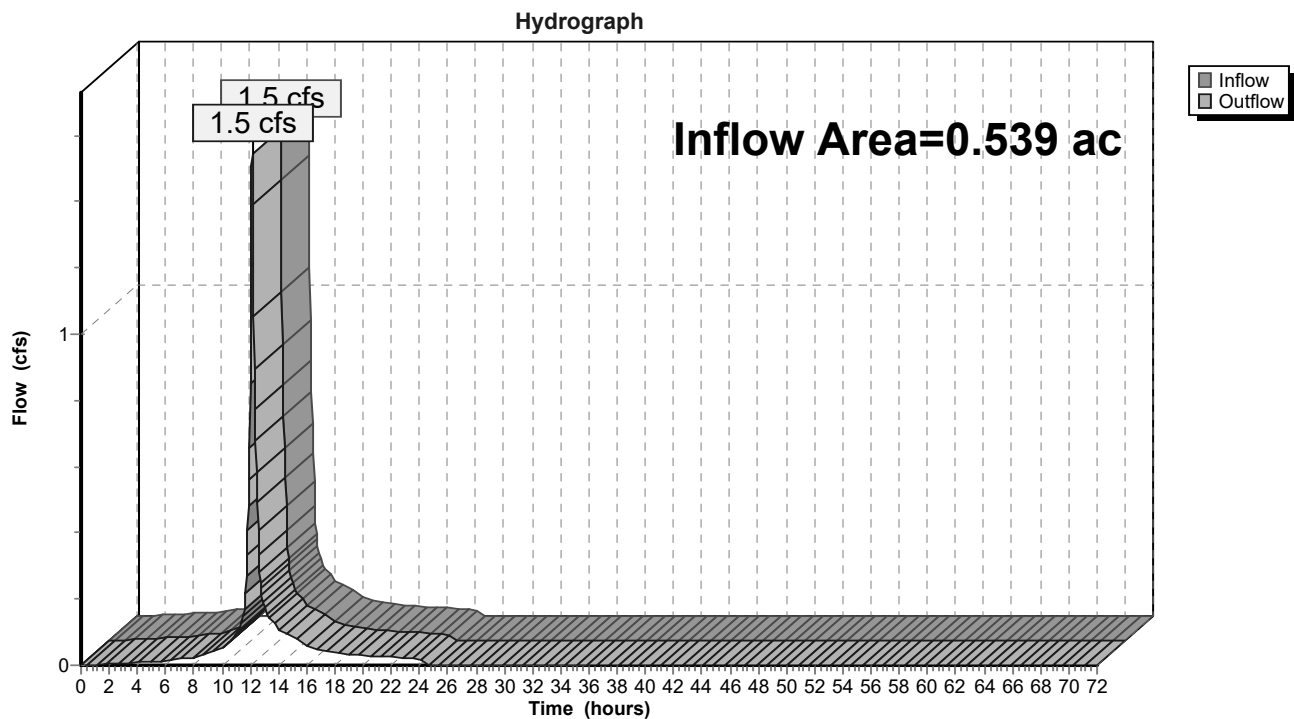
Printed 4/29/2026

Summary for Reach 1R:

Inflow Area = 0.539 ac, 39.32% Impervious, Inflow Depth = 3.07" for 10 yr event
Inflow = 1.5 cfs @ 12.12 hrs, Volume= 0.14 af
Outflow = 1.5 cfs @ 12.12 hrs, Volume= 0.14 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 1R:



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

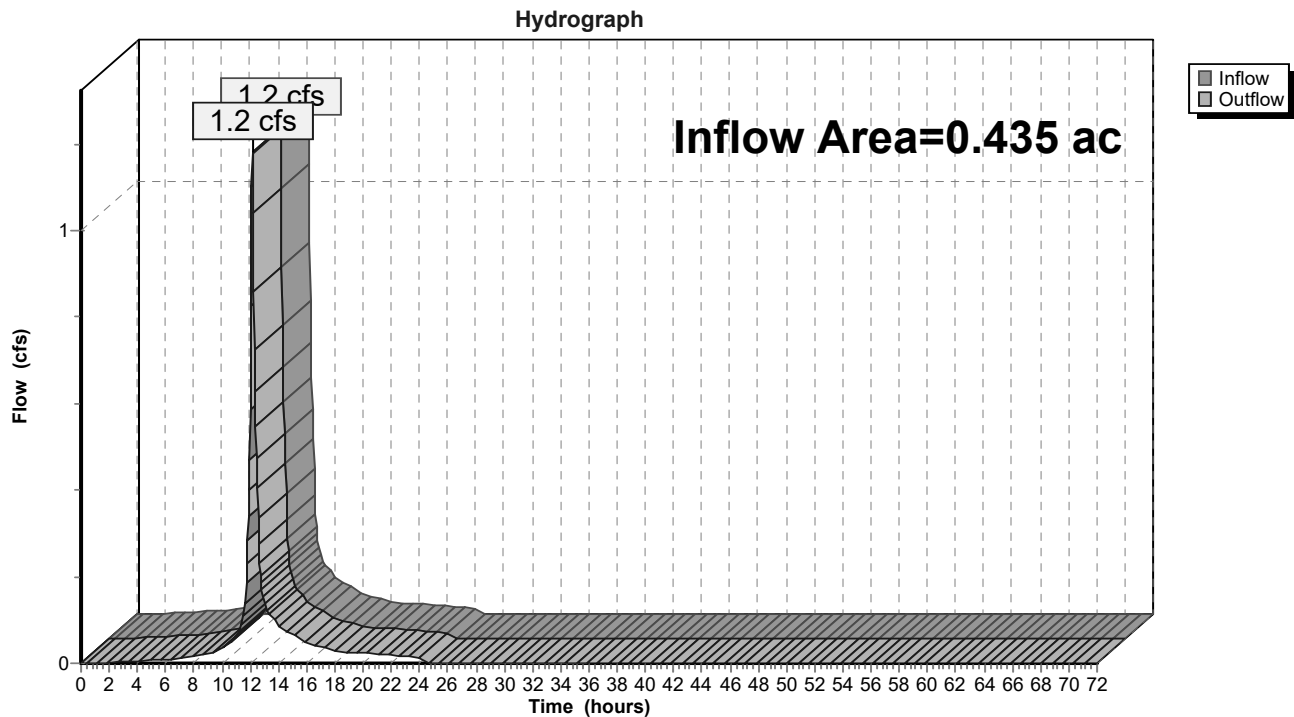
Printed 4/29/2026

Summary for Reach POA1:

Inflow Area = 0.435 ac, 30.80% Impervious, Inflow Depth = 2.86" for 10 yr event
Inflow = 1.2 cfs @ 12.14 hrs, Volume= 0.10 af
Outflow = 1.2 cfs @ 12.14 hrs, Volume= 0.10 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA1:



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

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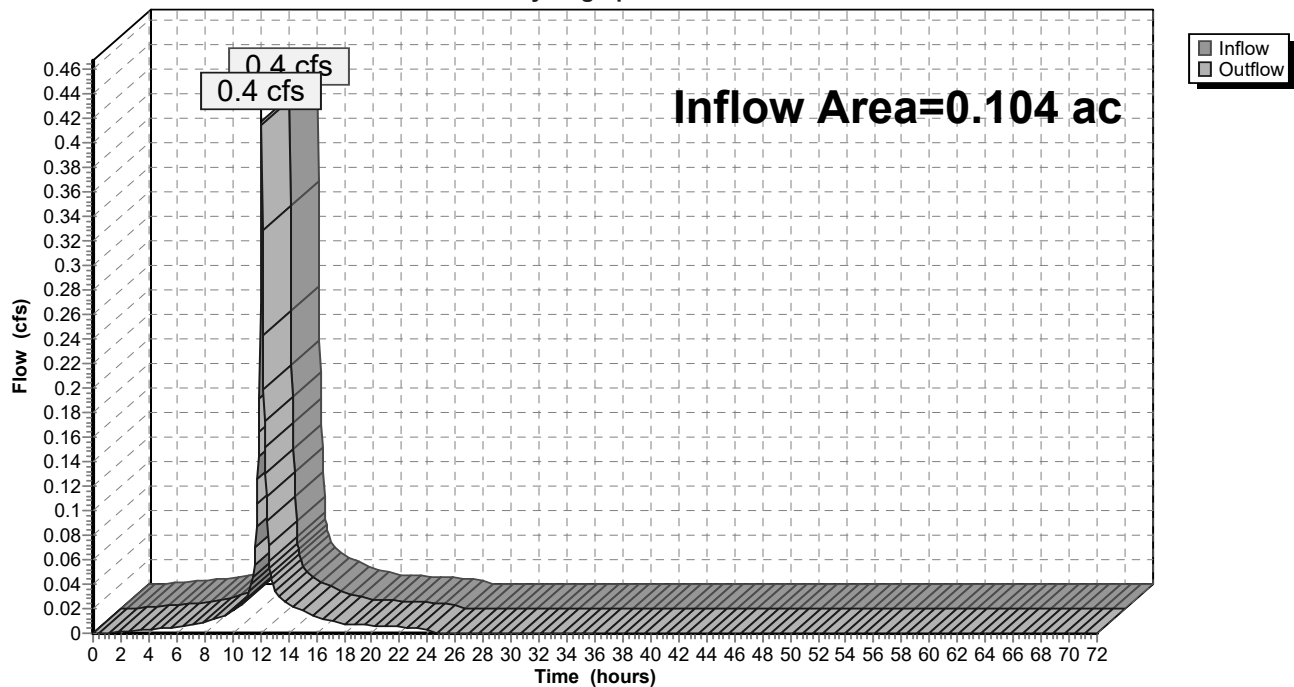
Summary for Reach POA2:

Inflow Area = 0.104 ac, 75.14% Impervious, Inflow Depth = 3.93" for 10 yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA2:

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Pond CB: CB#3701

Inflow Area = 0.104 ac, 75.14% Impervious, Inflow Depth = 3.93" for 10 yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 73.47' @ 12.09 hrs

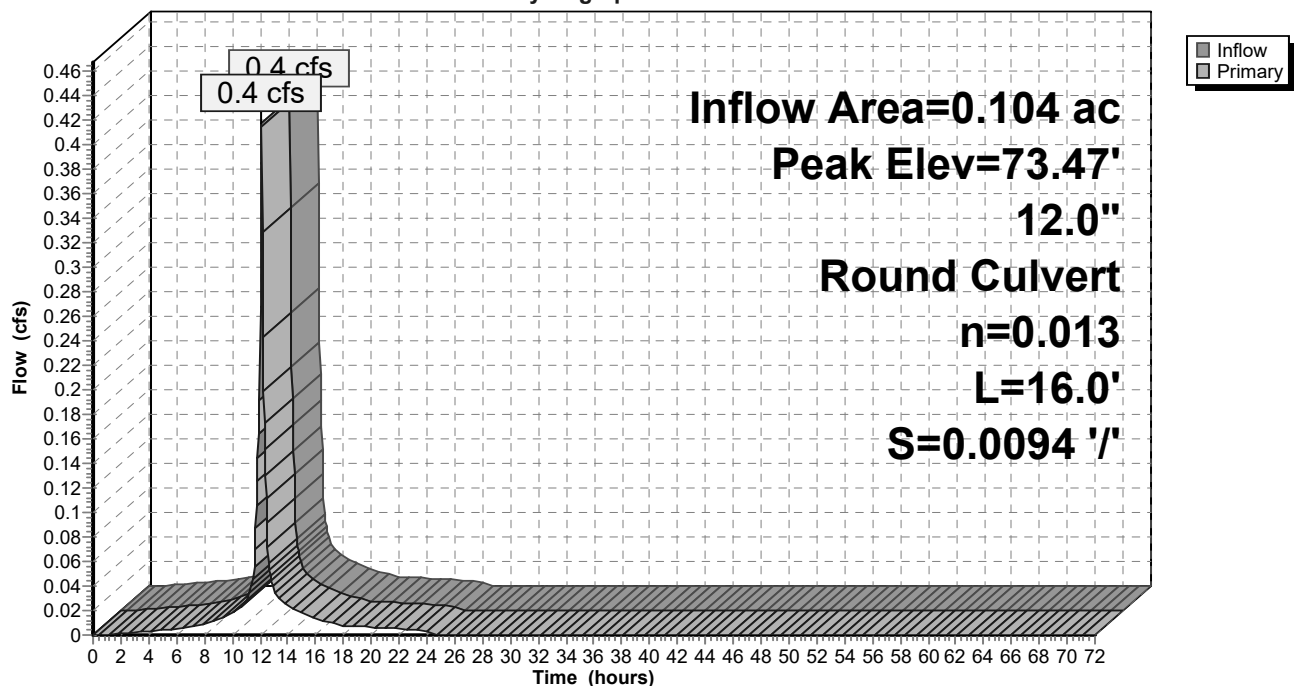
Device	Routing	Invert	Outlet Devices
#1	Primary	73.10'	12.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 73.10' / 72.95' S= 0.0094 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=73.46' TW=0.00' (Dynamic Tailwater)

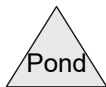
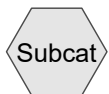
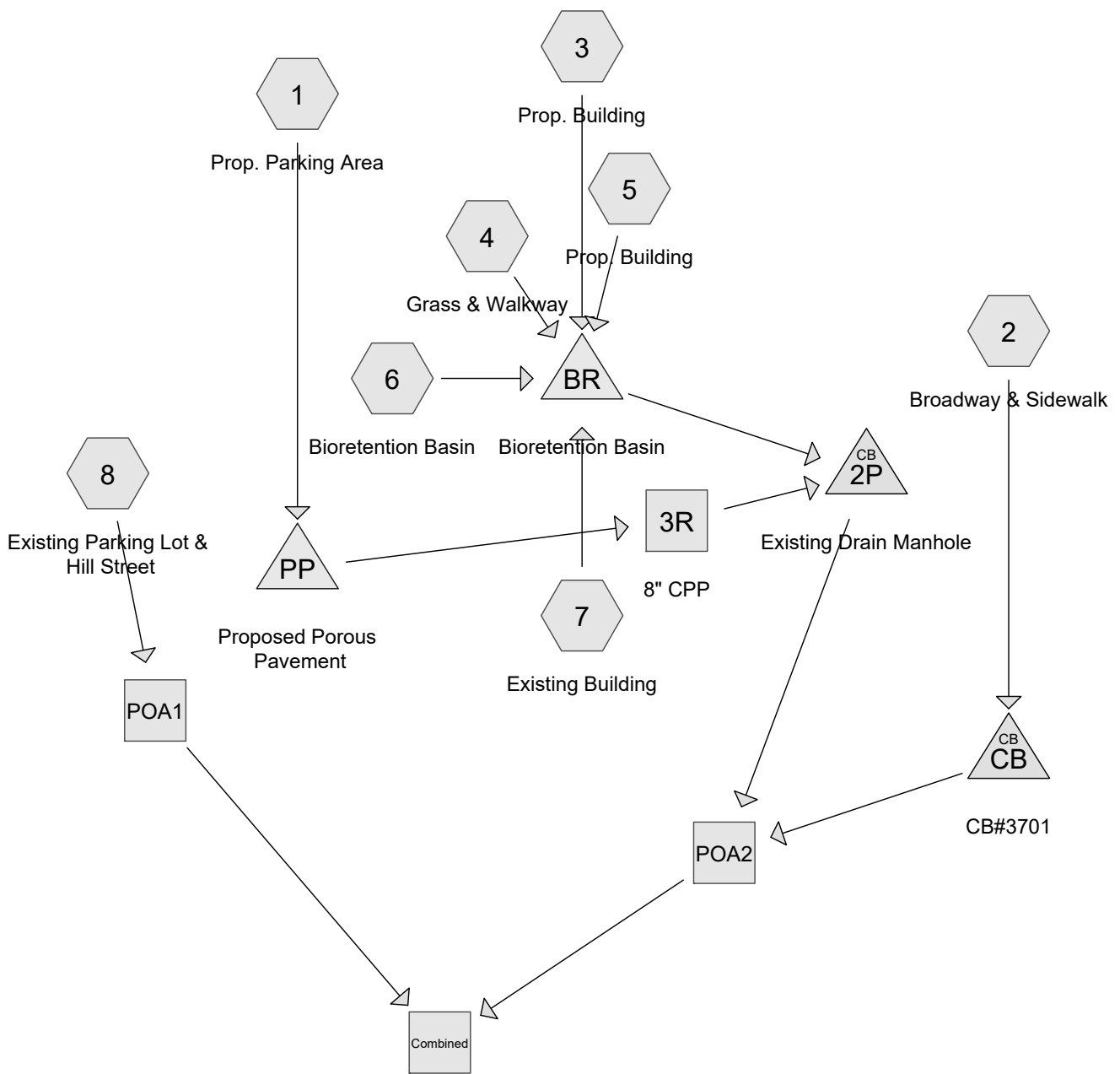
↑1=Culvert (Barrel Controls 0.4 cfs @ 2.3 fps)

Pond CB: CB#3701

Hydrograph



APPENDIX A 4.4



Routing Diagram for 25321 Post Development
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25321 Post Development

Prepared by Norway Plains Associates, Inc.

Printed 4/29/2026

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.206	74	>75% Grass cover, Good HSG C (1, 2, 4, 6, 7, 8)
0.260	98	Paved parking HSG C (1, 2, 4, 8)
0.072	98	Roofs HSG C (2, 3, 5, 8)
0.001	70	Woods, Good HSG C (8)
0.539	89	TOTAL AREA

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Printed 4/29/2026

Soil Listing (all nodes)

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

APPENDIX A 4.5

25321 Post Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 2 yr Rainfall=3.15"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Prop. Parking Area	Runoff Area=6,316 sf 51.35% Impervious Runoff Depth=1.99" Tc=6.0 min CN=WQ Runoff=0.3 cfs 0.02 af
Subcatchment2: Broadway & Sidewalk	Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=2.44" Tc=6.0 min CN=WQ Runoff=0.3 cfs 0.02 af
Subcatchment3: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=2.92" Tc=6.0 min CN=98 Runoff=0.1 cfs 0.01 af
Subcatchment4: Grass & Walkway	Runoff Area=854 sf 26.23% Impervious Runoff Depth=1.51" Tc=6.0 min CN=WQ Runoff=0.0 cfs 0.00 af
Subcatchment5: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=2.92" Tc=6.0 min CN=98 Runoff=0.1 cfs 0.01 af
Subcatchment6: Bioretention Basin	Runoff Area=937 sf 0.00% Impervious Runoff Depth=1.00" Tc=6.0 min CN=74 Runoff=0.0 cfs 0.00 af
Subcatchment7: Existing Building	Runoff Area=950 sf 0.00% Impervious Runoff Depth=1.00" Tc=6.0 min CN=74 Runoff=0.0 cfs 0.00 af
Subcatchment8: Existing Parking Lot & Hill	Runoff Area=7,087 sf 67.91% Impervious Runoff Depth=2.30" Tc=6.0 min CN=WQ Runoff=0.4 cfs 0.03 af
Reach 3R: 8" CPP	Avg. Flow Depth=0.21' Max Vel=1.90 fps Inflow=0.2 cfs 0.02 af 8.0" Round Pipe n=0.013 L=40.0' S=0.0047 ' Capacity=0.8 cfs Outflow=0.2 cfs 0.02 af
Reach Combined:	Inflow=1.0 cfs 0.09 af Outflow=1.0 cfs 0.09 af
Reach POA1:	Inflow=0.4 cfs 0.03 af Outflow=0.4 cfs 0.03 af
Reach POA2:	Inflow=0.6 cfs 0.06 af Outflow=0.6 cfs 0.06 af
Pond 2P: Existing Drain Manhole	Peak Elev=73.95' Inflow=0.4 cfs 0.04 af 12.0" Round Culvert n=0.013 L=350.0' S=0.0100 ' Outflow=0.4 cfs 0.04 af
Pond BR: Bioretention Basin	Peak Elev=77.85' Storage=375 cf Inflow=0.3 cfs 0.02 af Outflow=0.2 cfs 0.01 af
Pond CB: CB#3701	Peak Elev=73.38' Inflow=0.3 cfs 0.02 af 12.0" Round Culvert n=0.013 L=16.0' S=0.0094 ' Outflow=0.3 cfs 0.02 af
Pond PP: Proposed Porous Pavement	Peak Elev=74.90' Storage=101 cf Inflow=0.3 cfs 0.02 af 6.0" Round Culvert n=0.013 L=18.0' S=0.0000 ' Outflow=0.2 cfs 0.02 af

25321 Post Development

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96 Broadway
Type III 24-hr 2 yr Rainfall=3.15"
Printed 4/29/2026

Total Runoff Area = 0.539 ac Runoff Volume = 0.10 af Average Runoff Depth = 2.18"
38.31% Pervious = 0.206 ac 61.69% Impervious = 0.332 ac

25321 Post Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Prop. Parking Area	Runoff Area=6,316 sf 51.35% Impervious Runoff Depth=3.37" Tc=6.0 min CN=WQ Runoff=0.5 cfs 0.04 af
Subcatchment2: Broadway & Sidewalk	Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=3.93" Tc=6.0 min CN=WQ Runoff=0.4 cfs 0.03 af
Subcatchment3: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=4.51" Tc=6.0 min CN=98 Runoff=0.1 cfs 0.01 af
Subcatchment4: Grass & Walkway	Runoff Area=854 sf 26.23% Impervious Runoff Depth=2.78" Tc=6.0 min CN=WQ Runoff=0.1 cfs 0.00 af
Subcatchment5: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=4.51" Tc=6.0 min CN=98 Runoff=0.1 cfs 0.01 af
Subcatchment6: Bioretention Basin	Runoff Area=937 sf 0.00% Impervious Runoff Depth=2.17" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.00 af
Subcatchment7: Existing Building	Runoff Area=950 sf 0.00% Impervious Runoff Depth=2.17" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.00 af
Subcatchment8: Existing Parking Lot & Hill	Runoff Area=7,087 sf 67.91% Impervious Runoff Depth=3.76" Tc=6.0 min CN=WQ Runoff=0.6 cfs 0.05 af
Reach 3R: 8" CPP	Avg. Flow Depth=0.27' Max Vel=2.15 fps Inflow=0.3 cfs 0.04 af 8.0" Round Pipe n=0.013 L=40.0' S=0.0047 ' Capacity=0.8 cfs Outflow=0.3 cfs 0.04 af
Reach Combined:	Inflow=1.7 cfs 0.15 af Outflow=1.7 cfs 0.15 af
Reach POA1:	Inflow=0.6 cfs 0.05 af Outflow=0.6 cfs 0.05 af
Reach POA2:	Inflow=1.1 cfs 0.10 af Outflow=1.1 cfs 0.10 af
Pond 2P: Existing Drain Manhole	Peak Elev=74.07' Inflow=0.7 cfs 0.07 af 12.0" Round Culvert n=0.013 L=350.0' S=0.0100 ' Outflow=0.7 cfs 0.07 af
Pond BR: Bioretention Basin	Peak Elev=77.91' Storage=404 cf Inflow=0.5 cfs 0.04 af Outflow=0.4 cfs 0.03 af
Pond CB: CB#3701	Peak Elev=73.47' Inflow=0.4 cfs 0.03 af 12.0" Round Culvert n=0.013 L=16.0' S=0.0094 ' Outflow=0.4 cfs 0.03 af
Pond PP: Proposed Porous Pavement	Peak Elev=75.03' Storage=221 cf Inflow=0.5 cfs 0.04 af 6.0" Round Culvert n=0.013 L=18.0' S=0.0000 ' Outflow=0.3 cfs 0.04 af

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Total Runoff Area = 0.539 ac Runoff Volume = 0.16 af Average Runoff Depth = 3.61"
38.31% Pervious = 0.206 ac 61.69% Impervious = 0.332 ac

25321 Post Development

Prepared by Norway Plains Associates, Inc.

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96 Broadway
Type III 24-hr 25 yr Rainfall=6.00"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Prop. Parking Area	Runoff Area=6,316 sf 51.35% Impervious Runoff Depth=4.51" Tc=6.0 min CN=WQ Runoff=0.7 cfs 0.05 af
Subcatchment2: Broadway & Sidewalk	Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=5.12" Tc=6.0 min CN=WQ Runoff=0.5 cfs 0.04 af
Subcatchment3: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=5.76" Tc=6.0 min CN=98 Runoff=0.2 cfs 0.02 af
Subcatchment4: Grass & Walkway	Runoff Area=854 sf 26.23% Impervious Runoff Depth=3.86" Tc=6.0 min CN=WQ Runoff=0.1 cfs 0.01 af
Subcatchment5: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=5.76" Tc=6.0 min CN=98 Runoff=0.2 cfs 0.02 af
Subcatchment6: Bioretention Basin	Runoff Area=937 sf 0.00% Impervious Runoff Depth=3.18" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.01 af
Subcatchment7: Existing Building	Runoff Area=950 sf 0.00% Impervious Runoff Depth=3.18" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.01 af
Subcatchment8: Existing Parking Lot & Hill	Runoff Area=7,087 sf 67.91% Impervious Runoff Depth=4.93" Tc=6.0 min CN=WQ Runoff=0.8 cfs 0.07 af
Reach 3R: 8" CPP	Avg. Flow Depth=0.30' Max Vel=2.29 fps Inflow=0.4 cfs 0.05 af 8.0" Round Pipe n=0.013 L=40.0' S=0.0047 ' Capacity=0.8 cfs Outflow=0.4 cfs 0.05 af
Reach Combined:	Inflow=2.2 cfs 0.21 af Outflow=2.2 cfs 0.21 af
Reach POA1:	Inflow=0.8 cfs 0.07 af Outflow=0.8 cfs 0.07 af
Reach POA2:	Inflow=1.4 cfs 0.14 af Outflow=1.4 cfs 0.14 af
Pond 2P: Existing Drain Manhole	Peak Elev=74.15' Inflow=0.9 cfs 0.10 af 12.0" Round Culvert n=0.013 L=350.0' S=0.0100 ' Outflow=0.9 cfs 0.10 af
Pond BR: Bioretention Basin	Peak Elev=77.94' Storage=423 cf Inflow=0.6 cfs 0.05 af Outflow=0.6 cfs 0.04 af
Pond CB: CB#3701	Peak Elev=73.53' Inflow=0.5 cfs 0.04 af 12.0" Round Culvert n=0.013 L=16.0' S=0.0094 ' Outflow=0.5 cfs 0.04 af
Pond PP: Proposed Porous Pavement	Peak Elev=75.14' Storage=328 cf Inflow=0.7 cfs 0.05 af 6.0" Round Culvert n=0.013 L=18.0' S=0.0000 ' Outflow=0.4 cfs 0.05 af

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96 Broadway
Type III 24-hr 25 yr Rainfall=6.00"

Printed 4/29/2026

Total Runoff Area = 0.539 ac Runoff Volume = 0.21 af Average Runoff Depth = 4.77"
38.31% Pervious = 0.206 ac 61.69% Impervious = 0.332 ac

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96 Broadway
Type III 24-hr 50 yr Rainfall=7.17"

Printed 4/29/2026

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Prop. Parking Area	Runoff Area=6,316 sf 51.35% Impervious Runoff Depth=5.60" Tc=6.0 min CN=WQ Runoff=0.9 cfs 0.07 af
Subcatchment2: Broadway & Sidewalk	Runoff Area=4,514 sf 75.14% Impervious Runoff Depth=6.25" Tc=6.0 min CN=WQ Runoff=0.7 cfs 0.05 af
Subcatchment3: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=6.93" Tc=6.0 min CN=98 Runoff=0.2 cfs 0.02 af
Subcatchment4: Grass & Walkway	Runoff Area=854 sf 26.23% Impervious Runoff Depth=4.91" Tc=6.0 min CN=WQ Runoff=0.1 cfs 0.01 af
Subcatchment5: Prop. Building	Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=6.93" Tc=6.0 min CN=98 Runoff=0.2 cfs 0.02 af
Subcatchment6: Bioretention Basin	Runoff Area=937 sf 0.00% Impervious Runoff Depth=4.19" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.01 af
Subcatchment7: Existing Building	Runoff Area=950 sf 0.00% Impervious Runoff Depth=4.19" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.01 af
Subcatchment8: Existing Parking Lot & Hill	Runoff Area=7,087 sf 67.91% Impervious Runoff Depth=6.05" Tc=6.0 min CN=WQ Runoff=1.0 cfs 0.08 af
Reach 3R: 8" CPP	Avg. Flow Depth=0.34' Max Vel=2.41 fps Inflow=0.4 cfs 0.07 af 8.0" Round Pipe n=0.013 L=40.0' S=0.0047 ' Capacity=0.8 cfs Outflow=0.4 cfs 0.07 af
Reach Combined:	Inflow=2.7 cfs 0.26 af Outflow=2.7 cfs 0.26 af
Reach POA1:	Inflow=1.0 cfs 0.08 af Outflow=1.0 cfs 0.08 af
Reach POA2:	Inflow=1.7 cfs 0.17 af Outflow=1.7 cfs 0.17 af
Pond 2P: Existing Drain Manhole	Peak Elev=74.22' Inflow=1.1 cfs 0.12 af 12.0" Round Culvert n=0.013 L=350.0' S=0.0100 ' Outflow=1.1 cfs 0.12 af
Pond BR: Bioretention Basin	Peak Elev=77.97' Storage=439 cf Inflow=0.8 cfs 0.06 af Outflow=0.7 cfs 0.05 af
Pond CB: CB#3701	Peak Elev=73.58' Inflow=0.7 cfs 0.05 af 12.0" Round Culvert n=0.013 L=16.0' S=0.0094 ' Outflow=0.7 cfs 0.05 af
Pond PP: Proposed Porous Pavement	Peak Elev=75.25' Storage=435 cf Inflow=0.9 cfs 0.07 af 6.0" Round Culvert n=0.013 L=18.0' S=0.0000 ' Outflow=0.4 cfs 0.07 af

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96 Broadway
Type III 24-hr 50 yr Rainfall=7.17"

Printed 4/29/2026

Total Runoff Area = 0.539 ac Runoff Volume = 0.26 af Average Runoff Depth = 5.88"
38.31% Pervious = 0.206 ac 61.69% Impervious = 0.332 ac

APPENDIX A 4.6

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
Printed 4/29/2026

Summary for Subcatchment 1: Prop. Parking Area

CarlsonPlanXYPos|1196792.3840|257772.3434|

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.04 af, Depth= 3.37"

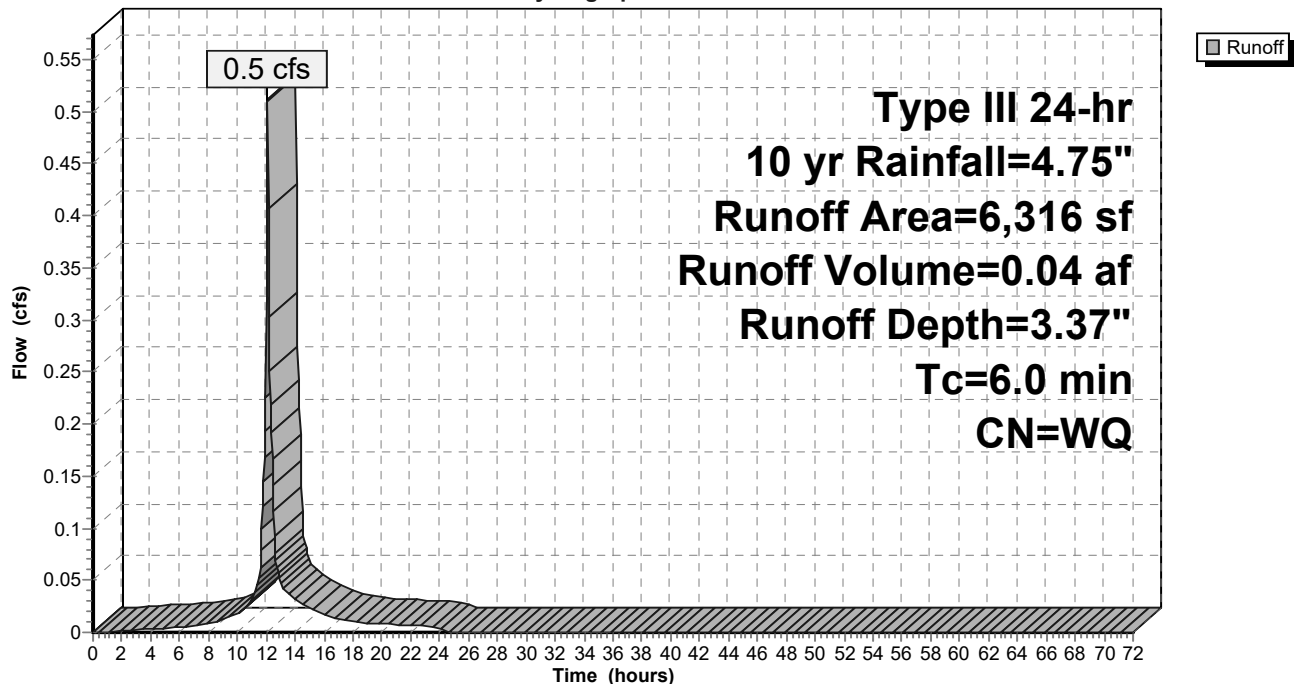
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
3,243	98	Paved parking HSG C
3,073	74	>75% Grass cover, Good HSG C
6,316		Weighted Average
3,073		48.65% Pervious Area
3,243		51.35% Impervious Area

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

Subcatchment 1: Prop. Parking Area

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 2: Broadway & Sidewalk

CarlsonPlanXYPos|1196833.5336|257736.4930|

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af, Depth= 3.93"

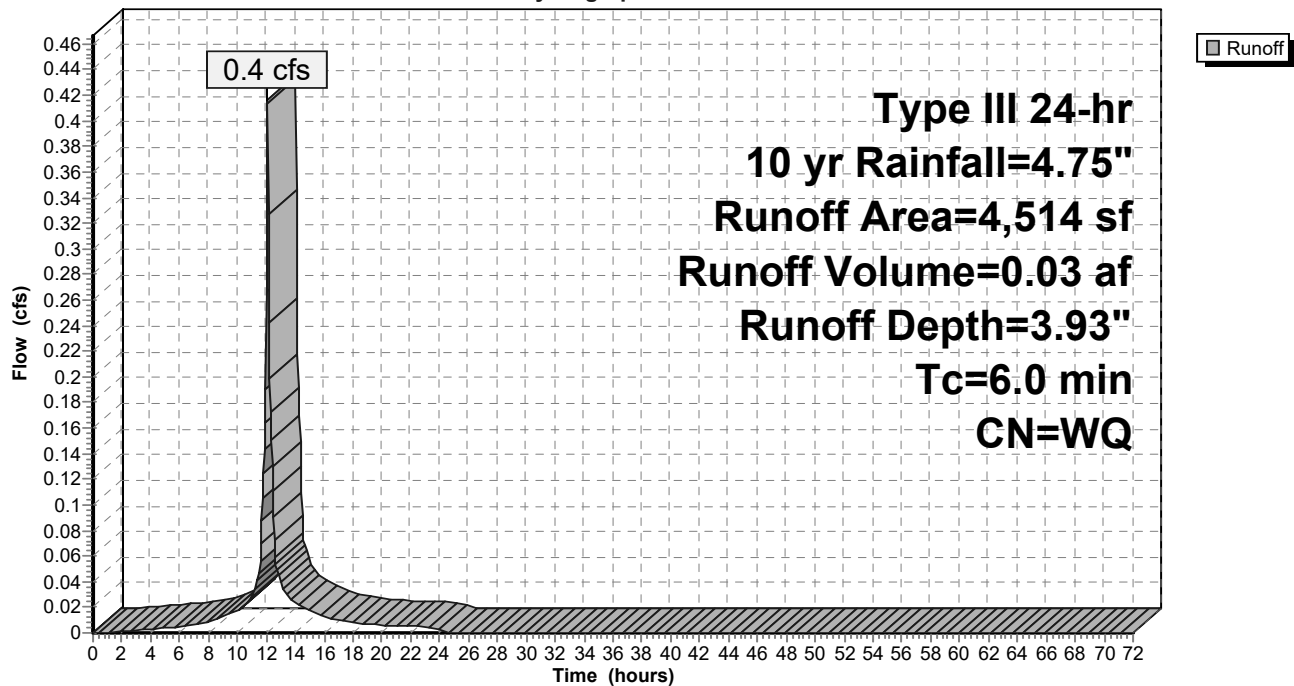
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
3,201	98	Paved parking HSG C
191	98	Roofs HSG C
1,122	74	>75% Grass cover, Good HSG C
4,514		Weighted Average
1,122		24.86% Pervious Area
3,392		75.14% Impervious Area

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

Subcatchment 2: Broadway & Sidewalk

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 3: Prop. Building

CarlsonPlanXYPos|1196793.6044|257744.7214|

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.01 af, Depth= 4.51"

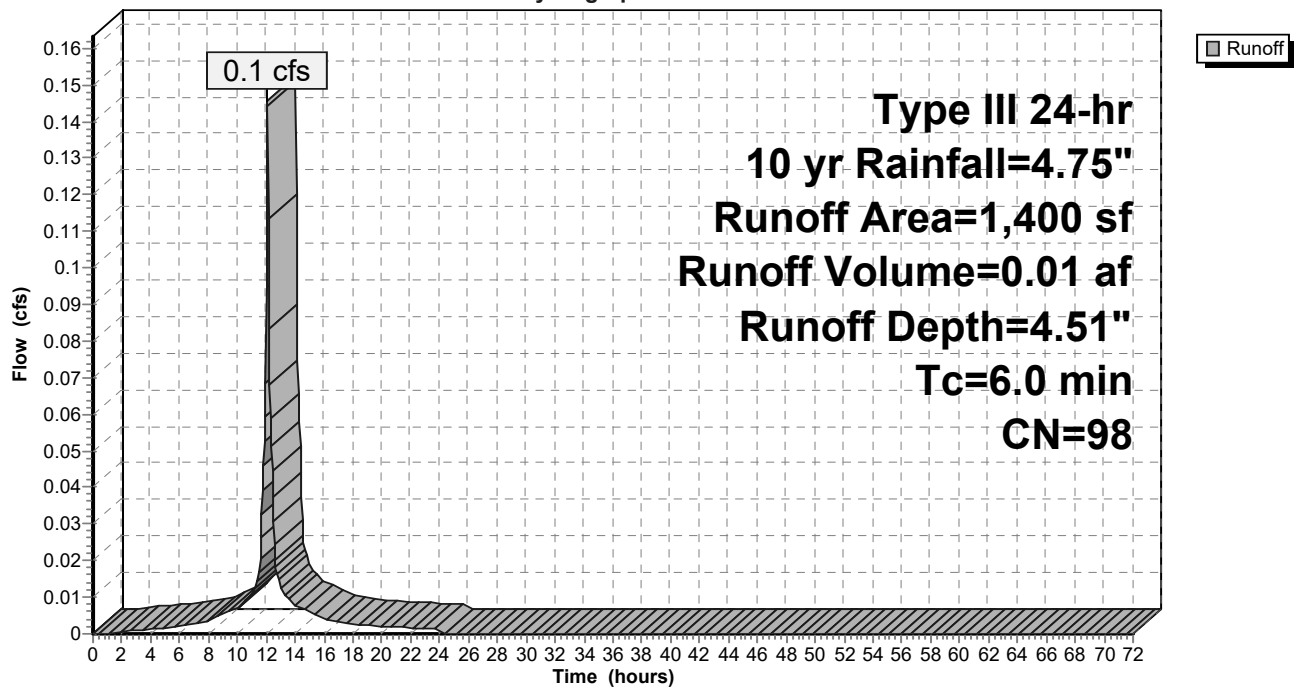
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
1,400	98	Roofs HSG C
1,400		100.00% Impervious Area

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

Subcatchment 3: Prop. Building

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
Printed 4/29/2026

Summary for Subcatchment 4: Grass & Walkway

CarlsonPlanXYPos|1196811.3128|257737.4629|

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.00 af, Depth= 2.78"

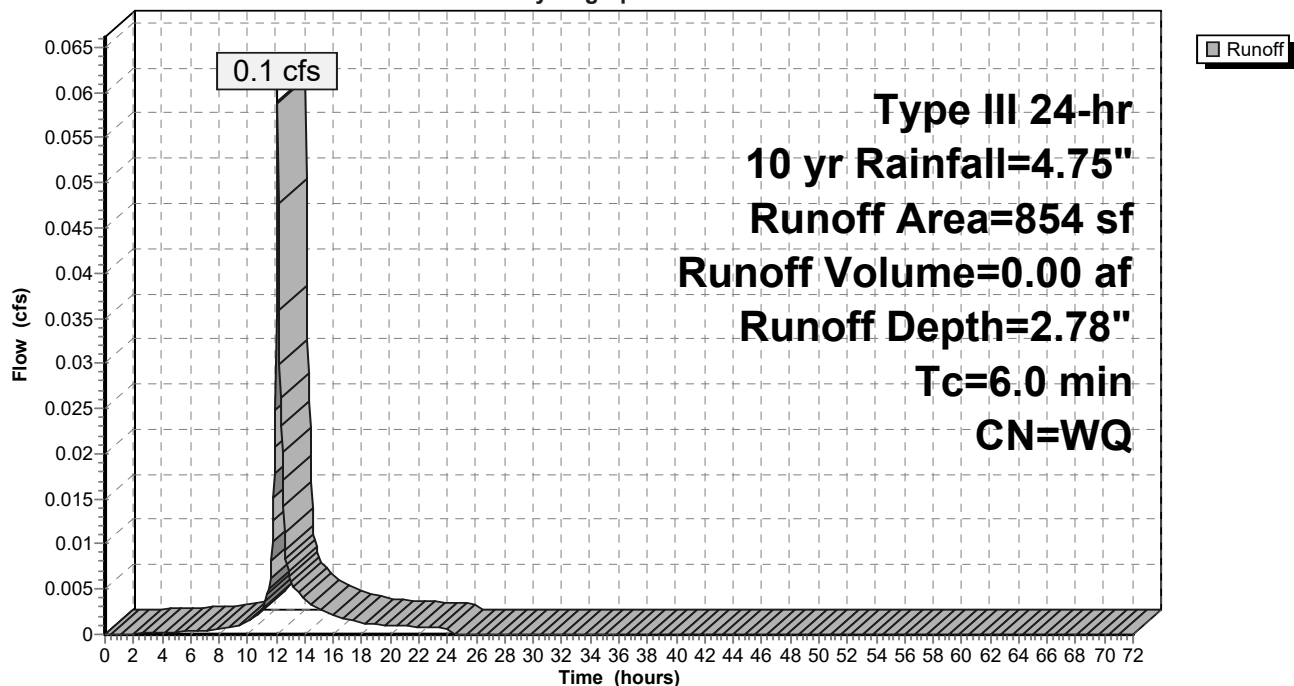
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
224	98	Paved parking HSG C
630	74	>75% Grass cover, Good HSG C
854		Weighted Average
630		73.77% Pervious Area
224		26.23% Impervious Area

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

Subcatchment 4: Grass & Walkway

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 5: Prop. Building

CarlsonPlanXYPos|1196773.7486|257716.1405|

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.01 af, Depth= 4.51"

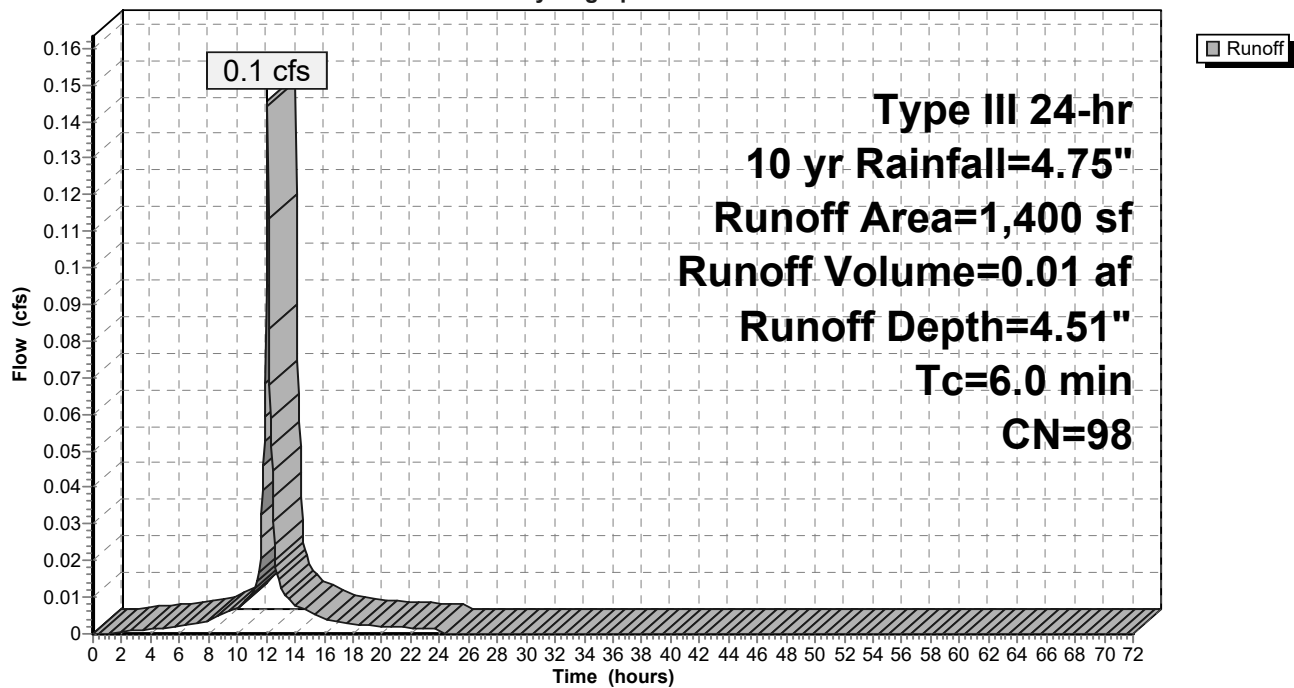
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
1,400	98	Roofs HSG C
1,400		100.00% Impervious Area

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

Subcatchment 5: Prop. Building

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 6: Bioretention Basin

CarlsonPlanXYPos|1196735.9916|257704.9174|

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.00 af, Depth= 2.17"

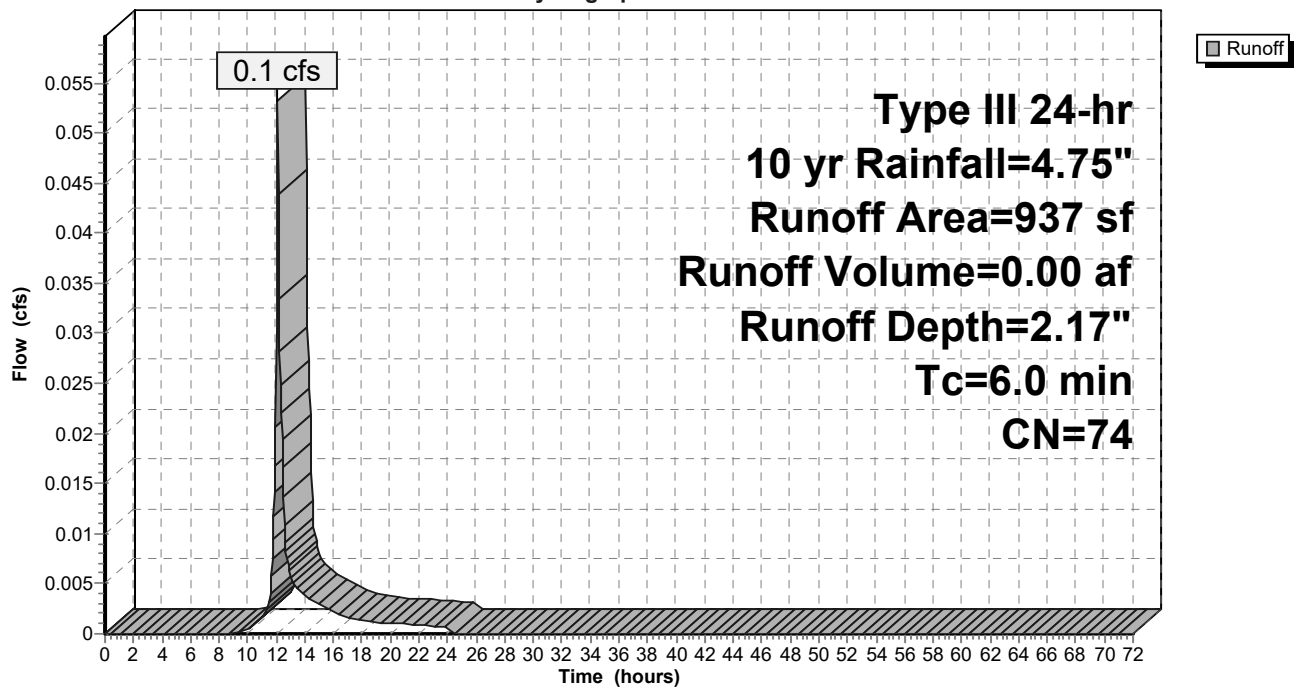
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
937	74	>75% Grass cover, Good HSG C
937		100.00% Pervious Area

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

Subcatchment 6: Bioretention Basin

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

Summary for Subcatchment 7: Existing Building

CarlsonPlanXYPos|1196747.0301|257673.6021|

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.00 af, Depth= 2.17"

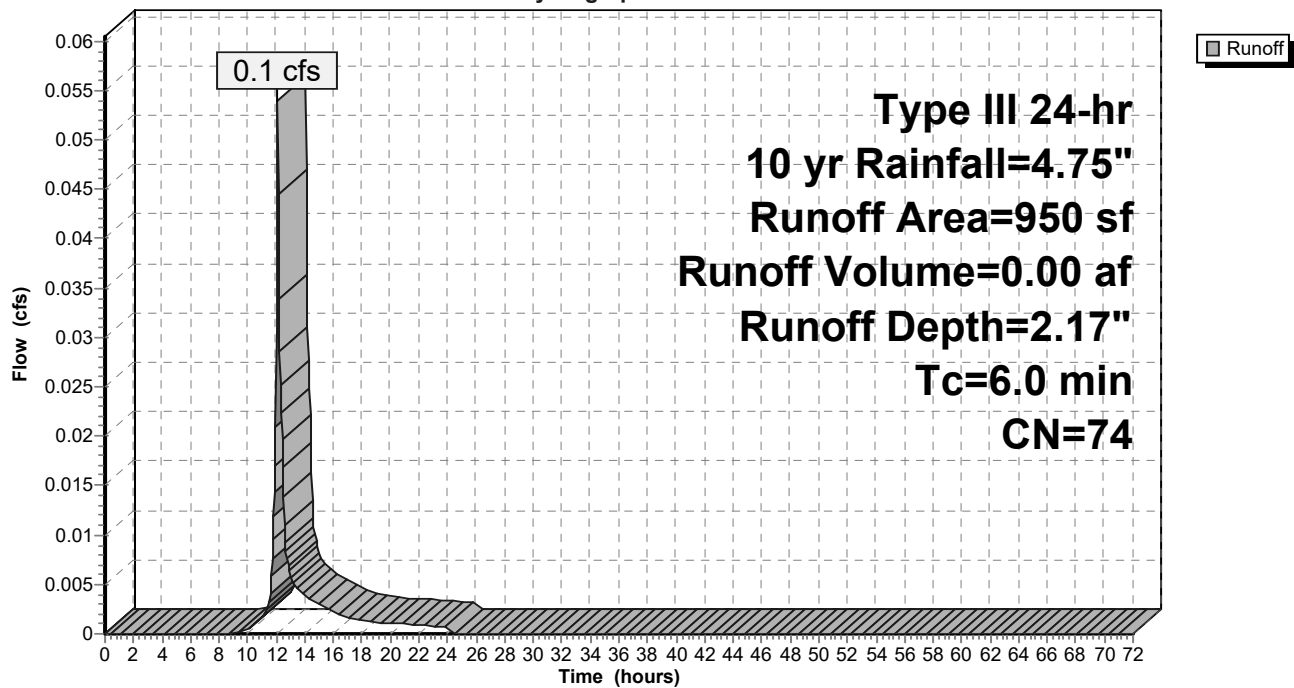
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
950	74	>75% Grass cover, Good HSG C
950		100.00% Pervious Area

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

Subcatchment 7: Existing Building

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
Printed 4/29/2026

Summary for Subcatchment 8: Existing Parking Lot & Hill Street

CarlsonPlanXYPos|1196694.8070|257704.6702|

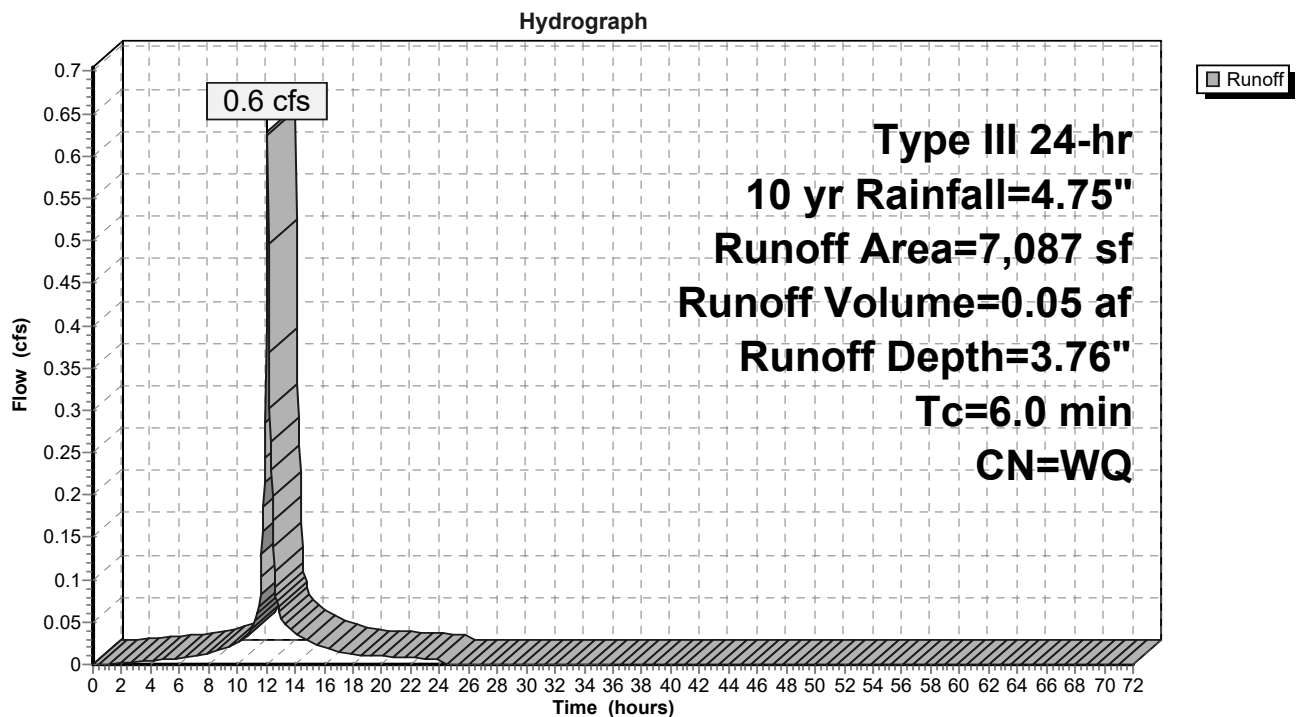
Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.05 af, Depth= 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.75"

Area (sf)	CN	Description
134	98	Roofs HSG C
4,679	98	Paved parking HSG C
29	70	Woods, Good HSG C
2,245	74	>75% Grass cover, Good HSG C
7,087		Weighted Average
2,274		32.09% Pervious Area
4,813		67.91% Impervious Area

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

Subcatchment 8: Existing Parking Lot & Hill Street



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
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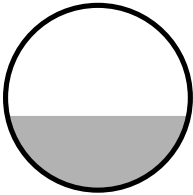
Summary for Reach 3R: 8" CPP

Inflow Area = 0.145 ac, 51.35% Impervious, Inflow Depth = 3.37" for 10 yr event
Inflow = 0.3 cfs @ 12.22 hrs, Volume= 0.04 af
Outflow = 0.3 cfs @ 12.23 hrs, Volume= 0.04 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.15 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 0.9 min

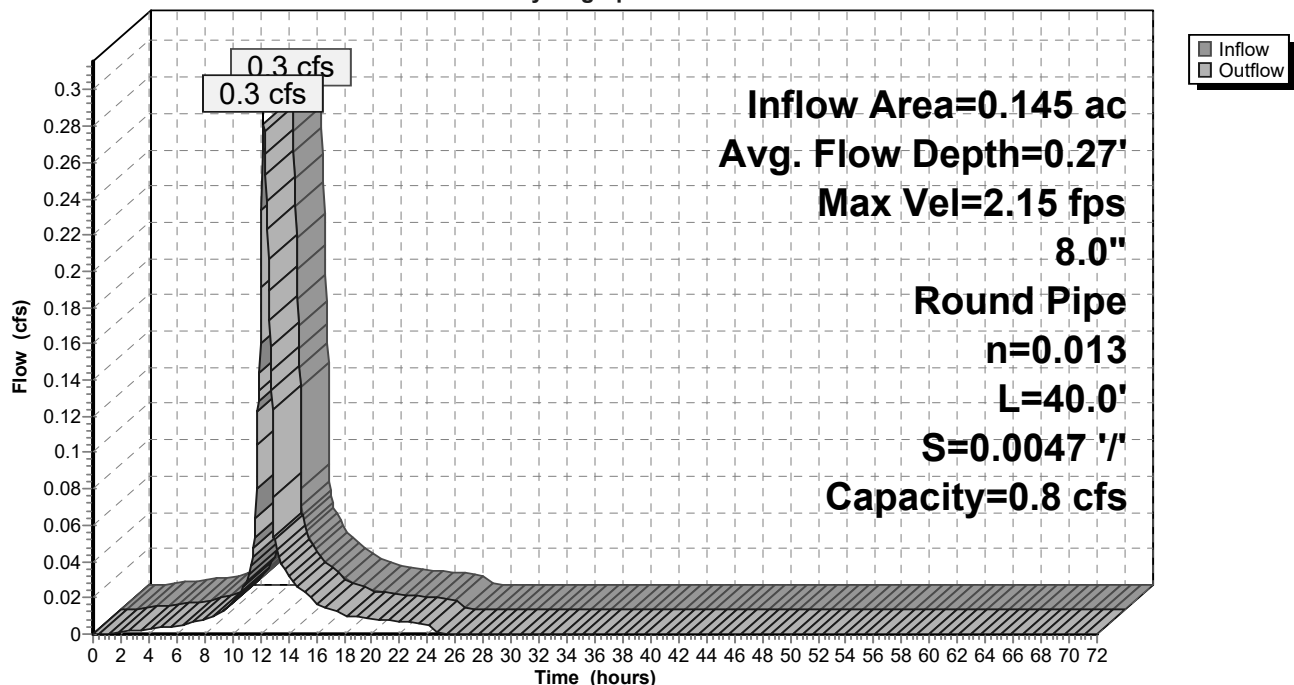
Peak Storage= 5 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.27' , Surface Width= 0.65'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 0.8 cfs

8.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0047 '/'
Inlet Invert= 74.49', Outlet Invert= 74.30'



Reach 3R: 8" CPP

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

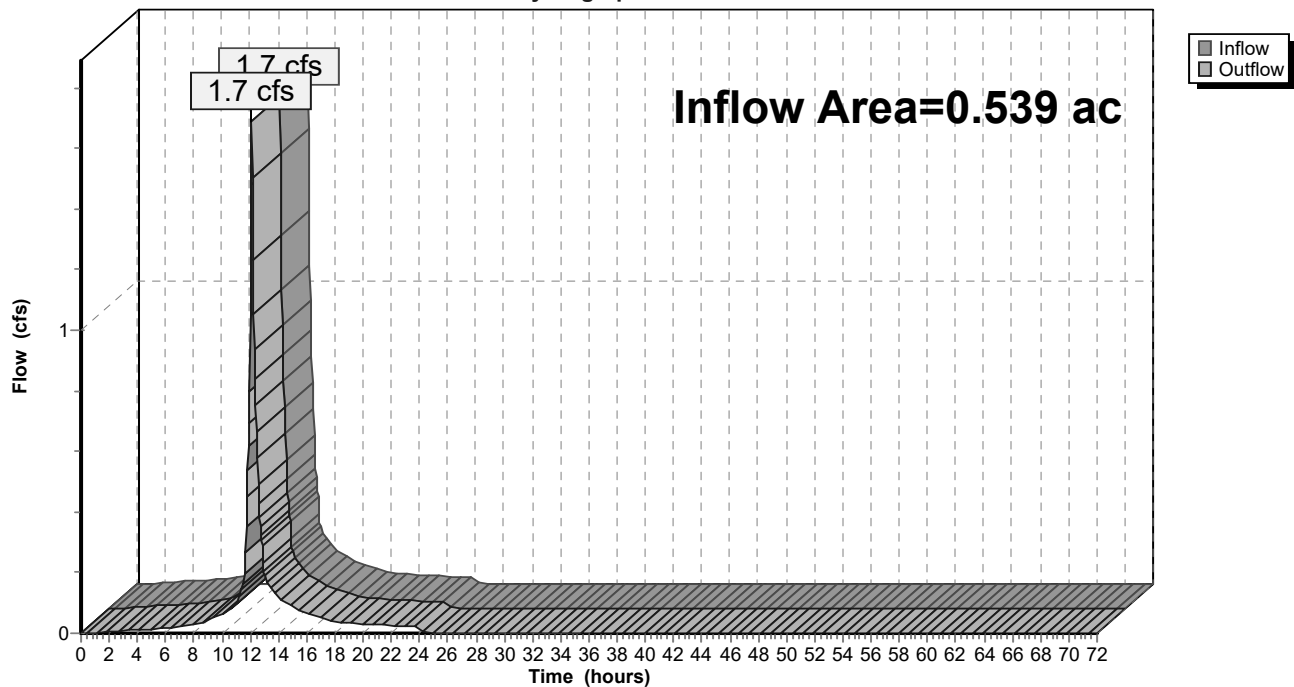
Summary for Reach Combined:

Inflow Area = 0.539 ac, 61.69% Impervious, Inflow Depth = 3.45" for 10 yr event
Inflow = 1.7 cfs @ 12.10 hrs, Volume= 0.15 af
Outflow = 1.7 cfs @ 12.10 hrs, Volume= 0.15 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach Combined:

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

Printed 4/29/2026

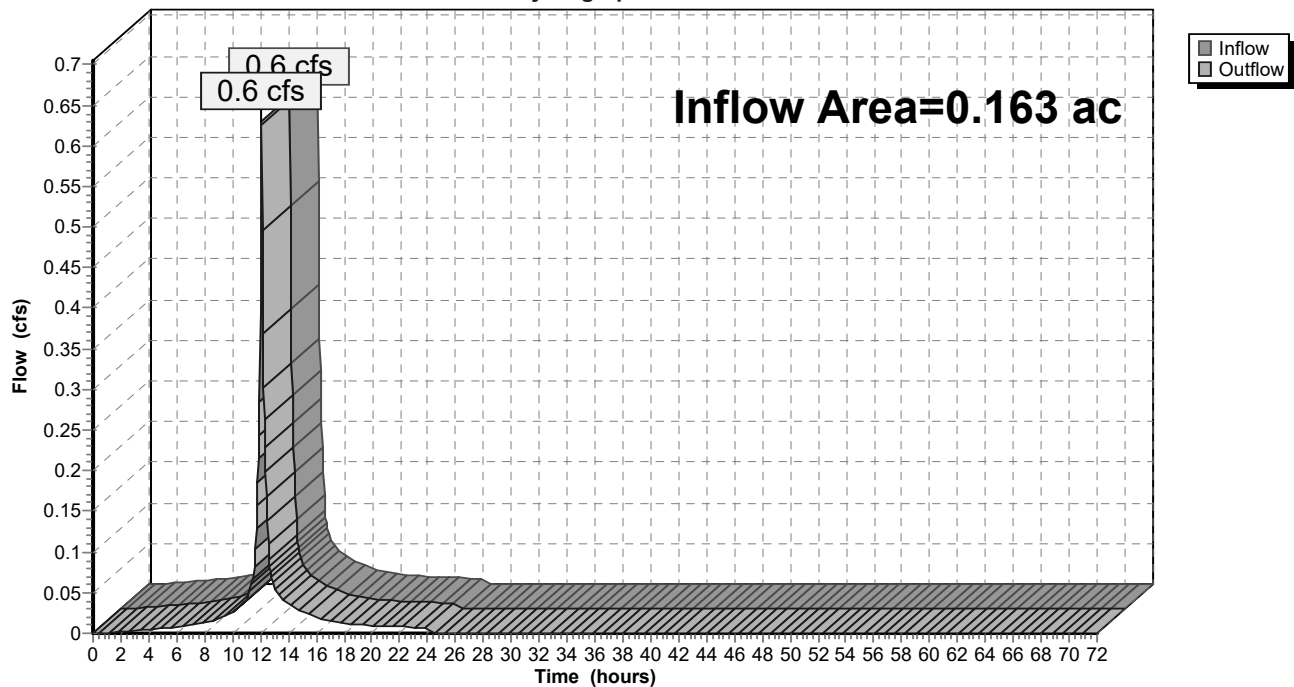
Summary for Reach POA1:

Inflow Area = 0.163 ac, 67.91% Impervious, Inflow Depth = 3.76" for 10 yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.05 af
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 0.05 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA1:

Hydrograph



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Type III 24-hr 10 yr Rainfall=4.75"

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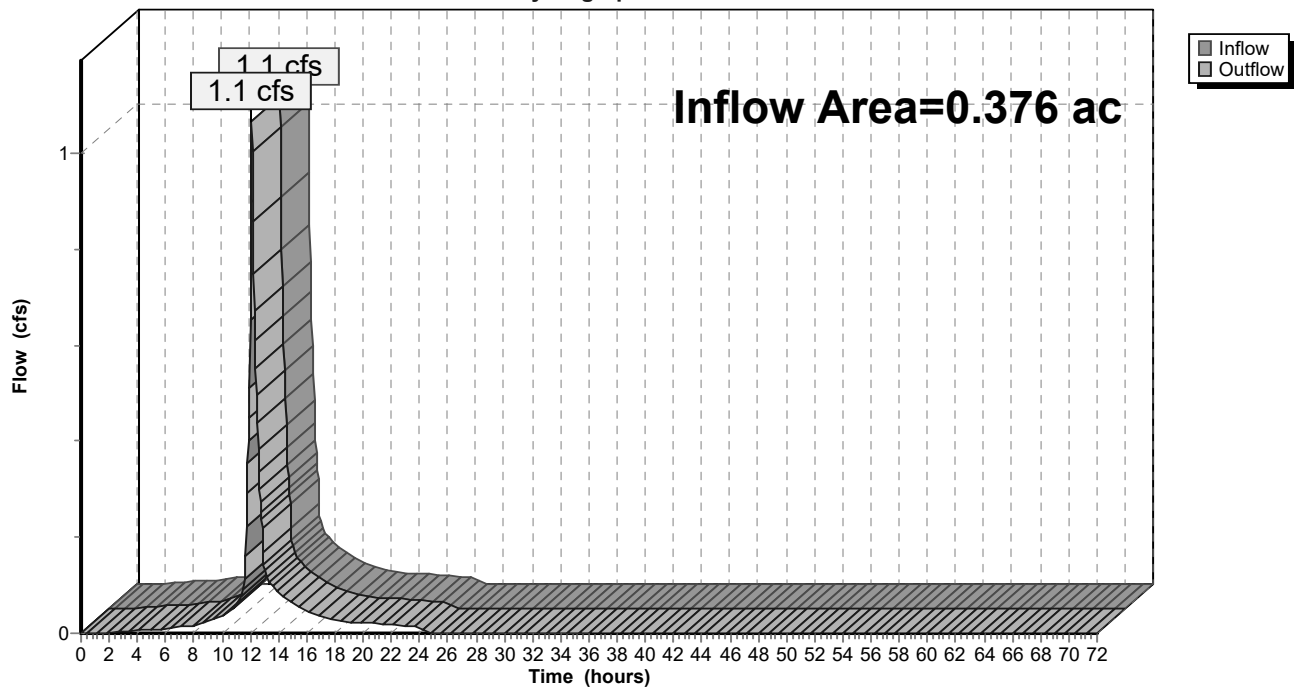
Summary for Reach POA2:

Inflow Area = 0.376 ac, 59.00% Impervious, Inflow Depth = 3.31" for 10 yr event
Inflow = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af
Outflow = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach POA2:

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
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Summary for Pond 2P: Existing Drain Manhole

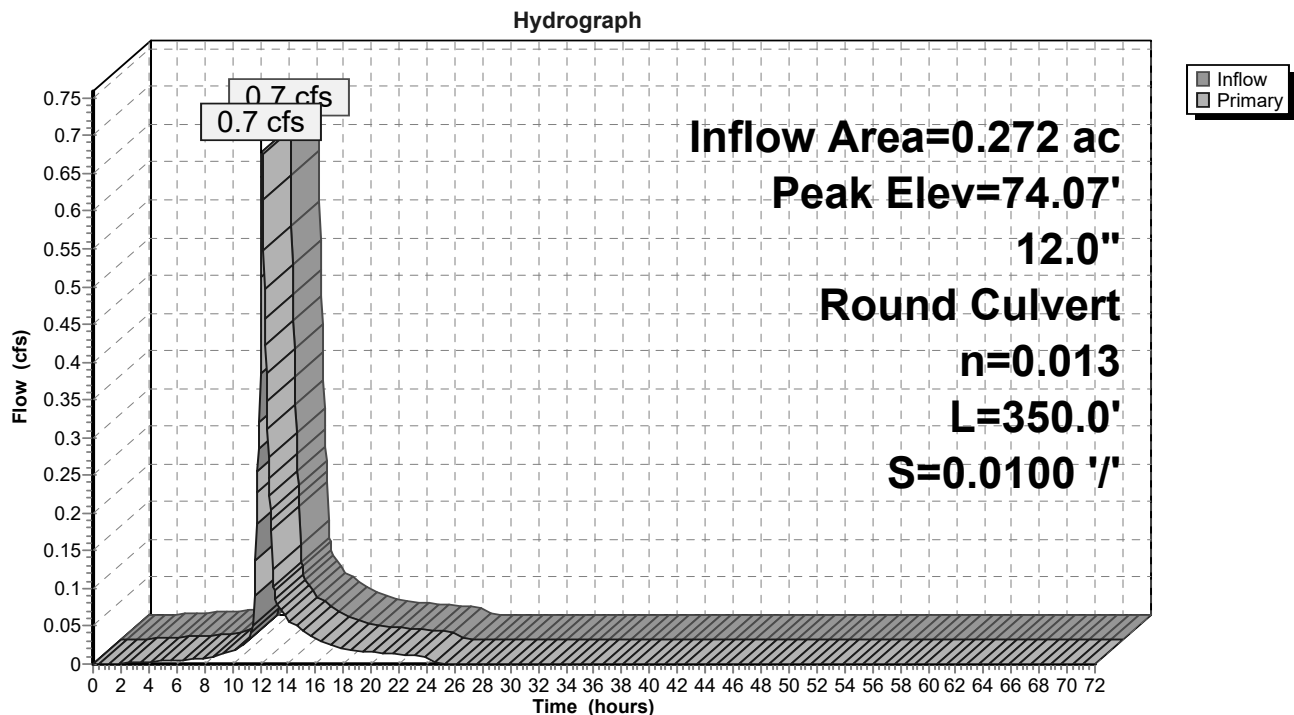
Inflow Area = 0.272 ac, 52.85% Impervious, Inflow Depth = 3.08" for 10 yr event
Inflow = 0.7 cfs @ 12.14 hrs, Volume= 0.07 af
Outflow = 0.7 cfs @ 12.14 hrs, Volume= 0.07 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.14 hrs, Volume= 0.07 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 74.07' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	73.60'	12.0" Round Culvert L= 350.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 73.60' / 70.10' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.14 hrs HW=74.07' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.7 cfs @ 1.85 fps)

Pond 2P: Existing Drain Manhole



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

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Summary for Pond BR: Bioretention Basin

Inflow Area = 0.127 ac, 54.57% Impervious, Inflow Depth = 3.45" for 10 yr event
 Inflow = 0.5 cfs @ 12.09 hrs, Volume= 0.04 af
 Outflow = 0.4 cfs @ 12.12 hrs, Volume= 0.03 af, Atten= 8%, Lag= 2.1 min
 Primary = 0.4 cfs @ 12.12 hrs, Volume= 0.03 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 77.91' @ 12.12 hrs Surf.Area= 1,435 sf Storage= 404 cf

Flood Elev= 78.00' Surf.Area= 1,479 sf Storage= 456 cf

Plug-Flow detention time= 145.1 min calculated for 0.03 af (80% of inflow)

Center-of-Mass det. time= 65.6 min (840.5 - 774.9)

Volume	Invert	Avail.Storage	Storage Description
#1	74.50'	7 cf	4.0" Round Pipe Storage L= 85.0'
#2	74.83'	30 cf	3/4" Crushed Stone (3" depth) (Irregular) Listed below (Recalc) 75 cf Overall x 40.0% Voids
#3	75.08'	120 cf	Filter Course 24" (Irregular) Listed below (Recalc) 598 cf Overall x 20.0% Voids
#4	77.08'	7 cf	Loam & Seed (3") (Irregular) Listed below (Recalc) 75 cf Overall x 10.0% Voids
#5	77.33'	292 cf	Basin Volume (Conic) Listed below (Recalc)
		456 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.83	299	134.6	0	0	299
75.08	299	134.6	75	75	333

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.08	299	134.6	0	0	299
77.08	299	134.6	598	598	568

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.08	299	134.6	0	0	299
77.33	299	134.6	75	75	333

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.33	299	0	0	299
77.50	368	57	57	369
78.00	582	235	292	586

Device	Routing	Invert	Outlet Devices
#1	Primary	74.50'	8.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900

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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

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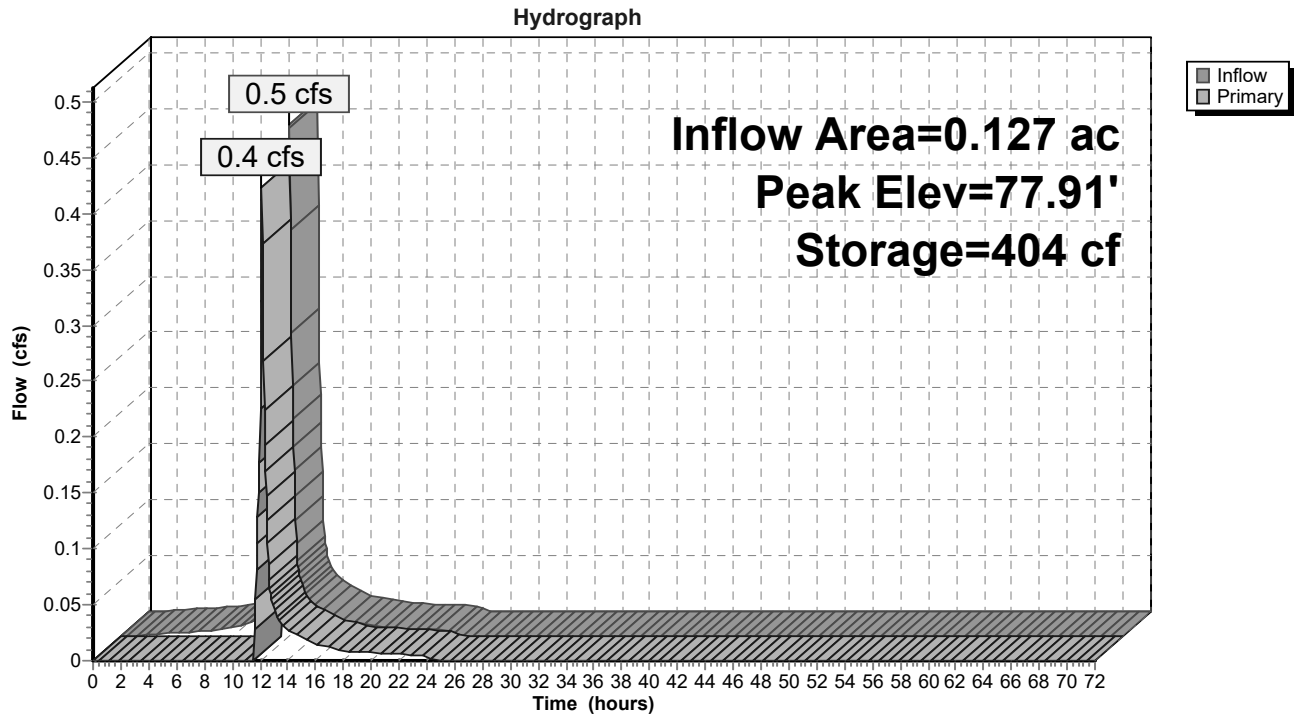
Inlet / Outlet Invert= 74.50' / 74.30' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2 Device 1 77.75' **8.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.4 cfs @ 12.12 hrs HW=77.90' TW=74.07' (Dynamic Tailwater)

1=Culvert (Passes 0.4 cfs of 2.3 cfs potential flow)

2=Grate (Weir Controls 0.4 cfs @ 1.28 fps)

Pond BR: Bioretention Basin



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"
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Summary for Pond CB: CB#3701

Inflow Area = 0.104 ac, 75.14% Impervious, Inflow Depth = 3.93" for 10 yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.03 af

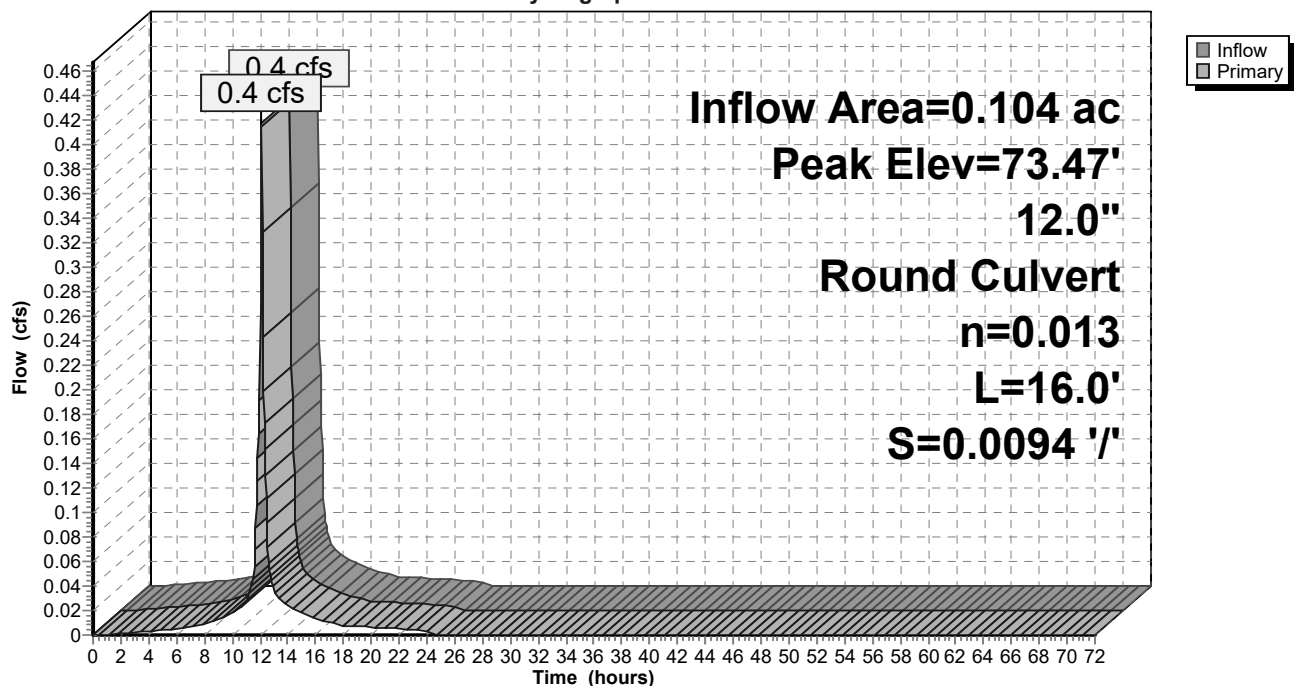
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 73.47' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	73.10'	12.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 73.10' / 72.95' S= 0.0094 ' S= 0.0094 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=73.46' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.4 cfs @ 2.34 fps)

Pond CB: CB#3701

Hydrograph



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96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

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Summary for Pond PP: Proposed Porous Pavement

Inflow Area = 0.145 ac, 51.35% Impervious, Inflow Depth = 3.37" for 10 yr event
 Inflow = 0.5 cfs @ 12.09 hrs, Volume= 0.04 af
 Outflow = 0.3 cfs @ 12.22 hrs, Volume= 0.04 af, Atten= 45%, Lag= 8.0 min
 Primary = 0.3 cfs @ 12.22 hrs, Volume= 0.04 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 75.03' @ 12.22 hrs Surf.Area= 4,784 sf Storage= 221 cf

Flood Elev= 76.70' Surf.Area= 9,568 sf Storage= 1,585 cf

Plug-Flow detention time= 11.7 min calculated for 0.04 af (100% of inflow)

Center-of-Mass det. time= 10.9 min (788.2 - 777.4)

Volume	Invert	Avail.Storage	Storage Description
#1	74.50'	30 cf	4.0" Round Pipe Storage L= 344.0'
#2	74.83'	163 cf	3/4" Crushed Stone 2" (Irregular) Listed below (Recalc) 407 cf Overall x 40.0% Voids
#3	75.00'	957 cf	Filter Course 12" (Irregular) Listed below (Recalc) 2,392 cf Overall x 40.0% Voids
#4	76.00'	120 cf	Filter Blanket (3" of Pea Gravel) (Irregular) Listed below (Recalc) 598 cf Overall x 20.0% Voids
#5	76.25'	316 cf	Reservoir Course (4" crushed stone) (Irregular) Listed below (Recalc) 789 cf Overall x 40.0% Voids
		1,585 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.83	2,392	204.7	0	0	2,392
75.00	2,392	204.7	407	407	2,427

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.00	2,392	204.7	0	0	2,392
76.00	2,392	204.7	2,392	2,392	2,597

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.00	2,392	204.7	0	0	2,392
76.25	2,392	204.7	598	598	2,443

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.25	2,392	204.7	0	0	2,392
76.58	2,392	204.7	789	789	2,460

Device	Routing	Invert	Outlet Devices
#1	Primary	74.50'	6.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900

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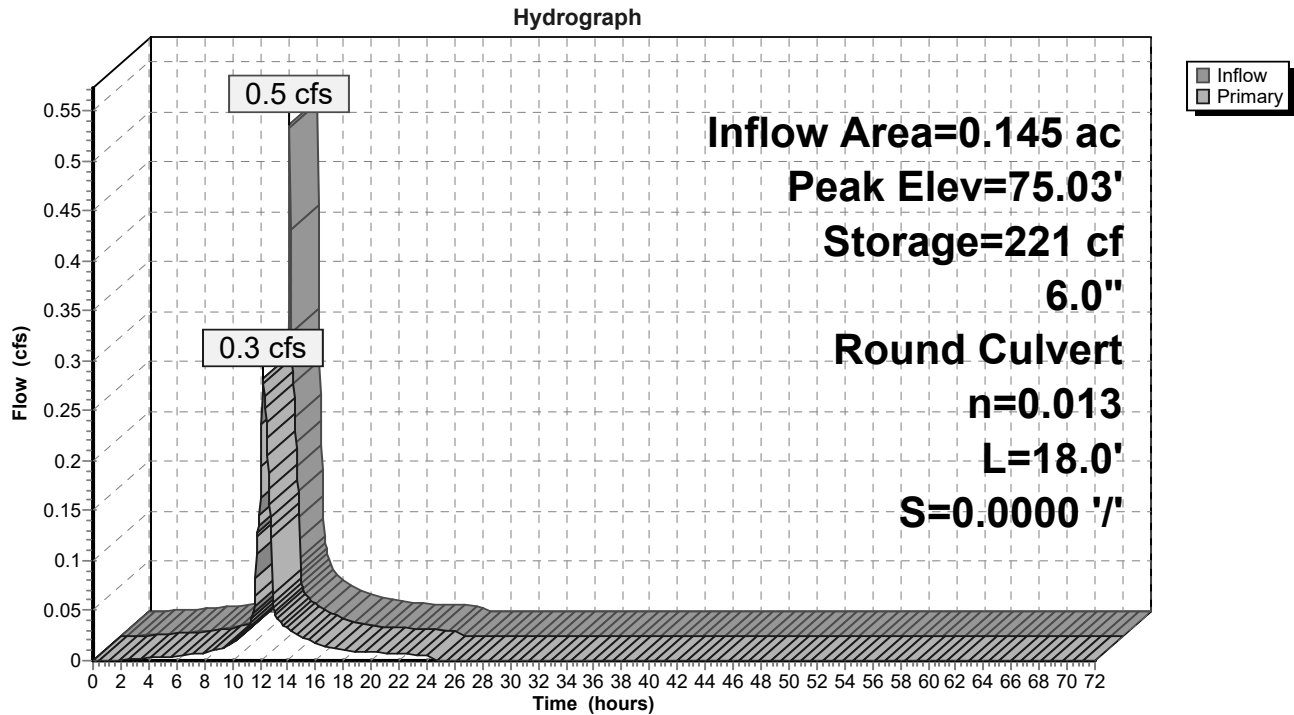
96 Broadway
Type III 24-hr 10 yr Rainfall=4.75"

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Inlet / Outlet Invert= 74.50' / 74.50' S= 0.0000 '/ S_c= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.3 cfs @ 12.22 hrs HW=75.03' TW=74.76' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.3 cfs @ 1.68 fps)

Pond PP: Proposed Porous Pavement



APPENDIX A 5

STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE MANUAL

**96 BROADWAY
PREPARED FOR:
RYAN ESCHBACH
96 BRAODWAY
DOVER, NH
STRAFFORD COUNTY**

April 2026

PREPARED BY:

NORWAY PLAINS ASSOCIATES, INC.

**Hilary Badger, P.E.
N.H. Reg. #18290**

2 CONTINENTAL BOULEVARD, P.O. BOX 249, ROCHESTER, NEW HAMPSHIRE 03866-0249 (603) 335-3948

TABLE OF CONTENTS

1.0	INTRODUCTION:	3
1.1	SUMMARY OF STORMWATER MANAGEMENT PRACTICES ON-SITE:	3
1.2	RESPONSIBLE PARTIES:	3
1.3	TRANSFER OF RESPONSIBILITY:	3
1.4	LONGTERM AGREEMENT	4
2.0	INSPECTION & MAINTENANCE (CONSTRUCTION):	5
2.1	INSPECTION (CONSTRUCTION):	5
2.2	MAINTENANCE (CONSTRUCTION):	5
3.0	INSPECTION & MAINTENANCE (OPERATION):	5
3.1	GENERAL SITE:	6
3.2	STANDARD ASPHALT AND POROUS ASPHALT PAVEMENT AREAS:	6
3.3	BIORENTION BASIN	7
3.4	UNDERDRAIN SYSTEM:	7
3.5	SEDIMENT & WASTE MATERIAL DISPOSAL:	8
3.6	QUALIFIED STORMWATER SYSTEM MAINTENANCE SERVICE:	8
3.7	CONTROL OF INVASIVE PLANTS	8
4.0	RECORD KEEPING; LONG TERM INSPECTION & MAINTENANCE:	8

APPENDICES

STORMWATER MANAGEMENT SYSTEM: INSPECTION & MAINTENACE CHECKLIST	A-1
STORMWATER MANAGEMENT SYSTEM: INSPECTION & MAINTENACE LOG	A-1
CONTROL OF INVASIVE SPECIES	A-2
DE-ICING LOG	A-3

1.0 INTRODUCTION:

The purpose of this Manual is to:

- 1) Make the Property Owner/Facility Operator explicitly aware of the maintenance responsibility that goes along with the design prepared for them at the site located at 96 Broadway, Dover NH.
- 2) Provide maintenance and inspection guidelines to be followed by this property owner, their successors and assigns and the agents thereof.

1.1 SUMMARY OF STORMWATER MANAGEMENT PRACTICES ON-SITE:

There are two (2) primary stormwater management practices employed on the site that will require routine inspection and maintenance to insure proper functioning of stormwater controls into the future.

- 1) Porous Pavement
- 2) Bioretention Basin

1.2 RESPONSIBLE PARTIES:

Property Owner:

Ryan Eschbach
US Route 1, Apt. 1C
York, ME 03909
(248) 225-6538
ryanesch@mac.com

1.3 TRANSFER OF RESPONSIBILITY:

In the event that the property is sold or transferred to another party, the Town of Lee shall be notified of the transfer of ownership and responsibility for the stormwater management practices discussed in this manual. The mailing address for Town of Lee is:

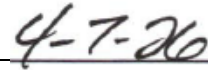
City of Dover
Planning and Community Development
288 Central Avenue
Dover, NH 03820
(603) 516-6008

1.4 LONGTERM AGREEMENT

I the undersigned have read this inspection and maintenance manual. With the signature below I acknowledge that it my responsibility to maintain or have maintained by qualified professionals all of the stormwater management practices outlined in this manual for perpetuity and that all successors and assigns of myself will be responsible for inspection and maintenance of the stormwater management practices as well. I also acknowledge that it is my responsibility to document any transfer of ownership and responsibility with the City of Dover.



Ryan Eschbach



Date

2.0 INSPECTION & MAINTENANCE (CONSTRUCTION):

During Construction it is important to maintain the site where construction is ongoing in a manner that minimizes tracking of silt, sediment and construction materials both onto the base and sub-base for pavement areas and the completed pavement areas as well as the bottoms of all of the infiltration practices. Sediment should be monitored at all Silt Fence throughout construction and excessive build up should be removed and disposed of in accordance with state and local requirements.

2.1 INSPECTION (CONSTRUCTION):

- 1) The Site Construction Contractor Shall perform a daily inspection of the entire site to insure that construction activities as not impacting:
 - a. Areas not currently under construction
 - b. Areas under construction but sensitive to sediment and silt deposition
 - Gravel and crushed gravel base courses of the Pavement
 - Bioretention Basin
- 2) The Site Superintendent or his designee shall walk the perimeter of the site taking note of any sedimentation /siltation that may be occurring.
- 3) All silt fences shall be inspected weekly and after each rain event.
- 4) The Stabilized Construction Entrances shall be inspected daily to insure any mud, sediment and or silt is not tracked off site and is limited on site.

2.2 MAINTENANCE (CONSTRUCTION):

The Site Construction Contractor shall be responsible for all erosion and sediment control devices during construction. Refer to the Plan Set “96 BROADWAY, 96 BROADWAY, DOVER, NH, PREPARED FOR 96 BROADWAY LLC”.

- 1) For all best management practices (BMP’s) locations, details on proper installation and, construction sequencing.
- 2) In an effort to limit travel on the bioretention basin area, this area should be constructed early in the construction sequence and stabilized as soon as possible.
- 3) If silt, sand or sediment becomes noticeably deposited on areas of travel not within the work zone these areas shall be swept or cleaned as appropriate.

3.0 INSPECTION & MAINTENANCE (OPERATION):

To insure the prolonged operational life of all of the stormwater management practices employed on the site it is imperative that a logical and thorough inspection and maintenance plan be implemented. The following sections outline the Inspection & Maintenance Schedule and methods to be employed on site after the completion of construction during the operational life of individual stormwater management practices employed.

3.1 GENERAL SITE:

The site shall undergo general inspection as follows (see Appendix A-1 for Stormwater Management Practices, Inspection & Maintenance Checklist):

- 1) **Litter and Trash pick-up and removal:**
 - a. **Inspection Frequency:**
 - Weekly
 - b. **Minimum Inspection Requirements:**
 - Inspect the site within the limits of the lawn areas for blown or loose litter.
 - c. **Maintenance/Cleanout Threshold:**
 - Clean as required;
 - Clean when visually apparent litter or trash spillage occurs.

3.2 STANDARD ASPHALT AND POROUS ASPHALT PAVEMENT AREAS:

The proposed driveways and parking areas shall undergo inspection as follows (see Appendix A-1 for Stormwater Management Practices, Inspection & Maintenance Checklist)

- 1) **Standard Asphalt Pavement:**
 - a. **Inspection/Maintenance Frequency:**
 - At least 1 time per year, preferably 2 times a year (Early Spring prior to May 15 and Fall prior to October 15).
 - b. **Minimum Inspection Requirements:**
 - Mandatory sweeping performed by a qualified professional
 - Typical street sweeping equipment is acceptable for sweeping paved driveway only.
- 2) **Porous Asphalt Pavement:**
 - a. **Inspection/Maintenance Frequency:**
 - 2 times a year (Early Spring after April 15, Late Fall after October 15) mandatory sweeping
 - Periodic inspection (during rain event) to ensure the pavement drains effectively during and after storms.
 - b. **Minimum Inspection Requirements:**
 - The pavement shall be inspected for areas of damage including spalling or deterioration;
 - Areas found to be damaged shall be noted for repair at the earliest convenience.
 - c. **Maintenance/Cleanout Threshold:**
 - Quarterly Vacuum Sweeping by qualified professional
 - Power washing maybe required prior to vacuum sweeping to dislodge trapped particles
 - In areas irreparably damaged, standard HMA can be used to patch (not to exceed 10% of porous parking bay)
 - Never re-seal porous pavement with HMA or other impermeable material.
- 3) **De-icing Agents:**

The use of sand as a de-icing agent is prohibited. **SAND CANNOT** be used in conjunction with porous pavement. It will clog the open pore structure of the pavement and cause premature failure of the surface leading to replacement.

- a. **Inspection/Maintenance Frequency:**
 - After every plowing, the site manager shall inspect the parking area to ensure that sand was not applied.
- b. **Minimum Inspection/Maintenance Requirements:**
 - No winter sanding is permitted.
 - In the event that sand has been applied, the plowing contractor shall be contacted to ensure that sand is not employed on site again.
 - Salt shall be applied only as necessary. This will vary depending on sun exposure. The use of salt shall be minimized.
- c. **Maintenance Threshold:**
 - After plowing of appreciable snow

3.3 BIORETENTION BASIN

The Bioretention Basin shall undergo inspection as follows (see Appendix A-1 for Stormwater Management Practices, Inspection & Maintenance Checklist)

- 1) **Bioretention Basins:**
 - a. **Inspection/Maintenance Frequency:**
 - Inspect pretreatment measures (i.e. stone outlet protection.) Bi-annually. Once in the spring prior to May 15 and once in the fall prior to October 15.
 - Inspect infiltration surface bi-annually. Once in the spring prior to May 15 and once in the fall prior to October 15.
 - Inspect garden bottom after any rainfall event of 2.5-inches in a 24-hour period or greater.
 - Conduct annual inspections of the vegetation, and maintained in healthy conditions, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species.
 - b. **Minimum Inspection/Maintenance Requirements:**
 - Remove and dispose of accumulated sediment based on inspection. Repair area of removal as necessary to restore infiltration capacity.
 - Perform maintenance and rehabilitation based on inspections.
 - Remove debris (if any) from rain garden inlet or overflow outlet structure based on inspection.
 - If the infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional (i.e. professional engineer, certified soils scientist, etc.) should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or replacement of the bioretention basin soil mixture.

3.4 UNDERDRAIN SYSTEM:

The Underdrain System shall undergo inspection as follows (see Appendix A-1 for Stormwater Management Practices).

- 1) **Manifold Manhole (outlet structure):**
 - a. **Inspection/Maintenance Frequency:**
 - At least 2 times per month
 - Inspect manhole after any rainfall event of 2.5-inches in a 24-hour period or greater.

- b. **Minimum Inspection/Maintenance Requirements:**
 - Check for sediment accumulation;
 - Filters to be cleaned out.
 - c. **Maintenance/Cleanout Threshold:**
 - Remove and dispose of all accumulated sediment based on inspection.
- 2) **Drainage pipes:**
- a. **Inspection/Maintenance Frequency:**
 - 1 time every 2 years (Early Spring after April 15 or Fall after October 15) same time as the pavement sweeping
 - b. **Minimum Inspection/Maintenance Requirements:**
 - Check for sediment accumulation;
 - Check for clogging
 - c. **Maintenance/Cleanout Threshold:**
 - Sediment depth $\geq$ 1-inch
 - Clogged

3.5 SEDIMENT & WASTE MATERIAL DISPOSAL:

All material removed from the PAVEMENT and the STORMWATER MANAGEMENT PRACTICES on site shall be disposed of in accordance with local, state and federal regulations offsite.

3.6 QUALIFIED STORMWATER SYSTEM MAINTENANCE SERVICE:

It is strongly recommended that the maintenance of the Stormwater Management Practices outlined above, excepting the General Site Maintenance, be performed by a qualified company such as:

Stormwater Compliance, LLC
8 Blue Moon Drive
North Yarmouth, ME 04097
207-712-7181
info@stormwatercomp.com

Companies of this nature have all of the necessary equipment to maintain closed drainage systems.

3.7 CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described in Appendix A-2. They should be controlled as described by Douglas Cygan with New Hampshire Department of Agriculture, Markets & Food, 603-271-3488, doug.cygan@agr.nh.gov

4.0 RECORD KEEPING; LONG TERM INSPECTION & MAINTENANCE:

Inspection and maintenance logs for stormwater practices employed by new development and re-development with substantial stormwater management infrastructure shall be kept and provided to representative of the City of Dover upon request.

APPENDIX A-1:

STORMWATER MANAGEMENT SYSTEM: INSPECTION & MAINTENANCE CHECKLIST

STORMWATER MANAGEMENT SYSTEM: INSPECTION AND MAINTENANCE LOG

Appendix A- 1

Stormwater Management System: Inspection and Maintenance Checklist

BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
General Site:			
Litter and Trash pick-up	Weekly	Inspect the site within the limits of the lawn areas for blown or loose litter.	- Clean as required - Clean when visually apparent litter or trash spillage has occurred
Control of Invasive Species	Monthly	Inspect the site where plantings have occurred for any species listed in appendix A-2.	Disposed of the invasive species in accordance with A-2.
Driveway and Parking Areas:			
Standard Pavement Driveway	At least 1 time per year, preferably 2 times/year (Early Spring prior to May 15 and Fall prior Oct. 15)	- Mandatory sweeping performed by a qualified professional* - Typical street sweeping equipment is acceptable for sweeping the paved areas.	N/A
Porous Asphalt Paved Surface	2 times/year (Early Spring after April 15 and Late Fall after Oct. 15) - Periodically, (during rain events) to ensure proper drainage of porous pavement	- Inspect for areas of damage (including spalling and deterioration) - Damaged areas should be noted for repair at earliest convenience	- Quarterly Vacuum Sweeping by qualified professional - Power washing maybe required prior to vacuum sweeping to dislodge trapped particles - In areas irreparably damaged, standard HMA can be used to patch (not to exceed 10% of porous parking bay) - Never re-seal porous pavement with HMA or other impermeable material
De-icing Agent Application	After every plowing, the site manager shall inspect the parking area to determine the need for sand application.	- NO winter sanding is permitted; application of sand shall be brought up with the plowing company and is not to happen again. - Salt shall be applied as necessary; amount will vary with sun exposure. - Use of salt shall be minimized	After plowing of appreciable snowfall
Stormwater Management Practices:			
Drainage Pipes	1 time every 2 years (Early Spring after April 15 or Fall after October 15)	- Check for sediment accumulation; - Check for clogging	- Sediment depth $\geq$ 1-inch - Clog

BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
Underdrain system:	At least two times per month and after any rain events greater than 2.5 inches	- Check for sediment accumulation; - Check for floatable contaminants (i.e. oils etc.) - Check for floatable trash (i.e. cigarette butts, paper etc.)	If any ponding water is observed, inspection of cleanouts shall occur.
Bioretention Basin	- Water the grasses as needed following construction. - Conduct inspections after rainfall. - Conduct routine maintenance monthly. - Inspect all of the vegetation semi-annually during first year and annually after.	- Water to promote plan growth and survival, mainly during the first two years and during dry periods. - Inspect site following rainfall events. Add/replace vegetation in any eroded areas. - Prune and weed swale to maintain appearance. Remove accumulated trash and debris. Replace mulch as needed. - Inspect inflow area for sediment accumulation. Remove any accumulated sediment or debris. - Inspect site for erosion as well as sediment and mulch which have been moved around in the garden. Add/replace vegetation in any eroded areas. - Inspect rain garden for dead or dying vegetation. Replace vegetation as needed. - Test planting bed for pH. If the pH is below 5.2, limestone should be applied. If the pH is about 8.0, iron sulfate and sulfur should be applied. - Remove and replace bioretention soil mixture if basin does not drain after 72-hours after a rain event.	N/A

Regular Inspection and Maintenance Guidance for Permeable Pavements

Regular inspection and maintenance is critical to the effective operation of permeable pavement. It is the responsibility of the owner to maintain the pavement in accordance with the minimum design standards. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less, frequent maintenance needs, depending on a variety of factors including the occurrence of large storm events, seasonal changes, and traffic conditions.

ACTIVITIES

Visual inspections are an integral part of system maintenance. This includes monitoring pavement to ensure water drainage, debris accumulation, and surface deterioration.

ACTIVITY

FREQUENCY

CLOGGING AND SYSTEM PERFORMANCE

Adjacent vegetated areas show no signs of erosion and run-on to permeable pavement.

Remedy: Repair or replace any damaged structural parts.

Whenever
vacuuming adjacent
permeable
pavements

Adjacent non-permeable sections of pavement are clean of debris to prevent debris tracking.

Remedy: Vacuuming adjacent pavement non-permeable pavement can be effective at minimizing run-on.

Check for standing water remaining on the surface of the pavement after a precipitation event within 30 minutes.

Remedy: Use of a power washer or compressed air blower at an angle of 30 degrees or less can be effective, particularly in combination with a vacuum or vacuum sweeper.

1-2 times per year,
more frequently for
high-use sites or
sites with higher
potential for run-on

Check for debris accumulation, particularly in the winter.

Remedy: Loose debris such as leaves or trash can be removed using a power/leaf blower or gutter broom. Fall and spring cleanup should be accompanied by pavement vacuuming.

Accumulation of sediment and organic debris on the pavement surface.

Remedy: Regular use of a vacuum sweeper can remove sediment and organic debris. The sweeper may be fitted with water jets.

PAVEMENT CONDITION

Check for accumulation of snow or other stockpiles of materials such as sand/salt, mulch, soil, yard waste, etc. Stockpiling of these materials on permeable pavements can lead to premature clogging.

Remedy: Remove stockpile if possible and check for clogging in storage area.

As Needed

Damage to pavement

Remedy: Repairs should be repaired as they are identified

CHECKLIST FOR INSPECTION OF PERMEABLE PAVEMENT

Location:
 Inspector:
 Date:
 Time:
 Site Conditions:
 Date Since Last Rain Event:

Inspection Items	Satisfactory (S) or Unsatisfactory (U)		Comments/Corrective Action
1. Salt / Deicing (Winter/Spring)			
Use salt only for ice management	S	U	
Accumulated salt removed in spring	S	U	
2. Debris Cleanup (1-2 times per year minimum, Spring/Fall)			
Remove sediment and organic debris using vacuum street sweeper	S	U	
Clean catch basins (if available)	S	U	
3. Controlling Run-On			
Adjacent vegetated areas show no signs of erosion and run-on to permeable pavement	S	U	
4. Outlet / Catch Basin Inspection (if available) (1-2 times per year, after large storm events)			
No evidence of blockage	S	U	
Good condition, no need for cleaning/repair	S	U	
5. Poorly Drained Pavement			
Recently cleaned and vacuumed	S	U	
6. Pavement Condition			
No evidence of deterioration	S	U	
7. Signage / Stockpiling (As Needed)			
No evidence of damage	S	U	
Proper signage posted indicating usage for traffic load	S	U	
No stockpiling of materials and other unauthorized uses	S	U	
Corrective Action Needed			Due Date
1.			
2.			
3.			
Inspector's Signature			Date

Stormwater Management System Inspection & Maintenance Log

[illegible]

Stormwater Management System Inspection Photos:

APPENDIX A-2:

CONTROL OF INVASIVE PLANTS

CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

Background:

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.



Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle

Lonicera tatarica

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvases.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag “head first” at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can’t be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn’t be burned as the seeds may disperse by the hot air created by the fire.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don’t reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn’t used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don’t compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database /
Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Be diligent looking for seedlings for years in areas where removal and disposal took place.

Suggested 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 isn't 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.

January 2010

APPENDIX A-3:

DE-ICING LOG

Deicing Log

[illegible]

APPENDIX A 6

APPENDIX A 6.1

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

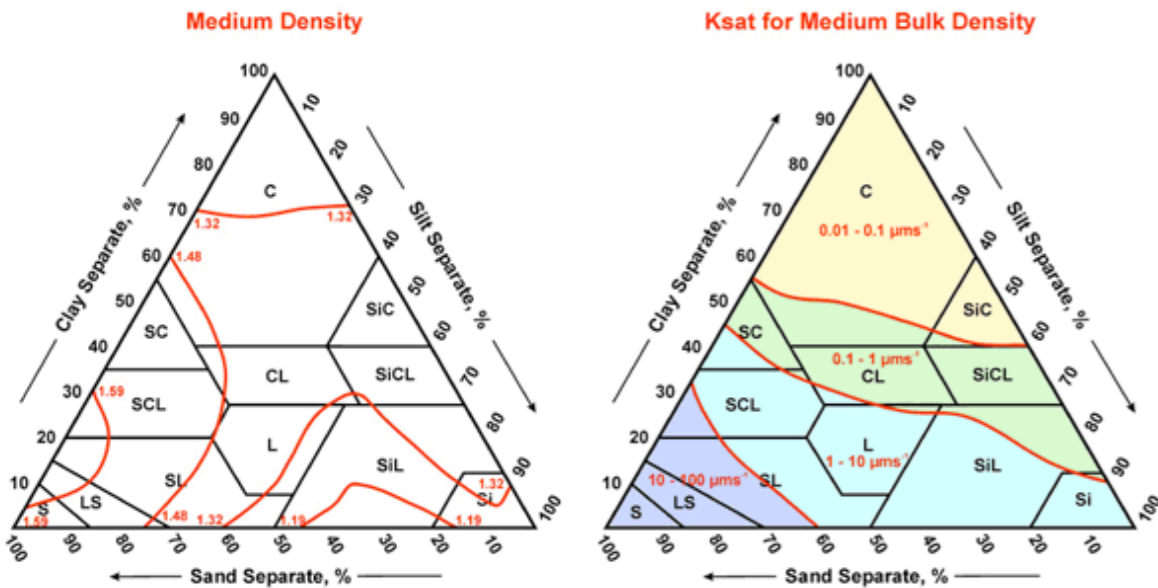
APPENDIX A 6.2

K_{sat} VALUES

FOR

NEW HAMPSHIRE SOILS

(Including Hydrologic and DES Soil Lot Sizing Groups)



From: Guide for Estimating K_{sat} from Soil Properties (Exhibit 618-9). (<http://soils.usda.gov/technical/handbook/contents/part618ex.html>)

Sponsored by the Society of Soil Scientists of Northern New England
SSSNNE Special Publication No. 5
September, 2009

K_{sat} VALUES FOR NEW HAMPSHIRE SOILS

ABOUT THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND

The Society of Soil Scientists of Northern New England (SSSNNE) is a non-profit professional organization of soil scientists, both in the private and public sectors, which is dedicated to the advancement of soil science. The Society fosters the profession of soil classification, mapping and interpretation, and encourages the dissemination of information concerning soil science. With the intent of contributing to the general human welfare, the Society seeks to educate the public on the wise use of soils and the associated natural resources.

INTRODUCTION

The publication “K_{sat} Values for New Hampshire Soils” is designed to assist soil scientists, engineers, and other professionals by assembling tables of existing data for all soil series currently on the state soil legend with regard to K_{sat} values and hydrologic groupings (Hyd.Grp.). The need for this information has become more important since the adoption by the New Hampshire Department of Environmental Services of the revised Alteration of Terrain rules for stormwater management. Additional information has been provided for each soil series with regard to landform, temperature regime (Temp.), soil textures, NHDES Soil Lot Size Groupings (Group), whether the soil is a Spodosol (Spodosol?) and other information which will be valuable to a variety of soil information users.

The data for each soil series has been sorted 3 ways for ease of searching:

Table A-Sorted by Numerical Legend

Table B-Sorted by Soil Series Name

Table C-Sorted by NHDES Soil Group for Establishing Lot Size

The report represents cumulative efforts by private soil scientists and NHDES staff with assistance from the USDA Natural Resource Conservation Service.

Comments or inquiries on the information in this publication may be directed to the Board of Directors at the following address:

**Society of Soil Scientists
of Northern New England
PO Box 76
Durham, NH 03824**

SATURATED HYDRAULIC CONDUCTIVITY (K_{SAT})

K_{sat} refers to the ease with which pores in a saturated soil transmit water. The estimates presented here are expressed in terms of inches per hour (NRCS official data presents K_{sat} in both micrometers per second and inches per hour). K_{sat} values are based on soil characteristics observed in the field, particularly structure, consistence, porosity, and texture. (USDA NRCS, Web Soil Survey)

Saturated flow occurs when the soil water pressure is positive; that is, when the soil matric potential is zero (saturated wet condition). In most soils this situation takes place when about 95 percent of the total pore space is filled with water. The remaining 5 percent is filled with entrapped air. Saturated hydraulic conductivity cannot be used to describe water movement under unsaturated conditions. (Soil Survey Manual, 1993)

It is commonly known that soil features (and thus data) for a certain soil series name may be slightly different from one county soil survey to the next and the range in characteristics (via the Typical Pedon) may be slightly different. For example – a Marlow soil (series) in Carroll County may have a higher sand content in its B horizon as opposed to a Marlow soil (series) in Coos County; resulting in a slightly different K_{sat} range for the B horizon.

The K_{sat} data for this publication was obtained from the USDA-NRCS Soil Data Mart using the Typical Pedon from the county that best reflected the soil and/or had the most acres of that soil. This data is presented in B and C horizons only as it is assumed that the topsoil (A or A_p horizon) will be removed in typical construction practices.

References:

Web Soil Survey. *Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>.*

Soil Data Mart. <http://soildatamart.nrcs.usda.gov/>.

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.*

HYDROLOGIC SOIL GROUPS

Hydrologic group is a group of soils having the same runoff potential under similar storm and cover conditions.

Hydrologic groups are used in equations that estimate runoff from rainfall. These estimates are needed for solving hydrologic problems that arise in planning stormwater management, watershed protection, and flood-prevention projects and for planning or designing structures for the use, control, and disposal of water.

Classifications assigned to soils were based on the use of rainfall-runoff data from small watersheds and infiltrometer plots. From these data, relationships between soil properties and hydrologic groups were established. Assignment of soils to hydrologic groups is based on the relationship between soil properties and hydrologic groups. Wetness characteristics, permeability after prolonged wetting, and depth to very slowly permeable layers are properties that assist in estimating hydrologic groups. Minimum annual steady ponded infiltration rate for a bare ground surface determines the hydrologic soil groups.

Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. (The influence of ground cover is treated independently, not in hydrologic soil groups.).

The soils in the United States are placed into four groups, A, B, C, and D, and three dual classes, *A/D*, *B/D*, and *C/D*. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

Group A- Saturated hydraulic conductivity is very high or in the upper half of high and internal free water occurrence is very deep. Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Some soils having loamy sand, sandy loam, loam or silt loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group A are as follows. The saturated hydraulic conductivity of all soil layers exceeds 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer are in group A if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 10 micrometers per second (1.42 inches per hour).

Group B- Saturated hydraulic conductivity is in the lower half of high or in the upper half of moderately high and free water occurrence is deep or very deep. Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group B are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] ranges from 10.0 micrometers per second (1.42 inches per hour) to 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer or water table are in group B if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 4.0 micrometers per second (0.57 inches per hour) but is less than 10.0 micrometers per second (1.42 inches per hour).

Group C- Saturated hydraulic conductivity is in the lower half of moderately high or in the upper half of moderately low and internal free water occurrence is deeper than shallow. Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay and less than 50 percent sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group C are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] is between 1.0 micrometers per second (0.14 inches per hour) and 10.0 micrometers per second (1.42 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a restriction or water table are in group C if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 0.40 micrometers per second (0.06 inches per hour) but is less than 4.0 micrometers per second (0.57 inches per hour).

Group D- Saturated hydraulic conductivity is below the upper half of moderately low, and/or internal free water occurrence is shallow or very shallow and transitory through permanent. Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas, they also have high shrink-swell potential. All soils with a depth to a water impermeable layer less than 50 centimeters [20 inches] and all soils with a water table within 60 centimeters [24 inches] of the surface are in this group, although some may have a dual classification, as described in the next section, if they can be adequately drained. The limits on the physical diagnostic characteristics of group D are as follows. For soils with a water impermeable layer at a depth between 50 centimeters and 100 centimeters [20 and 40 inches], the saturated hydraulic conductivity in the least transmissive soil layer is less than or equal to 1.0 micrometers per second (0.14 inches per hour). For soils that are deeper than 100 centimeters [40 inches] to a restriction or water table, the saturated hydraulic

conductivity of all soil layers within 100 centimeters [40 inches] of the surface is less than or equal to 0.40 micrometers per second (0.06 inches per hour).

Dual hydrologic soil groups-Certain wet soils are placed in group D based solely on the presence of a water table within 60 centimeters [24 inches] of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. If these soils can be adequately drained, then they are assigned to dual hydrologic soil groups (*A/D*, *B/D*, and *C/D*) based on their saturated hydraulic conductivity and the water table depth when drained. The first letter applies to the drained condition and the second to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high water table is kept at least 60 centimeters [24 inches] below the surface in a soil where it would be higher in a natural state.

References:

National Engineering Handbook, Natural Resource Conservation Service, U.S. Department of Agriculture.

Soil Data Mart. <http://soildatamart.nrcs.usda.gov/>.

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 18.*

TABLE A

NUMERICAL LEGEND

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Lim	3	0.6	2.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Hadley	8	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Merrimac	10	2.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Gloucester	11	6.0	20.0	6.00	20.0	A	1	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Hinckley	12	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Colton, gravelly	21	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Colton	22	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Masardis	23	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Agawam	24	6.0	20.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Groveton	27	0.6	2.0	0.60	6.0	B	2	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Madawaska	28	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Hartland	31	0.6	2.0	0.20	2.0	B	2	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Boxford	32	0.1	0.2	0.00	0.2	C	3	Silt and Clay Deposits	mesic	fine	no	silty clay loam
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Champlain	35	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	gravelly sand	no	
Adams	36	6.0	20.0	20.00	99.0	A	1	Outwash and Stream Terraces	frigid	sandy	yes	
Melrose	37	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Eldridge	38	6.0	20.0	0.06	0.6	C	3	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Millis	39					C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Canton	42	2.0	6.0	6.00	20.0	B	2	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Montauk	44	0.6	6.0	0.06	0.6	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Henniker	46	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Madawaska, aquatic	48	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Hermon	55	2.0	20.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Becket	56	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Charlton	62	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Berkshire	72	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Marlow	76	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Hollis	86	0.6	6.0	0.60	6.0	C/D	4	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Chatfield	89	0.6	6.0	0.60	6.0	B	4	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Hogback	91	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Lyman	92	2.0	6.0	2.00	6.0	A/D	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Sunday	102	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Winooski	103	0.6	6.0	0.60	6.0	B	3	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Hadley	108	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand, occ flooded
Limerick	109	0.6	2.0	0.60	2.0	C	5	Flood Plain (Bottom Land)	mesic	silty	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Finch	116					C	3	Outwash and Stream Terraces	frigid	sandy	yes	cemented (ortstein)
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand
Telos	123	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Chesuncook	126	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Allagash	127	0.6	2.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy	yes	loamy over sandy
Elliottsville	128	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	20 to 40 in. deep
Hitchcock	130	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam to silt in C
Burnham	131	0.2	6.0	0.02	0.2	D	6	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	organic over silt
Dartmouth	132	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	thin strata silty clay loam
Monson	133	0.6	2.0	0.60	2.0	D	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	less than 20 in. deep
Maybid	134	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	mesic	fine	no	silt over clay
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Monadnock	142	0.6	2.0	2.00	6.0	B	2	Loose till, sandy textures	frigid	loamy over sandy, sandy-skeletal	yes	gravely loamy sand in C
Acton	146	2.0	20.0	2.00	20.0	B	3	Loose till, sandy textures	mesic	sandy-skeletal	no	cobbly loamy sand
Vassalboro	150					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Canterbury	166	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Sunapee	168	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	
Waskish	195					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Sunday	202	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Fryeburg	208	0.6	2.0	2.00	6.0	B	2	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Charles	209	0.6	100.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	silty	no	
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Boscawen	220	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	no	loamy cap
Bemis	224	0.6	0.2	0.00	0.2	C	5	Firm, platy, loamy till	crylic	loamy	no	
Bice	226	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	no	sandy loam
Lanesboro	228	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	channery silt loam in Cd
Podunk	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Buxton	232	0.1	0.6	0.00	0.2	C	3	Silt and Clay Deposits	frigid	fine	no	silty clay
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Biddeford	234	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	frigid	fine	no	organic over clay
Buckland	237	0.6	2.0	0.06	0.2	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Elmridge	238	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	loamy over clayey	no	
Brayton	240	0.6	2.0	0.06	0.6	C	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Lyme	246	0.6	6.0	0.60	6.0	C	5	Loose till, sandy textures	frigid	loamy	no	
Millsite	251	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	no	20 to 40 in. deep
Macomber	252	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Lombard	259	0.6	6.0	2.00	20.0	C/D	2	Weathered bedrock, phyllite	frigid	loamy	no	very channery
Sunapee var	269	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	frigid dystrodept
Chatfield Var.	289	0.6	6.0	0.60	6.0	B	3	Loose till, bedrock	mesic	loamy	no	mwd to swpd
Greenwood	295					A/D	6	Organic Materials - Freshwater	frigid	hemic	no	deep organic
Catden	296					A/D	6	Organic Materials - Freshwater	mesic	sapric	no	deep organic
Lovewell	307	0.6	2.0	0.60	2.0	B	3	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Deerfield	313	6.0	20.0	20.00	100.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	single grain in C

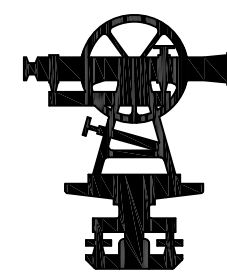
Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Mashpee	315	6.0	20.0	6.00	20.0	B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Bernardston	330	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Elmwood	338	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Cardigan	357	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	20 to 40 in. deep
Kearsarge	359	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	less than 20 in. deep
Dutchess	366	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	mesic	loamy	no	very channery
Dixfield	378	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Timakwa	393			6.00	100.0	D	6	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Chocorua	395			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Ipswich	397					D	6	Tidal Flat	mesic	hemic/sapric	no	deep organic
Suncook	402	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Metallak	404	6.0	100.0	6.00	100.0	B	3	Flood Plain (Bottom Land)	frigid	loamy over sandy	no	sandy or sandy-skeletal
Medomak	406	0.6	2.0	0.60	2.0	D	6	Flood Plain (Bottom Land)	frigid	silty	no	organic over silt
Haven	410	0.6	2.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Duane	413	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	cemented (ortstein)
Moosilauke	414	6.0	20.0	6.00	20.0	C	5	Loose till, sandy textures	frigid	sandy	no	
Grange	433	0.6	2.0	0.60	2.0	C	5	Outwash and Stream Terraces	frigid	co. loamy over sandy (skeletal)	no	
Swanton	438	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Chichester	442	0.6	2.0	2.00	6.0	B		Loose till, sandy textures	frigid	loamy over sandy	no	loamy over loamy sand
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Metacomet	458	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Gilmanton	478	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	fine sandy loam in Cd
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Abenaki	501	0.6	2.0	6.00	99.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy-skeletal	no	loamy over gravelly
Cohas	505	0.6	2.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	co. loamy over sandy (skeletal)	no	
Hoosic	510	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	slate, loamy cap
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Leicester	514	0.6	6.0	0.60	20.0	C	5	Loose till, loamy textures	mesic	loamy	no	
Au Gres	516					B	5	Outwash and Stream Terraces	frigid	sandy	yes	single grain, loose
Machias	520	2.0	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy or sandy-skeletal	yes	strata sand/gravel in C
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Caesar	526	20.0	100.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	coarse sand	no	
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Belgrade	532	0.6	2.0	0.06	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	strata of fine sand
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Binghamville	534	0.2	2.0	0.06	0.2	D	5	Terraces and glacial lake plains	mesic	silty	no	
Suffield	536	0.6	2.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Walpole	546	2.0	6.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	organic over loam
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Howland	566	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	silt loam, platy in Cd
Monarda	569	0.2	2.0	0.02	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Bangor	572	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Dixmont	578	0.6	2.0	0.60	2.0	C	3	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam, platy in C
Cabot	589	0.6	2.0	0.06	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Westbrook	597			0.00	2.0	D	6	Tidal Flat	mesic	loamy	no	organic over loam
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravely sandy loam in Cd
Croghan	613	20.0	100.0	20.00	100.0	B	3	Outwash and Stream Terraces	frigid	sandy	yes	single grain in C
Kinsman	614	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Salmon	630	0.6	2.0	0.60	2.0	B	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Canaan	663	2.0	20.0	2.00	20.0	C	4	Weathered Bedrock Till	frigid	loamy-skeletal	yes	less than 20 in. deep
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Surplus	669	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Glebe	671	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	cryic	loamy	yes	20 to 40 in. deep
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Ricker	674	2.0	6.0	2.00	6.0	A	4	Organic over bedrock (up to 4" of mineral)	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Houghtonville	795	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	cobbly fine sandy loam
Matunuck	797			20.00	100.0	D	6	Tidal Flat	mesic	sandy	no	organic over sand
Meadowsedge	894					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Bucksport	895					D	6	Organic Materials - Freshwater	frigid	sapric	no	deep organic
Colonel	927	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	loam in Cd
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Wonsqueak	995			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Glover	NA	0.6	2.0	0.60	2	D	4	Friable till, silty, schist & phyllite	frigid	loamy	no	less than 20 in. deep



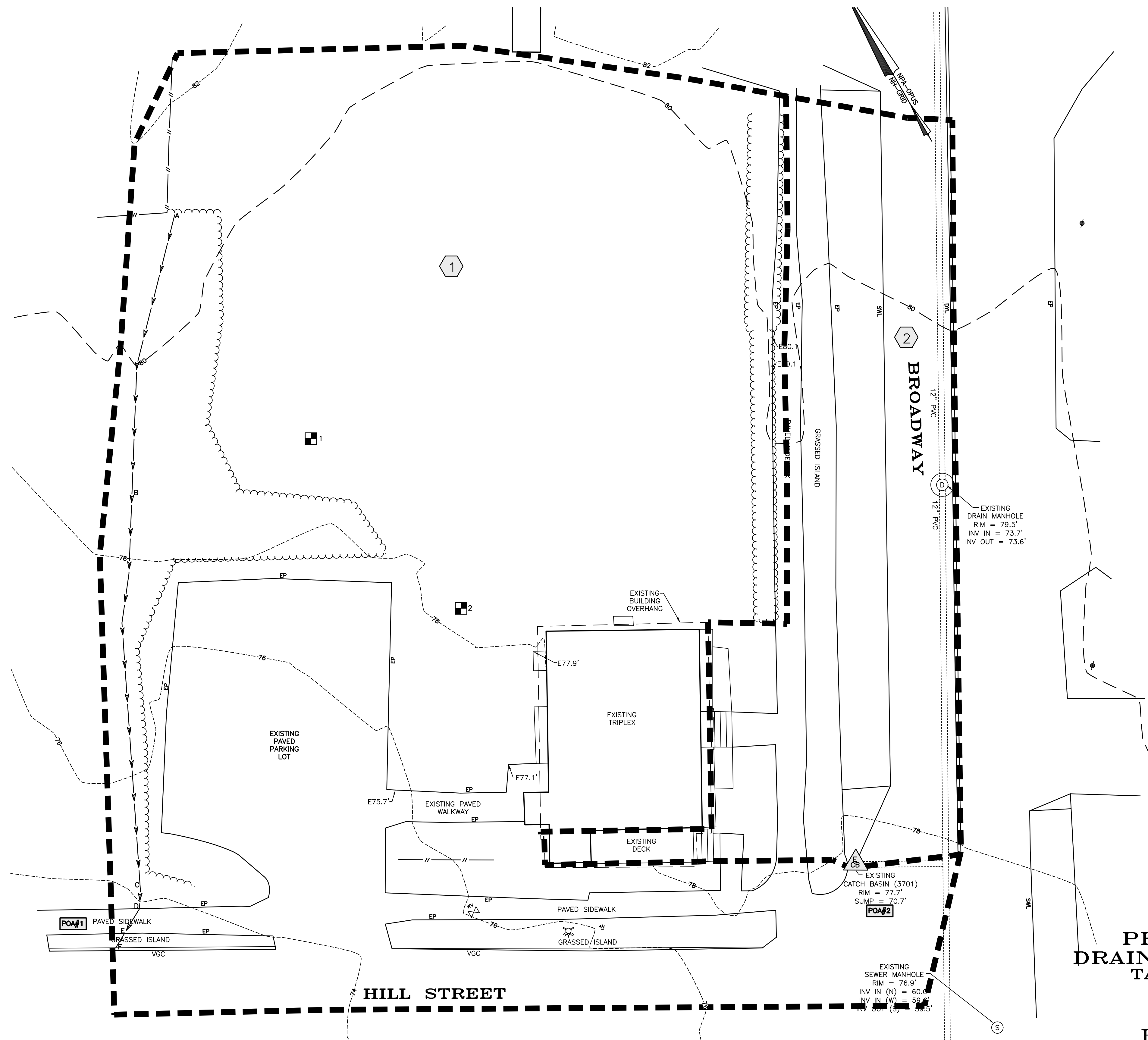
no longer recognized
organic materials

PLANS:
APPENDIX D-1 & D-2

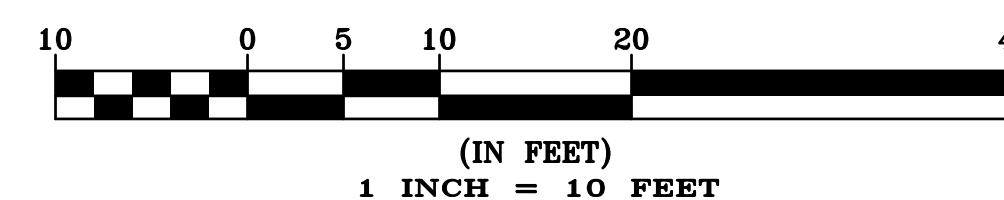


LEGEND

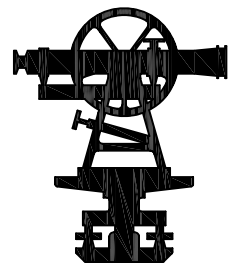
- EXISTING TREE LINE
- EXISTING DRAIN LINE
- EXISTING CONTOUR LINE (DATUM)
- EXISTING UTILITY POLE
- EXISTING TEST PIT
- SUBCATCHMENT BOUNDARIES
- SUBCATCHMENT DRAINAGE PATH
- SUBCATCHMENT AREA
- DRAINAGE BASINS OR CATCH BASINS
- DRAINAGE REACHES
- POINTS OF ANALYSIS



**PRE-DEVELOPMENT
DRAINAGE ANALYSIS PLAN**
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
 PREPARED FOR:
RYAN ESCHBACH
 APRIL 2026
 GRAPHIC SCALE

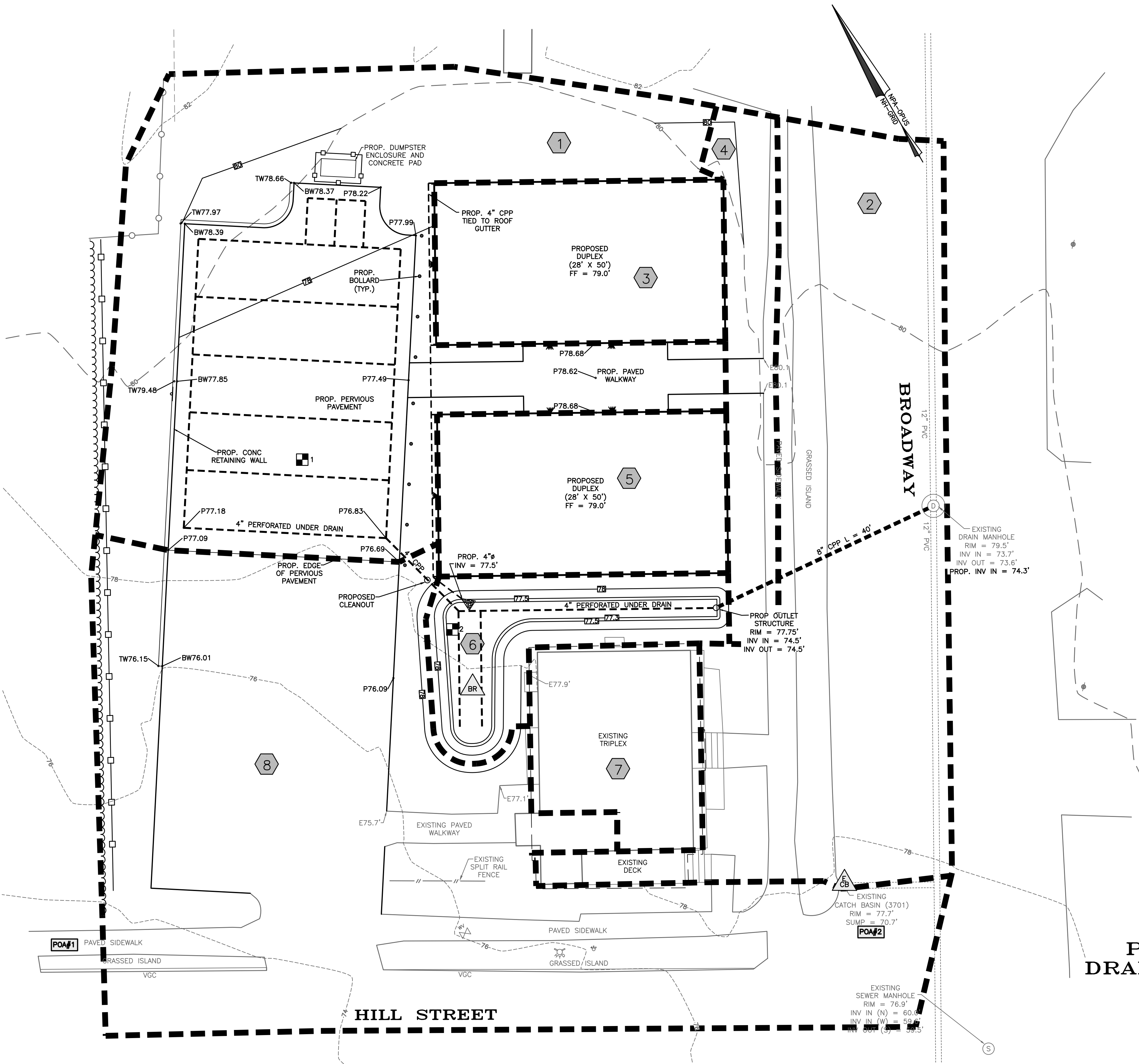


FILE NO. 537
 PLAN NO. C-3792
 DWG. NO. 25321/SP-1

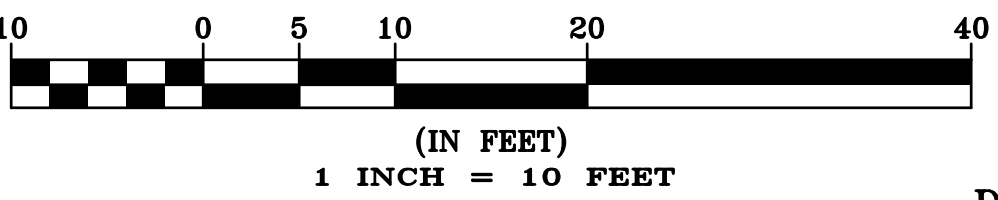


LEGEND

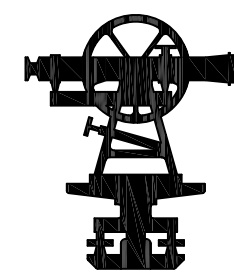
- EXISTING TREE LINE
- EXISTING DRAIN LINE
- EXISTING CONTOUR LINE
- EXISTING TEST PIT
- PROPOSED TREE LINE
- PROPOSED DRAIN LINE
- PROPOSED CONTOUR LINE
- PROPOSED OUTLET STRUCTURE
- SUBCATCHMENT BOUNDARIES
- SUBCATCHMENT DRAINAGE PATH
- SUBCATCHMENT AREA
- DRAINAGE BASINS OR CATCH BASINS
- DRAINAGE REACHES
- POINTS OF ANALYSIS



POST-DEVELOPMENT
DRAINAGE ANALYSIS PLAN
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026
GRAPHIC SCALE

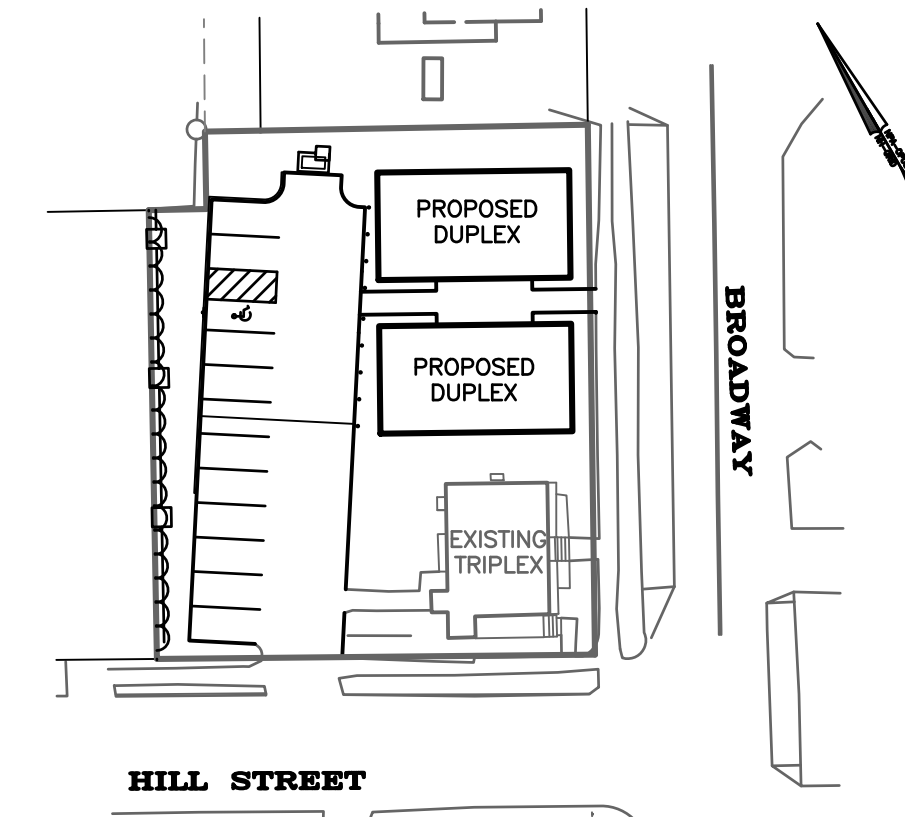
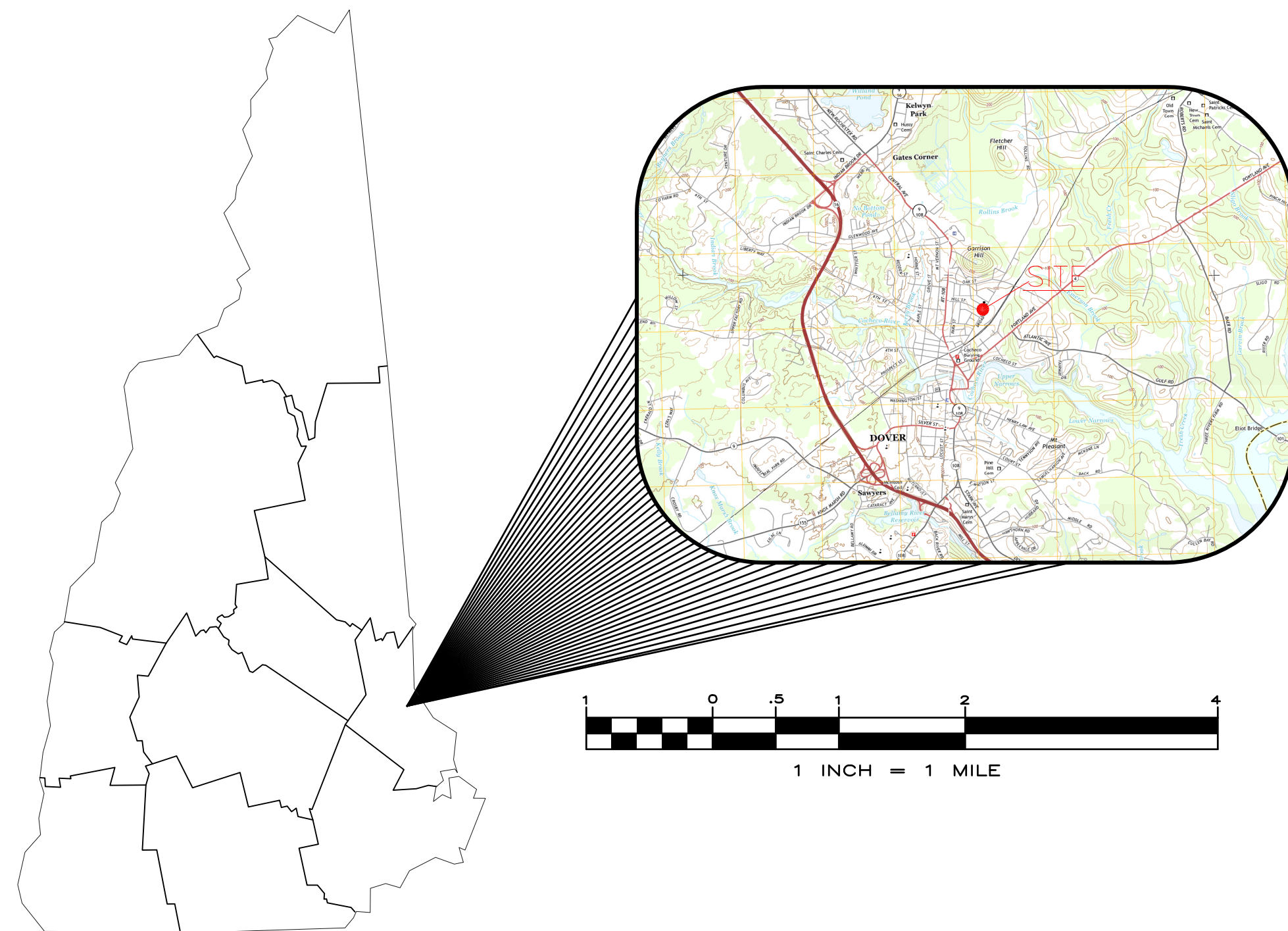


FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1



96 BROADWAY
96 BROADWAY, DOVER, NH
TAX MAP 27, LOT 169

PREPARED FOR
96 BROADWAY LLC: RYAN ESCHBACH
APRIL 2026



OVERALL SITE
1" = 50'



CIVIL ENGINEERS

NORWAY PLAINS ASSOCIATES, INC.
2 CONTINENTAL BOULEVARD
ROCHESTER, NEW HAMPSHIRE 03867
(603) 335-3948

LANDSCAPING ARCHITECTS

SEA LAUREL LANDSCAPE ARCHITECTURE
VICTORIA MARTEL
150 BLACKBERRY HILL ROAD
BERWICK, ME 03901
VICKY@SEALAUREL.COM
(207) 599-6517

ARCHITECTS

LASSEL ARCHITECTS
SARAH HOURIHANE, AIA LEED AP
370 MAIN STREET
SOUTH BERWICK, ME 03908
(207) 384-2049

OWNER OF RECORD

TAX MAP 27, LOT 169
96 BROADWAY LLC
US ROUTE 1, APT 1C
YORK, ME 03909
SCRD BOOK 5339, PAGE 197

APPLICANT

RYAN ESCHBACH
96 BROADWAY LLC
US ROUTE 1, APT 1C
YORK, ME 03909
(248) 225-6538

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO ENSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

STATE AND FEDERAL PERMITS:

STATE OF NEW HAMPSHIRE PERMIT NUMBERS:

NHDES ALTERATION OF TERRAIN:	NOT REQUIRED
NHDES WETLANDS PERMIT:	NOT REQUIRED
NHDES DAM PERMIT:	NOT REQUIRED
NHDES SUBDIVISION PERMIT:	NOT REQUIRED
NHDES SUBSURFACE SYSTEMS PERMIT:	NOT REQUIRED
NHDES WASTEWATER PERMIT:	REQUIRED
NHDOT DRIVEWAY/ENTRANCE PERMIT:	NOT REQUIRED

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):

NPDES PERMITS ARE ONLY REQUIRED FOR PROJECTS MEETING THE DISTURBED AREA CRITERIA BELOW AND HAVING A POINT SOURCE STORMWATER DISCHARGE FROM THE SITE TO AN ADJACENT WETLAND OR WATER BODY (I.E. CULVERT, SWALE, ETC. OUTLETING TO A WETLAND, CREEK, STREAM OR RIVER).

NPDES PERMIT: NOT REQUIRED

NPDES PERMITS CONSIST OF A NOTICE OF INTENT (NOI) FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY AT LEAST 14 DAYS PRIOR TO CONSTRUCTION COMMENCING AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BEING PREPARED, KEPT ON SITE AND FOLLOWED BY THE CONTRACTOR.

FOR STATUS OF THIS PERMIT, CONTACT THE PROJECT GENERAL CONTRACTOR.

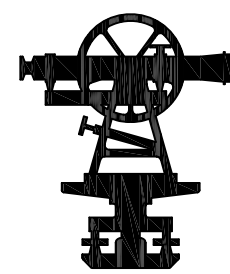
FINAL APPROVAL BY
DOVER PLANNING BOARD

SHEET INDEX

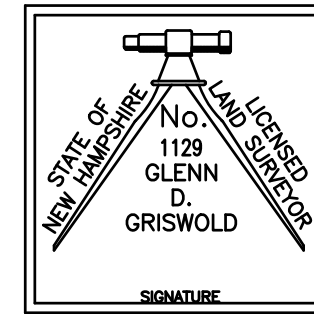
COVER	PLAN OF LAND	1" = 10'
SHEET S-1	EXISTING FEATURES	1" = 10'
SHEET E-1	OVERALL SITE PLAN	1" = 10'
SHEET C-1	GRADING AND DRAINAGE PLAN	1" = 10'
SHEET C-2	UTILITY PLAN	1" = 10'
SHEET C-3	CONSTRUCTION DETAILS	AS SHOWN
SHEET C-4	DRAINAGE DETAILS	AS SHOWN
SHEET C-5	UTILITY DETAILS	AS SHOWN
SHEET C-6	SEWER DETAILS	AS SHOWN
SHEET C-7	SEWER PLAN & PROFILE	AS SHOWN
SHEET C-8	TEMPORARY EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-9	PERMANENT EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-10	SITE LANDSCAPING PLAN	1" = 10'
SHEET L-1	LIGHTING PLAN AND DETAILS	1" = 10'
SHEET L-2		

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1

LAND SURVEYORS



CIVIL ENGINEERS



- LEGEND**
- PROPERTY LINE
 - EXISTING TREE LINE
 - EXISTING CHAIN LINK FENCE
 - EXISTING CONTOUR LINE (NAVD88)
 - EXISTING DRAIN LINE
 - EXISTING OVERHEAD WIRES
 - EXISTING WATER LINE
 - EXISTING SEWER LINE
 - EXISTING GAS LINE
 - EXISTING UTILITY POLE
 - EXISTING CATCH BASIN
 - EXISTING SEWER MANHOLE
 - EXISTING MONUMENT
 - EXISTING HYDRANT
 - EXISTING WATER GATE OR SHUT-OFF VALVE
 - EXISTING TEST PIT LOCATION & NUMBER

TAX MAP 27, LOT 170
CHANGXING LIN & LING YANG
4 CAPTAIN PARKER DRIVE
LEE, NH 03861

RBCF (+2")
BENT
S 72°28'04" W
1.04' TO CORNER

RBF (+2")
BENT
S 34°51'41" E
2.11' TO CORNER

TAX MAP 27, LOT 171
ROBERT C CARRIER, TRUSTEE
4 FLORENCE STREET
DOVER, NH 03820

TAX MAP 27, LOT 168
DANIELLE & TYLER SHERMAN
5 HILL STREET
DOVER, NH 03820

TAX MAP 27, LOT 169
93 LEBANON STREET LLC
4 US ROUTE 1, UNIT 1C
YORK, ME 03909

- PLAN REFERENCES:**
- "MAP OF PROPERTY IN DOVER NH OWNED BY ALPHONSO A CHENEY"
DATED OCTOBER 1897 BY WILLIAM G. OODEN, CE
RECORDED: SCRD POCKET 4, FOLDER 5, PLAN 44
 - "PLAN OF LOTS, ROBERT E. PRYOR, DOVER NH"
DATED NOVEMBER 1960 BY G.L. DAVIS & ASSOCIATES
RECORDED: SCRD BOOK 726, PAGE 77
 - "SITE PLAN OF 13-13 1/2 HILL STREET, PREPARED FOR 13 HILL ST, LLC"
DATED MARCH 2002 BY MACNEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN BOOK 65, PAGE 50
 - "LOT LINE ADJUSTMENT PLAN PREPARED FOR SANDRA G. NEVINS, 17-19 HILL STREET, DOVER, NH"
DATED JANUARY 2020 BY MACNEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN NO. 12073
 - "MINOR SUBDIVISION OF LAND PREPARED FOR THOMAS & EVELYN K. BACKOWIES"
DATED MAY 2020 BY MACNEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN 12207

FILE NO. 537
PLAN NO. C-3792
DWC. NO. 25321/SP-1

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

FINAL APPROVAL BY
DOVER PLANNING BOARD

CERTIFIED BY: _____ DATE: _____

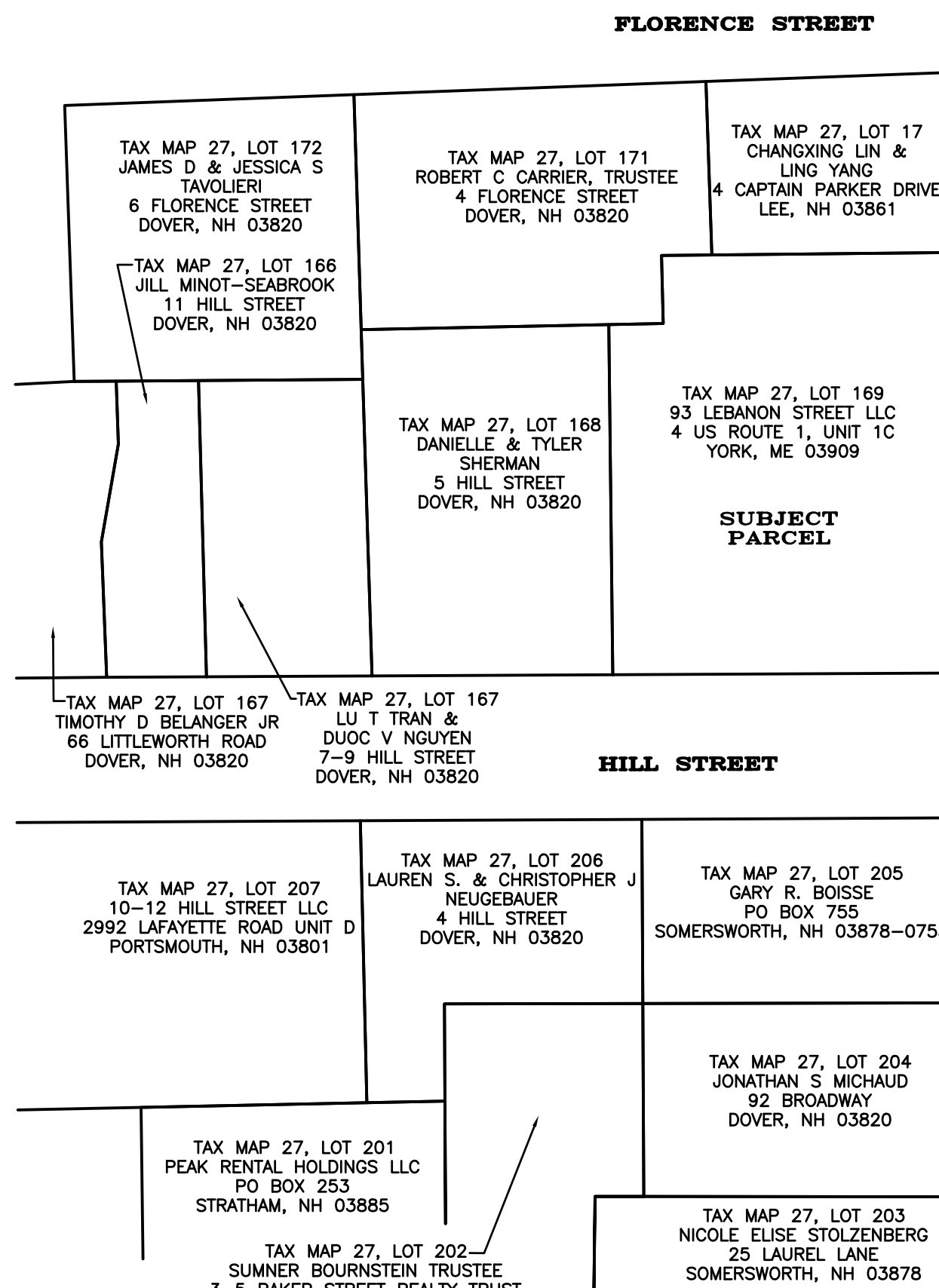
- GENERAL SITE PLAN NOTES**
- THE PARCEL IS SHOWN AS LOT NO. 169, MAP 27 ON THE CITY OF DOVER TAX ASSESSOR'S MAPS.
 - THIS PARCEL IS LOCATED IN THE GATEWAY DISTRICT.
 - TOTAL PARCEL AREA: 15,429 SQUARE FEET OR 0.35 ACRES.
 - THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING FEATURES ON THE LOT.
 - ALL EXISTING UTILITIES LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATION PRIOR TO ANY WORK BEING PERFORMED.
 - TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK 5339, PAGE 197.
 - THESE PLANS SHOW THE EXISTING CONDITIONS AS APPARENT AT THE TIME OF SURVEY. FIELDWORK WAS PERFORMED JANUARY-MARCH, 2026.
 - DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:
GATEWAY DISTRICT:
MINIMUM LOT AREA/DWELLING UNIT = 4,000 SF
MINIMUM LOT AREA = N/A
FRONT PRIMARY BUILD TO LINE = 5 FEET MIN. - 20 FEET MAX
FRONT SECONDARY BUILD TO LINE = 5 FEET MIN. - 20 FEET MAX
FRONTAGE BUILD-OUT = 60%
MINIMUM YARD SETBACKS:
SIDE = 10 FEET
REAR = 15 FEET
MAXIMUM LOT COVERAGE = 50%
MAXIMUM BUILDING HEIGHT = 4 STORY
(ULTIMATE CERTIFICATION AND VERIFICATION OF THE ZONE DESIGNATION AND APPLICABLE LOCATION OF BUILDING SETBACK REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE ZONING OFFICER IN THE SUBJECT MUNICIPALITY.)
ORIENTATION: HORIZONTAL: NH STATE PLANE NAD83(2011)
VERTICAL DATUMS NAVD88(GEOD18A)
PARCEL IS NOT LOCATED WITHIN ZONE A (100YR FLOOD) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY MAP, COMMUNITY #33017C0330E DATED SEPTEMBER 30, 2015.

TEST PIT INFORMATION
TEST PITS CONDUCTED ON JANUARY 23, 2026 BY:
ASHLEY F. ROWE, DESIGNER OF SUBSURFACE DISPOSAL SYSTEMS 1857

TEST PIT 1
0" - 2" LOAM TOPSOIL.
2" - 27" VERY FINE SANDY LOAM, GRANULAR, FRIABLE. REDOXIMORPHIC CONCENTRATIONS COMMON BELOW 23", SHWT AT 23".
27" - 47" VERY FINE SILTY LOAM, GRANULAR, FRIABLE. RESTRICTIVE FEATURE/LEDGE OR LARGE BOULDER AT 47".
SHWT AT 23", RESTRICTIVE FEATURE AT 47", NO OBSERVED WATER.

TEST PIT 2
0" - 8" LOAM TOPSOIL.
8" - 40" VERY FINE SANDY LOAM, GRANULAR, FRIABLE. REDOXIMORPHIC CONCENTRATIONS COMMON BELOW 23", SHWT AT 23".
40" - 62" VERY FINE SILTY LOAM, GRANULAR, FRIABLE. REFUSAL AT 62" DUE TO LEDGE OR LARGE BOULDER.
SHWT AT 23", REFUSAL AT 62", NO OBSERVED WATER.

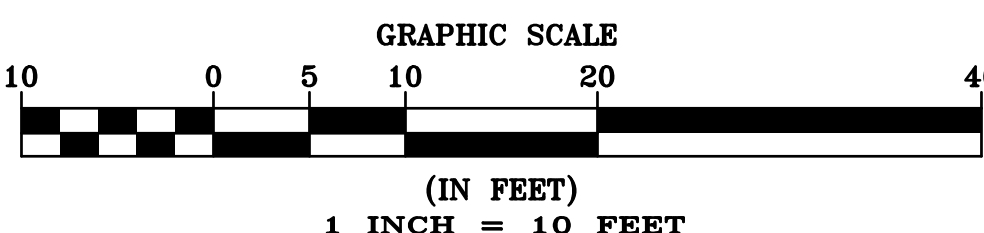
TAX MAP 27, LOT 182 STEPHANIE SPEIRS & JAMIESON 1308 CONSTITUTION AVE NE WASHINGTON, DC 20002	TAX MAP 27, LOT 183 SILAS S GORDON 1 FLORENCE STREET DOVER, NH 03820	TAX MAP 27, LOT 184 WILLIAM J KOTTAGE III 106 & 108 BROADWAY DOVER, NH 03820
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NEIGHBORHOOD MAP
1 INCH = 50 FEET

TAX MAP 27, LOT 169
96 BROADWAY LLC
US ROUTE 1, APT 1C
YORK, ME 03909
SCRD BOOK 5339, PAGE 197

EXISTING FEATURES PLAN
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026

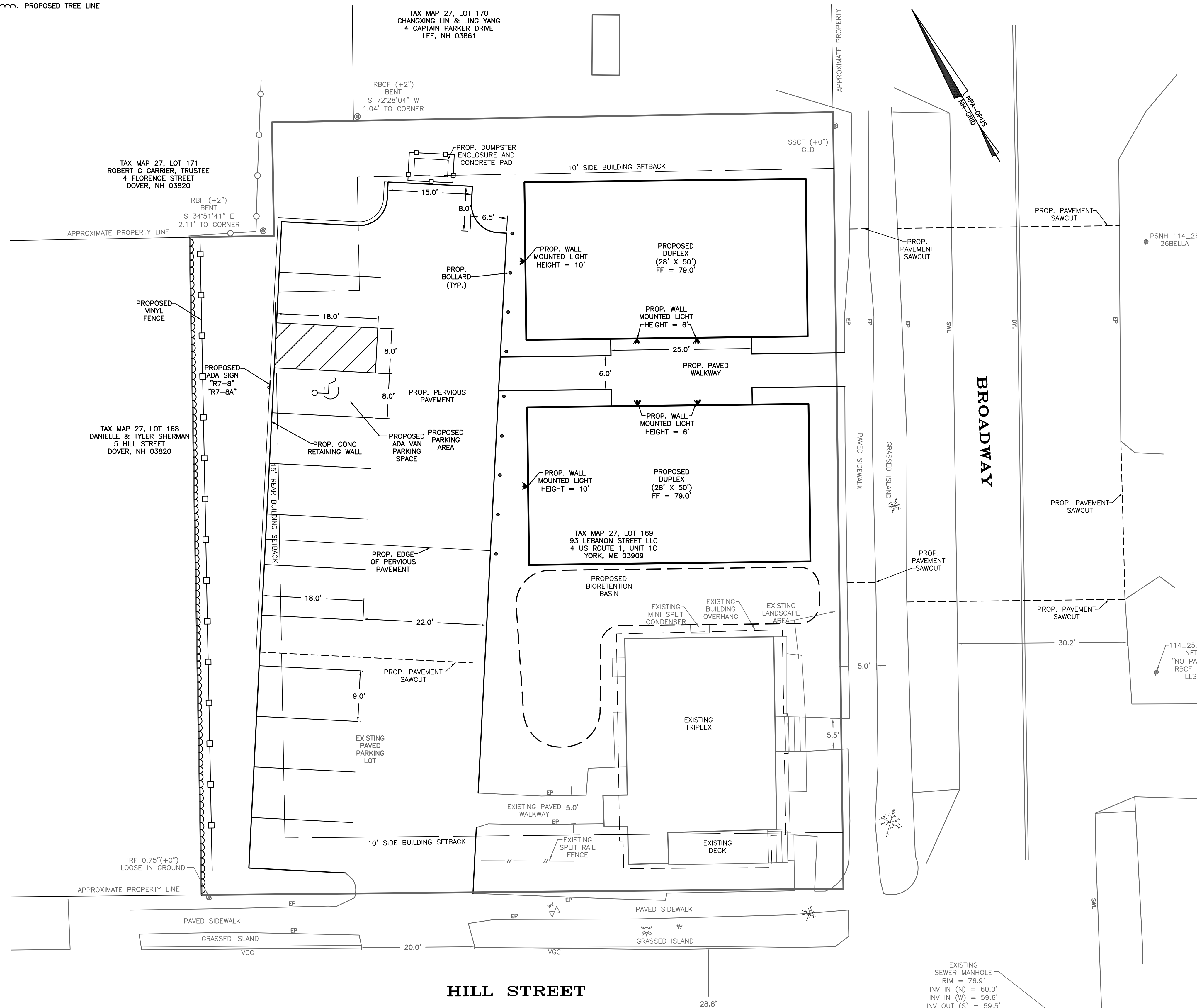
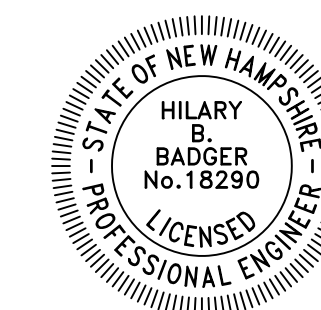
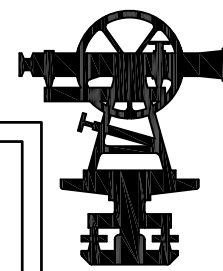


2 Continental Blvd., Rochester, N.H. 603-335-3948

LEGEND

- N 90°00'00" E
1.38'
PROPERTY LINE
EXISTING TREE LINE
EXISTING OVERHEAD WIRES
EXISTING UTILITY POLE
PROPOSED BUILDING
PROPOSED PAVEMENT
PROPOSED TREE LINE

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.



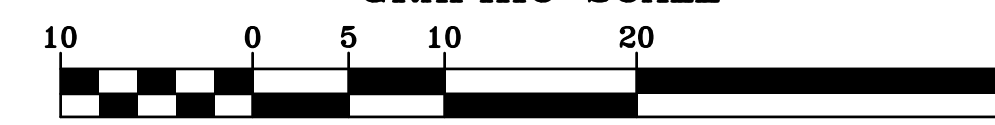
- GENERAL SITE PLAN NOTES
- THIS PARCEL IS LOCATED IN THE GATEWAY DISTRICT.
 - TOTAL PARCEL AREA: 15,429 SQUARE FEET OR 0.35 ACRES.
 - THE PURPOSE OF THIS PLAN IS TO DEPICT TWO PROPOSED DUPLEXES AND ASSOCIATED PARKING ON THE LOT. LOCATION PRIOR TO ANY WORK BEING PERFORMED.
 - ALL EXISTING UTILITIES LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATION PRIOR TO ANY WORK BEING PERFORMED.
 - THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
 - PROJECT PLAN REFERENCES: ARE NOTED ON THIS SHEET AND E-1.
 - DIMENSIONAL REGULATIONS PER ZONING ORDINANCE: GATEWAY DISTRICT:
 - MINIMUM LOT AREA/DWELLING UNIT = 4,000 SF
 - MINIMUM LOT AREA = N/A
 - FRONT PRIMARY BUILD TO LINE = 5 FT. MIN. - 20 FT. MAX
 - FRONT SECONDARY BUILD TO LINE = 5 FT. MIN. - 20 FT. MAX
 - FRONTAGE BUILD-OUT = 60%
 - MINIMUM YARD SETBACKS:
 - SIDE = 10 FT.
 - REAR = 15 FT.
 - MAXIMUM LOT COVERAGE = 50%
 - MAXIMUM BUILDING HEIGHT = 4 STORY(ULTIMATE CERTIFICATION AND VERIFICATION OF THE ZONE DESIGNATION AND APPLICABLE LOCATION OF BUILDING SETBACK REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE ZONING OFFICER IN THE SUBJECT MUNICIPALITY.)
- ORIENTATION: HORIZONTAL: NH STATE PLANE NAD83(2011)
- PARCEL IS NOT LOCATED WITHIN ZONE A (100YR FLOOD) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY MAP, COMMUNITY #3301700330E DATED SEPTEMBER 30, 2015.
- SOIL TYPES ARE PER NATURAL RESOURCES CONSERVATION SERVICE, CUSTOM SOIL RESOURCE REPORT FOR STRAFFORD COUNTY, NEW HAMPSHIRE.
- BzB - BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES
- FOR MORE INFORMATION ABOUT THIS SITE PLAN, CONTACT THE CITY OF DOVER PLANNING DEPARTMENT, 288 CENTRAL AVENUE, DOVER, NH 03820. (603) 516-6008.
- PARKING REQUIREMENTS (SITE PLAN REGULATIONS; 153-14):
- RESIDENTIAL USE:
- 1.25 SPACE PER DWELLING UNIT + 0.4 VISITOR SPACE PER UNIT
- 7 UNITS X 1.25 SPACES + 7 UNITS X 0.4 SPACES = 11.55 SPACES
- TOTAL REQUIRED SPACES = 12 SPACES
- TOTAL PROVIDED SPACES = 12 SPACES
- ACCESSIBLE PARKING:
- THE SPACES ARE PART OF THE TOTAL ABOVE.
- ACCESSIBLE PARKING SPACES : 0 TO 25 = 1 SPACE
- TOTAL PROVIDED SPACES = 1 SPACE
- THIS DEVELOPMENT MUST BE IN COMPLIANCE WITH ALL APPLICABLE LAW - INCLUDING ALL PERTINENT PROVISIONS OF THE CITY OF DOVER SITE PLAN REGULATIONS - UNLESS OTHERWISE WAIVED.
- ACCESS INTO THE SITE FOR FIRE APPARATUS MUST BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PROCESS. THIS IS THE SOLE RESPONSIBILITY OF THE APPLICANT/DEVELOPER TO MAINTAIN THIS ACCESS. PLEASE CONTACT THE FIRE DEPARTMENT AT 603-516-1448 WITH ANY QUESTIONS ABOUT ACCESS REQUIREMENTS.
- SNOW SHALL NOT BE PILED IN SUCH A MANNER AS TO BLOCK THE VISIBILITY OF THE VEHICLES ON HILL STREET AND ALL EXCESS SNOW SHALL BE REMOVED FROM THE SITE.
- ALL OUTSIDE CONSTRUCTION ACTIVITY RELATED TO THE DEVELOPMENT OF THIS SITE IS RESTRICTED TO THE HOURS OF 7:00 A.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY AND 9:00 A.M. TO 4:00 P.M. SATURDAY AND SUNDAY. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
- THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
- 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.
- A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
- A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
- THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURES WILL BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS (IE IBC ANSI-117.1) AND NH RSA 155-A:5.
- 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 FOR MAINTENANCE.
- A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
- APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR WATER LINES.
- AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND DWG, DXF OR AN ESR FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
- EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
- TOPOGRAPHIC SURVEY PERFORMED BY NORWAY PLAINS ASSOCIATES, INC. JANUARY-MARCH 2026.
- THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: ARE LISTED ON THE COVER SHEET OF THIS PLAN SET.

PLAN REFERENCES:

- "MAP OF PROPERTY IN DOVER NH OWNED BY ALPHONSO A CHENEY"
DATED OCTOBER 1897 BY WILLIAM G. OGDEN, CE
RECORDED: SCRD POCKET 4, FOLDER 5, PLAN 44
- "PLAN OF LOTS, ROBERT E. PRYOR, DOVER NH"
DATED NOVEMBER 1960 BY G.L. DAVIS & ASSOCIATES
RECORDED: SCRD BOOK 726, PAGE 77
- "SITE PLAN OF 13-13 1/2 HILL STREET, PREPARED FOR 13 HILL ST, LLC"
DATED MARCH 2002 BY MACENEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN BOOK 65, PAGE 50
- "LOT LINE ADJUSTMENT PLAN PREPARED FOR SANDRA G. NEVINS, 17-19 HILL STREET, DOVER, NH"
DATED JANUARY 2020 BY MACENEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN NO. 12073
- "MINOR SUBDIVISION OF LAND PREPARED FOR THOMAS & EVELYN K. BACKOWIES"
DATED MAY 2020 BY MACENEANEY SURVEY ASSOCIATES, INC.
RECORDED: SCRD PLAN 12207

TAX MAP 27, LOT 169
96 BROADWAY LLC
US ROUTE 1, APT 1C
YORK, ME 03909
SCRD BOOK 5339, PAGE 197
OVERALL SITE PLAN
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026

GRAPHIC SCALE



(IN FEET)

1 INCH = 10 FEET

FINAL APPROVAL BY
DOVER PLANNING BOARD

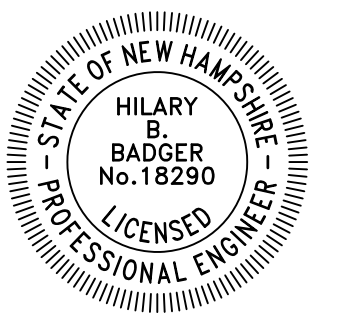
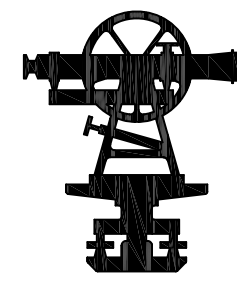
CERTIFIED BY: _____ DATE: _____

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1

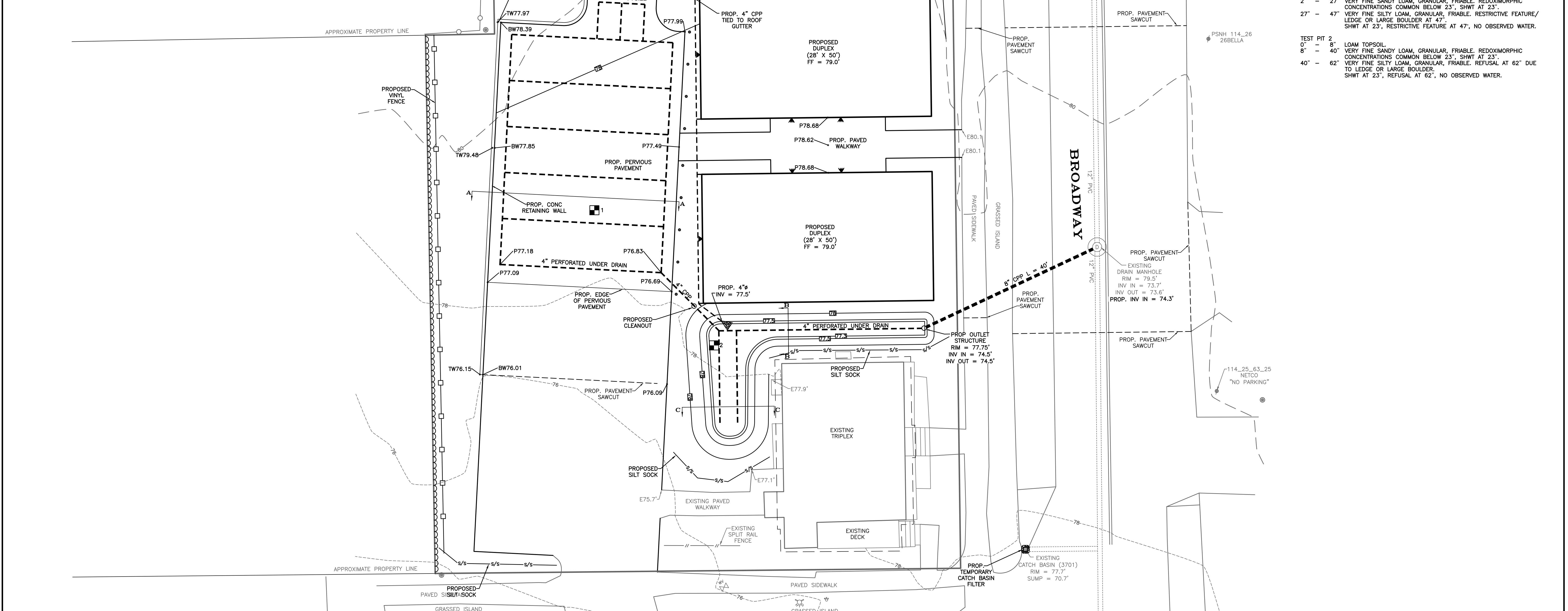
31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

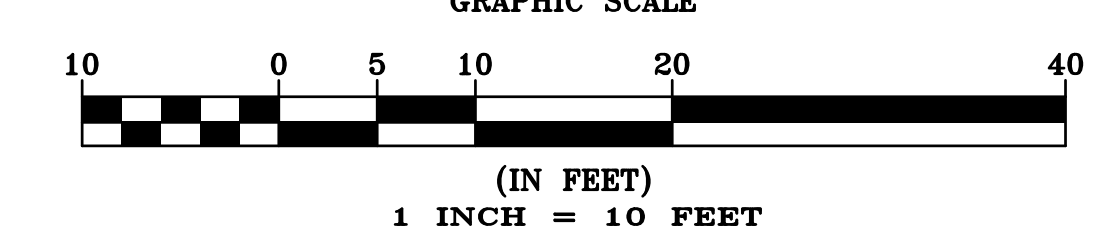
2 Continental Blvd., Rochester, N.H. 603-335-3948



- LEGEND**
- N 90°00'00" E 1.38' PROPERTY LINE
 - EXISTING TREE LINE
 - EXISTING DRAIN LINE
 - EXISTING CONTOUR LINE (NAVD88)
 - EXISTING TEST PIT
 - E78.1' EXISTING SPOT GRADE
 - P77.25' PROPOSED SPOT GRADE
 - PROPOSED TREE LINE
 - PROPOSED DRAIN LINE
 - PROPOSED CONTOUR LINE
 - S/S PROPOSED SILT SOCK
 - PROPOSED OUTLET STRUCTURE
 - CPP CORRUGATED POLYETHYLENE PIPE
 - CB CATCH BASIN
 - TW TOP OF RETAINING WALL
 - BW BASE OF RETAINING WALL
 - PROPOSED TEMPORARY CATCH BASIN FILTERS

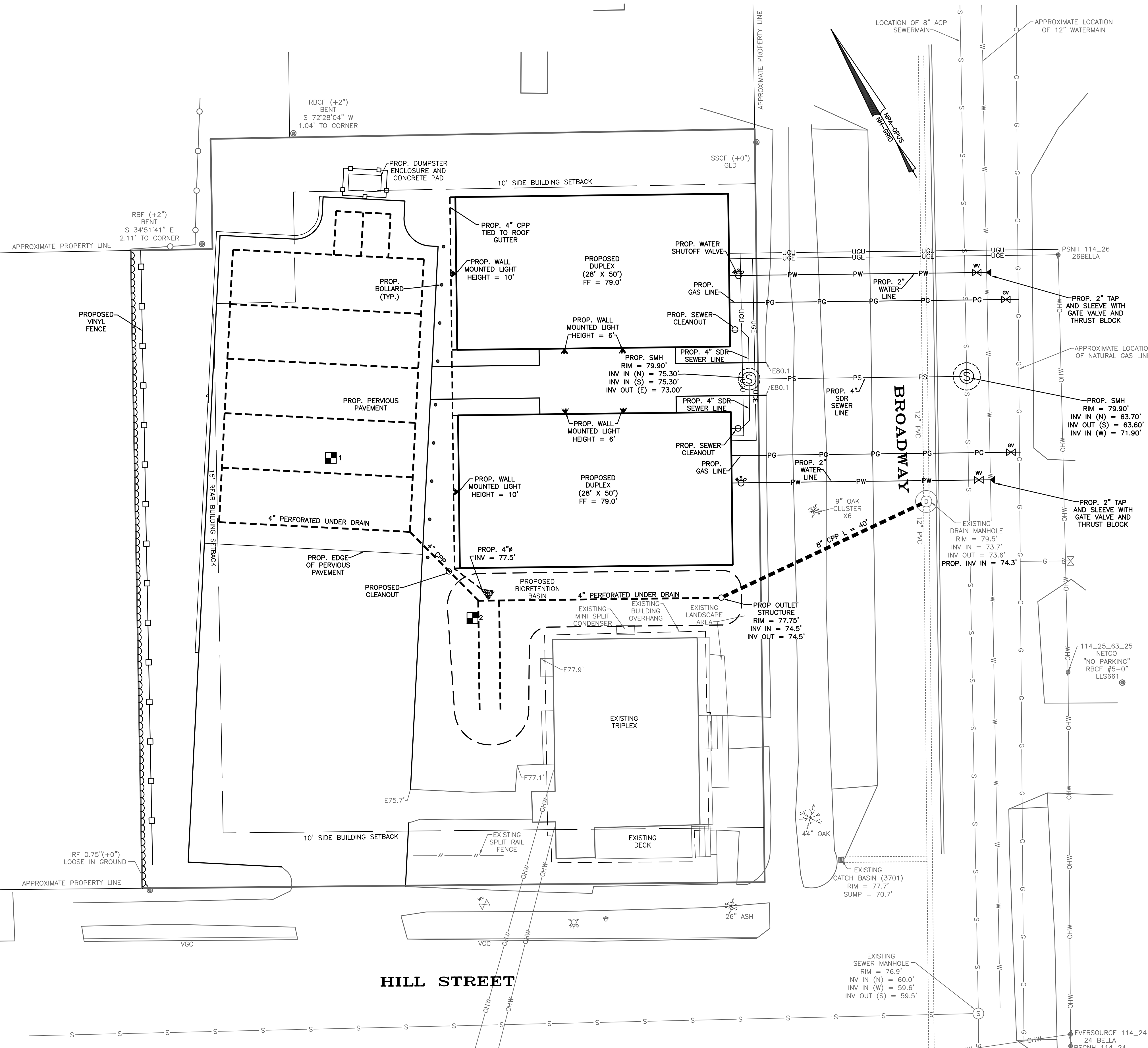


GRADING & DRAINAGE PLAN
 TAX MAP 27, LOT 169
 96 BROADWAY
 DOVER, NH
 PREPARED FOR:
RYAN ESCHBACH
 APRIL 2026
 GRAPHIC SCALE



FILE NO. 537
 PLAN NO. C-3792
 DWG. NO. 25321/SP-1

PROPERTY LINE



GRAPHIC SCALE

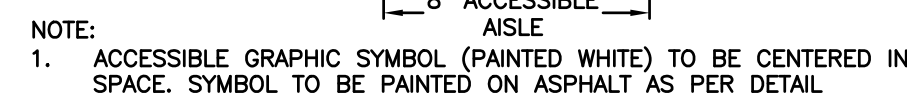
(IN FEET)
1 INCH = 10 FEET

NORWAY PLAINS ASSOCIATES, INC.

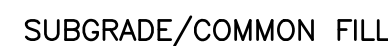
-3



SCALE: 1/2"=1'



NOT TO SCALE



NOT TO SCALE

- PAVEMENT NOTES:**
1. PLACE COMMON FILL IN 12 INCH LIFTS. COMPACT COMMON FILL TO 95% MAXIMUM PROCTOR DENSITY.
 2. PLACE GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
 3. PLACE CRUSHED GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
 4. PAVEMENT MUST BE INSTALLED IN TWO COURSES, A BINDER COURSE AND A WEARING COURSE.

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.



NOT TO SCALE

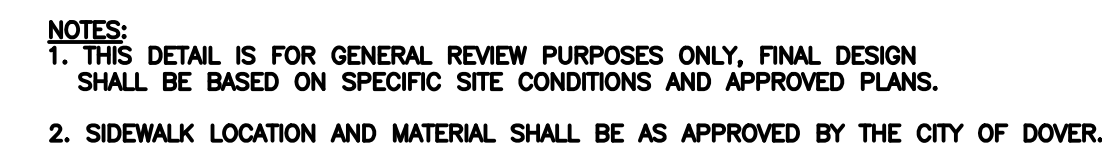
1. SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED.
2. INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
3. PLACE BINDER COURSE.
4. GRIND OR SAWCUT EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
5. TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.



- NOTES:**
1. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS SPECIFICATIONS.
 2. SIDEWALK AND DRIVEWAY WIDTHS SHALL BE EQUAL TO EXISTING WIDTHS OR AS APPROVED AND SHALL SLOPE TO MATCH EXISTING ELEVATIONS.
 3. BASE FOR THE SIDEWALKS AND DRIVEWAYS SHALL BE 9-INCHES OF CRUSHED GRAVEL.

NOT TO SCALE

CITY OF DOVER DETAIL D-6



NOT TO SCALE

CITY OF DOVER DETAIL D-5



NOT TO SCALE



NOT TO SCALE

NOTES:
1. ALL SIGNS SHALL BE PER "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

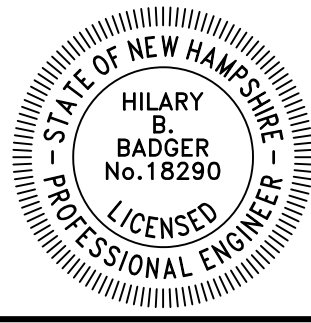
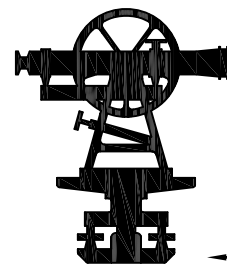
← R7-8 (TYP.)

AASHTO APPROVED
U. CHANNEL POST

- NOTES:**
1. SIGN POST SHALL BE AASHTO APPROVED U-CHANNEL OR OTHER PER AASHTO "SPECIFICATIONS FOR STRUCTURAL SUPPORT OF HIGHWAY SIGNS, LUMINARIES AND SIGNALS", LATEST EDITION.
 2. SIGNS SHALL BE MOUNTED 5 FT FROM GROUND TO BOTTOM EDGE WHERE PARKING AND PARKING LOT MOVEMENTS TAKE PLACE.

NOT TO SCALE

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1

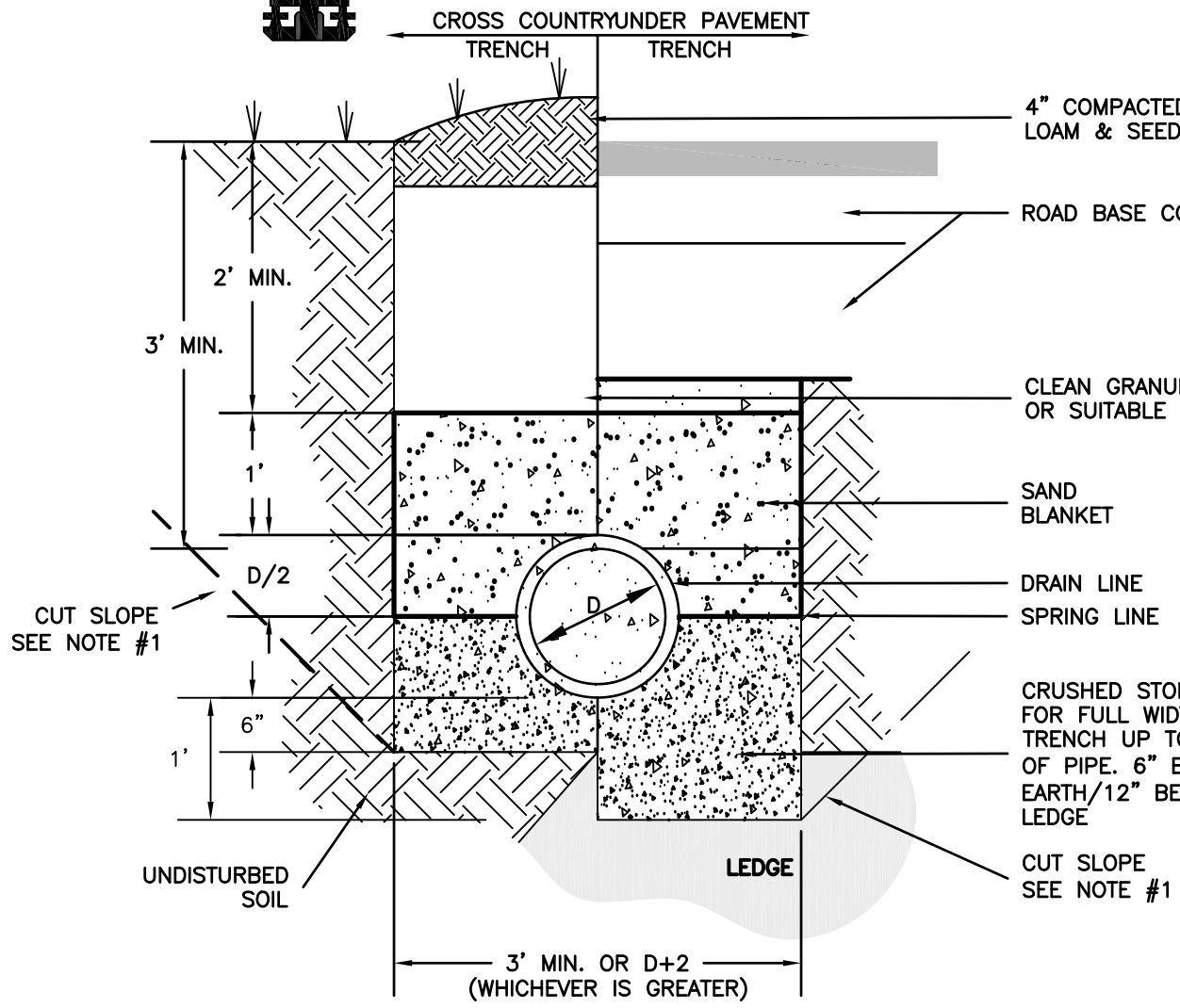


BIORETENTION BASIN NOTES

- VEGETATED RESIDENTIAL BIORETENTION BASIN CONSTRUCTION AND MAINTENANCE NOTES:
- DO NOT PLACE BIORETENTION SYSTEM INTO SERVICE UNTIL THE PLANTS HAS BEEN PLANTED AND THE ADJACENT AREAS ARE FULLY ESTABLISHED.
 - SYSTEM SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENTS EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION AS WARRANTED BY SUCH INSPECTION.
 - TRASH AND DEBRIS SHOULD BE REMOVED AT EACH INSPECTION.
 - AT LEAST ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF THE BIORETENTION BASIN DOES NOT DRAIN WITHIN 72 HOUR FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITIONS OF THE GARDEN TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION, INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
 - VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

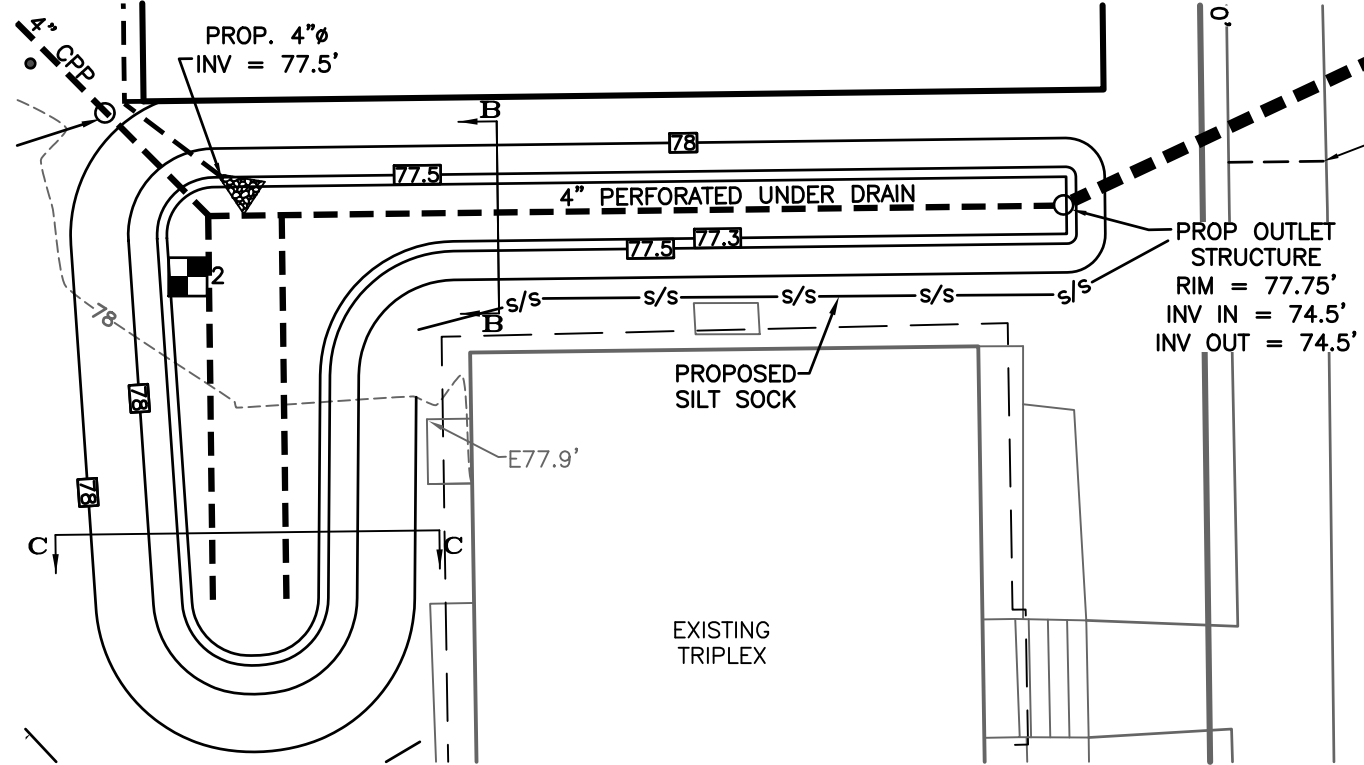
SUGGESTED PLANTINGS (SHADY RAIN GARDEN)
PLANTS WITHIN THE WETTER CENTER OF THE GARDEN:
WOODY SHRUBS:
VERNAL WITCH HAZEL; 6-10'H x 6-10"W
NATIVE RHODODENDRON; 1-3'H x 1-3"W
LABRADOR TEA; 1-3'H x 1-3"W
WINTERBERRY; 6-8'H x 6-8"W
PERENNIALS:
ROYAL FERN; 2-5'H x 2-5"W
NATIVE COLOMBINE; 1-2'H x 1-2"W
SENSITIVE FERN; 2'H x 18"W
CARDINAL FLOWERS; 2-4'H x 1"W
PLANTS WITHIN THE DRYER OUTER EDGE OF THE GARDEN:
WOODY SHRUBS:
SWEETFERN; 2-4'H x 2-4"W
BEARBERRY; 6-12" x 1-2"W
PERENNIALS:
WILD GERANIUM; 1-2'H x 2'W

COMPONENT MATERIAL	BIORETENTION FILTER MEDIA		GRADATION OF MATERIAL	
	PERCENT OF MIXTURE BY VOLUME	SIEVE NO.	PERCENT BY WEIGHT	PASSING STANDARD SIEVE
FILTER MEDIA OPTION A				
ASTM C-33 CONCRETE SAND	50 TO 55			
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25	
MODERATELY FINE SHREDDY BARK OR WOOD FIBERS MULCH, WITH FINES AS INDICATED	20 TO 30	200	< 5	
FILTER MEDIA OPTION B				
MODERATELY FINE SHREDDY BARK OR WOOD FIBERS MULCH, WITH FINES AS INDICATED	20 TO 30	200	< 5	
LOAMY COURSE SAND	70 TO 80	10	85 TO 100	
		20	70 TO 100	
		60	15 TO 40	
		200	8 TO 15	

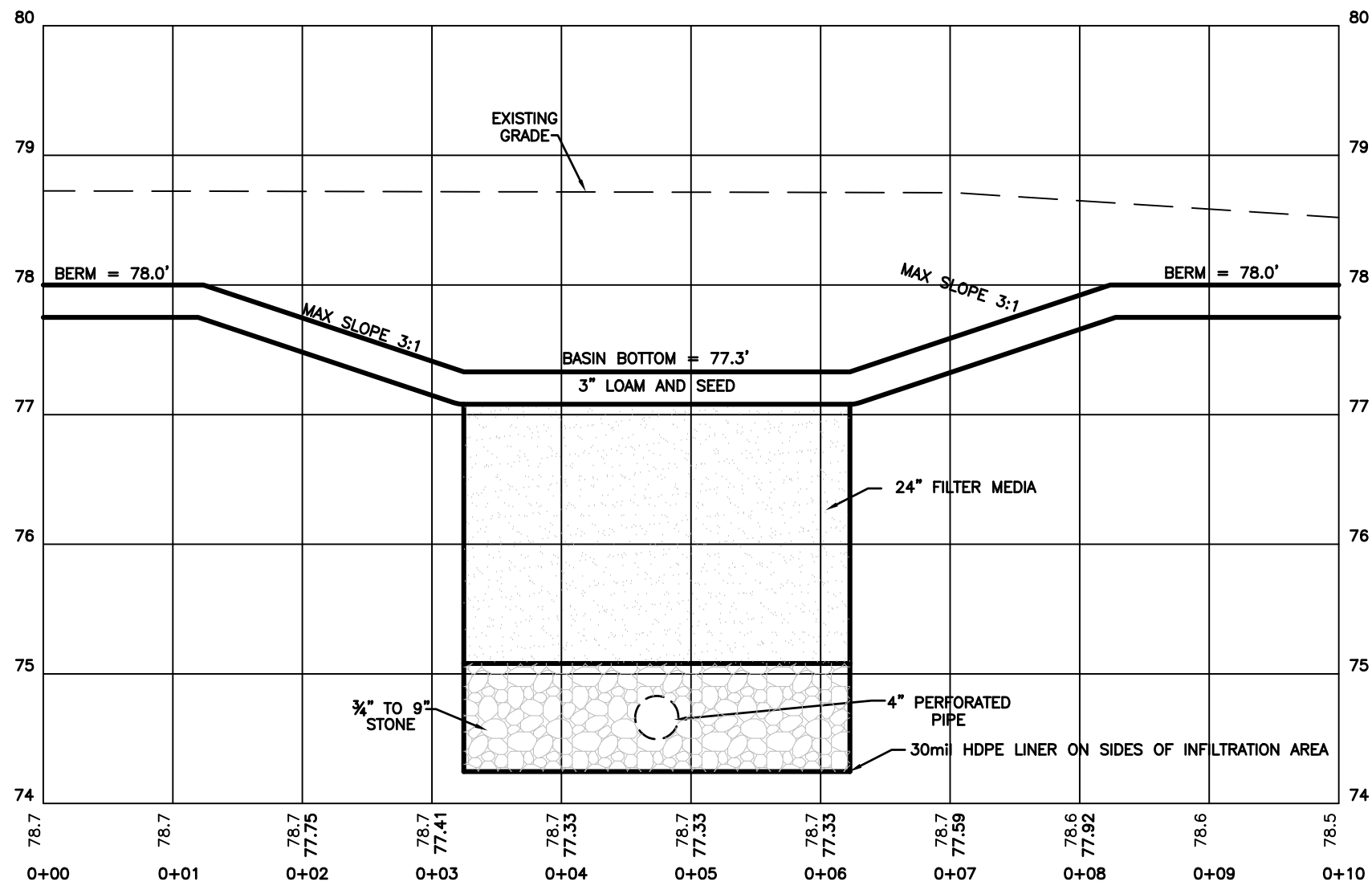


- NOTES:
- PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.
 - PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
 - SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

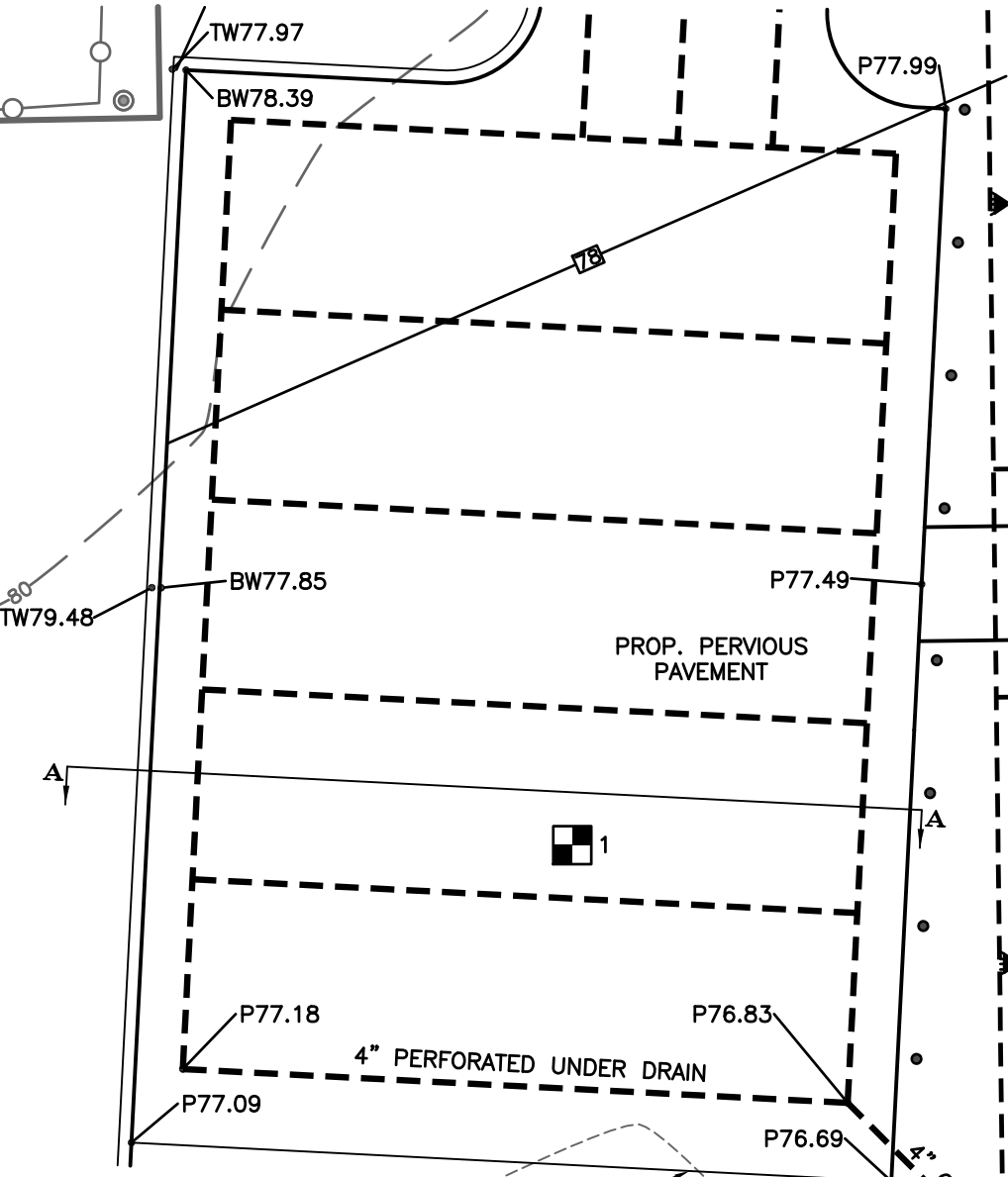
DRAINAGE PIPE TRENCH INSTALLATION DETAIL
NOT TO SCALE



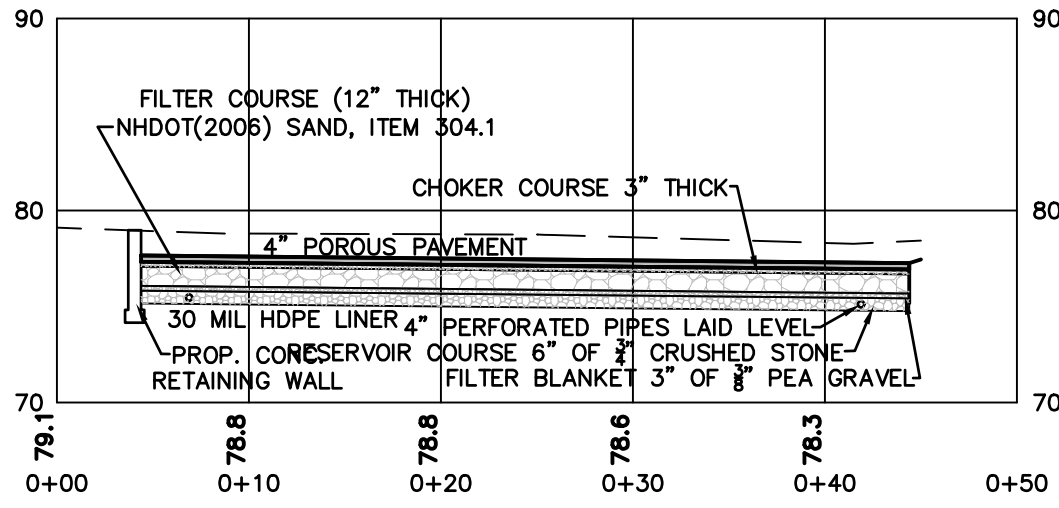
BIORETENTION BASIN PLAN VIEW
1" = 10'



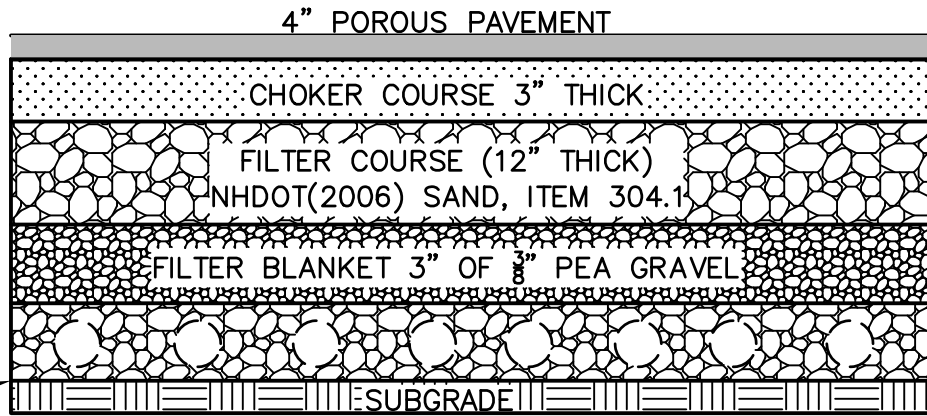
CROSS SECTION B-B
VERTICAL SCALE 1" = 1'
HORIZONTAL SCALE 1" = 1'



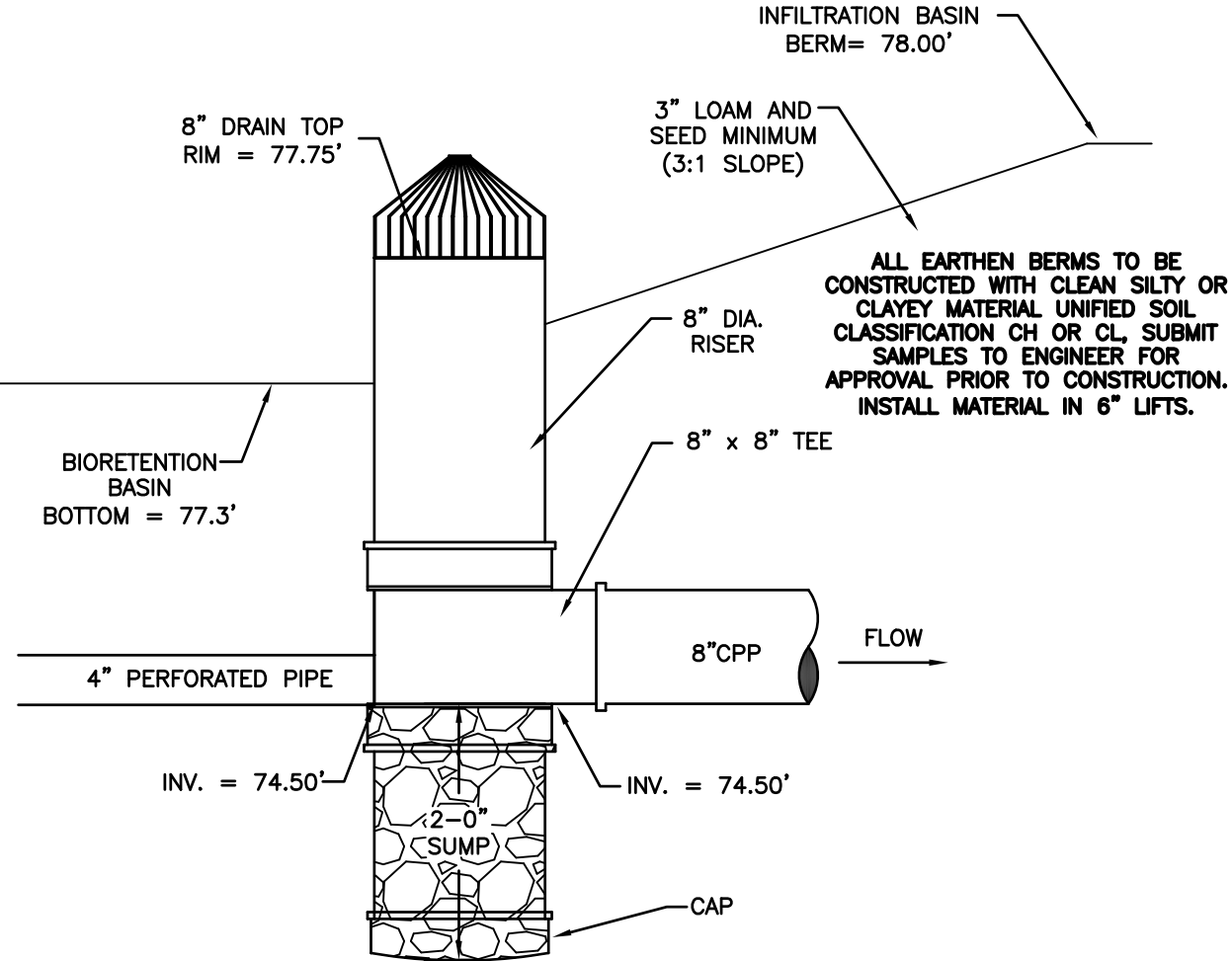
PLAN VIEW
1" = 10'



CROSS SECTION A-A
VERTICAL SCALE 1" = 10'
HORIZONTAL SCALE 1" = 10'



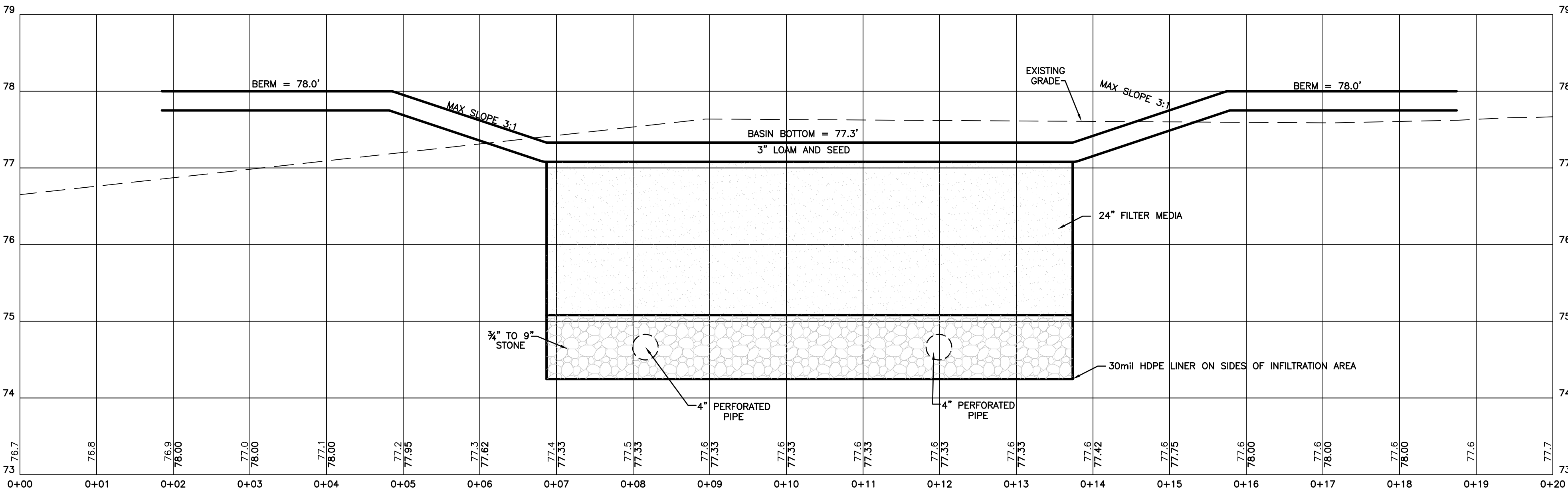
BIORETENTION BASIN OUTLET STANDPIPE DETAIL
NOT TO SCALE



POROUS ASPHALT MIX DESIGN CRITERIA***	
US STANDARD SIEVE SIZE INCHES / MM	PERCENT PASSING (%)
0.75 / 19	100
0.50 / 12.5	85-100
0.375 / 9.5	55-75
No.4 / 4.75	10-25
No.8 / 2.36	5-12
No.200 / 0.075 (#200)	2-4
BINDER CONTENT (AASHTO T164)	5.8-6.5
AIR VOID CONTENT (ASTM D6752)	16.0-22%
BRANDOWN (ASTM D6390)*	<0.3%
RETAINED TENSILE STRENGTH (AASHTO 283)**	>80%
CANTABRO ABRASION TEST ON UNAGED SAMPLE	<20%
CANTABRO ABRASION TEST ON 7 DAY AGE SAMPLES	<30%

GRADATION & COMPACTION OF CHOKER, FILTER & RESERVOIR COURSE MATERIAL			
US STANDARD SIEVE SIZE INCHES / MM	CHOKER COURSE (AASHTO No. 57)	FILTER COURSE (MODIFIED NHDOT 304.1)	RESERVOIR COURSE (AASHTO No. 3)
6 / 150	-	100	-
2.5 / 63	-	-	-
2 / 50	-	-	90-100
1.5 / 37.5	100	-	35-70
1 / 25	95-100	-	0-15
3 / 19	-	-	-
1 / 12.5	25-60	-	0-5
3 / 9.5	-	-	-
#4 / 4.75	0-10	70-100	70-100
#5 / 2.36	0-5	-	-
#200 / 0.075	0-5	0-6**	-
COMPACTION			
ASTM D698	95	95	
AASHTO 199			

*PREFERABLY LESS THAN 4%
CONSTRUCTION AND QA/QC REQUIREMENTS FOR THE POROUS ASPHALT MIX SHALL BE IN ACCORDANCE WITH THE UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS, FEBRUARY 2014, REVISION SEPTEMBER 2016

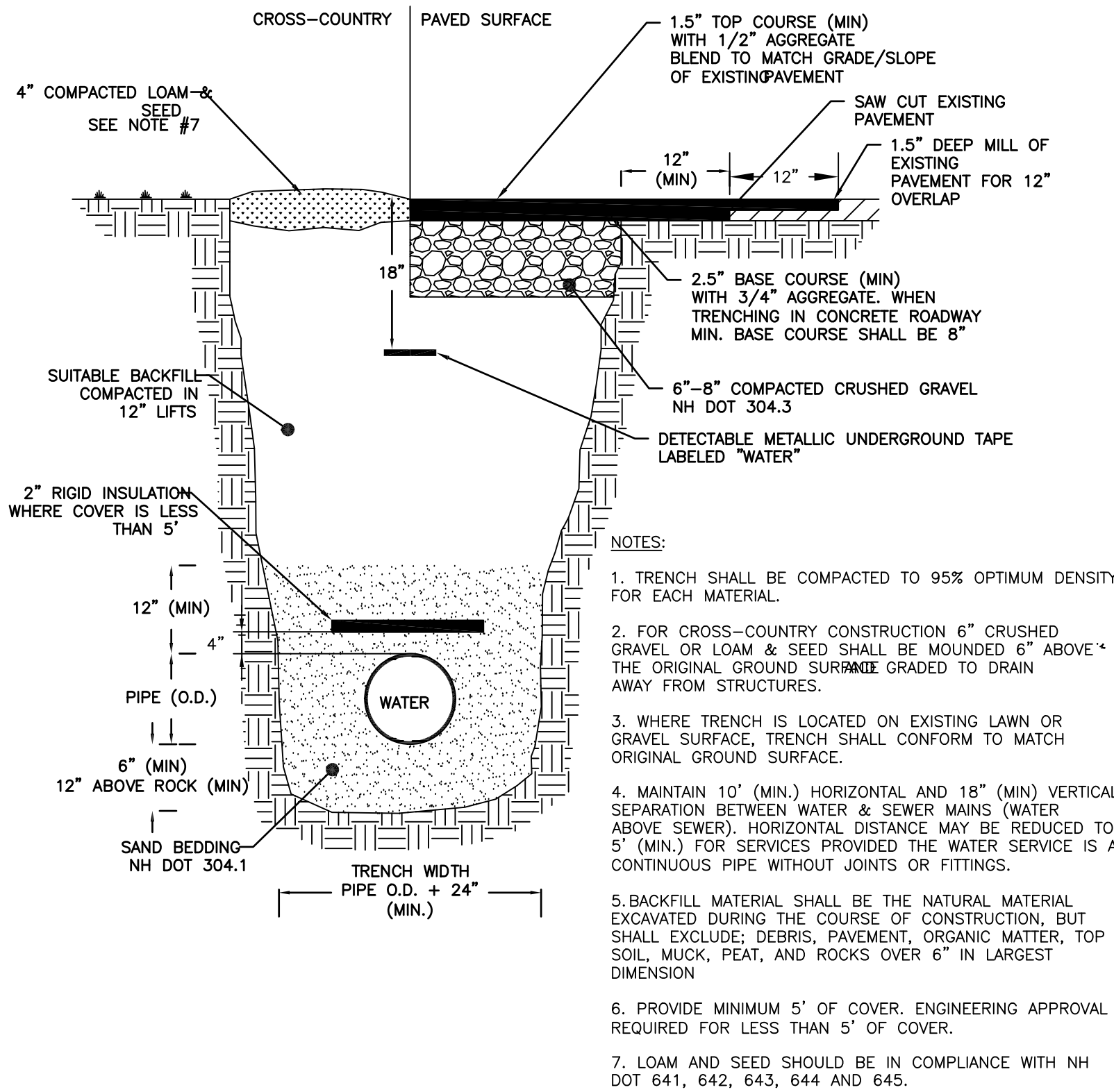
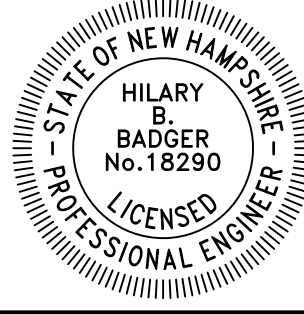
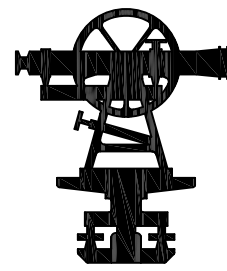


CROSS SECTION C-C
VERTICAL SCALE 1" = 10'
HORIZONTAL SCALE 1" = 10'

DRAINAGE DETAILS
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2028

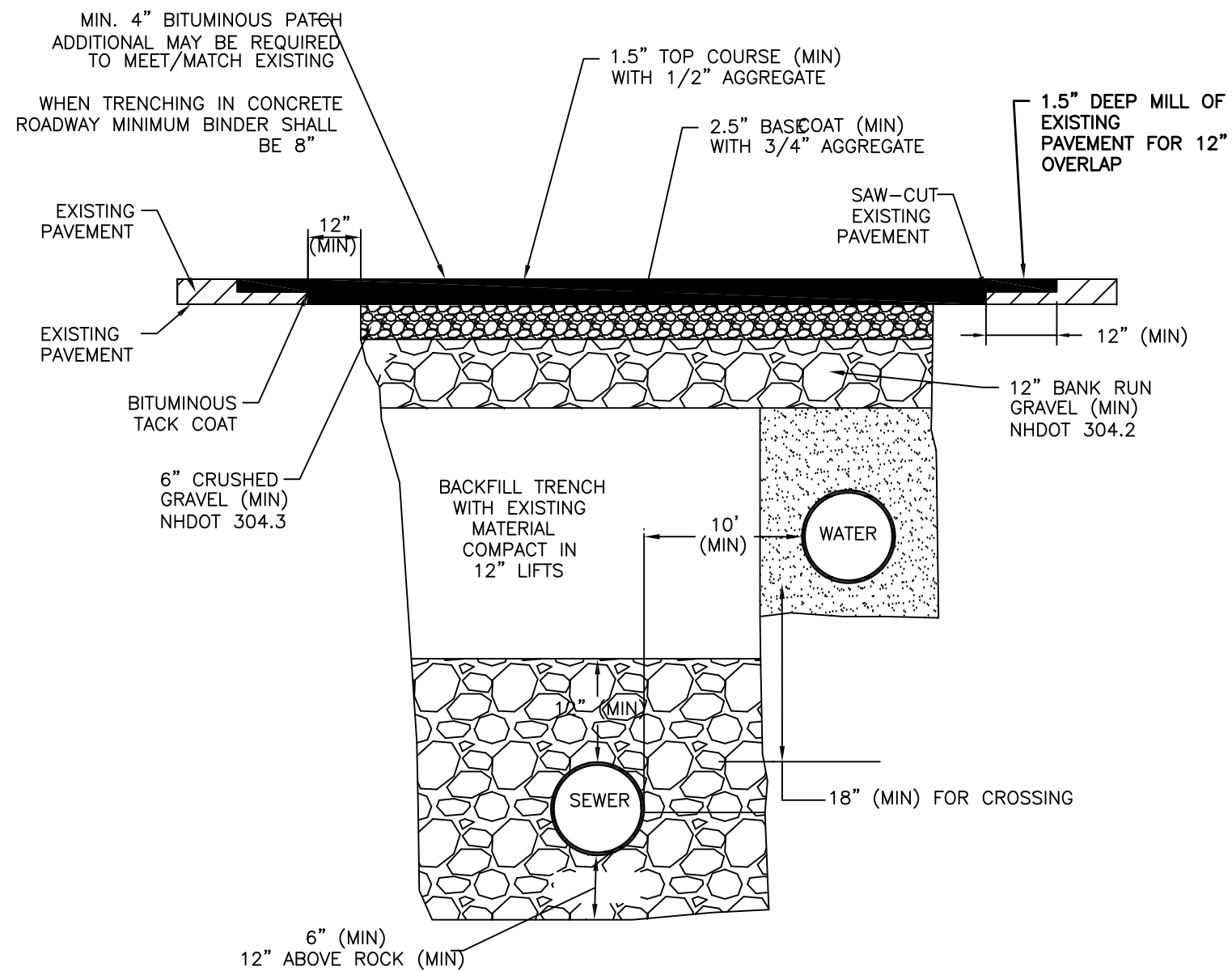
CROSS-SECTION FOR POROUS ASHALT PAVEMENT
NOT TO SCALE

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1



WATER TRENCH DETAIL

NOT TO SCALE
CITY OF DOVER DETAIL D-4



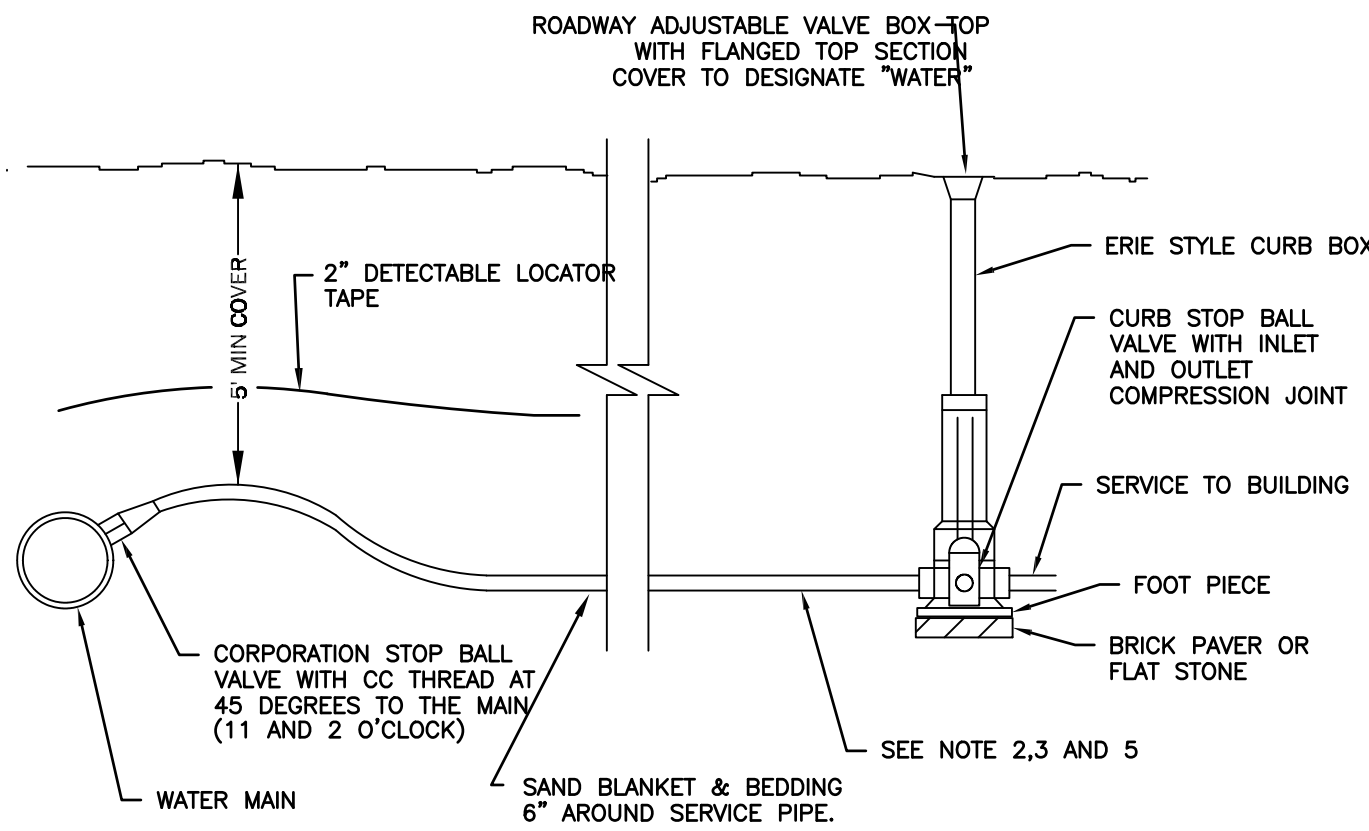
TYPICAL TRENCH DETAIL

NOT TO SCALE
CITY OF DOVER DETAIL D-10

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

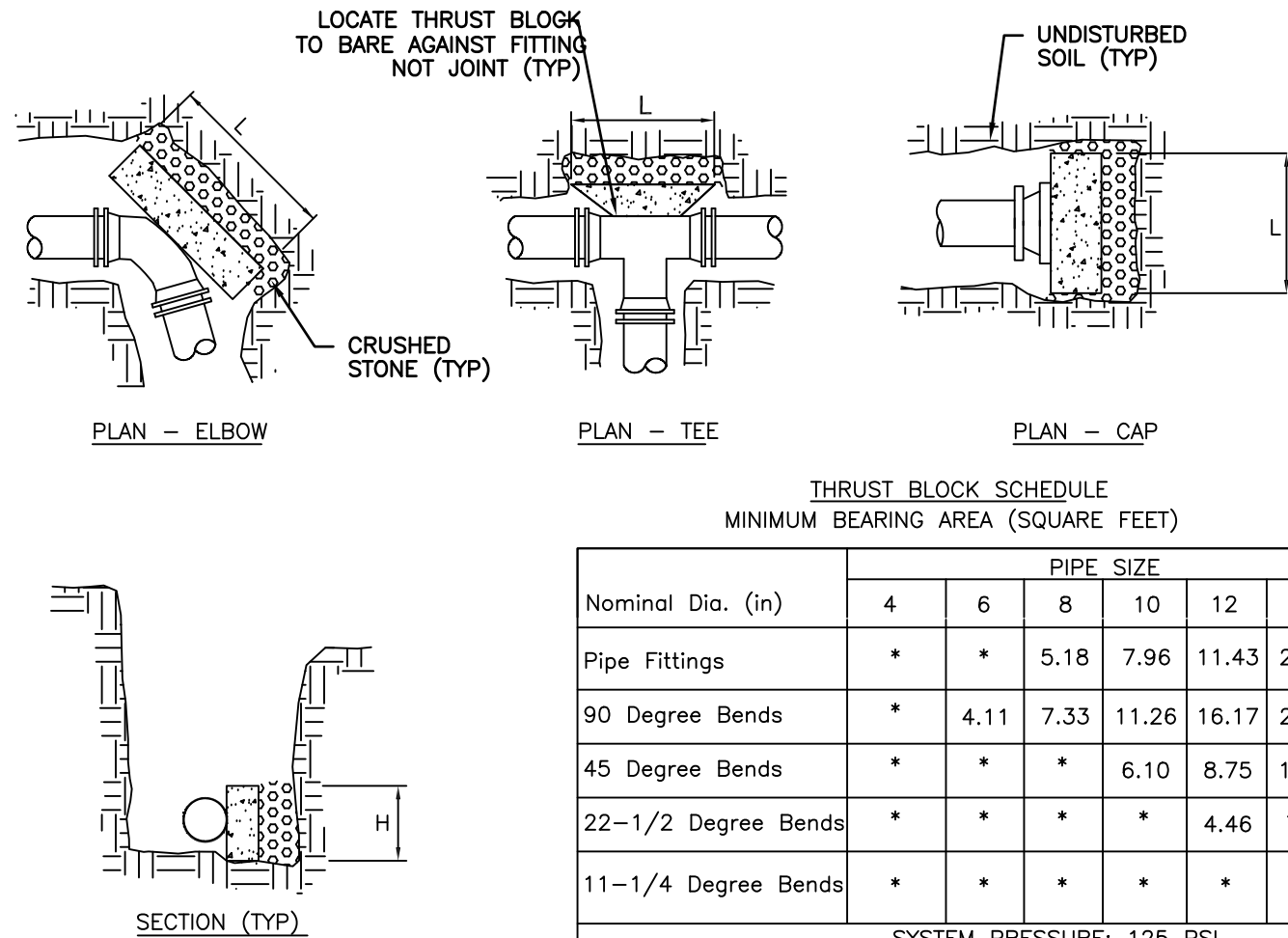
FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1

31 Mooney Street, Alton, N.H. 603-875-3948



WATER SERVICE DETAIL

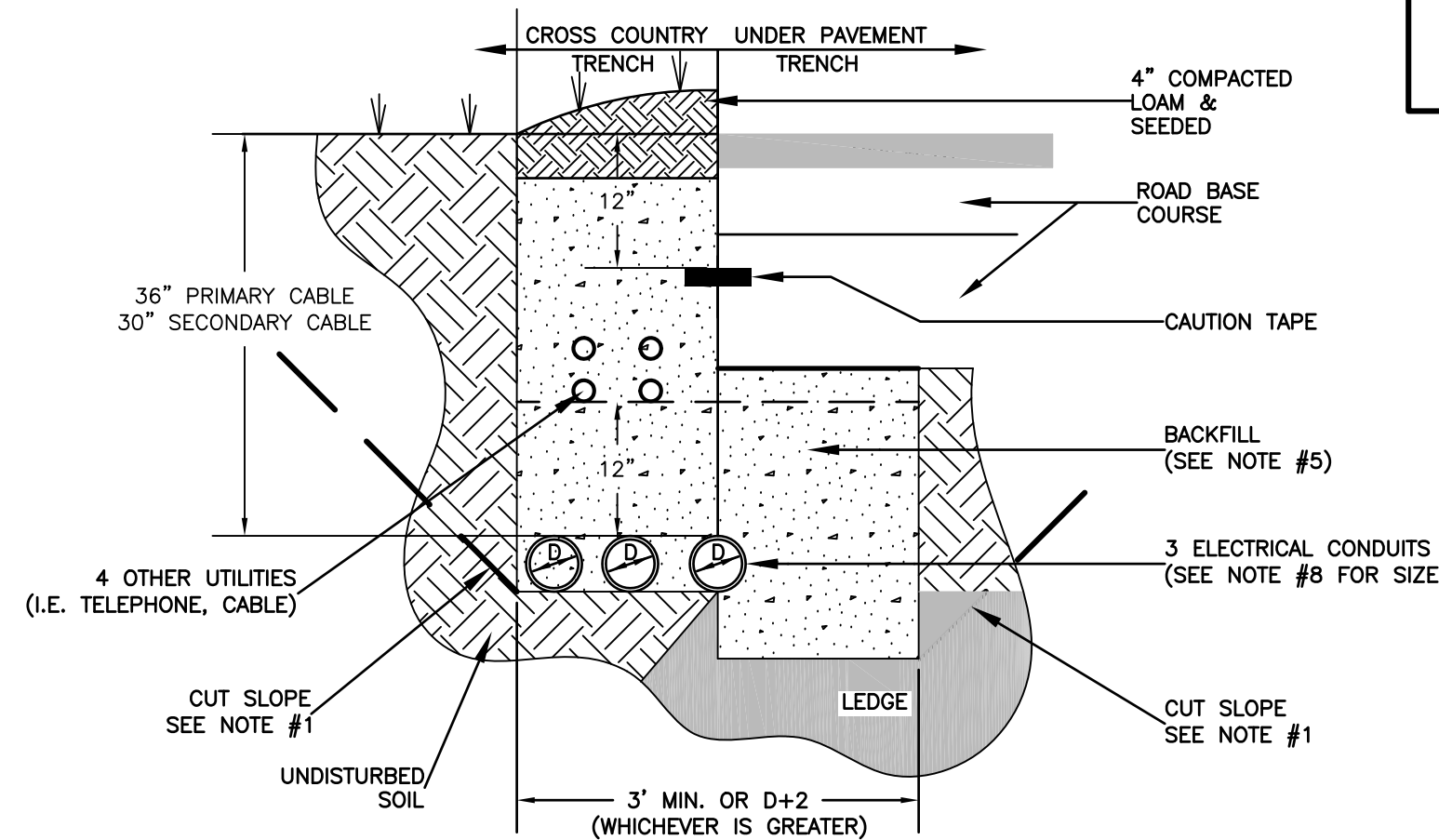
NOT TO SCALE
CITY OF DOVER DETAIL D-13



- NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
 2. 2'X2'X2" MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
 3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
 4. FOR MINIMUM BEARING AREAS OVER 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.

CONCRETE THRUST BLOCK DETAIL

NOT TO SCALE
CITY OF DOVER DETAIL D-15



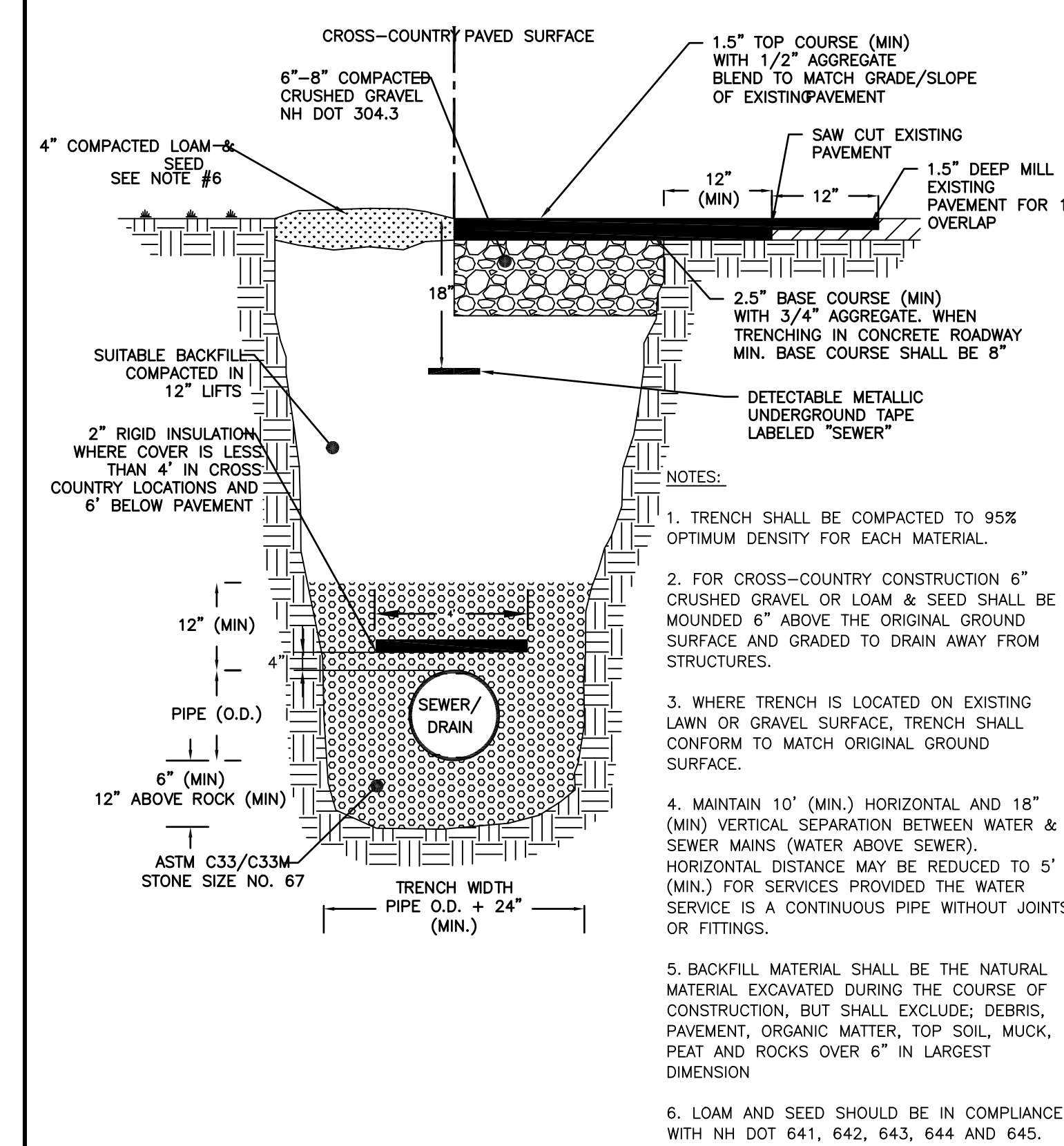
- NOTES:
1. ALL NON-METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC, AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA 1C2-1990 AND BE UL LISTED. ONLY GRAY-COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. ALL PVC JOINTS MUST BE CEMENTED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
 2. ALL 90 DEGREE SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES. ALL STEEL SWEEPS WITHIN 18" OF THE SURFACE SHALL BE PROPERLY GROUNDED.
 3. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE PSNH DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING CABLE PULLING.
 4. THE CONDUIT SHALL CROSS PAVED AREAS AT APPROXIMATELY 90 DEGREES.
 5. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY PSNH. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6-INCH LAYERS.
 6. A SUITABLE PULL STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE PSNH IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
 7. ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY PSNH. INSTALLATION OF THE CONDUIT WILL BE DONE BY THE CONTRACTOR. THE PSNH SUPERVISOR MUST BE NOTIFIED 2 BUSINESS DAYS PRIOR TO BACKFILLING THE TRENCH. IN THE EVENT THAT A CABLE CANNOT BE SUCCESSFULLY PULLED THROUGH THE COMPLETED CONDUIT SYSTEM DUE TO A CONSTRUCTION ERROR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND REPAIR THE INVOLVED CONDUIT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RESULTING EXPENSES.
 8. NORMAL CONDUIT SIZES FOR PSNH ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY.
 9. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.
 10. CONDUIT MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.

ELECTRICAL & UNDERGROUND UTILITY
TRENCH INSTALLATION DETAIL

NOT TO SCALE

- 1.) CONTRACTOR SHALL NOTIFY DIG-SAFE (811) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- 2.) ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS.
- 3.) THESE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE IS NOT INTENDED OR IMPLIED.
- 4.) ANY UTILITY POLES THAT NEED TO BE RELOCATED SHALL BE COORDINATED WITH EVERSOURCE OR VERIZON, WHOM EVER HAS CONTROL OVER THEM.
- 5.) PROPOSED UTILITIES ARE TO BE UNDERGROUND. COORDINATE LOCATION OF UNDERGROUND UTILITIES AND TRANSFORMER PADS WITH PSNH AND OTHER PERTINENT UTILITY COMPANIES.
- 6.) WATER AND SEWER LINES SHALL BE INSTALLED A MINIMUM OF 10-FT APART HORIZONTALLY.
- 7.) WHERE SEWER AND WATER LINES MUST CROSS, SEWER PIPE JOINTS SHALL BE LOCATED A MINIMUM 9-FT HORIZONTALLY FROM THE WATER LINE AND A VERTICAL SEPARATION OF 18-INCHES SHALL BE MAINTAINED.
- 8.) SEWER PIPE JOINTS SHALL BE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWER AND AT 1-1/2 TIMES WORKING PRESSURE FOR ALL FORCE MAINS.
- 9.) WATERLINE CONSTRUCTION:
A.) ALL PROPOSED WATER LINE MATERIAL USED SHALL MEET DOVER WATER DEPARTMENT AND DOVER ENGINEERING DEPARTMENT SPECIFICATIONS. WATER LINES SHALL BE A.W.W.A C 151, CLASS 52, CEMENT LINED, DUCTILE IRON PIPE.
B.) PROPOSED WATER GATE VALVES SHALL BE MANUFACTURED BY KENNEDY OF AMERICAN FLOW CONTROL, RESILIENT SEAT TYPE.
C.) ALL WATER LINES SHALL BE BURIED A MINIMUM OF 5'.
D.) IF 5' OF COVER IS NOT AVAILABLE WATER LINE SHALL BE INSULATED AS SHOWN IN THE "SHALLOW COVER TRENCH DETAIL FOR INSULATED WATER PIPE".
E.) ALL WATER FITTINGS SHALL BE GLASS 52.
F.) PROPOSED WATER GATE VALVE SHALL OPEN CLOCKWISE (RIGHT).
- 10.) WORK TO CONNECT INTO THE WATER OR SEWER MAINS REQUIRES A PERMIT FROM THE DOVER PUBLIC WORKS DEPARTMENT. CONTRACTORS ARE TO BE PRE-QUALIFIED.

UTILITY DETAILS
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026



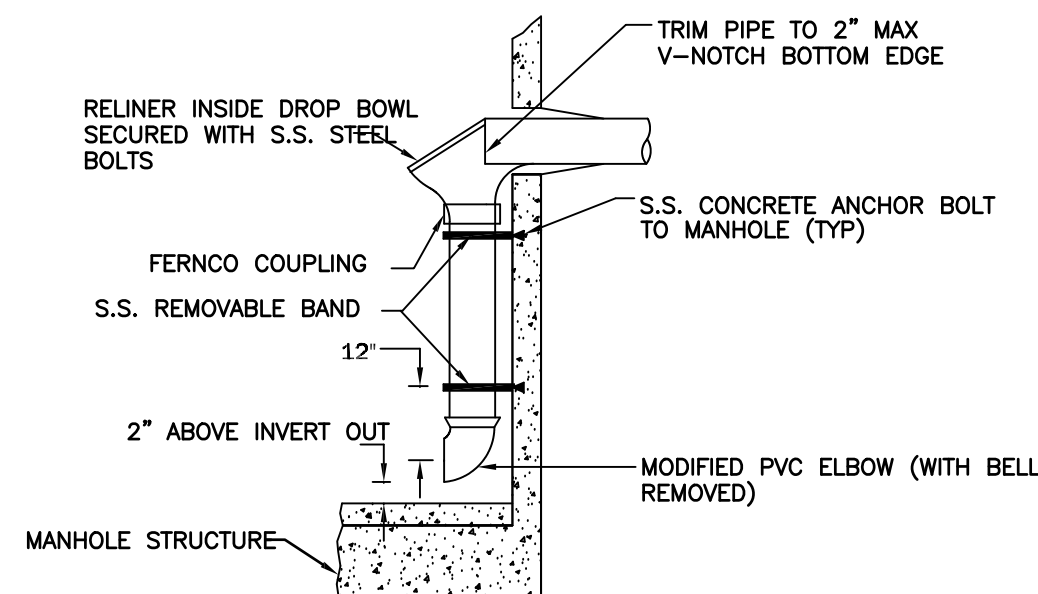
SEWER TRENCH DETAIL

NOT TO SCALE
CITY OF DOVER DETAIL D-3

MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:
MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION.
PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE AS SHOWN BELOW:

HYDRATED LIME	SAND	TYPE II PORTLAND CEMENT
NONE	4.5 PARTS	1.5 PARTS
0.5 PARTS	4.5 PARTS	1 PART

CEMENT SHALL BE TYPE II PORTLAND CEMENT THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C150/C150M STANDARD IN EFFECT AT THE TIME THE CEMENT WAS MANUFACTURED.
HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE TIME THE HYDRATED LIME WAS PROCESSED.
SAND SHALL CONSIST OF INERT NATURAL SAND THAT IS CERTIFIED BY ITS SUPPLIER AS CONFORMING TO THE ASTM C33 STANDARD IN EFFECT AT THE TIME THE SAND IS PROCESSED BY STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES.



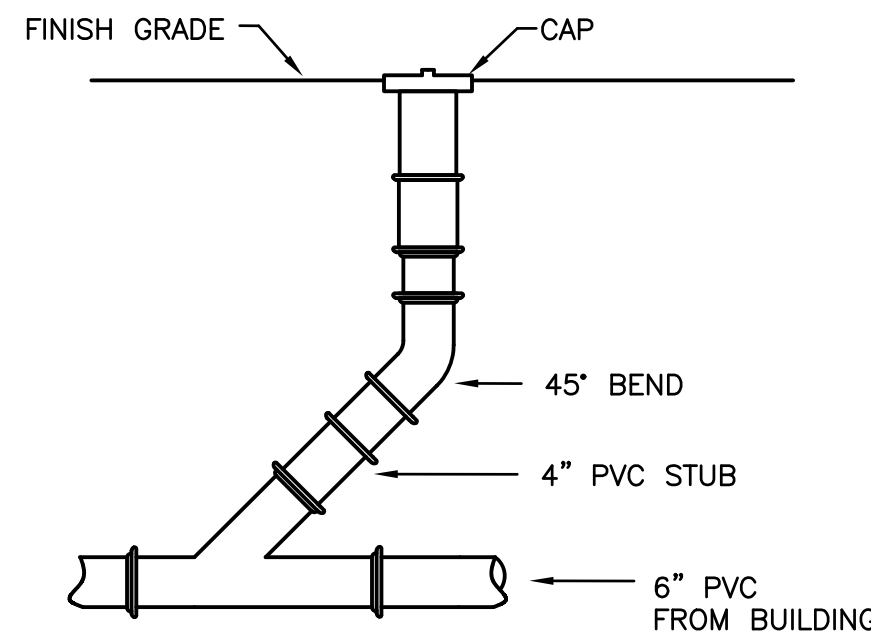
INTERNAL DROP

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

MANHOLE DROP INLET DETAIL

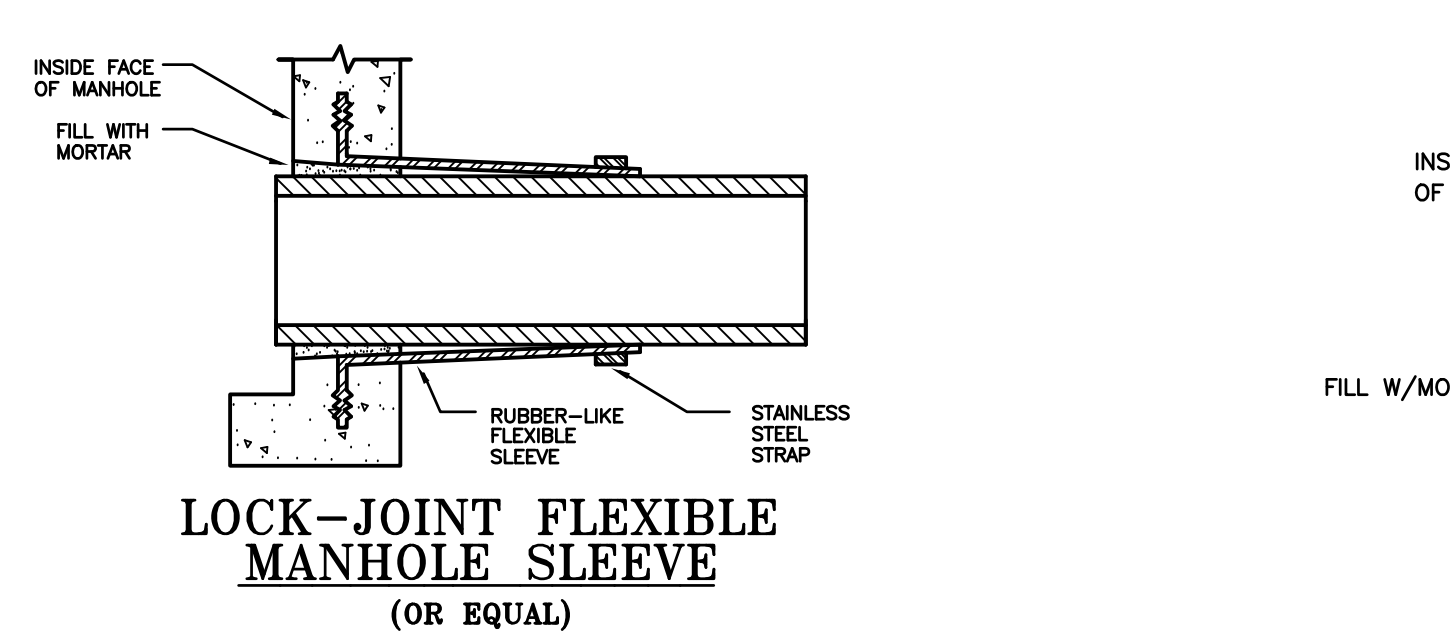
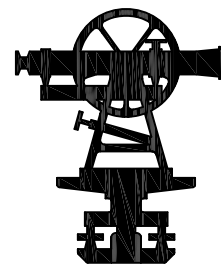
NOT TO SCALE
CITY OF DOVER DETAIL D-18

- NOTES:
1. IT IS INTENTION OF THE CITY OF DOVER PUBLIC WORKS DEPARTMENT THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY BY THE PUBLIC WORKS DEPARTMENT FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
 2. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELBLY MARKED ON THE INSIDE WALL.
 3. VACUUM LEAKAGE TESTING (ASTM C1244) SHALL BE PERFORMED FOR ALL MANHOLES. LOW-PRESSURE AIR TESTING (ASTM F1417) AND DEFLECTION TESTING USING A 120/100 G.O. MANHOLE, FOR ALL SANITARY SEWERS, IN ACCORDANCE WITH THE MHDS SEWER REGULATIONS AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REQUIREMENTS.
 4. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION 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. BRICK MASONRY CONFORM WITH ASTM C32. INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
 5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "SEWER" FOR SEWERS OR "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER. SEWER MANHOLE FRAME AND COVER: FRAME - EJ 20062 PRODUCT#00200611 COVER - EJ 2006A1 PRODUCT#00200628 IMMEDIATELY FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO ADJUST TO GRADE.
 6. BEDDING: MIN. 6\"/>
 7. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE MIN. 3/4\"/>
 8. CONCRETE FOR DROP SUPPORT SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3000#) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH.
 9. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
RCP & CI PIPE - ALL SIZES
AC & VC PIPE - UP THROUGH 12\"/>
 10. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
 11. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIAL 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.
 12. TEES OR WYES: WHEN 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 IMPROVISED MEANS, 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\"/>
 13. PIPE 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 AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR PIPE WITH 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 HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DETERMINE THE TRENCH.
 14. 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 THE 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 DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY 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.
 15. ILLEGAL CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER, SHALL NOT BE PERMITTED.
 16. HOUSE AND WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO THE SIDE OF THE HOUSE SEWER AS SHOWN.
 17. BEDDING: MIN. 3/4\"/>
 18. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, MIN. 3/4\"/>
 19. CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4', A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION.
 20. ALL DRAINAGE AND SEWER STRUCTURES INCLUDING FRAMES AND GRATES SHALL BE H-20 LOADING.
 21. ALL SEWER CONSTRUCTION SHALL BE CONSTRUCTED TO MHDS AND THE CITY OF DOVER STANDARDS & SPECIFICATIONS.
 22. HORIZONTAL JOINTS: BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE COMMISSION, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
 23. PIPE TO MANHOLE JOINTS: SHALL BE ONLY AS APPROVED BY THE COMMISSION AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
 24. FOR BITUMASTIC TYPE JOINTS: THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY APPROVED BITUMASTIC SEALANTS: RAM-NEK KENT SEAL NO.2 EZ
 25. THE CONTRACTOR SHALL NOTIFY DIG-SAFE 1-888-344-7233 PRIOR TO CONSTRUCTION.



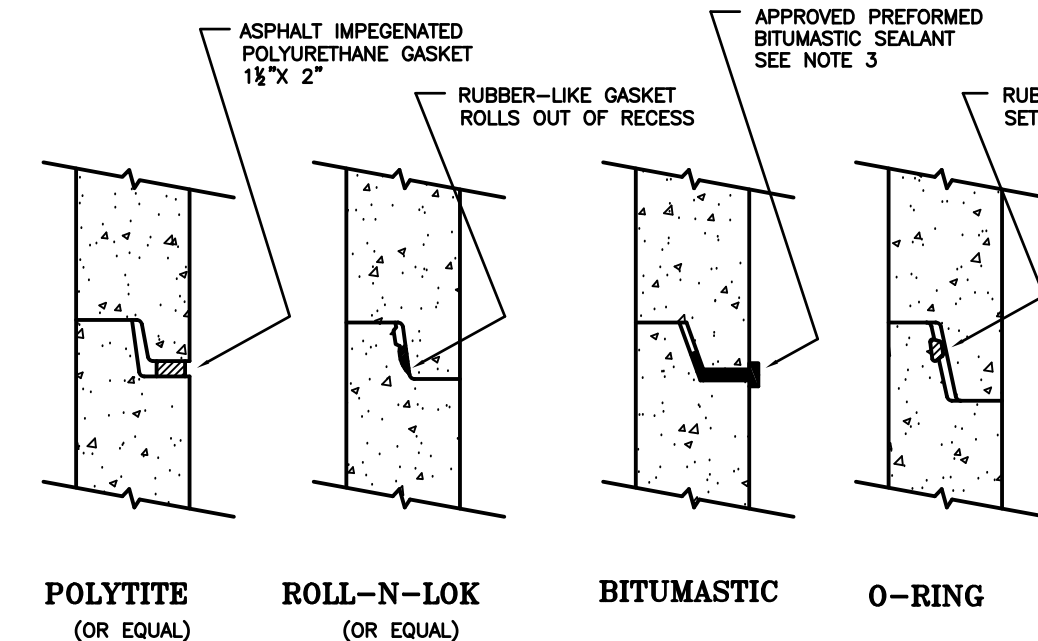
SEWER CLEAN OUT

NOT TO SCALE

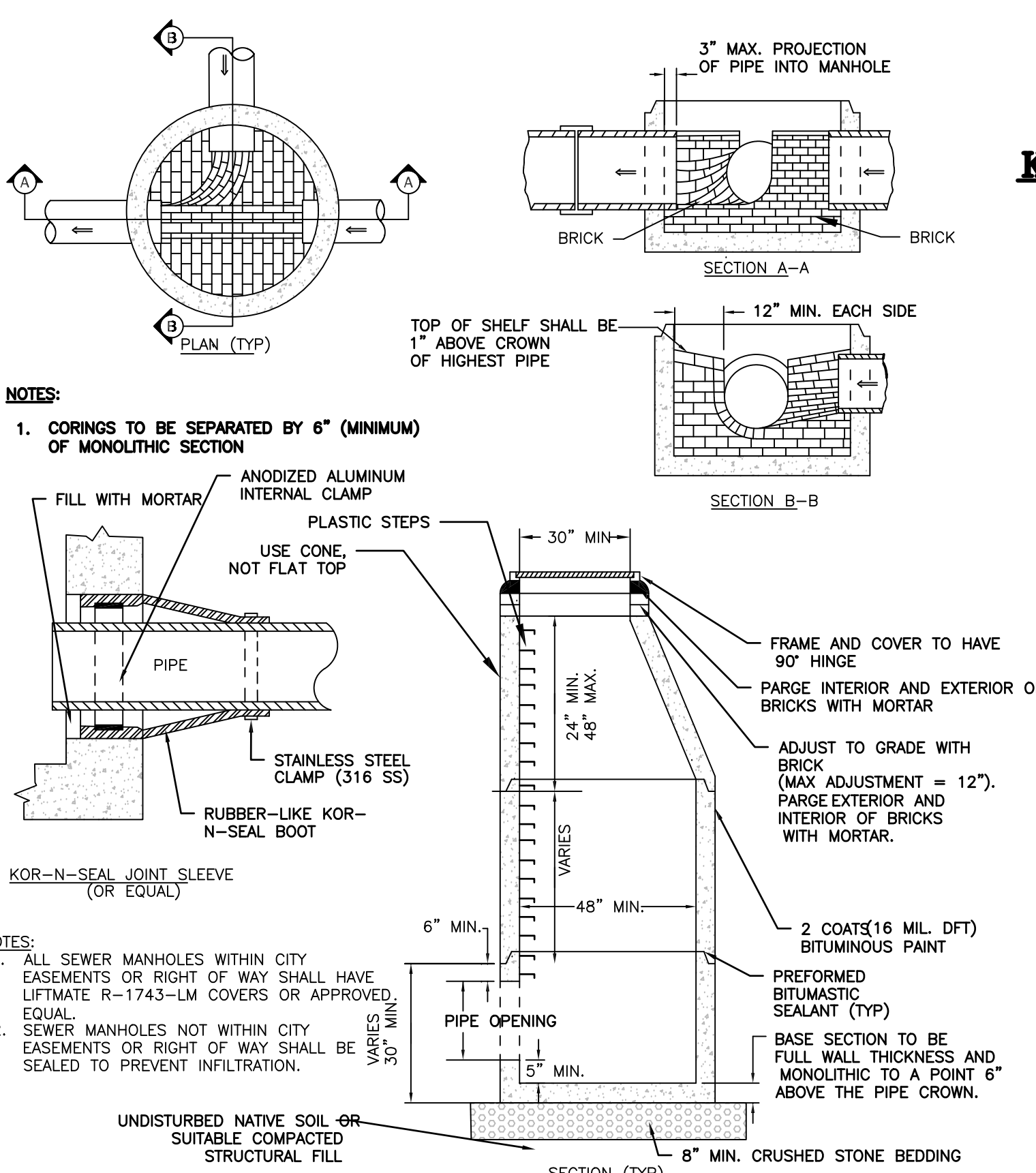


LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR EQUAL)

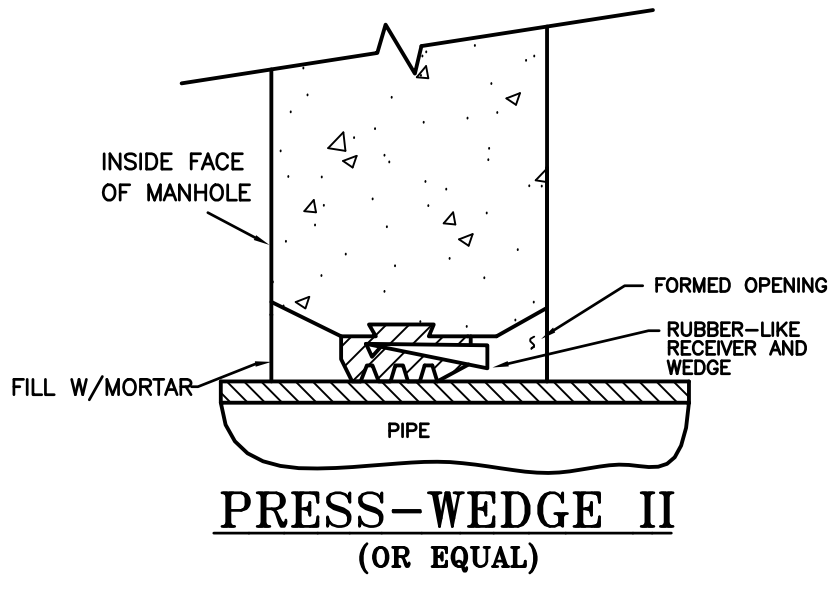


DETAIL-B



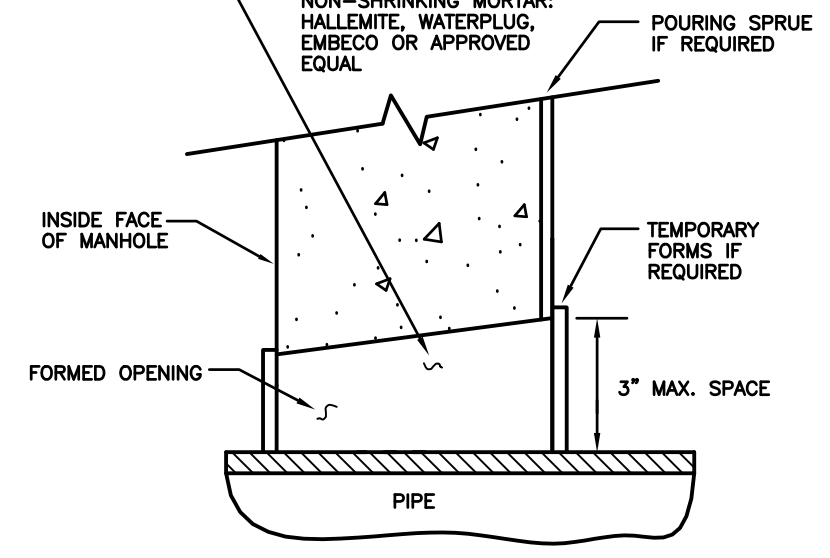
SEWER MANHOLE DETAIL

NOT TO SCALE
CITY OF DOVER DETAIL D-16



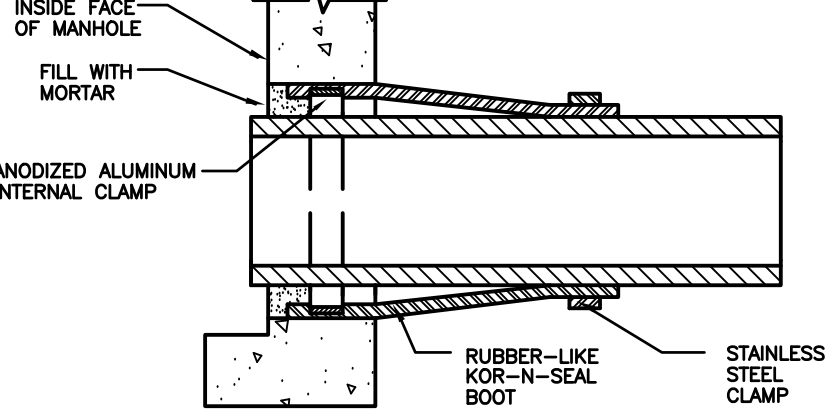
PRESS-WEDGE II

(OR EQUAL)



NON-SHRINKING MORTAR

(OR EQUAL)

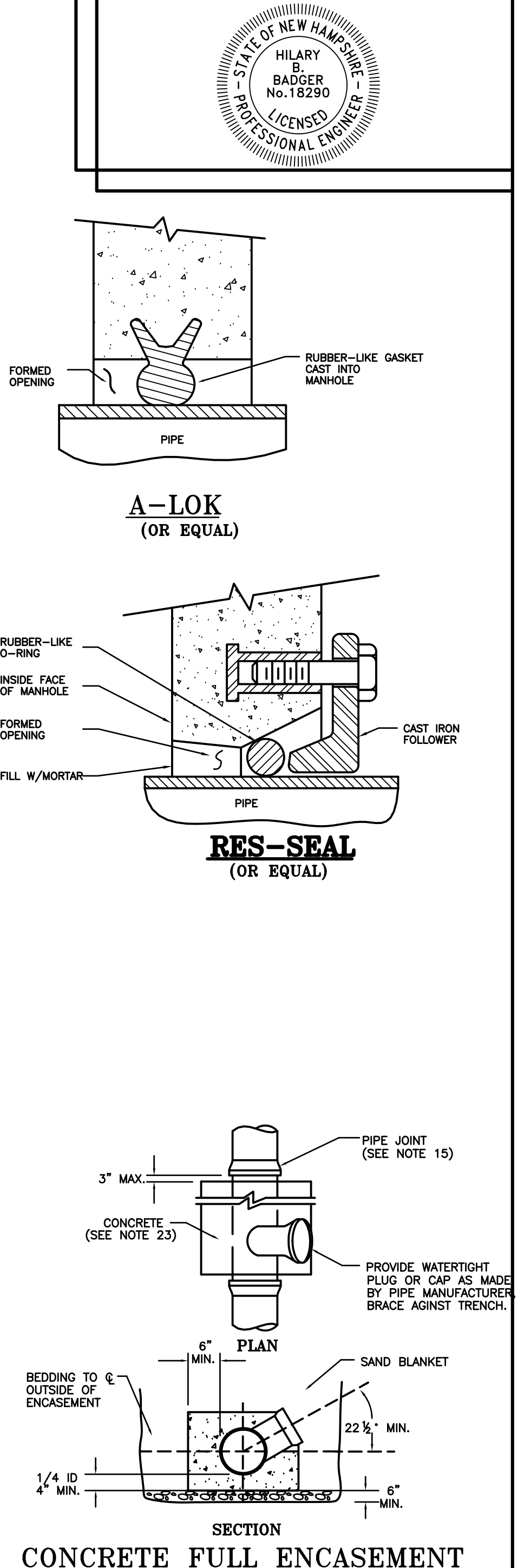


KOR-N-SEAL JOINT SLEEVE

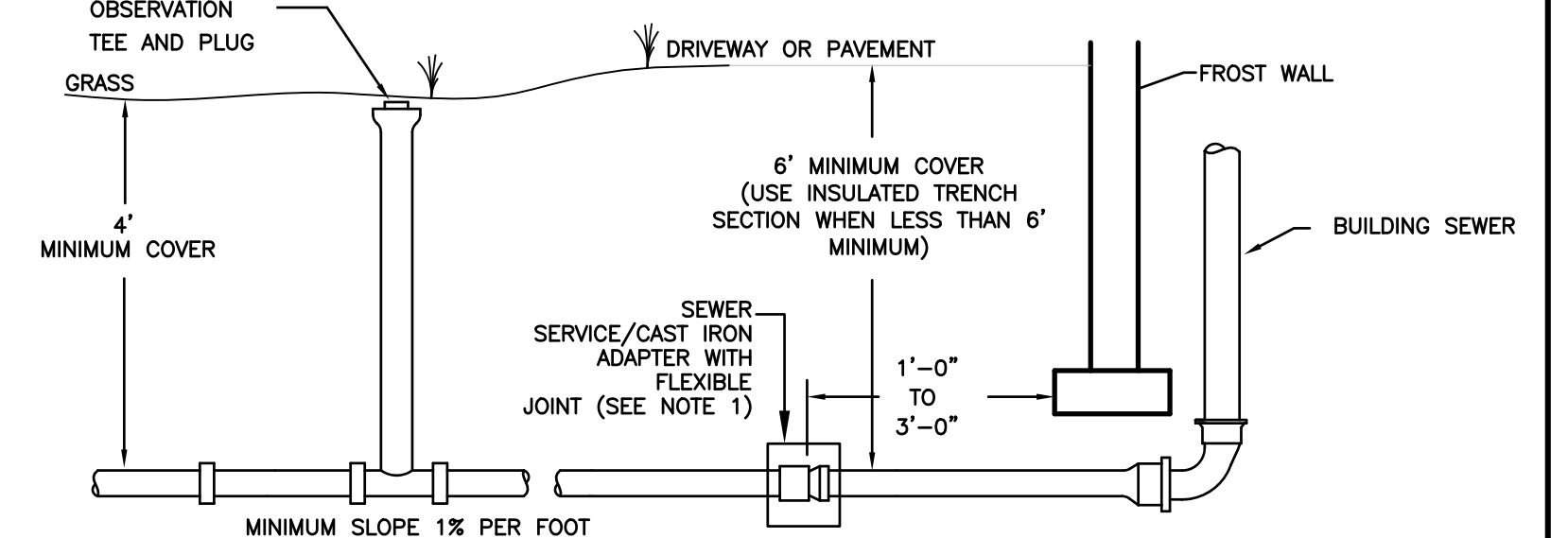
(OR EQUAL)

DETAIL-A

NOTE: ALL GASKETS, SEALANTS, MORTAR ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.



CONCRETE FULL ENCASEMENT



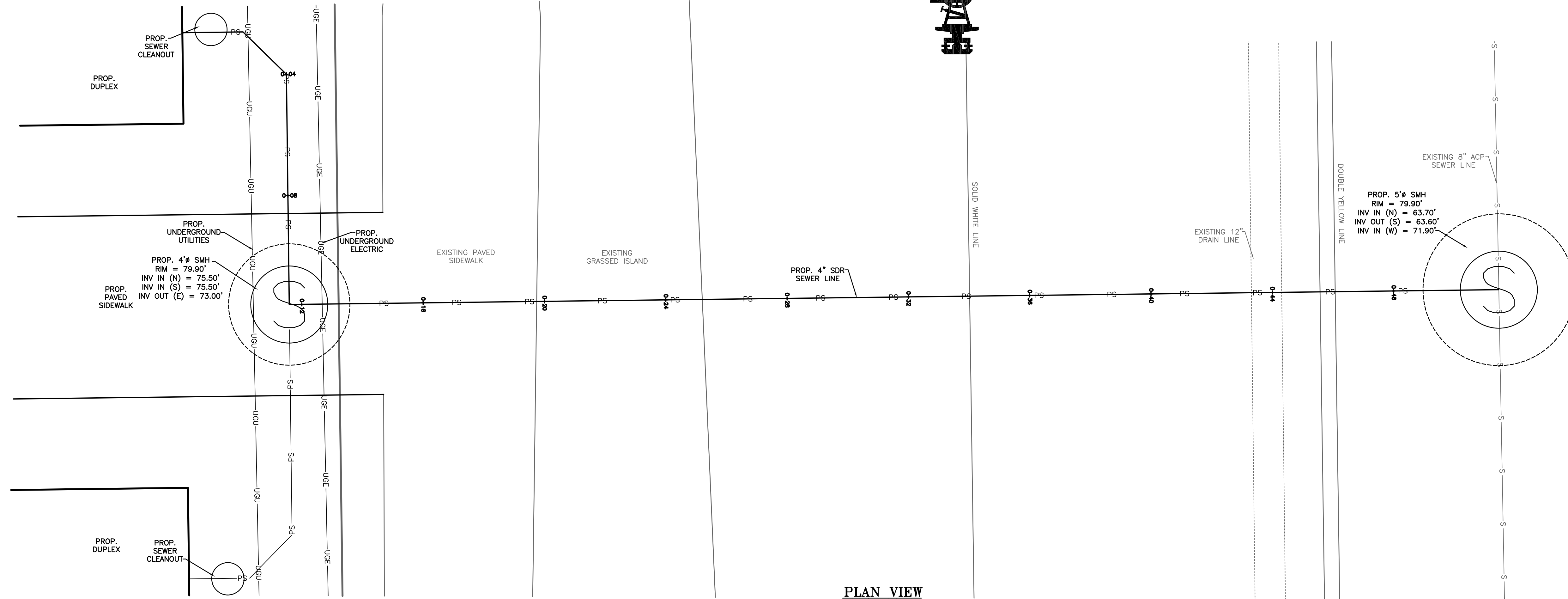
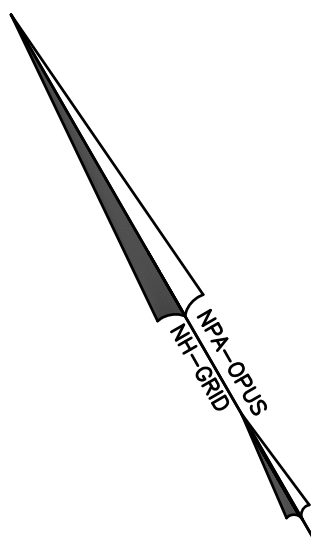
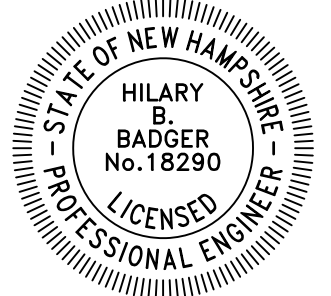
TYPICAL BUILDING SEWER SERVICE DETAIL

NOT TO SCALE

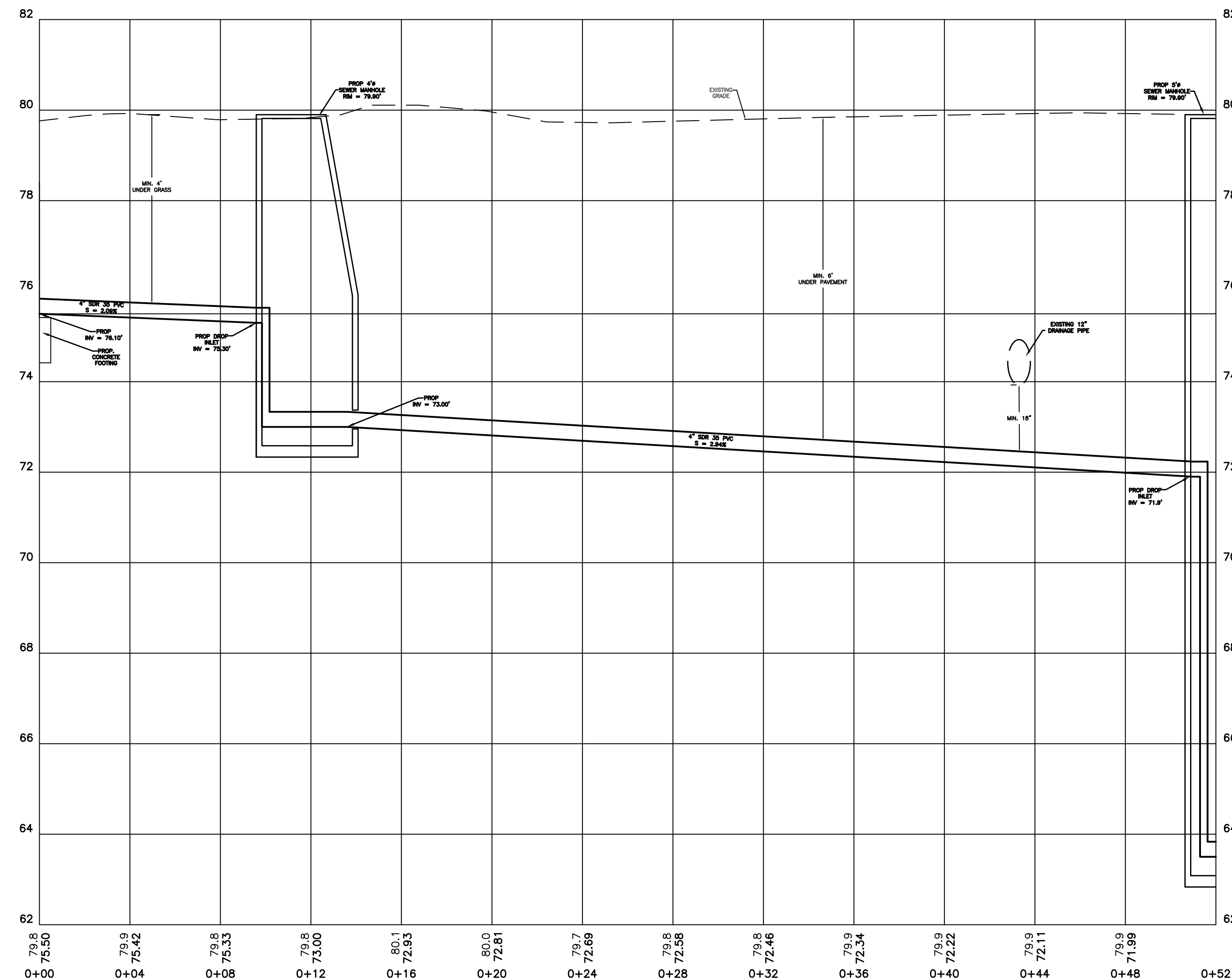
NOTES:
1. MEXADAPTOR TYPE COUPLING SHALL BE USED FOR FLEXIBLE TRANSITION TO BUILDING.

SANITARY SEWER DETAILS
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026

2 Continental Blvd., Rochester, N.H. 603-335-3948

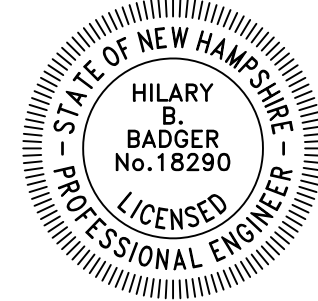
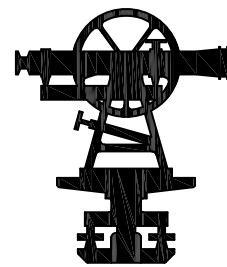


PLAN VIEW
SCALE 1" = 2'



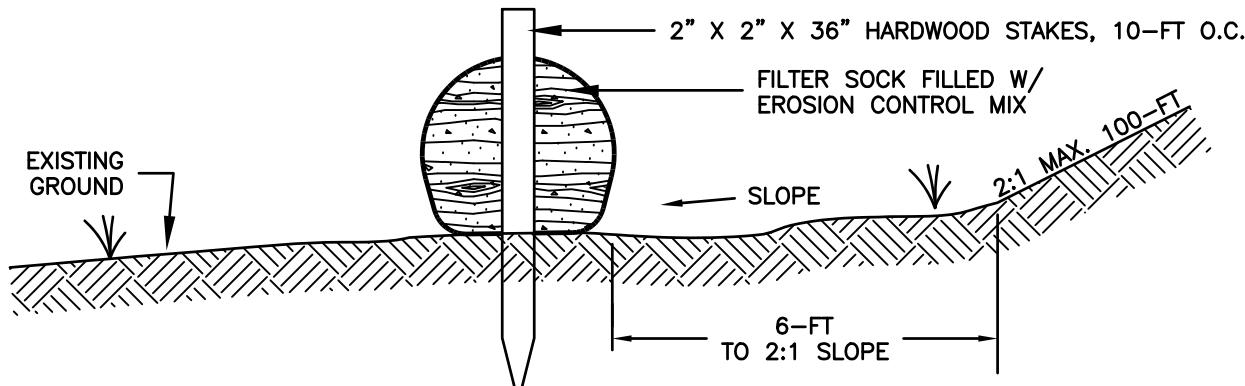
CROSS SECTION
VERTICAL SCALE 1" = 2'
HORIZONTAL SCALE 1" = 4'

SANITARY SEWER
PLAN & PROFILE
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026

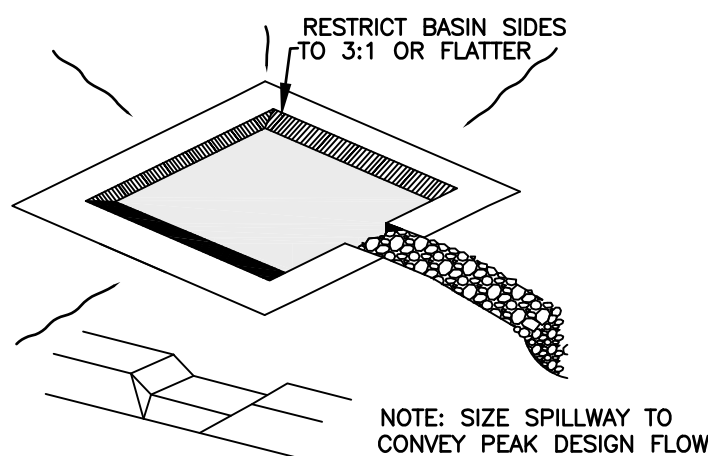


CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

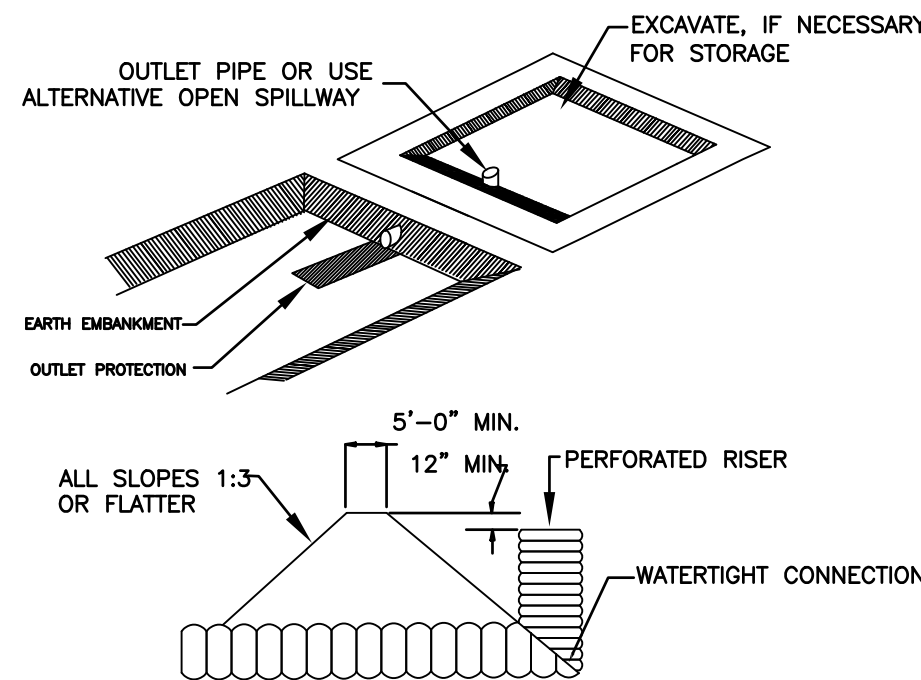
FILTER SOCK CONNECTION
PLAN VIEW



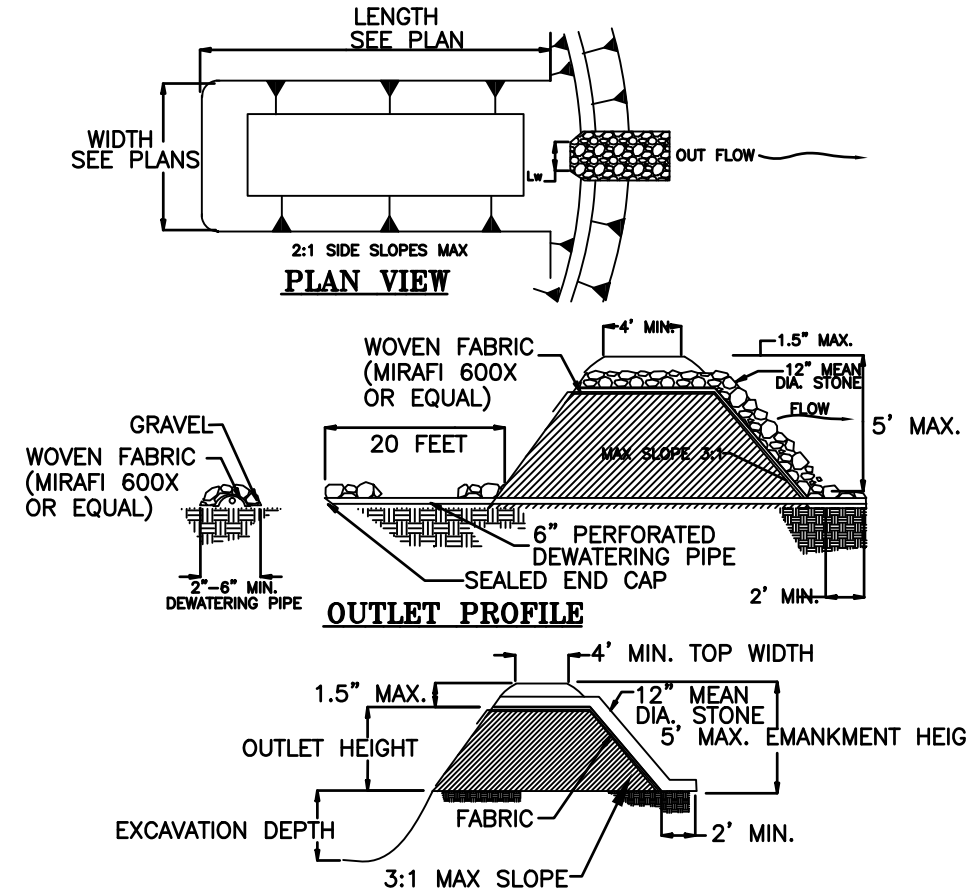
SINGLE FILTER SOCK
CROSS-SECTION



TYPICAL OPEN SPILLWAY

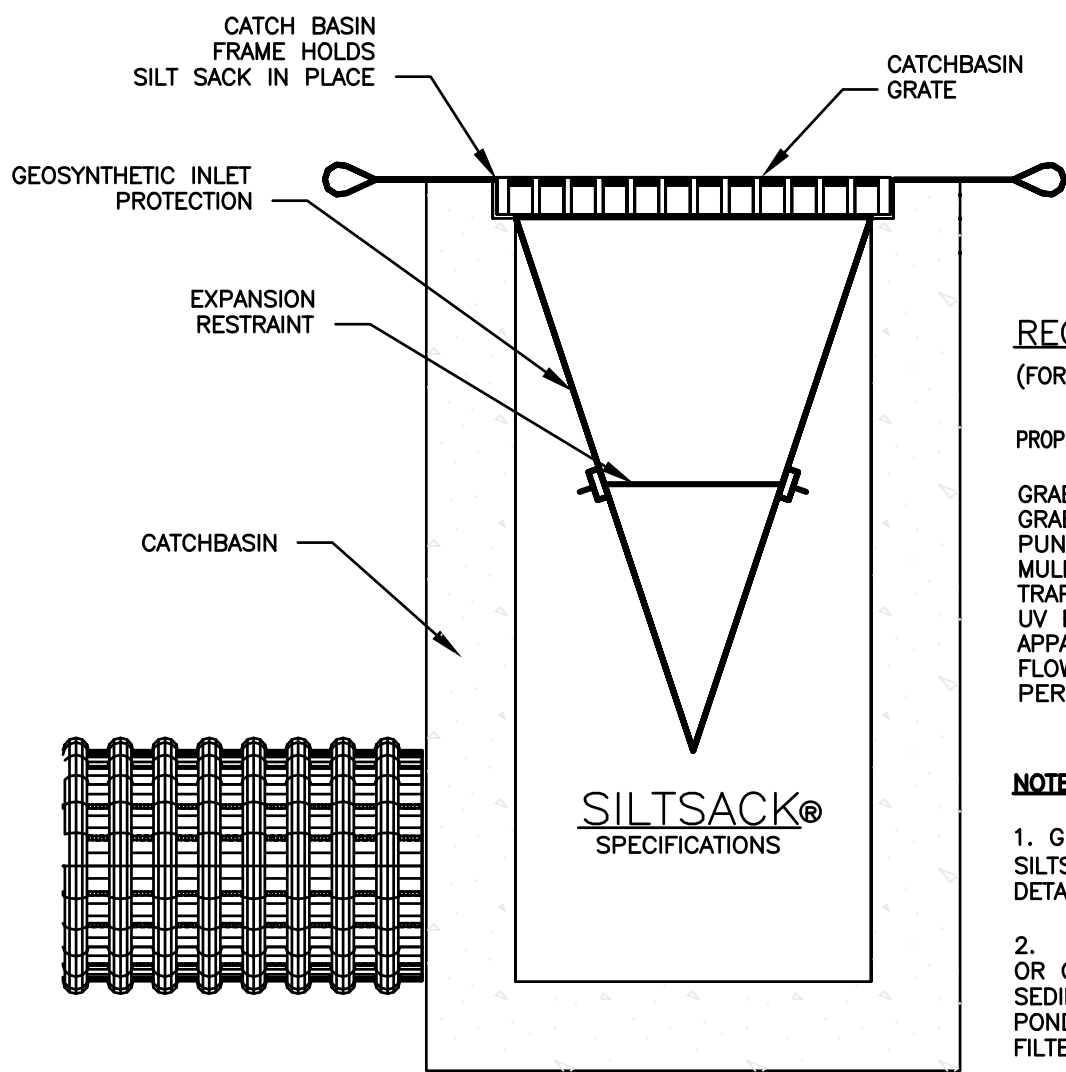


EMBANKMENT SECTION THRU RISER



ALTERNATE OUTLET PROFILE

SEDIMENT TRAP



REGULAR FLOW SILTSACK®

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4633	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	0.55 SEC -1
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

NOTES:

- GEOSYNTHETIC SEDIMENT FILTER TRAP SHALL BE "REGULAR FLOW SILTSACK®" OR APPROVED EQUAL. SPECIFICATIONS FOR SILTSACK® ARE DETAILED.
- FILTER TRAPS SHALL BE INSPECTED AFTER EVERY RAIN EVENT OF 0.25" OR GREATER AND SEDIMENTS SHALL BE REMOVED FROM TRAP WHEN SEDIMENT HAS REACHED TWO THIRDS OF THE DEPTH OF THE TRAP, OR IF PONDING OF WATER AT SURFACE BEGINS TO OCCUR. DO NOT PUNCTURE FILTER TRAP TO MITIGATE PONDING.
- INSTALL SILT SACKS IN CATCH BASIN UPON INSTALLATION OF STRUCTURE.

CATCH BASIN GEOSYNTHETIC SEDIMENT TRAP
NOT TO SCALE

STOCKPILE PRACTICES:

- LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS.
- PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
- STOCKPILES SHALL BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NHSM VOL. 3, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILE.
- IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
- PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER.

PROTECTION OF INACTIVE STOCKPILES:

- INACTIVE SOIL STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES.
- INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND SIMILAR MATERIALS SHALL BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHALL ALSO BE COVERED.

PROTECTION OF ACTIVE STOCKPILES:

- ALL STOCKPILES SHALL BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHALL BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIAL FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHALL BE INSPECTED AT THE END OF EACH WORKING DAY.
- WHEN A STORM IS PREDICTED, STOCKPILES SHALL BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

TRIBUTARY AREA (ACRES)	LENGTH OF SPILLWAY, WEIP Lw (FT)
0-1.0	50
1.01-2.0	37
2.01-3.0	30
3.01-4.0	19
4.01-5.0	15

TEMPORARY VEGETATION:

SPECIFICATIONS:

SITE PREPARATION:

- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
 - GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
 - RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
 - ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
- SEEDBED PREPARATION:
- STONES AND TRASH SHALL BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
 - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
 - IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
 - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)*
*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)*
*LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

SEEDING:

- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
- TEMPORARY SEED SHALL TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
- AREAS SEEDING BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULLING" PRACTICE DESCRIBED IN THE NHSM, VOL. 3.
- VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

MAINTENANCE REQUIREMENTS:

- TEMPORARY SEEDING SHALL BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHALL BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
- BASED ON INSPECTION, AREAS SHALL BE RESEED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHALL BE IMPLEMENTED.
- IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

DUST CONTROL PRACTICES:

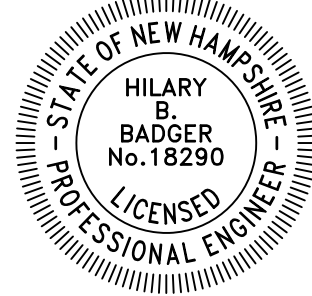
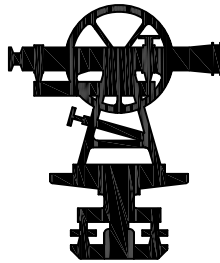
- APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL OF DUST ON SITE.
- WATER APPLICATION:
 - MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
- AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.
- STONE APPLICATION:
 - COVER SURFACE WITH CRUSHED OR COARSE GRAVEL.
 - IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE.
- REFER TO "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" FOR OTHER ALLOWABLE DUST CONTROL PRACTICES (I.E. COMMERCIAL TACKIFIERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

TEMPORARY VEGETATION
SEEDING RECOMMENDATIONS

SPECIES	PER ACRE BUSHES (BU) OR POUNDS (LBS.)	PER 1,000-SF	REMARKS
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYE GRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYE GRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
SOURCES: - NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1 - MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)			

TEMPORARY EROSION AND
SEDIMENTATION CONTROL
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1



PERMANENT VEGETATION:

SPECIFICATIONS:

SITE PREPARATION:

- 1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
- 2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
- 3. RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
- 4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

SEEDBED PREPARATION:

- 1. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHALL BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY AND SILT SOILS SHALL BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
- 2. REMOVE FROM THE SURFACE ALL STONES 2-INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLODS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
- 3. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
- 4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- 5. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
- 6. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)*
*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)*
*LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

SEEDING:

- 1. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
- 2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE.
- 3. WHERE FEASIBLE EXCEPT WHERE EITHER CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
- 4. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHALL BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDDED IN LATE SUMMER AT LEAST 35% OF THE SEED SHALL BE HARD SEED (UNSCARRIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3, AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- 5. AREAS SEEDDED BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3.
- 6. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

HYDROSEEDING:

- 1. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
- 2. SLOPES MUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTALLY BY 1 FOOT VERTICALLY).
- 3. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
- 4. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

MAINTENANCE REQUIREMENTS:

- 1. PERMANENT SEEDED AREAS SHALL BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHALL CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
- 2. SEEDDED AREAS SHALL BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOWING HEIGHT AND FREQUENCY DEPEND OF TYPE OF GRASS COVER.
- 3. BASED ON INSPECTION, AREAS SHALL BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
- 4. AT A MINIMUM 85% OF THE SOIL SURFACE SHALL BE COVERED BY VEGETATION.
- 5. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

PERMANENT VEGETATION SEEDING RECOMMENDATIONS

USE	MIXTURE	SPECIES	LBS./ACRE	LBS/ 1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREEPING RED FESCUE	20	0.45
		REDTOP	2	0.05
		TOTAL	42	0.95
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	TALL FESCUE	20	0.45
		CREEPING RED FESCUE	20	0.45
		REDTOP	2	0.05
		TOTAL	42	0.95
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY RECREATION SITES	A	TALL FESCUE	20	0.45
		CREEPING RED FESCUE	20	0.45
		REDTOP	2	0.05
		TOTAL	42	0.95
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL ESSENTIAL FOR GOOD TURF)	F	CREEPING RED FESCUE	50	1.15
		KENTUCKY BLUEGRASS	50	1.15
		TOTAL	100	2.30
SOURCES: 1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLES 4-2 AND 4-3 2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)				

GENERAL CONSTRUCTION PHASING:

1. STABILIZATION:

A SITE IS DEEMED STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOIL ON SITE WILL NOT EXPERIENCE ACCELERATED OR UNNATURAL EROSION UNDER THE CONDITIONS OF A 10-YEAR STORM EVENT, SUCH AS BUT NOT LIMITED TO:
A)N AREAS THAT WILL NOT BE PAVED:

- a) A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
- b) A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED, OR;
- c) EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.

B)N AREAS TO BE PAVED:

- a) BASE COURSE GRAVELS HAVE BEEN INSTALLED.

2. TEMPORARY STABILIZATION:

ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 14 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES. THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.

3. PERMANENT STABILIZATION:

ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.

4. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME.

- A) FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED.
- B) EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.

- 6. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN DEPICTED ON SHEET C-2.

- 7. ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON SHEET C-2.

- 8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM EROSION.

- 9. STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES".

- 10. SLOPES SHALL NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGE.

- 11. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.

- 12. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3-INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHALL BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.

- 13. ALL FILLS SHALL BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS AND OTHER FACILITIES, SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

- 14. IN GENERAL, FILLS SHALL BE COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHALL REVIEW THE PROJECT GEOTECHNICAL REPORT AND/OR THE "PROJECT SPECIFIC PHASING NOTES" FOR SPECIFIC GUIDANCE.

- 15. ANY AND ALL FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS (LARGER THAN 3/4 THE DEPTH OF THE LIFT BEING INSTALLED), LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

- 16. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN AREAS OF THESE MATERIALS SHALL BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

- 17. THE OUTER FACE OF THE FILL SLOPE SHALL BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TREADS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING" IN THE NHSSM, VOL.3.

- 18. ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.

- 19. USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.

- 20. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE EVALUATED BY A PROFESSIONAL ENGINEER (PREFERABLY THE DESIGN ENGINEER) TO DETERMINE IF THE PROPOSED DESIGN SHALL BE REVISED TO PROPERLY MANAGE THE CONDITION.

- 21. STABILIZE ALL GRADED AREAS (AS ABOVE) WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETE OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.

- 22. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

- 23. THE PROJECT SHALL BE CONSTRUCTED TO MEET ALL REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

- 24. THE PROJECT SHALL BE CONSTRUCTED TO MEET ALL REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

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PROJECT SPECIFIC CONSTRUCTION PHASING:

- 1. REFER TO THE "GENERAL CONSTRUCTION PHASING" NOTES PRIOR TO COMMENCING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING PHASING. THE "GENERAL CONSTRUCTION PHASING" NOTES APPLY TO THE OVERALL CONSTRUCTION AND SHALL BE ADHERED TO.

- 2. INSTALL ALL TEMPORARY SEDIMENT CONTROL BARRIERS (I.E. SILT SOCK, EROSION CONTROL MIX BERM, STONE CHECK DAMS, ETC.) AROUND THE OUTER PERIMETER OF THE CONSTRUCTION SITE AS DEPICTED ON SHEET C-2 PRIOR TO EARTH MOVING OPERATIONS.

- 3. INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASINS AND THE FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE BASINS HAS STARTED.

- 4. CLEAR, GRUB AND STRIP THE SITE. STUMPS, BRUSH AND OTHER ORGANIC WASTE SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.

- 5. STOCKPILE STRIPPED TOPSOIL AND CUT MATERIAL TO BE REUSED ON SITE IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE "SOIL STOCKPILES PRACTICES". MAINTAIN THE STOCKPILES AS DIRECTED IN THE "SOIL STOCKPILE PRACTICES".

- 6. PERFORM THE NECESSARY CUTS AND FILLS TO CONSTRUCT THE BIOTRETENTION BASIN AS DEPICTED ON SHEET C-2 AND IN ACCORDANCE WITH THE BIOTRETENTION BASIN DETAILS SHOWN ON SHEET C-5.

- 7. CONSTRUCT THE BIOTRETENTION BASIN. LOAM SEED AND MULCH THE SIDE SLOPES OF THE BASIN AS DIRECTED IN THE BIOTRETENTION BASIN DETAILS.

- 8. ALL DITCHES/SWALES/AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

- 9. PERFORM THE NECESSARY CUTS AND FILLS TO SUBGRADE IN THE BUILDING AND PARKING LOT AREAS.

- A) INSTALL REQUIRED FILLS IN MAXIMUM 8-INCH LIFTS AND COMPACT EACH LIFT TO 95% MAXIMUM PROCTOR DENSITY.

- 10. AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE, CHECK DAMS AND SEDIMENT CONTROLS AND CATCH BASINS, ETC.)

- 11. INSTALL ALL UTILITIES AND CLOSED DRAINAGE SYSTEM COMPONENTS (I.E. PIPE CULVERTS, CATCH BASINS AND REMAINING WATER MAIN) PER THE CORRESPONDING DETAILS AND AS SHOWN ON SHEET C-2 AND C-3, AS EACH STRUCTURE IS COMPLETED INSTALL THE CORRESPONDING

- 12. ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED SHALL BE LOAMED AND SEEDDED FOR PERMANENT VEGETATION AND STABILIZATION AS DESCRIBED UNDER THE "PERMANENT VEGETATION PRACTICES" WITHIN 3 DAYS OF ACHIEVING FINAL GRADE.

- 13. INSTALL ALL GRAVEL BASE AND CRUSHED GRAVEL MATERIALS FOR THE PARKING AREA AS SPECIFIED IN THE CORRESPONDING DETAILS.

- 14. THE PARKING AREAS SHALL BE STABILIZED (CONSTRUCTED TO GRAVEL BASE COURSE) WITHIN 3 DAYS OF ACHIEVING FINISHED SUBGRADE ELEVATIONS.

- 15. INSTALL PAVEMENT SURFACES AS SOON AS POSSIBLE AFTER THE INSTALLATION OF THE GRAVEL BASE AND CRUSHED GRAVEL. IN ORDER TO LIMIT THE SOIL EROSION AND POLLUTION OF THE GRAVEL MATERIALS WITH ORGANIC MATERIALS. IN NO CASE SHALL AREAS TO BE PAVED BE LEFT UNPROTECTED THROUGH OUT THE WINTER MONTHS.

- 16. ALL DISTURBED AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE. IN NO CASE SHALL ANY DISTURBED AREA BE LEFT UN-STABILIZED FOR LONGER THAN 21 DAYS. IF NECESSARY TEMPORARY STABILIZATION MEASURES AS DISCUSSED IN THE "GENERAL CONSTRUCTION PHASING NOTES" AND NHSSM, VOL. 3 SHOULD BE EMPLOYED.

- MAINTENANCE AND INSPECTION:

- 20. DURING CONSTRUCTION ALL TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE INSPECTED WEEKLY, AFTER EVERY 1/2 INCH OF RAINFALL, AND ANNUALLY.

- 17. EXCESS SEDIMENT SHOULD BE REMOVED FROM TEMPORARY SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES WHEN IT REACHES PRESCRIBED THRESHOLDS DISCUSSED IN THE DETAILS FOR EACH PRACTICE.

- 18. ALL DAMAGED TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE REPAIRED OR REPLACED IMMEDIATELY UPON NOTICE.

- 19. SEDIMENT SHALL BE DISPOSED OF PROPERLY EITHER ON SITE OR OFF SITE. PROJECT COMPLETION AND STABILIZATION.

- 20. UPON PROJECT COMPLETION, ONCE THE SITE IS DEEMED STABILIZED (VEGETATION IS GERMINATED), THE TEMPORARY SEDIMENT CONTROL BARRIERS AND EROSION CONTROL PRACTICES SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING REMOVAL SHALL BE REPAIRED IN AN APPROPRIATE MANNER.

- 21. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL ON SITE CATCH BASINS AND BIOTRETENTION BASIN.

WINTER STABILIZATION & CONSTRUCTION PRACTICES:

MAINTENANCE REQUIREMENTS:

- 1. MAINTENANCE MEASURES SHALL BE PERFORMED THROUGHOUT CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL CONDUCT INSPECTION OF ALL INSTALLED EROSION CONTROL PRACTICES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUED FUNCTION.

- 2. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHALL CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF THE VEGETATION AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH.)

- 3. THE CONTRACTOR SHALL MAINTAIN THE SEEDING RATES AS SPECIFIED IN THE "GENERAL CONSTRUCTION PHASING" NOTES AND THE "PROJECT SPECIFIC PHASING NOTES" THROUGHOUT THE WINTER PERIOD.

- 4. THE CONTRACTOR SHALL MAINTAIN THE SEEDING RATES AS SPECIFIED IN THE "GENERAL CONSTRUCTION PHASING" NOTES AND THE "PROJECT SPECIFIC PHASING NOTES" THROUGHOUT THE WINTER PERIOD.

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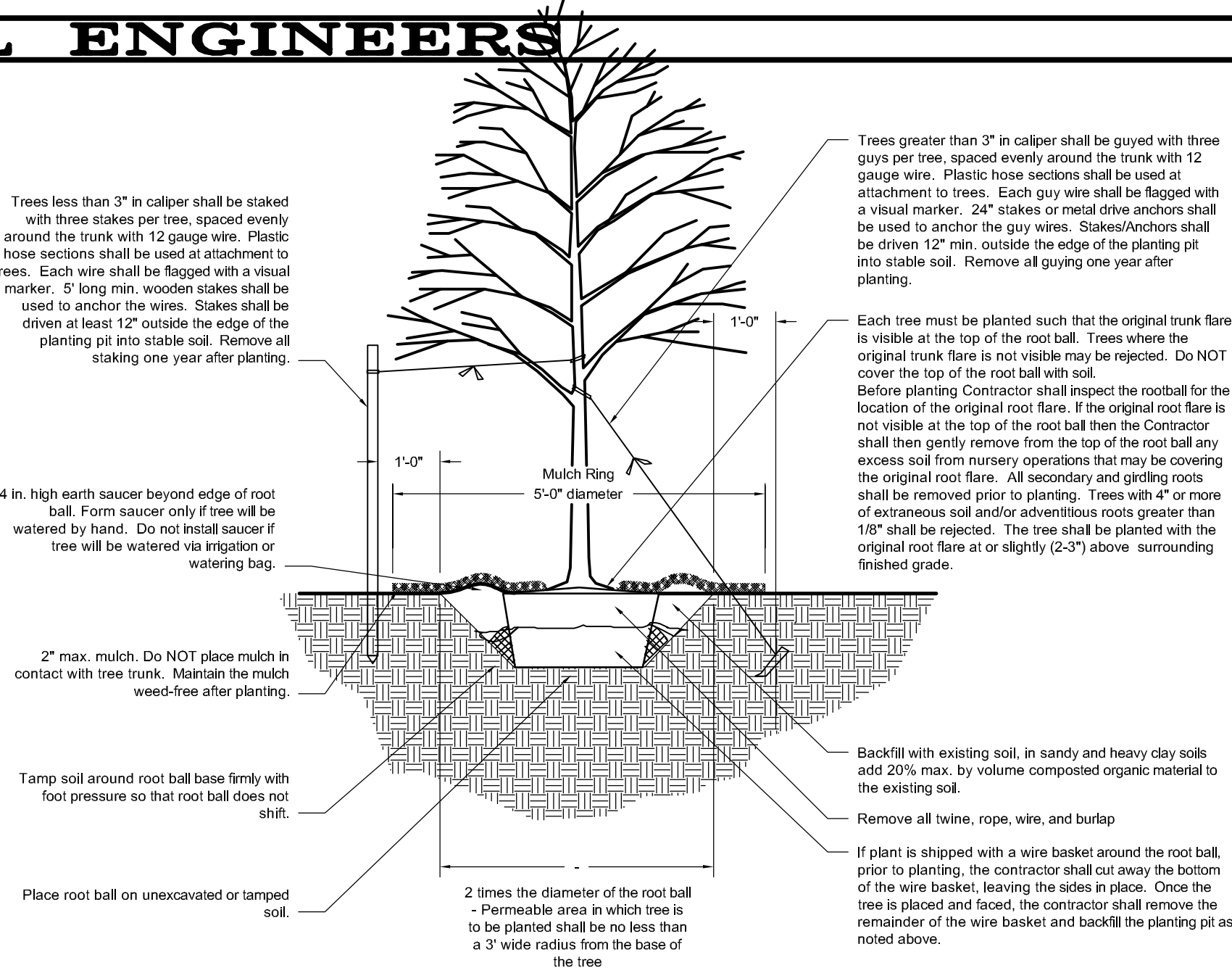
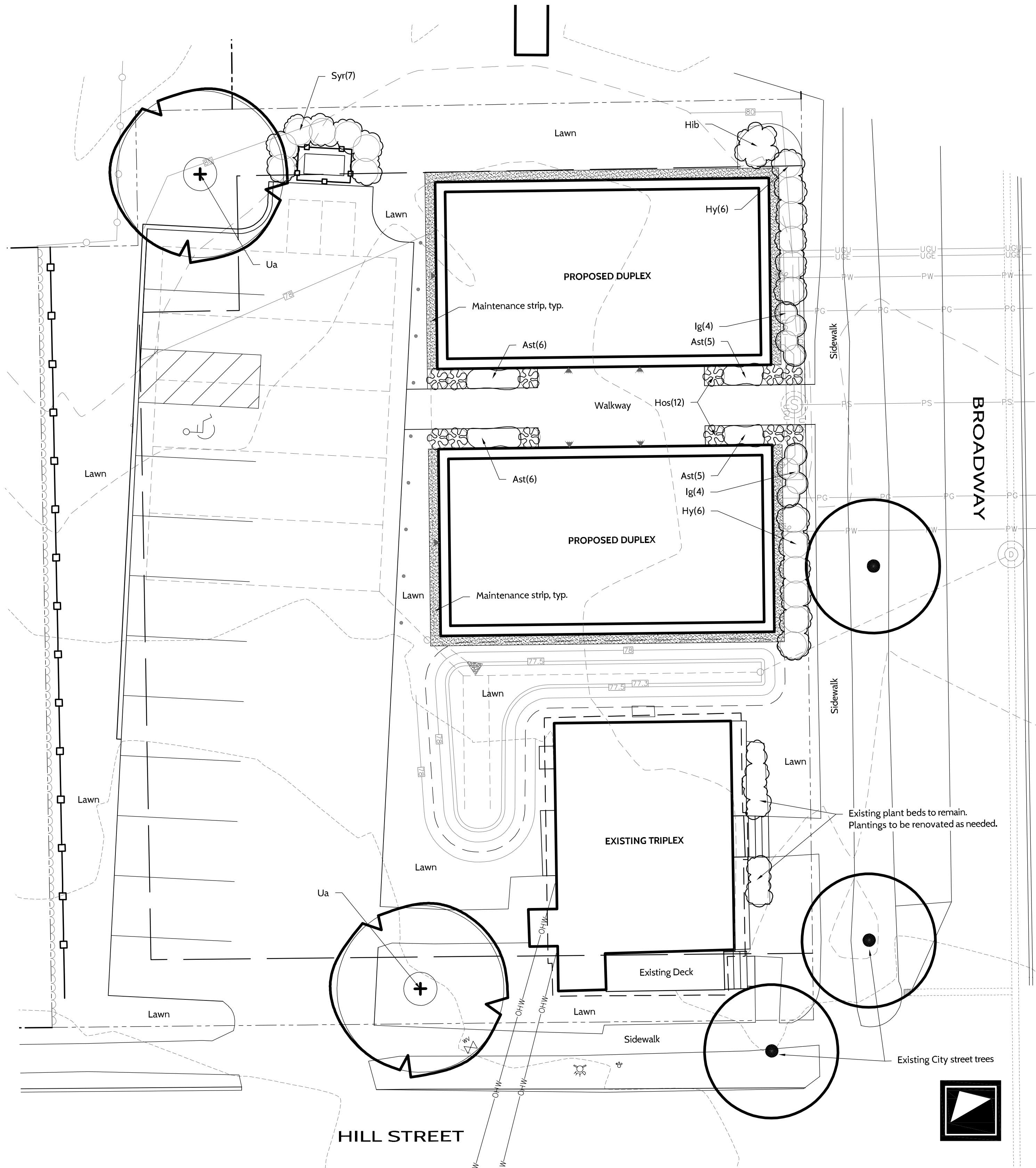
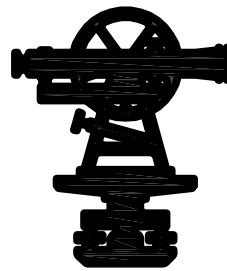
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- 18. THE CONTRACTOR SHALL MAINTAIN THE SEEDING RATES AS SPECIFIED IN THE "GENERAL CONSTRUCTION PHASING" NOTES AND THE "PROJECT SPECIFIC PHASING NOTES" THROUGHOUT THE W

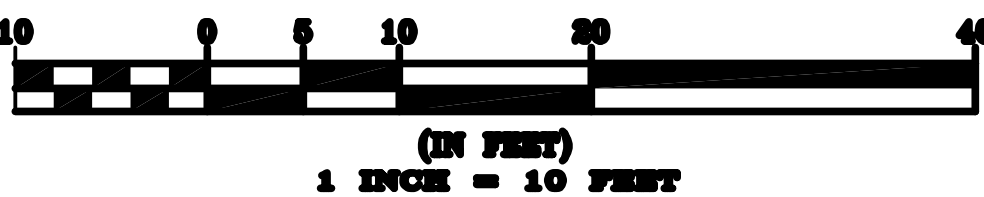


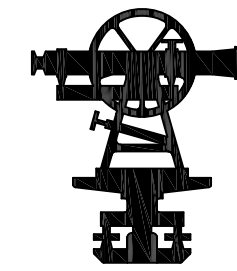
TREE PLANTING DETAIL

LANDSCAPE NOTES

- Design is based on drawings by Norway Plains dated April 2026 and may require adjustment due to actual field conditions.
- The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
- Erosion Control shall be in place prior to construction.
- The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
- It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
- Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
- This plan is for review purposes only, NOT for Construction. Construction Documents will be provided upon request.
- Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
- The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 811.
- The Contractor shall procure any required permits prior to construction.
- Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
- Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
- The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
- A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
- All plants shall be legibly tagged with proper botanical name.
- The Contractor shall guarantee all plants for not less than one year from time of acceptance.
- Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
- No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
- All landscaping shall be provided with the following:
 - An underground sprinkling system
 - An outside hose attachment within 150 feet
- The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
- All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
- Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and 1/4" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
- Drip strip shall extend to 6" beyond roof overhang and shall be edged with 3/16" thick metal edger.
- In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
- Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
- Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
- Landscape Architect is not responsible for the means and methods of the contractor.

LANDSCAPE PLAN
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH
PREPARED FOR:
RYAN ESCHBACH
APRIL 2026



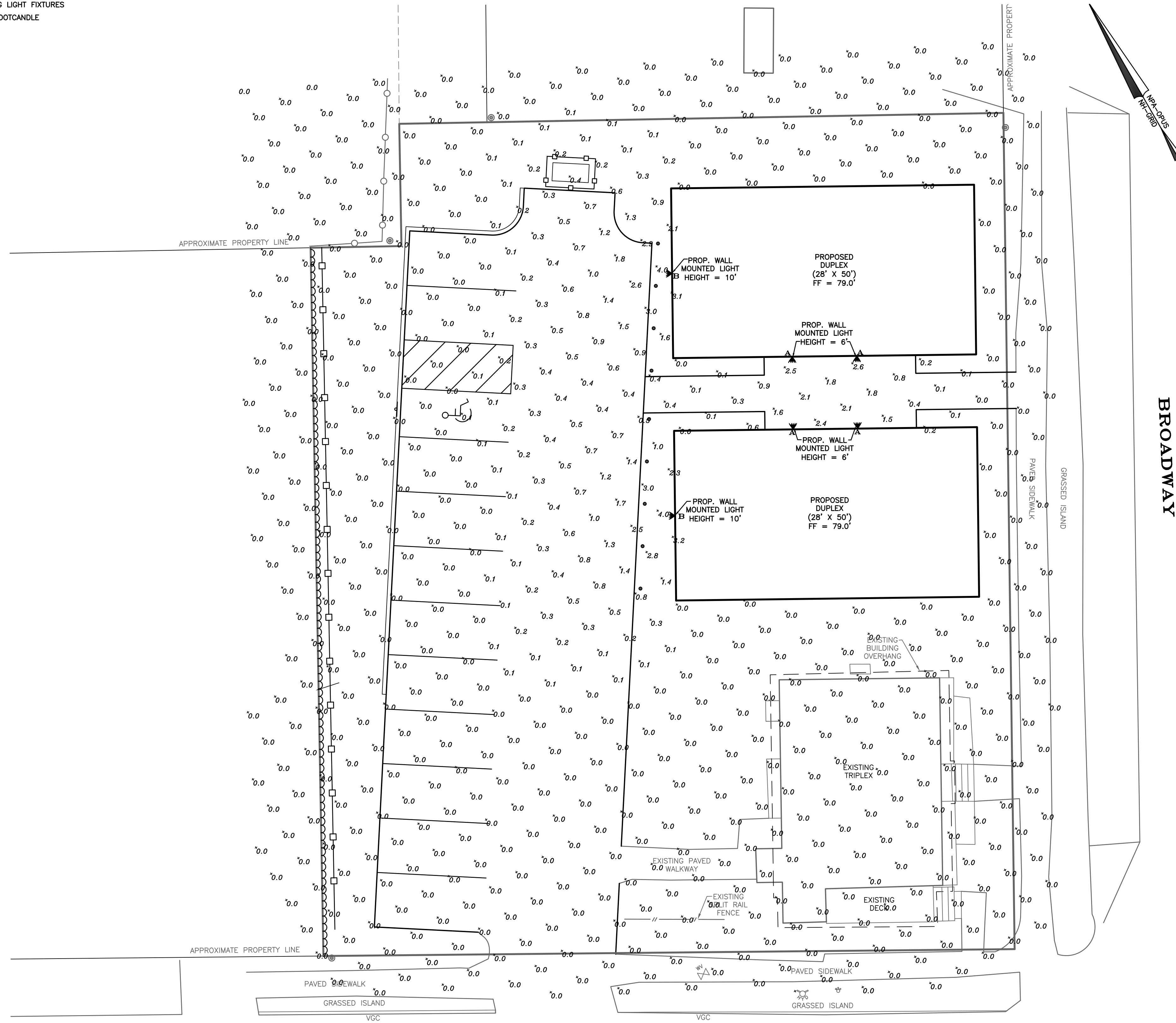


CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- EXISTING OVERHEAD WIRES
- EXISTING LIGHT POLES
- PROPOSED BUILDING
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT WITH CURBING
- PROPOSED LIGHT POLES
- PROPOSED BUILDING LIGHT FIXTURES
- PROPOSED LIGHT FOOTCANDLE

Luminaire Schedule			
Symbol	Label	Qty	Description
◀	A	4	WAC LIGHTING: WSW115616-3000K-BK
◀	B	2	PERFORMANCE IN LIGHTING: M20-M-15W-T4-XX-3K-UNV-XX-XX



BROADWAY

HILL STREET

LIGHTING PLAN
TAX MAP 27, LOT 169
96 BROADWAY
DOVER, NH

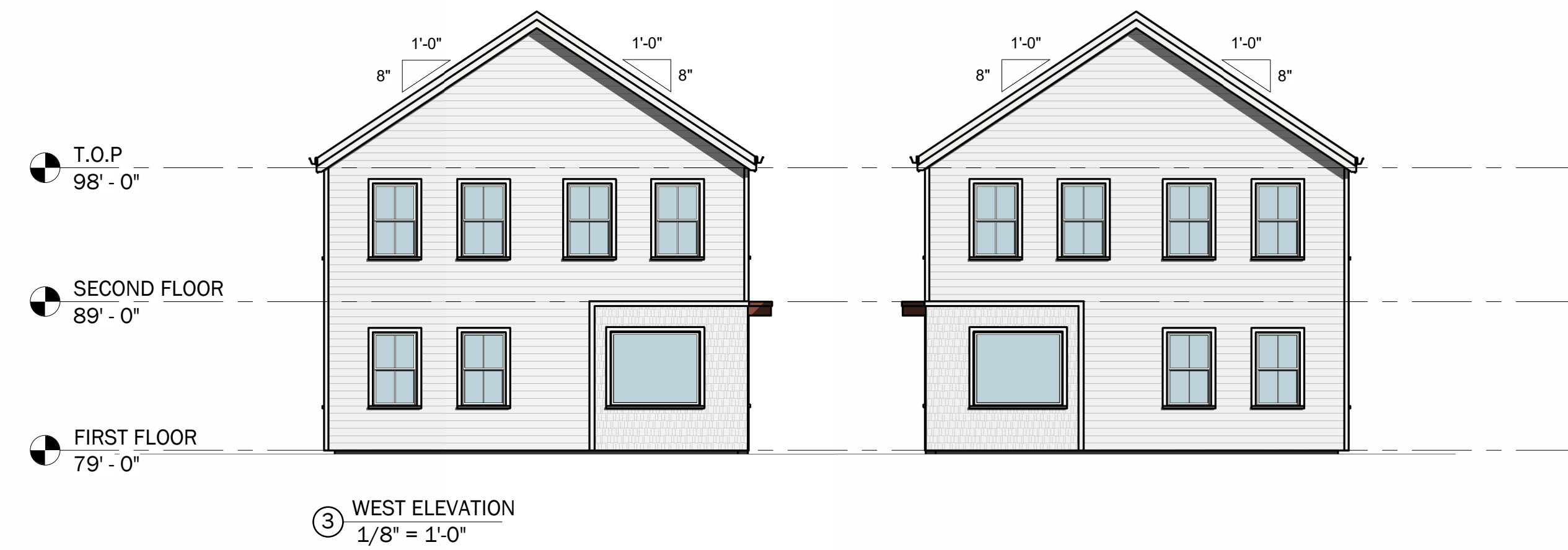
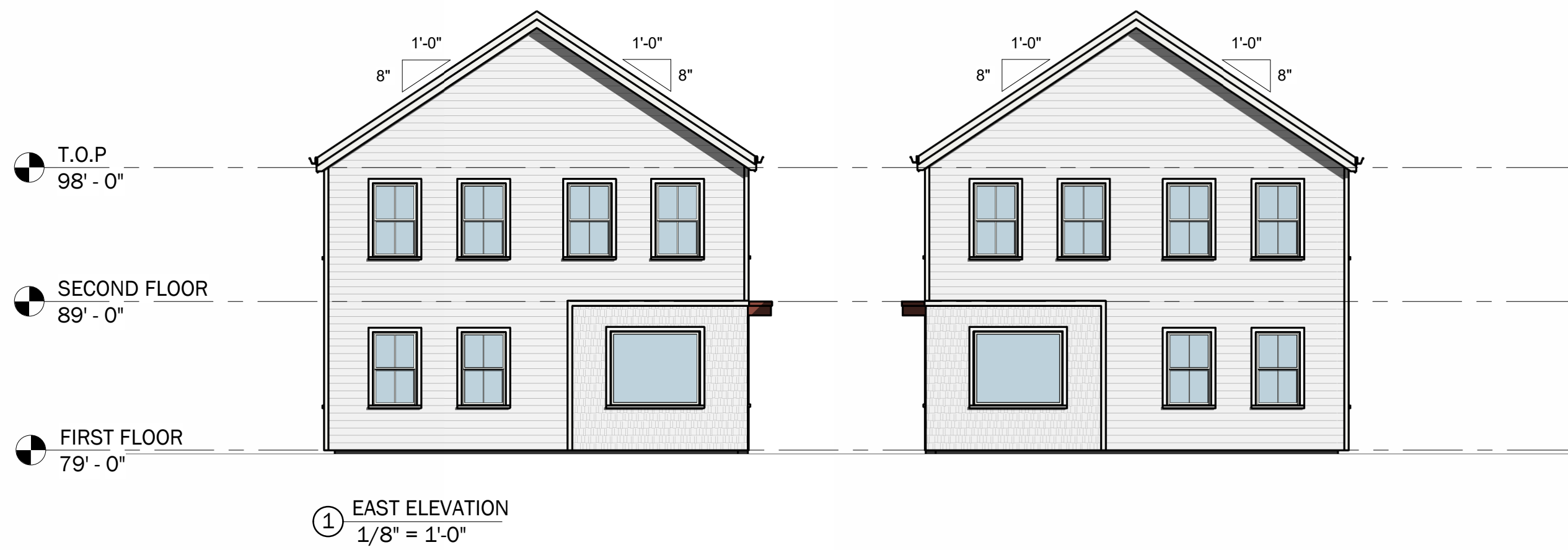
PREPARED FOR:
RYAN ESCHBACH

APRIL 2026
GRAPHIC SCALE



(IN FEET)
1 INCH = 10 FEET

FILE NO. 537
PLAN NO. C-3792
DWG. NO. 25321/SP-1



CLIENT:
RYAN ESCHBACH

96 BROADWAY HOUSING

DRAFT

PROJECT NUMBER: 26.07
DATE: MARCH 3, 2026
SCALE: AS NOTED
REVISION:

DRAWING NAME:
EXTERIOR ELEVATIONS

DRAWING NUMBER:

SD - 05



VIEW FROM BROADWAY 01



VIEW FROM BROADWAY 02

96 BROADWAY HOUSING

DRAFT

CLIENT:
RYAN ESCHBACH

PROJECT:

PROJECT NUMBER: 26.07
DATE: MARCH 3, 2026
SCALE: AS NOTED
REVISION:

NORTH:

DRAWING NAME:

3D VIEWS

DRAWING NUMBER:

SD - 06

PROJECT:

96 BROADWAY HOUSING

ADDRESS:

96 BROADWAY
DOVER, NH 03820

CLIENT:

RYAN ESCHBACH

DRAWING LIST:

DRAWING No.	DRAWING NAME.
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Schematic Design	
SD - 01	SITE PLAN
SD - 02	FIRST FLOOR PLAN
SD - 03	SECOND FLOOR PLAN
SD - 04	ROOF PLAN
SD - 05	EXTERIOR ELEVATIONS
SD - 06	3D VIEWS



LASSEL
ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

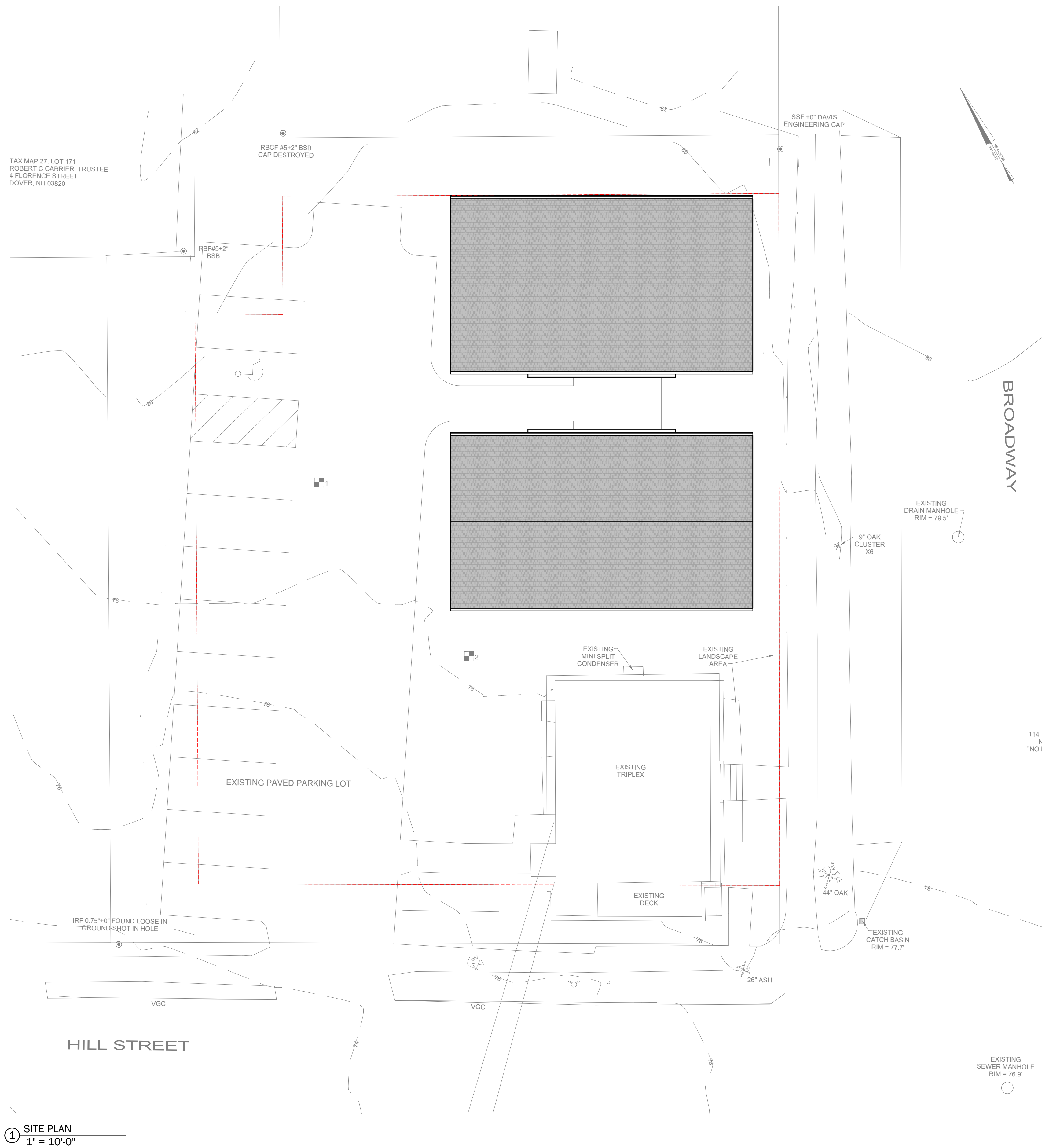
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26.07
DATE:
MARCH 3, 2026

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COVER SHEET
DRAWING NUMBER:

DRAFT SD - 00

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① SITE PLAN
1" = 10'-0"

CLIENT:
RYAN ESCHBACH

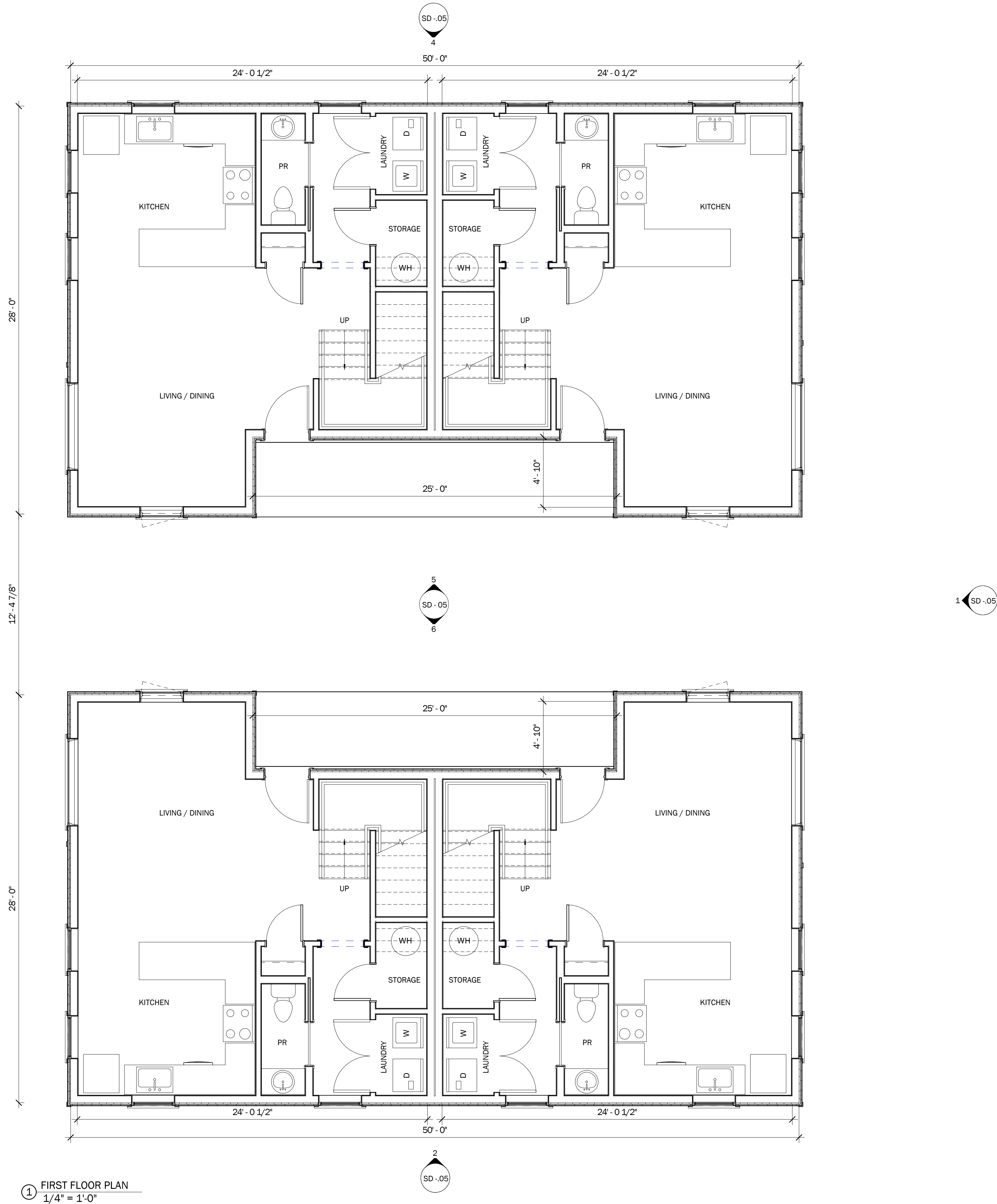
96 BROADWAY HOUSING

PROJECT NUMBER: 26.07
DATE: MARCH 3, 2026
SCALE: AS NOTED
REVISION:

DRAWING NAME:
SITE PLAN
DRAWING NUMBER:

SD - 01

DRAFT



① FIRST FLOOR PLAN
1/4" = 1'-0"

CLIENT:

RYAN ESCHBACH

PROJECT:

96 BROADWAY HOUSING

PROJECT NUMBER:

26.07

NORTH:

DATE:

MARCH 3, 2026

SCALE:

AS NOTED

REVISION:

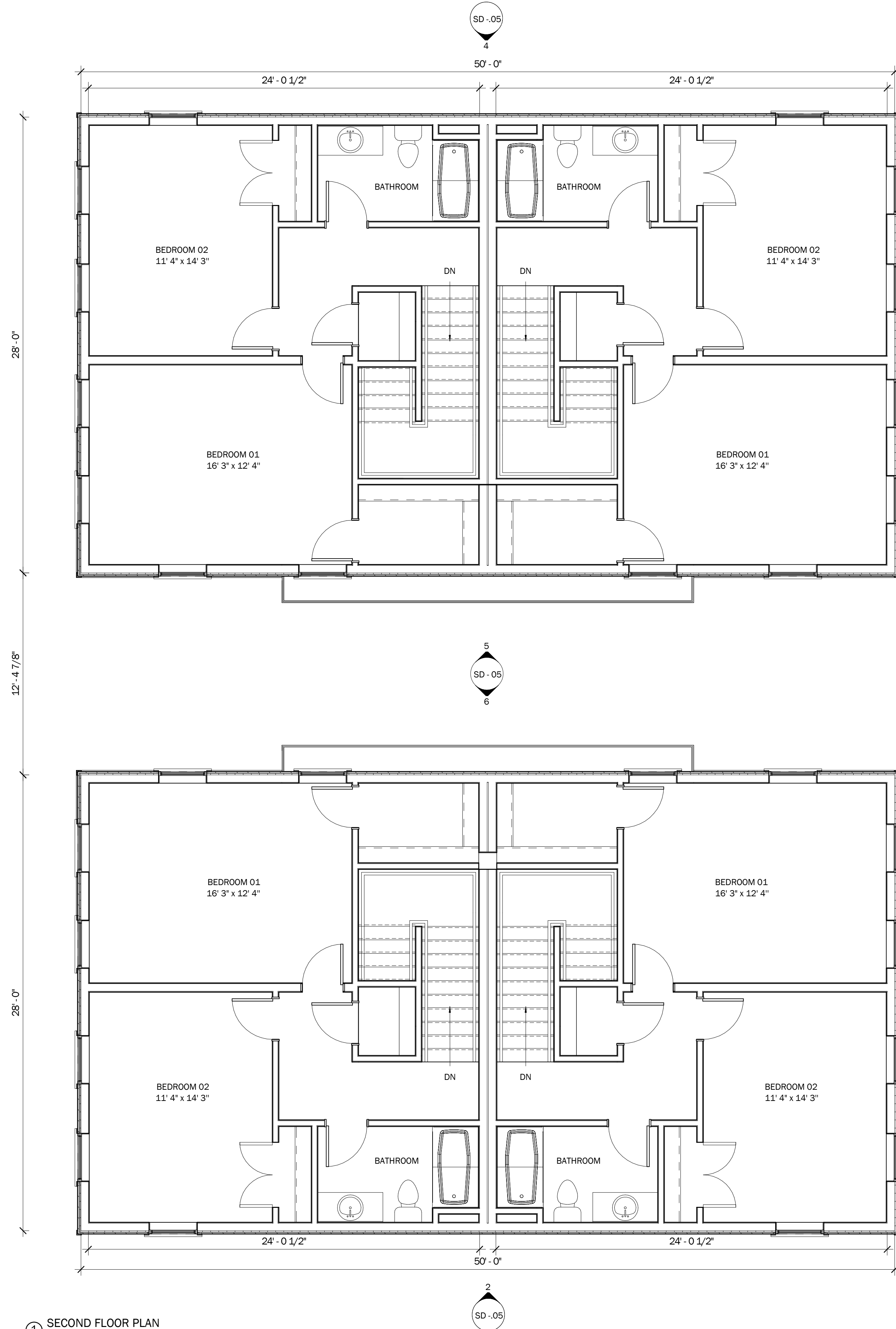
DRAWING NAME:

FIRST FLOOR PLAN

DRAWING NUMBER:

SD - 02

DRAFT



① SECOND FLOOR PLAN
1/4" = 1'-0"

CLIENT:
RYAN ESCHBACH

PROJECT:

96 BROADWAY HOUSING

PROJECT NUMBER: 26.07
DATE: MARCH 3, 2026
SCALE: AS NOTED
REVISION:

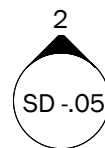
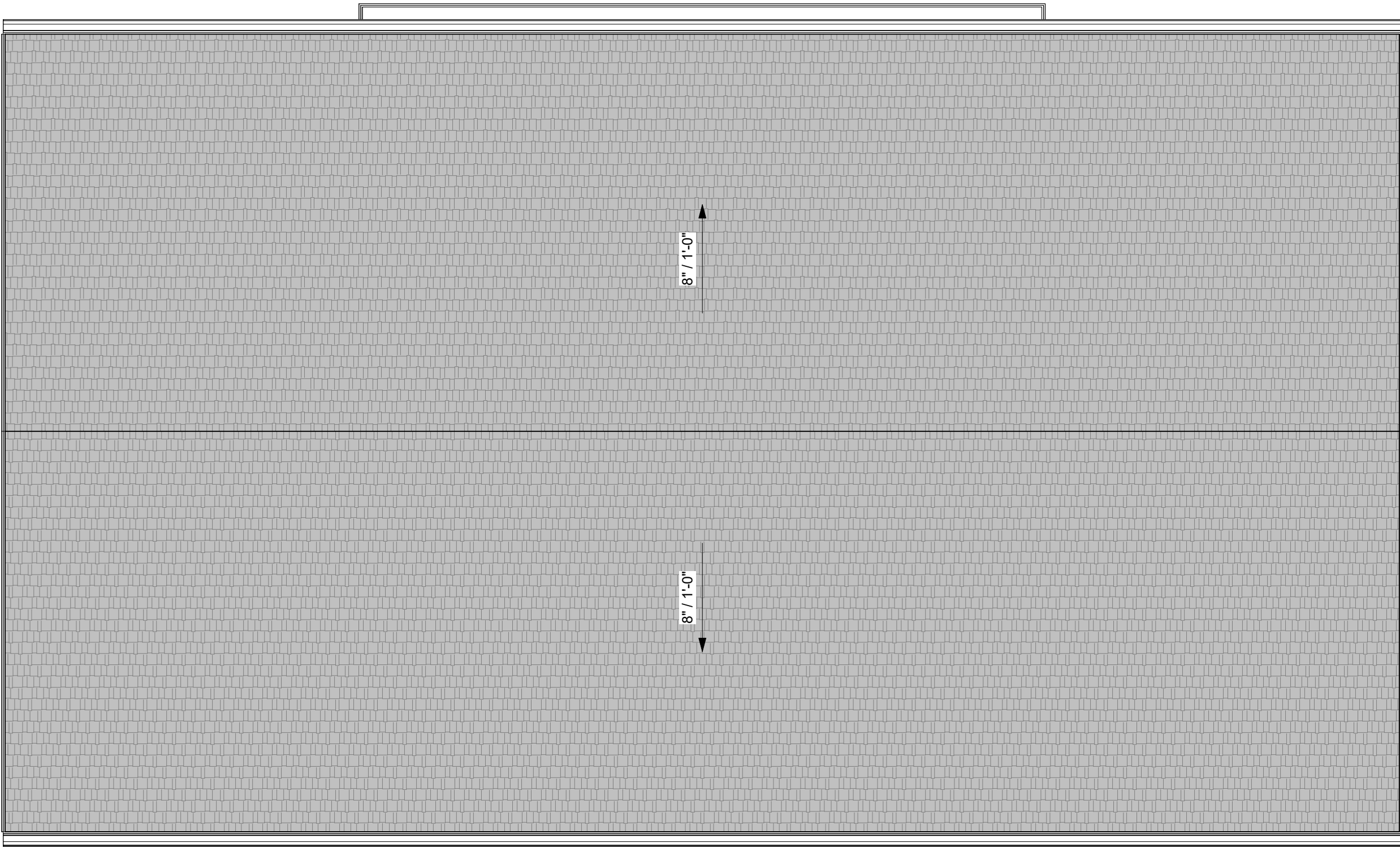
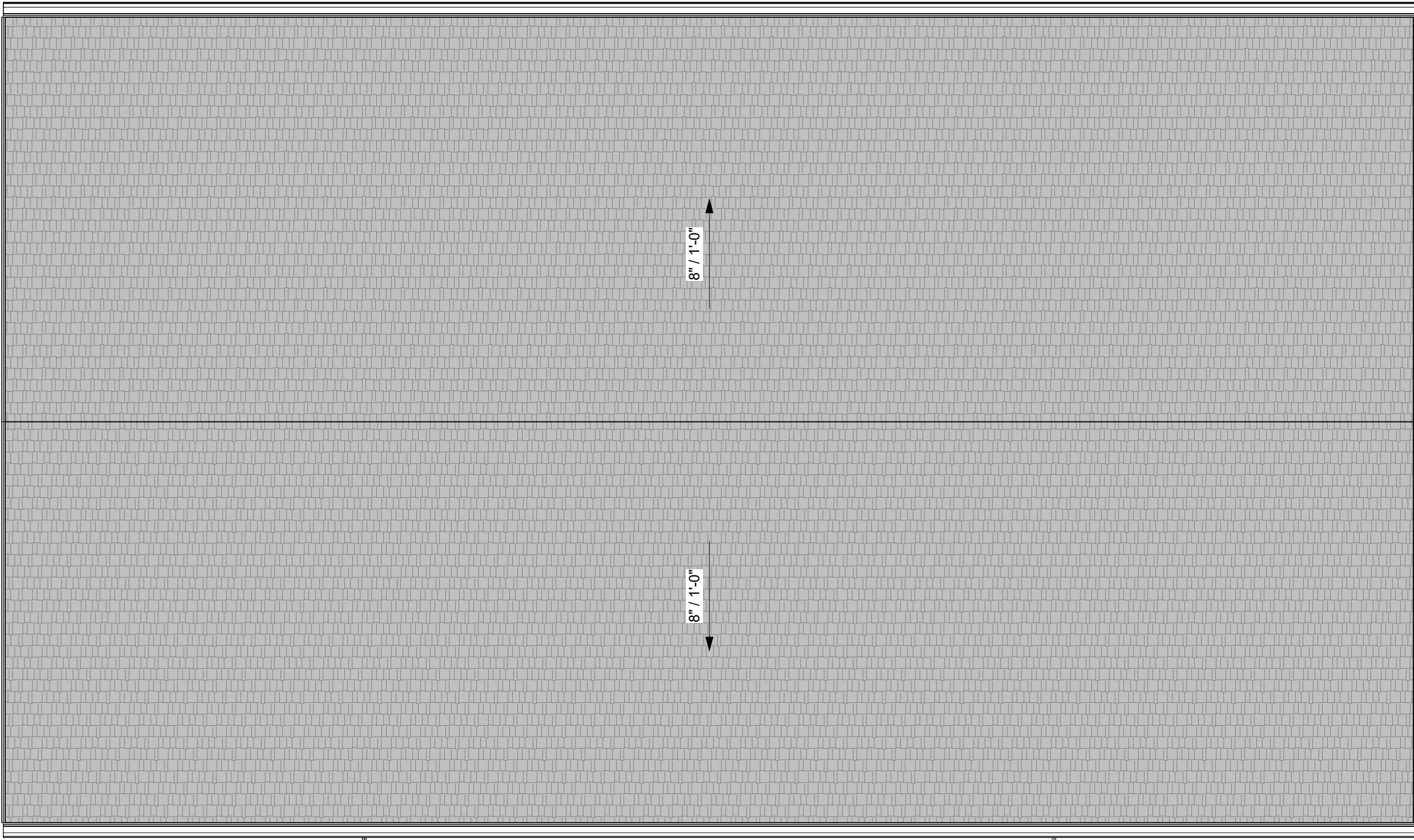
NORTH:

DRAWING NAME:
SECOND FLOOR PLAN

DRAWING NUMBER:

SD - 03

DRAFT



① ROOF PLAN
1/4" = 1'-0"

CLIENT:
RYAN ESCHBACH

PROJECT:

96 BROADWAY HOUSING

PROJECT NUMBER: 26.07
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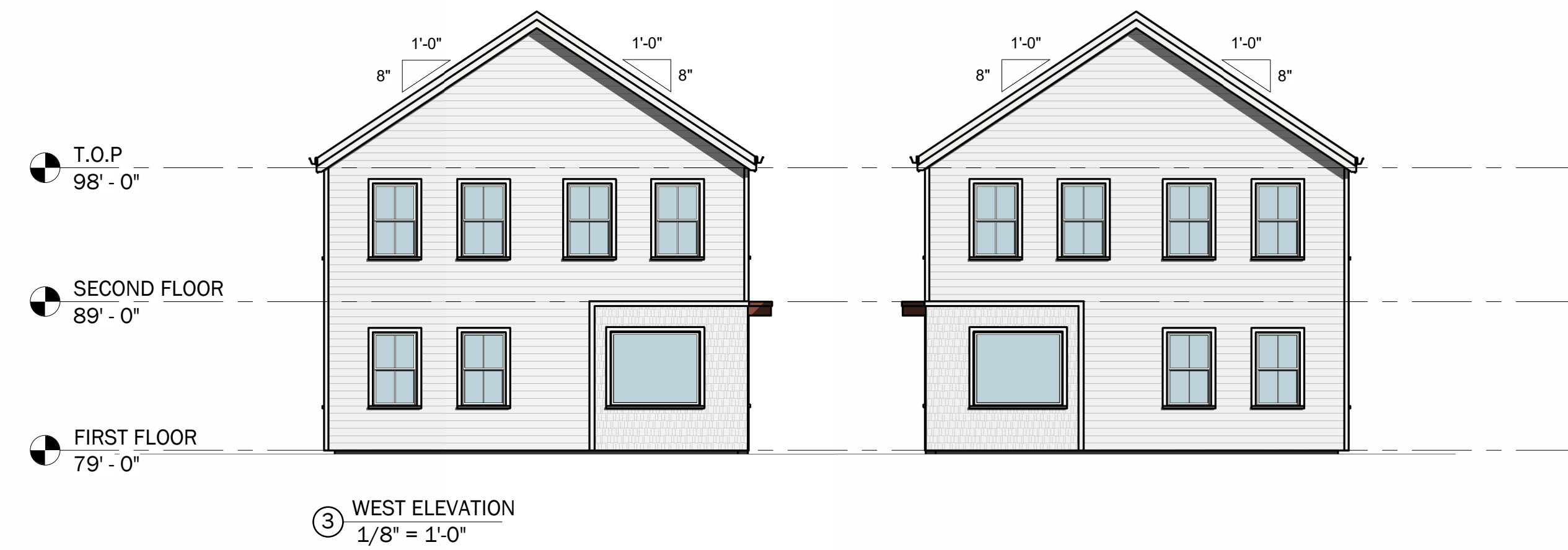
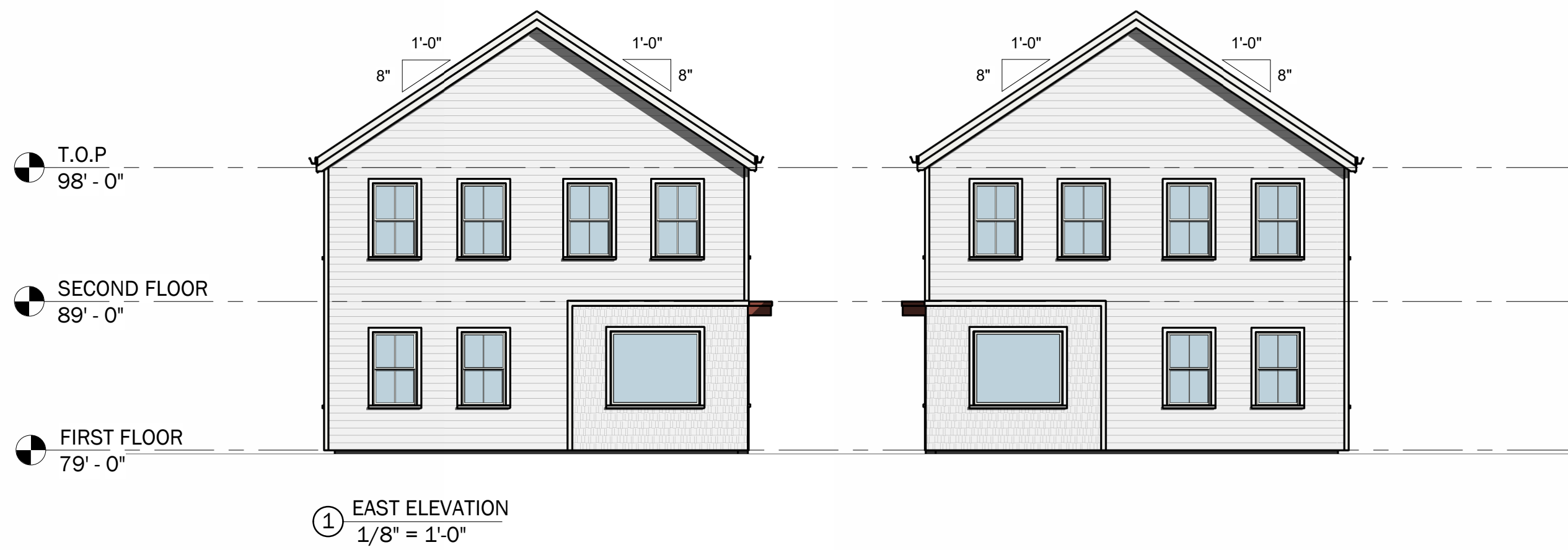
DRAWING NAME:

ROOF PLAN

DRAWING NUMBER:

SD - 04

DRAFT



CLIENT:
RYAN ESCHBACH

96 BROADWAY HOUSING

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DRAWING NAME:
EXTERIOR ELEVATIONS

DRAWING NUMBER:

SD - 05



VIEW FROM BROADWAY 01



VIEW FROM BROADWAY 02

96 BROADWAY HOUSING

DRAFT

SD - 06

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CLIENT:
RYAN ESCHBACH

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PROJECT:

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DRAWING NAME:

3D VIEWS

DRAWING NUMBER:

