



CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room – City Hall, Dover NH
Meeting Date: **Thursday, April 22, 2021**
Meeting Time: **10:30 AM**

1. 10:30 AM – 11:00 AM: Site Review for Pandolfo Company, Inc, Assessor's Map A, Lot 1, zoned C-Commercial, located at 1 Long Hill Road. (Proposal is to construct a 4,834 sq. ft. prefabricated aluminum building and 6 vacuums with 1 central motor). (P21-24)
2. 11:00 AM – 12:00 PM: Subdivision using Transfer of Development Rights for Zeland Schwartz Revocable Trust, Assessor's Map H, Lot 14D, zoned R-20, located at 26 ½ Bellamy Road. (Proposal is to increase residential units from 3 to 5). A related CUP application will also appear before the Planning Board. (P21-25)

CHRISTOPHER G. PARKER, AICP
Assistant City Manager
Planning & Strategic Initiatives
c.parker@dover.nh.gov



288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6008
Fax: (603) 516-6049
www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

INSTRUCTIONS TO APPLICANTS TO THE DOVER PLANNING BOARD

**IMPORTANT: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE
FILLING OUT ATTACHED APPLICATION.
INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED FOR REVIEW.**

Dear Applicant:

This will serve to briefly inform you regarding the process to have the Dover Planning Board (the Board) review a land use application. Please refer to the NH Statutes on Land Use and Regulation the Dover Code, and our Developer's Handbook for more specific information.

The Board primarily reviews 5 types of applications:

1. **Site Plans** - A site plan is a professionally rendered drawing which delineates the proposed development of a site. This plan is required for non-residential development, creation of multi-family residential structures, and for extensions of parking lots and alteration of an acre or more of land. These plans require meeting with the Technical Review Committee before Planning Board review.
2. **Subdivisions** - A subdivision is the division of the lot, tract, or parcel of land into two (2) or more lots, plats, sites or other divisions of land for the purpose, whether immediate or future, of sale, rent, lease or building development. It includes re-subdivision and, when appropriate to the context, relates to the process of subdividing or to the land or territory subdivided. Major subdivision plans (4+) require meeting with the Technical Review Committee before Planning Board review.
3. **Lot Line Adjustments** - A lot line adjustment alters the size of two (2) or more lots, but does not create a new buildable lot.
4. **Conditional Use Permits** - A conditional use permit is required for any alteration of wetlands, wetland buffers or work within the City's conservation district. Additionally, a conditional use permit could be issued as to offer relief in the Central Business District, for plans in the Residential Mixed Use Overlay District, or parking relief. Environmental Conditional Use Permits are acted on after Conservation Commission review.
5. **Excavation Permits** - NH RSA Chapter 155-E grants municipalities the authority to regulate earth excavations within their borders. This authority rests with the Planning Board.

The Board cannot and will not review applications that do not meet zoning requirements. **Please review the need to apply to the Zoning Board of Adjustment prior to applying to the Board.**

Professional agents will prepare your application; however, you may represent yourself or authorize, in writing, someone else to represent you before the Planning Board.

In most cases, 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, and a PDF, need to be provided, along with payment of plan review fees. These meetings occur on Thursday, and materials and payment must be submitted three (3) weeks prior to meeting. Meetings are scheduled, upon receipt of completed applications with the full checklist and payment.

The next step would be to provide, two weeks prior to Planning Board, the final plan sets (three (3) full size and twelve (12) half size (11x 17), folded, copies of the plan), and 15 copies, and a PDF, of all supporting materials, including response to TRC comments. Please print all materials on both sides of paper.

For projects not appearing before the Technical Review Committee, Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and 15 copies, plus a PDF, of plans and materials, 3 weeks prior to the Planning Board meeting. Please print all materials on both sides of paper.

Staff will generate an abutter list, and Abutter/Notice Fees will be invoiced. They are due 28 hours prior to Planning Board. If they are not paid, the application will not be heard.

Once an item is placed upon an agenda the following process is used:

- The Board will hold a public hearing on your application at a regularly scheduled meeting
 - Typically the second or fourth Tuesday of the Month.
- Public notice of the hearing will be posted at the City Clerk's office and the Planning Department office and printed in the newspaper.
- Certified letters will be mailed to you and to all abutters at least ten days before the date of the hearing.
- 28 hours prior to the meeting, abutter/notice fees must be paid
- At the meeting
 - Staff will introduce your project
 - You and all other parties will be invited to appear in person or by agent or counsel to present your application.
 - Your project will be pre-loaded onto a laptop for review by the Board and public
 - The Board may ask clarifying questions
 - The Board will vote to accept jurisdiction on the application
 - If accepted:
 - The Board will hold a public hearing
 - The Board may ask additional questions
 - The Board will deliberate on your application
 - Typically decisions are made the night of the presentation, but an application may be tabled
 - After deliberation, a decision will be made.
 - You will be sent a notice of the decision.

Name of Applicant: PAUOLOLO COMPANY, INC. - FRANK PAUOLOLO Telephone # 617.908.3448

Address of Applicant: PO BOX 1068 BURLINGTON, MA. 01803

E-Mail Address: FRANKPAUOLOLO@PAUOLOLOCOMPANY.COM

Name of Property Owner (if different from applicant): GTY MA/NH Leasing, Inc. Telephone # 646-349-6000

Address of Property Owner: 292 Madison Ave - 9th Fl, New York, NY 10017

PROPERTY INFORMATION

Address of Property: 1 LONG HILL ROAD

Assessor's Map # A-1 Lot(s) # 0-0

Zoning District(s) B-3 Overlay District(s) _____

Size of Parcel: 88,190 sq. ft. 2 ac. Property Deed: Book 3917 Page: 643
1267 378
1206 245

Existing Use of Property: CONVENIENCE STORE, GAS STATION, DUNKIN DONUTS, CARWASH - 333

SITE PLAN INFORMATION

Describe Proposed Use: SAME AS EXISTING

Area of Parcel to be Developed: 1,400 sq. ft.

If Multi-family Residential, Specify Number of Units & Buildings Proposed: _____

Number of Parking Spaces: Existing 29 Proposed 28

Highway Access (check where applicable): ☒ City Street ☒ State Highway

Number of Employees Total: 6 In Maximum Shift: 6

Disposition of Parcel:

Building Setbacks:

Building Footprint 4,834 sq. ft.

Front Yard 54'-0" ft.

Total Building Area 5,544 sq. ft.

Rear Yard 15'-0" ft.

Paved Area 26,000 sq. ft.

Side Yard: Right 85 ft. Left 85 ft.

City Water? ☒ Yes ☐ No How far is city water from the property? N/ACity Sewer? ☒ Yes ☐ No How far is city sewer from the property? N/A

BUILDING INFORMATION

Type of Building to be Built: 6' x 14' PREFABRICATED ALUMINIUM BUILDING AND 6 VACUUM BOOMS WITH 1 CENTRAL MOTORHeight of Building: 8' Finished Floor Elevation: N/ANumber of Seats (where applicable) 1Estimated value of construction: \$58,000.00 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.) _____

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

ENGINEER INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) STEVEN M. PEDRO - AYOUB ENGINEERINGAddress 414 BENEFIT STREET PAWTUCKET, RI 02861 Telephone #: 401.728.5533

Professional License #: 2659 E-mail address: SPEDRO@AYOUBENGINEERING.COM

LANDSCAPE ARCHITECT INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

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.

By: GTY MA/NH Leasing, Inc.

Signature of Property Owner: [Signature] Date: 3/9/21By: Christopher J. Constant, President
Signature of Applicant (if different from owner): Frank Pandolf Date: 2/2/21

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.

By: GTY MA/NH Leasing, Inc.

Signature of Property Owner: [Signature] Date: 3/9/21By: Christopher J. Constant, President
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.

By: GTY MA/NH Leasing, Inc.

Signature of Property Owner: [Signature] Date: 3/9/21By: Christopher J. Constant, President
Signature of Applicant (if different from owner): Frank Pandolf Date: 2/2/21

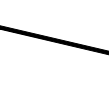
CERTIFICATION OF FEES

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.

By: GTY MA/NH Leasing, Inc.

Signature of Property Owner: [Signature] Date: 3/9/21By: Christopher J. Constant, President
Signature of Applicant (if different from owner): Frank Pandolf Date: 2/2/21

[illegible]

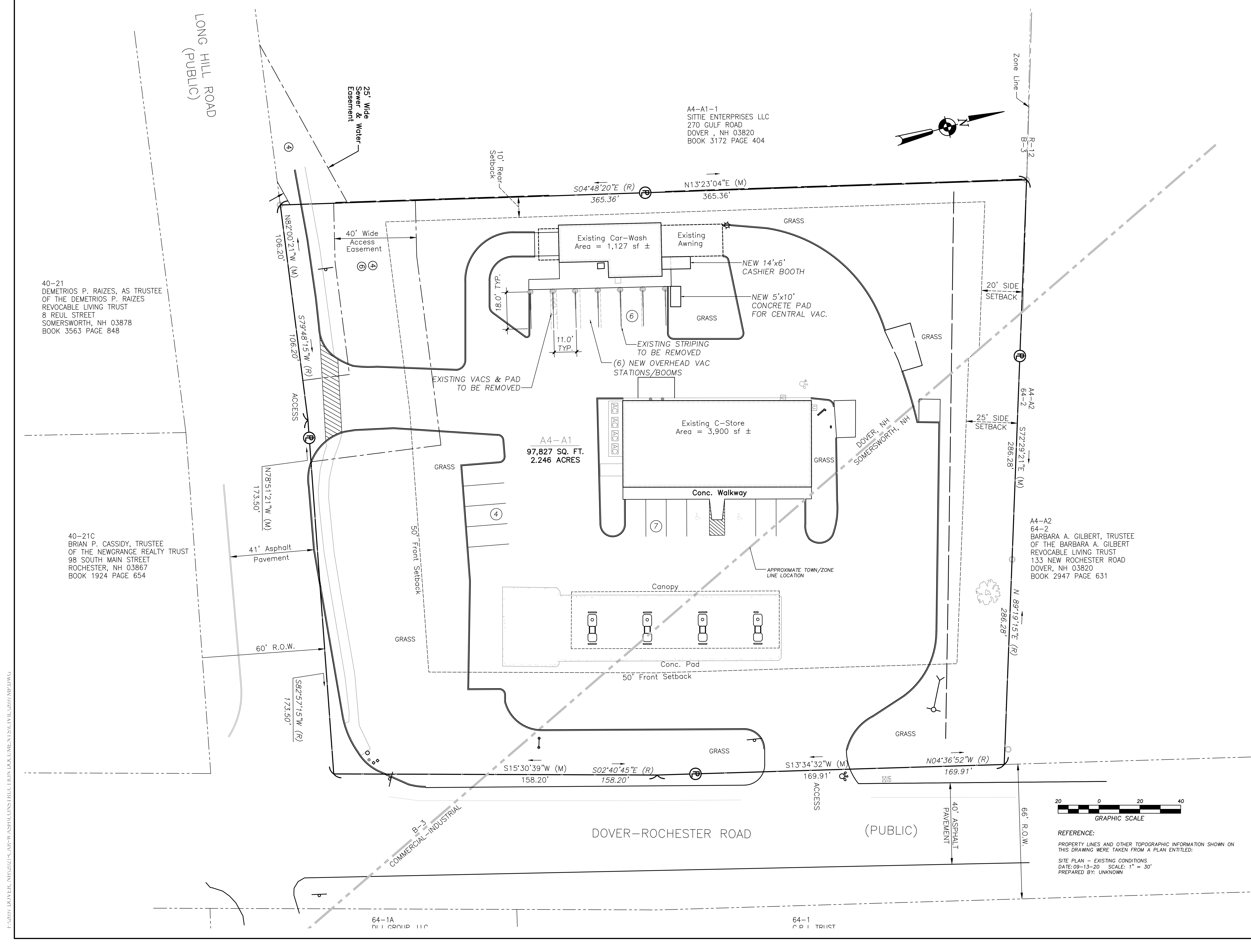
AYOUB
ENGINEERING

ENGINEERS & ARCHITECTS

ADDRESS:

414, BENEFIT STREET
PAWTUCKET, RHODE ISLAND 02861
401-728-5533

 NOURIA ENERGY CORP 326 CLARK STREET WORCESTER, MA 01606 (866) 903-6321	PREPARED FOR	PROJECT ADDRESS DOVER, NH 1 LONGHILL ROAD	SHEET DESCRIPTION SITE IMPROVEMENT PLAN
	PROJECT NO. 2687.120		
	SCALE: 1"=20'		
	DRAWN BY: HAL		
DATE: 01/14/2021			SHEET NO. C-1













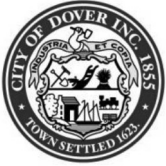












City of Dover, New Hampshire SUBDIVISION APPLICATION

[Revision Date: September 17, 2020]

Office Use Only

Project #: _____

Date Received: _____

Amount Paid: _____

Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: Zeland Schwartz Revocable Trust Telephone # 207-752-2996

Address of Applicant: 14 Huckins Road Madbury, NH 03823

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

Address of Property Owner: SAME

E-Mail Address: zelandra1@aol.com

PROPERTY INFORMATION

Address of Property: 26 1/2 Bellamy Road

Assessor's Map # H Lot(s) # 14D

Zoning District(s) R-20 Low Density Overlay District(s) Conservation District, TDR

Size of Parcel: 161,700 s.f. (3.71 ac.) Property Deed: Book 4742 Page: 911

Existing Use of Property: Residential - Single Family

SUBDIVISION INFORMATION

Subdivision Type: Major (4 + net new lots): X Open Space: _____ TDR: X

Existing Number of Lots: 1 Proposed Number of Lots: 5

City Water? X Yes _____ No _____ How far is city water from the property? at Bellamy Road

City Sewer? X Yes _____ No _____ How far is city sewer from the property? at Bellamy Road

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

Estimated Length of Proposed Roads: 400+/- feet Public or Private Road? Private

Estimated value of construction: \$275,000 Refuse removal: Public Private (circle one)

New impervious area (in s.f.): 10,268.27s.f.

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: SEE ATTACHED

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

SURVEYOR INFORMATIONName of Surveyor and Company (Licensed in N.H.) Kevin M. McEneaney, LLS
McEneaney Survey AssociatesAddress 24 Chestnut Street Dover, NH 03820 Telephone #: 603-742-0911Professional License #: NH LLS #661 E-mail address: kevin@surveynh.com**ENGINEER INFORMATION**Name of Engineer and Company (Licensed in N.H.) Stephen J. Haight, P.E. - Civilworks New EnglandAddress P.O. Box 1166 Dover, NH 03821 Telephone #: 603-749-0443Professional License #: NH P.E.#7978 E-mail address: shaight@civilworksne.com**LANDSCAPE ARCHITECT INFORMATION**Name of Landscape Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

Wetland

SOIL SCIENTIST INFORMATION

Wetland

Name of Soil Scientist and Company (Licensed in N.H.) Damon E. Burt, CWS
Fraggle Rock EnvironmentalAddress 38 Garland Road Strafford, NH 03884 Telephone #: 603-969-5574Professional License #: NH CWS #163 E-mail address: frenvironmental@gmail.com**CONSERVATION EASEMENT HOLDER N/A**

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.

X Signature of Property Owner: Yes Date: 4/11/21

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.

X Signature of Property Owner: Yes Date: 4/1/21

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

X Signature of Property Owner: Yes Date: 4/1/21

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.

X Signature of Property Owner: Yes Date: 4/1/21

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

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

X Signature of Property Owner: Yes Date: 4/1/21

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



City of Dover, New Hampshire SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 2019]

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

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

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

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

APPLICANT: Zeland Schwartz Revocable Trust File Number: P21-

PROJECT TITLE: Subdivision of Land for Zeland Schwartz Revocable Trust

PROPERTY LOCATION: 26 1/2 Bellamy Road Tax Map: H Lot: 14D

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

	Explain How Provided	Reviewed
Existing and proposed buildings and structure locations	X	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	X	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	X	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	X	
Existing and proposed septic system, including test pit locations and results and NHDES subdivision permit number	N/A	
Existing and proposed stormwater lines and facilities	X	
Existing and proposed streetlights	X	
Location of Flood Hazard Zone	X	
Location of all bodies of water and watercourses	X	
Location of wetlands and buffers	X	
Neighborhood plan with aerial underlay showing how project relates to abutting uses	X	
Existing natural features and/or significant vegetation on property	X	
Depict existing contours up to 100 ft. beyond project limits	X	
Soil types	X	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	X	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision		
Location, material and size of existing and proposed permanent monuments	X	
Existing railroad lines	N/A	
Note regarding solid waste disposal	X	
All applicable Dover Common Subdivision notes	X	
10. Construction Detail Sheets shall contain the following:		
Profiles showing existing & proposed elevations along the center lines of proposed streets & within 100' of intersections with existing streets	X	
Profiles showing the locations & a typical cross-section detail of streets	X	
Location of street trees, street lighting poles and street signs	X	
Location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants	X	
Location and size of all water, gas and other underground utilities	X	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing and proposed storm drainage system and engineered drainage analysis	X	
Stormwater Management System Operation and Maintenance Plan	X	
Letter to Serve from Public and Private Utilities	X	
Erosion and Sedimentation Control Plan	X	
Perimeter Landscaping Plan	N/A	
Proposed restrictive covenants or homeowners association documents	X	
Dates and permit numbers of all required state and federal permits	X	
If wetland buffer, indicate placards locations, as applicable	N/A	
Hydrogeologic study if located in Groundwater Protection Zone	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	UPON REQUEST	

REVIEWED BY: _____ DATE _____ TRC DATE _____

*Schwartz Zeland Revocable Trust
Schwartz Zeland Trustee
14 Huckins Road
Madbury, NH 03823*

January 28, 2021

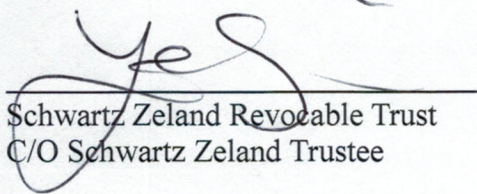
City of Dover
Planning Board
288 Central Ave
Dover, NH 03820

Ref: 26 ½ Bellamy Road
Dover, NH 03820
Tax map H, Lot 14-D & 13

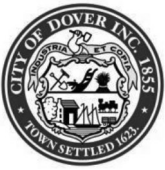
Re: Letter of Authorization

Schwartz Zeland Revocable Trust authorizes, Civilworks New England to represent the applicant to the State of New Hampshire, the City of Dover Planning Board and any other Dover Board or Committee relative to the pursuit of permits for the development of the subject parcel.

Sincerely,



Schwartz Zeland Revocable Trust
C/O Schwartz Zeland Trustee



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: Zeland Schwartz Revocable Trust Telephone # 207-752-2996

Address of Applicant: 14 Huckins Road Madbury, NH 03823

E-Mail Address: zelandra1@aol.com

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

Address of Property Owner: SAME

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 14D

Address of Property: 26 1/2 Bellamy Road

Zoning District(s) R-20 Low Density Overlay District(s) Conservation District, TDR

Existing Use of Property: Residential - Single Family

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:

To allow general construction grading activity within Steep Slopes and the 100' Conservation District.

There a steep slope impact of 64 sf which is also part of a 8671 sf impact within the

Conservation District.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Shoreland Impact Permit # 2021-00587, approved 3/19/21

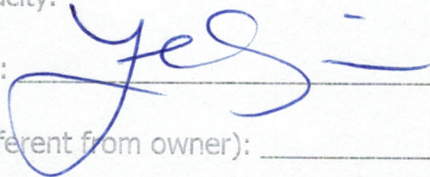
Name of Professional That Prepared Plans: Stephen J. Haight, P.E. - Civilworks New England

Address P.O. Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: Stephen J. Haight, P.E.#7978 E-mail address: shaight@civilworksne.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.

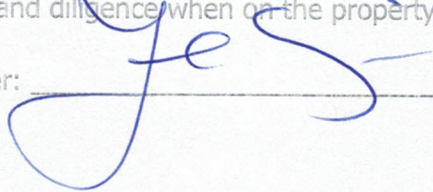
x Signature of Property Owner:  Date: 4/1/21

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.

x Signature of Property Owner:  Date: 4/1/21

**CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS**

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	<u>MAILING ADDRESS</u>
H	14D	Zeland Schwartz Revocable Trust	14 Huckins Road Madbury, NH 03823

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	<u>MAILING ADDRESS</u>

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	<u>MAILING ADDRESS</u>
Kevin M. McEneaney, LLS	McEneaney Survey Associates	24 Chestnut Street Dover, NH 03820
Stephen J. Haight, P.E.	Civilworks New England	P.O. Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	<u>MAILING ADDRESS</u>



City of Dover, New Hampshire

TRANSFER OF DEVELOPMENT RIGHTS APPLICATION

[Revision Date: August 16, 2018]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Zeland Schwartz Revocable Trust Telephone # 207-752-2996

Address of Applicant: 14 Huckins Road Madbury, NH 03823

E-Mail Address: zelandra1@aol.com

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

Address of Property Owner: SAME

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 14D

Address of Property: 26 1/2 Bellamy Road

Zoning District(s) R-20 Low Density Overlay District(s) Conservation District, TDR

Existing Use of Property: Residential - Single Family

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

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

Relief sought (Check All That Apply):

☐ Lot Size ☐ Frontage ☒ Setback ☒ Increase by 2 units

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

To increase the number of residential units from 3 to 5. And to allow road construction creating an
impact of 7036 sf. within the 30' no disturb buffer. Also, there is a 64 sf impact to a steep slope area,
which is included in a 8671 sf impact within the 100' Conservation District.

A Conditional Use Permit application is being submitted to address these impacts.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Shoreland Impact Permit # 2021-00587, approved 3/19/21

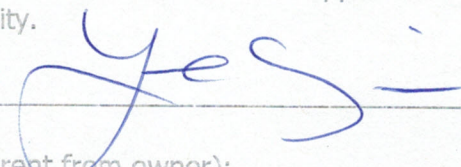
Name of Professional That Prepared TDR Plans: Kevin M. McEneaney, LLS
McEneaney Survey Associates

Address P.O. Box 681 Dover, NH 03820 Telephone #: 603-742-0911

Professional License #: NH LLS #661 E-mail address: kevin@surveynh.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.

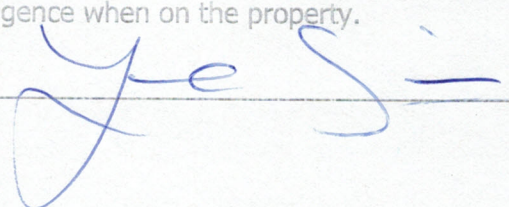
x Signature of Property Owner:  Date: 4/1/21

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.

x Signature of Property Owner:  Date: 4/1/21

PROJECT NARRATIVE

For
Zeland Schwartz Revocable Trust
5 - Lot Subdivision
Bellamy Road, Dover, NH
Tax Map H, Lot 14D

PROJECT OVERVIEW

The project proponent will be developing a 3.71 acre parcel on Bellamy Road with five (5) single family detached homes, of the five (5), two (2) are existing residential structures. Site improvements will include a private road to service the homes, underground utilities, municipal water and sewer, storm water mitigation, associated site grading, site lighting, a revegetation plan and a mail kiosk.

Dover City Zoning Ordinance 170-27.2 "Transfer of Development Rights" (TDR) allows for a base number of 3.28 units. The applicant is requesting two (2) additional units. Along with a Subdivision and TDR approval from the Planning Board, the project proponent will be requesting Conditional Use Permits for impacts to Dover Conservation District 20% slopes and 100' River setback, and a Shoreland Impact Permit from the State (which has been granted permit #2021-00587). The proposed impacts are limited to grading and the stormwater management system.

The project consists of the following general construction:

- Select clearing and grubbing of lot limited to the areas required to construct the improvements, leaving as much natural buffer as is practicable;
- Installation of the storm water management system, road, driveways, underground utilities and site lighting;
- House site and utility construction;
- Installation of site landscaping and stabilization of the remaining areas with loam and seed.
- Re-vegetating 17,300 s.f. of previously cleared area and the removal of the existing gravel driveway (See Shoreland Permit).

PROJECT LOCATION AND SITE CHARACTERISTICS

The project site is located at 26 ½ Bellamy Road and is within the Low Density Residential (R-20) District and is shown on Assessor's Tax Map H as Lot 14D. The project parcel is bounded by Bellamy Road, Bellamy River, residential lots, and the Dover High School parcel, contains +/- 3.71 acres, and is currently developed with two (2) existing residential structures sharing a gravel drive along the river bank for site access.

100' RIVER CONSERVATION DISTRICT AND 20% SLOPE IMPACTS

There are impacts to the City of Dover 100' River Conservation District and 20% Steep Slope district totaling 8,671 s.f. for drainage and driveway construction, and 64 s.f. for drainage respectively.

PROJECT NARRATIVE

For
Zeland Schwartz Revocable Trust
5 - Lot Subdivision
Bellamy Road, Dover, NH
Tax Map H, Lot 14D

DRAINAGE

The proposed bio-retention basin will treat and mitigate stormwater runoff from the majority of the proposed road, driveways, and proposed homes. The remaining site overland through existing drainage ways to the Bellamy River.

UTILITIES

The proposed project will connect to municipal water and sewer located in Bellamy Road. The project will also connect to Unitil natural gas and Eversource electric. Each of these services are currently available in the Bellamy Road right-of-way.

TRAFFIC

A waiver is being requested for the requirements of the traffic study.

SOILD WASTE

Solid waste will be managed on site and the Condominium Association will contract with a private waste hauler.

POSTAL SERVICES

Postal services will be provided on site with a postal kiosk located on the in-bound side of the project road entrance.

CIVILWORKS NEW ENGLAND
P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 749-0443, FAX: (603)749-7348

WAIVER REQUEST #1

ACCOMPANYING TDR SUBDIVISION APPLICATION

for
Schwartz Subdivision
26 ½ Bellamy Road
TAX MAP H, LOT 14-D

Dover Land Subdivision Regulations: Section 157-10.D Traffic impact assessment and analysis. All proposed major subdivisions shall be reviewed by the Technical Review Committee and/or Planning Board to ascertain that adequate provisions have been made by the applicant for traffic safety. To facilitate this review, the applicant shall provide a traffic impact assessment and analysis to document existing traffic conditions in the vicinity of a proposed development project, to describe the volume and effect of projected traffic generated by the proposed project, and to identify measures proposed to mitigate any adverse impacts on traffic. All analyses must meet the minimum requirements of a "standard" analysis.

Waiver request: A waiver from the requirement of performing a traffic analysis.

The proposed development would produce approximately 30 trips per day (10 vehicle trips/day/home). This low volume of traffic does not warrant a full traffic impact assessment.

CIVILWORKS NEW ENGLAND
P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 749-0443, FAX: (603)749-7348

WAIVER REQUEST #2

ACCOMPANYING TDR SUBDIVISION APPLICATION

for
Schwartz Subdivision
26 ½ Bellamy Road
TAX MAP H, LOT 14-D

Dover Land Subdivision Regulations: Section 157-31.F Block Size. Blocks in general shall not be less than 500 feet nor more than 1,200 feet in length. In general, no block width shall be less than twice the normal lot depth.

Waiver request: A waiver from the requirement that a block/road shall be less than 500 feet to allow a 397 ft. +/- hammer head cul-de-sac.

Due to the unique site topography, lot configuration, and proximity to the Bellamy River the proposed road has been designed to accommodate 3 new homes while minimizing impacts to the land area and slopes.

Strict conformity to the length requirements would require impacts to slopes and vegetated areas.

Granting the waiver is in general conformance with the intent of the ordinance.

CIVILWORKS NEW ENGLAND
P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 749-0443, FAX: (603)749-7348

WAIVER REQUEST #3

ACCOMPANYING TDR SUBDIVISION APPLICATION

for
Schwartz Subdivision
26 ½ Bellamy Road
TAX MAP H, LOT 14-D

Dover Land Subdivision Regulations: Section 157-32.J Dead-End Streets.(culs-de-sac). Unless topography indicates a need for an alternative length, streets shall not be less than 500 feet nor exceed 1,000 feet in length and shall terminate in a cul-de-sac.

Waiver request: A waiver from the requirement that a block/road shall be less than 500 feet to allow a 397 ft. +/- hammer head cul-de-sac.

Due to the unique site topography, lot configuration, and proximity to the Bellamy River the proposed road has been designed to accommodate 3 new homes while minimizing impacts to the land area and slopes.

Strict conformity to the length requirements would require impacts to slopes and vegetated areas.

Granting the waiver is in general conformance with the intent of the ordinance.

CIVILWORKS NEW ENGLAND
P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 749-0443, FAX: (603)749-7348

WAIVER REQUEST #4

ACCOMPANYING TDR SUBDIVISION APPLICATION

for
Schwartz Subdivision
26 ½ Bellamy Road
TAX MAP H, LOT 14-D

Dover Land Subdivision Regulations: Section 157-47 A. Private Roads
Table A. Where 5 or more lots require a 24 to 34 foot road as determined by the site physical characteristics and the layout and density of the proposed development.

Waiver request: A waiver from the requirement for a 24 foot wide paved to allow for a 20 foot wide paved road to service 5 homes.

Due to the unique site topography, lot configuration, and proximity to the Bellamy River the proposed road has been designed to accommodate 3 new homes while minimizing impacts to the land area and slopes. Note: the existing gravel driveway along the top of river bank that services the parent lot will be removed and re-vegetated as per the approved Shoreland Impact Plan; Permit #2021-00587.

Strict conformity to the roadway width requirements would require more impacts to slopes and vegetated areas.

Granting the waiver is in general conformance with the intent of the ordinance.

CIVILWORKS NEW ENGLAND
P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 749-0443, FAX: (603) 749-7348

WAIVER REQUEST #5

ACCOMPANYING TDR SUBDIVISION APPLICATION

for
Schwartz Subdivision
26 ½ Bellamy Road
TAX MAP H, LOT 14-D

Dover Zoning Ordinance: Section 170.27.2 G (7) Transfer of Development Rights
A continuous visual buffer shall be created along the perimeter of the parent parcel, which shall include a thirty (30) foot no cut, no disturb buffer.

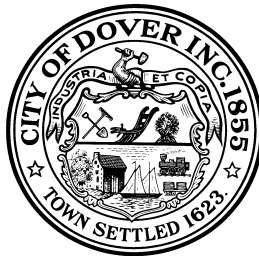
Waiver request: A waiver from the requirement of the 30 foot no cut, no disturb buffer along the first 200 feet of the proposed roadway where 15 feet of the impact will be of vegetated slope, as well as along the frontage of the lot to allow for a comprehensive stormwater management system.

Due to the unique site topography, lot configuration, and proximity to the Bellamy River the proposed road has been designed to accommodate 3 new homes while minimizing impacts to the land area and slopes. Note: the existing gravel driveway along the top of river bank that services the parent lot will be removed and re-vegetated as per the approved Shoreland Impact Plan; Permit #2021-00587.

Strict conformity to the length requirements would require impacts to slopes and vegetated areas. Buffer requirements for the roadway would require more substantial impacts to the shoreland river setbacks and steep slopes.

Granting the waiver is in general conformance with the intent of the ordinance.

DAVE WHITE, P.E.
City Engineer
d.white@dover.nh.gov



288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6450
www.dover.nh.gov

City of Dover, New Hampshire
COMMUNITY SERVICES DEPARTMENT

March 26, 2021

Jase R. Gregoire
Staff Engineer
Civilworks New England/Haight Engineering, PLLC
181 Watson Road
P.O. Box 1166
Dover, New Hampshire 03821

RE: 26 1/2 Spur Rd

To Whom It May Concern:

This letter is written confirmation that the City of Dover is able to serve the above referenced development with water and sanitary sewer service. Water and sanitary sewer work shall conform to the City's Water and Sewer Ordinances, as well as the requirements of Dover's Community Services Utilities Division. There is also adequate supply and capacity in the water and sewer system. If you have any questions, please feel free to call me at 516-6450.

Sincerely,

Dave White

Dave White, PE
City Engineer



March 25, 2021

Zeland Schwartz
14 Huckins Road
Madbury, NH 03823

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

Dear Zeland Schwartz:

I am responding to your request to confirm the availability of electric service for the proposed 26 ½ Bellamy Road project being constructed for/by Zeland Schwartz.

The proposed project consists of a 3 single family detached residential units approximately 2,738 s/f. The proposed development will be constructed along Bellamy Road.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan "Draft Utility Plan". The proposed building service will be fed from (to be determined by Eversource Engineering) as depicted on utility plan "Draft Utility Plan". The developer will work with Eversource to obtain all necessary easements and licenses for the proposed overhead/underground facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Draft Utility Plan" dated 3-25-21, shows transformer locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (<https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2>).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Timothy Kenney, Eastern Region Operations Manager, Eversource
Mary Jo Hanson, Field Supervisor, Electric Design, Eversource



March 2, 2021

Zeland Schwartz
Zeland Schwartz Revocable Trust
14 Huckins Road
Madbury NH 03823

RE: Natural Gas Availability to 26 ½ Bellamy Rd Dover NH Project

Dear Mr. Schwartz,

Unitil's natural gas division has reviewed the requested site for natural gas service.

Unitil hereby confirms natural gas service will be available to the 26 ½ Bellamy Road Dover Project, to serve three single family homes.

Installation is pending an authorized installation agreement with Zeland Schwartz Revocable Trust and a street opening approval from the City of Dover DPW.

Let me know if you have any questions. You can email me at oliver@unitil.com. My phone number is 603-294-5174.

Sincerely,

Janet Oliver
Senior Business Development Representative

DRAINAGE ANALYSIS

for

**Schwartz Subdivision
Map H - Lot 14D
26 ½ Bellamy Road
Dover, NH 03820**

April 2021

Prepared For:

**Zeland Schwartz Revocable Trust
14 Huckins Road
Madbury, NH 03823**

Prepared By:

**Civilworks New England
181 Watson Road, P.O. Box 1166
Dover, NH 03820**

Stephen J. Haight, PE

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 - Area Listing
 - Soil Listing
 - Node Listing – 2-yr

- Node Listing – 10-yr
- Storm Summary – 10-yr
- Node Listing – 25-yr
- Node Listing – 50-yr

4.0 APPENDIX B – Watershed Plans

B-1 Pre-Developed Conditions

B-2 Post-Developed Conditions

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel, Tax Map H – Lot 14D. The parcel is located on Bellamy Road, Dover, NH. The site contains approximately 3.71 acres and is bounded on the west by Bellamy Road, the east by Dover High School and Bellamy River, the south by Dover High School and a residential lot, and the north by Bellamy River. The watershed of the parcel includes the project site as well as an abutting parcel, 26 Bellamy Road, which is also owned by Zeland Schwartz Revocable Trust. The project site consists of 2 existing residential structures, woodlands along the river and in the middle of the property, and a recently cleared area around the existing structures. On site soils are a mix of Windsor Loamy Fine Sand, Clay Subsoil variant, and Buxton Silt Loam. The Windsor series soils are HSG A and Buxton series soils area classified as HSG C.

The existing conditions within the property and its watershed have been analyzed using the same analysis points to compare the pre-development runoff to post-development. The subject parcel is located along Bellamy Road. The majority of the site slopes to the Bellamy River, with a small portion draining to Bellamy Road, which ultimately drains to the Bellamy River. The site is broken down into 3 major sub-catchments in order to model the pre-development condition. The largest sub-catchment (B) includes the majority of the parcel and drains overland into the Bellamy River, sub-catchment (A) mostly consists of the abutting residential parcel and a small portion of the subject parcel, this sub-catchment drains to Bellamy Road, sub-catchment (C) is located along the southern portion of the site and drains from the southwest to the southeast onto an abutting property before ultimately draining to the Bellamy River. To be conservative, the large cleared area near the 2 existing residential structures was modeled as woodland.

The proposed development of the site includes the construction of 3 new residential units, with site improvements such as site access, site grading, drainage, and utility connections. The cleared area will be re-vegetated with *Pinus Strobus*, *Amelanchier Canadensis*, and *Comptonia Peregrina*. The existing gravel driveway will be removed and be re-vegetated. The 2 existing homes will now be accessed from the proposed drive. A bio-retention basin is proposed for mitigation and treatment, and is located between Bellamy Road and one of the existing homes on the subject parcel.

The post development watershed is modeled utilizing the same points of analysis, “A”, Bellamy River, and “C”, to allow direct comparison of the peak runoff between the pre and post developed conditions. The post development conditions has been divided into four sub-catchments to accurately model the proposed development and proposed stormwater mitigation measure.

The bio-retention basin will treat and mitigate stormwater runoff from the majority of the proposed road, 4 out of the 5 proposed driveways, 1 proposed residential unit, and approximately a 3rd of the existing residential structure closest to Bellamy Road. Due to topographic and bedrock constraints a paved sluice is proposed to direct stormwater into the bio-retention basin from the road.

2.0 DRAINAGE ANALYSIS

A comprehensive hydrologic study of this site has been performed utilizing nationally recognized runoff estimating techniques developed by the USDA, Soil Conservation Services (SCS). The technique and runoff models are described in various SCS publications and references as follows:

“Stormwater Management and Erosion Sediment Control Handbook for Urban and Developing Areas in New Hampshire”

“New Hampshire Stormwater Manual Volume 2 - Post-Construction Best Management Practices Selection & Design”

“Civil Engineering Reference Manual, Fifth Edition”

“Open-Channel Hydraulics” Chow.

“Stormwater Modeling System” HydroCAD Ver. 10.10-5a

2.1 DRAINAGE DESIGN PARAMETERS

A brief review of the procedures and parameters used in the drainage study follows:

2.1.1 Watersheds

The watershed and subcatchment areas were delineated using topographic and boundary data provided by McEneaney Survey Associates of New England.

2.1.2 Soils

Onsite soil information used to estimate the runoff curve numbers was provided: by the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey tool.

Hydrologic Drainage Class A:

WfB - Windsor Loamy Fine Sand, Clay Subsoil Variant

Hydrologic Drainage Class C:

BzB - Buxton Silt loam

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center (NRCC) were utilized in this analysis. As such, the analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 3.15", 4.75", 6.01", and 7.18" rainfall depths respectively. The bio-retention basin has been sized to accommodate the 50-yr storm event.

2.1.4 Runoff Curve Numbers

The SCS runoff curve numbers were used and are summarized within each subcatchment drainage summary in Appendix A.

2.2 EXISTING CONDITIONS

For purposes of this analysis the subject parcel was analyzed as 3 sub-watershed areas that are all analyzed with the summing points as described above.

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

Watershed	Pre-Development Volume (af)	Pre Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.012	0.03	0.29	0.56	0.83
Bellamy River	0.003	0.01	0.08	0.42	1.14
C	0.000	0.00	0.00	0.01	0.03

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed with 4 sub-watershed areas. Post development watersheds have the same summing points as the pre development analysis.

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

Watershed	Post-Development Volume (af)	Post Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.011	0.03	0.26	0.48	0.71
Bellamy River	0.039	0.02	0.28	0.86	1.76
C	0.000	0.00	0.01	0.04	0.13

2.4 COMPARISION CHART

2.4.1 Table C – Existing vs. Developed Conditions Hydrology

Watershed	Pre/Post-Development Volume (af)	Pre/Post Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.012/ 0.011	0.03/ 0.03	0.29/ 0.26	0.56/ 0.48	0.83/ 0.71
Bellamy River	0.003/ 0.039	0.01/ 0.02	0.08/ 0.28	0.42/ 0.86	1.14/ 1.76
C	0.000/ 0.000	0.00/ 0.00	0.00/ 0.01	0.01/ 0.04	0.03/ 0.13

APPENDIX A

HYDROLOGIC CALCULATIONS

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.889 degrees West
Latitude	43.179 degrees North
Elevation	0 feet
Date/Time	Tue, 26 Jan 2021 19:17:31 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	1yr	0.70	0.98	1.20	1.54	2.00	2.60	2.86	1yr	2.30	2.75	3.15	3.88	4.45	1yr
2yr	0.32	0.49	0.61	0.81	1.01	1.29	2yr	0.88	1.17	1.50	1.91	2.45	3.15	3.50	2yr	2.78	3.36	3.86	4.59	5.22	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.58	5yr	1.06	1.44	1.85	2.38	3.07	3.98	4.48	5yr	3.52	4.31	4.93	5.80	6.56	5yr
10yr	0.40	0.63	0.80	1.09	1.42	1.85	10yr	1.22	1.69	2.18	2.82	3.66	4.75	5.41	10yr	4.20	5.20	5.93	6.93	7.79	10yr
25yr	0.46	0.74	0.94	1.29	1.72	2.27	25yr	1.48	2.09	2.69	3.52	4.61	6.01	6.93	25yr	5.32	6.67	7.59	8.76	9.79	25yr
50yr	0.52	0.83	1.06	1.48	2.00	2.66	50yr	1.72	2.46	3.18	4.18	5.49	7.18	8.38	50yr	6.35	8.06	9.14	10.47	11.65	50yr
100yr	0.58	0.94	1.20	1.70	2.32	3.12	100yr	2.00	2.89	3.74	4.95	6.53	8.59	10.12	100yr	7.60	9.73	11.02	12.52	13.86	100yr
200yr	0.64	1.05	1.36	1.95	2.69	3.66	200yr	2.32	3.40	4.42	5.89	7.79	10.27	12.24	200yr	9.09	11.77	13.28	14.98	16.50	200yr
500yr	0.75	1.24	1.62	2.35	3.29	4.53	500yr	2.84	4.21	5.49	7.37	9.82	13.02	15.73	500yr	11.53	15.12	17.02	18.99	20.79	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	1yr	0.64	0.88	0.91	1.26	1.57	2.10	2.47	1yr	1.86	2.37	2.89	3.33	4.02	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.18	2yr	0.86	1.16	1.36	1.83	2.36	3.04	3.39	2yr	2.69	3.26	3.74	4.46	5.05	2yr
5yr	0.35	0.54	0.67	0.91	1.16	1.40	5yr	1.00	1.37	1.61	2.15	2.78	3.71	4.12	5yr	3.28	3.96	4.60	5.41	6.11	5yr
10yr	0.38	0.59	0.73	1.02	1.31	1.60	10yr	1.13	1.56	1.81	2.44	3.13	4.27	4.78	10yr	3.78	4.60	5.32	6.25	7.02	10yr
25yr	0.44	0.66	0.82	1.18	1.55	1.91	25yr	1.34	1.87	2.11	2.84	3.65	4.96	5.79	25yr	4.39	5.57	6.48	7.56	8.44	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.19	50yr	1.52	2.14	2.35	3.20	4.10	5.67	6.69	50yr	5.01	6.43	7.53	8.74	9.68	50yr
100yr	0.54	0.81	1.01	1.47	2.01	2.50	100yr	1.73	2.45	2.63	3.58	4.58	6.46	7.71	100yr	5.72	7.42	8.75	10.09	11.10	100yr
200yr	0.59	0.89	1.13	1.64	2.29	2.86	200yr	1.97	2.80	2.93	4.00	5.11	7.36	8.90	200yr	6.51	8.56	10.16	11.66	12.74	200yr
500yr	0.69	1.03	1.33	1.93	2.74	3.45	500yr	2.36	3.37	3.40	4.64	5.94	8.72	10.73	500yr	7.71	10.32	12.37	14.13	15.24	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	1yr	0.75	1.05	1.24	1.74	2.21	2.87	3.07	1yr	2.54	2.95	3.42	4.21	4.80	1yr
2yr	0.33	0.51	0.62	0.85	1.04	1.25	2yr	0.90	1.22	1.48	1.95	2.51	3.28	3.61	2yr	2.90	3.47	3.99	4.74	5.43	2yr
5yr	0.39	0.60	0.75	1.03	1.31	1.58	5yr	1.13	1.55	1.86	2.50	3.20	4.24	4.83	5yr	3.75	4.65	5.26	6.21	6.98	5yr
10yr	0.46	0.70	0.87	1.21	1.57	1.92	10yr	1.35	1.88	2.23	3.05	3.86	5.21	6.03	10yr	4.61	5.80	6.62	7.63	8.51	10yr
25yr	0.55	0.84	1.05	1.50	1.97	2.48	25yr	1.70	2.42	2.88	3.97	4.96	7.06	8.10	25yr	6.25	7.79	8.84	10.04	11.09	25yr
50yr	0.64	0.97	1.21	1.74	2.35	2.99	50yr	2.03	2.92	3.49	4.83	6.02	8.72	10.14	50yr	7.72	9.75	11.03	12.34	13.56	50yr
100yr	0.75	1.13	1.41	2.04	2.80	3.61	100yr	2.41	3.53	4.24	5.92	7.32	10.78	12.70	100yr	9.54	12.21	13.75	15.20	16.59	100yr
200yr	0.86	1.30	1.65	2.38	3.33	4.38	200yr	2.87	4.28	5.15	7.24	8.88	13.37	15.92	200yr	11.83	15.31	17.15	18.71	20.33	200yr
500yr	1.06	1.57	2.02	2.94	4.18	5.63	500yr	3.60	5.50	6.65	9.47	11.51	17.78	21.47	500yr	15.74	20.65	23.00	24.65	26.61	500yr

Custom Soil Resource Report
Soil Map (20052-Schwartz Dover Subdivision)

70° 53' 33" W

70° 53' 4" W

43° 10' 53" N

43° 10' 53" N



43° 10' 39" N

43° 10' 39" N

70° 53' 33" W

70° 53' 4" W



Map Scale: 1:3,000 if printed on A landscape (11" x 8.5") sheet.

0 40 80 160 240 Meters

0 100 200 400 600 Feet

Map projection: Web Mercator Corner coordinates: WGS84

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 20, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

Map Unit Legend (20052-Schwartz Dover Subdivision)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	2.7	24.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.1	1.4%
SfC	Suffield silt loam, 8 to 15 percent slopes	0.2	1.7%
SfE	Suffield silt loam, 15 to 35 percent slopes	0.4	3.6%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	7.4	68.7%
Totals for Area of Interest		10.8	100.0%

Map Unit Descriptions (20052-Schwartz Dover Subdivision)

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

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

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

Strafford County, New Hampshire

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 capacity: 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

ScA—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9d8s
Elevation: 0 to 260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Scantic

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 23 inches: silty clay loam
H3 - 23 to 40 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Not named wet

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Biddeford

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Swanton

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

SfC—Suffield silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9d8v
Elevation: 0 to 250 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Suffield

Typical profile

H1 - 0 to 19 inches: silt loam
H2 - 19 to 28 inches: silt loam
H3 - 28 to 41 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY017NH - Well Drained Lake Plain
Hydric soil rating: No

Minor Components

Not named

Percent of map unit: 9 percent
Hydric soil rating: No

Buxton

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

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

SfE—Suffield silt loam, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: 9d8w
Elevation: 0 to 210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Suffield

Typical profile

H1 - 0 to 19 inches: silt loam
H2 - 19 to 28 inches: silt loam
H3 - 28 to 41 inches: silty clay

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e

Custom Soil Resource Report

Hydrologic Soil Group: C

Ecological site: F144AY017NH - Well Drained Lake Plain

Hydric soil rating: No

Minor Components

Not named

Percent of map unit: 14 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent

Hydric soil rating: No

WfB—Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d9b

Elevation: 0 to 280 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

Windsor variant and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor Variant

Typical profile

H1 - 0 to 26 inches: loamy fine sand

H2 - 26 to 30 inches: loamy sand

H3 - 30 to 42 inches: silt loam

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 24 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

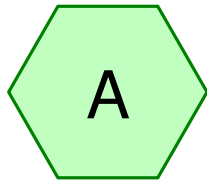
Not named

Percent of map unit: 15 percent

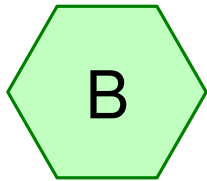
Hydric soil rating: No

A-1

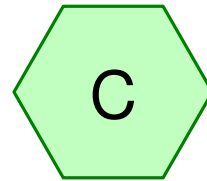
EXISTING WATERSHEDS



A



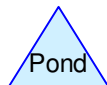
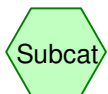
B



C



Bellamy River



Routing Diagram for 20052 - Pre

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20052 - Pre

Prepared by Civilworks New England

Printed 3/31/2021

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.872	39	>75% Grass cover, Good, HSG A (A, B, C)
0.043	74	>75% Grass cover, Good, HSG C (A)
0.055	96	Gravel surface, HSG A (B)
0.114	96	Gravel surface, HSG C (A, B)
0.041	98	Paved parking, HSG A (A)
0.010	98	Paved parking, HSG C (A)
0.129	98	Roofs, HSG A (A, B, C)
0.004	98	Roofs, HSG C (B)
2.464	30	Woods, Good, HSG A (A, B, C)
0.439	70	Woods, Good, HSG C (A, B)
4.172	42	TOTAL AREA

20052 - Pre

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
3.562	HSG A	A, B, C
0.000	HSG B	
0.609	HSG C	A, B
0.000	HSG D	
0.000	Other	
4.172		TOTAL AREA

A – 1

NODE LISTING – 2-YR

20052 - Pre**20052 24-hr S1 2-yr Rainfall=3.15"**

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Page 1

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A

Runoff Area=23,331 sf 19.86% Impervious Runoff Depth=0.26"
Flow Length=119' Tc=10.8 min CN=56 Runoff=0.03 cfs 0.012 af

Subcatchment B: B

Runoff Area=127,750 sf 2.55% Impervious Runoff Depth=0.01"
Flow Length=445' Tc=16.1 min CN=42 Runoff=0.01 cfs 0.003 af

Subcatchment C: C

Runoff Area=30,635 sf 0.48% Impervious Runoff Depth=0.00"
Flow Length=486' Tc=27.6 min CN=33 Runoff=0.00 cfs 0.000 af

Link BR: Bellamy River

Inflow=0.01 cfs 0.003 af
Primary=0.01 cfs 0.003 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.014 af Average Runoff Depth = 0.04"
95.58% Pervious = 3.987 ac 4.42% Impervious = 0.185 ac

A – 1

NODE LISTING – 10-YR

20052 - Pre**20052 24-hr S1 10-yr Rainfall=4.75"**

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Printed 3/31/2021

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Page 2

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A

Runoff Area=23,331 sf 19.86% Impervious Runoff Depth=0.92"
Flow Length=119' Tc=10.8 min CN=56 Runoff=0.29 cfs 0.041 af

Subcatchment B: B

Runoff Area=127,750 sf 2.55% Impervious Runoff Depth=0.25"
Flow Length=445' Tc=16.1 min CN=42 Runoff=0.08 cfs 0.061 af

Subcatchment C: C

Runoff Area=30,635 sf 0.48% Impervious Runoff Depth=0.02"
Flow Length=486' Tc=27.6 min CN=33 Runoff=0.00 cfs 0.001 af

Link BR: Bellamy River

Inflow=0.08 cfs 0.061 af
Primary=0.08 cfs 0.061 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.103 af Average Runoff Depth = 0.30"
95.58% Pervious = 3.987 ac 4.42% Impervious = 0.185 ac

A – 1

STORM SUMMARY – 10-YR

Summary for Subcatchment A: A

Runoff = 0.29 cfs @ 12.11 hrs, Volume= 0.041 af, Depth= 0.92"

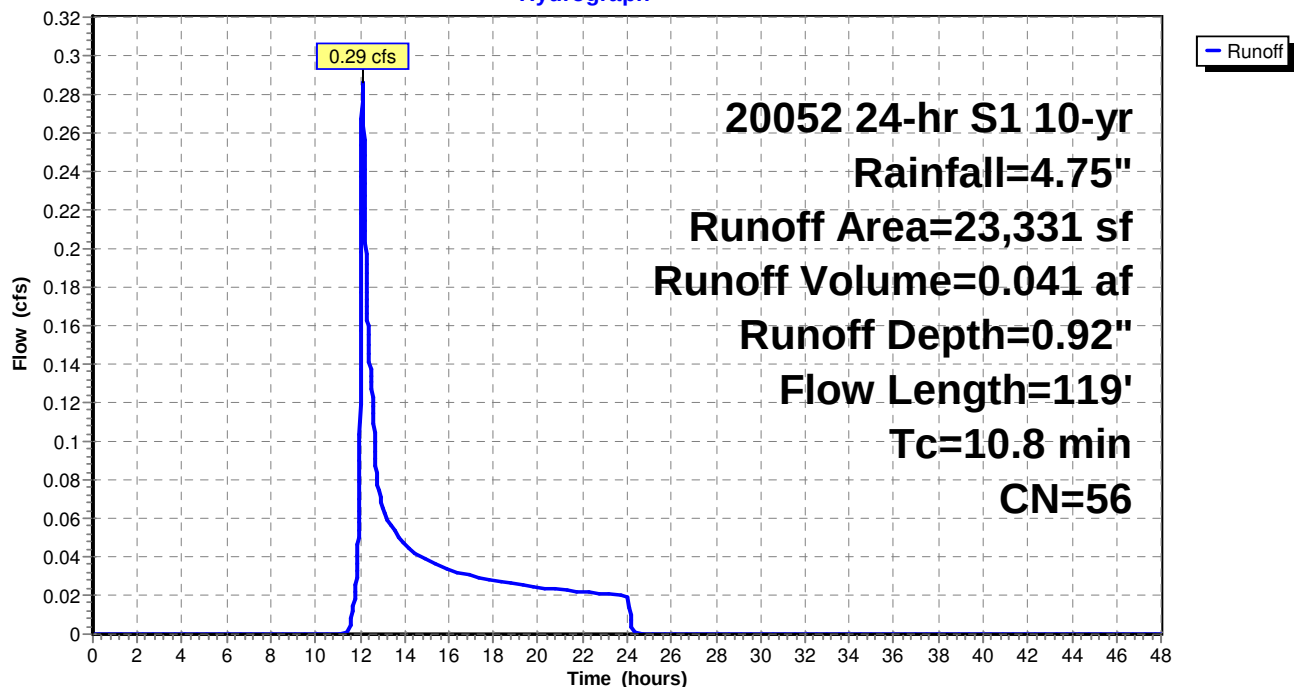
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
12,435	39	>75% Grass cover, Good, HSG A
1,693	30	Woods, Good, HSG A
1,795	98	Paved parking, HSG A
2,395	98	Roofs, HSG A
1,860	74	>75% Grass cover, Good, HSG C
2,696	70	Woods, Good, HSG C
13	96	Gravel surface, HSG C
444	98	Paved parking, HSG C
23,331	56	Weighted Average
18,697		80.14% Pervious Area
4,634		19.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	6	0.1080	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
6.7	53	0.0377	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
3.2	36	0.1111	0.19		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
0.1	5	0.1200	1.54		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
0.0	19	0.1200	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.8	119	Total			

Subcatchment A: A

Hydrograph



Summary for Subcatchment B: B

Runoff = 0.08 cfs @ 12.72 hrs, Volume= 0.061 af, Depth= 0.25"

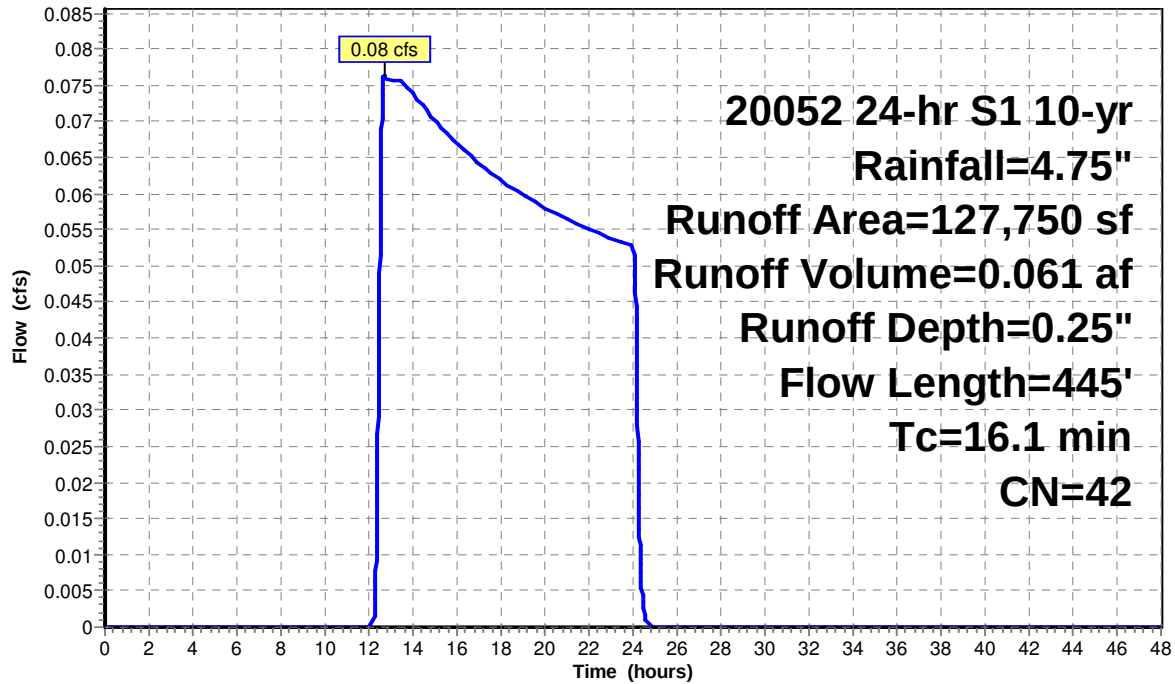
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
17,472	39	>75% Grass cover, Good, HSG A
83,249	30	Woods, Good, HSG A
2,408	96	Gravel surface, HSG A
3,085	98	Roofs, HSG A
16,432	70	Woods, Good, HSG C
4,932	96	Gravel surface, HSG C
172	98	Roofs, HSG C
127,750	42	Weighted Average
124,493		97.45% Pervious Area
3,257		2.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0276	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
0.7	48	0.0276	1.16		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.8	297	0.1290	1.80		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	445	Total			

Subcatchment B: B

Hydrograph



Summary for Subcatchment C: C

Runoff = 0.00 cfs @ 24.07 hrs, Volume= 0.001 af, Depth= 0.02"

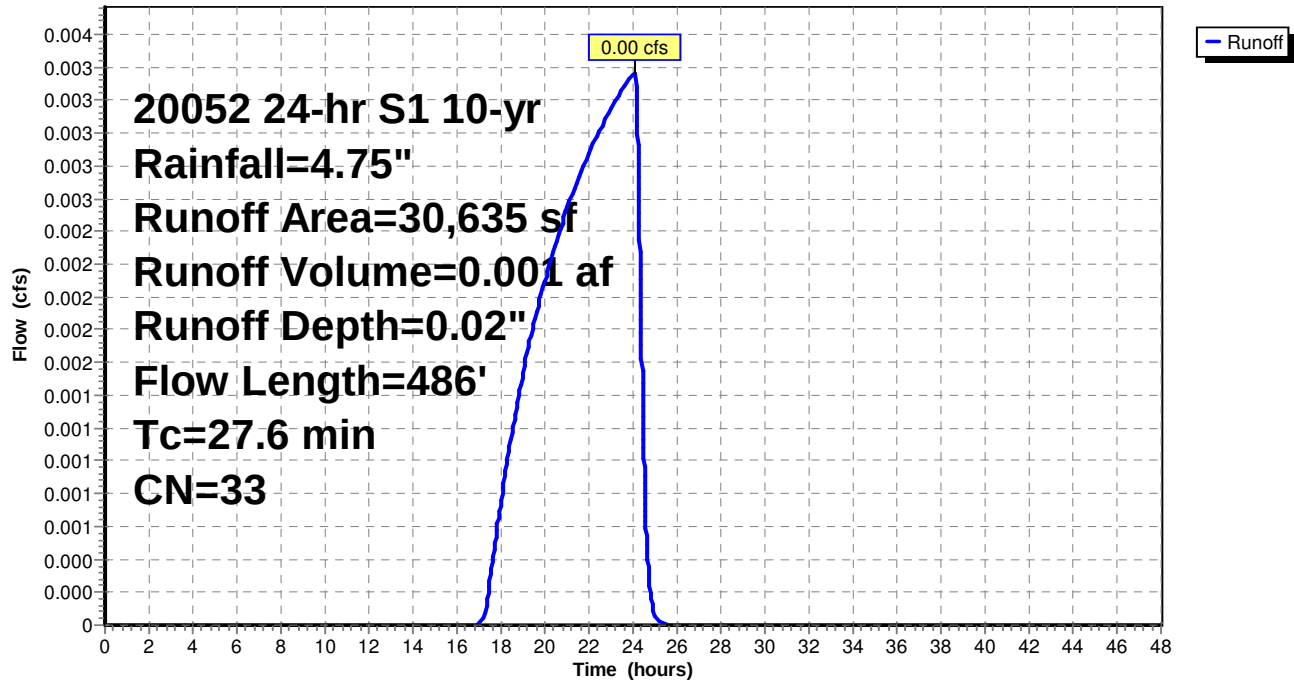
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
8,091	39	>75% Grass cover, Good, HSG A
22,396	30	Woods, Good, HSG A
148	98	Roofs, HSG A
30,635	33	Weighted Average
30,487		99.52% Pervious Area
148		0.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0213	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
3.2	139	0.0213	0.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	44	0.0213	1.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	44	0.0213	0.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.6	159	0.1060	1.63		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.6	486	Total			

Subcatchment C: C

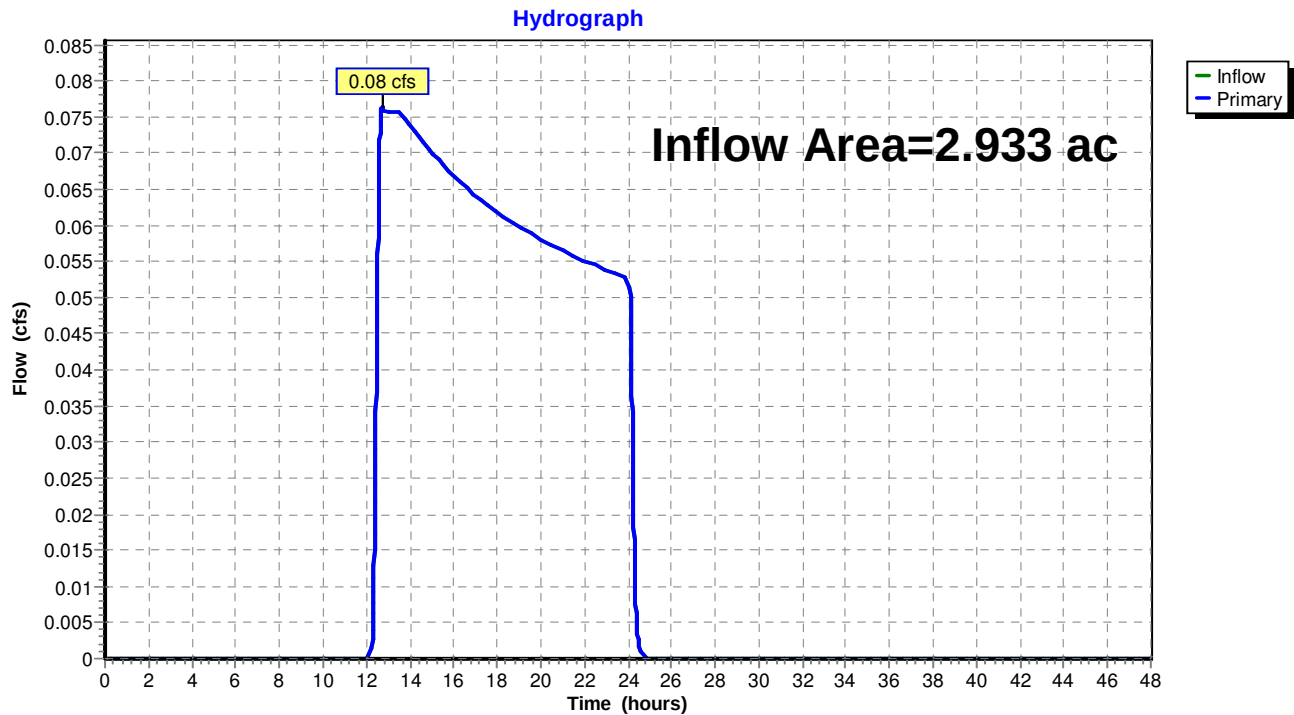
Hydrograph



Summary for Link BR: Bellamy River

Inflow Area = 2.933 ac, 2.55% Impervious, Inflow Depth = 0.25" for 10-yr event
Inflow = 0.08 cfs @ 12.72 hrs, Volume= 0.061 af
Primary = 0.08 cfs @ 12.72 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

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

Link BR: Bellamy River

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NODE LISTING – 25-YR

20052 - Pre**20052 24-hr S1 25-yr Rainfall=6.01"**

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A

Runoff Area=23,331 sf 19.86% Impervious Runoff Depth=1.60"
Flow Length=119' Tc=10.8 min CN=56 Runoff=0.56 cfs 0.072 af

Subcatchment B: B

Runoff Area=127,750 sf 2.55% Impervious Runoff Depth=0.62"
Flow Length=445' Tc=16.1 min CN=42 Runoff=0.42 cfs 0.151 af

Subcatchment C: C

Runoff Area=30,635 sf 0.48% Impervious Runoff Depth=0.17"
Flow Length=486' Tc=27.6 min CN=33 Runoff=0.01 cfs 0.010 af

Link BR: Bellamy River

Inflow=0.42 cfs 0.151 af
Primary=0.42 cfs 0.151 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.233 af Average Runoff Depth = 0.67"
95.58% Pervious = 3.987 ac 4.42% Impervious = 0.185 ac

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NODE LISTING – 50-YR

20052 - Pre**20052 24-hr S1 50-yr Rainfall=7.18"**

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A

Runoff Area=23,331 sf 19.86% Impervious Runoff Depth=2.34"
Flow Length=119' Tc=10.8 min CN=56 Runoff=0.83 cfs 0.104 af

Subcatchment B: B

Runoff Area=127,750 sf 2.55% Impervious Runoff Depth=1.07"
Flow Length=445' Tc=16.1 min CN=42 Runoff=1.14 cfs 0.262 af

Subcatchment C: C

Runoff Area=30,635 sf 0.48% Impervious Runoff Depth=0.42"
Flow Length=486' Tc=27.6 min CN=33 Runoff=0.03 cfs 0.024 af

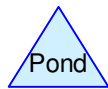
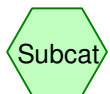
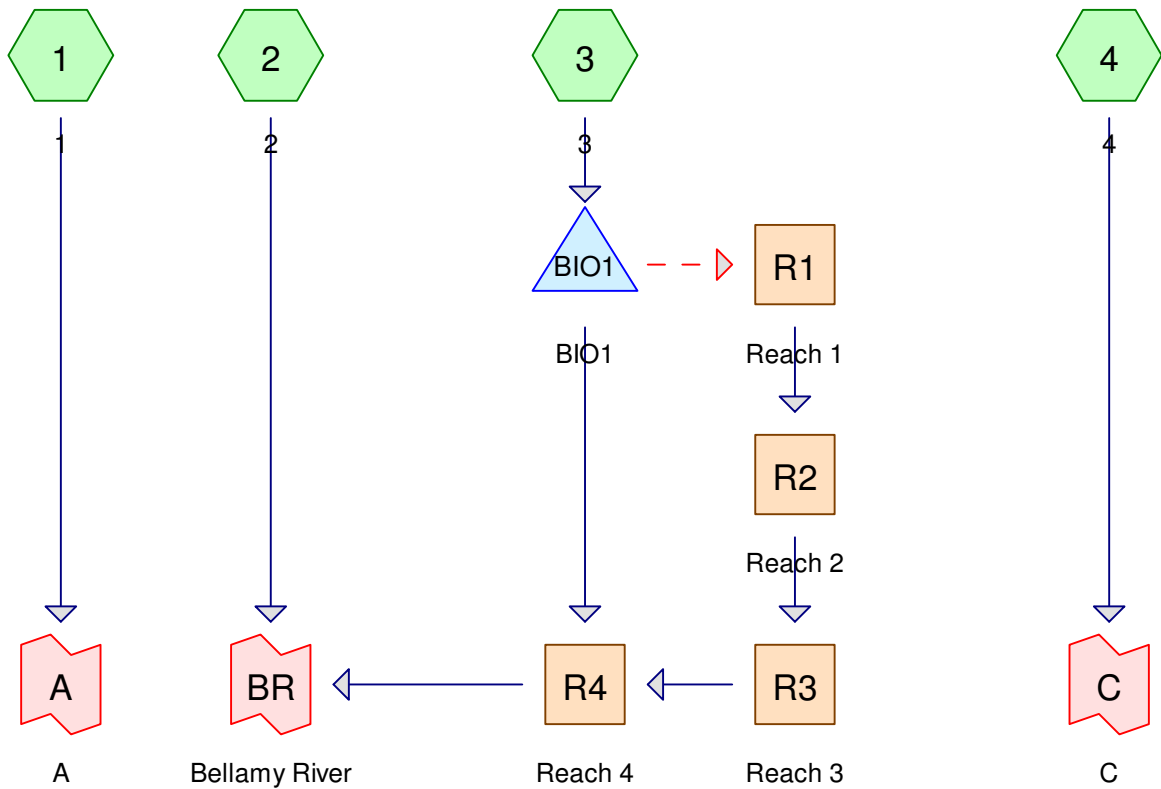
Link BR: Bellamy River

Inflow=1.14 cfs 0.262 af
Primary=1.14 cfs 0.262 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.390 af Average Runoff Depth = 1.12"
95.58% Pervious = 3.987 ac 4.42% Impervious = 0.185 ac

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DEVELOPED WATERSHEDS



20052 -Post

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.469	39	>75% Grass cover, Good, HSG A (1, 2, 3, 4)
0.195	74	>75% Grass cover, Good, HSG C (1, 2, 3)
0.341	98	Paved parking, HSG A (1, 2, 3)
0.049	98	Paved parking, HSG C (1, 2, 3)
0.318	98	Roofs, HSG A (1, 2, 3, 4)
0.004	98	Roofs, HSG C (2, 3)
1.435	30	Woods, Good, HSG A (1, 2, 3, 4)
0.362	70	Woods, Good, HSG C (2)
4.172	50	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
3.562	HSG A	1, 2, 3, 4
0.000	HSG B	
0.609	HSG C	1, 2, 3
0.000	HSG D	
0.000	Other	
4.172		TOTAL AREA

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NODE LISTING – 2-YR

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20052 24-hr S1 2-yr Rainfall=3.15"

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Page 1

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1	Runoff Area=19,021 sf 27.29% Impervious Runoff Depth=0.29" Flow Length=119' Tc=10.8 min CN=57 Runoff=0.03 cfs 0.011 af
Subcatchment 2: 2	Runoff Area=94,691 sf 8.25% Impervious Runoff Depth=0.05" Flow Length=316' Tc=12.0 min CN=46 Runoff=0.01 cfs 0.009 af
Subcatchment 3: 3	Runoff Area=39,050 sf 39.05% Impervious Runoff Depth=0.58" Flow Length=363' Tc=15.2 min CN=65 Runoff=0.29 cfs 0.043 af
Subcatchment 4: 4	Runoff Area=28,954 sf 9.46% Impervious Runoff Depth=0.00" Flow Length=486' Tc=27.6 min CN=39 Runoff=0.00 cfs 0.000 af
Reach R1: Reach 1	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.069 L=15.0' S=0.0267 ' ' Capacity=22.32 cfs Outflow=0.00 cfs 0.000 af
Reach R2: Reach 2	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.069 L=12.0' S=0.0833 ' ' Capacity=39.45 cfs Outflow=0.00 cfs 0.000 af
Reach R3: Reach 3	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.400 L=5.0' S=0.5000 ' ' Capacity=8.41 cfs Outflow=0.00 cfs 0.000 af
Reach R4: Reach 4	Avg. Flow Depth=0.04' Max Vel=0.24 fps Inflow=0.03 cfs 0.030 af n=0.400 L=21.0' S=0.5476 ' ' Capacity=8.80 cfs Outflow=0.03 cfs 0.030 af
Pond BIO1: BIO1	Peak Elev=74.25' Storage=857 cf Inflow=0.29 cfs 0.043 af Primary=0.03 cfs 0.030 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.030 af
Link A: A	Inflow=0.03 cfs 0.011 af Primary=0.03 cfs 0.011 af
Link BR: Bellamy River	Inflow=0.04 cfs 0.039 af Primary=0.04 cfs 0.039 af
Link C: C	Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af
Total Runoff Area = 4.172 ac Runoff Volume = 0.063 af Average Runoff Depth = 0.18" 82.95% Pervious = 3.460 ac 17.05% Impervious = 0.711 ac	

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NODE LISTING – 10-YR

20052 -Post

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20052 24-hr S1 10-yr Rainfall=4.75"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1

Runoff Area=19,021 sf 27.29% Impervious Runoff Depth=0.97"
 Flow Length=119' Tc=10.8 min CN=57 Runoff=0.26 cfs 0.035 af

Subcatchment 2: 2

Runoff Area=94,691 sf 8.25% Impervious Runoff Depth=0.41"
 Flow Length=316' Tc=12.0 min CN=46 Runoff=0.18 cfs 0.074 af

Subcatchment 3: 3

Runoff Area=39,050 sf 39.05% Impervious Runoff Depth=1.49"
 Flow Length=363' Tc=15.2 min CN=65 Runoff=0.84 cfs 0.111 af

Subcatchment 4: 4

Runoff Area=28,954 sf 9.46% Impervious Runoff Depth=0.15"
 Flow Length=486' Tc=27.6 min CN=39 Runoff=0.01 cfs 0.008 af

Reach R1: Reach 1

Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.069 L=15.0' S=0.0267 '/ Capacity=22.32 cfs Outflow=0.00 cfs 0.000 af

Reach R2: Reach 2

Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.069 L=12.0' S=0.0833 '/ Capacity=39.45 cfs Outflow=0.00 cfs 0.000 af

Reach R3: Reach 3

Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.400 L=5.0' S=0.5000 '/ Capacity=8.41 cfs Outflow=0.00 cfs 0.000 af

Reach R4: Reach 4

Avg. Flow Depth=0.07' Max Vel=0.36 fps Inflow=0.13 cfs 0.098 af
 n=0.400 L=21.0' S=0.5476 '/ Capacity=8.80 cfs Outflow=0.13 cfs 0.098 af

Pond BIO1: BIO1

Peak Elev=74.91' Storage=1,754 cf Inflow=0.84 cfs 0.111 af
 Primary=0.13 cfs 0.098 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.098 af

Link A: A

Inflow=0.26 cfs 0.035 af
 Primary=0.26 cfs 0.035 af

Link BR: Bellamy River

Inflow=0.28 cfs 0.172 af
 Primary=0.28 cfs 0.172 af

Link C: C

Inflow=0.01 cfs 0.008 af
 Primary=0.01 cfs 0.008 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.229 af Average Runoff Depth = 0.66"
82.95% Pervious = 3.460 ac 17.05% Impervious = 0.711 ac

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STORM SUMMARY – 10-YR

20052 -Post

20052 24-hr S1 10-yr Rainfall=4.75"

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Summary for Subcatchment 1: 1

Runoff = 0.26 cfs @ 12.11 hrs, Volume= 0.035 af, Depth= 0.97"

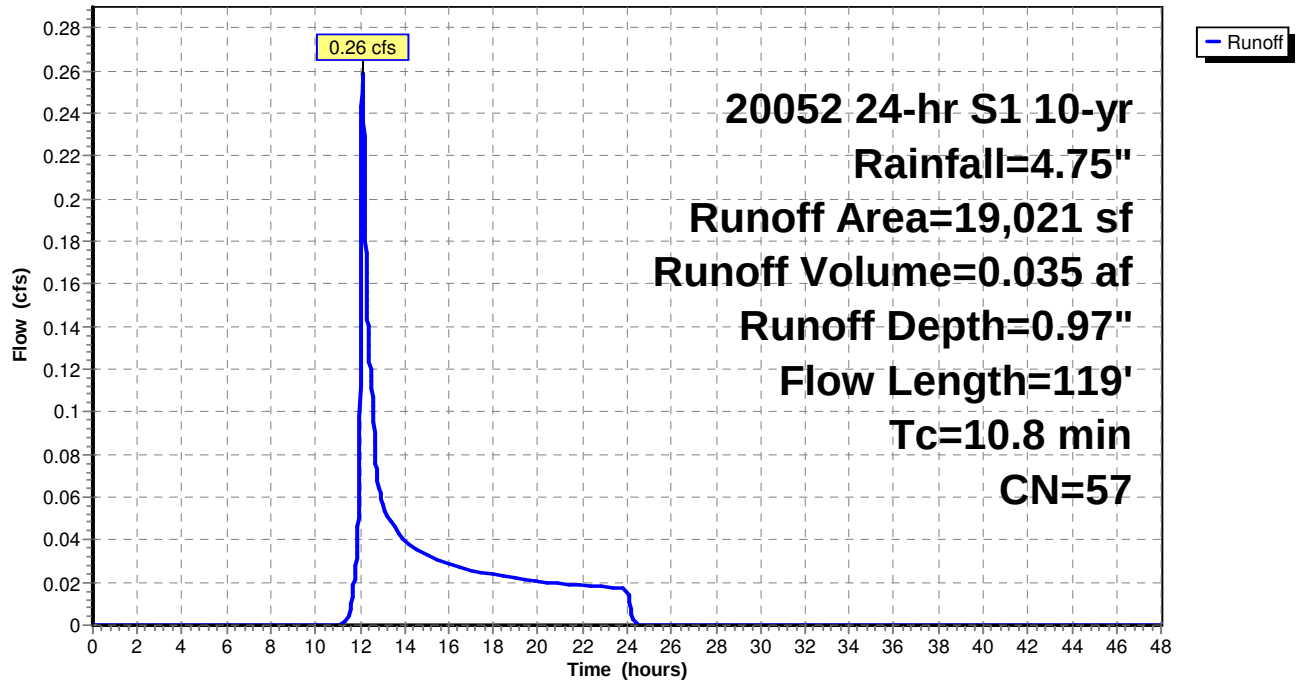
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
11,726	39	>75% Grass cover, Good, HSG A
779	30	Woods, Good, HSG A
1,767	98	Paved parking, HSG A
2,395	98	Roofs, HSG A
1,326	74	>75% Grass cover, Good, HSG C
1,028	98	Paved parking, HSG C
19,021	57	Weighted Average
13,831		72.71% Pervious Area
5,190		27.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	6	0.1080	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
6.7	53	0.0377	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
3.2	36	0.1111	0.19		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
0.1	5	0.1200	1.54		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
0.0	19	0.1200	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.8	119	Total			

Subcatchment 1: 1

Hydrograph



Summary for Subcatchment 2: 2

Runoff = 0.18 cfs @ 12.39 hrs, Volume= 0.074 af, Depth= 0.41"

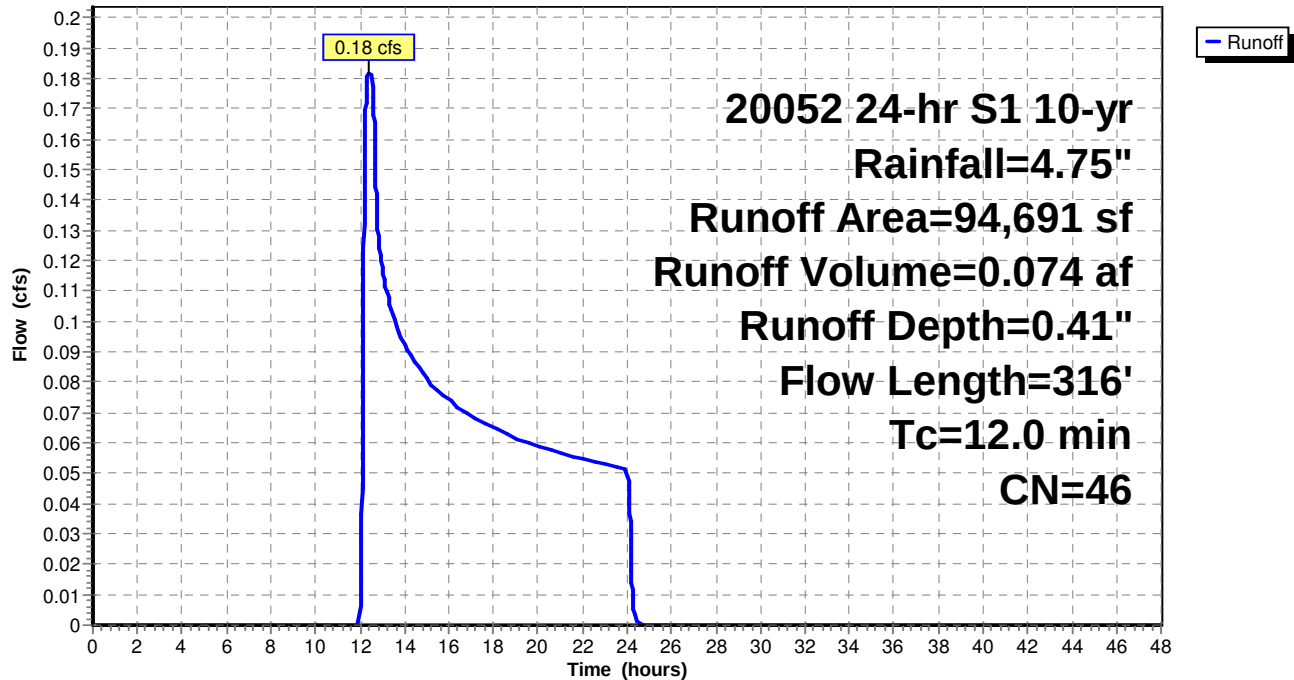
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
23,697	39	>75% Grass cover, Good, HSG A
43,696	30	Woods, Good, HSG A
2,056	98	Paved parking, HSG A
5,522	98	Roofs, HSG A
3,721	74	>75% Grass cover, Good, HSG C
15,764	70	Woods, Good, HSG C
68	98	Paved parking, HSG C
167	98	Roofs, HSG C
94,691	46	Weighted Average
86,878		91.75% Pervious Area
7,813		8.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	66	0.0568	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
1.3	17	0.2352	0.22		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
2.1	17	0.0722	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
0.5	60	0.0722	1.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	6	0.0722	1.34		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.2	150	0.1633	2.02		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.0	316	Total			

Subcatchment 2: 2

Hydrograph



Summary for Subcatchment 3: 3

Runoff = 0.84 cfs @ 12.17 hrs, Volume= 0.111 af, Depth= 1.49"

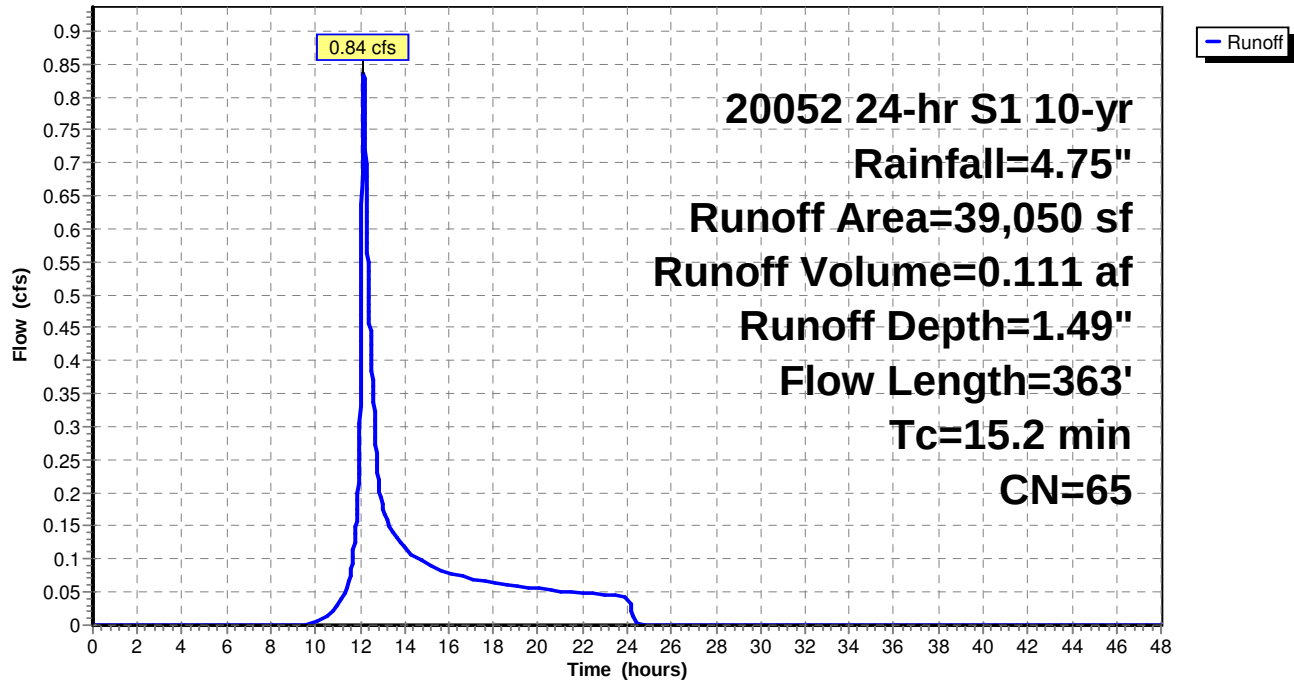
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
20,333	39	>75% Grass cover, Good, HSG A
39	30	Woods, Good, HSG A
11,017	98	Paved parking, HSG A
3,186	98	Roofs, HSG A
3,428	74	>75% Grass cover, Good, HSG C
1,043	98	Paved parking, HSG C
4	98	Roofs, HSG C
39,050	65	Weighted Average
23,800		60.95% Pervious Area
15,250		39.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	69	0.0106	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.16"
0.5	31	0.0200	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
0.4	84	0.0264	3.30		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	160	0.0637	5.12		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	19	0.1000	6.42		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.2	363	Total			

Subcatchment 3: 3

Hydrograph



Summary for Subcatchment 4: 4

Runoff = 0.01 cfs @ 17.51 hrs, Volume= 0.008 af, Depth= 0.15"

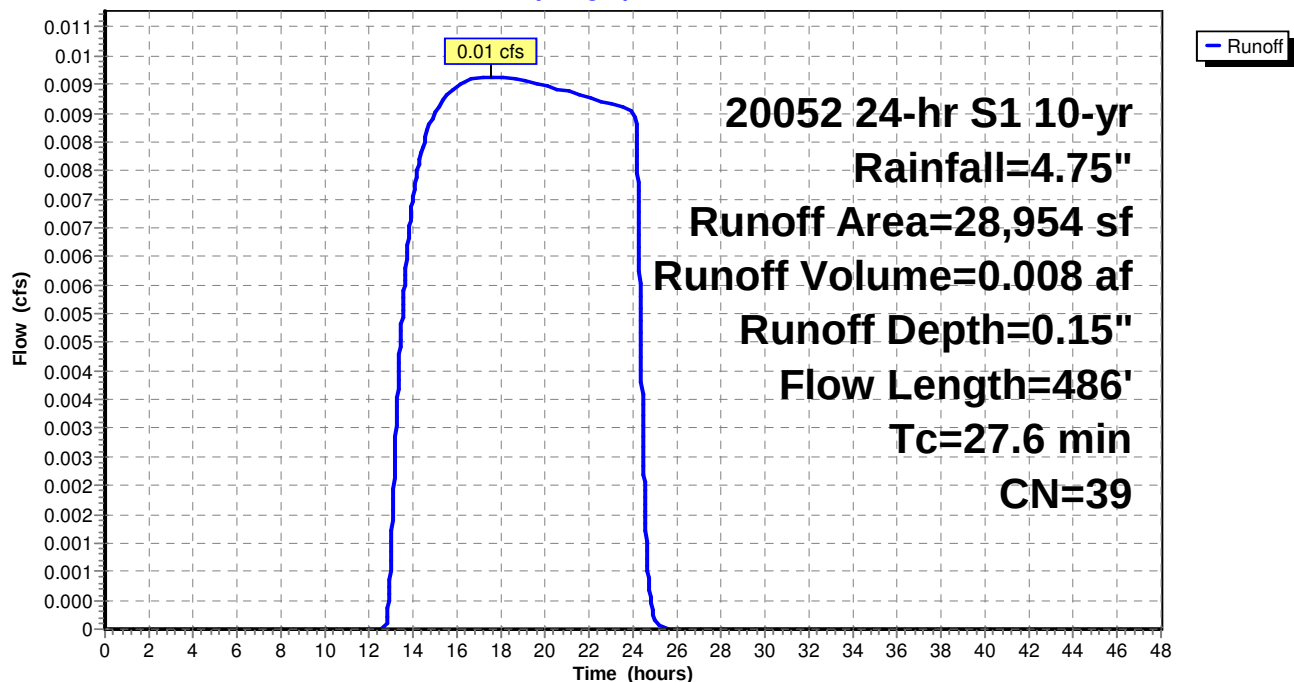
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
20052 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
8,214	39	>75% Grass cover, Good, HSG A
18,002	30	Woods, Good, HSG A
2,738	98	Roofs, HSG A
28,954	39	Weighted Average
26,216		90.54% Pervious Area
2,738		9.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0213	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
3.2	139	0.0213	0.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	44	0.0213	1.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	44	0.0213	0.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.6	159	0.1060	1.63		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.6	486	Total			

Subcatchment 4: 4

Hydrograph



Summary for Reach R1: Reach 1

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

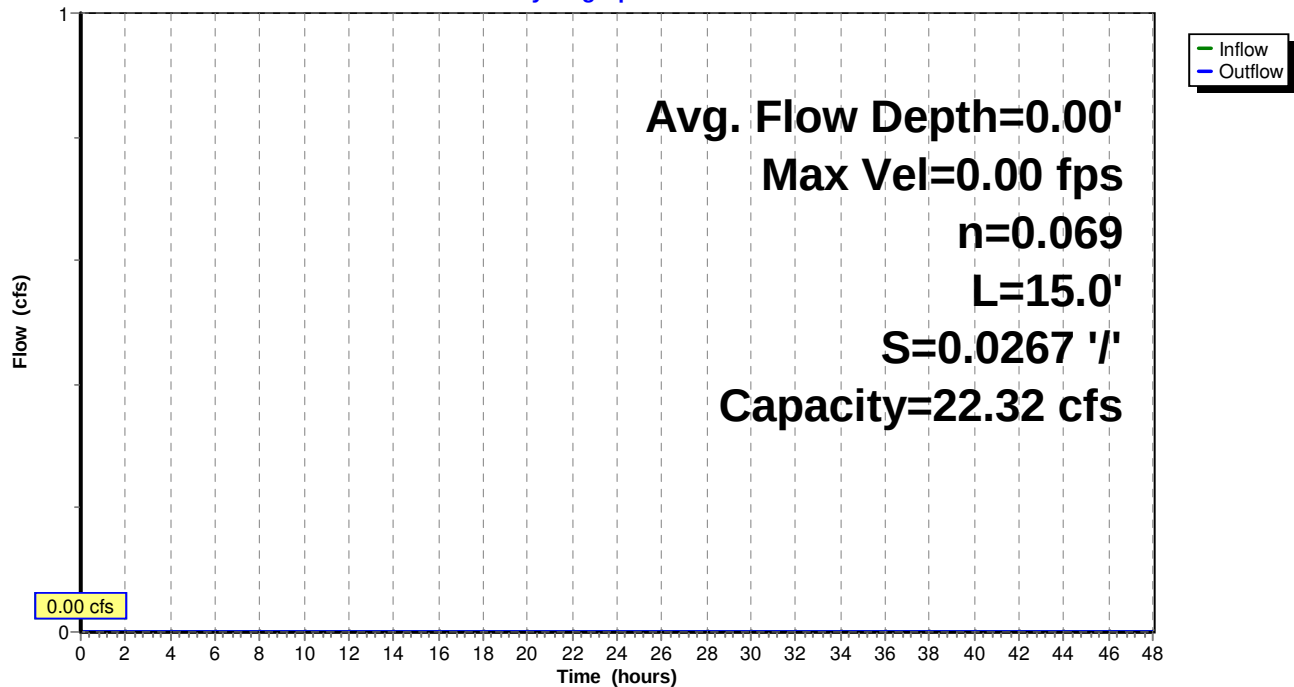
Bank-Full Depth= 1.00' Flow Area= 8.0 sf, Capacity= 22.32 cfs

5.00' x 1.00' deep channel, n= 0.069 Riprap, 6-inch

Side Slope Z-value= 3.0 '/' Top Width= 11.00'

Length= 15.0' Slope= 0.0267 '/'

Inlet Invert= 75.40', Outlet Invert= 75.00'

**Reach R1: Reach 1****Hydrograph**

Summary for Reach R2: Reach 2

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

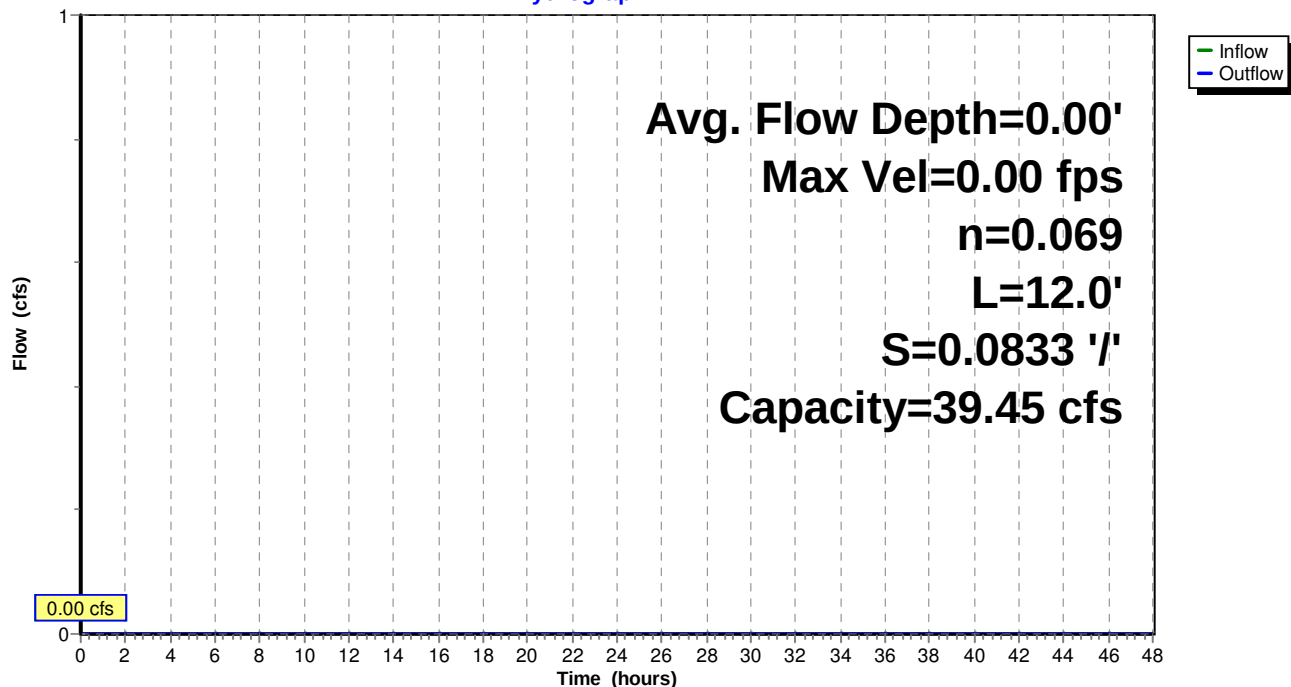
Bank-Full Depth= 1.00' Flow Area= 8.0 sf, Capacity= 39.45 cfs

5.00' x 1.00' deep channel, n= 0.069 Riprap, 6-inch

Side Slope Z-value= 3.0 '/' Top Width= 11.00'

Length= 12.0' Slope= 0.0833 '/'

Inlet Invert= 75.00', Outlet Invert= 74.00'

**Reach R2: Reach 2****Hydrograph**

Summary for Reach R3: Reach 3

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

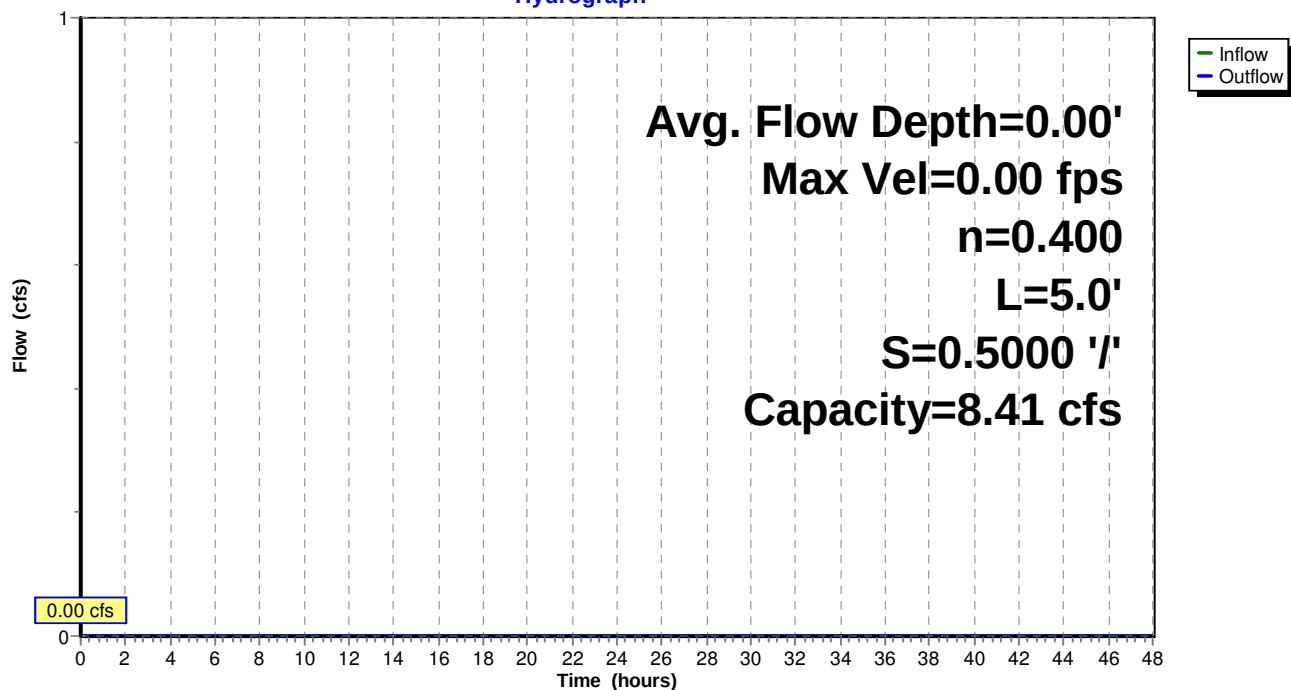
Average Depth at Peak Storage= 0.00'

Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 8.41 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush

Length= 5.0' Slope= 0.5000 '/'

Inlet Invert= 74.00', Outlet Invert= 71.50'

**Reach R3: Reach 3****Hydrograph**

Summary for Reach R4: Reach 4

[62] Hint: Exceeded Reach R3 OUTLET depth by 0.07' @ 13.70 hrs

Inflow Area = 0.896 ac, 39.05% Impervious, Inflow Depth > 1.31" for 10-yr event
 Inflow = 0.13 cfs @ 13.69 hrs, Volume= 0.098 af
 Outflow = 0.13 cfs @ 13.70 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.36 fps, Min. Travel Time= 1.0 min

Avg. Velocity = 0.17 fps, Avg. Travel Time= 2.0 min

Peak Storage= 8 cf @ 13.70 hrs

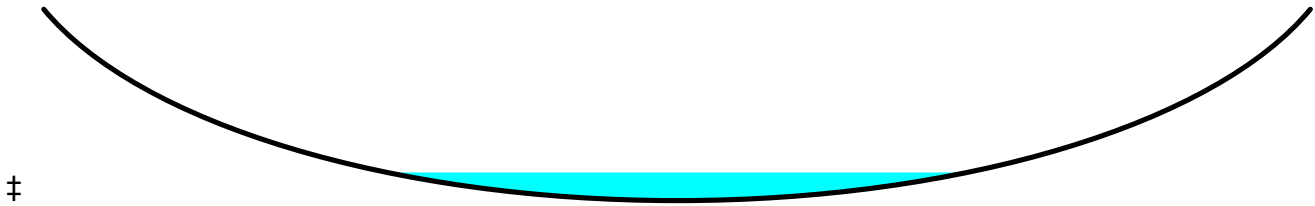
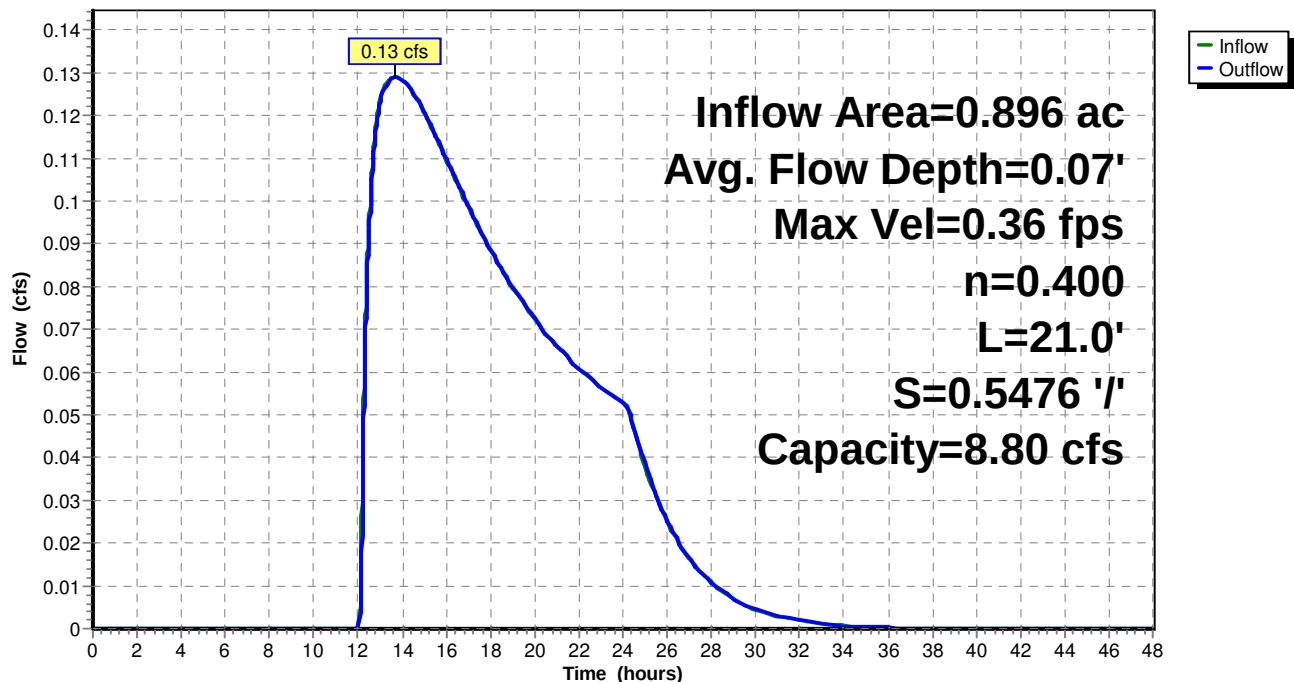
Average Depth at Peak Storage= 0.07' , Surface Width= 7.55'

Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 8.80 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush

Length= 21.0' Slope= 0.5476 '/'

Inlet Invert= 71.50', Outlet Invert= 60.00'

**Reach R4: Reach 4****Hydrograph**

Summary for Pond BIO1: BIO1

Inflow Area = 0.896 ac, 39.05% Impervious, Inflow Depth = 1.49" for 10-yr event
 Inflow = 0.84 cfs @ 12.17 hrs, Volume= 0.111 af
 Outflow = 0.13 cfs @ 13.69 hrs, Volume= 0.098 af, Atten= 85%, Lag= 91.1 min
 Primary = 0.13 cfs @ 13.69 hrs, Volume= 0.098 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 74.91' @ 13.69 hrs Surf.Area= 1,585 sf Storage= 1,754 cf

Flood Elev= 75.80' Surf.Area= 2,672 sf Storage= 3,356 cf

Plug-Flow detention time= 234.3 min calculated for 0.098 af (88% of inflow)

Center-of-Mass det. time= 175.9 min (1,095.6 - 919.7)

Volume	Invert	Avail.Storage	Storage Description
#1	71.25'	2,891 cf	Custom Stage Data (Irregular) Listed below (Recalc)
#2	73.00'	465 cf	SEDIMENT FOREBAY (Irregular) Listed below (Recalc)
		3,356 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.25	803	120.2	0.0	0	0	803
72.25	803	120.2	35.0	281	281	923
72.50	803	120.2	20.0	40	321	953
74.00	803	120.2	10.0	120	442	1,134
75.00	1,211	145.3	100.0	1,000	1,442	1,680
75.50	2,053	180.6	100.0	807	2,248	2,599
75.80	2,233	196.8	100.0	643	2,891	3,089

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.00	69	41.1	0	0	69
74.00	224	54.9	139	139	185
75.00	439	81.3	326	465	479

Device	Routing	Invert	Outlet Devices
#1	Primary	71.50'	6.0" Round Culvert L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.50' / 71.50' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Device 1	74.00'	10.000 in/hr Exfiltration over Surface area above 74.00' Excluded Surface area = 1,027 sf Phase-In= 0.01'
#3	Secondary	75.50'	5.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.13 cfs @ 13.69 hrs HW=74.91' TW=71.57' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.13 cfs of 1.38 cfs potential flow)

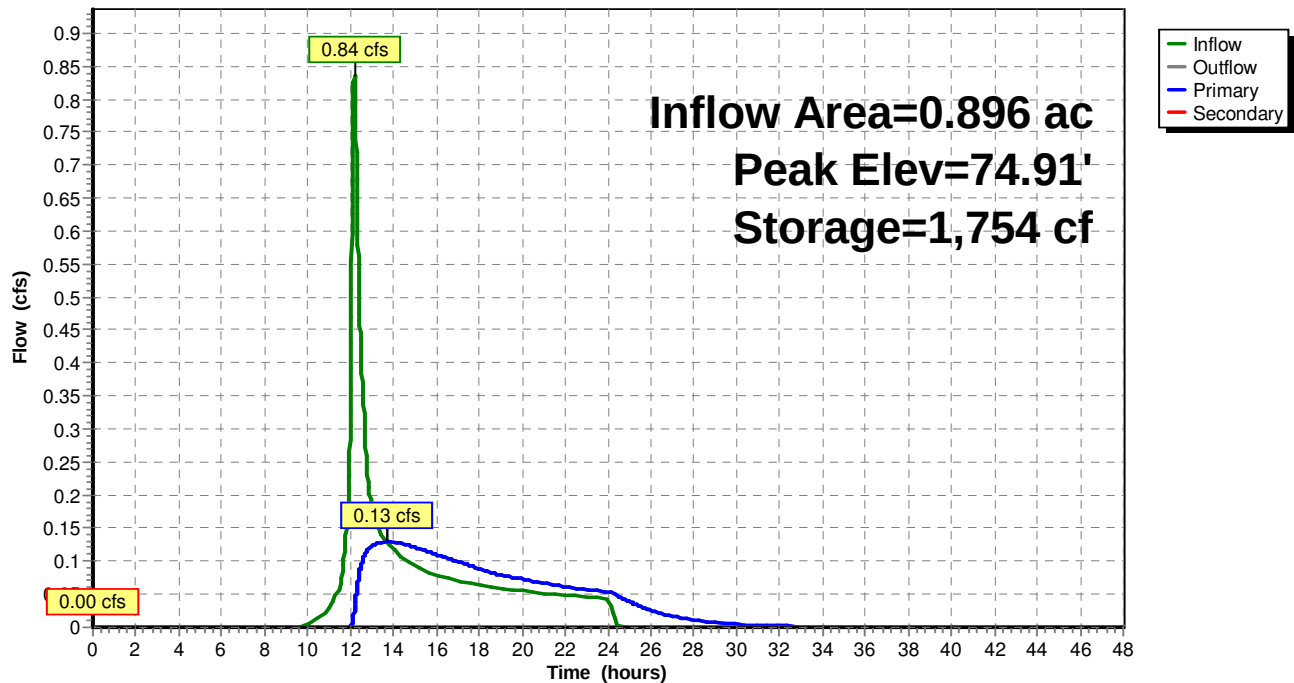
↑ **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=71.25' TW=75.40' (Dynamic Tailwater)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BIO1: BIO1

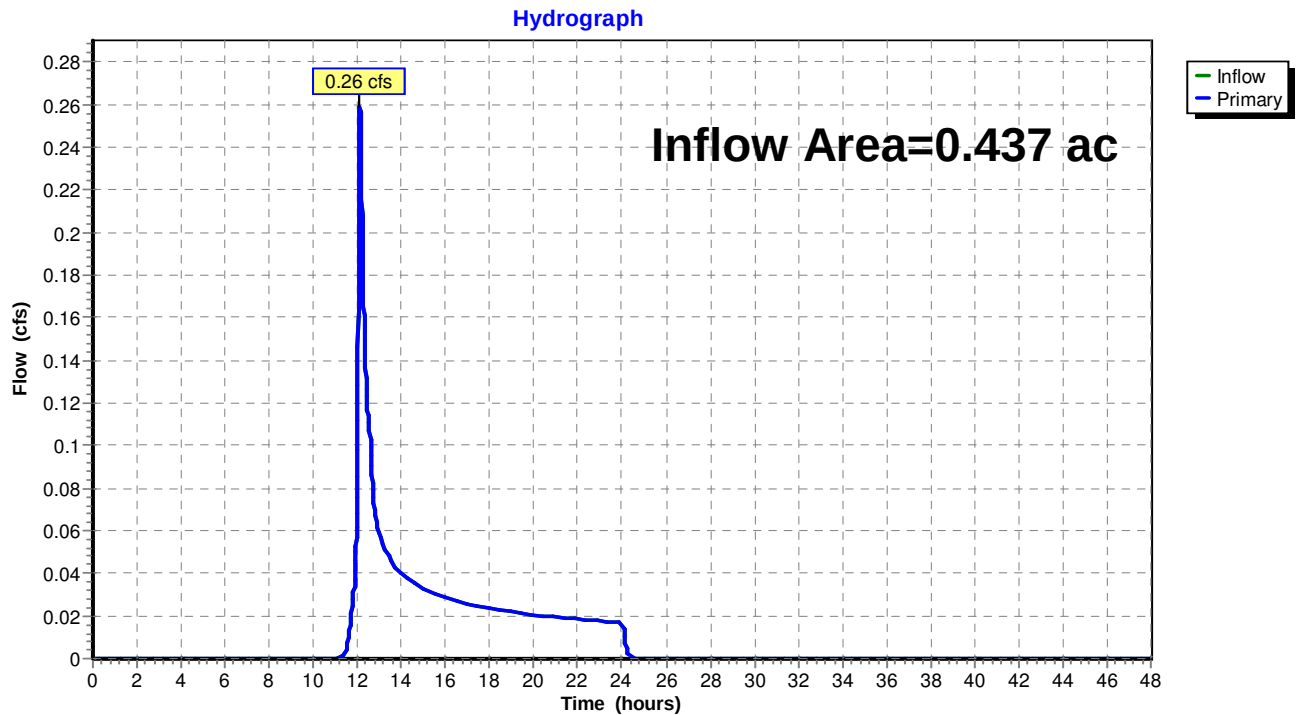
Hydrograph



Summary for Link A: A

Inflow Area = 0.437 ac, 27.29% Impervious, Inflow Depth = 0.97" for 10-yr event
Inflow = 0.26 cfs @ 12.11 hrs, Volume= 0.035 af
Primary = 0.26 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

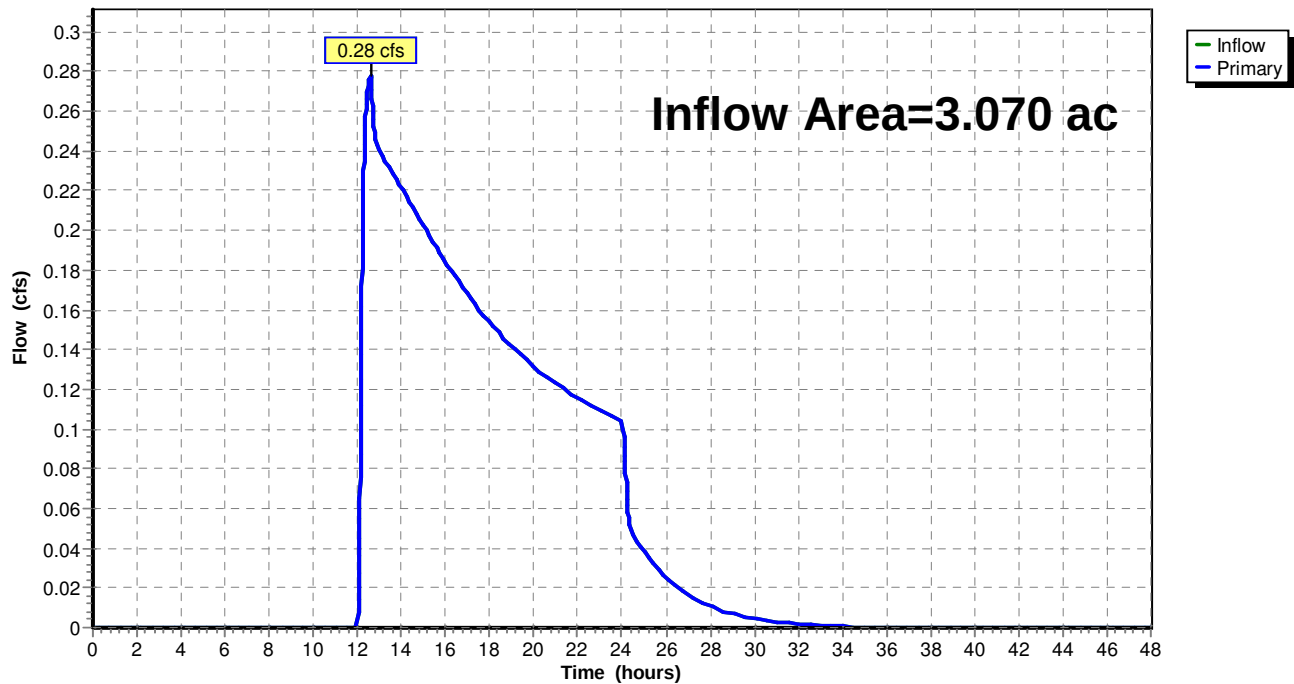
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link A: A

Summary for Link BR: Bellamy River

Inflow Area = 3.070 ac, 17.24% Impervious, Inflow Depth = 0.67" for 10-yr event
Inflow = 0.28 cfs @ 12.57 hrs, Volume= 0.172 af
Primary = 0.28 cfs @ 12.57 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min

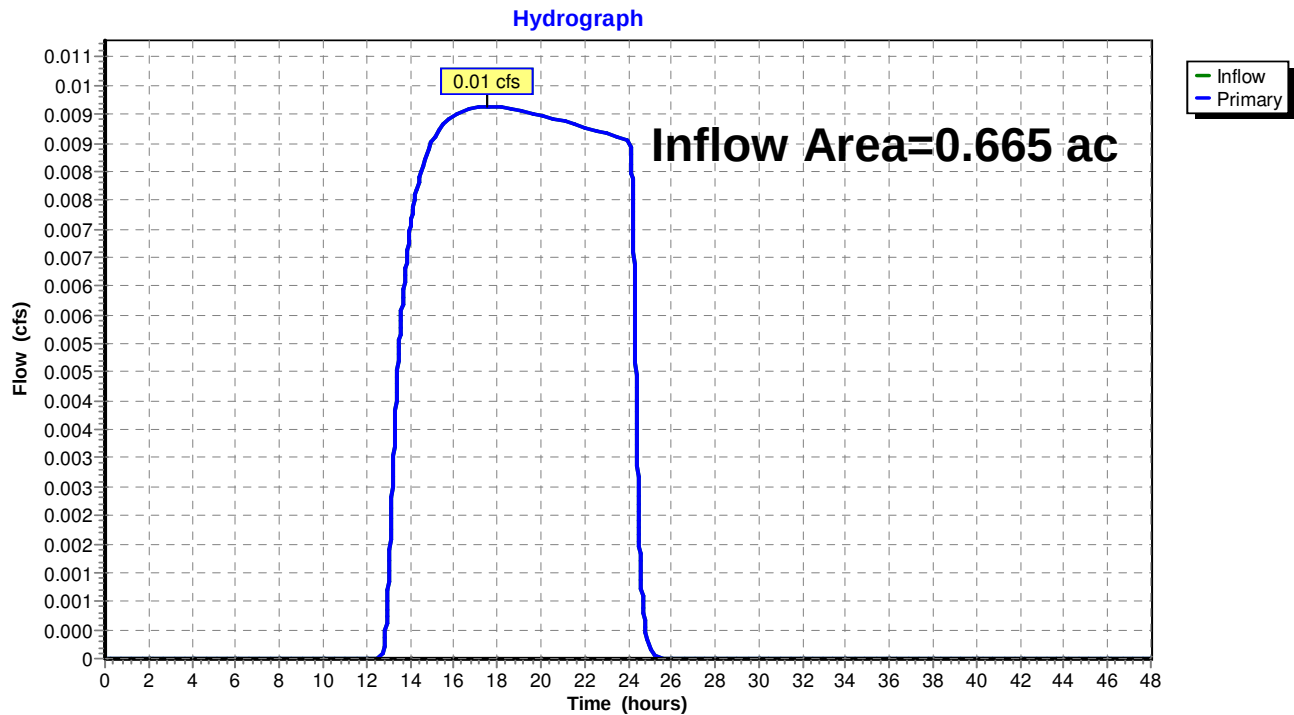
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link BR: Bellamy River**Hydrograph**

Summary for Link C: C

Inflow Area = 0.665 ac, 9.46% Impervious, Inflow Depth = 0.15" for 10-yr event
Inflow = 0.01 cfs @ 17.51 hrs, Volume= 0.008 af
Primary = 0.01 cfs @ 17.51 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

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

Link C: C

A – 2

NODE LISTING – 25-YR

20052 -Post

Prepared by Civilworks New England

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20052 24-hr S1 25-yr Rainfall=6.01"

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Page 3

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1	Runoff Area=19,021 sf 27.29% Impervious Runoff Depth=1.68" Flow Length=119' Tc=10.8 min CN=57 Runoff=0.48 cfs 0.061 af
Subcatchment 2: 2	Runoff Area=94,691 sf 8.25% Impervious Runoff Depth=0.87" Flow Length=316' Tc=12.0 min CN=46 Runoff=0.77 cfs 0.158 af
Subcatchment 3: 3	Runoff Area=39,050 sf 39.05% Impervious Runoff Depth=2.36" Flow Length=363' Tc=15.2 min CN=65 Runoff=1.31 cfs 0.176 af
Subcatchment 4: 4	Runoff Area=28,954 sf 9.46% Impervious Runoff Depth=0.45" Flow Length=486' Tc=27.6 min CN=39 Runoff=0.04 cfs 0.025 af
Reach R1: Reach 1	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.069 L=15.0' S=0.0267 '/ Capacity=22.32 cfs Outflow=0.00 cfs 0.000 af
Reach R2: Reach 2	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.069 L=12.0' S=0.0833 '/ Capacity=39.45 cfs Outflow=0.00 cfs 0.000 af
Reach R3: Reach 3	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.400 L=5.0' S=0.5000 '/ Capacity=8.41 cfs Outflow=0.00 cfs 0.000 af
Reach R4: Reach 4	Avg. Flow Depth=0.11' Max Vel=0.47 fps Inflow=0.31 cfs 0.163 af n=0.400 L=21.0' S=0.5476 '/ Capacity=8.80 cfs Outflow=0.31 cfs 0.163 af
Pond BIO1: BIO1	Peak Elev=75.44' Storage=2,584 cf Inflow=1.31 cfs 0.176 af Primary=0.31 cfs 0.163 af Secondary=0.00 cfs 0.000 af Outflow=0.31 cfs 0.163 af
Link A: A	Inflow=0.48 cfs 0.061 af Primary=0.48 cfs 0.061 af
Link BR: Bellamy River	Inflow=0.86 cfs 0.321 af Primary=0.86 cfs 0.321 af
Link C: C	Inflow=0.04 cfs 0.025 af Primary=0.04 cfs 0.025 af

Total Runoff Area = 4.172 ac Runoff Volume = 0.420 af Average Runoff Depth = 1.21"
82.95% Pervious = 3.460 ac 17.05% Impervious = 0.711 ac

A – 2

NODE LISTING – 50-YR

20052 -Post

Prepared by Civilworks New England

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20052 24-hr S1 50-yr Rainfall=7.18"

Printed 3/31/2021

Page 4

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

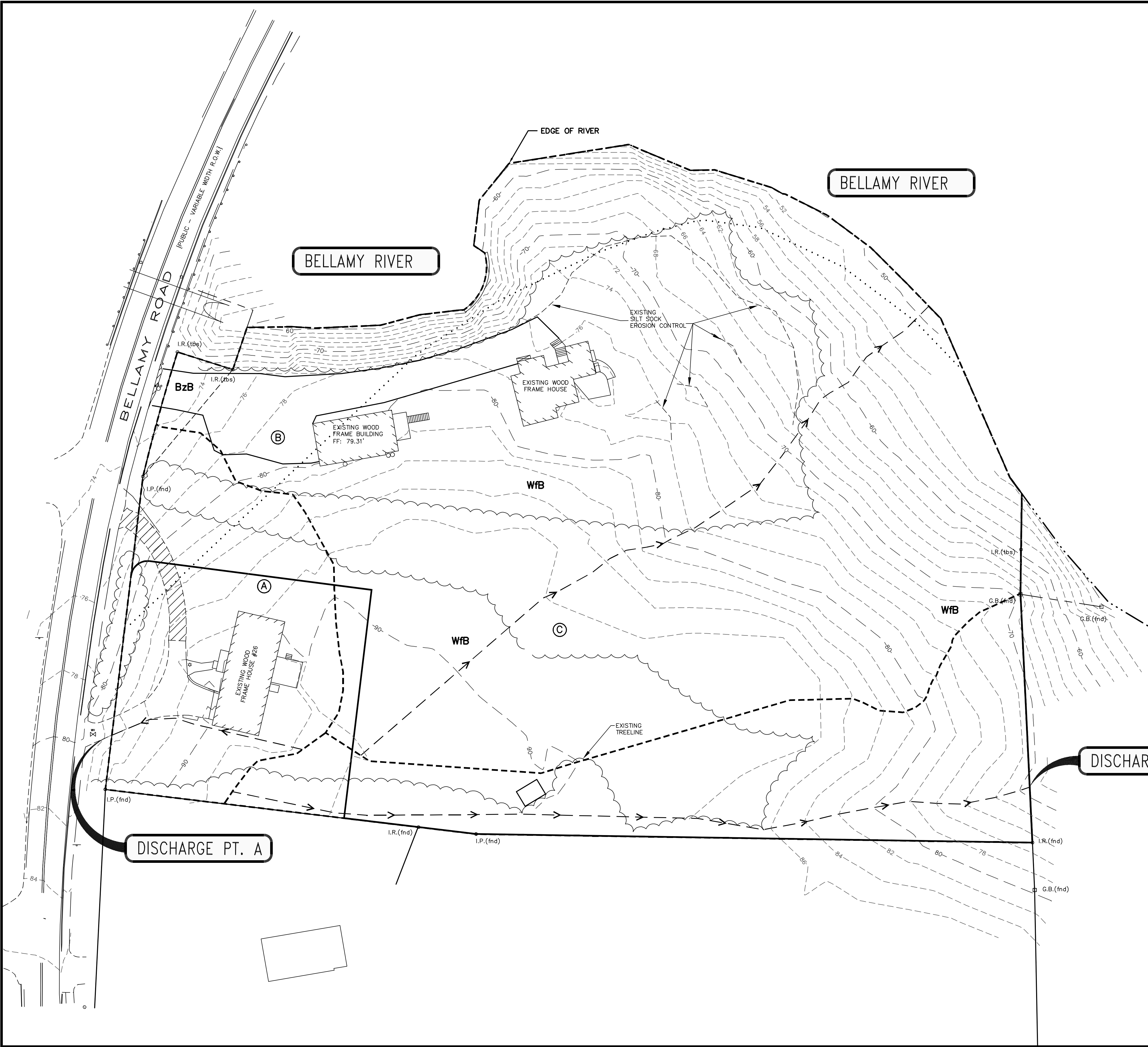
Subcatchment 1: 1	Runoff Area=19,021 sf 27.29% Impervious Runoff Depth=2.43" Flow Length=119' Tc=10.8 min CN=57 Runoff=0.71 cfs 0.089 af
Subcatchment 2: 2	Runoff Area=94,691 sf 8.25% Impervious Runoff Depth=1.41" Flow Length=316' Tc=12.0 min CN=46 Runoff=1.57 cfs 0.255 af
Subcatchment 3: 3	Runoff Area=39,050 sf 39.05% Impervious Runoff Depth=3.24" Flow Length=363' Tc=15.2 min CN=65 Runoff=1.77 cfs 0.242 af
Subcatchment 4: 4	Runoff Area=28,954 sf 9.46% Impervious Runoff Depth=0.83" Flow Length=486' Tc=27.6 min CN=39 Runoff=0.13 cfs 0.046 af
Reach R1: Reach 1	Avg. Flow Depth=0.12' Max Vel=0.83 fps Inflow=0.55 cfs 0.021 af n=0.069 L=15.0' S=0.0267 '/' Capacity=22.32 cfs Outflow=0.55 cfs 0.021 af
Reach R2: Reach 2	Avg. Flow Depth=0.09' Max Vel=1.19 fps Inflow=0.55 cfs 0.021 af n=0.069 L=12.0' S=0.0833 '/' Capacity=39.45 cfs Outflow=0.55 cfs 0.021 af
Reach R3: Reach 3	Avg. Flow Depth=0.14' Max Vel=0.55 fps Inflow=0.55 cfs 0.021 af n=0.400 L=5.0' S=0.5000 '/' Capacity=8.41 cfs Outflow=0.55 cfs 0.021 af
Reach R4: Reach 4	Avg. Flow Depth=0.18' Max Vel=0.66 fps Inflow=0.91 cfs 0.229 af n=0.400 L=21.0' S=0.5476 '/' Capacity=8.80 cfs Outflow=0.91 cfs 0.229 af
Pond BIO1: BIO1	Peak Elev=75.63' Storage=2,988 cf Inflow=1.77 cfs 0.242 af Primary=0.36 cfs 0.208 af Secondary=0.55 cfs 0.021 af Outflow=0.91 cfs 0.229 af
Link A: A	Inflow=0.71 cfs 0.089 af Primary=0.71 cfs 0.089 af
Link BR: Bellamy River	Inflow=1.76 cfs 0.484 af Primary=1.76 cfs 0.484 af
Link C: C	Inflow=0.13 cfs 0.046 af Primary=0.13 cfs 0.046 af
Total Runoff Area = 4.172 ac Runoff Volume = 0.632 af Average Runoff Depth = 1.82" 82.95% Pervious = 3.460 ac 17.05% Impervious = 0.711 ac	

APPENDIX B

WATERSHED PLANS

B – 1

PRE-DEVELOPED CONDITIONS



PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

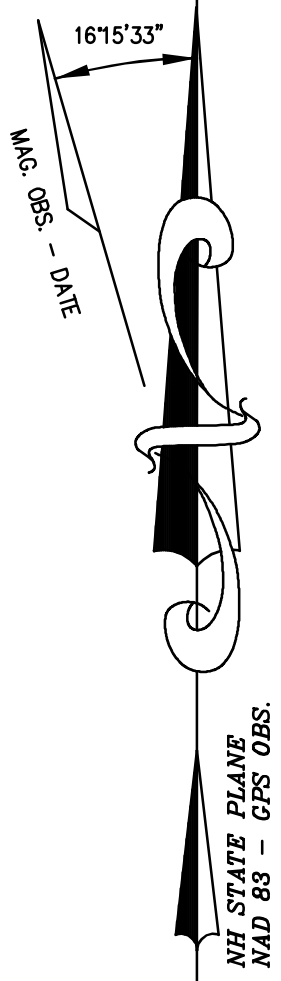
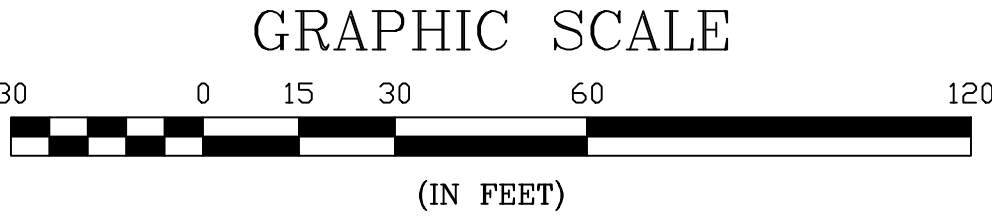
SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.54	119	10.8
B	2.93	445	16.1
C	0.70	486	27.6

SOILS DATA

Hydrologic Drainage Class A:
WfB — Windsor Loamy Fine Sand, 0 — 8 Percent Slopes

Hydrologic Drainage Class C:
BzB — Buxton Silt Loam, 3 — 8 Percent Slopes

- LEGEND:
- EX 2' CONTOUR
 - EX 10' CONTOUR
 - EDGE OF PAVEMENT
 - EDGE OF TREELINE
 - EDGE OF WETLAND
 - SOIL BOUNDARY
 - SUBCATCHMENT BOUNDARY
 - LONGEST FLOW PATH WITH DIRECTION OF FLOW
 - SUBCATCHMENT DESIGNATION
 - SOIL DESIGNATION



PRE-DEVELOPMENT WATERSHED PLAN

ZELAND SCHWARTZ
REVOCABLE TRUST
14 HUCKINS ROAD
MADBURY, NH 03823

SCHWARTZ SUBDIVISION
26 & 26 1/2 BELLAMY ROAD
DOVER, NH 03820

WS-1

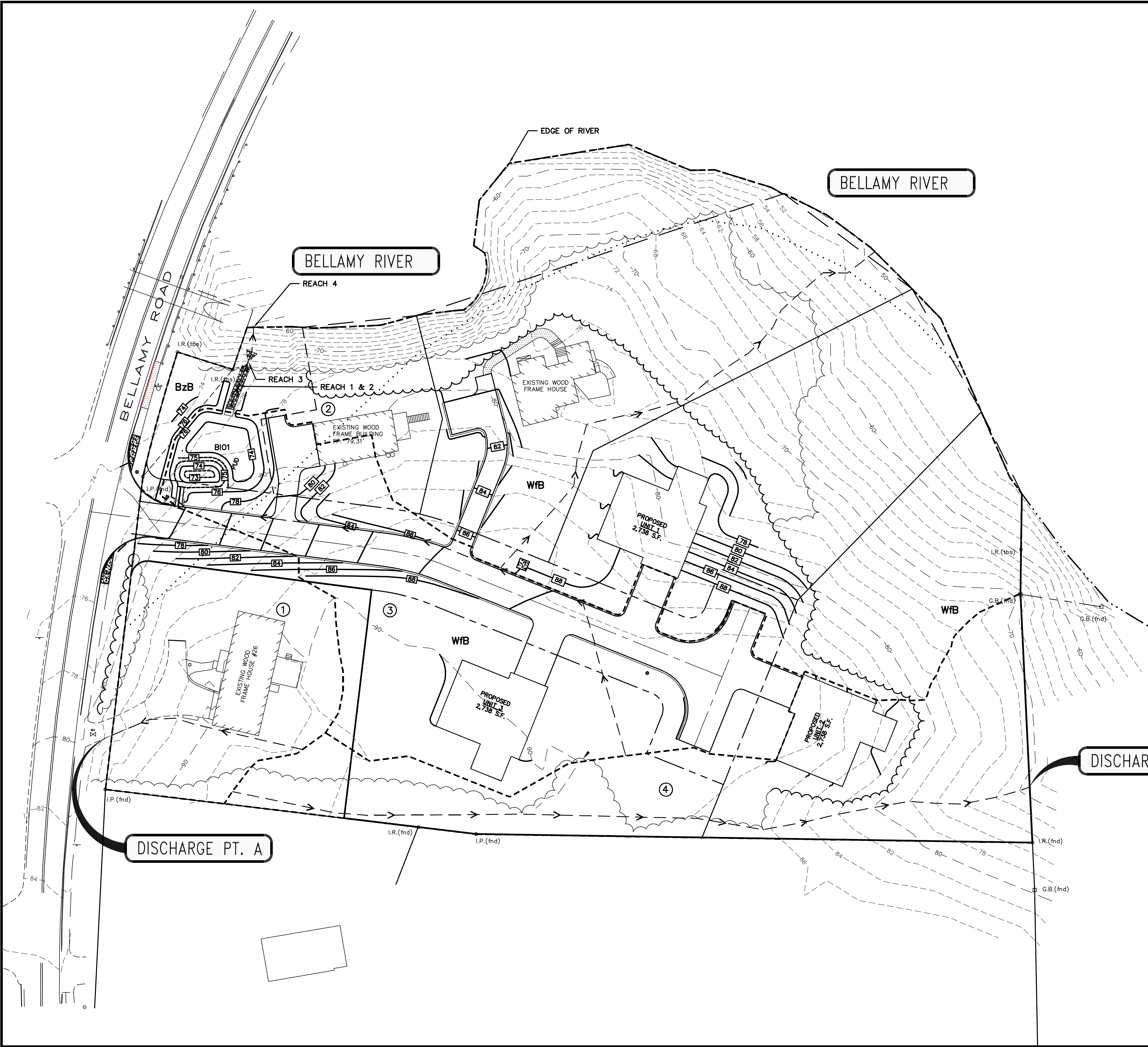
DATE: 4-2-21	SCALE: 1"=30'	DRAWN BY: JRG	DESIGN BY: JRG	APPROVED BY: JH	PROJECT NO: 20032	FILE: DRN	NO.	REVISION	APP'D	DATE
NOT FOR CONSTRUCTION FOR PERMIT USE ONLY										

CIVILWORKS NEW ENGLAND

181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.748.0443

B – 2

POST-DEVELOPED CONDITIONS



POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.44	119	10.8
2	2.17	316	12.0
3	0.90	363	15.2
4	0.67	486	27.6

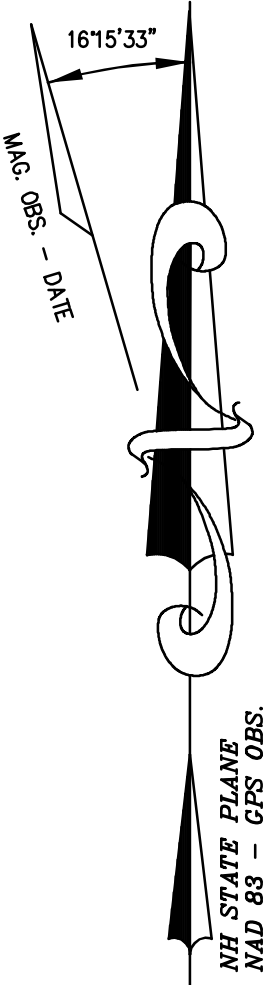
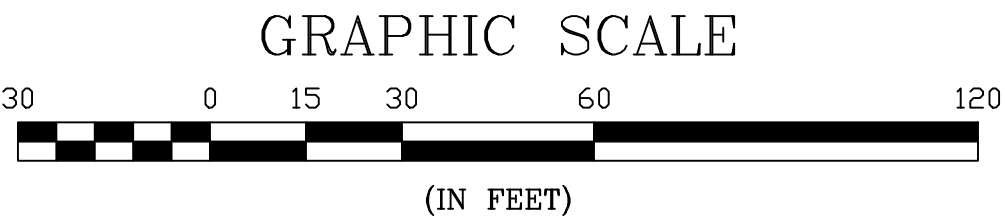
SOILS DATA

Hydrologic Drainage Class A:
WfB — Windsor Loamy Fine Sand, 0 — 8 Percent Slopes

Hydrologic Drainage Class C:
BzB — Buxton Silt Loam, 3 — 8 Percent Slopes

LEGEND:

- EX 2' CONTOUR
- - - EX 10' CONTOUR
- - - EDGE OF PAVEMENT
- ~ ~ ~ EDGE OF TREELINE
- . . . EDGE OF WETLAND
- SOIL BOUNDARY
- - - PROPOSED EDGE OF PAVEMENT
- - - PROPOSED TREELINE
- - - SUBCATCHMENT BOUNDARY
- > - LONGEST FLOW PATH WITH DIRECTION OF FLOW
- ① SUBCATCHMENT DESIGNATION
- BzB SOIL DESIGNATION
- - - PUD - PROPOSED UNDERDRAIN



POST-DEVELOPMENT WATERSHED PLAN															NOT FOR CONSTRUCTION FOR PERMIT USE ONLY		
						DATE: 4-2-21											
						SCALE: 1"=30'											
						DRAWN BY: JRG											
						DESIGN BY: JRG											
						APPROVED BY: JRG											
						PROJECT NO: 20052											
						FILE: DRN						NO.			REVISION		
												APP'D			DATE		
WS-2			SCHWARTZ SUBDIVISION 26 & 26 1/2 BELLAMY ROAD DOVER, NH 03820			ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823											

Stormwater Management System Inspection & Maintenance Plan

**SCHWARTZ SUBDIVISION
MAP H, LOT14-D**

**26 ½ Bellamy Road
Dover, New Hampshire
Strafford County**

April 2021

Prepared For:

ZELAND SCGWARTZ REVOCABLE TRUST

26 ½ Bellamy Road.
Dover, New Hampshire 03820

Prepared By:

CIVILWORKS NE

P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03820

Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for, **Zeland Schwartz Revocable Trust** at 26 ½ Bellamy Road, Dover, NH. The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will also help to minimize potential environmental impacts to the areas surrounding the developed site. By following the enclosed procedures, the property owners, and maintenance personnel will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff while at the same time ensuring the recharge of groundwater resources through continued infiltration.

This plan also requires the Owner/Operator to prepare and implement a salt minimization plan to reduce salt usage on-site and ultimately within the watershed. This plan will allow the owner/operator to monitor and modify how much salt is needed, when it should be applied, where it needs to be applied, with the ultimate goal of reducing salt-use without compromising safety. It is expected that salt-use reduction will lead to long-term cost-savings as a result of purchasing less salt and reduced impacts on vegetation (e.g., landscaping) and corrosion of infrastructure .

The salt minimization plan should include the retention of a contractor who has completed the Green SnowPro Training course and obtained NH DES Salt Application Certification.

It is anticipated that this be a living document that will be updated at regular intervals (recommend updating annually in advance of the winter season in order to facilitate adjustments.

Owner

**Zeland Schwartz Revocable Trust
14 Huckins Road
Madbury, NH 03823**

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party; transfer shall be documented to NH DES in writing.

Contact / Responsible Party

**Zeland Schwartz Revocable Trust
14 Huckins Road
Madbury, NH 03823**

**Phone: (215) 872-2862
Email: zelandra1@aol.com**

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NH DES in writing.

Management Company

**Zeland Schwartz Revocable Trust
14 Huckins Road
Madbury, NH 03823**

The contact information for the Management Party shall be kept current.

Inspection Schedule / Record Retention

Inspection frequency should, at a minimum, be in accordance with New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NH DES. See the Inspection and Maintenance Plan for frequency requirements. A copy of the completed Stormwater Management System's Inspection & Maintenance Log and Deicing Salt Quantity Use Log shall be maintained, kept on-site, and be made available to local, state, or federal regulators as applicable by law. All Inspection and Maintenance records must be provided to NH DES upon request.

Stormwater Management System Components

The Stormwater Management System associated with the project is designed to mitigate both the quantity and quality of site-generated stormwater runoff and to recharge the underlying groundwater resources. As a result, its design includes the following elements:

- Bio-retention System
- Sediment Forebay
- Energy Dissipation Structures (Rip Rap)
- Pavement
- Outlet Structures
- Litter / Trash Removal

Structure callouts correlate to the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

During maintenance activities, check for the presence of invasive plants and remove in a safe manner. Invasive plants shall be controlled to prevent them from reproducing, spreading, or re-growing. See the University of New Hampshire – Cooperative Extension's "Method for Disposing Non-Native Invasive Plants", included at the end of this manual, for guidance on the removal and disposal of invasive species.

Inspection and Maintenance Plan

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

BIO-RETENTION SYSTEM:

- Inspection, by a **qualified professional**, of the bio-retention system at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Inspect the system annually for drawdown time. If the system does not drain within 72-hours following a rainfall event, a qualified professional should assess the condition of the system, and determine measures to restore filtration function.
- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as “berms” or “dams” that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.
- Inspect periodically for invasive species within the system, if invasive species appear remove immediately. If invasive species become established then re-seeding and re-planting may be necessary.

SEDIMENT FOREBAYS

- Inspect at least once per year.
- Inspect for sediment accumulation.
- Remove all debris immediately.
- Install and maintain a staff gage to indicate depth of sediment accumulation.

ENERGY DISSIPATION STRUCTURES (RIP RAP): As Applicable

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.

PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Clean periodically (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS

- To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends that the Owner/Operator develop a Road Salt and Deicing Minimization Plan for the parking lots and roadways. The plan should develop the policies that the development will keep in place to minimize salt and other deicer use after the project has been completed. The plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. (See Anti-icing Data Form in the appendix).
- Use sand as primary agent for driveway and access way safety during ice and snow conditions
- Minimize the use of salt during the winter
- Use de-icing or anti-caking agents, added to enhance performance and application characteristics of sand mixtures, only as necessary and at minimum application rates.
- Recommend using a certified Winter Operator (Green SnowPro Trained) for applying de-icing agents.
- Monitor weather and apply de-icing agents based on weather conditions and temperatures.

ANTI-ICING AND SALT MINIMIZATION

- Owner to develop a Road Salt and Deicing Minimization Plan
- Provide a written policy that the “Development” will keep in place to minimize salt and other deicer use after the project has been completed.
- Use the attached form to track the use of salt and other deicers for each storm event and compiling salt use data annually.

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Bio-retention System • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation (Veg.)	Bi-Annually “ “ Periodically “ “ “ “ Annually	See Catch Basin (CB) Requirements (Req.) See Outlet Structure (OS) Req. Check for erosion, settlement, seepage, etc. Check for sediment accumulation in pond Check for trash (in pond and structures) • Maintain 95% veg. (pond & slopes) • Maintain healthy stand of veg. • Invasive species • Check for sufficient drawdown time	See CB Req. See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in Remove immediately If system does not drain within a 72 hour period
Sediment Forebay	Annually	• Check for sediment accumulation • Check for woody vegetation growth • Check for debris	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly
Energy Dissipation (ED) Structures (RipRap)	Annually	Check for displaced stones Check for woody vegetation	Replace immediately Remove annually
Pavement • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As Req. 1 - 2 x's Year Periodically	Minimize use to prevent tracking issues RECORD APPLICATION RATES Sweep or vacuum to prevent tracking issues Check for trash/debris	Sweep to prevent issues Minimize as Req. Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

The following page contains a blank copy of the Stormwater Management System's Inspection & Maintenance Log and a Deicing Salt Quantity Use Log. These forms are provided to assist the owners with the inspection and maintenance of the aforementioned Stormwater Management System.

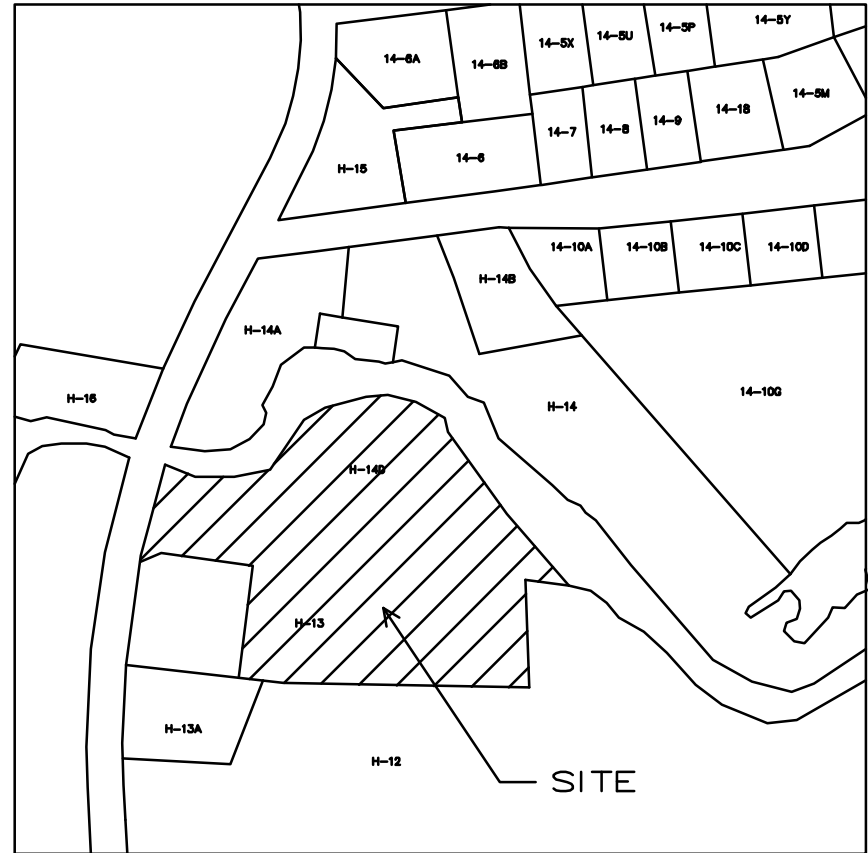
Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance: _____ Inspector: _____

[illegible]

Deicing Salt Quantity Use Log

[illegible]



LOCATION PLAN
SCALE: NOT TO SCALE

SUBDIVISION PLAN
TAX MAP H, LOT 14-D
26 1/2 BELLAMY ROAD
DOVER, NH
APRIL 2, 2021

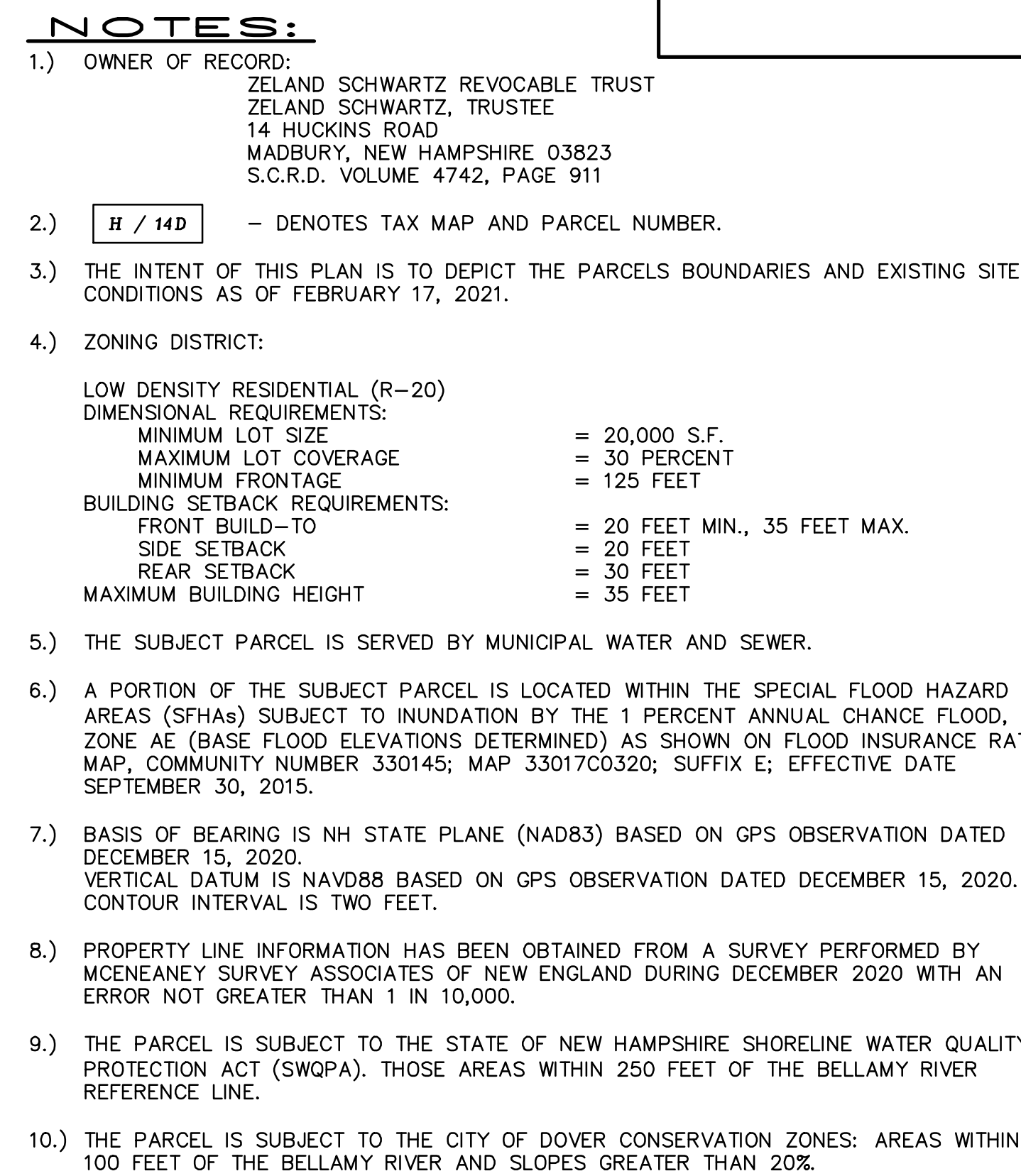
OWNER/APPLICANT ZELAND SCHWARTZ REVOCABLE TRUST
ZELAND SCHWARTZ, TRUSTEE
14 HUCKINS ROAD
MADBURY, NH 03823

DATE

CIVIL ENGINEER CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LAND SURVEYOR McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 681
24 CHESTNUT STREET
DOVER, NH 03820
(603) 742-0911

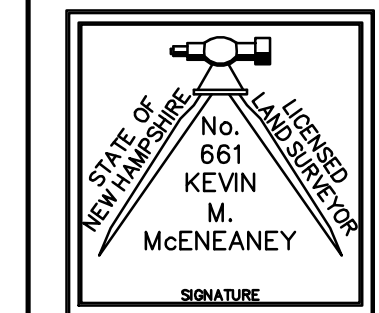
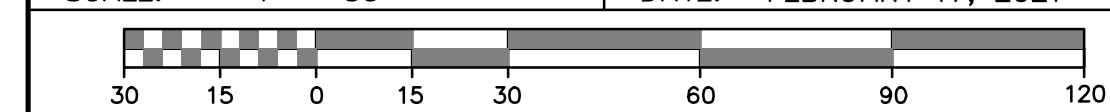
SHEET INDEX	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	3
SUBDIVISION PLAN (BY MCENEANEY SURVEY)	4-5
TOPOGRAPHIC SUBDIVISION PLAN (BY MCENEANEY SURVEY)	6
NOTE SHEET	7
DEMOLITION PLAN	8
SITE PLAN	9
GRADING, DRAINAGE & EROSION CONTROL PLAN	10
UTILITY PLAN	11
ROAD PROFILE	12
CROSS COUNTRY SEWER PROFILE	13
250' ALL SEASON SIGHT DISTANCE	14
EROSION CONTROL NOTES	15
EROSION CONTROL DETAILS	16
DETAILS	17 -21
LIGHTING PLAN	22
LIGHTING DETAILS	23
DOVER LADDER TRUCK MOVEMENT PLAN	24
NHDES SHORELAND PLAN (RE-VEGETATION PLAN)	S-1



"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

EXISTING CONDITIONS PLAN
PREPARED FOR
ZELAND SCHWARTZ REVOCABLE TRUST
TAX MAP H, LOT No. 14D
26 1/2 BELLAMY ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

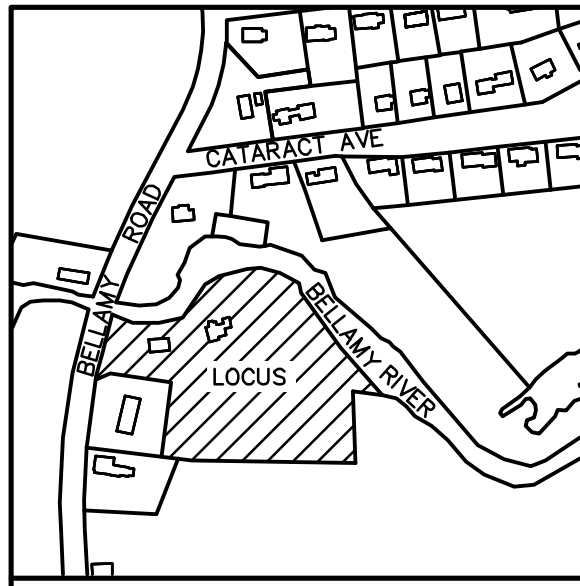
DRAWN BY: KJF	FILE: MSA\2301\20-2301 EC
SCALE: 1" = 30'	DATE: FEBRUARY 17, 2021



McNeaney
Survey
Associates
of NEW ENGLAND

P.O. Box 681 — 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING – PLANNING – CONSULTING



HOLGATE LIMITED PARTNERSHIP, LLC
130 CENTRAL AVENUE
DOVER, NH 03820
4130 / 687

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing	RADIAL BEARING-IN	RADIAL BEARING-OUT
C1	96°35'13"	10.00'	16.86'	14.93'	N34°20'00"W		
C2	3°40'31"	1042.00'	66.84'	66.83'	N15°47'52"E	S76°02'23"E	S72°21'52"E
C3	5°55'28"	175.00'	18.10'	18.09'	N79°39'52"W		
C4	8°37'11"	175.00'	26.33'	26.30'	N72°23'32"W		
C5	90°00'01"	10.00'	15.71'	14.14'	S66°55'03"W		
C6	14°32'39"	125.00'	31.73'	31.65'	S75°21'16"E		
C7	89°59'59"	10.00'	15.71'	14.14'	S23°04'57"E		
C8	90°31'23"	10.00'	15.80'	14.21'	S52°06'43"W		
C9	0°36'49"	1042.00'	11.16'	11.16'	S13°39'12"W	S76°02'23"E	S76°39'13"E

LOCATION PLAN
(NO SCALE)

SMH 2694 (1731)
RIM = 73.17
INV. IN = 70.3 12" (SOUTH)
INV. OUT = 70.1 12" (NORTH)

TBM SPIKE IN UP
ELEV. = 75.24

CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820

ZELAND SCHWARTZ
14 HUCKINS ROAD
MADBURY, NH 03823
4865 / 421

No.	Bearing	Distance
L1	S72°25'12"E	35.00'
L2	N18°42'18"E	26.82'
L3	N89°54'38"E	33.32'
L4	S26°18'41"E	55.00'
L5	S21°55'02"W	25.00'
L6	S00°48'21"W	33.67'
L7	S00°48'21"W	27.00'
L8	N21°55'02"E	34.39'
L9	S82°37'36"E	4.98'
L10	S21°55'02"W	25.00'
L11	N83°08'06"W	35.22'
L12	N83°08'06"W	45.00'

NO.	DATE	DESCRIPTION	BY	CHK
REVISIONS				
20-2301		SUBDIVISION	20-12	61-70
PROJECT NO		TYPE	FIELDBOOK & PAGES	

SEAMES TREFETHEN
58 CATARACT AVENUE
DOVER, NH 03820
2810 / 448

PARCEL AREA
15,864 S.F.
0.36 Ac.

DRAINAGE
EASEMENT AREA
6,596 S.F.

EXISTING WOOD
FRAME HOUSE #26

STEPHEN LEE THUNSTROM
28 BELLAMY ROAD
DOVER, NH 03820
4697 / 723

CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
799 / 251

PARCEL AREA
22,679 S.F.
0.52 Ac.

PARCEL AREA
39,609 S.F.
0.91 Ac.

PARCEL AREA
27,592 S.F.
0.63 Ac.

PARCEL AREA
35,863 S.F.
0.75 Ac.

LEGEND

- S.F. - SQUARE FEET
- Ac. - ACRE
- (TYP.) - TYPICAL
- ± - MORE OR LESS
- Ø - DIAMETER
- S.C.R.D. - STRAFFORD COUNTY
REGISTRY OF DEEDS
- UP - UTILITY POLE
- I.R.(tbs) - IRON ROD W/ I.D. CAP (TO BE SET)
- I.R.(set) - IRON ROD W/ I.D. CAP (SET)
- I.P.(fnd) - IRON PIPE FOUND
- I.R.(fnd) - IRON ROD FOUND
- G.B.(fnd) - GRANITE BOUND FOUND
- 48- - - - - CONTOUR LINE (2 FOOT INTERVAL)

REFERENCE PLANS:

- LOT LINE ADJUSTMENT PLAN PREPARED FOR ZELAND SCHWARTZ REVOCABLE TRUST AND ZELAND SCHWARTZ, TAX MAP H, LOT Nos. 13 & 14D, 26 & 26 1/2 BELLAMY ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE; SCALE: 1" = 30'; DATED: MARCH 4, 2021; BY THIS OFFICE; TO BE RECORDED.
- PROPOSED HIGHWAY LAYOUT BELLAMY ROAD/BELLAMY RIVER; SCALE: 1" = 40'; DATED: 1-13-87; BY: PUBLIC WORKS DEPT., DOVER, N.H.; RECORDED S.C.R.D. PLAN 3, POCKET 12, FOLDER 1.

NOTES:

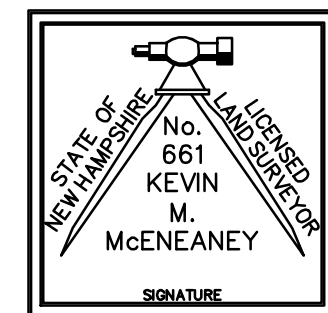
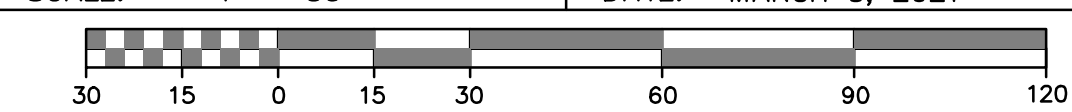
- OWNER OF RECORD:
ZELAND SCHWARTZ REVOCABLE TRUST
ZELAND SCHWARTZ, TRUSTEE
14 HUCKINS ROAD
MADBURY, NEW HAMPSHIRE 03823
S.C.R.D. VOLUME 4742, PAGE 911
- H / 14D - DENOTES TAX MAP AND PARCEL NUMBER.
- THE INTENT OF THIS PLAN IS TO SUBDIVIDE THE SUBJECT PARCEL INTO FIVE (5) SINGLE FAMILY RESIDENTIAL LOTS.
170-27.2. TRANSFER OF DEVELOPMENT RIGHTS.
SINGLE FAMILY DETACHED METHOD.
AN APPLICANT SHALL DEVELOP A BASELINE YIELD FOR THE LOT TO BE DEVELOPED, THROUGH THE FOLLOWING FORMULA:
1. THE SQUARE FOOTAGE OF THE PARENT LOT MINUS ENVIRONMENTAL CONSTRAINTS (WETLANDS, CONSERVATION AREAS ETC) IS THE BASE LOT SIZE.
2. THE BASE LOT SIZE IS THEN REDUCED BY FIFTEEN (15) PERCENT TO ACCOUNT FOR ROADWAY, THIS CREATES THE NET AREA.
3. THE NET AREA IS THEN MULTIPLIED BY A FACTOR DETERMINED BY THE AMOUNT OF WETLANDS OVER THE PARENT LOT. THIS IS THE DEVELOPABLE AREA.
4. THE DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE, AND THE WHOLE NUMBER VALUE IS THE BASE NUMBER, WITH NO ROUNDING.
PERCENTAGE OF PARCEL THAT IS WETLANDS FACTOR
0<10% 0.85
10<20% 0.9
20<30% 0.75
30%< 0.7
= 161,491 S.F.±
PARENT PARCEL ENVIRONMENTAL CONSTRAINTS = 74,833 S.F.
BASE LOT SIZE = 86,658 S.F. (NON SLOPE & NON CONSERVATION)
NET AREA = 86,658 x 0.85 = 73,659 S.F.
WETLANDS = 0 S.F.
PERCENTAGE OF PARCEL THAT IS WETLANDS = 0 S.F. / 73,659 S.F. = 0 PERCENT
DEVELOPABLE AREA = 73,659 S.F. x 0.85 = 62,610 S.F.
BASE NUMBER = 62,610 S.F. / 20,000 S.F. = 3.13 UNITS
- ZONING DISTRICT:
LOW DENSITY RESIDENTIAL (R-20), WITH TRANSFER DEVELOPMENT RIGHTS (TDR)
DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = 20,000 S.F.
MAXIMUM LOT COVERAGE = 30 PERCENT
MINIMUM FRONTAGE = 40 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT = 20 FEET
SIDE SETBACK = 10 FEET
REAR SETBACK = 30 FEET
MAXIMUM BUILDING HEIGHT = 35 FEET
- THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
- A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; MAP 33017C0320; SUFFIX E; EFFECTIVE DATE SEPTEMBER 30, 2015.
- BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020. VERTICAL DATUM IS NAVD83 BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020. CONTOUR INTERVAL IS TWO FEET.
- PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCNEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING DECEMBER 2020 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
- THE PARCEL IS SUBJECT TO THE STATE OF NEW HAMPSHIRE SHORELINE WATER QUALITY PROTECTION ACT (SWQPA). THOSE AREAS WITHIN 250 FEET OF THE BELLAMY RIVER REFERENCE LINE.
- THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONES: AREAS WITHIN 100 FEET OF THE BELLAMY RIVER AND SLOPES GREATER THAN 20%.

SEE SHEET 5 FOR EASEMENTS
AFFECTING LOTS 1 & 2

SHEET 4

SUBDIVISION PLAN
PREPARED FOR
ZELAND SCHWARTZ REVOCABLE TRUST
TAX MAP H, LOT No. 14D
26 1/2 BELLAMY ROAD
CITY OF DOVER
COUNTY OF STRAFFORD
STATE OF NEW HAMPSHIRE

DRAWN BY: KJP FILE: MSA\2301\20-2301 TDR
SCALE: 1" = 30' DATE: MARCH 5, 2021

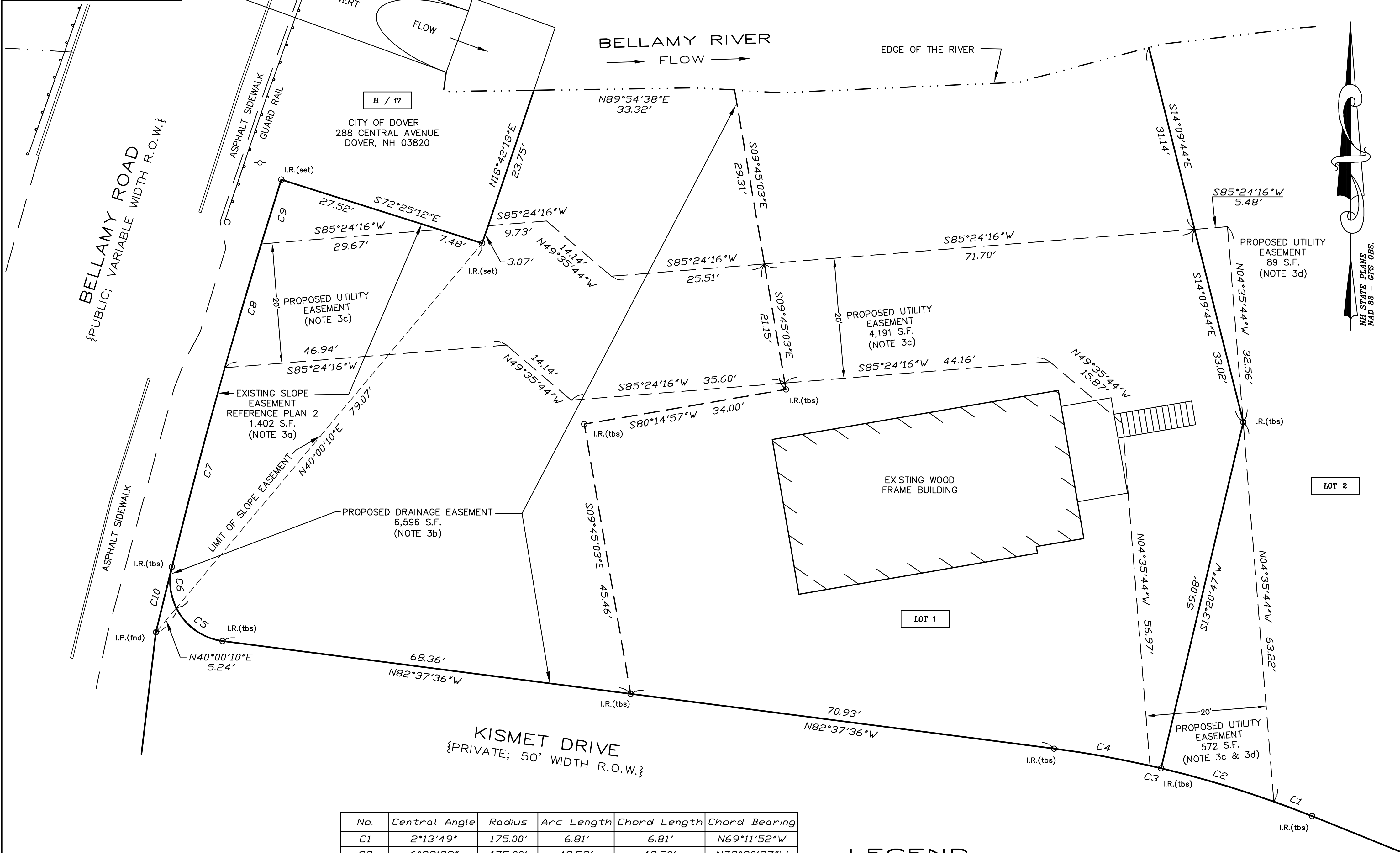
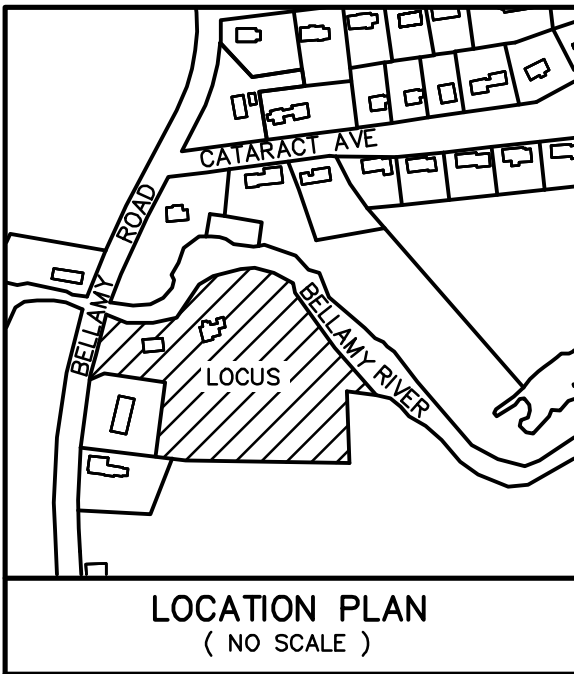


McNeaney
Survey
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of NEW ENGLAND

P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."



NO.	DATE	DESCRIPTION	BY	CHK
REVISIONS				
20-2301	SUBDIVISION	20-12	61-70	
PROJECT NO	TYPE	FIELDBOOK	& PAGES	

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	2°13'49"	175.00'	6.81'	6.81'	N69°11'52"W
C2	6°23'22"	175.00'	19.52'	19.50'	N73°30'27"W
C3	0°37'07"	175.00'	1.89'	1.89'	N77°00'42"W
C4	5°18'21"	175.00'	16.21'	16.20'	N79°58'26"W
C5	56°24'01"	10.00'	9.84'	9.45'	S54°25'35"E
C6	40°11'11"	10.00'	7.01'	6.87'	S06°07'59"E
C7	1°52'53"	1042.00'	34.21'	34.21'	S14°54'03"W
C8	1°10'41"	1042.00'	21.43'	21.43'	S16°25'50"W
C9	0°36'57"	1042.00'	11.20'	11.20'	S17°19'39"W
C10	0°36'49"	1042.00'	11.16'	11.16'	S13°39'12"W

LEGEND

- S.F. - SQUARE FEET
Ac. - ACRE
(TYP.) - TYPICAL
± - MORE OR LESS
Ø - DIAMETER
S.C.R.D. - STRAFFORD COUNTY
REGISTRY OF DEEDS
-o- UP - UTILITY POLE
I.R.(set) - IRON ROD W/ I.D. CAP (SET)
I.P.(fnd) - IRON PIPE FOUND
I.R.(fnd) - IRON ROD FOUND
I.R.(tbs) - IRON ROD W/ I.D. CAP (TO BE SET)

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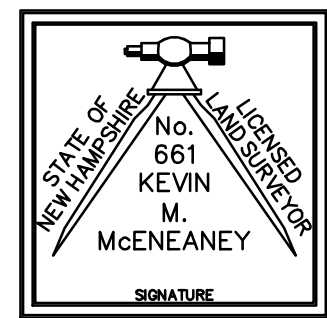
- OWNER OF RECORD:
ZELAND SCHWARTZ REVOCABLE TRUST
ZELAND SCHWARTZ, TRUSTEE
14 HUCKINS ROAD
MADBURY, NEW HAMPSHIRE 03823
S.C.R.D. VOLUME 4742, PAGE 911
- H / 14D - DENOTES TAX MAP AND PARCEL NUMBER.
- THE INTENT OF THIS PLAN IS TO DEPICT EXISTING AND PROPOSED EASEMENTS ON LOTS 1 & 2 AS SHOWN ON SHEET 1 OF 2.
- a.) LOT 1 IS SUBJECT TO A 1,402 S.F. SLOPE EASEMENT TO THE CITY OF DOVER, S.C.R.D. VOL. 827, PAGE 361.
- b.) LOT 1 WILL BE SUBJECT TO A PROPOSED 6,596 S.F. DRAINAGE EASEMENT.
- c.) LOT 1 WILL BE SUBJECT TO A PROPOSED 4,191 S.F. UTILITY EASEMENT.
- d.) LOT 2 WILL BE SUBJECT TO A PROPOSED 661 S.F. UTILITY EASEMENT.

SEE SHEET 4 FOR OVERALL
SUBDIVISION AND LOT BOUNDARIES

SHEET 5

EASEMENT PLAN
PREPARED FOR
ZELAND SCHWARTZ REVOCABLE TRUST
TAX MAP H, LOT No. 14D
26 1/2 BELLAMY ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

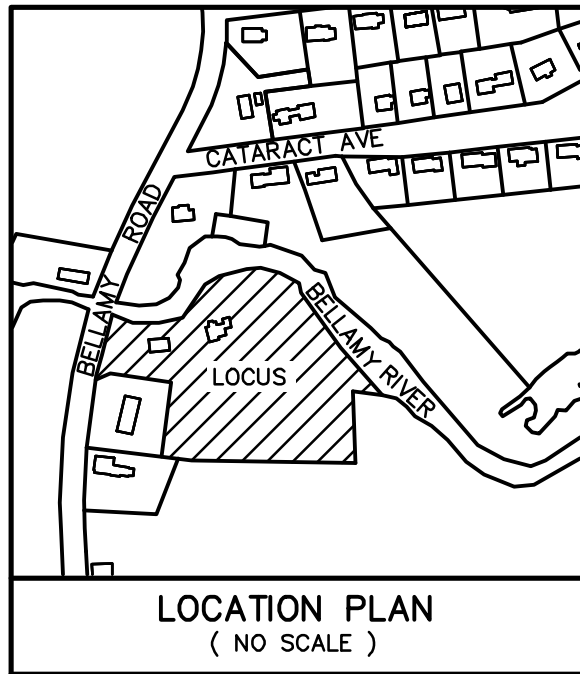
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SCALE: 1" = 30' DATE: MARCH 5, 2021



McEneaney
Survey
Associates
of NEW ENGLAND

P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING



H / 14D
HOLGATE LIMITED PARTNERSHIP, LLC
130 CENTRAL AVENUE
DOVER, NH 03820
4130 / 687

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing	RADIAL BEARING-IN	RADIAL BEARING-OUT
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SMH 2694 (1731)
RIM = 73.17
INV. IN = 70.3 12" (SOUTH)
INV. OUT = 70.1 12" (NORTH)

BELLAMY RIVER
FLOW

TBM SPIKE IN UP
ELEV. = 75.24

H / 17
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820

H / 13

ZELAND SCHWARTZ
14 HUCKINS ROAD
MADBURY, NH 03823
4865 / 421

H / 13A
STEPHEN LEE THUNSTROM
28 BELLAMY ROAD
DOVER, NH 03820
4697 / 723

H / 12
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
799 / 251

H / 14
J. MCCRUM, D. THURBER
PROULX ET AL MADELINE H. PROULX LIFE ESTATE
54 CATARACT AVENUE
DOVER, NH 03820
2668 / 596

No.	Bearing	Distance
L1	S72°25'12"E	35.00'
L2	N18°42'18"E	26.82'
L3	N89°54'38"E	33.32'
L4	S26°18'41"E	55.00'
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L10	S21°55'02"W	25.00'
L11	N83°08'06"W	35.22'
L12	N83°08'06"W	45.00'

NO.	DATE	DESCRIPTION	BY	CHK
REVISIONS				
20-2301	TOPOGRAPHIC	20-12	61-70	
PROJECT NO	TYPE	FIELDBOOK & PAGES		

LEGEND

- S.F. - SQUARE FEET
- Ac. - ACRE
- (TYP.) - TYPICAL
- ± - MORE OR LESS
- Ø - DIAMETER
- S.C.R.D. - STRAFFORD COUNTY REGISTRY OF DEEDS
- UP - UTILITY POLE
- I.R.(tbs) - IRON ROD W/ I.D. CAP (TO BE SET)
- I.R.(set) - IRON ROD W/ I.D. CAP (SET)
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- I.R.(fnd) - IRON ROD FOUND
- G.B.(fnd) - GRANITE BOUND FOUND
- CONTOUR LINE (2 FOOT INTERVAL)
- HATCHED AREAS REPRESENT SLOPES GREATER THAN 20%

REFERENCE PLANS:

- LOT LINE ADJUSTMENT PLAN PREPARED FOR ZELAND SCHWARTZ REVOCABLE TRUST AND ZELAND SCHWARTZ, TAX MAP H, LOT NOS. 13 & 14D, 26 & 28 1/2 BELLAMY ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE; SCALE: 1" = 30'; DATED: MARCH 4, 2021; BY THIS OFFICE; TO BE RECORDED.

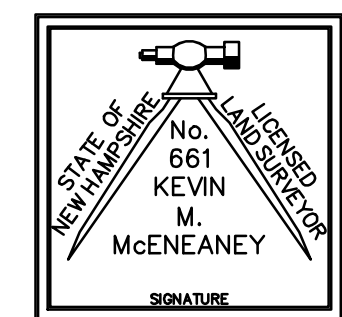
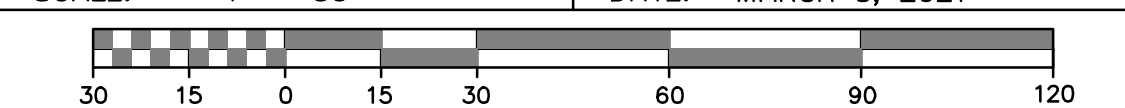
NOTES:

- OWNER OF RECORD:
ZELAND SCHWARTZ REVOCABLE TRUST
ZELAND SCHWARTZ, TRUSTEE
14 HUCKINS ROAD
MADBURY, NEW HAMPSHIRE 03823
S.C.R.D. VOLUME 4742, PAGE 911
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- THE INTENT OF THIS PLAN IS TO SUBDIVIDE THE SUBJECT PARCEL INTO FIVE (5) SINGLE FAMILY RESIDENTIAL LOTS.
170-27.2. TRANSFER OF DEVELOPMENT RIGHTS.
SINGLE FAMILY DETACHED METHOD.
AN APPLICANT SHALL DEVELOP A BASELINE YIELD FOR THE LOT TO BE DEVELOPED, THROUGH THE FOLLOWING FORMULA:
1. THE SQUARE FOOTAGE OF THE PARENT LOT MINUS ENVIRONMENTAL CONSTRAINTS (WETLANDS, CONSERVATION AREAS ETC) IS THE BASE LOT SIZE.
2. THE BASE LOT SIZE IS THEN REDUCED BY FIFTEEN (15) PERCENT TO ACCOUNT FOR ROADWAY, THIS CREATES THE NET AREA.
3. THE NET AREA IS THEN MULTIPLIED BY A FACTOR DETERMINED BY THE AMOUNT OF WETLANDS OVER THE PARENT LOT. THIS IS THE DEVELOPABLE AREA.
4. THE DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE, AND THE WHOLE NUMBER VALUE IS THE BASE NUMBER, WITH NO ROUNDING.
PERCENTAGE OF PARCEL THAT IS WETLANDS FACTOR
0-10% 0.85
10-20% 0.9
20-30% 0.75
30%- 0.7
= 161,491 S.F. ±
PARENT PARCEL ENVIRONMENTAL CONSTRAINTS = 74,833 S.F.
BASE LOT SIZE = 86,658 S.F. (NON SLOPE & NON CONSERVATION)
NET AREA = 86,658 x 0.85 = 73,659 S.F.
WETLANDS = 0 S.F.
PERCENTAGE OF PARCEL THAT IS WETLANDS = 0 S.F. / 73,659 S.F. = 0 PERCENT
DEVELOPABLE AREA = 73,659 S.F. x 0.85 = 62,610 S.F.
BASE NUMBER = 62,610 S.F. / 20,000 S.F. = 3.13 UNITS
- ZONING DISTRICT:
LOW DENSITY RESIDENTIAL (R-20), WITH TRANSFER DEVELOPMENT RIGHTS (TDR)
DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = 20,000 S.F.
MAXIMUM LOT COVERAGE = 30 PERCENT
MINIMUM FRONTAGE = 40 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT = 20 FEET
SIDE SETBACK = 10 FEET
REAR SETBACK = 30 FEET
MAXIMUM BUILDING HEIGHT = 35 FEET
- THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
- A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; MAP 33017C0320; SUFFIX E; EFFECTIVE DATE SEPTEMBER 30, 2015.
- BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020. VERTICAL DATUM IS NAVD83 BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020. CONTOUR INTERVAL IS TWO FEET.
- PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCNEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING DECEMBER 2020 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
- THE PARCEL IS SUBJECT TO THE STATE OF NEW HAMPSHIRE SHORELINE WATER QUALITY PROTECTION ACT (SWQPA). THOSE AREAS WITHIN 250 FEET OF THE BELLAMY RIVER REFERENCE LINE.
- THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONES: AREAS WITHIN 100 FEET OF THE BELLAMY RIVER AND SLOPES GREATER THAN 20%.

SHEET 6

TOPOGRAPHIC
SUBDIVISION PLAN
PREPARED FOR
ZELAND SCHWARTZ REVOCABLE TRUST
TAX MAP H, LOT No. 14D
26 1/2 BELLAMY ROAD
CITY OF DOVER
COUNTY OF STRAFFORD
STATE OF NEW HAMPSHIRE

DRAWN BY: KJP FILE: MSA\2301\20-2301 TDR
SCALE: 1" = 30' DATE: MARCH 5, 2021



McNeaney
Survey
Associates
of NEW ENGLAND

P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

GENERAL NOTES:

1. OWNER OF RECORD AND APPLICANT:
ZELAND SCHWARTZ REVOCABLE TRUST
ZELAND SCHWARTZ, TRUSTEE
14 HUCKINS ROAD
MADBURY, NEW HAMPSHIRE 03823
S.C.R.D. VOLUME 4742, PAGE 911

2.

H / 14D

 - DENOTES TAX MAP AND PARCEL NUMBER.

3. PARCEL AREA: 161,700 S.F.± / 3.71 Ac.±

4. ZONING DISTRICT IS R-20; TDR OVERLAY DISTRICT (170-27.2).

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE

MINIMUM LOT COVERAGE

MINIMUM FRONTAGE

= 20,000 S.F.

= 30 PERCENT

= 125 FEET

BUILDING SETBACK REQUIREMENTS:

FRONT BUILD TO LINE

SIDE SETBACK

REAR SETBACK

MAXIMUM BUILDING HEIGHT

= 20 FEET MINIMUM

= 35 FEET MAXIMUM

= 20 FEET

= 35 FEET MAXIMUM

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

7. A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE AE (BASE FLOOD ELEVATIONS DETERMINED); AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; MAP NUMBER 33017C0320; SUFFIX E; DATE SEPTEMBER 30, 2015.

8. BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020.

9. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED DECEMBER 15, 2020. CONTOUR INTERVAL IS TWO FEET.

10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, OF NEW ENGLAND DURING DECEMBER 2020 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

11. THE IMPROVEMENTS AND UTILITIES SHOWN ARE FROM OBSERVATIONS MADE IN THE FIELD OR REFERENCE PLANS. LOCATIONS OF UNDERGROUND UTILITIES NOT MARKED ON THE SURFACE WERE NOT LOCATED. ALL VISIBLE UTILITIES ARE SHOWN.

12. PARCEL IS SUBJECT TO THE STATE OF NEW HAMPSHIRE SHORELINE WATER QUALITY PROTECTION ACT (SWQPA). THOSE AREAS WITHIN 250 FEET OF THE BELLAMY RIVER REFERENCE LINE.

13. THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONE AREAS WITHIN THE 100 FEET OF THE BELLAMY RIVER AND SLOPES GREATER THAN 20%.
- DEMOLITION NOTES:
1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).

4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO CONCRETE, PAVEMENT AND POLES.

5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.

6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.

8. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.

9. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.

10. EXISTING ("OLD") WATER SERVICES TO THE SUBJECT SITE SHALL BE DISCONNECTED AND SHUT-OFF AT THE WATER MAIN.

11. EXISTING SEWER SERVICES TO BE CUT AND PERMANENTLY CAPPED AT PROPERTY LINE AS APPLICABLE.

12. 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.
- PERMIT SUMMARY:
1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
NHDES SHORELAND PERMIT APPLICATION: NHDES#2021-00587 APPROVED MARCH 19, 2021

2. 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.

- CONDITIONAL USE: PENDING

- SUBDIVISION APPROVAL: PENDING
- WAIVER REQUESTS:
1. A WAIVER REQUEST FROM SECTION 157-10.D TO NOT REQUIRE A TRAFFIC IMPACT ASSESSMENT.

2. A WAIVER REQUEST FROM SECTION 157-31.F TO ALLOW A 397 FT. +/- BLOCK/ROADWAY WHERE 500' IS REQUIRED.

3. A WAIVER REQUEST FROM SECTION 157-32.J TO ALLOW A 397 FT. +/- BLOCK/ROADWAY WHERE 500' IS REQUIRED.

4. A WAIVER REQUEST FROM SECTION 157-47.A TO ALLOW FOR A 20' WIDE PAVED ROAD WHERE 24' WIDE IS REQUIRED.

5. A WAIVER REQUEST FROM SECTION 170.27.2.G (2) TO ALLOW 15' OF VEGETATED SLOPE ALONG THE FIRST 200 FEET OF PROPOSED ROADWAY, AS WELL ALONG THE FRONTAGE OF THE LOT WHERE 30' NO CUT, NO DISTURB BUFFER IS REQUIRED.
- SITE NOTES:
1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND (SEE EXISTING CONDITIONS PLAN IN THIS PLAN SET)

2. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 400' OF ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 5 UNIT SINGLE FAMILY DETACHED CONDOMINIUM. THE ROADWAYS ARE PRIVATE AND PER 157-47B THERE ARE NO CITY SERVICES PROVIDED. ANY PROPOSED CHANGE FROM PRIVATE ROADS WILL REQUIRE REVIEW OF THE REQUEST BY PLANNING BOARD.

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

4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.

5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS, AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.

6. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.

7. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.

8. SEE DETAILS FOR SIGN LEGENDS.

9. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNERS REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE-DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.

10. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.

12. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

13. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.

14. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER AND SEWER.

15. 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 TO ANY EARTH DISTURBANCE ACTIVITY OCCURS.

16. AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.

17. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY HOURS 9 AM-4 PM, AND NO SUNDAY WORK HOURS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR AND THE SIGN SHALL NOTE THE ROADWAY IS PRIVATE, SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.

18. 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.

19. 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 PROJECT (PTAPP) PORTAL. HTTP://WWW.UNH.EDU/UNHSC/PTAPP

20. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.

21. 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.

22. THE ROADWAY WITH PRIVATE UTILITY EASEMENTS SHALL NOT BE ACCEPTED AS PUBLIC ROAD BY THE CITY UNLESS THE EASEMENTS ARE EXPUNGED PRIOR TO THE TRANSFER OF LAND TO THE CITY. LICENSE AGREEMENTS FOR ANY AND ALL PRIVATE UTILITIES WITHIN THE RIGHT OF WAY MAY BE GRANTED BY THE CITY UPON ACCEPTANCE OF THE UNENCUMBERED ROADWAY CONSISTENT WITH APPLICABLE STATE LAW.

23. PRIOR TO CONVEYING THE OWNERSHIP AND MAINTENANCE OBLIGATIONS FROM THE DEVELOPER TO THE ASSOCIATION, THE ENGINEER OF RECORD SHALL MEET WITH THE ASSOCIATION AND REVIEW MAINTENANCE OBLIGATIONS, INCLUDING STORMWATER, OPENSACE AND ROADWAY MAINTENANCE.

24. PRIOR TO THE LAST C.O. BEING ISSUED, THE ENGINEER OF RECORD SHALL MEET WITH THE ASSOCIATION AND REVIEW THE AS-BUILT FOR THE PROJECT.

25. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR.
- GRADING NOTES:
1. ALL ROAD DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".

3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.

4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.

5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.

6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA SCS AND NHDES.

7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.

8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.

9. DENSITY REQUIREMENTS:

LOCATION

MINIMUM DENSITY

BELOW PAVED OR CONCRETE AREAS

95%

TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL

95%

BELOW LOAM AND SEED AREA

90%

*ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.

11. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.

12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.

13. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR THIS PROJECT. THE SWPPP MUST INCLUDE THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE SITE. PARTIES RESPONSIBLE FOR DEVELOPING THE SWPPP SHOULD REFER TO THE EPA NPDES CONSTRUCTION GENERAL PERMITS NOTICE OF INTENT FOR A COMPLETE OUTLINE OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.

14. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.

15. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.

16. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND PRIOR TO CONSTRUCTION.
- UTILITY NOTES:
1. THE PROJECT SITE IS SERVED BY CITY WATER AND SEWER.

2. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION AND SIZE OF EXISTING UTILITIES. THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.

3. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO WORK BEING PERFORMED. CALL DIGSAFE AT 1-888-388-7233 OR "811".

4. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SUBDIVISION PLANS SHALL SHOW ANY EASEMENTS FOR THESE SERVICES.

5. UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE TV CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH/PER EVERSOURCE, VERIZON, COMCAST, AND UNTIL STANDARDS.

6. PROPOSED INSTALLATION OF UNDERGROUND CONDUITS FOR TELEPHONE, ELECTRIC AND GAS SERVICE SHALL BE COORDINATED WITH THE RESPECTIVE CONTACTS ARE AS FOLLOWS:

ELECTRIC:

ELECTRIC:

CABLE:

GAS:

EVERSOURCE 1.800.362.7764

COMCAST 603.334.3615

UNTIL 866.933.3821

7. SEE ELECTRICAL DRAWINGS AND DETAILS FOR OUTDOOR LIGHTING CONDUIT LOCATIONS.

8. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.

9. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.

10. SEWAGE LOADING (PER ENV. - Wq 1008.03 TABLE 1008-1)

EXISTING HOUSE - 3 BEDROOM

EXISTING GARAGE CONVERSION - 3 BEDROOM

3 NEW HOMES - 3 BEDROOM

15 BDRMS x 150 GALS./DAY/BDRM = 2,250 GPD

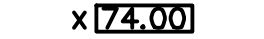
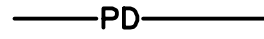
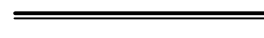
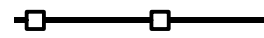
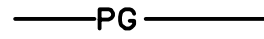
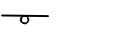
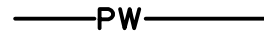
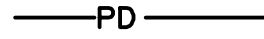
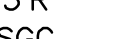
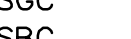
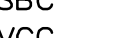
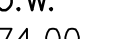
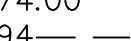
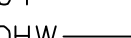
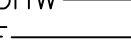
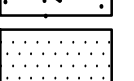
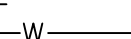
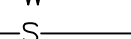
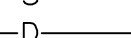
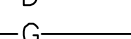
11. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.

12. APPROVED BACKFLOW PREVENTORS SHALL BE INSTALLED ON BOTH FIRE AND DOMESTIC WATER LINES. AS APPLICABLE

13. ALL UNUSED WATER SERVICES SHALL BE REMOVED BACK TO THE CORPORATION AT THE MAIN.

14. TAPPING SLEEVE AND GATES SHALL BE STAINLESS STEEL.

15. USE FOSTER GATES TO TEES WHERE ANCHOR TEE'S ARE NOT USED.

16. CURB BOXES SHALL BE PLACED AT RIGHT OF WAY AND OUT OF PAVEMENT AS POSSIBLE. IF IN PAVEMENT USE ROAD BOX.
- LEGEND
- | | | | |
|---|------------------------------------|---|--------------------------|
| S.F. | SQUARE FEET |  | PROPOSED SIGN |
| Ac. | ACRE |  | PROPOSED FINISH GRADE |
| ± | MORE OR LESS |  | PROPOSED SPOT GRADE |
| (TYP.) | TYPICAL |  | PROPOSED DRAIN LINE |
| S.C.R.D. | STRAFFORD COUNTY REGISTRY OF DEEDS |  | PAVEMENT WITH CURB |
| TBR | TO BE REMOVED |  | SILT BARRIER |
|  | EXISTING UTILITY POLE |  | PROPOSED GAS |
|  | EXISTING SIGN |  | PROPOSED WATER |
|  | EXISTING WATER SHUT-OFF |  | PROPOSED FENCE |
|  | EXISTING WATER VALVE |  | PROPOSED ELECTRIC |
|  | EXISTING GAS VALVE |  | PROPOSED DRAIN LINE |
|  | EXISTING HYDRANT |  | PROPOSED UNDERDRAIN LINE |
|  | EXISTING LIGHT/SIGNAL POLE |  | PROPOSED CATCHBASIN |
|  | EXISTING SEWER MANHOLE |  | GARAGE FINISH FLOOR |
|  | EXISTING DRAINAGE MANHOLE |  | FINISH FIRST FLOOR |
|  | EXISTING CATCHBASIN |  | FINISH BASMENT FLOOR |
|  | PAVEMENT RADIUS | | |
|  | SLOPE GRANITE CURB | | |
|  | SLOPED BITUMINOUS CURB | | |
|  | VERTICAL GRANITE CURB | | |
|  | TOP OF WALL | | |
|  | EXISTING SPOT GRADE |  | INLET PROTECTION |
|  | EXISTING GRADE |  | HANDICAP PARKING SYMBOL |
|  | OVERHEAD WIRES |  | PROPOSED CONCRETE |
|  | EXISTING ELECTRIC |  | PROPOSED SIDEWALK |
|  | EXISTING WATER LINE |  | PROPOSED POROUS PAVEMENT |
|  | EXISTING SEWER LINE |  | PROPOSED GRASS PAVERS |
|  | EXISTING DRAINAGE LINE | | |
|  | EXISTING GAS LINE | | |
- NOTE SHEET
- ZELAND SCHWARTZ
REVOCABLE TRUST
14 HUCKINS ROAD
MADBURY, NH 03823
- SCHWARTZ SUBDIVISION
26 1/2 BELLAMY ROAD
DOVER, NH 03820
- 7
- NOT FOR CONSTRUCTION FOR PERMIT USE ONLY
- | | | | | | | | | | | |
|--------------|---------------|---------------|----------------|----------------|-------------------|------------|-----|----------|-------|------|
| DATE: 4-2-21 | SCALE: 1"=30' | DRAWN BY: JRG | DESIGN BY: JRG | APPROVED BY:JH | PROJECT NO: 20082 | FILE: SITE | NO. | REVISION | APP'D | DATE |
| | | | | | | | | | | |
- CIVILWORKS NEW ENGLAND
CIVIL & WATERWRT ENGINEERS
181 Watson Road PO Box 1166
Dover, New Hampshire 03821
603.748.0443



NOTE:
1. FOR PROJECT NOTES SEE NOTE SHEET #7.

PLAN REFERENCES:

1. "EXISTING CONDITIONS PLAN" PREPARED FOR: ZELAND SCHWARTZ REVOCABLE TRUST, TAX MAP H, LOT NO. 14D, 26 1/2 BELLAMY ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, DATED: FEBRUARY 17, 2021, PREPARED BY: MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND.

TDR CALCULATIONS

170-27.2. TRANSFER OF DEVELOPMENT RIGHTS.

SINGLE FAMILY DETACHED METHOD.

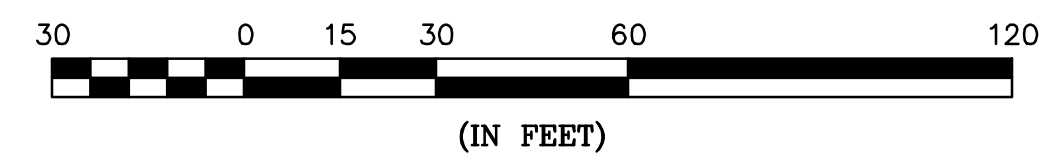
AN APPLICANT SHALL DEVELOP A BASELINE YIELD FOR THE LOT TO BE DEVELOPED, THROUGH THE FOLLOWING FORMULA

1. THE SQUARE FOOTAGE OF THE PARENT LOT MINUS ENVIRONMENTAL CONSTRAINTS (WETLANDS, CONSERVATION AREAS ETC) IS THE BASE LOT SIZE.
2. THE BASE LOT SIZE IS THEN REDUCED BY FIFTEEN (15) PERCENT TO ACCOUNT FOR ROADWAY, THIS CREATES THE NET AREA.
3. THE NET AREA IS THEN MULTIPLIED BY A FACTOR DETERMINED BY THE AMOUNT OF WETLANDS OVER THE PARENT LOT. THIS IS THE DEVELOPABLE AREA.
4. THE DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE, AND THE WHOLE NUMBER VALUE IS THE BASE NUMBER, WITH NO ROUNDING.

PERCENTAGE OF PARCEL THAT IS WETLANDS	FACTOR
0<10%	0.85
10<20%	0.8
20<30%	0.75
30%<	0.7

1. PARENT PARCEL = 161,700 S.F.±
ENVIRONMENTAL CONSTRAINTS = 70,825 S.F.
2. BASE LOT SIZE
CONSERVATION) = 90,875 S.F. (NON SLOPE & NON
NET AREA = 90,875 x 0.85 = 77,244 S.F.
3. WETLANDS = 0 S.F.
PERCENTAGE OF PARCEL
THAT IS WETLANDS = 0 S.F. / 77,244 S.F. = 0 PERCENT
4. DEVELOPABLE AREA = 77,244 S.F. x 0.85 = 65,657 S.F.
5. BASE NUMBER = 65,657 S.F. / 20,000 S.F. = 3.28 UNITS

GRAPHIC SCALE

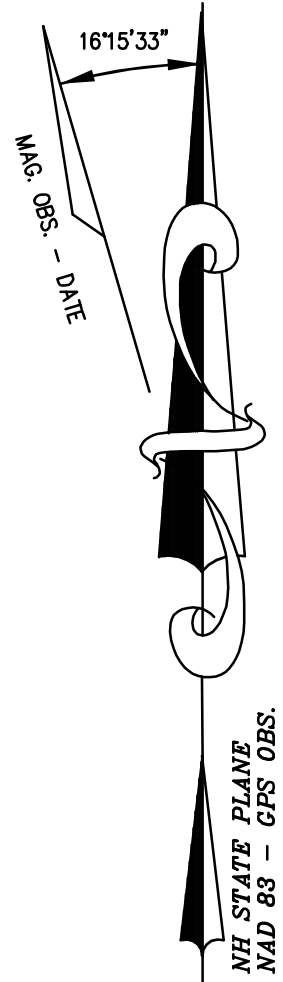
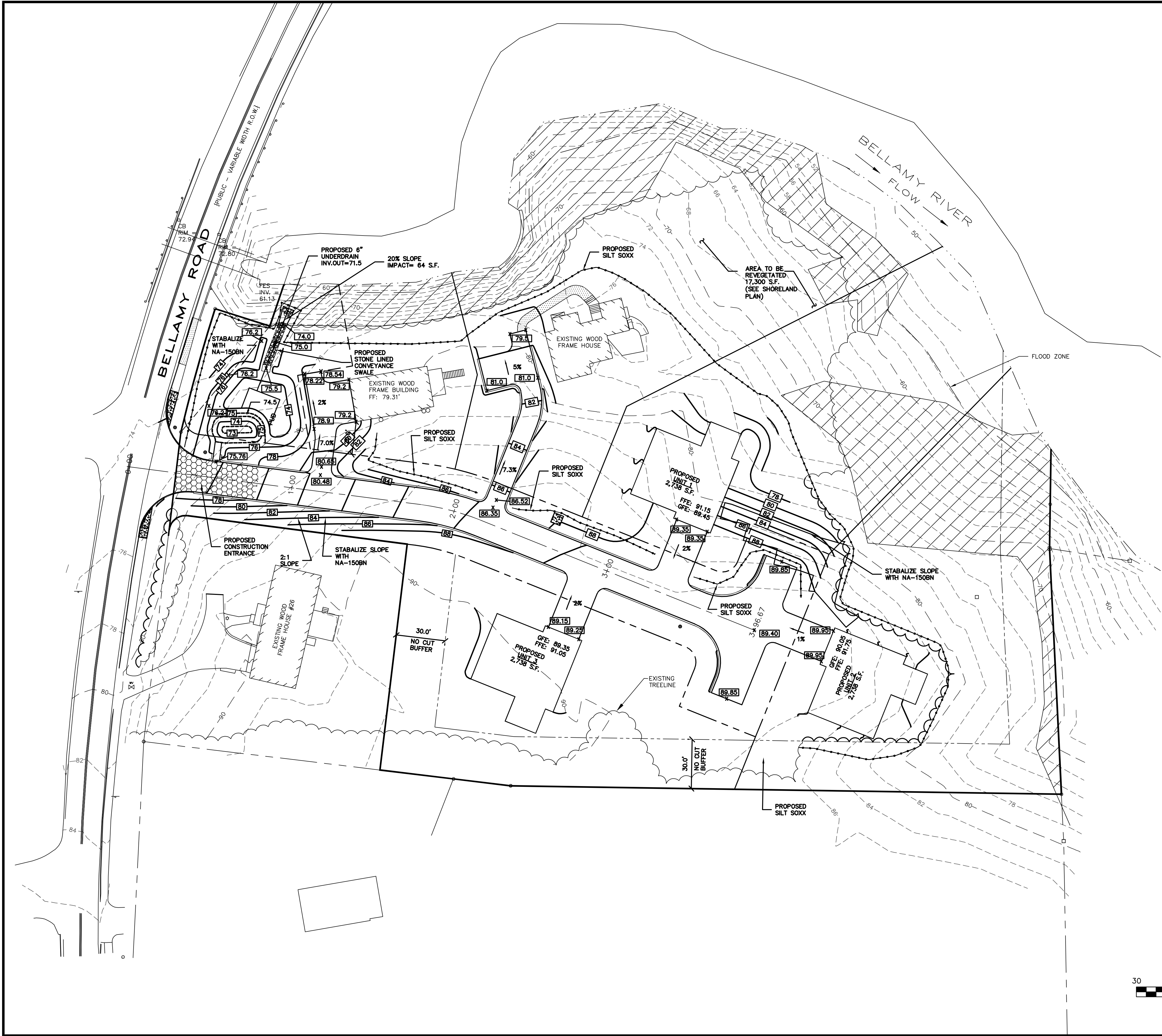


16°15'33"

MAG. OBS. - DATE

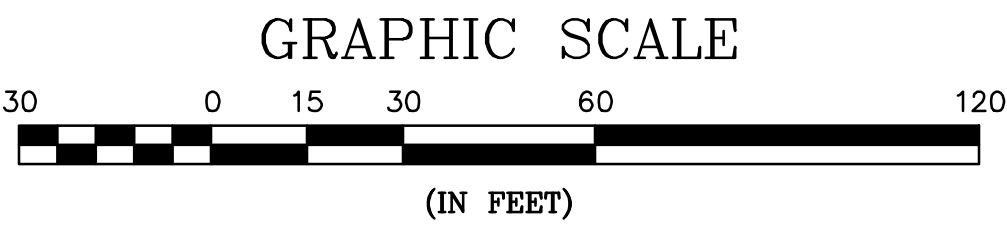
NH STATE PLANT
VAD. 83 - CBS OBS.
VAD. 83 - CBS OBS.

9		SITE PLAN		SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820	ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823											NOT FOR CONSTRUCTION FOR PERMIT USE ONLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

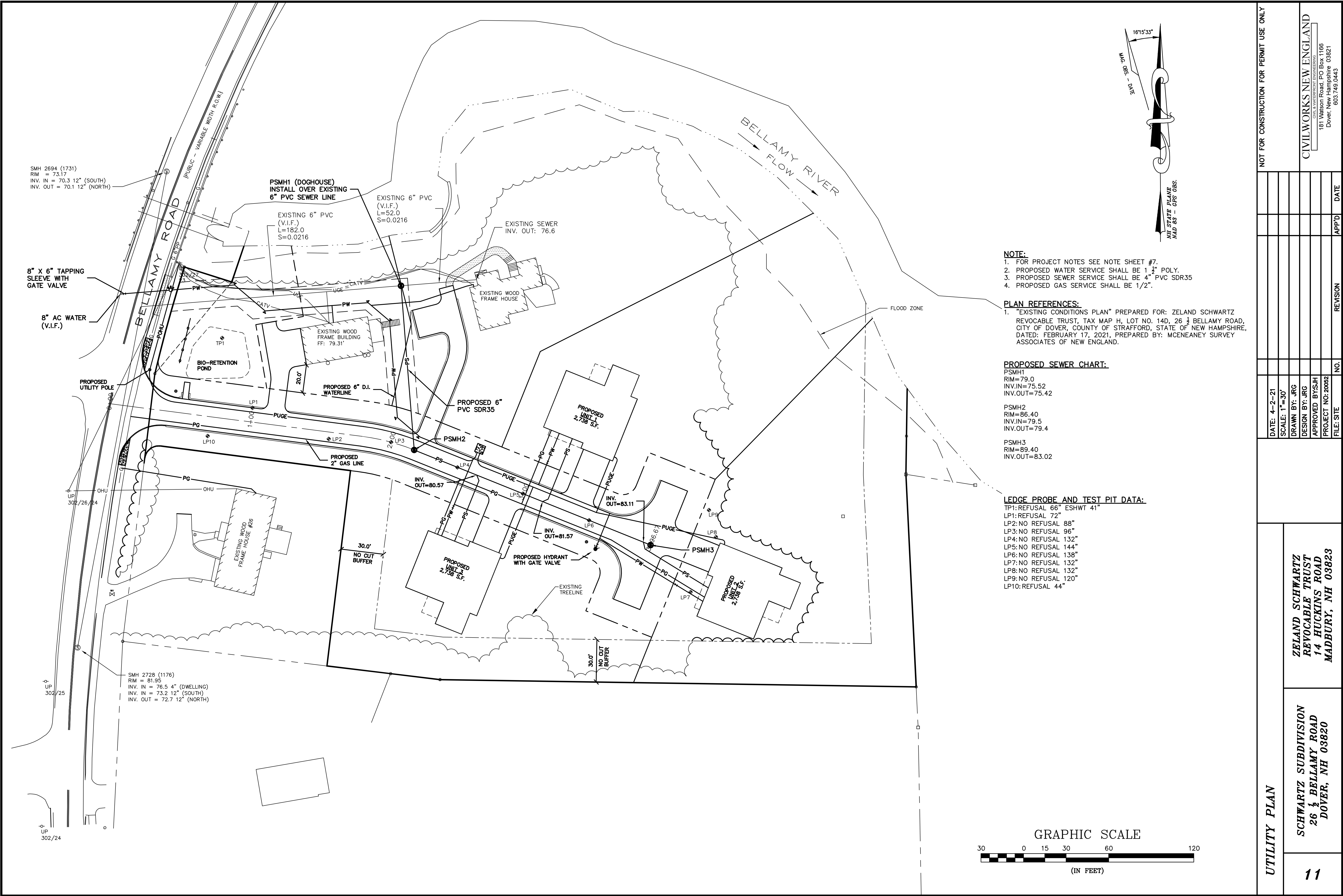


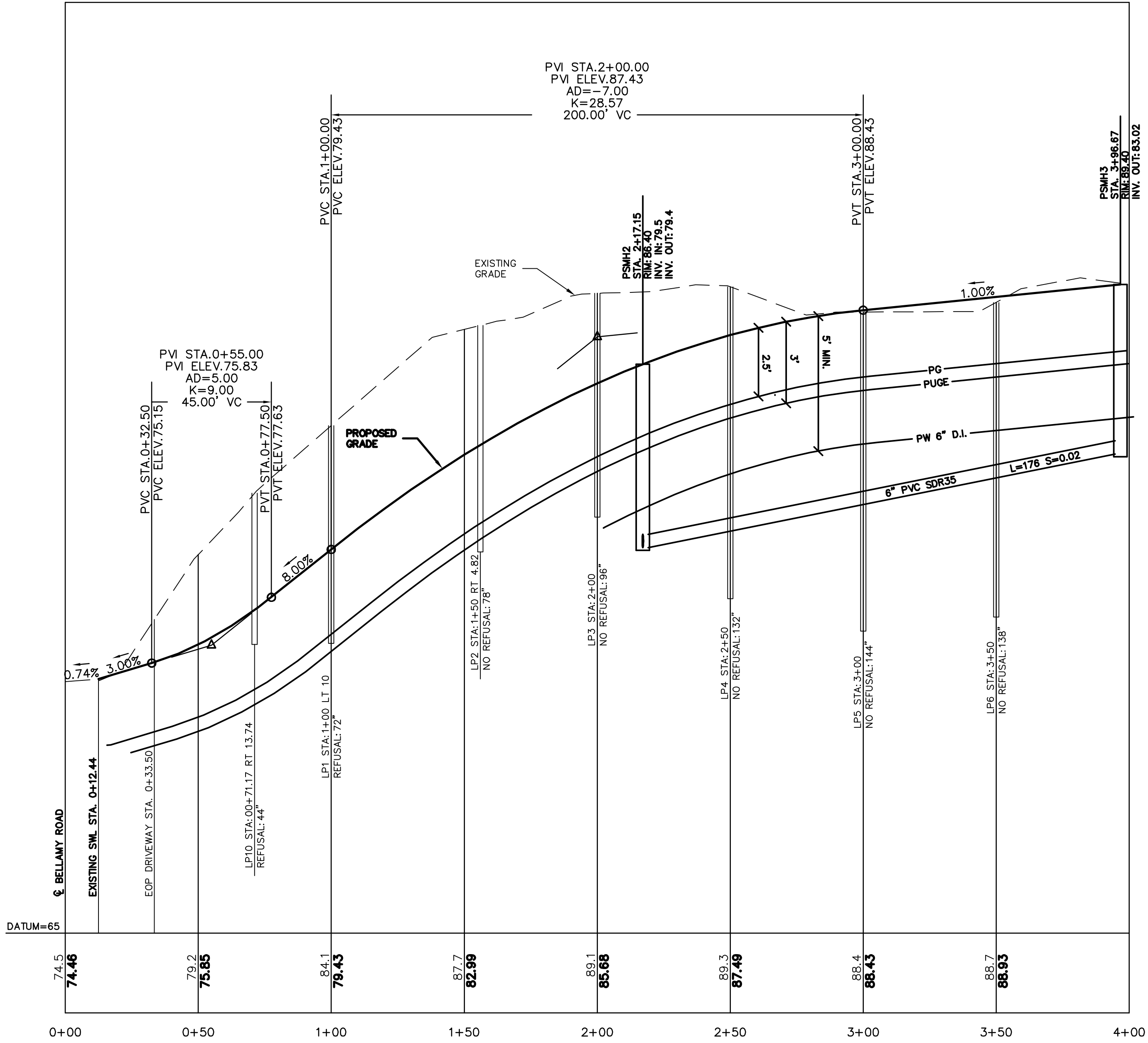
NOTE:
1. FOR PROJECT NOTES SEE NOTE SHEET #7.

PLAN REFERENCES:
1. "EXISTING CONDITIONS PLAN" PREPARED FOR: ZELAND SCHWARTZ REVOCABLE TRUST, TAX MAP H, LOT NO. 14D, 26 1/2 BELLAMY ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, DATED: FEBRUARY 17, 2021, PREPARED BY: MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND.

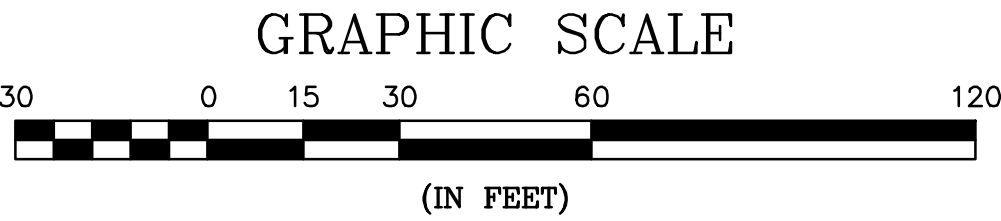


GRADING, DRAINAGE & EROSION CONTROL PLAN		NOT FOR CONSTRUCTION FOR PERMIT USE ONLY				
10	SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820	ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823	DATE: 4-2-21			
			SCALE: 1"=30'			
			DRAWN BY: JRG			
			DESIGN BY: JRG			
			APPROVED BY: JRG			
			PROJECT NO: 20032			
		FILE: SITE	NO.	REVISION	APP'D	DATE
			CIVILWORKS NEW ENGLAND 181 Watson Road, PO Box 1166 Dover, New Hampshire 03821 603.745.0443			

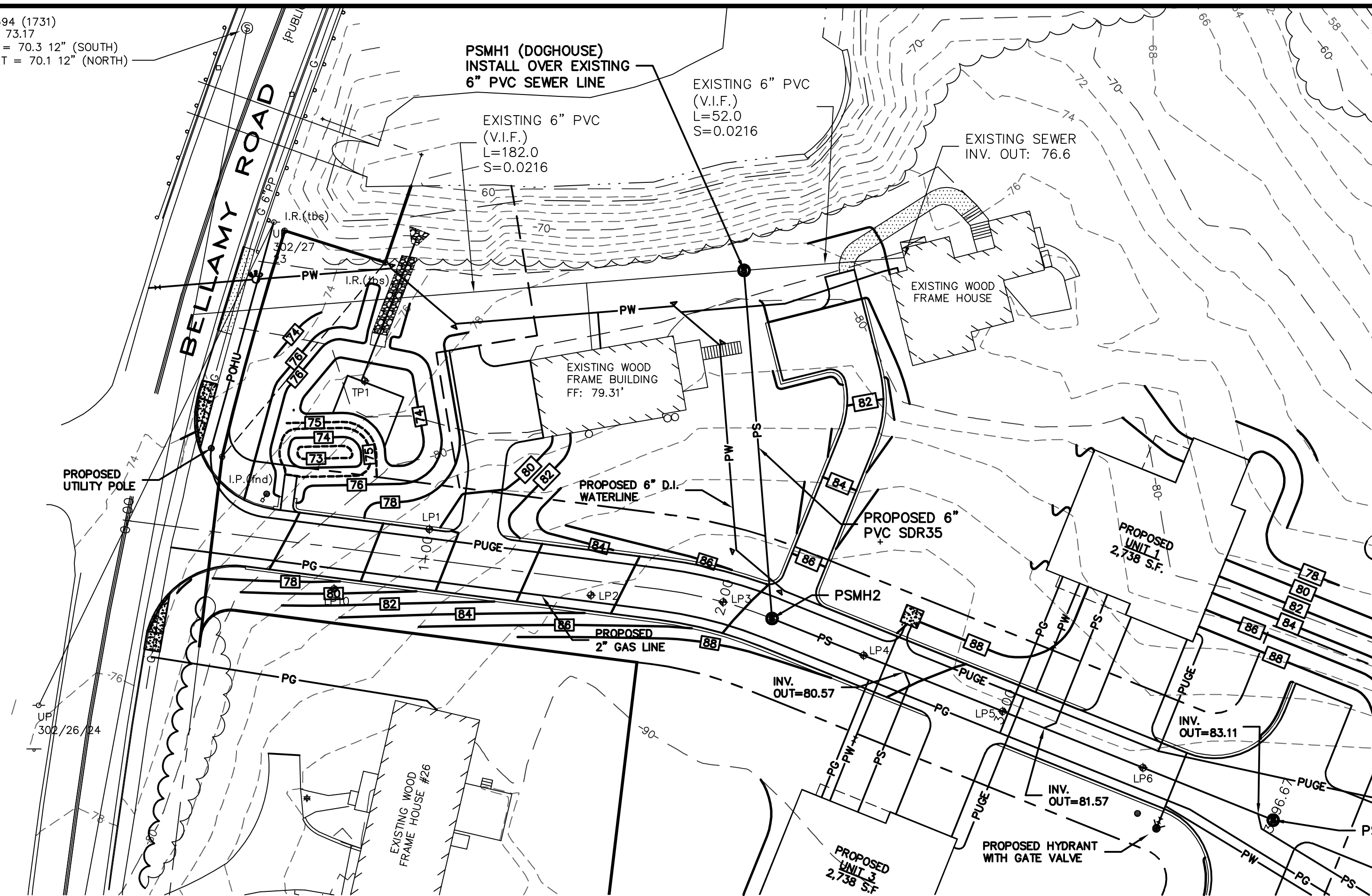




PROPOSED ROAD PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'



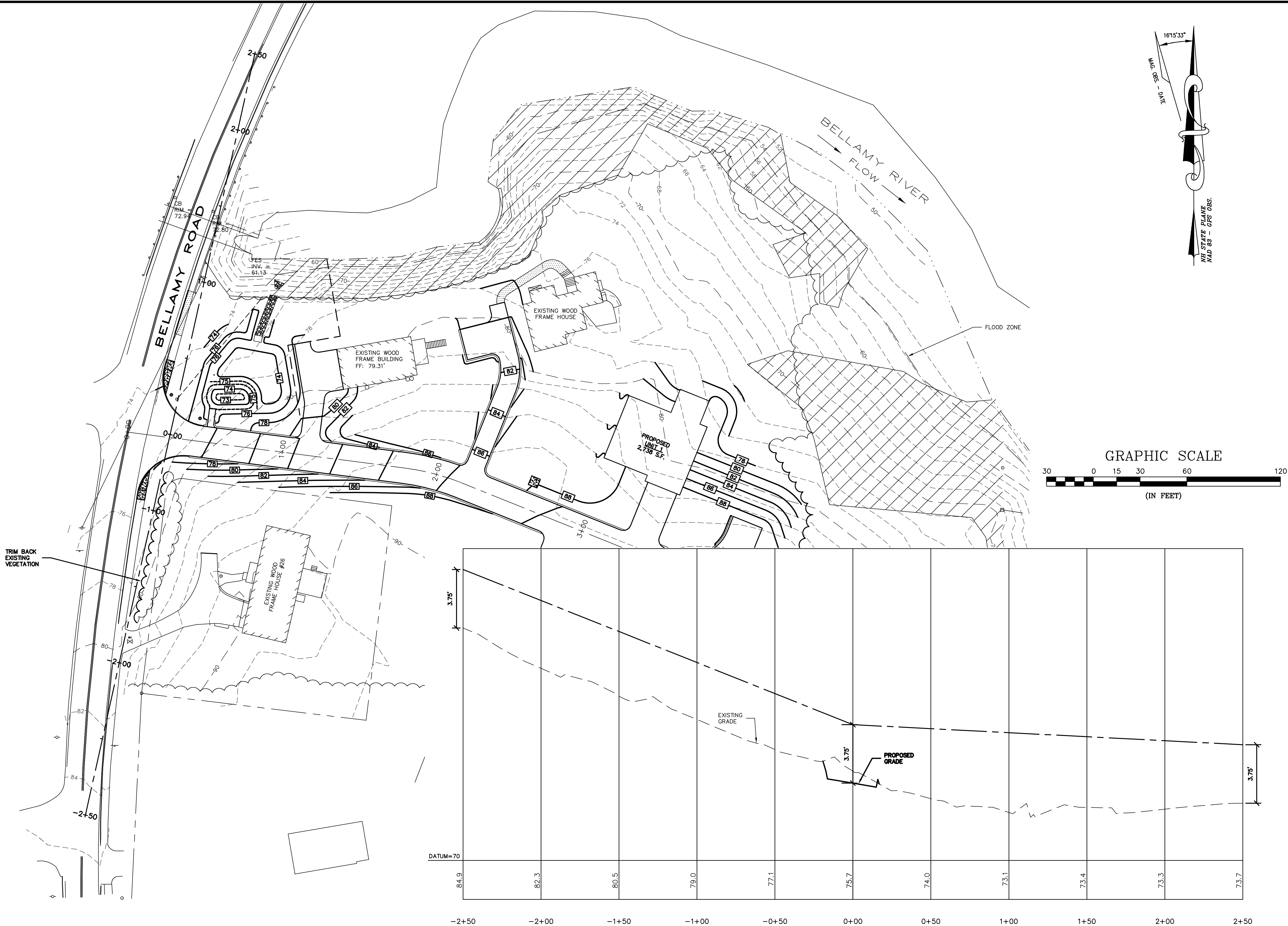
ROAD PROFILE PLAN		NOT FOR CONSTRUCTION FOR PERMIT USE ONLY					
12	SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820	ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823	DATE: 4-2-21				
			SCALE: 1"=30'				
			DRAWN BY: JRG				
			DESIGN BY: JRG				
			APPROVED BY: JH				
			PROJECT NO: 20092				
			FILE: SITE				
			NO.	REVISION	APP'D	DATE	
			CIVILWORKS NEW ENGLAND CIVIL ENGINEERING 181 Watson Road, PO Box 1166 Dover, New Hampshire 03821 603.748.0443				



GRAPHIC SCALE

(IN FEET)

[illegible]



250' ALL SEASON SIGHT DISTANCE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 400' OF ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 5 UNIT SINGLE FAMILY DETACHED CONDOMINIUM. THE ROADWAYS ARE PRIVATE AND PER 157-47B THERE ARE NO CITY SERVICES PROVIDED. ANY PROPOSED CHANGE FROM PRIVATE ROADS WILL REQUIRE REVIEW OF THE REQUEST BY PLANNING BOARD.

PROJECT NAME AND LOCATION

SCHWARTZ SUBDIVISION
26 1/2 BELLAMY ROAD
DOVER, NH

LATITUDE N43° 10' 45"
LONGITUDE W70° 53' 49"

DISTURBED AREA

±48,898

NOTES:

1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

SEQUENCE OF MAJOR ACTIVITIES

1. CONTRACTOR SHALL PREPARE THE SWPPP, FILE FOR AND OBTAIN THE NOI A MINIMUM OF 2 WEEKS PRIOR TO COMMENCEMENT OF SITE WORK.
2. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
3. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
4. SELECTIVE DEMOLITION.
5. REGRADE SITE TO SUBGRADE.
6. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
7. SWALES AND PONDS (AS APPLICABLE) SHALL BE CONSTRUCTED EARLY ON IN THE CONSTRUCTION SEQUENCE AND BEFORE GRADING OF THE SITE AND ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. INSTALL DRAINAGE STRUCTURES AND CONTROLS.
9. INSTALL UNDERGROUND UTILITIES.
10. PLACE GRAVELS AND FINE GRADE.
11. STABILIZE ROADWAYS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1.5" OF RAINFALL.
14. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
15. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND FILE THE EPA - N.O.T.

DEFINITIONS

- AN AREA SHALL BE CONSIDERED STABLE OF ONE OF THE FOLLOWING HAS OCCURRED.
1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED, OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE, AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. SILT BARRIER

1. INSTALLATION
a. USE SILT BARRIER AS PERIMETER CONTROLS, PARTICULARLY AT THE LOWER OR DOWN SLOPE EDGE OF A DISTURBED AREA.
b. LEAVE SPACE FOR MAINTENANCE BETWEEN TOE AND SLOPE OF SILT BARRIER.
c. TRENCH IN THE SILT BARRIER ON THE UPHILL SIDE (6 INCHES DEEP BY 6 INCHES WIDE).
d. INSTALL STAKES ON THE DOWNHILL SIDE OF THE SILT BARRIER.
e. CURVE THE END OF THE SILT BARRIER UP-GRADIENT TO HELP IT CONTAIN RUNOFF.
2. SEQUENCE OF INSTALLATION
a. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
3. MAINTENANCE
a. SILT BARRIERS SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
b. SILT BARRIERS HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT BARRIERS SHOULD BE REPLACED PERIODICALLY TO MAINTAIN EFFECTIVENESS.
c. REMOVE SEDIMENT WHEN IT REACHES ONE-THIRD (1/3) THE HEIGHT OF THE SILT BARRIER.
d. REPLACE THE SILT BARRIERS WHERE THEY ARE TORN, WORN, OR OTHERWISE DAMAGED, AND MONITOR PERFORMANCE TO ENSURE EFFECTIVE PERFORMANCE.
e. RETRENCH AND REPLACE ANY SILT BARRIER THAT IS NOT PROPERLY ANCHORED TO THE GROUND.
f. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
g. SILT BARRIERS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.

B. MULCHING

1. TIMING
a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THE SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET.
b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 150-200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A 1-TONKIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECESSARY.
c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
d. EROSION CONTROL MAY BE USED FOR TEMPORARY STABILIZATION. IT SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING

1. SEEDBED PREPARATION
a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
i) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
ii) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
c. TEMPORARY SEEDING BETWEEN 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE TEMPORARY AND PERMANENT MULCHING PRACTICE.
d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING

1. BEFORE SEEDING LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARRROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
LOW PHOSPHATE (N-P205-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
a. TYPE
TALL FESCUE 20 LBS. PER ACRE 0.45 LBS. PER 1,000 S.F.
CREEPING RED FESCUE 20 0.45
BIRDSFOOT TREFOIL 8 0.20
TOTAL 48 1.10
4. SEEDING
a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
a. PERMANENT SEEDING AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION, INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
b. SEEDING AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
c. BASED ON INSPECTION, AREAS SHOULD BE RESEED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDING. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION

1. SPECIFICATIONS
a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
b. ANY RESISTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND-DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
b. PROTECT INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMPs.
d. DESIGN YOUR INLET PROTECTION TO HANDLE THE VOLUME OF WATER FROM THE CATCH BASIN DRAINAGE. ENSURE THAT THE DESIGN IS SIZED APPROPRIATELY.
3. MAINTENANCE
a. INSPECT INLETS BARRIERS FREQUENTLY, BEFORE AND AFTER EACH RAINFALL EVENT AND REPAIR WHEN NECESSARY.
b. SEDIMENT SHOULD BE REMOVED AND THE STORM DRAIN SEDIMENT BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DEEPH OF THE BARRIER.
c. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
d. SWEEP STREETS, SIDEWALKS, AND OTHER PAVED AREAS REGULARLY.
e. ALL CATCH BASINS AND STORM DRAIN INLETS MUST BE CLEANED AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

WASTE DISPOSAL

- a. WASTE MATERIALS
ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSITE. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PROPERTY OWNER IS RESPONSIBLE AFTER CONSTRUCTION IS COMPLETE.

CATCH BASINS & STORMWATER TREATMENT STRUCTURES

1. CATCH BASINS & STORMWATER TREATMENT STRUCTURES SHOULD BE INSPECTED ON A MONTHLY BASIS AND/OR AFTER A MAJOR RAINFALL EVENT TO ASSURE THAT DEBRIS OR SEDIMENTS DO NOT REDUCE THE EFFECTIVENESS OF THE SYSTEM.

SPILL PREVENTION

A. MATERIAL MANAGEMENT PRACTICES

- THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
GOOD HOUSEKEEPING
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
a. HAZARDOUS MATERIALS:
b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES

- THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
1. PETROLEUM PRODUCTS:
a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. FERTILIZERS:
a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
3. PAINTS:
a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
4. CONCRETE TRUCKS:
a. CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.
5. SPILL CONTROL PRACTICES
IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
c. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
d. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OF LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
f. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

THE PROJECT PROPONENT IS REQUIRED TO MANAGE CONSTRUCTION TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND 3800 RELATIVE TO CONTROLLING INVASIVE SPECIES AND CONTROLLING FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002.

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

THE RULE, AGR 3800, STATES: NO PERSON SHALL COLLECT, TRANSPORT, IMPORT, EXPORT, MOVE, BUY, SELL, DISTRIBUTE, PROPAGATE OR TRANSPLANT ANY LIVING AND VIABLE PORTION OF ANY PLANT SPECIES, WHICH INCLUDED ALL OF THEIR CULTIVARS AND VARIETIES, LISTED IN TABLE 3800.1, NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST. A COMPLETE COPY OF THE RULES CAN BE ACCESSED ON THE INTERNET:
[HTTP://AGRICULTURE.NH.GOV/TOPICS/PLANTS_INSECTS.HTM](http://agriculture.nh.gov/topics/plants_insects.htm).

ENV-A 1002 FUGITIVE DUST: PRECAUTIONS TO PREVENT, ABATE, AND CONTROL FUGITIVE DUST.

- a. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE EMITS FUGITIVE DUST, OTHER THAN THOSE LISTED IN ENV-A 1002.02 (b), SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST.
b. PRECAUTIONS REQUIRED BY (a) ABOVE, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
i) THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
ii) THE APPLICATION OF ASPHALT, WATER, OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIALS AND SURFACES;
iii) THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
iv) THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS;
v) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

PEB 153-10.F

ALL SITE IMPROVEMENTS WHICH REQUIRE BLASTING OF LAND SHALL MEET THE FOLLOWING REQUIREMENTS PRIOR TO ANY BLASTING OCCURRING.

1. THE APPLICANT SHALL PREPARE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN FIVE HUNDRED (500) FEET OF THE EXTERNAL BOUNDARIES OF THE PROPOSED LOT, TO BE DEVELOPED. THIS SURVEY, ALONG WITH A MONITORING PLAN, SHALL BE ON FILE WITH THE DOVER FIRE AND RESCUE. UPON RECOMMENDATIONS OF THE CHIEF, THE PLANNING BOARD MAY REQUIRE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN ONE THOUSAND (1000) FEET.
2. THE APPLICANT SHALL HOLD A NEIGHBORHOOD MEETING TO REVIEW THE BLASTING PLAN AND PRE-BLAST SURVEY, WITH REPRESENTATIVES OF THE FIRE AND RESCUE AND THE BLASTING COMPANY IN ATTENDANCE, PRIOR TO ANY ON-SITE BLASTING. ABUTTERS WITHIN ONE THOUSAND (1000) FEET OF THE EXTERNAL BOUNDARY OF THE PROJECT PARCEL SHALL BE NOTIFIED BY THE CERTIFIED MAIL (PAID FOR BY THE APPLICANT) OF THE MEETING NO LESS THAN TEN (10) DAYS PRIOR TO THE MEETING AND NO MORE THAN FIFTEEN (15) DAYS PRIOR TO THE MEETING. THE NOTICE SHALL STATE THE TIME AND DATE OF THE MEETING AND SHOWING THE BLASTING AREA, THE 1,000-FOOT-RADIUS AREA, AND THE 500-FOOT-RADIUS AREA.
3. PERMIT HOLDERS SHALL BE IN COMPLIANCE WITH NFPA 495, EXPLOSIVE MATERIALS CODE, IN ADDITION TO ALL OTHER ORDINANCES AND CODES SET FORTH IN THE CITY OF DOVER CODE, AT 153-14. STORMWATER MANAGEMENT, EROSION CONTROL, AND FLOOD HAZARDS, OF THIS CHAPTER AND THE CITY OF DOVER FIRE PREVENTION CODE, WHICH SPECIFICALLY PROHIBITS THE OVERNIGHT STORAGE OF EXPLOSIVES OR BLASTING AGENTS. FURTHER, ALL STORAGE MAGAZINES SHALL BE LOOKED IN THE OPEN POSITION AT THE END OF THE DAY'S OPERATION FOR EASY INSPECTION BY CITY OFFICIALS.
4. BLASTING PERMITS MAY BE OBTAINED BY CALLING THE DOVER FIRE AND RESCUE DURING NORMAL BUSINESS HOURS. THE PERMITS ARE ONLY ACTIVE FOR THE DATES AND TIME SPECIFIED ON THE PERMIT.
5. PERMIT HOLDERS SHALL HOLD INSURANCE AGAINST CLAIMS FOR DAMAGES FOR PERSONAL INJURY AND PROPERTY DAMAGE FROM PERFORMANCE OF THE WORK.
6. HOURS OF OPERATION FOR THE BLASTING SHALL BE NO EARLIER THAN 8:00AM AND NO LATER THAN 6:00PM, MONDAY THROUGH FRIDAY, EXCLUDING FEDERAL HOLIDAYS.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES OF GREATER THAN 2 TO 1. ALL SLOPES OF GREATER THAN 2 TO 1 SHALL BE COVERED WITH MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT.
2. ALL SLOPES OF GREATER THAN 2 TO 1 SHALL BE COVERED WITH MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 4 INCHES OF CRUSHED GRAVEL PER MHDOT ITEM 403.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

ENV-WD 1510: BEST MANAGEMENT PRACTICES FOR BLASTING

- 1) ALL ACTIVITIES ASSOCIATED WITH BLASTING NEED TO BE OPTIMIZED TO PREVENT THE RELEASE OF CHEMICALS ASSOCIATED WITH BLASTING ACTIVITIES TO THE ENVIRONMENT.
2) IF MORE THAN 5,000 CY OF ROCK REMOVAL IS REQUIRED DRINKING WATER WELLS MUST BE IDENTIFIED AND LOCATED WITHIN 200 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.
3) THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
(1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
(A) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE MASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF HOLEDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
(B) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL.
(C) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
(D) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE STORED OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
(E) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANT TO THE ENVIRONMENT.
(F) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
(2) EXPLOSIVE SELECTION. THE FOLLOWING BMPs SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
(A) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
(B) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE. FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
(3) PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
(4) MUCK AND ITS MANAGEMENT. BLASTING MATERIAL MEANS ALL OF EARTH MATERIAL LOOSED AS A RESULT OF BLASTING. MUCK MEANS THE BLASTED MATERIAL REMAINING AFTER THE ROCKS HAVE BEEN REMOVED; ROCKS MEANS THE LARGER PIECES OF BLASTED MATERIAL THAT ARE SEPARATED FROM THE MUCK FOR USE ELSEWHERE, INCLUDING FOR FEEDSTOCK OF A ROCK CRUSHING OPERATION; MUCK SHALL BE REMOVED FROM THE AREA AS SOON AS REASONABLY POSSIBLE. ROCKS SHALL BE MANAGED SO AS TO PREVENT WATER SUPPLY WELLS OR SURFACE WATERS FROM BEING CONTAMINATED BY RUNOFF.
(5) SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
(A) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE;
2. SECURE STORAGE OF AREAS AGAINST UNAUTHORIZED ENTRY;
3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY;
4. INSPECT STORAGE AREAS WEEKLY;
5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
6. WHEREVER POSSIBLE, KEEP REGULATED SUBSTANCES IN SECURED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS; AND
7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES THAT ARE STORED OUTSIDE. EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
(B) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
1. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES IN SECURED CONTAINERS.
2. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES; AND
5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
(C) THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
(D) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGR-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT" OR ITS SUCCESSOR DOCUMENT. (SEE <https://www.des.nh.gov/sites/g/files/zfbemt341/files/documents/2020-01/dwgr-22-6.pdf>)
(6) FUELING AND MAINTENANCE OF CONSTRUCTION EQUIPMENT:
(A) THE FOLLOWING SHALL APPLY TO ANY CONSTRUCTION EQUIPMENT THAT WILL BE FUELED FROM A TANK TRUCK OR OTHER CONTAINER THAT IS MOVED AROUND THE SITE:
1. PORTABLE CONTAINMENT EQUIPMENT THAT IS SIZED TO CONTAIN THE MOST LIKELY VOLUME OF FUEL TO BE SPILLED DURING A FUEL TRANSFER SHALL BE USED, WHERE THE MOST LIKELY VOLUME TO BE SPILLED IS DETERMINED BASED ON THE FUEL TRANSFER RATE, THE AMOUNT OF FUEL BEING TRANSFERRED, THE DISTANCE BETWEEN THE HOSE NOZZLE AND PUMP SHUT OFF SWITCH, AND THE RESPONSE TIME OF PERSONAL AND EQUIPMENT AVAILABLE AT THE FACILITY;
2. THE CONTAINMENT EQUIPMENT SHALL BE POSITIONED TO CATCH ANY FUEL SPILLS DUE TO OVERRILLING THE EQUIPMENT AND ANY OTHER SPILLS THAT MIGHT OCCUR AT OR NEAR THE FUEL FILLER PORT TO THAT EQUIPMENT;
3. THE TYPE OF EQUIPMENT USED AND ITS POSITIONING AND USE SHALL TAKE ACCOUNT FOR ALL OF THE DRIP POINTS ASSOCIATED WITH THE FUEL FILLING PORT AND THE HOSE FROM THE FUEL DELIVERY TRUCK;
4. PERSONNEL SHALL NOT LEAVE THE IMMEDIATE AREA WHILE FUELING IS BEING TRANSFERRED, TO ENSURE THAT ANY SPILLS WILL BE OF LIMITED FLOW.
(B) IF THE SITE WILL HAVE A FIXED LOCATION FOR FUELING CONSTRUCTION EQUIPMENT, THE FOLLOWING SHALL APPLY:
1. ALL FUEL CONTAINERS, INCLUDING BUT NOT LIMITED TO SKID-MOUNTED TANKS, DRUMS, AND FIVE GALLON CANS, SHALL HAVE SECONDARY CONTAINMENT.
(A) IS CAPABLE OF CONTAINING 110% OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER; AND
(B) HAS IMPERVIOUS FLOOR;
2. SECONDARY CONTAINMENT FOR TANKS MAY COMPRISE A METAL, PLASTIC, POLYMER OR PRECAST CONCRETE VAULT PROVIDING 110 PERCENT OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER;
3. FOR FUEL CONTAINERS, SECONDARY CONTAINMENT MAY COMPRISE CONTAINMENT PALLETES;
4. THE AREA WHERE THE FUEL IS TRANSFERRED SHALL BE A FLAT, IMPERVIOUS AREA THAT:
(A) IS ADJACENT TO THE FUEL CONTAINER(S); AND
(B) EXTENDS BEYOND THE FULL REACH, OR LENGTH, OF THE FUEL HOSE; AND
5. SECONDARY CONTAINMENT AREAS MAY BE IN THE FORM OF A BASIN THAT IS: (A) SLOPED DOWN TO A CENTRAL LOW POINT OR BERMED ALONG THE PERIMETER.
(B) LINED WITH A CONTINUOUS SHEET OF 20 MIL OR THICKER POLYMER MATERIAL OR APPROPRIATE GEOMEMBRANE LINER;
(C) BACKFILLED WITH AT LEAST 6 INCHES OF SAND.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

DATE: 4-2-21

SCALE: 1"=30'

DRAWN BY: JRG

DESIGN BY: JRG

APPROVED BY: JRG

PROJECT NO: 20052

FILE: SITE

NO.

REVISION

APPD

DATE

NO.

REVISION

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SEEKING REPORTS OF RARE TURTLES

The NH Fish & Game Department is collecting observations of four turtle species:



Blanding's turtle (state endangered)

- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



Wood turtle (special concern)

- Sculpted, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land



Eastern box turtle (state endangered)

- Small terrestrial turtle with highly domed shell
- Irregular yellow or orange markings over brown/black base



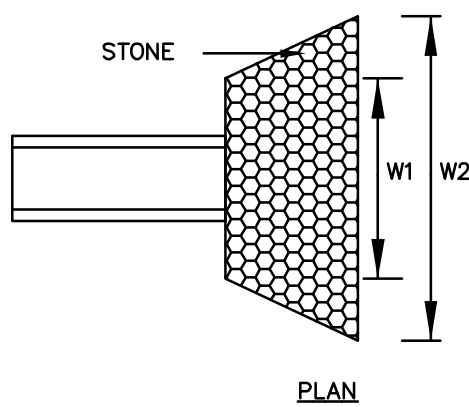
Spotted turtle (state threatened)

- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

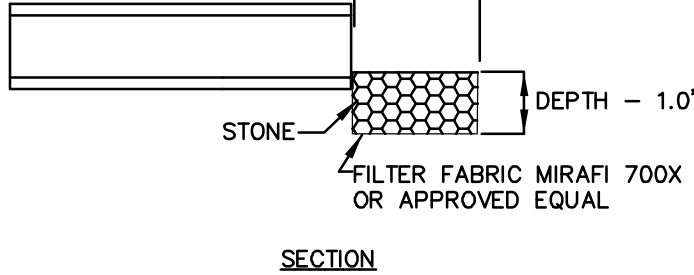
Report sightings to RAARP@wildlife.nh.gov or 603-271-2461. Please report promptly, noting specific location and date - Photographs strongly encouraged

NOTES:

1. ALL OUTSIDE CONSTRUCTION PERSONNEL SHALL RECEIVE TRAINING IN THE IDENTIFICATION OF RARE TURTLE SPECIES AND MADE AWARE OF THEIR PROTECTED STATUS.
2. THE USE OF WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED.
3. THE USE OF EROSION CONTROL BERM, WHITE FILTREXX DEGRADABLE WOVEN SILT SOCK, OR 'WILDLIFE FRIENDLY' WOVEN ORGANIC MATERIAL (E.G. COCO OR JUTE MATTING SUCH AS NORTH AMERICAN GREEN SC150BN OR EQUIVALENT) ARE ACCEPTABLE FOR USE.
4. IF WOOD, SPOTTED, OR BLANDING'S TURTLES ARE FOUND LAYING EGGS IN THE WORK AREA, PLEASE CONTACT MELISSA DOPERALSKI AT 271-1738 or JOSH MEGYESY AT 271-1125 FOR FURTHER INSTRUCTIONS.



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO FLAT AREA, NON DEFINED CHANNEL



MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

OUTLET	W1 (FT)	W2 (FT)	L (FT)	D50 (IN)	D (FT)
PUD	2	7	5	6	1

CONSTRUCTION SPECIFICATIONS

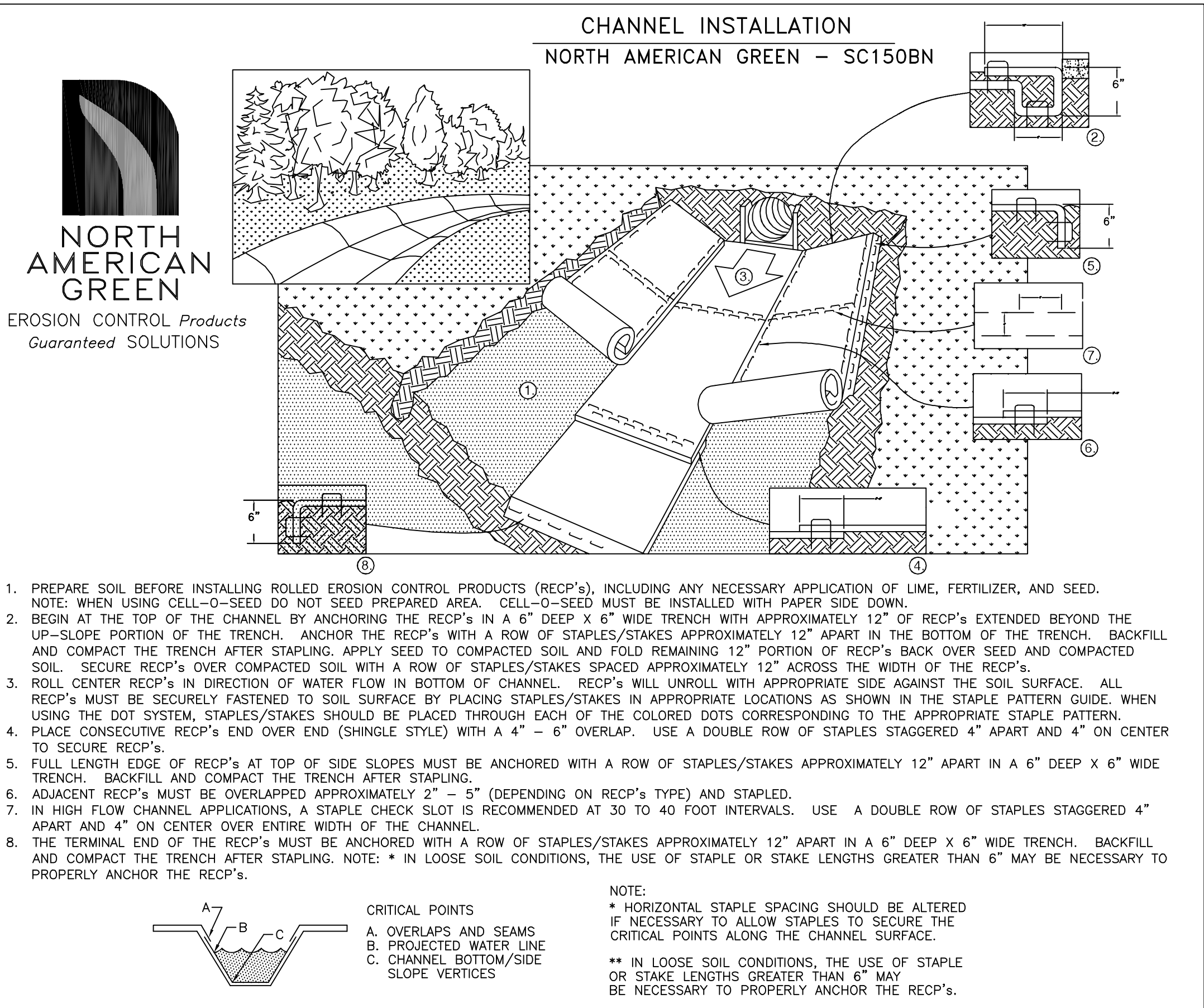
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. STONE APRON SHALL BE CONSTRUCTED ON A 6" THICK (MIN) GRAVEL BASE.

RIP RAP OUTLET PROTECTION

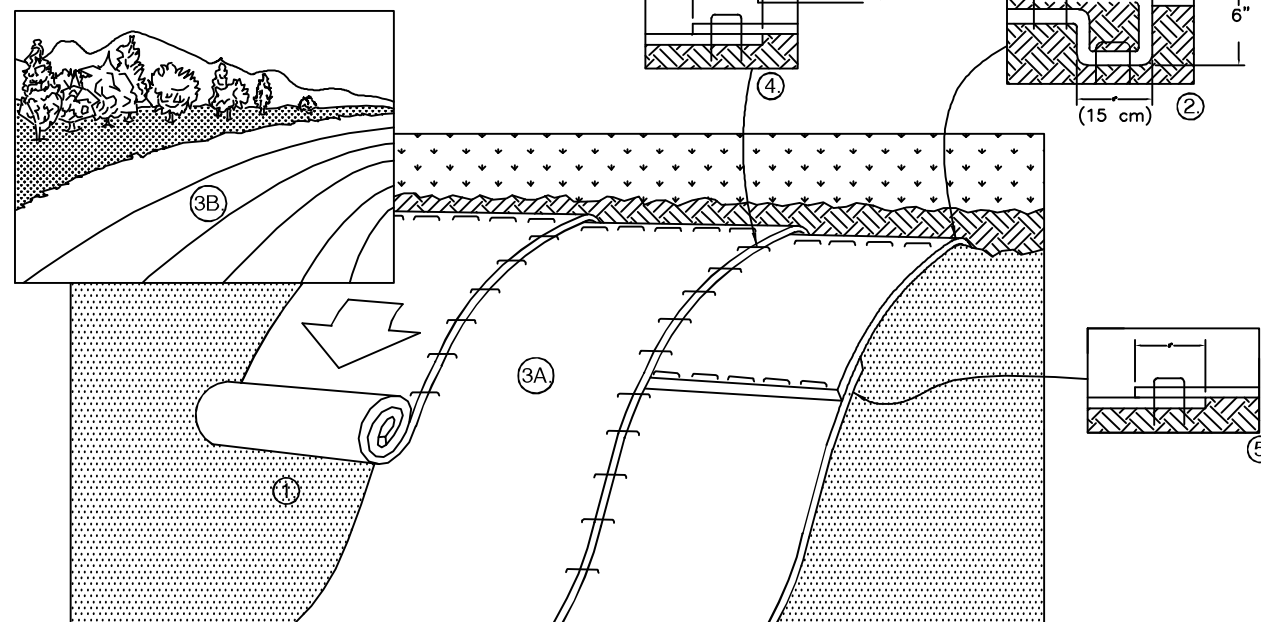
NOT TO SCALE

STONE GRADATION

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

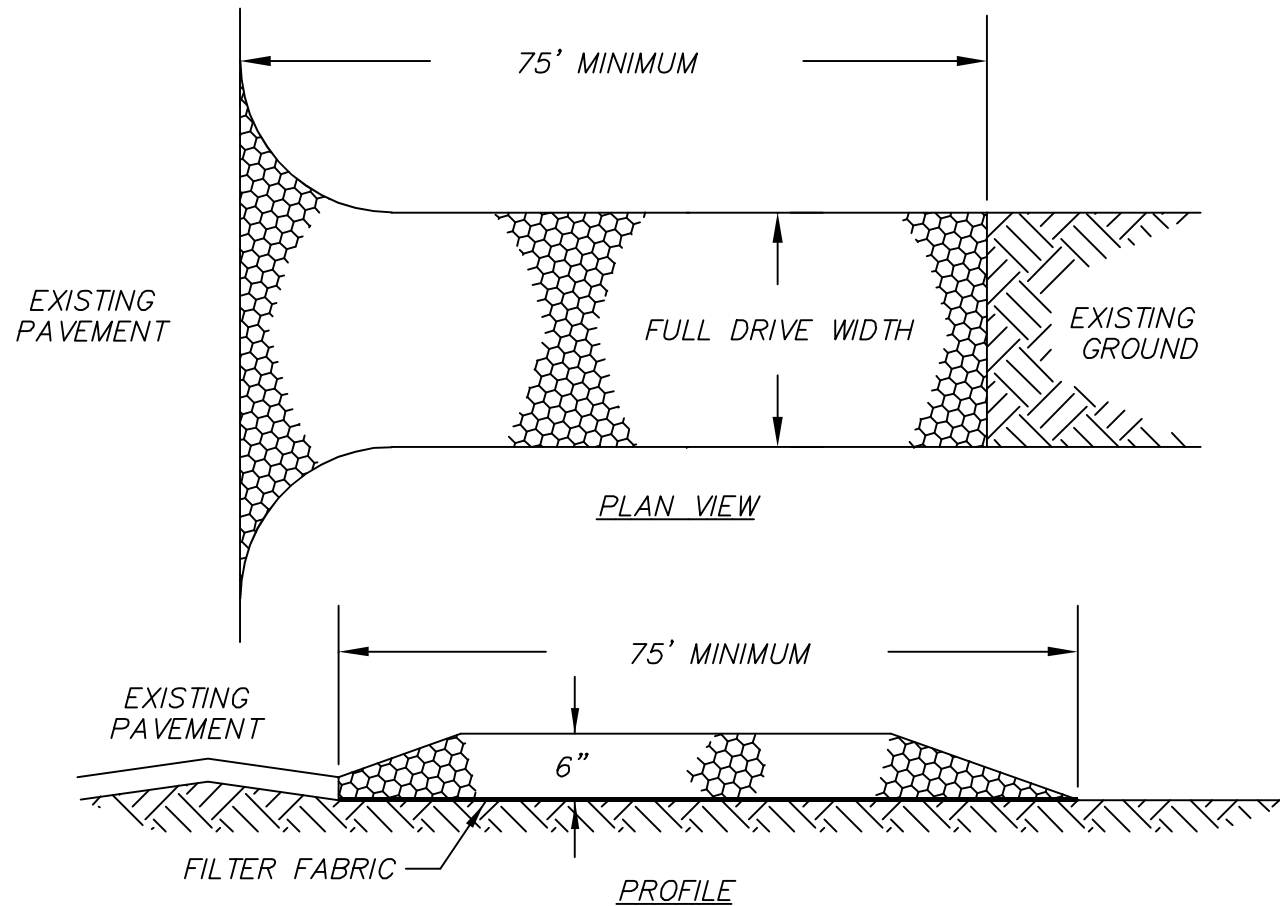


SLOPE INSTALLATION
NORTH AMERICAN GREEN - SC150BN



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

NOTE: THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.



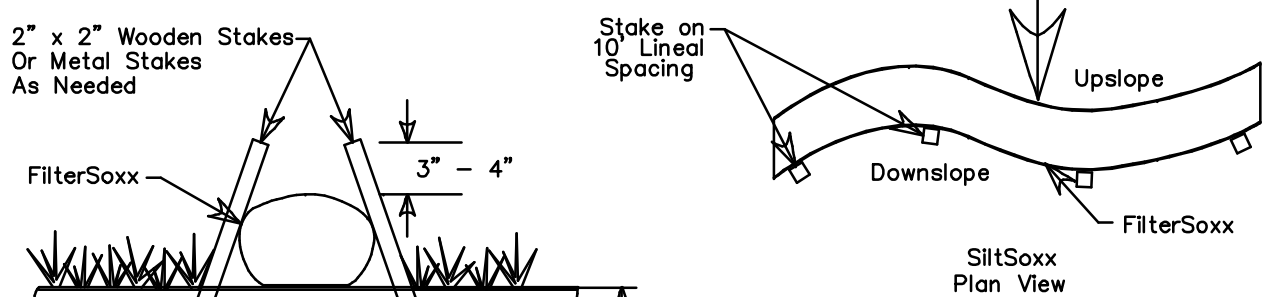
NOTES:

1. SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.
2. TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.

STABILIZED CONSTRUCTION ENTRANCE

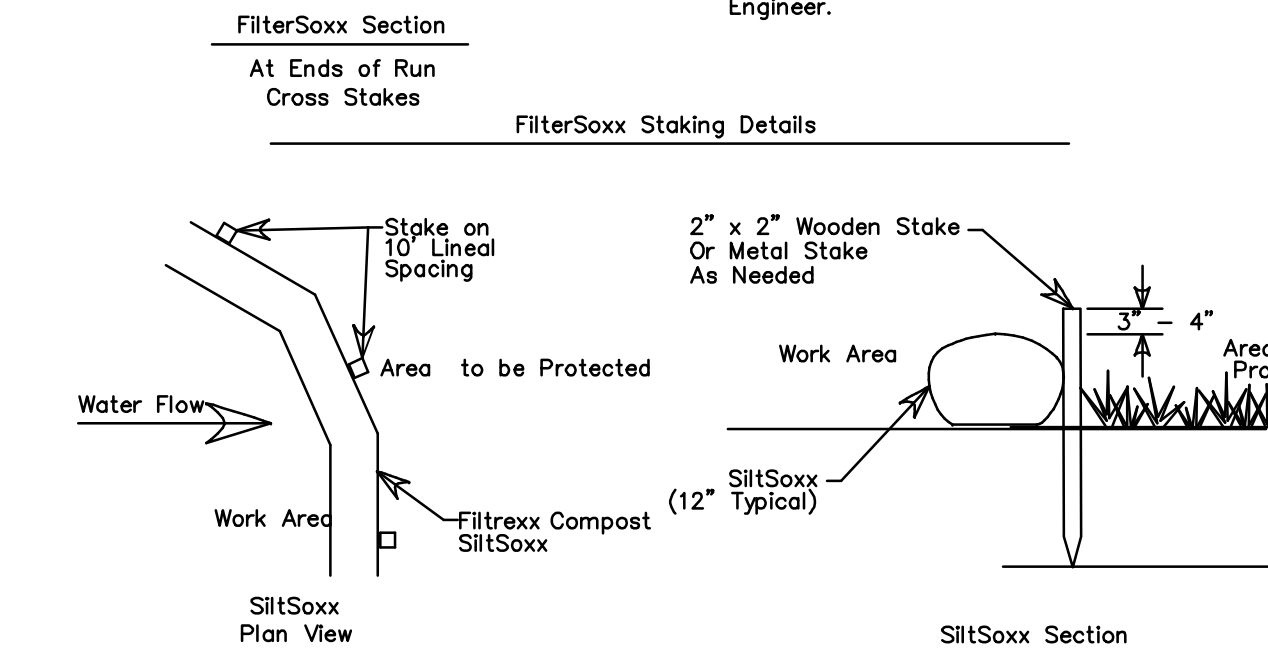
1. SPECIFICATIONS
A. AGGREGATE SIZE: USE THREE (3) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
D. LENGTH: AS REQUIRED, BUT NOT LESS THAN SEVENTY-FIVE (75) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE.
F. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUAL.
2. MAINTENANCE
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



Notes:

1. All material to meet Filtrtex specifications
2. FilterSoxx compost/soil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site, as determined by Engineer.



Notes:

1. All material to meet Filtrtex specifications
2. SiltSoxx compost/soil/rock/seed fill to meet application requirements.
3. SiltSoxx depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer.
4. Compost material to be dispersed on site, as determined by Engineer.

SiltSoxx Details

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

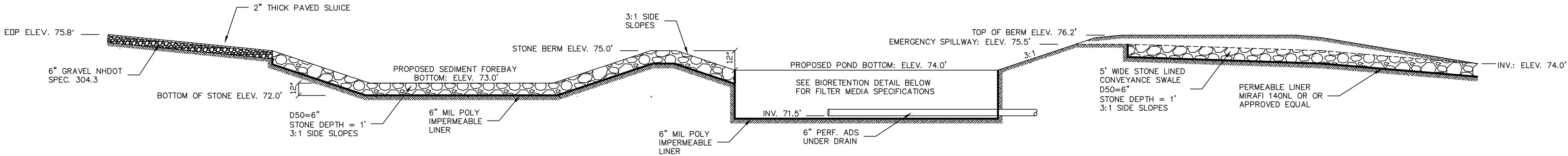
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ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823
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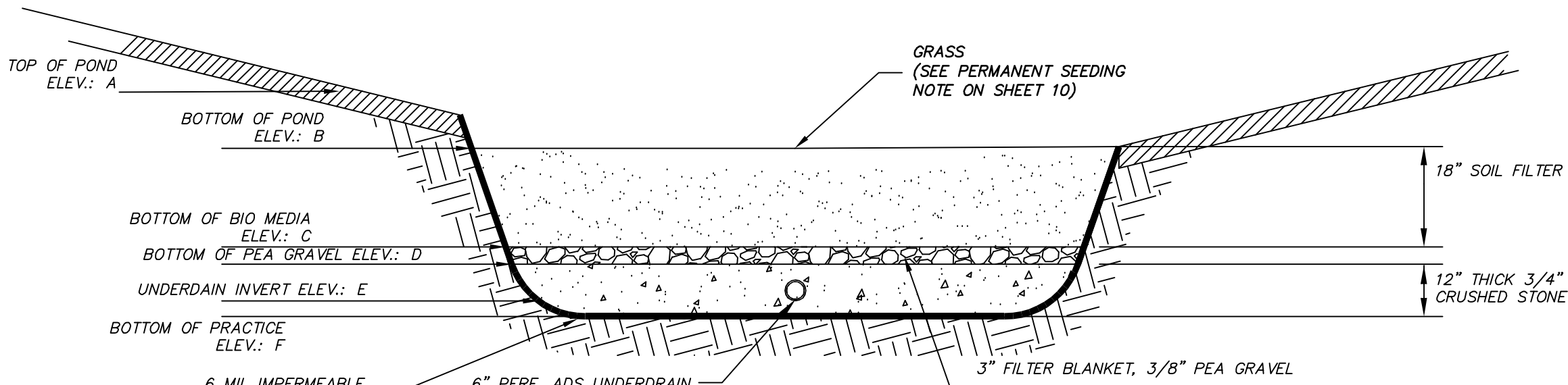
SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820
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16



SEDIMENT FOREBAY AND BIORETENTION SYSTEM SECTION
NOT TO SCALE

- NOTES:
- DO NOT BEGIN CONSTRUCTION OF THE BIORETENTION AREA UNTIL LAWN AREA ON THE ENTIRE SITE AREA ESTABLISHED WITH AT LEAST 80 PERCENT TURF. FILTER ALL DRAIN INLETS IN THE SEDIMENT FOREBAYS TO PREVENT SILTATION INTO THE BIORETENTION AREA.
 - THE RAIN GARDEN SUBGRADE SHALL BE EXCAVATED TO THE DESIGN DEPTH PLUS TWO (2) INCHES. AT THAT DEPTH FOUR (4) INCHES OF COMPOST SHALL BE TILLED INTO THE EXISTING SOILS SUCH THAT THE SOILS ARE WELL MIXED. DO NOT DRIVE CONSTRUCTION EQUIPMENT ON FILTER SUBGRADE NOR ON THE FILTER MATERIAL. INSTALL FILTER MATERIAL BY MEANS OF AN EXCAVATOR LOCATED ADJACENT TO THE FILTER AREA.
 - MATERIALS: CRUSHED STONE LAYER SHALL MEET NHDOT 304.4. STONE SHALL CONTAIN NO MORE THAN 5% FINES PASSING THE #200 SIEVE. TOPSOIL SHALL CONTAIN 15 TO 25% FINES PASSING THE #200 SIEVE. MULCH SHALL BE SHREDDED HARDWOOD, AGES IN A STOCKPILE OR STORED FOR AT LEAST 12 MONTH. NON-WOVEN GEOTEXTILE BE 4 TO 6 OZ. PER SQUARE YARD WITH A.O.S. OF #70 SIEVE OR LOWER, AND A MINIMUM FLOW RATE OF 125 GAL PER SQUARE FEET. UNDERDRAIN SHALL BE PERFORATED 6" PVC OR TRIPLE WALL PE PIPE. REFER TO PERMANENT SEEDING NOTE ON SHEET 10 FOR GRASS SEED MIXES AND PLANTINGS. FERTILIZATION OF THE FILTER AREA SHALL BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.
 - INITIAL ESTABLISHMENT: DURING THE FIRST 2-3 MONTHS OF ESTABLISHMENT WATER THE GRASS ON A WEEKLY BASIS (TO SUPPLEMENT RAINFALL FOR TOTAL OF 1 INCH PER WEEK).
 - ANNUAL MAINTENANCE: IN THE SPRING OF EACH YEAR, ANY DEAD VEGETATION SHALL BE REMOVED TO ALLOW FOR NEW GROWTH, AND ANY ACCUMULATED SEDIMENT (NORMALLY AT THE ENTRANCE TO THE GARDEN) SHALL ALSO BE REMOVED. DURING THE GROWING SEASON THE RAIN GARDEN SHALL BE WEEDED TWO (2) TIMES AND ADDITIONAL HARDWOOD MULCH SHALL BE ADDED AS NEEDED TO ASSIST IN WEED SUPPRESSION. TURF AT FILTER SHALL BE MOWED NO MORE THAN 3 TIMES PER GROWING SEASON. IF WATER PONDS ON THE SURFACE FOR MORE THAN 24 HOURS DURING THE FIRST YEAR OR 72 HOURS THEREAFTER, THE FILTER SURFACE SHALL BE AERATED WITH DEEP TINES OR THE SURFACE REPLACED.
 - GRASS SEED SHALL BE NATIVE NON-INVASIVE SPECIES, SEE LANDSCAPE ARCHITECT DRAWINGS.



POND	POND ELEVATION					
	A	B	C	D	E	F
BRI	76.2	74.0	72.5	72.25	71.50	71.25

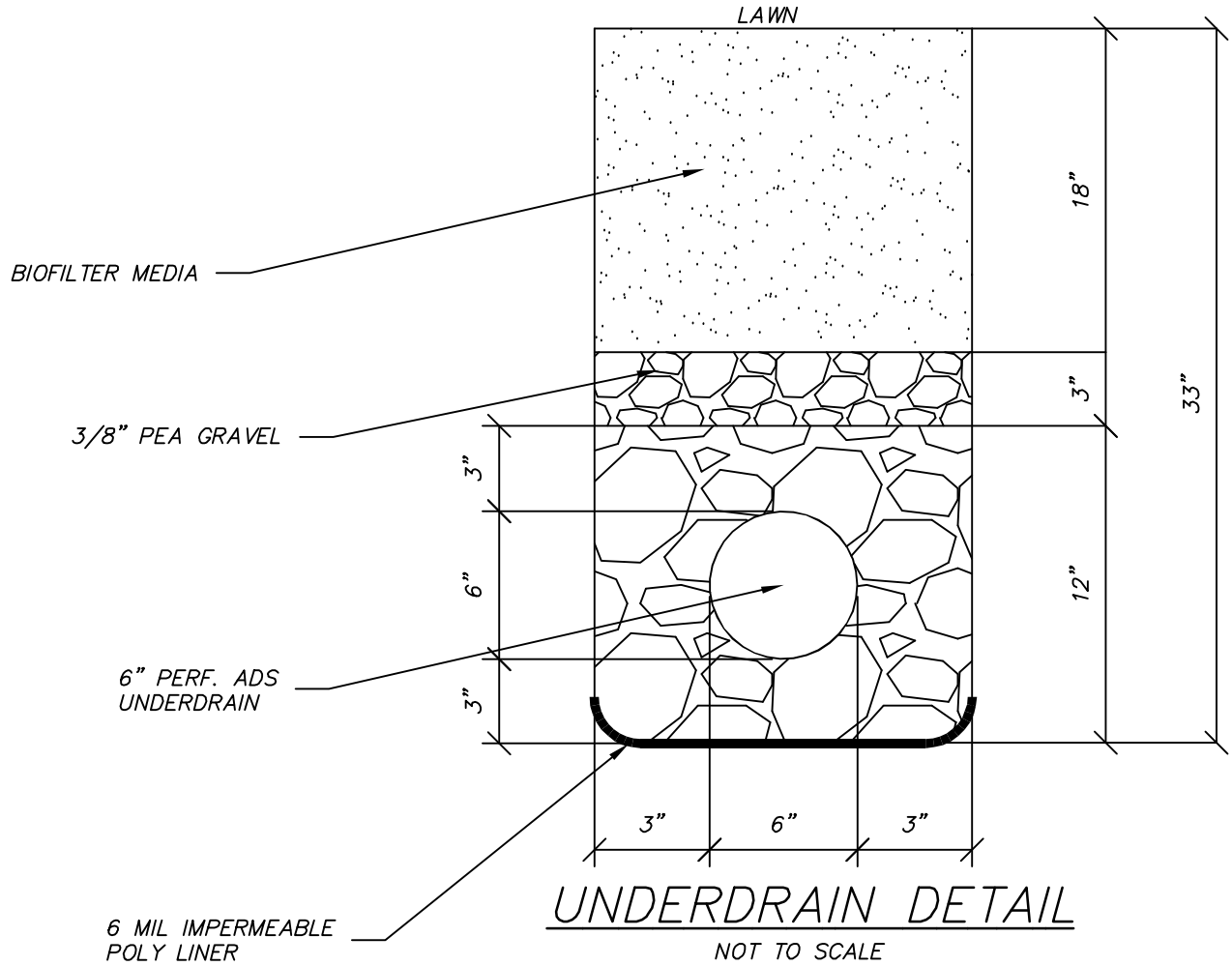
ACCEPTABLE PARTICLE SIZE DISTRIBUTION OF FINAL BIORETENTION SOIL MIX					
MEDIA TYPE	SIEVE #	SIZE (in)	SIZE (mm)	% PASSING	
COARSE SAND	4	0.187	4.76	100	
MEDIUM SAND	10	0.079	2.00	95	
FINE SAND	40	0.017	0.42	40-15	
SILTS	200	0.003	0.075	10-20	
CLAYS	<200	PAN	PAN	0-5	

BIORETENTION SOIL MEDIA COMPONENTS:*

- AMOUNTS MIXED BY TOTAL VOLUME
- 60-85% - SAND (0.5 TO 2.0 mm) (SEE SPECS ABOVE)
- 15-25% - LOAM OR TOPSOIL
- 3-8% - ORGANIC MATTER
- 0-5% - WATER TREATMENT RESIDUALS OR IRON FILINGS**

*ALTERNATELY, USE MEDIA SPECIFIED IN THE ALTERATION OF TERRAIN RULES, Env-Wq 1508.07(k)

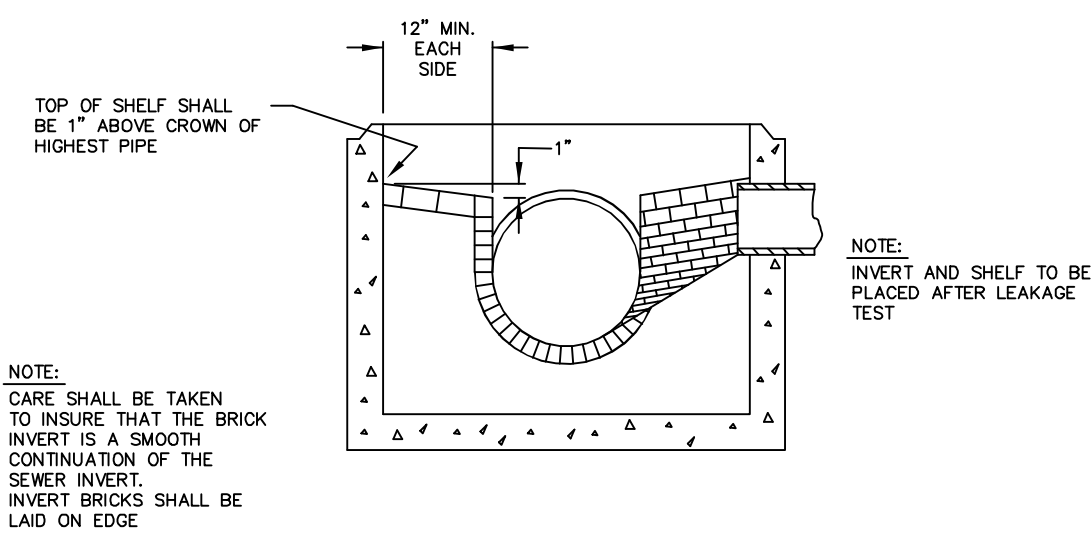
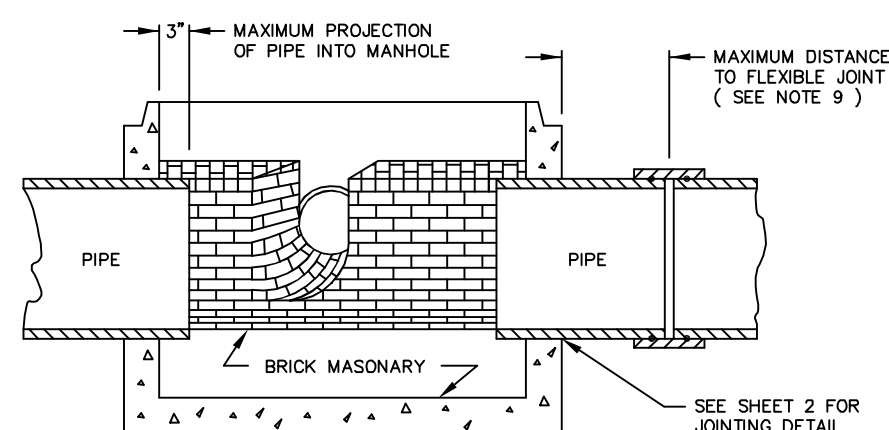
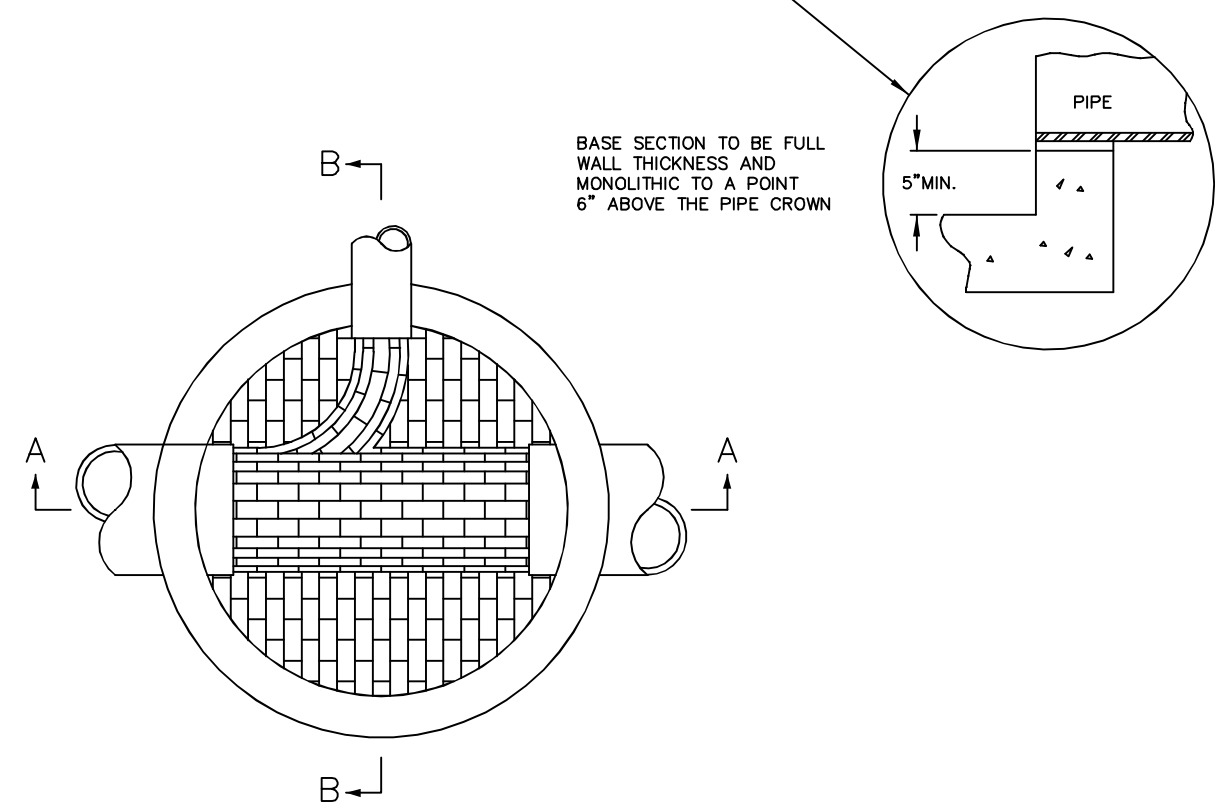
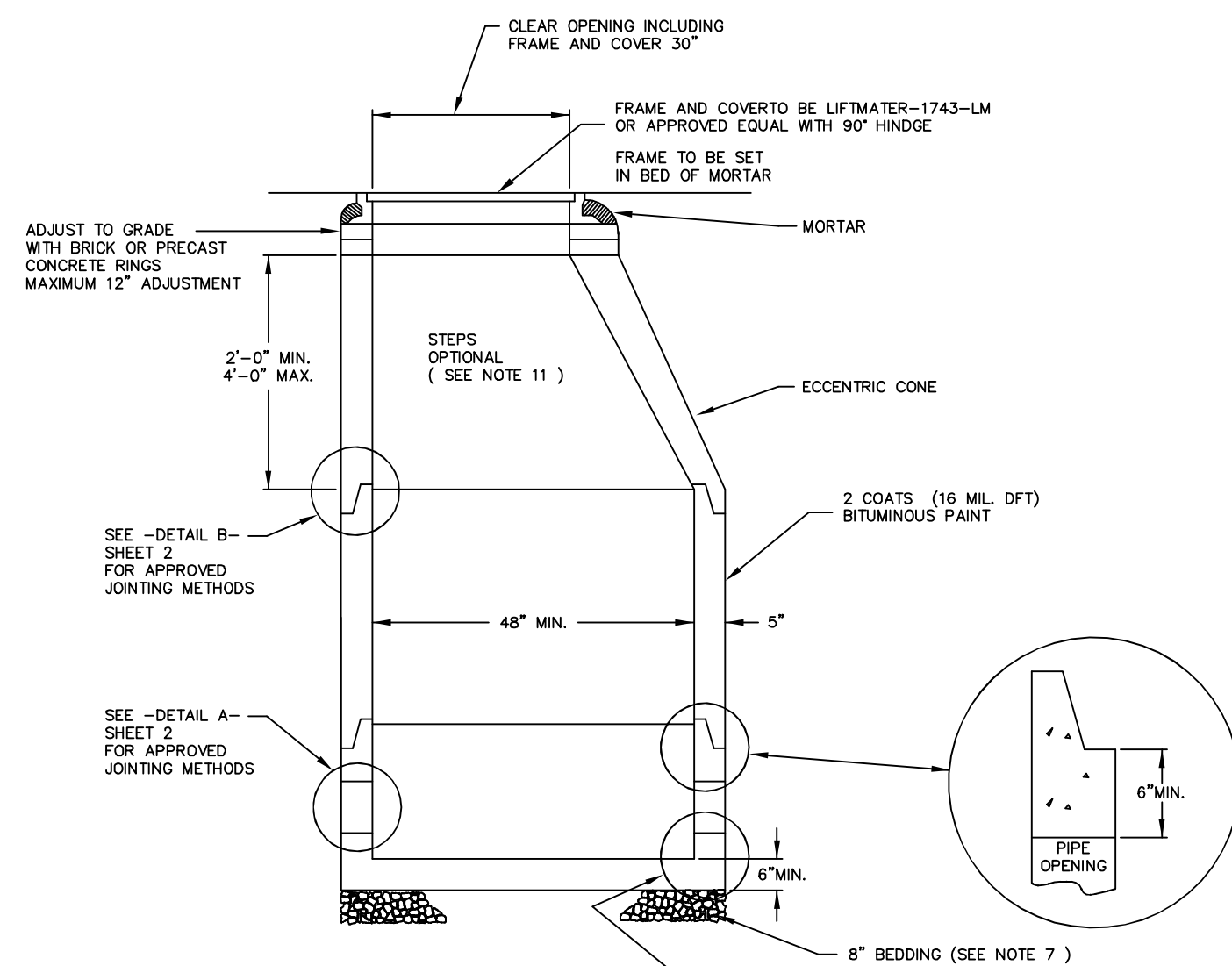
**THIS IS AN AMENDMENT USED FOR ENHANCED PHOSPHORUS ADSORPTION



BIORETENTION SYSTEM DETAIL
(SEE GRADING PLAN FOR LOCATION)
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY				NO.	REVISION	APP'D	DATE
DATE	SCALE	DRAWN BY	DESIGN BY				
DATE: 4-2-21	SCALE: 1"=30'	DRAWN BY: JRG	DESIGN BY: JRG				
			APPROVED BY: JH				
			PROJECT NO: 20052				
			FILE: SITE				
				ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823			
				SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820			
				18			

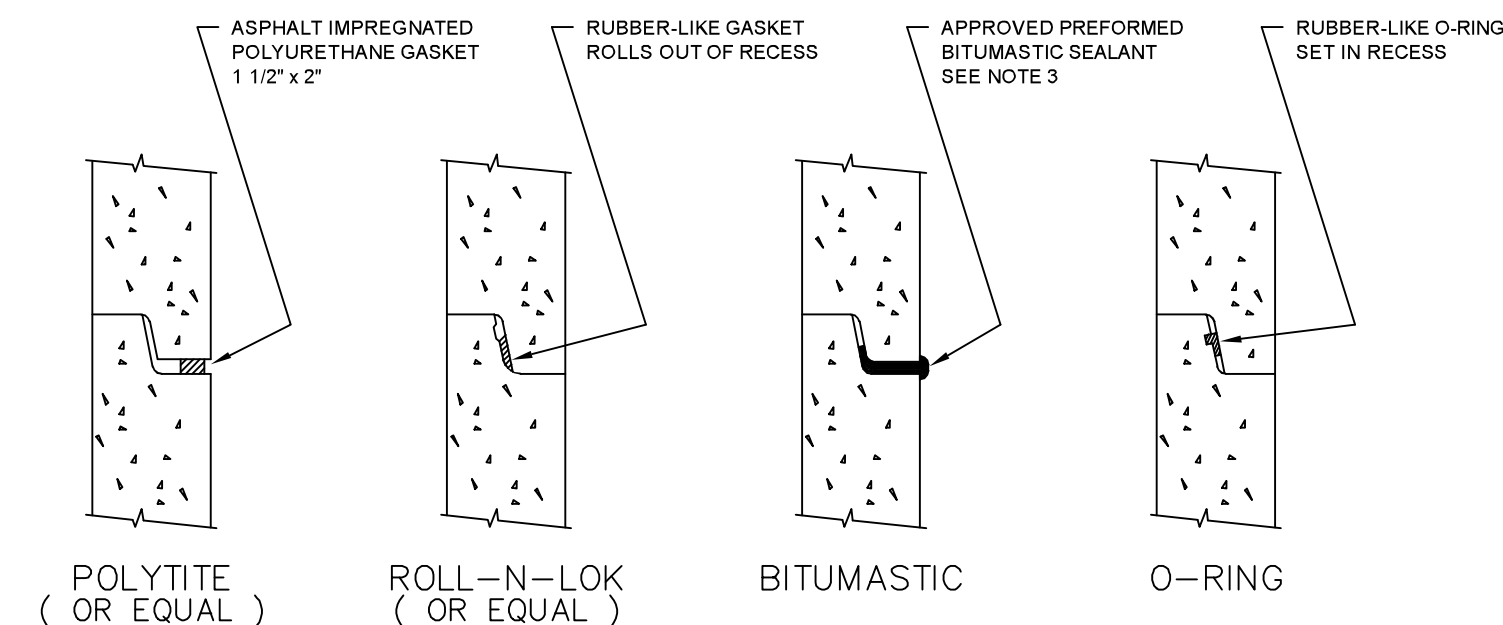
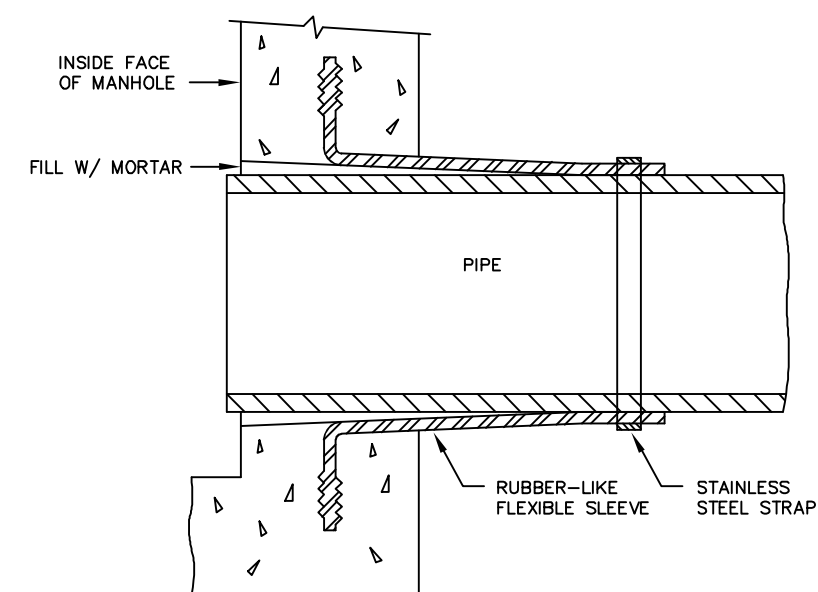
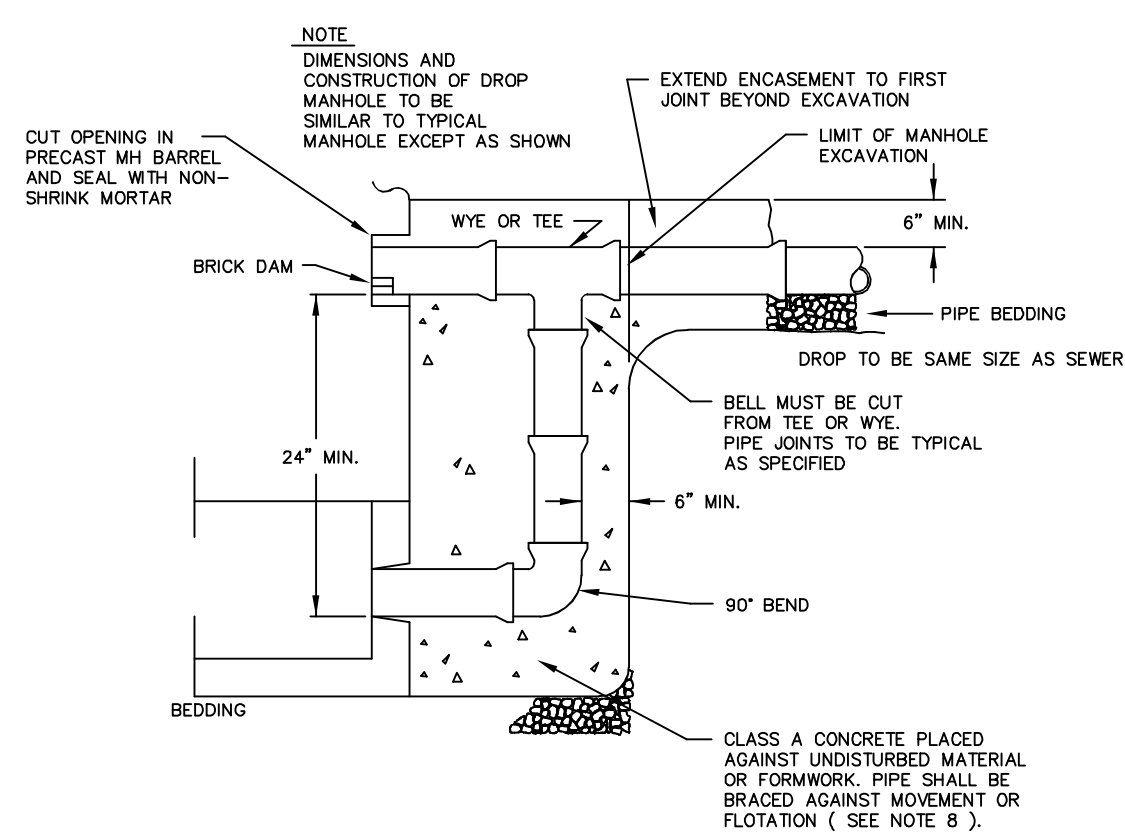
CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.745.0443



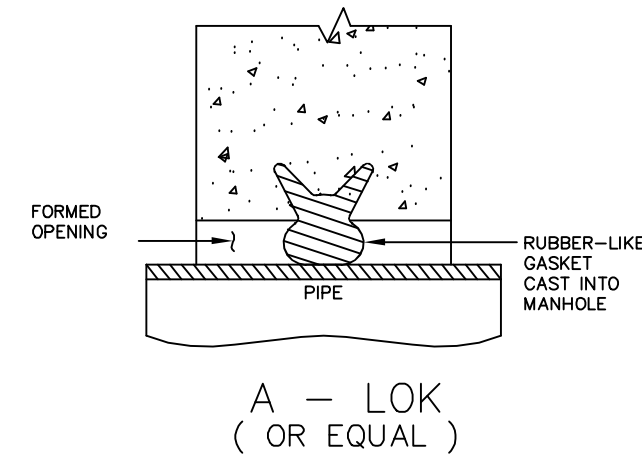
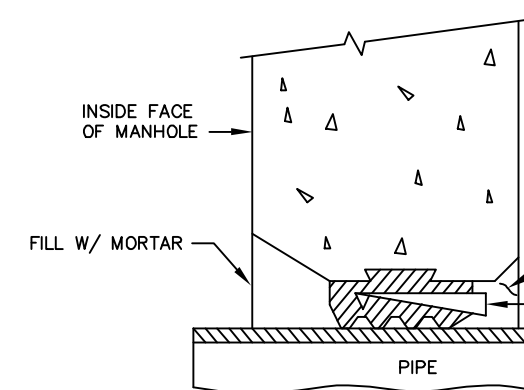
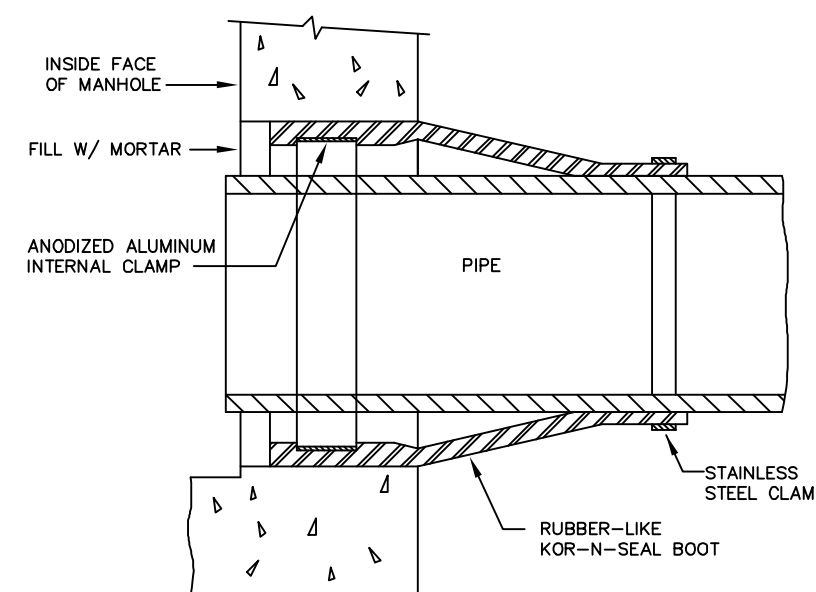
NOTES:

- 1) IT IS THE INTENTION OF THE COMMISSION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE COMMISSION 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.
- 3.) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.
- 4.) LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- 5.) INVERTS AND SHELVES, MANHOLES SHALL HAVE A BRICK PAVED 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.
- 6.) 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 "S" FOR SEWER OR "D" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
- 7.) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33
100% PASSING 1 INCH SCREEN 0-10% PASSING # 4 SIEVE
90-100% PASSING 3/4 INCH SCREEN 0-5% PASSING # 8 SIEVE
20-55% PASSING 3/8 INCH SCREEN
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1 1/2 INCH TO 1 1/2 INCH SHALL BE USED.
- 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 - 48"
AC & VC PIPE - UP THROUGH 12" DIA - 18"
AC & VC PIPE - LARGER THAN 12" DIA - 36"
DI PIPE - NONE REQUIRED
PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED
PVC (ASTM F 679) - LARGER THAN 15" DIA. - 48" - 60"
PVC (ASTM F 789) - ALL SIZES - 48" - 60"
ABS (ASTM D 2680) - ALL SIZES - SAME AS VC ABOVE

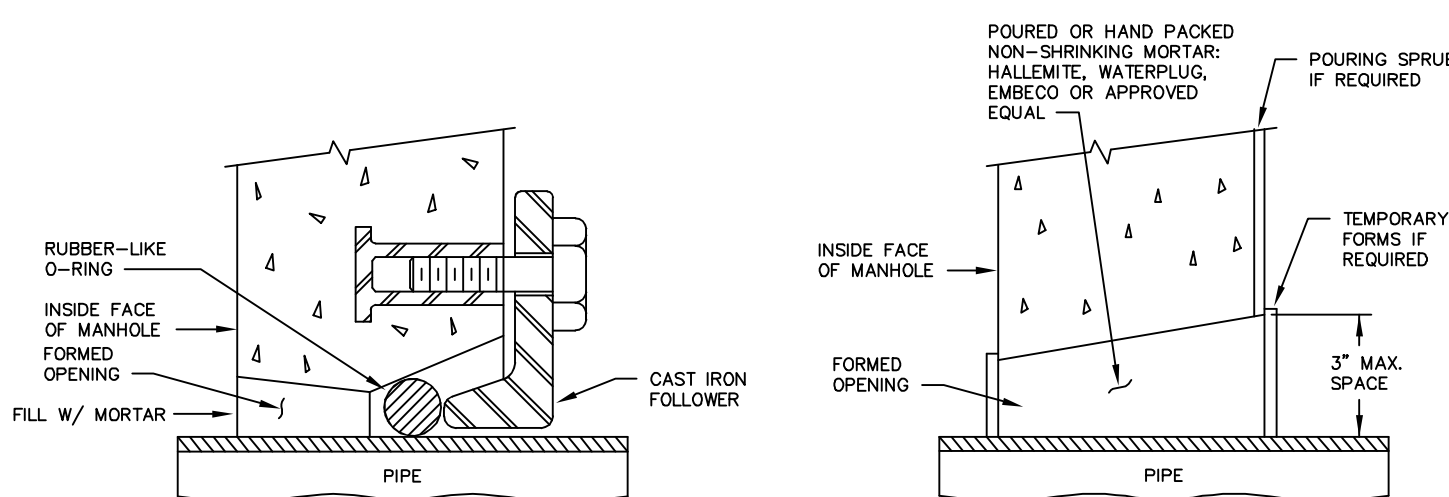
- UNDER SEVERE CONDITIONS WHEN DIFFERENTIAL SETTING CANNOT BE CONTROLLED WITHIN NORMAL LIMITS, VARIATIONS IN THE STUB LENGTH MAY BE NECESSARY. OTHER PLASTIC PIPES SHALL BE REVIEWED ON A CASE BY CASE BASIS.
- 10.) SHALLOW MANHOLE, IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.



NOTE: ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS



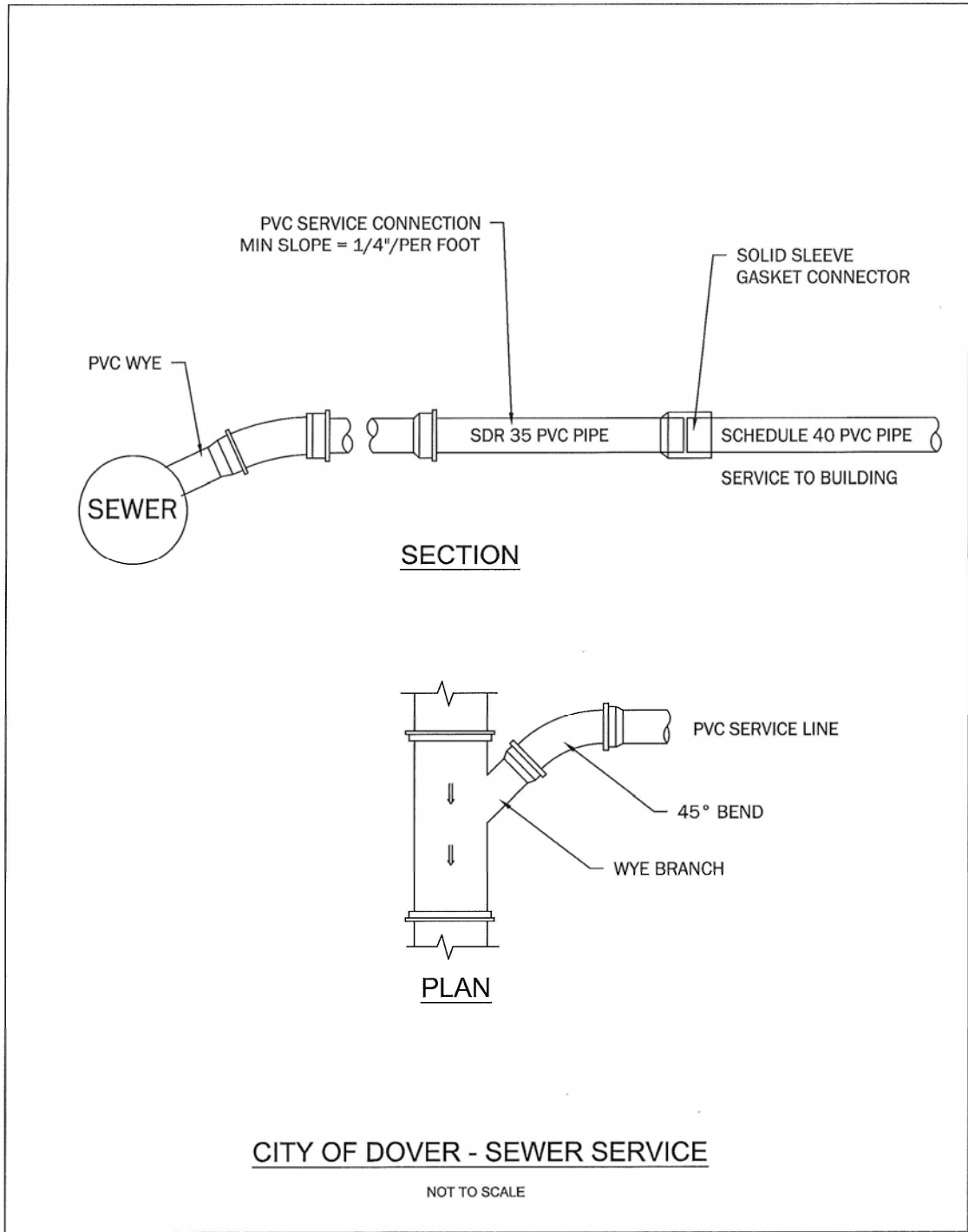
NOTE: ALL GASKETS, SEALANTS, MORTAR, ETC. SHALL BE
INSTALLED IN ACCORDANCE WITH MANUFACTURERS
WRITTEN INSTRUCTIONS



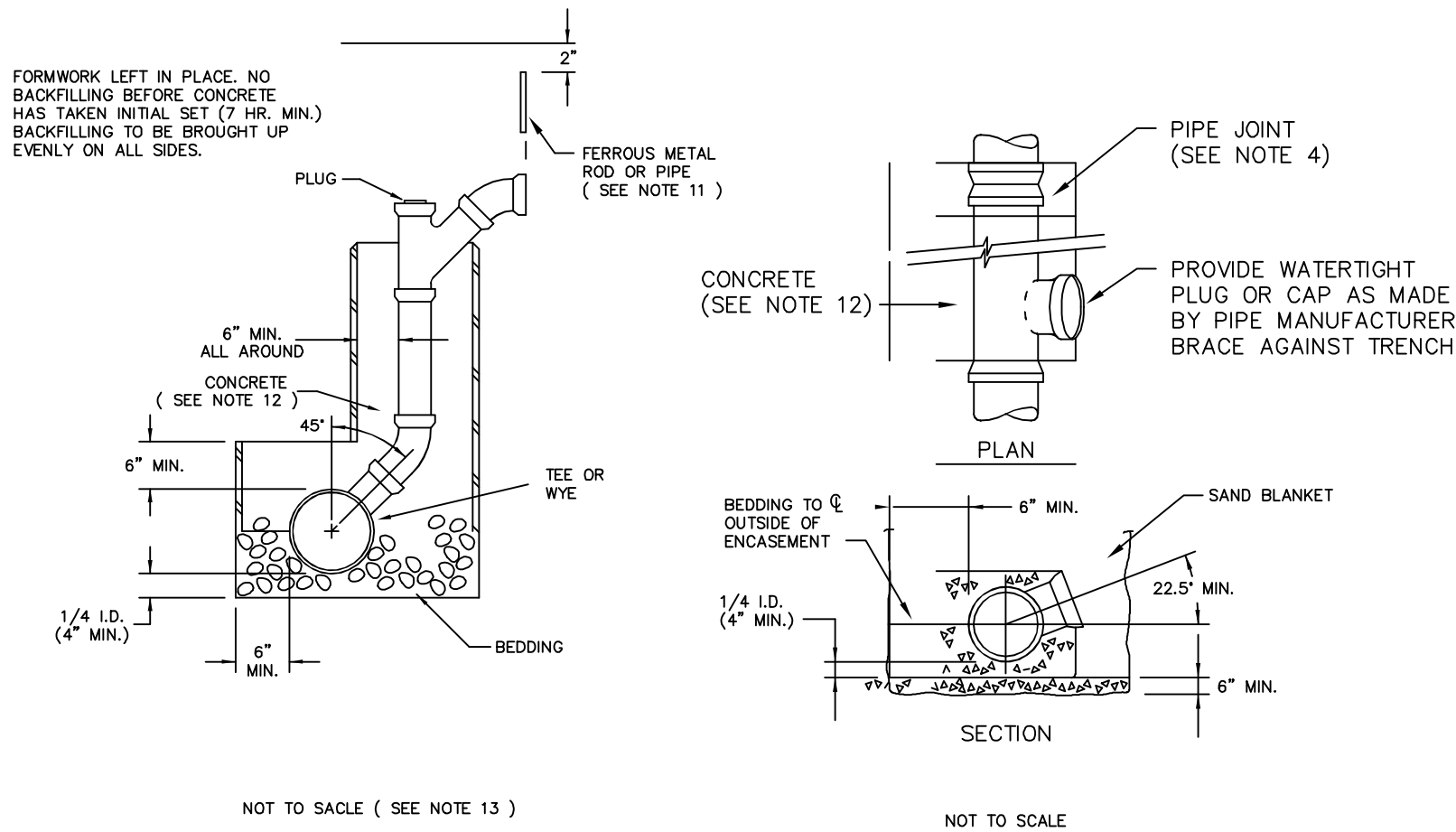
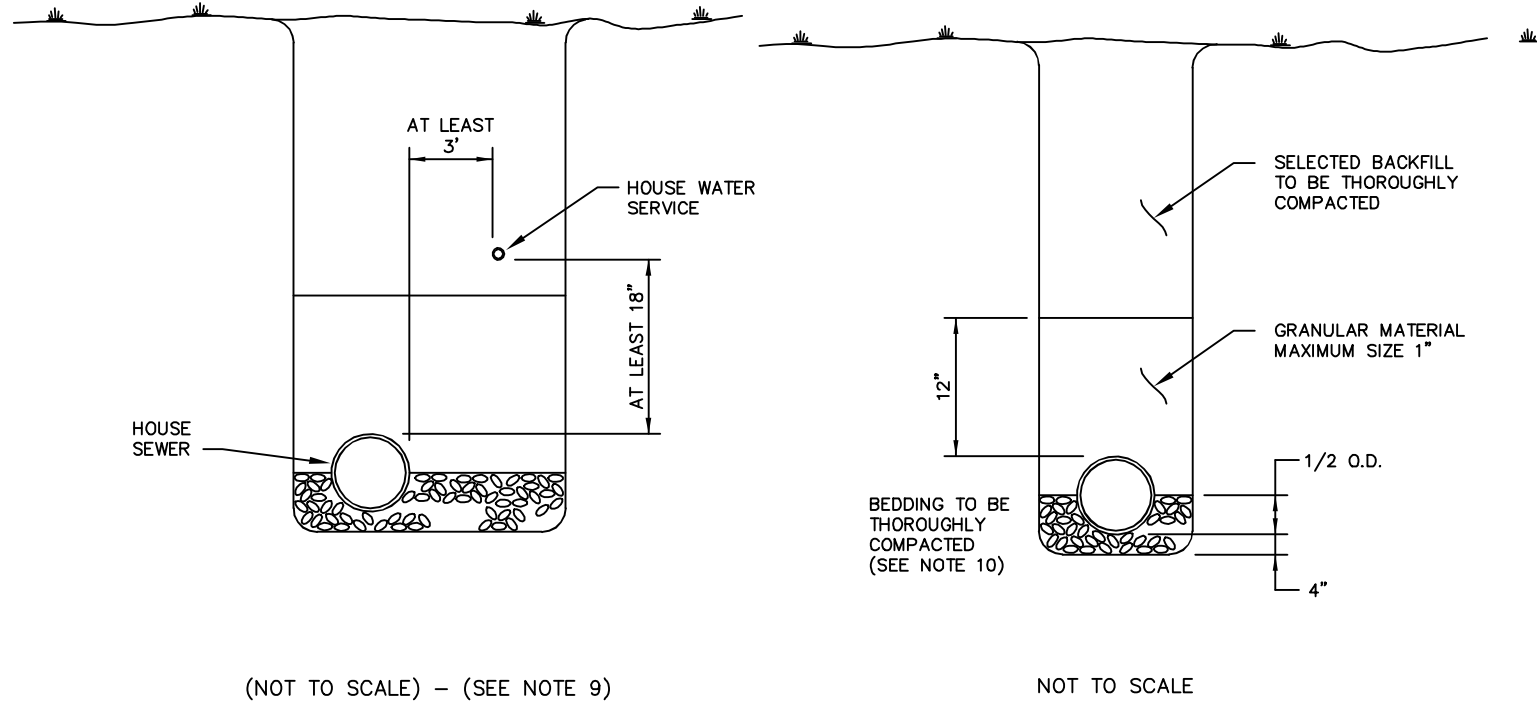
NOTES:

- 1.) HORIZONTAL JOINTS
BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
- 2.) PIPE TO MANHOLE JOINTS
SHALL BE ONLY AS APPROVED BY THE ENGINEER AND, IN GENERAL, SHALL BE AS FOLLOWS: ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES; CAST INTO THE WALL OR SECURED WITH STEEL CLAMPS; ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
- 3.) 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

19	SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820	ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823	DATE: 4-2-21						NOT FOR CONSTRUCTION FOR PERMIT USE ONLY
			SCALE: 1"=30'						
			DRAWN BY: JRG						
			DESIGN BY: JRG						CIVILWORKS NEW ENGLAND CIVIL & WATERFRONT ENGINEERING 181 Watson Road, PO Box 1166 Dover, New Hampshire 03821 603.7749.0443
			APPROVED BY: JSH						
			PROJECT NO: 20092						
			FILE: SITE		NO.	REVISION	APP'D	DATE	



Appendix B Page 15



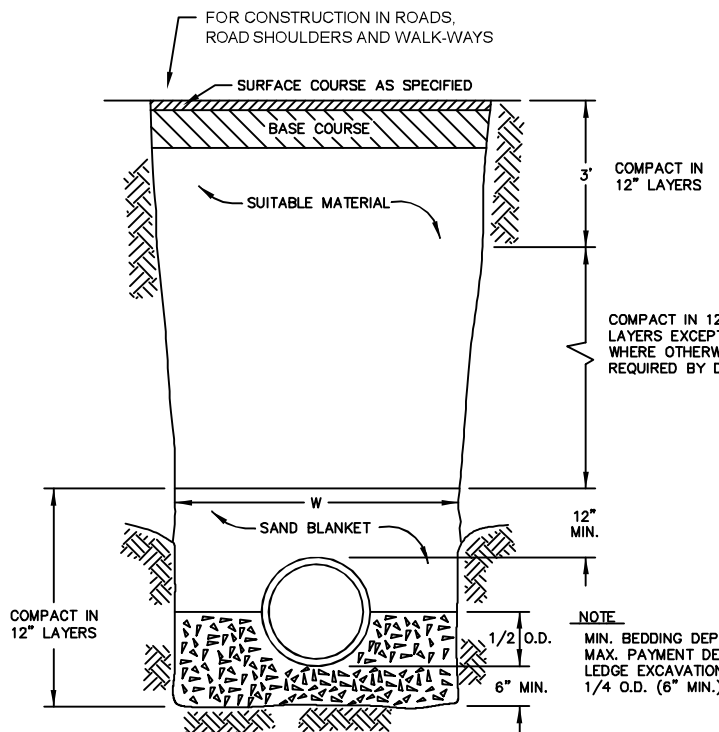
NOTES:

- 1.) MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES.
- 2.) PIPE AND JOINT MATERIALS:
 - A) VITRIFIED CLAY PIPE
 - 1 - PIPE AND FITTINGS SHALL BE EXTRA STRENGTH CLAY PIPE CONFORMING TO THE REQUIREMENTS OF ASTM C-700
 - 2 - JOINTS SHALL BE MADE WITH OIL RESISTANT GASKET IN ACCORDANCE WITH ASTM C-425 TYPE III. MANUFACTURERS INSTRUCTIONS FOR INSTALLATION SHALL BE FOLLOWED.
 - B) ASBESTOS-CEMENT-NON-PRESSURE SEWER PIPE
 - 1 - PIPE AND FITTINGS SHALL CONFORM TO ASTM TENTATIVE SPECIFICATIONS C 644 TYPE II.
 - 2 - JOINTS SHALL BE OF THE SLEEVE - COUPLING TYPE CONFORMING TO ASTM SPECIFICATIONS C 644 TYPE II. COMPRESSION RINGS SHALL BE OF OIL RESISTANT RUBBER TYPE OR ELASTOMERIC MATERIAL AND SHALL CONFORM TO ASTM SPECIFICATION D 1869. MANUFACTURERS INSTRUCTIONS FOR INSTALLATION SHALL BE FOLLOWED.
 - C) CAST - IRON PIPE FITTINGS AND JOINTS
 - 1 - CAST IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE
A21 1 THICKNESS DESIGN OF CAST IRON PIPE
A21 4 CEMENT MORTAR LINING FOR CAST IRON PIPE AND FITTINGS
A21 6 CAST IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS FOR WATER OR OTHER LIQUIDS.
A21 8 CAST IRON PIPE CENTRIFUGALLY CAST IN SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.
A21 10 CAST IRON FITTINGS, 2 INCHES THROUGH 48 INCHES FOR WATER AND OTHER LIQUIDS.
 - 2 - JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE JOINTS AND GASKETS SHALL CONFORM TO
A21 11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE AND FITTINGS.
 - D) DUCTILE - IRON PIPE, FITTINGS AND JOINTS
 - 1 - DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE
A21 50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
A21 51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
 - 2 - JOINTS SHALL BE AS SPECIFIED IN C2 ABOVE, CAST IRON PIPE JOINTS.
- 3.) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- 4.) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTORS SHALL BE USED.
- 5.) TEES OR WYES WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE FOLLOWING MANUFACTURERS INSTRUCTIONS USING A BOLTED, CLAMPED, OR EPOXY - CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER. (DOES NOT APPLY TO INSTALLATIONS WHERE 'ts' & 'ys' ARE USED).
- 6.) PIPE INSTALLATION THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED IN ACCORDANCE WITH THE INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE 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 DEWATER THE TRENCH.
- 7.) TESTING THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING):
 - A) AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
 - B) THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF 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.
- 8.) ILLEGAL CONNECTION NOTHING BUT SANITARY WASTE FLOW FROM 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.
- 9.) HOUSE WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
- 10.) BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67:
100% PASSING 1 INCH SCREEN 90-100% PASSING 3/4 INCH SCREEN
20-55% PASSING 3/8 INCH SCREEN 0- 10% PASSING #4 SIEVE
0- 5% PASSING #8 SIEVE
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1 1/2 INCH TO 1/2 INCH SHALL BE USED.
- 11.) LOCATION THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
- 12.) CONCRETE CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
CEMENT - 6.0 BAGS / C.Y. WATER - 5.75 GALS. / BAG CEMENT
AGGREGATE - 1 1/2" MAX.
- 13.) CHIMNEYS IF VERTICAL DROP INTO SEWER IS GREATER THAN 4', A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION.

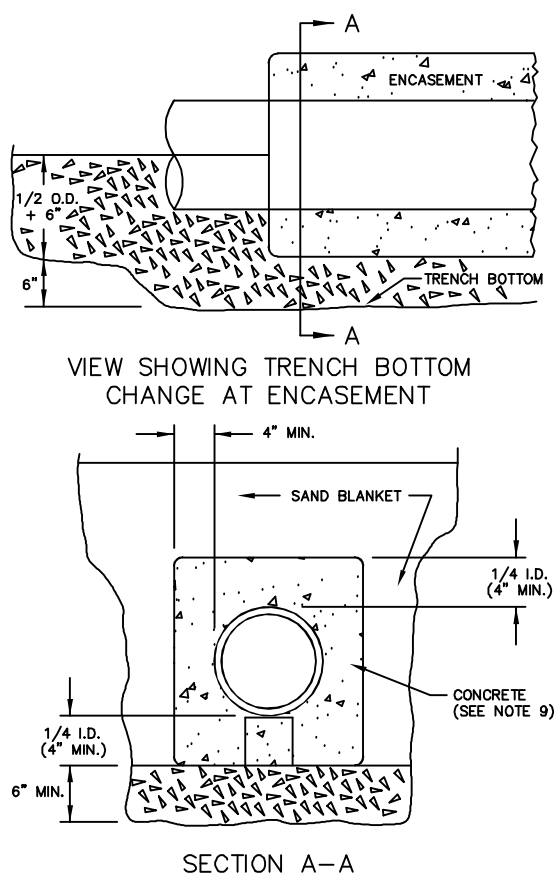
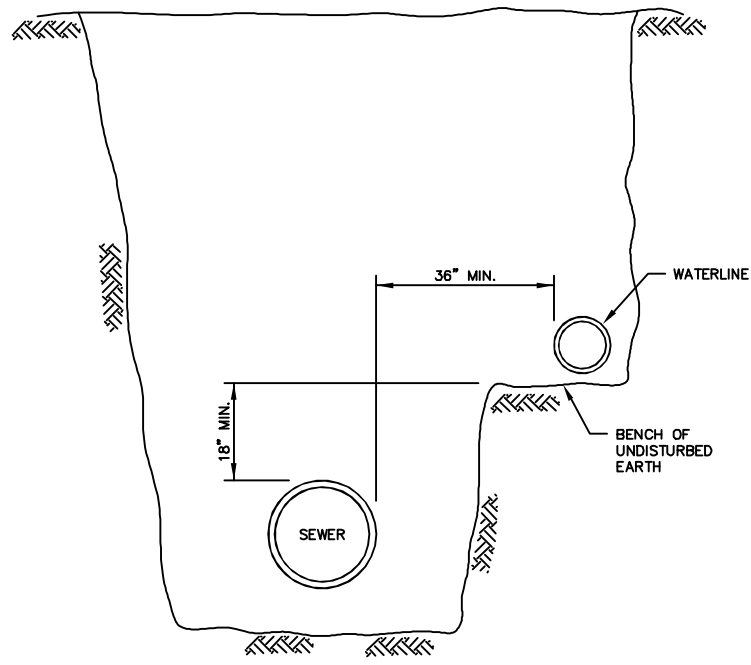
STANDARD TRENCH SECTION



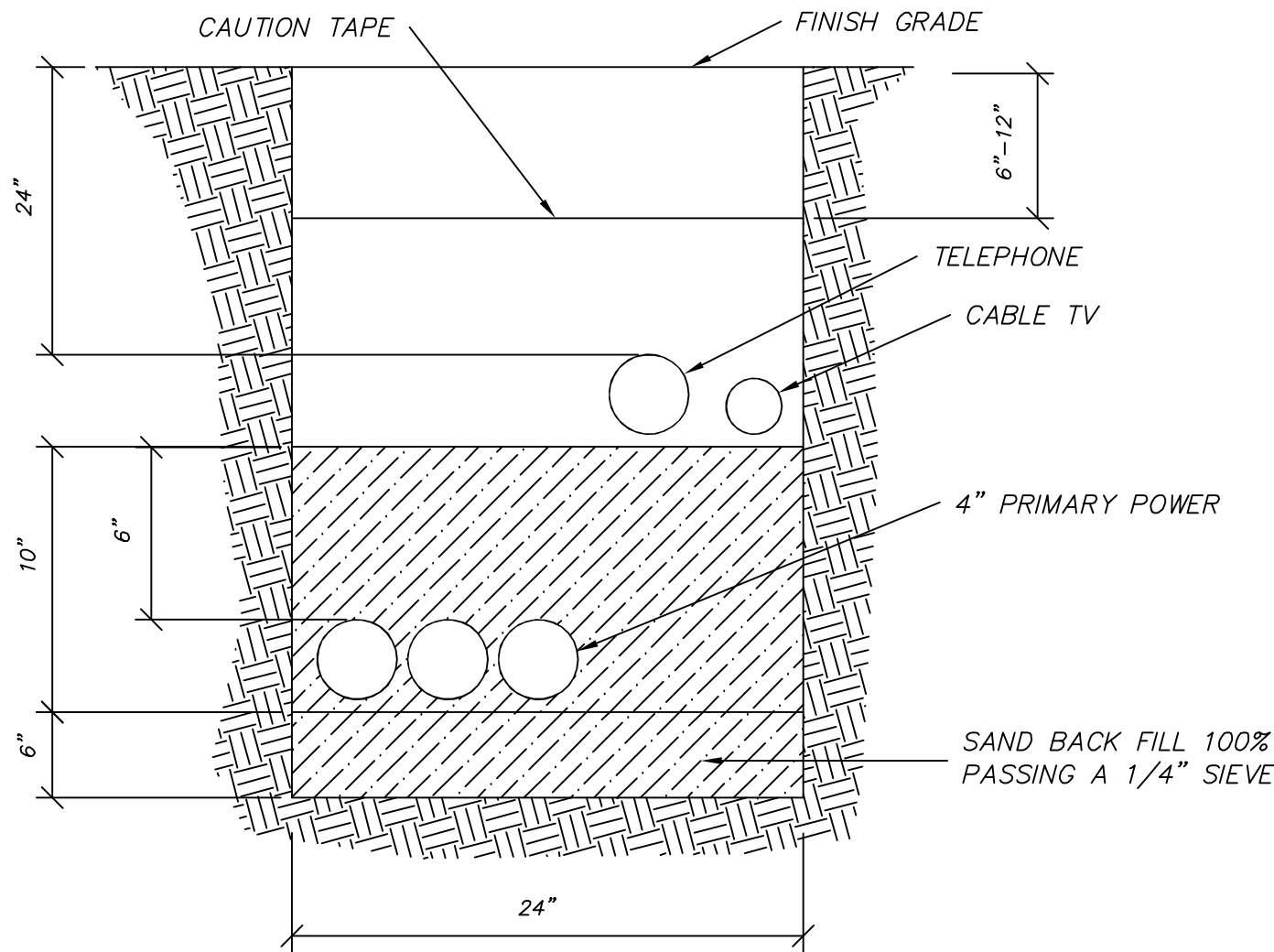
NOTES:

- 1.) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. SEE ALSO NOTE 7.
- 2.) BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67:
100% PASSING 1 INCH SCREEN
90 - 100% PASSING 3/4 INCH SCREEN
20 - 55% PASSING 3/8 INCH SCREEN
0 - 10% PASSING #4 SIEVE
0 - 5% PASSING #8 SIEVE
- CRUSHED STONE 1/2 INCH - 1 1/2 INCH MAY BE USED INSTEAD OF SCREENED GRAVEL WHERE ALLOWED BY THE ENGINEER.
- 3.) SAND BLANKET CLEAN SAND FREE FROM ORGANIC MATTER SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE.
- 4.) SUITABLE MATERIAL IN ROADS, ROAD SHOULDERS, WALK-WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY, WILL BE PRESERVED.
- 5.) BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, (D.O.T.).
- 6.) WOOD SHEETING, IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
- 7.) W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- 8.) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 9.) CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) 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
- 10.) NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION (NH DES) DESIGN STANDARDS REQUIRE 10 FT. SEPARATION. HOWEVER, SHOULD CONSTRUCTION OPERATIONS REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FT. HORIZONTAL FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED.
 - A. IF THE WATERLINE CAN BE KEPT AT LEAST 18 INCHES ABOVE AND 3 FEET TO ONE SIDE OF THE SEWER, AS SHOWN AND SUPPORTED ON A BENCH OF ORIGINAL SOIL, NO OTHER PROTECTION IS REQUIRED.
- 11.) IF FULL CASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.



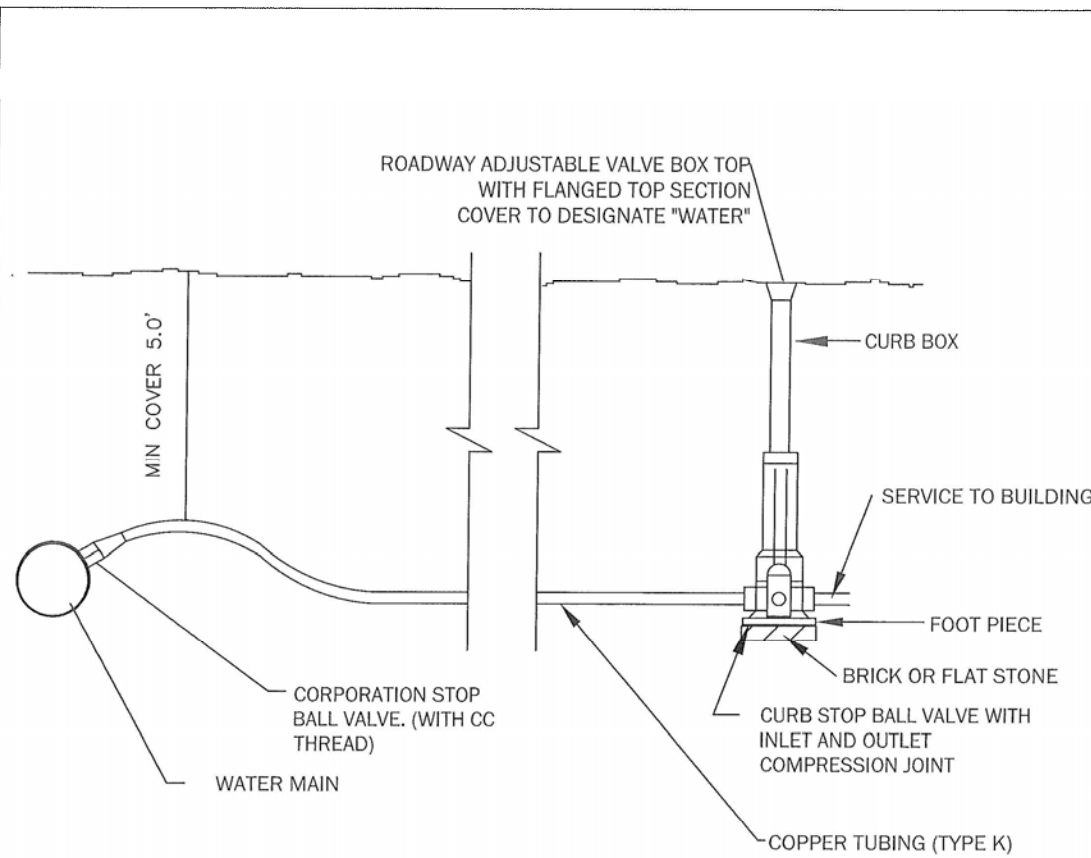
DETAIL SHEET				NOT FOR CONSTRUCTION FOR PERMIT USE ONLY			
DATE: 4-2-21		SCALE: 1"=30'		DRAWN BY: JRG		DESIGN BY: JRG	
PROJECT NO: 20052		APPROVED BY: JRG		FILE: SITE		NO.	
ZELAND SCHWARTZ		REVOCABLE TRUST		MADBURY, NH 03823		REVISION	
SCHWARTZ SUBDIVISION		26 1/2 BELLAMY ROAD		DOVER, NH 03820		APP'D	
20		CIVILWORKS NEW ENGLAND		181 Watson Road, PO Box 1166		DATE	
		Dover, New Hampshire 03821		603.745.0443			



1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

UTILITY TRENCH

NOT TO SCALE

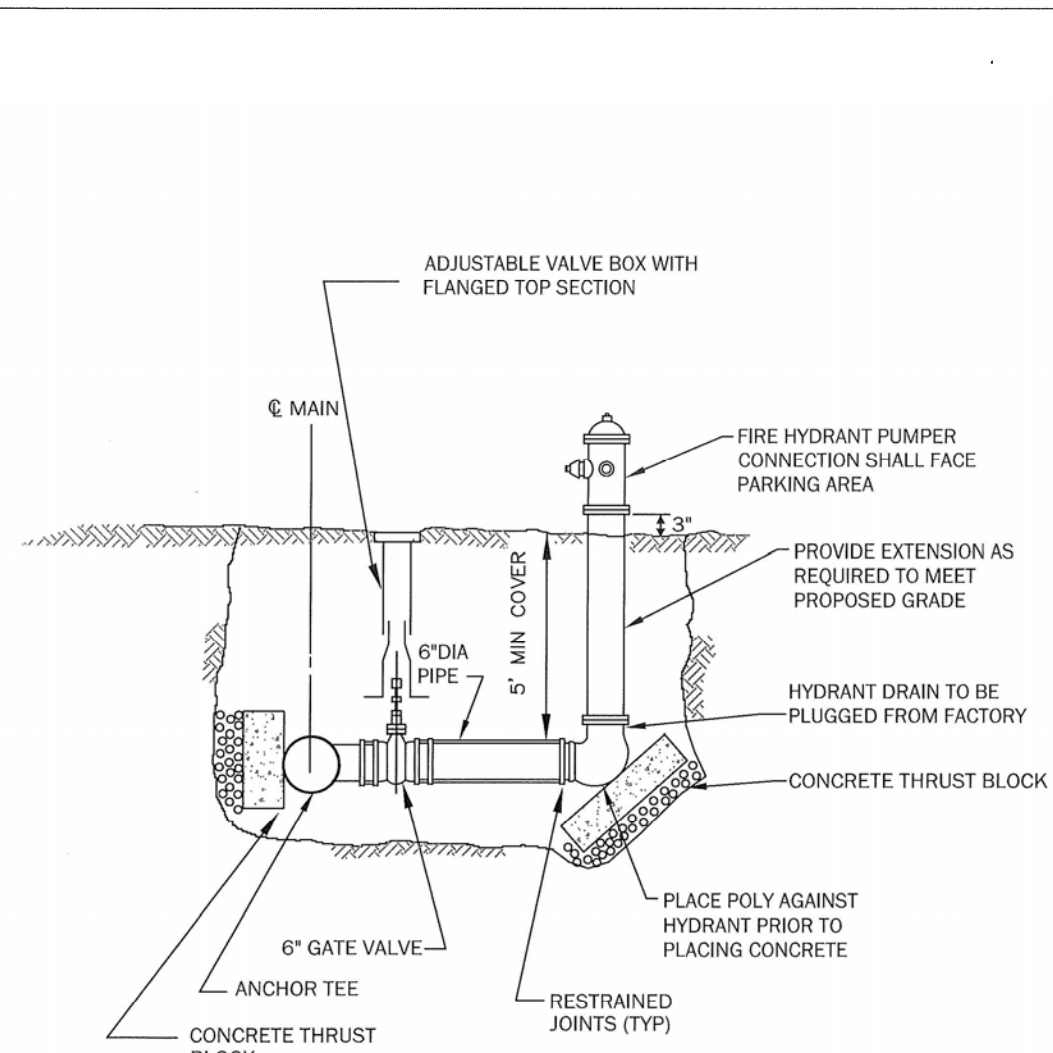


NOTE:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP. CONTRACTOR MAY FORGO WRAPPING PIPE IF THE DUCTILE IRON PIPE IS ZINC-COATED, TEES AND OTHER CONNECTIONS WILL STILL NEED TO BE WRAPPED.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE SDR 9 CTS (BLUE) PLASTIC POLYETHYLENE RATED FOR 250 psi.

CITY OF DOVER - WATER SERVICE CONNECTION

NOT TO SCALE



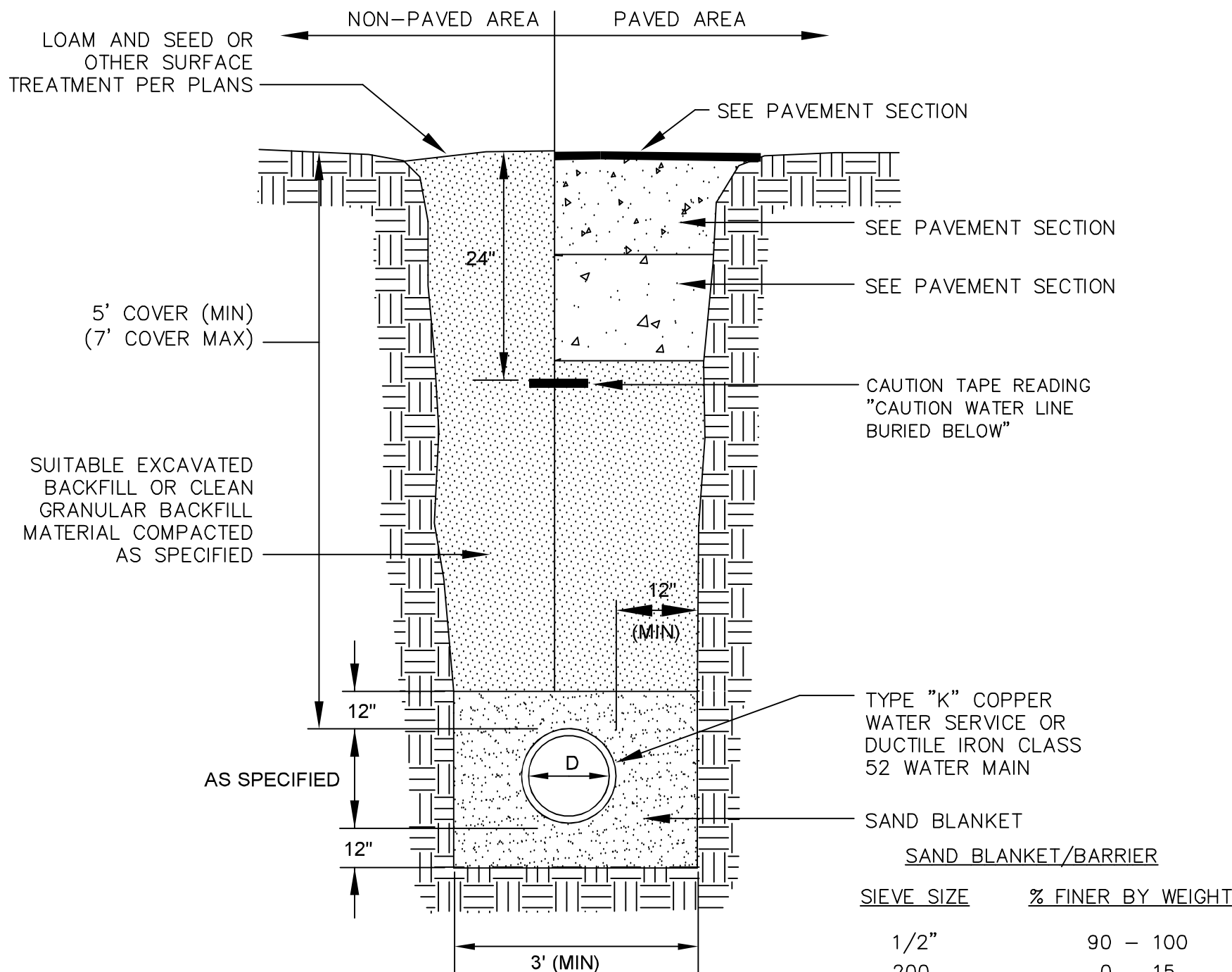
NOTES:

1. FIRE HYDRANT TO BE EDDY 2641.
2. HYDRANT TO BE PAINTED RED.
3. HYDRANT SHALL OPEN LEFT.

CITY OF DOVER - HYDRANT

NOT TO SCALE

Appendix B Page 10

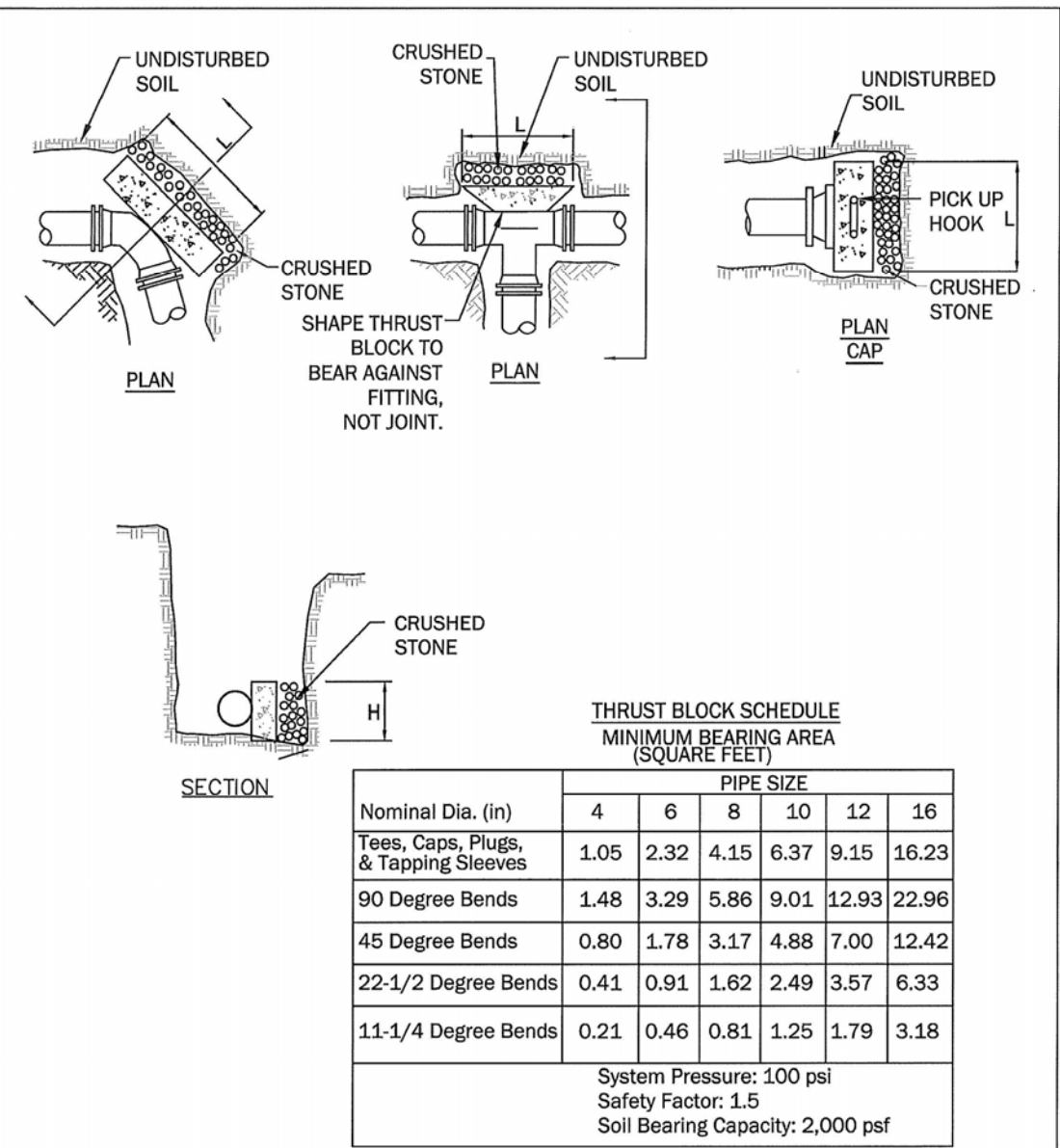


NOTES

1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUIABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

WATER MAIN TRENCH

NOT TO SCALE



THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 100 PSI. IF THE SYSTEM PRESSURE IS ABOVE 100 PSI, INCREASE THE NOTED AREAS PROPORTIONAL TO THE ACTUAL SYSTEM PRESSURE. FOR EXAMPLE, IF THE ACTUAL SYSTEM PRESSURE IS 160 PSI, MULTIPLY THE ABOVE VALUES BY 160%.

CITY OF DOVER - PRECAST CONCRETE THRUST BLOCK & ANCHOR

NOT TO SCALE
Appendix B Page 11

DETAIL SHEET

ZELAND SCHWARTZ
REVOCABLE TRUST
14 HUCKINS ROAD
MADBURY, NH 03823

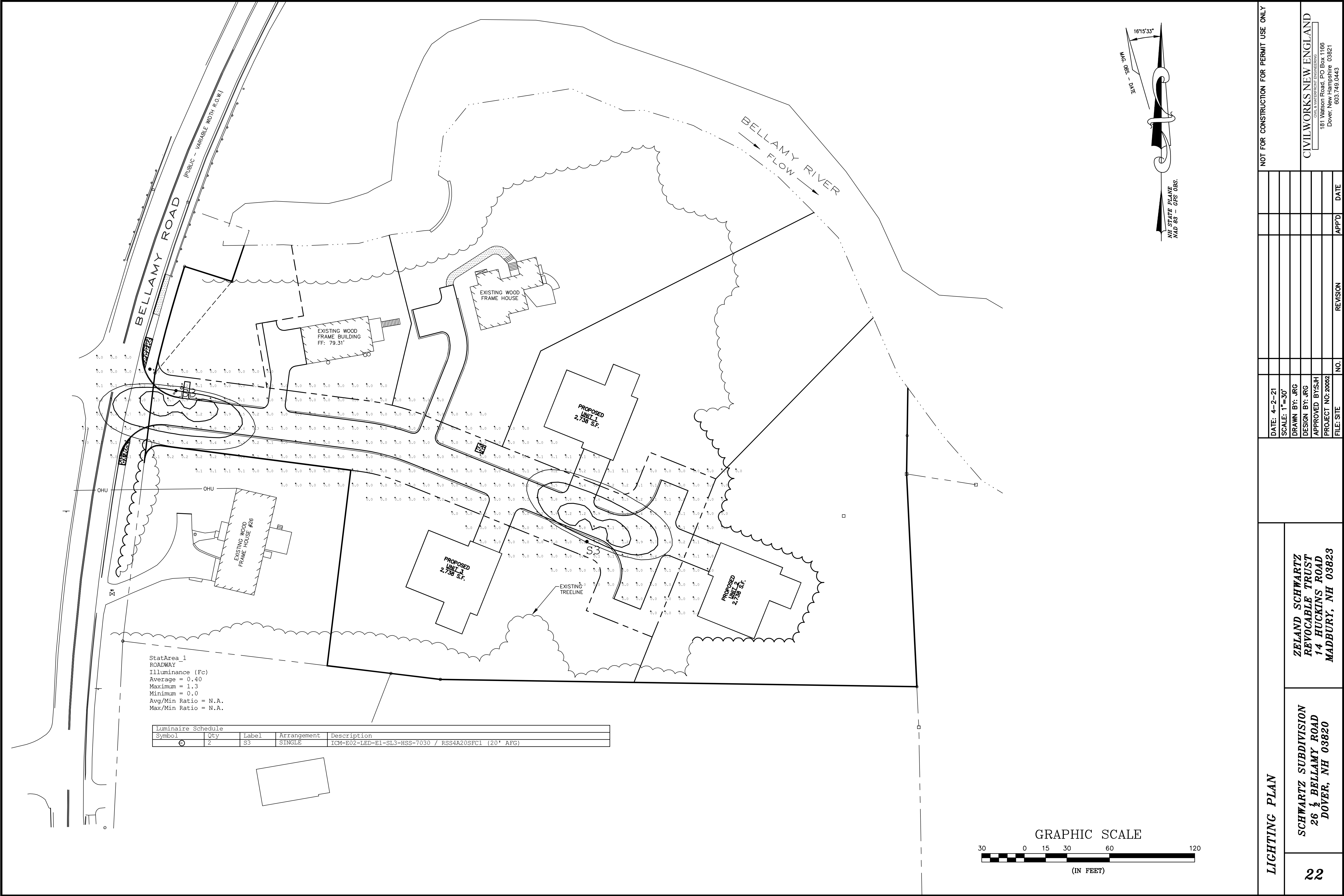
SCHWARTZ SUBDIVISION
26 1/2 BELLAMY ROAD
DOVER, NH 03820

21

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

DATE: 4-2-21	SCALE: 1"=30'	DRAWN BY: JRG	DESIGN BY: JRG	APPROVED BY: JRG	PROJECT NO: 20052	FILE: SITE	NO.	REVISION	APP'D	DATE
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CIVILWORKS NEW ENGLAND
18 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.748.0443



DESCRIPTION

LED technology combined with the Icon luminaires unique form creates the choice solution for modern site lighting applications. The Icon luminaires gentle curves and sleek profile create a shape that is beyond common. Two unique arm choices combined with structural element options provide no limitations in bridging to the architectural application.

SPECIFICATION FEATURES

Construction
HOUSING: Heavy-wall, one-piece, die-cast aluminum housing has precise tolerance control and repeatability in manufacturing. Integral aluminum heat sink provides superior heat transfer in 440°C ambient environment. DOOR: One-piece, die-cast aluminum construction with tool-less release latch. Door swings down and is retained on heavy duty leafpin hinge. GASKET: Continuous gasket provided to seal housing to door. HARDWARE: Tool-less release button latches are stainless steel/aluminum construction, painted to match housing and allow access to internal housing and electrical components.

Optics
Choice of twelve patented, high-efficiency AcuoLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AcuoLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 70 or 80 CRI. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life.

Standard drivers feature electronic universal voltage (120-277V, 50/60Hz), 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common - and differential - mode surge protection. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Mounting
UPSWEEP ARM: Manufactured of heavy-wall cast aluminum. Internal bolt guides provided for positioning arm to housing and pole. LINEAR ARM: Manufactured of heavy-wall extruded aluminum. Arm features internal bolt guides for positioning arm to housing and pole. STRUCTURAL MOUNT: Die-cast aluminum cleat, factory mounted and finished in luminaire color. Stainless steel structural rod measures 1/2" in diameter and is provided in luminaire finish or optional natural finish. Wall

bracket works in conjunction with linear arm. Mounting arms ordered separately.

Slide Arm
An elegant cantilever arm assembly articulates the Icon housing in suspended balance. The extended aluminum arm and rear suspension detail in conjunction with the flowing lines from pole to luminaire provide a dramatic form where excitement in architectural design is desired. Arm weldment assembly manufactured of 6061, 6063 cast aluminum subcomponents. The medium Icon arm (SDM) assembly mounts to a 5" O.D. round straight pole equipped with a 4" O.D. by 10" tall tenon. The Small Icon Arm (SDS) Fits 4" O.D. tenon or splits over 4" round straight pole. Arm secures to pole with provided stainless steel hex head fasteners and includes a removable side cap for wire access and inspection.

Finish
Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.

Warranty
Five-year warranty.

Invue

Catalog #	Type
Project	
Comments	
Prepared by	Date



ICS/ICM
ICON LED

ICM 1 - 6 LightBARs
ICS 1 - 4 LightBARs
Solid State LED

ARCHITECTURAL
AREA/SITE LUMINAIRE



CERTIFICATION DATA
UL/cUL Listed
UL95 Light-Safety
LM79 / LM80 Compliant
3G Vibration Tested
ISO 9001

ENERGY DATA
Electromagnetic Interference
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz,
480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA
Effective Projected Area: (Sq. Ft.)
ICS Icon Small:
Single: 0.69
Single Structural: 0.71

ICM Icon Medium:
Single: 1.09
Single Structural: 1.11

SHIPPING DATA
Approximate Net Weight:
ICS Icon Small: 37 lbs. (16.82 kgs.)
ICM Icon Medium: 50 lbs. (22.73 kgs.)

TD560007EN
April 20, 2020 2:12 PM

Steel Poles

Catalog #	Type
Project	
Comments	
Prepared by	Date

FEATURES
• ASTM Grade steel base plate with ASTM A366 base cover
• Hand hole assembly 3" x 5" on 5" and 6" poles, 2" x 4" on 4" poles
• 10'-30' mounting heights
• Drilled or tenon (specify)

RSS ROUND
STRAIGHT STEEL

DESIGN CONSIDERATIONS

Wind induced vibrations resulting from steady, unidirectional winds and other aerodynamic forces, as well as vibration and coefficient of height factors for non-grounded mounted installations (e.g., installations on bridges or buildings) are not included in this document. The information contained herein is for general guidance only and is not a replacement for professional judgement. Consult with a professional, and local and federal standards, before ordering to ensure product is appropriate for the intended purpose and installation location. Also, please review Cooper Lighting Solutions Light Pole White Paper for risk factors and design considerations. Learn more.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Cooper Lighting Solutions or visit www.cooperlighting.com for available options, accessories and ordering information.

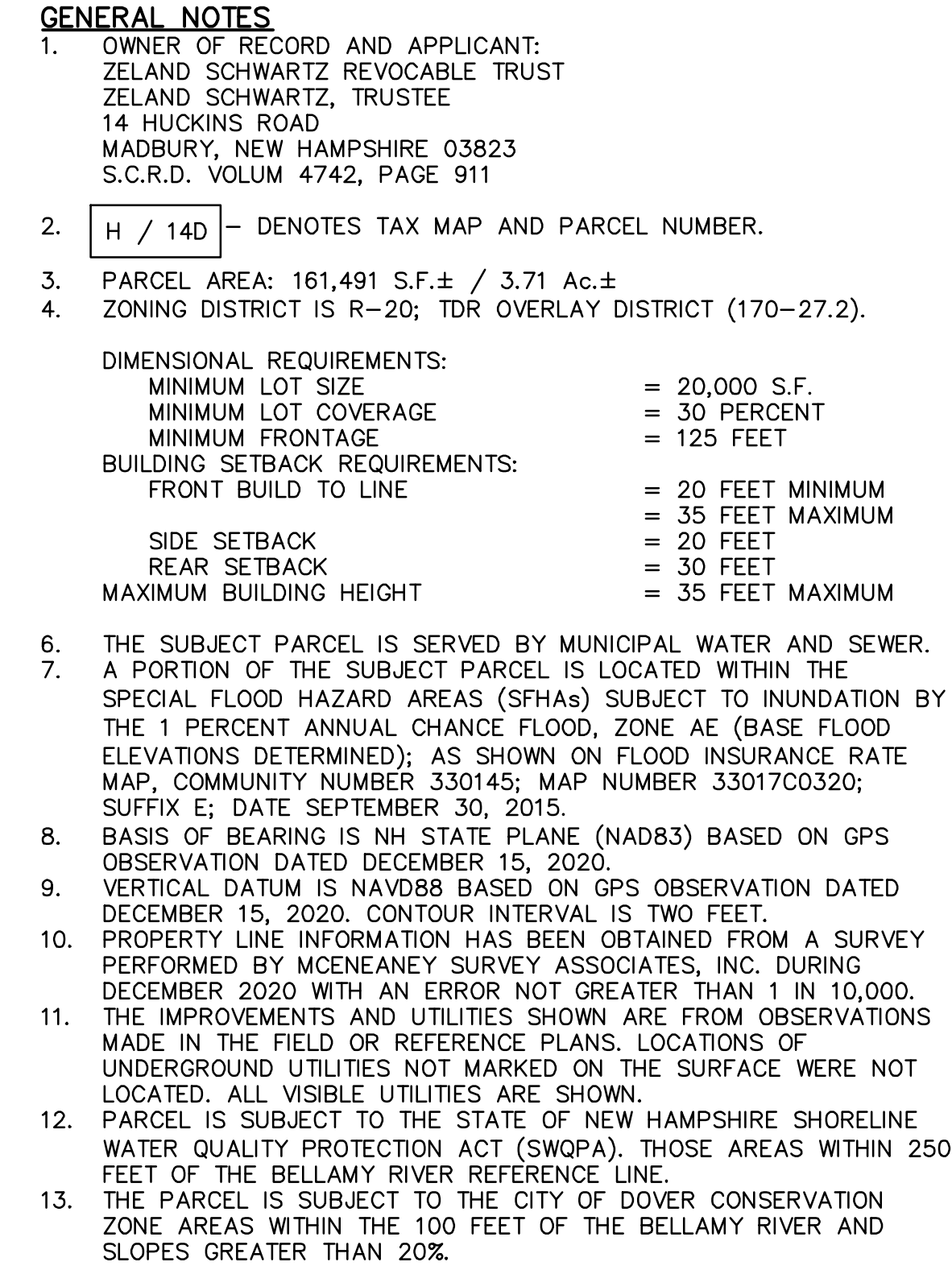
ORDERING INFORMATION

SAMPLE NUMBER: RSS4A23SF2XG

Product Family	Shaft Size (Inches) *	Wall Thickness (Inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Arm Lengths (Feet)	Options (Add as Suffix)
RSS-Round Straight Steel	4-4" 5-5" 6-6"	A=0.120" * M=0.188"	10-10' 15-15' 20-20' 25-25' 30-30'	S-Square Steel Base	F-Dark Bronze G-Galvanized Steel J-Summit White K-Carbon Bronze L-Dark Platinum R-Hartford Green S-Silver T-Graphite Metallic V-Grey W-White X-Custom Color Y-Black	2-2-3/8" O.D. Tenon (4" Long) 2-2-1/2" O.D. Tenon (5" Long) 4-4" O.D. Tenon (6" Long) 6-6" O.D. Tenon (8" Long) 8-8" O.D. Tenon (10" Long) 10-10" O.D. Tenon (12" Long) 12-12" O.D. Tenon (14" Long) 14-14" O.D. Tenon (16" Long) 16-16" O.D. Tenon (18" Long) 18-18" O.D. Tenon (20" Long) 20-20" O.D. Tenon (22" Long) 22-22" O.D. Tenon (24" Long) 24-24" O.D. Tenon (26" Long) 26-26" O.D. Tenon (28" Long) 28-28" O.D. Tenon (30" Long) 30-30" O.D. Tenon (32" Long) 32-32" O.D. Tenon (34" Long) 34-34" O.D. Tenon (36" Long) 36-36" O.D. Tenon (38" Long) 38-38" O.D. Tenon (40" Long) 40-40" O.D. Tenon (42" Long) 42-42" O.D. Tenon (44" Long) 44-44" O.D. Tenon (46" Long) 46-46" O.D. Tenon (48" Long) 48-48" O.D. 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DOVER LADDER MOVEMENT PLAN		NOT FOR CONSTRUCTION FOR PERMIT USE ONLY										
24	SCHWARTZ SUBDIVISION 26 1/2 BELLAMY ROAD DOVER, NH 03820	ZELAND SCHWARTZ REVOCABLE TRUST 14 HUCKINS ROAD MADBURY, NH 03823	DATE: 4-2-21									
			SCALE: 1"=30'									
			DRAWN BY: JRG									
			DESIGN BY: JRG									
			APPROVED BY: JRG									
			PROJECT NO: 20082									
			FILE: SITE									
			NO.									
			REVISION									
			APP'D									
DATE												
CIVILWORKS NEW ENGLAND												
181 Madison Road, PO Box 1166 Dover, New Hampshire 03821 603.749.0443												



1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 400' OF ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 5 UNIT SINGLE FAMILY DETACHED CONDOMINIUM.

1. NHDES SHORELAND PERMIT APPLICATION: NHDES#2021-00587 APPROVED
MARCH 19, 2021

<u>LEGEND</u>	
S.F.	SQUARE FEET
Ac.	ACRE
±	MORE OR LESS
EOW	EDGE OF WET
x 74.00	EXISTING SPOT GRADE
— — — — — 94 — — — — —	EXISTING GRADE
	EXISTING TREELINE
 . . . 	EDGE OF RIVER
	PROPOSED SILT/SOXX
	PROPOSED BUILDING
	PROPOSED TREELINE
	PROPOSED RE-VEGETATED AREA

A (17) 5-6' HIGH PINUS STROBUS
B (8) #10 AMELANCHIER CANADENSIS
C (40) #1 COMPTONIA PEREGRINA

[illegible]