



CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, May 9, 2024**
Meeting Time: **10:30 AM**

1. 10:30 AM – 11:00 AM: Site Review for 17-19 Summer Street Properties, LLC, Assessor's Map 12, Lot 35-1, zoned HR, located at Locust Street. (Proposal is to build a 2,400 s.f. residential building consisting of (4) four, (2) two bedroom units, improved driveway access, parking, utilities and drainage improvements.) (SITE-2024-0003) *[This item was previously heard by the Planning Technical Review Committee on March 28, 2024]*



PLAN SNAPSHOT REPORT SITE-2024-0003 FOR CITY OF DOVER, N.H.

Plan Type: Site Plan - Major
Work Class: New Construction
Status: Fees Due
Valuation: \$0.00
Description: Multi-Unit Building with 4 two bedroom units, improved driveway access, parking, utilities and drainage improvements.

Project:
District: None
Square Feet: 0.00
Assigned To: Blonigen, Rachel

App Date: 03/07/2024
Exp Date: 05/11/2024
Completed: NOT COMPLETED
Approval Expire Date:

Parcel: 12035-001000	Main	Address: Locust St Dover, NH	Main	Zone: HR(Residential - Heritage)
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Plan Preparer
Civilworks New England
Steve Haight
181 Watson Road PO Box
1166
Dover, NH 03820
Business: (603) 749-0443
Mobile: (603) 817-6651

Applicant
Ben Perez
Mobile: (603) 944-0516

Plan Custom Fields

Total	0	Total2	0	Total3	1060
Total4	0	Total5	0	Total6	4
Total7	0	Total8	0	Total9	2395
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	9	Water Service	Municipal
Recording Number		Sewer Service	Municipal	Deed Book	
Total SQFT	0	Deed Page		Deed Date	
Proposed Property Use	Multi-Unit Residential	Area of Parcel to be Developed (SQFT)	14500	Number of Parking Spaces Existing	0
Number of Parking Spaces Proposed	9	Type of Building to be Built	Wood Frame, Clapboard Siding, Asphalt Shingle Roof	Estimated Construction Value	950000.00
Refuse Removal	Private	Is there an existing Conservation Easement?	No	Existing Conservation Easement Details	
TotalImpactFeeSDTOD	0.00	TotalImpactFeeTHTOD	0.00	TotalImpactFee23FTOD	0.00
TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00	TotalImpactFeeADUTO	0.00
TotalImpactFeeAONRT	0.00	TotalImpactFeeAR55TC	0.00	TotalImpactFeeAR62TC	0.00
OD		D		D	
Sub Total Residential	0.00	TotalImpactFeeRIRCT	0.00	TotalImpactFeeOCSTO	0.00
		D		D	
TotalImpactFeeITWCT	0.00	TotalImpactFeeNHALT	0.00	TotalImpactFeeOIUTOD	0.00
D		D			
TotalImpactFeeAFAOT	0.00	Sub Total	0.00	Total of Impact Fees to be Assessed	0.00
OD		Non-Residential			

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_3/7/2024.jpg	03/07/2024 10:08	Haight, Steve		Uploaded via CSS
2024.03.28_PlanningTechnicalReviewCommittee.Agenda.pdf	03/13/2024 14:27	Blonigen, Rachel		TRC Agenda
2024.03.28_PlanningTechnicalReviewCommittee.Locust Street_SITE-2024-0003.pdf	04/01/2024 12:39	Blonigen, Rachel		Draft TRC Minutes

PLAN SNAPSHOT REPORT (SITE-2024-0003)

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00007010	Planning General Application Fee	\$200.00	\$0.00
Total for Invoice INV-00007010		\$200.00	\$0.00
INV-00007018	Planning Impervious Paved Area Fee	\$74.20	\$74.20
	Planning Residential Fee	\$400.00	\$400.00
Total for Invoice INV-00007018		\$474.20	\$474.20
Grand Total for Plan		\$674.20	\$474.20

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	03/28/2024	Technical Review Committee Meeting
Meeting Custom Fields			
TRC Meeting Next Steps	Resubmit for 2nd TRC		

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: Locust Street

- The building looks attractive and both the building and use appear consistent with the surrounding area.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

PLAN SNAPSHOT REPORT (SITE-2024-0003)

Comments: Project: SITE-2024-0003: Locust Street Residential Properties

TRC Meeting: March 28, 2024 (Meeting 1)

Reviewer: Kenneth Mavrogeorge, PE

Checked by: Engineering Staff

R:\Divisions\Engineering\00_Standards\06_Review Checklists\00_Dover Planning - TRC\2023_City of Dover Project Review Checklist.docx

Comments:

- General Comment:

o Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. Engineering is currently in the final stages of updating this document. The Applicant should be prepared to conform to the currently adopted guidelines when they are adopted.

<https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf>

o Provide detail for City of Dover Construction Sign

o Are any of the Units ADA accessible?

o Are ADA spaces provided and signed?

o Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing structures on the property.

o Confirm if the driveway easement will be modified to include the parking spaces.

o A Landscaping Plan should be provided.

- Sheet 4:

o Dover Notes 24 and 25 appear to be missing. Confirm that all relevant notes are on the notes sheet.

o Site Note 13 indicates that there is land owned by DIBDA. Please confirm what this is in reference to.

- Sheet 6:

o The driveway apron should be paved and is the responsibility of the property owner not the City.

o There are stairs on all sides of the building but no pathways to connect them. Please confirm that accessible or clear paths are not required by fire code. Provide as necessary.

- Sheet 7:

o Show inverts for all proposed structure on the plan not just the detail sheet.

- Sheet 8:

o CTS may be used from the curb stop to the building for water services.

o Will the building have submeters monitored by the Applicant? As proposed the building will receive one meter from the City.

- Sheet 12:

o The driveway apron should be paved and is the responsibility of the property owner not the City.

o Recommend a 12" thick dumpster pad.

- Sheet 16:

o Will the building have lighting on the exterior? If so, include it in the calculation as the points of egress around the building appear to have zero lighting.

- Landscape O&M:

o Plan notes that snow shall not be stored in rain gardens which conflicts with the snow storage provided on the plans. Please adjust snow storage accordingly

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: Resubmit for 2nd TRC

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: • Is the proposed new residential structure subject to requirement for underground electrical connection? Overhead connection is shown on plan.

• Any walkways or patios connected to proposed staircases on N, S and E sides of building? Or do these lead directly to lawn space?

• Building official will set address, but DPD supports a Locust Street address for units in the new proposed building. Some of the letters-to-serve reference "135 Locust Street" but this is incongruent with the even/odd side numbering.

Workflow Step / Action Name	Action Type	Start Date	End Date
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PLAN SNAPSHOT REPORT (SITE-2024-0003)

Review v.1

03/13/2024 12:38

Confirm application complete v.1	Generic Action		03/13/2024 12:39
Technical Review Committee Meeting Agenda v.1	Task	03/13/2024 12:39	03/13/2024 12:39
Land Use Plan Technical Review v.1	Receive Submittal	03/13/2024 0:00	04/01/2024 12:33
Land Use Plan Technical Review v.2	Receive Submittal	04/01/2024 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	04/01/2024 12:31	04/01/2024 12:33

Planning Board v.1

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

Final Plan v.1

Land Use Plan Stamped and Signed v.1	Generic Action		
Recording v.1	Task		
Document Archival v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		

Create/Link to Records v.1

Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		



CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2024-0003

Application Type: Site Review
Applicant(s): 17-19 Summer Street Properties, LLC
Owner(s): 17-19 Summer Street Properties, LLC
Location: Locust Street (Assessor's Map 12, Lot 35-1)
Date: March 28, 2024

INTENT: Proposal is to build a 2,400 square foot residential building consisting of four (4), two (2) bedroom units, improved driveway access, parking, utilities and drainage improvements.

UNITS PROPOSED: 4 units

AGENDA ITEM #: 1

ACREAGE: 0.22± ac.

ZONING DISTRICT: HR

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Multi-family residential

SURROUNDING LAND USE: Mixed residential

ZBA ACTION: None

PERMITS REQUIRED:

- CUP for the construction of a four-family dwelling, must meet the requirements of §170-20.B(2) and B(3).

WAIVERS REQUESTED: None requested.

ATTENDANCE:

Donna Benton, Planning
Paul Crouser, Zoning
Marn Speidel, Police
Ken Mavrogeorge, Engineering
Jim Maxfield, Fire/Inspection Services
James Burdin, Business Development

Others:

Erin Bassegio, Assistant City Planner
Abigail Gilbert, Office of Business Development
Joe Griffin, Civilworks NE

Approval of minutes from March 21, 2024:

J. Burdin moved to approve the March 21, 2024 minutes. Seconded by K. Mavrogeorge. Vote: U/A.

PLAN REVIEW:

Planning:

- Reminder: Impact fees, Water and sewer investment fees
- Discuss sight distance at 85 percentile as TAC has heard complaints in that same area used as justification in the Traffic Memo.
- § 153-14D(3): EVSE readiness for 5% of parking spaces
- Snow storage near entrance
- Structure setbacks not accurate
- HR Requirements from back of HR table shall be included in narrative including:
 - Open space calculation
 - Parking and structure setbacks
- Revise plans:
 - Include planning file number: SITE-2024-0003
 - Use latest common notes
 - Keep 16" hardwood?
 - Darkest spot in parking lot amended or waiver needed
 - Uniformity ratio and parking plan table need to be added
 - Use different lighting fixture that is more fitting for HR
 - Location/width of proposed easement
 - Streetscape rendering

Engineering:

- General Comment:
 - Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. Engineering is currently in the final stages of updating this document. The Applicant should be prepared to conform to the currently adopted guidelines when they are adopted.
<https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf>



CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2024-0003

Application Type: Site Review
Applicant(s): 17-19 Summer Street Properties, LLC
Owner(s): 17-19 Summer Street Properties, LLC
Location: Locust Street (Assessor's Map 12, Lot 35-1)
Date: March 28, 2024

- Provide detail for City of Dover Construction Sign
- Are any of the Units ADA accessible?
- Are ADA spaces provided and signed?
- **Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing structures on the property.**
- Confirm if the driveway easement will be modified to include the parking spaces.
- A Landscaping Plan should be provided.
- Sheet 4:
 - Dover Notes 24 and 25 appear to be missing. Confirm that all relevant notes are on the notes sheet.
 - Site Note 13 indicates that there is land owned by DIBDA. Please confirm what this is in reference to.
- Sheet 6:
 - The driveway apron should be paved and is the responsibility of the property owner not the City.
 - There are stairs on all sides of the building but no pathways to connect them. Please confirm that accessible or clear paths are not required by fire code. Provide as necessary.
- Sheet 7:
 - Show inverts for all proposed structure on the plan not just the detail sheet.
- Sheet 8:
 - CTS may be used from the curb stop to the building for water services.
 - Will the building have submeters monitored by the Applicant? As proposed the building will receive one meter from the City.
- Sheet 12:
 - The driveway apron should be paved and is the responsibility of the property owner not the City.

- Recommend a 12" thick dumpster pad.

● Sheet 16:

- Will the building have lighting on the exterior? If so, include it in the calculation as the points of egress around the building appear to have zero lighting.

● Landscape O&M:

Plan notes that snow shall not be stored in rain gardens which conflicts with the snow storage provided on the plans. Please adjust snow storage accordingly.

Police:

- Is the proposed new residential structure subject to requirement for underground electrical connection? Overhead connection is shown on plan.
- Any walkways or patios connected to proposed staircases on N, S and E sides of building? Or do these lead directly to lawn space?
- Building official will set address, but DPD supports a Locust Street address for units in the new proposed building. Some of the letters-to-serve reference "135 Locust Street" but this is incongruent with the even/odd side numbering.

Fire/Inspection Services:

- Provide location of FDC connection
- Indicate location of sprinkler main and access to sprinkler room
- Add accessible parking space.
- Confirm slab on grade construction? Show bulkhead, suppression line location, etc.
- Building Official will advise on new address.

Business Development:

- The building looks attractive and both the building and use appear consistent with the surrounding area.

Planning Board:

- None.

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

Pause TRC at: 10:54 am

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181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

April 25, 2024

Dover Planning Board
288 Central Avenue
Dover, NH 03820

Attn: Technical Review Committee

Re: 17-19 Summer Street Properties, LLC
Locust Street - Residential Development
Assessor's Map 12, Lot 35-1

Technical Review Committee Minutes –
SITE-2024-0003, dated March 28, 2024

Dear Planning Board:

In response to Technical Review Committee Minutes – SITE-2024-0003, dated March 28, 2024, we submit the following responses in bold beneath the review comments in italic.

Planning:

1. *Reminder: Impact fees, water and sewer investment fees.*
The client has been made aware of all impact fees and investment fees.
2. *Discuss sight distance at 85 percentile as TAC has heard complaints in that same area used as justification in the Traffic Memo.*
The sight distances for the 85th percentile have been updated in the TAM.
3. *§ 153-14D (3): EVSE readiness for 5% of parking spaces.*
EVSE readiness has been included in the utility plan.
4. *Snow storage near entrance.*
The project does not propose snow storage beyond the existing hedge row along Locust Street.
5. *Structure setbacks are not accurate.*
Setbacks have been updated.
6. *HR Requirements from back of HR table shall be included in narrative including:*
CUP Narrative has been updated.
 - a. *Open space calculation.*
The open space area of the neighborhood was calculated and a response is included in the narrative.
 - b. *Parking and structure setbacks.*
Setbacks have been updated and a response has been provided in the narrative.
7. *Revise plans:*
 - a. *Include planning file number, SITE-2024-0003.*
The plans have been updated accordingly.

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- b. *Use latest common notes.*
The most recent common notes have been added to the plan set.
- c. *Keep 16" hardwood?*
The tree will need to be removed in support of construction.
- d. *Darkest spot in parking lot amended or waiver needed.*
Lighting has been updated and a waiver for the dark area of the parking lot has been submitted.
- e. *Uniformity ratio and parking plan table need to be added.*
A uniformity ratio has been provided and the parking requirements table has been updated.
- f. *Use different lighting fixture that is more fitting for HR.*
A revised pole and lighting fixture have been added to the plan set.
- g. *Location/width of proposed easement.*
The easement documents are being drafted and will be submitted to Planning prior to recording at the Registry of Deeds.
- h. *Streetscape rendering.*
A Streetscape rendering has been included in the plan set.

Engineering:

1. General Comment:

- a. *Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. Engineering is currently in the final stages of updating this document. The Applicant should be prepared to conform to the currently adopted guidelines when they are adopted.*
[https://www.dover.negov/Assets/government/city-operations/1form/community-services/engineering/engineering documents/Construction%20Guidelines.pdf](https://www.dover.negov/Assets/government/city-operations/1form/community-services/engineering/engineering%20documents/Construction%20Guidelines.pdf)
Acknowledged.
- b. *Provide detail for City of Dover Construction Sign*
The sign has been added to the plan set.
- c. *Are any of the Units ADA accessible?*
The units are not proposed as ADA accessible.
- d. *Are ADA spaces provided and signed?*
One accessible space and the appropriate signage have been added to the plan set.
- e. *Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing structures on the property.*
"Dover Site Plan Review Note # 47" has been included in the plan set.
- f. *Confirm if the driveway easement will be modified to include the parking spaces.*
A note indicating that the easement will include both access and parking has been added to the plan set.
- g. *A Landscaping Plan should be provided.*
The Landscaping Plan has been included in the submission.

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2. *Sheet 4:*

- a. *Dover Notes 24 and 25 appear to be missing. Confirm that all relevant notes are on the notes sheet.*

The most recent "Dover Site Plan Review Notes" have been included in the plan set.

- b. *Site Note 13 indicates that there is land owned by DIBDA. Please confirm what this is in reference to.*

The note has been removed from the plan set.

3. *Sheet 6:*

- a. *The driveway apron should be paved and is the responsibility of the property owner not the City.*

The driveway apron and tip down ramps are identified as asphalt.

- b. *There are stairs on all sides of the building but no pathways to connect them. Please confirm that accessible or clear paths are not required by fire code. Provide as necessary.*

The architect has confirmed additional pathways are not required.

4. *Sheet 7:*

- a. *Show inverts for all proposed structure on the plan not just the detail sheet.*

Proposed structures have been added to the drainage table.

5. *Sheet 8:*

- a. *CTS may be used from the curb stop to the building for water services.*

The proposed water line has been updated.

- b. *Will the building have submeters monitored by the Applicant? As proposed the building will receive one meter from the City.*

The location of the water meters has been added to the plan set.

6. *Sheet 12:*

- a. *The driveway apron should be paved and is the responsibility of the property owner not the City.*

A note indicating that the apron and tip downs are the responsibility of the owner has been added to the detail.

- b. *Recommend a 12" thick dumpster pad.*

Trash removal will be curbside. The dumpster pad detail has been removed.

7. *Sheet 16:*

- a. *Will the building have lighting on the exterior? If so, include it in the calculation as the points of egress around the building appear to have zero lighting.*

The lighting plan has been updated to include the existing and proposed lighting associated with the two buildings.

8. *Landscape O&M:*

- a. *Plan notes that snow shall not be stored in rain gardens which conflicts with the snow storage provided on the plans. Please adjust snow storage accordingly.*

The snow storage areas were updated and include storage in the sediment forebay.

Police:

1. *Is the proposed new residential structure subject to requirement for underground electrical connection? Overhead connection is shown on plan.*

A waiver requesting overhead connection has been submitted.

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2. *Any walkways or patios connected to proposed staircases on N, S and E sides of building? Or do they lead directly to lawn space?*

Doors lead to lawn areas.

3. *Building official will set address, but DPD supports a Locust Street address for units in the new proposed building. Some of the letters-to-serve reference "135 Locust Street" but this is incongruent with the even/odd side numbering.*

The street number was removed from the Architectural plans.

Fire/ Inspection Services:

1. *Provide location of FDC connection.*

The FDC connection location has been provided on the plan set and in the architectural drawings.

2. *Indicate location of sprinkler main and access to sprinkler room.*

The sprinkler control location has been added and the architectural plans provide access details.

3. *Add accessible parking space.*

An accessible space has been added to the plan set.

4. *Confirm slab on grade construction? Show bulkhead, suppression line location, etc.*

The project proposes a full basement. Egress window wells have been added to the plan set. The fire service line is proposed as 2" C.T.S.

5. *Building Official will advise on new address.*

Acknowledged.

Business Development:

1. *The building looks attractive, and both the building and use appear consistent with the surrounding area.*

Acknowledged.

Planning Board:

1. *None.*

CIVILWORKS NEW ENGLAND

Sincerely,



Stephen J Haight, PE



City of Dover, New Hampshire SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: 17-19 Summer Street Properties, LLC Telephone # 603-944-0516

Address of Applicant: 71 Lafayette Road Hampton Falls, NH 03844

E-Mail Address: ben@bostonnorthdevelopment.com

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

Address of Property Owner: same

PROPERTY INFORMATION

Address of Property: Locust Street

Assessor's Map # 12 Lot(s) # 35-1

Zoning District(s) HR - Heritage Residential Overlay District(s) N/A

Size of Parcel: 10,000 sq. ft. .22 ac. Property Deed: Book 4925 Page: 399

Existing Use of Property: vacant

SITE PLAN INFORMATION

Describe Proposed Use: 4 (two bedroom) Unit Building w/Parking & Driveway Easement

Area of Parcel to be Developed: 9,200± sq. ft.

If Multi-family Residential: Number of Units 4 & Buildings Proposed 1

If lodging: Number of Units N/A & number of Buildings N/A

Number of Parking Spaces: Existing 0 Proposed 8

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

Number of Employees Total: N/A In Maximum Shift: N/A

Disposition of Parcel:

Building Setbacks:

Building Footprint 2,410± sq. ft. Front Yard 20 ft.

Total Building Area 4,847± sq. ft. Rear Yard 30 ft.

Paved Area 619± sq. ft. Side Yard: Right 15 ft. Left 15 ft.

City Water? ☒ Yes ☐ No How far is city water from the property? stubbed on site

City Sewer? ☒ Yes ☐ No How far is city sewer from the property? stubbed on site

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION N/A

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

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

Relief sought (Check All That Apply):

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

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

BUILDING INFORMATION

Type of Building to be Built: Wood frame, clapboard siding, asphalt shingle roof

Height of Building: 34±' Finished Floor Elevation: 102.2'

Number of Seats (where applicable) N/A

Estimated value of construction: \$950,000 Refuse removal: Public/ **Private** (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: Article IV, Section B.(3) & Article IV, Section E.(2)(b)

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

See attached Waiver Request(s)

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney, LLS
McEneaney Survey Associates

Address P.O. Box 1166 Dover, NH 03821 Telephone #: 603-742-0911

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

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Stephen J. Haight, PE
Civilworks New England

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

Professional License #: NH PE # 7978 E-mail address: shaight@civilworksne.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) Samia Touma - Distinction by Design

Address 49 Oak Street Dover, NH 03820 Telephone #: 603-401-7294

Professional License #: _____ E-mail address: samia.distinction@gmail.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Jeffrey R. Hyland
Ironwood Design Group, LLC

Address P.O. Box 873 Exeter, NH 03833 Telephone #: 603-772-0590

Professional License #: NH #0026 E-mail address: jhyland@fewood.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Strafford County NH Web Soil Survey Data

Address _____ N/A Telephone #: N/A

Professional License #: _____ N/A E-mail address: _____ N/A

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.

Signature of Property Owner: [Signature] Date: 3/5/2024

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

Signature of Agent: [Signature] Date: 3/5/24

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: [Signature] Date: 3/5/2024

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner: [Signature] Date: 3/5/2024

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

CERTIFICATION OF FEES

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

Signature of Property Owner: [Signature] Date: 3/5/2024

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

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

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
12	35-1	17-19 Summer Street Properties, LLC	71 Lafayette Road Hampton Falls, NH 03844

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Same		

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	P.O. Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	P.O. Box 1166 Dover, NH 03821

Conservation Easement Holder: N/A

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS



City of Dover, New Hampshire SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

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

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

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

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

APPLICANT: 17-19 Summer Street Properties, LLC File Number: SITE-2024-003

PROJECT TITLE: Locust Street Residential Development

PROPERTY LOCATION: Locust Street Tax Map: 12 Lot: 35-1

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

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

REVIEWED BY: _____ DATE _____ TRC DATE _____



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: 17-19 Summer Street Properties, LLC Telephone # 603-944-0516

Address of Applicant: 71 Lafayette Road Hampton Falls, NH 03844

E-Mail Address: ben@bostonnorthdevelopment.com

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

Address of Property Owner: Same

PROPERTY INFORMATION

Assessor's Map # 12 Lot(s) # 35-1

Address of Property: Locust Street

Zoning District(s) HR - Heritage Residential Overlay District(s) N/A

Existing Use of Property: Vacant

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 a 4-unit building in the Heritage Residential District as permitted by Conditional Use Permit per Dover Zoning Regulations.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: _____

N/A

Name of Professional That Prepared Plans: Stephen Haight - Civilworks New England

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

Professional License #: NH PE # 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.

Signature of Property Owner: [Signature] Date: 3/5/2024

Signature of Applicant (if different from owner): [Signature] Date: 3/5/2024

Signature of Agent: [Signature] Date: 3/5/2024

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: [Signature] Date: 3/5/2024

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>
12	35-1	17-19 Summer Street Properties, LLC	71 Lafayette Road Hampton Falls, NH 03844

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>
Stephen J. Haight, PE	Civilworks New England	P.O. Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	P.O. Box 1166 Dover, NH 03821

Conservation Easement Holder:

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

17-19 Summer Street Properties, LLC
71 Lafayette Road
Hampton, NH 03844

March 6, 2024

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

Re: 17-19 Summer Street Properties, LLC
Tax Map 12, Lot 35-1
Locust Street - Dover, NH

LETTER OF AUTHORIZATION

As the Owner of the above referenced parcel, I, Ben Perez, Member of 17-19 Summer Street Properties, LLC, hereby authorize Civilworks New England to represent all applications before the City of Dover Planning Board and any other Dover Boards or Committees, and the State of NH, if necessary, to obtain the required permits and/or approvals relative to this development project.

Respectfully,



Ben Perez, Member
17-19 Summer Street Properties, LLC

WAIVER REQUEST
for
17-19 Summer Street Properties, LLC
SITE REVIEW APPLICATION
Tax Map 12, Lot 35-1
Locust Street

CITY OF DOVER
SITE PLAN REVIEW REGULATIONS
ARTICLE IV

§ 153-14. B. Utilities

- (3) Electric, cable television and telephone. The installation of electric power, cable television and telephone lines shall be underground throughout the site for which development is proposed. Site plans shall show any easements for these services.

Per Eversource request, overhead services are necessary due to the areas being densely developed with a significant amount of existing and abandoned services (water, sewer, communication vault, gas, etc.) located in the Locust Street right of way. All Properties within this neighborhood are served by overheard utilities.

WAIVER REQUEST

for

17-19 Summer Street Properties, LLC

SITE REVIEW APPLICATION

Tax Map 12, Lot 35-1

Locust Street

CITY OF DOVER SITE PLAN REVIEW REGULATIONS ARTICLE IV

§ 153-14. E. Outdoor lighting.

(2) Parking lot lighting. Parking lot lighting shall be designed to provide the minimum lighting necessary to ensure adequate vision and safety in parking areas, and to not cause glare or direct illumination onto adjacent properties or streets.

Parking lot lighting has been minimized to avoid site lighting from being visible from abutting residential properties. The proposed lighting sufficiently illuminates the parking area towards the rear of the subject lot, while the existing street lighting will provide some lighting for the parking area towards the front of the lot. This minimization will still provide adequate vision and safety in the parking area.

PROJECT NARRATIVE

for
17-19 Summer Street Properties, LLC
Site Plan Review & Conditional Use Permit
Locust Street Residential Development
Tax Map 12, Lot 35-1

PROJECT OVERVIEW & SITE CHARACTERISTICS

The proposed project is for a multi-unit residential development on a 0.22-acre undeveloped parcel of land located on the easterly side of Locust Street located in the Heritage Residential (HR) District. The proposed site design includes the construction of a four-unit building, each unit consisting of 2 bedrooms, a shared driveway and parking area and the associated utility and drainage improvements in support of the project. Four-unit dwellings are permitted in the HR District with an approved Condition Use Permit. A Conditional Use Permit application has been submitted with the application materials. The project also proposes shared access and parking with the abutting parcel, Tax Map 12, Lot 35, which includes an existing three-unit dwelling.

The architectural design of the proposed building, the replacement of concrete sidewalk with a brick sidewalk, and improved landscaping ensure the development fits the character of the existing neighborhood.

The proposed site will include public water and sewer connections, electric and communication service, natural gas service (is accessible), and associated drainage improvements.

The project site consists of the following general improvements:

- Clear the site, as necessary, for construction.
- Construction of 1 building containing 4 units, associated parking, and landscaping.
- Construction of on-site stormwater detention and treatment system, grading, and other drainage requirements.
- Site utility construction & installation.
- Stabilize remaining areas with loam and seed.

DRIVEWAY AND PARKING LOT

The project proposes access to the site through a shared 24' wide driveway located on Locust Street. The driveway location is on the abutting parcel, Tax Map 12, Lot 35, and will utilize the existing driveway cut for the abutting property. The shared access drive will provide the necessary parking for the proposed 4-unit multi-family dwelling as well as two of the units in the existing 3-unit multi-family dwelling and will prevent vehicles from having to back out into Locust Street. The third unit, in the existing 3-unit building, has separate off-street parking, which is located on Summer Street. The project provides 12 combined parking spaces for the proposed 4-unit and existing 3-unit multi-family dwellings. The project will be granted easements to allow for access and parking on the abutting parcel. The parking area lighting will consist of a pole mounted LED fixture that is dark sky compliant.

WETLAND SETBACK IMPACT TYPE

There are no wetlands present on this site.

DRAINAGE

The parcel is located on the east side of Locust Street, approximately mid-way between the intersections of Locust Street with Silver Street and with Summer Street. The parcel is bound by a residential property to the north, a multi-family dwelling to the south, the Woodman Institute to the east and Locust Street to the west. The parcel has an existing 12" HDPE drain line stubbed to the property; it is connected to the City's existing closed drainage system located in Locust Street. The site is undeveloped and primarily consists of lawn, landscaped areas, and a few mature trees. The parcel is fairly level and slightly slopes away from Locust St. towards the abutting parcel. There are no wetlands onsite and soils are identified as Windsor loamy fine sand, clay subvariant. Field data from the site includes 3 test pits and 3 borehole infiltration tests. Review of this data concluded that the onsite soil is not conducive to infiltration based best management practices nor is it capable of meeting the groundwater recharge requirements of the City of Dover.

The 0.45± acre hydrologic analysis includes the subject parcel as well as 0.23± acres from the abutting property to the south. The analysis of the existing conditions incorporated the onsite grassed areas as well as offsite areas of grass, gravel, and roof. In the existing condition, stormwater from the site, from the edge of Locust Street, and a portion of the abutting parcel, drain easterly to an abutting parcel. Once exiting the site, the discharge continues through the property of the Woodman Institute and then discharges into the City's closed drainage system located in Central Avenue.

The project proposes the construction of a four-unit multi family dwelling, an improved entrance and parking area (that will be shared with the abutting three-family multi family dwelling), and the associated utility and drainage improvements. The project does not meet the requirements associated with a re-development project and as such, the City's new development standards apply. The stormwater design captures 100% of the proposed onsite and 100% of the offsite impervious area (that flows onto the site) and directs it to a best management practice that provides pollutant removal that exceeds the City's requirements. This project effectively treats 3,500± SF of previously untreated predevelopment impervious area. The site's poor soil characteristics are not conducive to infiltration and as such the project proposes increase to volume and flow of stormwater from the proposed site. The stormwater design maximizes the amount of onsite storage to minimize the increase in flow and captures the stormwater so as to redirect it into the City's closed drainage system as opposed to overland to the abutter. The proposed development of the site will have minimal impact on the watershed.

TRAFFIC

A traffic assessment was completed for the project and is attached as a report to this submittal. Overall, and as expected, there is a minimal increase in traffic as a result of the proposed development.

UTILITIES

The proposed project will connect to existing City of Dover water and sewer lines that have been stubbed to the property line. The property also has an existing 12" HDPE drainage pipe stubbed to the site that connects to the existing closed drainage system located in Locust Street. Existing electric and communication services as well as a natural gas line are currently located on Locust Street. Building and utility connections will be made per the City's Community Services Utility Division and Fire Department requirements and standards.

CONDITIONAL USE NARRATIVE
§170-20.B(2) & B(3)
HERITAGE RESIDENTIAL DISTRICT
for
LOCUST STREET RESIDENTIAL DEVELOPMENT
LOCUST STREET
Tax Map 12, Lot 35-1

Per the Heritage Residential (HR) District Regulations creation of a 4-family dwelling in the HR District is allowed with a Conditional Use Permit that meets the requirements of §170-20.B(2) and B(3).

- (2) Conditional use approval for relief from the use standards herein may be granted by the PLANNING BOARD (RSA 674:21 II) after proper public notice and public hearing provided that the proposed project complies with the following standards:

- (a) The requested use shall be compatible with abutting uses and the surrounding NEIGHBORHOOD.

The surrounding neighborhood has several multi-family dwellings. The buildings architecture is designed to maintain the traditional look of the neighborhood. The project also proposes the replacement of the existing concrete sidewalk with a traditional brick sidewalk in front of the lot to better fit the character of the neighborhood.

- (b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

The proposed project will not create undue traffic congestion or impair pedestrian safety in the vicinity. The project proposes improvements to the area by providing off-street parking for the proposed 4 – unit building and will also include improved off-street parking for 2 of the units in the existing 3 – unit building located on the abutting parcel. The two parcels will share the combined off-street parking which will prevent vehicles from having to back out onto Locust Street.

- (c) The requested use will not result in objectionable noise or odor which would constitute a NUISANCE.

The proposed project is residential, is consistent with the uses of surrounding properties, and will not result in objectional noises or odors.

- (3) Conditional use approval shall be subject to a formal agreement between the PLANNING BOARD and the APPLICANT. Said agreement shall be recorded at the Strafford County Registry of Deeds.

A development agreement between the City and the Owner shall be recorded with the SCRD.

Conversion to, or creation of Dwelling, 3-4 Family: Three- or four-family dwellings and conversions of existing dwellings to three (3) or four (4) units shall be subject to the following regulations:

- A. The specific site must have an amount of open space, either landscaped or left natural, at least equal to the average amount of open space on all developed lots in the HR District that are wholly or partly within two hundred (200) feet of the subject parcel. Existing parking areas, either gravel, paved or unpaved, shall not be considered to be open space.

Open space calculations were performed for all developed lots within the HR District and wholly or partially located within 200 feet of the subject parcel. The calculation indicates that the neighborhood has an average open space of approximately 57%. The project proposes an open space area of 63.4% which is greater than the neighborhood average.

- B. Off-street parking, in accordance with Chapter 153, Site Review, shall be provided to avoid vehicles backing into the street. Two (2) parking spaces per unit shall be required.

The project proposes improvements to the area by providing off-street parking for the proposed 4 – unit building and will also include improved off-street parking for 2 of the units in the existing 3 – unit building located on the abutting parcel. The two parcels will share the combined off-street parking which will prevent vehicles from having to back out onto Locust Street. Off-street parking is in accordance with Chapter 153 of the Site Review regulations.

- C. Parking lots shall be at least five (5) feet from a side property line and ten (10) feet from a front property line.

The proposed parking area is greater than 10 feet from the front property line. The shared parking lot crosses over the side property line and will be identified with the appropriate easements.

- D. Parking areas shall be screened from the street and from abutting lots.

The parking area is screened from the street with existing hedgerows and additional landscaping.

- E. Structures shall be at least twenty (20) feet from a front property line, thirty (30) feet from a rear property line and fifteen (15) from a side property line unless abutting a street, in which case, the distance from the side property line shall be twenty (20) feet.

The building meets the necessary setback requirements.

- F. For new construction, the building must be designed to look like a SINGLE-FAMILY DWELLING. At a minimum, this shall mean that only one entrance shall be visible from a public street. For conversions, the building must retain its appearance as a SINGLE-FAMILY DWELLING or a 2-family dwelling, whichever is the current use. Notwithstanding any other provision of Chapter 170, a legal or legal non-conforming accessory structure existing as of the effective date of these regulations may be converted into one or more residential units, provided that the building shall not be enlarged, nor shall any exterior improvements be made to alter its appearance as an accessory structure.

The architectural plans are provided to indicate conformance with these requirements.

SITE DEVELOPMENT DESIGN CRITERIA NARRATIVE
§153-14
STORMWATER MANAGEMENT
for
Locust Street Residential Development
Locust Street
Tax Map 12, Lot 35-1

A. Stormwater management, erosion control and flood hazards.

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

(a) Managing stormwater runoff to protect water quality and quantity. **The proposed development has been designed in accordance with NH DES AoT permitting requirements to include the treatment and mitigation of stormwater runoff from the site. Site limitations prevent the infiltration of stormwater and as such the project proposes minimal increases in volume and flow.**

(b) Minimizing the contribution of a pollutant for which a water body is impaired to the maximum extent practicable (MEP). **The proposed development has been designed in accordance with NH DES AoT permitting requirements to include the treatment of stormwater runoff from all impervious areas of the site as well as the effective treatment of 3,500+/- sf of offsite predevelopment area to minimize pollutant runoff.**

(c) Causing no discharge of runoff to an adjacent property in excess of runoff discharge in the existing developed or undeveloped condition. **The proposed development proposes a minimal increase in volume and the 2- and 10-year flow. The proposed development redirects all stormwater runoff from an abutting parcel to the City's closed stormwater system.**

(d) Encouraging the use of low-impact development (LID) strategies. **The project proposes the use of a bioretention practice for stormwater treatment.**

(2) Applicability of the stormwater standards.

(a) All projects requiring site plan or major subdivision approval shall be subject to the following set of stormwater standards according to the amount and type of disturbance. Applicability is as follows: **The project does not qualify for the redevelopment standards and will create greater than 4,000 square feet of impervious, as such, the stormwater standards apply.**

[1] The minimum protections and management standards shall apply to all projects. **The design incorporates these standards.**

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

[3] The stormwater management for redevelopment standards shall apply to any project that results in a contiguous land disturbance of more than 20,000 square feet or creates more than 4,000 square feet of new impervious area where the existing land use has been previously developed as commercial, industrial, institutional, governmental, recreational, or multifamily. **The redevelopment standards are not applicable to this project.**

(b) All projects of such magnitude as to require a permit from the National Pollutant Discharge Elimination System (NPDES) Program or the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain (AoT) Program shall also comply with the standards of the Environmental Protection Agency (EPA) and/or NHDES permits and this section, whereas the stricter standards shall apply. **The project does not require NH DES AoT permitting or a NPDES CGP through the EPA. Although the permits are not required, the design of the project has incorporated the associated standards of these agencies.**

(3) Design standards.

(a) Minimum protections and management standards.

[1] Where applicable, all development must comply with the EPA Phase II Stormwater Rules and the City's MS4 permit, as amended. **The project complies with the City's design and stormwater requirements.**

[2] Existing surface waters, including ponds, rivers, perennial and intermittent streams (natural or channelized), and wetlands (including vernal pools), shall be protected by the minimum buffer setback as specified in Chapter 170, Zoning, § 170-27.1. Stormwater and erosion and sediment control best management practices (BMPs) shall be located outside the specified buffer zone unless otherwise approved by the Planning Board. **The project does not propose any work in a wetland or wetland buffer zone.**

[3] Low-impact development (LID) site planning and design strategies shall be used to the MEP in order to reduce the generation of the stormwater runoff Volume for both new and redevelopment projects. An owner/applicant must document why LID strategies are not appropriate if not used to manage stormwater. **LID strategies were implemented to the maximum extent practicable. The site was evaluated for infiltration practices but the site characteristics and depth to the SHWT prevent the use of infiltration practices.**

[4] All proposed stormwater practices and measures shall be installed and maintained in accordance with manufacturers' specifications and performance specifications outlined in the New Hampshire Stormwater Management Manual Volume 2 (December 2008 or current revision) a copy of which can be found on The NHDES website. **The project incorporates stormwater BMPs designed in accordance with NH DES requirements. A stormwater I&M is also provided.**

[5] All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials shall meet the regulations of the NHDES, including but not limited to those involving underground storage tanks, aboveground storage tanks, hazardous waste, and best management practices for groundwater protection (Part Env Wq 401). **The project is residential and does not propose the storage of the referenced materials onsite.**

[6] Salt and other deicing materials shall be stored under cover or located such that no direct discharges to receiving waters are possible. Snow storage areas shall be located such that no direct discharges to receiving waters are possible. See the NHDES guidance fact sheet on road salt and snow disposal. **The project does not propose the storage of deicing materials onsite.**

[7] The use of sodium-chloride-based materials for winter maintenance shall be the minimum necessary for safety. The use of sodium-chloride-based materials is discouraged within the groundwater protection districts. **The project I&M manual directs the owner/operator to produce a salt minimization plan as part of the winter maintenance of the site.**

[8] Impervious surfaces for parking areas and roads shall be minimized to the extent possible. **The project design incorporated the minimization of impervious areas to the maximum extent possible. All aspects of the design including the required number of parking spaces, drive aisle width, and turning areas were evaluated.**

[9] Stormwater runoff from new impervious surfaces shall be directed to a best management practice for flow mitigation, treatment and/or infiltration. **The proposed development has been designed in accordance with NH DES AoT permitting requirements to include the treatment of stormwater runoff from all impervious areas of the site as well as the effective treatment of 3,500+/- sf of offsite predevelopment area to minimize pollutant runoff.**

(b) Stormwater management for new development.

[1] Runoff of impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus. Removal rates shall be determined using approved manufacturer's pollutant removal efficiency analysis or the pollutant removal efficiencies outlined in the New Hampshire Stormwater Management Manual Volume 1, Appendix E (December 2008 or current revision), a copy of which is available from the NHDES website. **The project utilizes a bioretention basin for treatment of all impervious areas on site and the areas of offsite impervious that flow through the watershed. This system provides 90% removal of TSS and 65% removal of both total nitrogen and phosphorus per the NH Stormwater Manual.**

[2] Rainfall amount shall be based on current extreme precipitation estimates obtained from the Northeast Regional Climate Center. **The design incorporates NRCC precipitation amounts and the associated storm distribution data.**

[3] Measures shall be taken to control the post-development peak rate runoff so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events. **The proposed design mitigates post-development peak rate runoff of the 25- and 50-year storm events. The site limitations, including poor soil characteristics and inadequate space for stormwater retention, prevent the project from being able to mitigate an increase in flow for the 2- and 10-year storm events. The project proposes minimal increases of 0.2 and 0.1 cfs during the 2- and 10-year storm events respectively. The proposed increases will not negatively affect the system.**

[4] Measures shall be taken to control the post-development surface water runoff volume so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events. For sites where infiltration/recharge is limited or not practicable, the owner/applicant must demonstrate that the project will not cause or contribute to flooding or functional impairments to streets, adjacent properties, and downstream properties. **The site was evaluated for the inclusion of infiltration practices but the poor soil characteristics and depth to seasonal high-water tables, prevent incorporating infiltration practices. The project proposes an increase in the volume of runoff from the site of less than 0.03 acre-feet. The small increase in volume of runoff will be discharged directly to the closed drainage system to prevent additional volume being discharged to the abutting lot. The increase in volume will not cause flooding to adjacent or downstream properties and will not cause functional impairments to the closed drainage system in Locust Street.**

[5] Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14. **The site was not feasible for infiltration practices and as such infiltration rates were not calculated.**

[6] Stormwater conveyance practices shall be sized appropriately to convey the ten-year, twenty-four-hour storm event without overtopping or causing flooding on the property. **Stormwater conveyance practices are designed to ensure they pass the 50-yr, 24-hour storm events without overtopping.**

[7] For large projects adding greater than or equal to 10 acres of impervious cover, or projects located in known areas of flooding concern, or specifically within areas with a 1% chance of being inundated by water in any given year, the owner/applicant shall submit a supplementary report that describes how the project will not increase the future flooding potential and complies with the AoT requirements pertaining to floodplain impacts as described in Section Env-Wq 1503.09, regardless of whether an AoT permit is required. **The project is located outside of the 0.2 percent annual chance floodplain. The project does not propose permanent or temporary disturbance or alteration of terrain within the flood plain.**

[8] The design of the stormwater management systems shall take into account upstream and upgradient runoff that flows onto, over, or through the site to be developed or redeveloped and provide for this contribution of runoff. **The project has incorporated offsite and upgradient stormwater runoff in support of the design for the bioretention pond and closed drainage system.**

[9] Seasonal high-water table elevations must be accounted for in all BMP design criteria. **Test pit information and design intent (underdrained system) were utilized in determining the SHWT associated with the bioretention basin design.**

[10] Access for maintenance of stormwater facilities must be included as part of the design, where necessary. Access easements may be required. **Stormwater facilities are included on site and the site will be solely owned by the applicant. Stormwater access easements are not required for this project.**

[11] Plantings in treatment areas shall be native grasses, shrubs and/or other native plants in sufficient numbers and density to prevent soil erosion and to achieve water-quality treatment. **A licensed Landscape Architect has produced a site-specific planting plan and O&M document in support of site revegetation including the stormwater BMP(s).**

(c) Stormwater management for redevelopment. In order to determine the stormwater requirements for redevelopment projects, the percentage of the site covered by existing impervious areas must be calculated. Stormwater requirements for redevelopment will vary based upon the amount of site surface area that is covered by existing impervious surfaces. **The project does not meet redevelopment requirements and this section is Not Applicable (N/A).**

[1] For sites meeting the definition of a redevelopment project and having less than 40% existing impervious surface coverage, the stormwater management requirements will be the same as new development projects, with the important distinction that the applicant can meet those requirements either on site or at an approved off-site location (i.e., off-site mitigation). The applicant must satisfactorily demonstrate that impervious area reduction, LID strategies and BMPs have been implemented on site to the MEP. **N/A**

[2] For sites meeting the definition of a redevelopment project and having more than 40% existing impervious surface coverage, stormwater shall be managed in accordance with one or more of the following techniques, listed in order of preference: **N/A**

[a] Implement measures on site that result in mitigation and treatment of at least 30% of the existing impervious cover as well as 50% of the additional proposed impervious surfaces and pavement areas through the application of LID; or

[b] Implement other LID techniques on site to the MEP to provide mitigation and treatment for at least 50% of the entire site area.

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

[a] The owner/applicant shall demonstrate, to the satisfaction of the Planning Board, that on-site treatment has been implemented to the MEP.

[b] The owner/applicant shall find an approved, off-site location within the same watershed as the project site or within the drainage area of the same receiving water body.

[c] Off-site mitigation shall be equivalent to no less than the total area of pervious cover not treated on site.

[d] The owner/applicant shall submit a full design of the proposed off-site measures for review and approval.

[e] The owner/applicant must also demonstrate that there is no downstream drainage or flooding impact as a result of not providing on-site management.

(d) Erosion control standards during construction. The following standards shall be applied in project planning and shall be implemented prior to and during construction activity: **The plan set includes temporary and permanent sediment and erosion control practice notes and details in support of meeting the erosion control standards.**

[1] All proposed measures shall meet, at a minimum, the design standards for best management practices set forth in the New Hampshire Stormwater Management Manual Volume 3 (December 2008 or current revision), a copy of which is available from the NHDES website. **The sediment and erosion control details provided in the plan set are all designed in accordance with the NH Stormwater Manual.**

[2] When a project requires a stormwater permit from the EPA Construction General Permit (CGP) Program, copies of the stormwater pollution prevention plan (SWPPP) inspections shall be provided to the Community Services Department. **A SWPPP will not be required as the project will not meet the area of disturbance criteria.**

[3] Stripping of vegetation shall be done in a manner that minimizes soil erosion. Whenever practical, natural vegetation shall be retained, protected, or supplemented. **The Erosion Control Notes in the provided plan set indicate that the smallest practical area shall be disturbed during construction.**

[4] The area of land disturbance shall be kept to a minimum and be limited to an area only large enough to accommodate construction activities for a particular construction phase. **The Erosion Control Notes in the provided plan set indicate that the smallest practical area shall be disturbed during construction.**

[5] Off-site surface water and runoff from undisturbed areas shall be diverted away from disturbed areas where feasible, or measures to convey stormwater through the project area without causing erosion of sediment must be included. The integrity of downstream drainage systems shall be maintained. **Direction to ensure that stormwater conveyance practices shall be stabilized prior to receiving stormwater runoff is included on the Erosion Control Notes sheet provided as part of this submittal.**

[6] Appropriate erosion and sediment control measures shall be installed prior to any soil land disturbance and must be reviewed and approved by the Community Services Department. **Construction scheduling and inspections will be discussed with Community Services at the required pre-construction meeting.**

[7] Perimeter site controls shall not be placed within wetland areas, stream channels or wetland buffers. **This project does not propose any work in a wetland or a wetland buffer.**

[8] Disturbed soil areas shall be either temporarily or permanently stabilized. In areas where final grading has not occurred, temporary stabilization measures should be in place within seven calendar days for exposed soil areas that are within 100 feet of a surface water body or a wetland and no more than 14 calendar days for all other areas. Permanent stabilization should be in place within three calendar days following completion of final grading of exposed soil areas. **The definitions of, and direction for, stabilization of the site is provided on the Erosion Control Notes sheet provided as part of this submittal.**

[9] All temporary erosion and sediment control measures shall be maintained in functioning condition until final site stabilization is accomplished. A proposed BMP inspection schedule shall be included in the submittal. **The erosion control inspection scheduling requirements are identified on the Erosion Control Notes sheet provided as part of this submittal.**

[10] Additional temporary stabilization for the winter season consistent with NHDES guidelines shall be in place for disturbed areas that are not permanently stabilized by October 1, or at the discretion of the Community Services Department. **The NH DES AoT winter construction notes are identified on the Erosion Control Notes sheet provided as part of this submittal.**

[11] Special stabilization details shall be provided with the submission for any land disturbance on slopes equal to or steeper than 3:1. **Slopes greater than 3:1 require erosion control matting and/or armoring and those details are provided in the plan set.**

[12] All temporary erosion and sediment control measures shall be removed after final site stabilization. Trapped sediment and other disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized within 30 calendar days unless conditions dictate otherwise. **Temporary practice details identify the need to remove sediment and/or stabilize the area once the practices have been removed.**

[13] For projects proposing to disturb and expose soils in areas of 10 acres or more at one time, a temporary (or permanent) sediment basin must be provided with storage for a calculated volume of runoff from a drainage area from a two-year, twenty-four-hour storm, or equivalent control measures, where attainable, until final stabilization of the site. Alternatively, the sediment of storage per acre of drainage area until final stabilization of the site. In determining appropriate locations and number of sediment basins needed, the operators may consider such factors as erodibility of site soils, slope lengths, available area on site, construction period and other unique site considerations. **The project does not propose the disturbance of greater than 10 acres of area. A temporary sediment trap detail, designed with a maximum contributing area of 5 acres, has been provided in accordance with NH DES AoT design requirements.**

[14] Use of temporary sediment basins should avoid any additional vegetation clearing or site land disturbance not otherwise needed for post-construction. Sediment basin locations must be reviewed by the Community Services Department prior to construction and must consider the potential for off-site impacts, including public safety, especially as it relates to sediment movement and/or sediment basin failure, and alternative sediment controls must be used where site limitations preclude a safe design. **Temporary sediment basin locations, if constructed, will be discussed with Community Services prior to the construction of the practices.**

(e) Installation and construction inspections. The owner/applicant shall be responsible for inspection requirements as follow:

[1] The Community Services Department or its designated agent shall have access to the site to complete routine inspections. **Community Services access and inspection requirements will be discussed at the pre-construction meeting.**

[2] The Community Services Department shall be notified 24 hours prior to installation of a stormwater BMP in order to schedule an inspection. These inspections shall be completed during normal working hours. **The project notes provide direction for the contractor to notify the design engineer and the Community Services Department as required.**

[3] The Planning Board or Community Services Department may require the design engineer and/or an independent third party to provide inspection and oversight of the construction of the stormwater management facilities and erosion and sediment control measures at its discretion. Such oversight may be especially important for implementing techniques such as porous pavement or subsurface stormwater infiltration systems. The owner/applicant shall be responsible for all fees associated with third-party inspections. **A letter can be provided if requested. This letter, if required, will be discussed at the pre-construction meeting.**

[4] All SWPPP inspections must be conducted by a qualified professional such as a professional engineer (PE), a certified professional in erosion and sediment control (CPESC), a certified erosion sediment and stormwater inspector (CESSWI), or a certified professional in stormwater quality (CPSWQ). Inspection reports shall be submitted to the Community Services Department. **The project notes provide direction for the inspector to be qualified and for all reports to be submitted to the Community Services Department.**

[5] The owner is ultimately responsible for the installation, construction, inspection, and disposition of all stormwater management and erosion control measures required by the provisions of these regulations. **The project notes identify the owner as having the responsibility for ensuring the stormwater management and erosion control measures are installed as approved.**

(f) Stormwater management plan (SWMP) submittal requirements. At the discretion of the Planning Board or Community Services Department, a technical review by an independent third party may be required of any SWMP prepared under these regulations. Such a review shall be performed by a qualified professional consultant and the expense of which shall be the full responsibility of the owner/applicant. **The SWMP is a comprehensive set of documents that include, at a minimum, a drainage report, plan set, and Stormwater I&M Manual. These documents each serve a role in presenting the necessary information to the appropriate audience. The information required in this section is provided within the SWMP documents.**

[1] For projects requiring minimum protection standards, a plan including the following information shall be submitted:

[a] Description of erosion and sediment control measures as well as sequence for final stabilization of the project site. **This information is provided within the Erosion Control Notes within the plan set.**

[b] Proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns. **This information is provided within the drainage report and the Pre/Post Development Watershed Plans.**

[c] Description of LID proposed measures. **This information is provided in the drainage report and throughout the plan set and details.**

[2] For projects requiring new development or redevelopment standards, a drainage report that contains the following items shall be submitted: **The SWMP documents include the proposed information when applicable.**

[a] Description of construction period and earth movement schedule, including anticipated project start and completion dates, sequence and duration of grading and construction activities, sequence, and timing of installation and/or application of soil erosion and sediment control measures as well as sequence for final stabilization of the project site. **The SWMP documents include the proposed information when applicable.**

[b] Description of the on-site and adjacent wetlands, streams and other water resources, including methods used to identify these resources, and a description of any buffer setbacks that may apply, steep slopes, critical habitat, existing vegetation, areas with a 1% chance of being inundated by water in any given year, and whether any downstream water bodies are listed as impaired according

to NHDES's most recent 303(d) list. **The SWMP documents include the proposed information when applicable.**

[c] Soils information for proposed disturbed areas shall be delineated by a certified soil scientist. For all other areas that contribute runoff to the project site, soil types may be identified in accordance with Natural Resources Conservation Service (NRCS) countywide soil survey. **The SWMP documents include the proposed information when applicable.**

[d] Description of existing drainage patterns, receiving water bodies or drainage infrastructure and soil types for recharge potential. **The SWMP documents include the proposed information when applicable.**

[e] Watershed area limits, including any off-site and upstream areas contributing flow to shared drainage channels and/or infrastructure. **The SWMP documents include the proposed information when applicable.**

[f] Description of proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns. **The SWMP documents include the proposed information when applicable.**

[g] Methods and assumptions used to calculate pre- and post-development runoff volume, peak discharge, and discharge velocity for the specified design storm events. **The SWMP documents include the proposed information when applicable.**

[h] Methods and assumptions used to calculate the pollutant load removal. **The SWMP documents include the proposed information when applicable.**

[i] Description of LID measures that are proposed to limit the development footprint, preserve existing vegetation and mimic existing hydrology to the extent feasible. **The SWMP documents include the proposed information when applicable.**

[j] If not used, provide rationale why LID measures are not practical for the site. **The SWMP documents include the proposed information when applicable.**

[k] Describe measures and calculations for proposed practices used to achieve no net increase in runoff volumes leaving the site. **The SWMP documents include the proposed information when applicable.**

[l] Provide calculations for the infiltration or exfiltration system. **The SWMP documents include the proposed information when applicable.**

[m] If an increase in post-development runoff volume is anticipated due to limited applicability for LID measures and site constraints, provide an assessment and supporting calculations to demonstrate no adverse impacts to downstream infrastructure, adjacent properties, or aquatic habitat. **The SWMP documents include the proposed information when applicable.**

[n] Descriptions, details, and design criteria and calculations for all structural, nonstructural, permanent, and temporary erosion and sedimentation control measures and BMPs. This information should include seeding mixtures and rates, types of sod, methods of seedbed preparation, expected seeding dates (or

limitations on seeding time frames), type and rate of lime and fertilizer application, and type and quantity of mulching for temporary and permanent control facilities. **The SWMP documents include the proposed information when applicable.**

[o] Where proposed changes are anticipated within mapped limits of the areas with a 1% chance of being inundated by water in any given year, provide hydrologic and hydraulic analysis to show no net increase in flood elevations. **The SWMP documents include the proposed information when applicable.**

[p] Proposed schedule for the inspection and maintenance of all erosion control measures on site prior to achieving final site stabilization. **The SWMP documents include the proposed information when applicable.**

[q] Describe procedures for removing temporary erosion control measures and removal of accumulated sediment captured by such measures. **The SWMP documents include the proposed information when applicable.**

[r] Any other specific study, calculation, or investigation as requested by the City. **Additional information is provided as requested and may include traffic studies, structural designs, septic/sewer designs, geotechnical reports, etc. These documents are provided on a case-by-case basis and as requested by the City.**

[s] Describe procedures to limit and/or optimize the use of deicing materials and minimize off-site increases in chloride levels in adjacent surface water and groundwater. **The Stormwater I&M Manual includes the implementation of a salt minimization plan.**

[t] Provide a maintenance and inspection plan for post-construction monitoring of stormwater BMPs to ensure long-term performance and functionality, including details of who will be responsible for inspections and maintenance, proposed schedule, documentation, submittal procedures and contingency plans if future maintenance is required. **A Stormwater I&M Manual is provided as part of the submission.**

[u] Provide copies of pertinent state and federal permits. **Copies of permits will be provided to the City, as applicable.**

(g) Long-term operation and maintenance. The owner shall be responsible for continued inspection and maintenance requirements. **An I&M Manual that identifies the owner's responsibilities has been provided as a part of the submission.**

[1] An operation and maintenance manual shall be created with the following information:

[a] The names of the responsible qualified professionals who will implement the required reporting, inspections, and maintenance activities. **The Owner, Responsible Party, and the Management Company are identified in the I&M Manual.**

[b] An inspection checklist, identifying item or BMP, inspection frequency, and components to be inspected. The list shall clearly outline performance thresholds and triggers for maintenance. **Inspection requirements and maintenance thresholds are identified in the I&M Manual.**

[c] Snow and ice removal shall be performed by a contractor certified by the "Green SnoPro" Program, or approved equivalent, following best management practices for the application of deicing materials. **The I&M Manual requires the use of a Green SnowPro contractor.**

[d] Deicing log to track amount and type of deicing material applied. **The I&M Manual requires the implementation of a salt minimization plan that also requires the owner or operator to track salt usage onsite through a quantity usage log.**

[e] A site plan clearly identifying the locations of all stormwater practices to be inspected and maintained. **The approved Grading and Drainage Plan accompanies the I&M Manual.**

[f] Inspection and maintenance log to be submitted to the City of Dover Community Services Department on an annual basis. Documents shall be submitted no later than December 15 of each year. **The I&M Manual identifies this requirement.**

[2] The owner of record shall record at the Registry of Deeds documentation sufficient to provide notice to all persons that may acquire any property subject to the requirements and responsibilities described in the approved stormwater management plan. The notice shall comply with the applicable requirements for recording contained in RSA 477 and 478. The notice need not set forth the requirements at length, so long as it is sufficient to provide notice to prospective purchasers of the requirements for maintenance and reporting. **Not Applicable.**

From: Mark Beaudry
Sent: February 29, 2024
To: Mavrogeorge, Kenneth <K.Mavrogeorge@doover.nh.gov>
Cc: Steve Haight <shaight@civilworksne.com>; Joseph Griffin <jgriffin@civilworksne.com>
Subject: CNE 23029 – 135 Locust Street, Dover, NH 03820
Attachments: 23029 – 135 Locust St, Dover – Locus and Utility Plans Draft (2-23-24).pdf

Hello Ken: The developer for 135 Locust Street is proposing to build four two-bedroom residential apartments in a single building. Attached is a 2-sheet PDF containing our locus and utility plans that depicts the location, site layout of the buildings and anticipated utility services.

The project total design flow is estimated to be as follows:

- 4 Apartment Units x 2 Bedrooms/ unit = 8 bedrooms total
- 8 Bedrooms x 150 GPD/bedroom = 1,200 GPD Total

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

Please provide us with correspondence that states as required, that the City can provide water and wastewater service to this building.

If you have any questions or require more information, please do not hesitate to get back to us.

Thank you for your assistance on these projects.

Mark

Mark Beaudry, PE
Senior Associate/Sr. Project Manager
Civilworks New England
C: (413) 325-3384
O: (603) 749-0443 x113



April 1, 2024

Mark E. Beaudry, PE
Civilworks New England
181 Watson Road, P.O. Box 1166
Dover, NH 03821

1700 Lafayette Road
Portsmouth, NH 03801

Trevor S Emmons
603-332-7515
Trevor.emmons@eversource.com

Dear Mark:

I am responding to your request to confirm the availability of electric service for the proposed residential project located in Dover NH being constructed for/by 17–19 Summer Street Properties, LLC.

The proposed project consists of a single 3-story building (including attic bonus space), with four (4) residential units. The proposed development will be constructed along 135 Locust Street.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The service will be as shown on attached marked up plan titled "Utility Plan - Locust Street Residential Development" dated 2/29/2024 prepared by Civilworks New England". The proposed building service will be fed from Locust Street as at a location determined by Eversource Engineering. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead 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 Utility Plan shows the electric service information, including any transformer location(s), 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>).

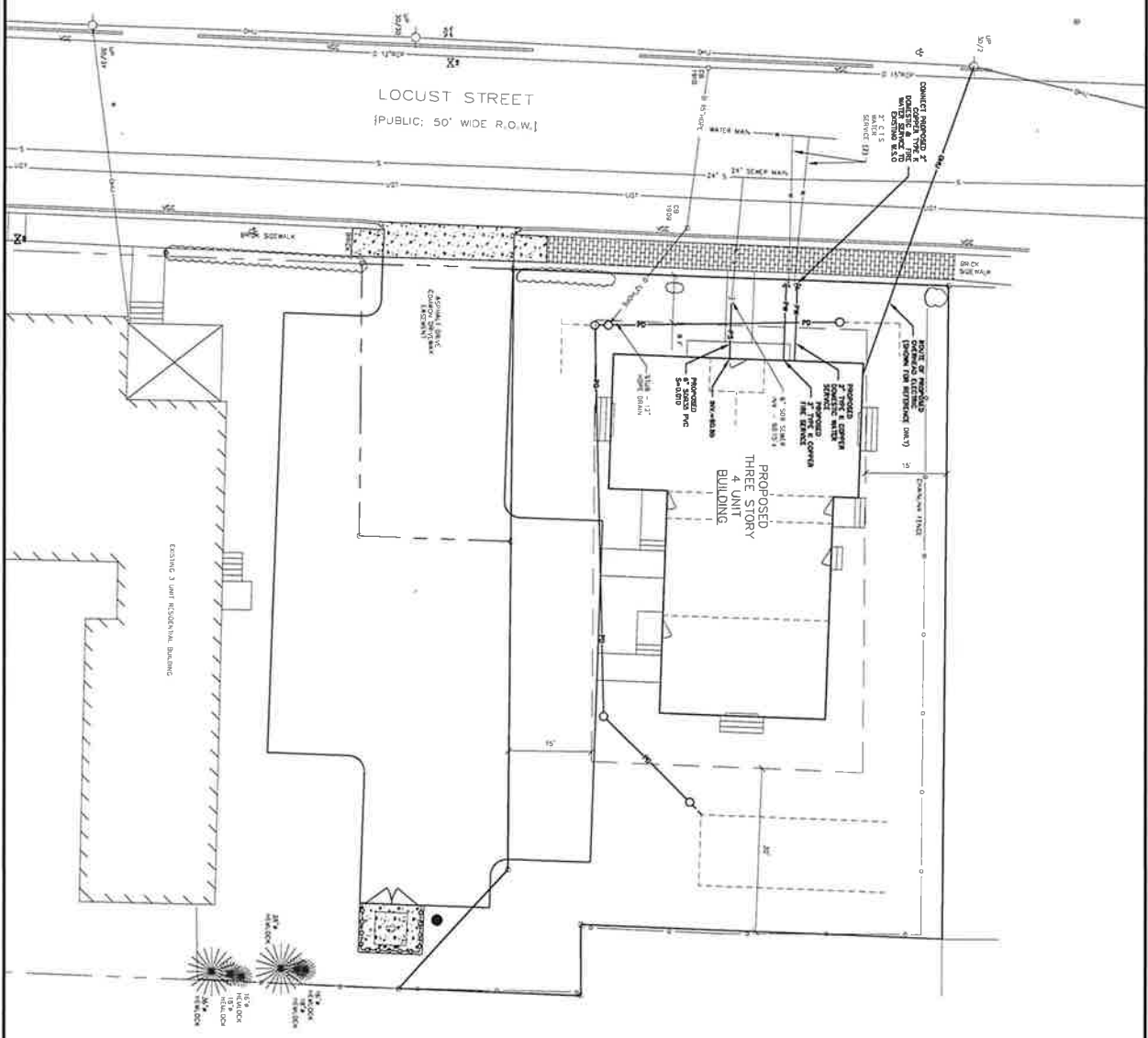
If you require additional information or I can be of further assistance please do not hesitate to contact me at our Rochester Office, 603-332-7515

Respectfully,

A handwritten signature in dark ink, appearing to read "Trevor Emmons", with a horizontal line extending to the right.

Trevor Emmons
Eastern Regional Engineer, Eversource

cc: Michael J. Busby, PE, Eastern Regional Engineering and Design Manager, Eversource
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource



2023 DRAINAGE STRUCTURE SCHEDULE

CA 1000 (REF. A.C.T. CA 1000)
 INV. 12' 10\"/>

PLANNING FILE NO.: SITE-2024-XXXXX

UTILITY PLAN			NOT FOR CONSTRUCTION FOR PERMIT USE ONLY			
8	LOCUST STREET RESIDENTIAL DEVELOPMENT DOVER, NH	17-19 SUMMER STREET PROPERTIES, LLC 71 LAFAYETTE ROAD HAMPTON FALLS, NH 03844	DATE: 2-29-24			
			SCALE: 1"=10'			
			DRAWN BY: SRD			
			DESIGN BY: SRD			
			APPROVED BY: SRD			
			PROJECT NO: 2009			
			FILE: SITE.DWG	NO.	REVISION	APPRO. DATE





March, 4th, 2024

Mark Beaudry, PE
Senior Associate/Sr. Project Manager
Civilworks New England

Natural Gas to 135 Locust Street in Dover NH

Hi Mark,

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for natural gas Service:

Unitil hereby confirms that natural gas is available for the proposed building at 135 Locust Street in Dover NH

If you have any questions, please contact me at 603-534-2379.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dave MacLean", is written over a light blue rectangular background.

Dave MacLean
Senior Business Development Rep



T 603.294.5261

M 603.534.2379

F 603.294.5264

Email macleand@unitil.com

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443

TRAFFIC ASSESSMENT MEMORANDUM

April 24, 2024

INTRODUCTION

Civilworks New England has prepared this traffic-assessment memorandum (TAM) in regard to the residential development project proposed on Locust Street, Map 12, Lot 35-1, in Dover.

This TAM includes:

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

This TAM concludes that:

- relevant sight distances at the Locust Street/proposed driveway intersection will be adequate.
- The proposed project is not anticipated to add significant new traffic to the area.

EXISTING SITE DESCRIPTION

The project site:

- is along the easterly side of Locust Street at the middle of the block between Silver Street and Summer Street
- has an existing driveway “curb cut” serving the site via a “common driveway easement”
- has an area of 10,000 square feet (0.22 acres).
- is presently a vacant area of grass and large trees that abuts an existing multifamily residential home (17 - 19 Summer Street) and parking area.

PROPOSED PROJECT DESCRIPTION

The project will provide four two-bedroom rental apartment units within a single two-story building (plus an attic level) that will have the appearance of a single-family dwelling.

One unsignalized driveway intersecting the east side of Locust Street that will provide access to a proposed parking area that will be enlarged to service all four proposed apartments along with the existing multifamily residential building (which also is served by a couple of parking spaces off of Summer Street). The existing driveway “curb cut”, off Locust Street, will be utilized for the new shared driveway.

ROAD DESCRIPTION

Locust Street:

- is under the jurisdiction of the City
- is oriented north-south with a straight/linear horizontal alignment
- intersects with Silver Street to the north and Summer Street to the south

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- has very limited vertical grade change
- has bituminous concrete pavement in overall good condition.
- has one travel lane per direction, with a pavement width of approximately 32 feet
- has sidewalks on both sides
- streetside parking is allowed on the west side of Locust Street
- has marked pavement (centerline striping and lane “fog” side lines)
- has a posted speed limit of 30 MPH, but as reported by the City, an 85th percentile speed of 34 MPH
- has an ADT of 5,686 vehicles as reported by the City
- includes existing utility services

PUBLIC TRANSIT

Collaborative Alliance for Seacoast Transportation (COAST) Route 34 provides bus service in the area. Service is on Mondays through Saturdays, except holidays. A bus stop is on Silver Street near Elm Street is only a 3 to 4 minute walk from the site. Route 34 connects with:

- downtown Dover and Knox Marsh Road
- the Amtrak “Downeaster” train station
- the COAST Transit Center

SIGHT DISTANCES

The driveway access to the site is approximately 235 feet from Silver Street, which is signalized, and approximately 125 feet north from Summer Street; with Summer Street being stop sign controlled. The overall distance between the intersections is 360 ± feet. The alignment of Locust Street is straight and linear with limited elevation change so sight distance beyond the intersections is possible; especially with the sidewalks present on both sides. Several residential driveways exist along Locust Street on this block. Streetside parking will not interfere with sight distances from this driveway as streetside parking is only available on the west side of Locust Street. The vegetation along both sides of the existing entrance drive “curb cut” is mature and acts as screening of the parking areas from Locust Street.

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for appropriate sight distances in terms of stopping sight distance (SSD) for vehicles on the main road reacting to existing traffic, and intersection sight distance (ISD) for left turn movements from a stop. For a 30 mile per hour roadway, AASHTO has established the SSD to be 200 feet and ISD to be 335 feet. For the 34 mile per hour 85th percentile speed, the AASHTO SSD is 240 feet and ISD is 379 feet; both determined by interpolation between the 30 MPH and 35 MPH sight distance figures in AASHTO.

Evaluation of the site indicates that at a point 7 feet from the fog line, sight distances to the north and south are in excess of 350 feet and ample stopping and intersection sight distances are provided. Sight distance from the access drive will not be impeded by streetside parking and the unobstructed nature of the streetside sidewalk provides the opportunity to maintain these sightlines unhindered throughout the year. Furthermore, the off-street parking provided by this

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parking area allows the residents to turn around in the parking area and pull out onto Locust Street, thereby preventing the need for the vehicle to back into traffic. The sight distance available from the proposed driveway is an improvement over the existing parking area being replaced and is adequate to provide a safe means of egress.

CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual*.¹ This authoritative guide for calculating site traffic includes vehicle trip information for a “low rise” multifamily housing within a dense multi-use urban and city center area; which is known in the ITE *Trip Generation Manual* as Land Use Code 220 (LUC). The trip data in LUC 220 is based on the number of dwelling units. The project will provide four two-bedroom rental apartment units within a single two-story building (plus an attic level) that will have the appearance of a single-family dwelling. This qualifies as a “mansion apartment” under the various “low rise” multifamily housing configurations in LUC 220. Even though the Dover Amtrak station is on the COAST bus route, to be conservative the LUC 220 trip generation utilized is that for a project that is not close to rail transit. If the data for a project close to rail transit was used, the vehicle trip generation would clearly be less.

Table 1 shows calculated vehicle trip ends associated with the proposed development project. The total vehicle trips generated by the project are:

- Daily (weekday) = No trip data provided by ITE for LUC 220
- AM peak hour (weekday) = 10.5 total trips (1.0 in and 9.5 out)
- PM peak hour (weekday) = 4 total trips (3.8 in and 0.4 out)

Table 1: Trip Generation - Multifamily Housing

Weekday Period	Vehicle Trips*				
	Avg. Trips / Dwell. Unit	Proposed Units	Total	In	Out
Daily	No Data				
AM - Peak Hour of Adjacent Street Traffic	See Equation	4	10.5	1.0	9.5
PM - Peak Hour of Adjacent Street Traffic	See Equation	4	4.2	3.8	0.4
* ITE, <i>Trip Generation Manual</i> , Multifamily Housing - Land Use Code 220 (Not Close to Rail Transit)					

* ITE, *Trip Generation Manual*, Multifamily Housing - Land Use Code 220 (Not Close to Rail Transit)

AM Trips = $0.24(\text{Units}) + 9.56$ (10% entering, 90% exiting) PM Trips = $0.24(\text{Units}) + 3.25$ (90% entering, 10% exiting)

TRIP DISTRIBUTION/ASSIGNMENT

All project-related trips will access the site from Locust Street via Silver Street and/or Locust from the north and Summer Street and/or Locust Street from the south. The calculated vehicle trip generation for the development project is so low that area traffic operations are not sensitive to

¹ ITE, *Trip Generation Manual*, 11th edition (Washington DC, September 2021).

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443

trip distribution/assignment of project vehicle trips. This is primarily due to the presence of Central Avenue to the east and Silver Street to the north which carry the bulk of traffic in the area of the site.

POTENTIAL TRAFFIC IMPACTS

The calculations show 10.5 or less peak-hour primary vehicle trips, due to the proposed project. More specifically, tabulated *peak-hour* trip generation is:

- 4.2 to 10.5 total vehicle trips.
- These totals are comprised of vehicles entering and vehicles exiting the site.

Therefore, the proposed project is not anticipated to add significant new traffic to the surrounding area.

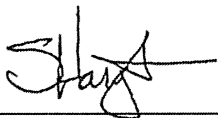
CONCLUSION

In conclusion:

- Sight distances at the Locust Street/proposed driveway intersection will be adequate.
- The proposed project is not anticipated to add significant new traffic to the area.

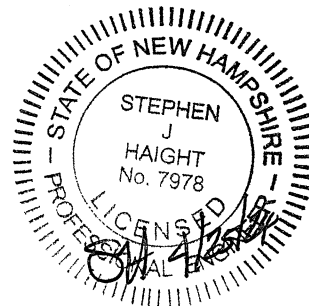
CIVILWORKS NEW ENGLAND

Sincerely,



Stephen J. Haight, PE

Cc: 17 – 19 Summer Street Properties LLC



Landscape Best Management Practices Operations and Maintenance Plan

Locust Street Residential Development
Dover, New Hampshire 03820

January 4, 2024

Prepared for
Civilworks New England/Haight Engineering, PLLC
181 Watson Road
PO Box 1166
Dover, New Hampshire 03821

Prepared by
Ironwood Design Group, LLC
PO Box 873
Exeter, New Hampshire 03833



Landscape Maintenance

Introduction

The landscape enhancements proposed for the Locust Street Residential Development project will require modest maintenance at various times throughout the year. For the site plantings, maintenance is most important during the first 1-2 years following installation when plants are becoming established. Anyone involved in the upkeep of the facility should become familiar with the landscape and its features. Identified below are basic, at minimum, maintenance tasks:

Weekly Tasks

1. Prune back any shrubs overhanging curbs or sidewalks.
2. Remove litter from plants bed.
3. Remove broken or fallen branches from trees.
4. Prune sucker growth from tree trunks.
5. Remove weeds larger than 2 inches high or wide from plant beds. Weeds two inches and larger must be removed, not just killed. **The application of herbicides such as Roundup is discouraged.**
6. Any invasive species seedlings observed should be removed and disposed of properly.
7. Replace bark mulch that may have been washed out of planting beds. Smooth mulch layer if it has been disturbed.
8. Check plants for signs of stress, pests or disease and notify Owner for authorization to replace.
9. If a significant decline in plant health is attributed to an insect pest, **apply an organic product and/or process** to control the pest.
10. Water plants that are dry and stressed.
11. Notify Owner for authorization to replace dead plants at the appropriate time (see annual tasks, September).
12. Identify other tasks listed on the Annual and Monthly checklist of tasks.

Annual Tasks

Early Spring

1. Prune winter damage such as broken tree branches that interfere with public safety.
2. Trim dead perennial foliage left in the fall for winter interest to within six inches of the ground.
3. Add new mulch to plant beds where the mulch depth has been reduced to less than 2 inches. Mulch depth shall not exceed two inches (top dressed). Mulch is not required where shrubs or groundcover completely hide the soil surface from view.
4. Gently prune shrubs, at appropriate time of year based on species, for shape and form. **Do not shear.**
5. Conduct a soil test to measure at a minimum pH, phosphorus, potassium, calcium, and magnesium. Follow the recommendations provided with the soil test results.
6. Apply fertilizer only when required. A single application of fertilizer per year before Memorial Day is encouraged.

Monthly Tasks

June

No additional items

July

No additional items

August

No additional items

September

1. Inventory all plant materials, including an exact count of all shrubs and trees.
2. Replace any dead or missing plants.
3. Aerate lawn areas.
4. Apply pelletized lime at a rate of 80 lbs/1,000 square feet or as soil test dictates.

October

No additional items

November

1. Remove leaves from lawn areas and planting beds.
2. Remove perennial vegetation that has died back for the season.
3. Apply "WILT-PRUF" to broadleaf evergreens, according to label instructions, to protect shrubs from winter die back.

December

1. Prune any tree branches that interfere with public safety.
2. Prune deciduous trees yearly to encourage strong growth the following growing season. Trees adjacent to pedestrian sidewalks shall have branches pruned to 6-foot height.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Replace dead or dying plants			X		X		
Remove weeds	X		X	X	X		
Remove accumulated leaves, litter, and plant debris		X					X

Rain Gardens

The rain gardens will attenuate flow and treat stormwater. The rain gardens consist of a basin and swales seeded with native, adaptable, and rugged perennial grasses, and sometimes other flowering plants. There are maintenance tasks associated with rain garden care.

Erosion

The soil in the facility and in areas draining to the rain garden shall be inspected for erosion. Eroded areas shall be filled with soil or mulch and seeded with the mix specified in the plans.

Sediment Accumulation and Clogging

The accumulation of sediment within the rain garden may reduce its infiltration capacity. The rain garden shall be inspected for accumulation of sediment, and if found, excessive sediment shall be removed from the area, re-mulched, and replanted as appropriate and necessary.

Debris and Litter

Debris and litter should be removed from the rain garden monthly to maintain aesthetic appearance and public acceptance.

Plant Maintenance

Healthy vegetation contributes to the optimal operation of the stormwater facility. Planting area maintenance tasks include the removal of accumulated leaves, litter, and plant debris as needed. During the first 1-2 years after planting, the facility should be monitored for invasive species and weeded as needed and appropriate. Well-established rain garden vegetation shall be pruned back each fall.

Snow Storage

Snow shall not be dumped directly onto the rain gardens.

Chlorides

The rain gardens are not suitable for treating chlorides. Chloride use on source surface areas tributary to the facility should be avoided if possible. In these locations, it would be prudent to eliminate or reduce application of chloride-containing deicing compounds, use alternative deicers, or apply clean sand as needed.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Inspect for erosion. Rake and redistribute/replenish any soil, rap, or mulch that has eroded		X					X
Inspect for standing water							X
Remove accumulated leaves, litter, and plant debris		X					X
Weed plant material		X					
Prune back dying plant material					X		

Stormwater Management System Inspection & Maintenance Plan

Prepared for:

**LOCUST STREET RESIDENTIAL DEVELOPMENT
Map 12, Lot 35-1**

**Locust Street
Dover, New Hampshire
Strafford County**

February 2024

Owner of Record:

17 – 19 SUMMER STREET PROPERTIES, LLC

71 Lafayette Road
Hampton Falls, New Hampshire 03844

Prepared By:

CIVILWORKS NEW ENGLAND

P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks New England, has prepared the following Stormwater Management System Inspection & Maintenance Plan for **17 – 19 Summer Street Properties, LLC**. 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 inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

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.

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, and 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 NHDES 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:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party.

Contact / Responsible Party:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

**Ben Perez
Phone: (603) 944-0516
Email: Ben@bostonnorthdevelopment.com**

The contact information for the Contact / Responsible Party shall be kept current.

Management Company:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

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 NHDES. 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 the City of Dover Community Services Department annually before Dec 15th.

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. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Sediment Forebay
- Yard Drains
- Bioretention Basins
- Grassed Lined Conveyance Swale
- Pavement
- Litter / Trash Removal

Design elements are identified in 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.

PIPES/CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

OUTLET STRUCTURES:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

SEDIMENT FOREBAY:

- Vegetated areas shall be mowed to maintain a 4" start of vegetative growth.
- Inspect at least once per year.
- Inspect for sediment accumulation.
- Remove all debris immediately.

YARD DRAINS:

- Inspect once per year.
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately and sediment accumulations ≥ 1 foot.
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

BIORETENTION BASINS:

- Inspection, by a **qualified professional**, of the Bioretention Basin 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. If the Bioretention Basin systems do not drain within 72-hours following a rainfall event, a qualified professional should assess the condition and determine measures required to restore filtration practice (as applicable).
- 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.
- 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.

GRASS LINED CONVEYANCE SWALE:

- Inspect once per year.
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4” stand of vegetative growth.

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 Deicing Salt Quantity Use Log).
- 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
Pipes/Culverts	Annually	- Check for clogging - Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structures	Annually	- Inspect once per year. - Inspect for clogging and sediment accumulation. - Remove all debris immediately and sediment accumulations ≥ 2 inches.	≥ 2 in. sediment Remove immediately
Sediment Forebay	Annually	- Check for sediment accumulation - Check for woody vegetation growth - Check for debris - Vegetated areas shall be mowed to maintain a 4" start of vegetative growth.	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly
Yard Drains	Annually	- Check for sediment accumulation - Check for floatable contaminants - Check for hydrocarbons (oils and grease)	≥ 1 ft. sediment depth Remove all floatables Remove immediately
Bioretention Basins - Outlet Structure - Inlet/Outlet Piping - Embankments - Pond Sediment - Trash/Debris - Vegetation (Veg.)	Bi-Annually " " " " Periodically " " " "	- 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.	See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Grass Lined Conveyance Swale	Annually	- Check for sediment accumulation - Check for erosion - Ensure swale is stabilized - Maintain healthy stand of veg., 4" minimum - Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind Mow twice per year Remove/Dispose of accordingly
Pavement: - Sanding - Salt Applications - Sweep/Vacuum - Trash/Debris	Limit use As required 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 required) 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 pages contain 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]

Methods for Disposing Non-Native Invasive Plants

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



Tatarian honeysuckle

Lonicera tatarica

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

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

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

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

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

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

New Hampshire Regulations

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

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

How and When to Dispose of Invasives?

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

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

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

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

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

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

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

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



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

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

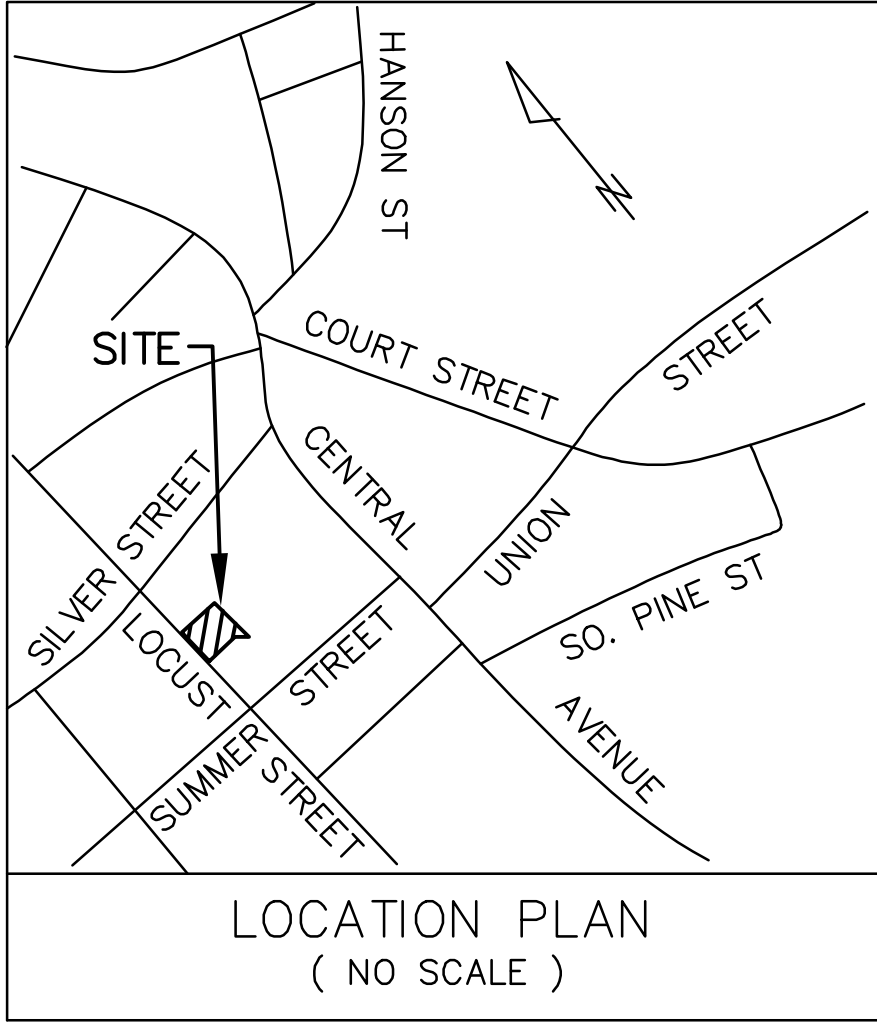
Suggested Disposal Methods for Non-Native Invasive Plants

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

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

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard (<i>Alliaria petiolata</i>) spotted knapweed (<i>Centaurea maculosa</i>) ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort (<i>Cynanchum nigrum</i>) ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort (<i>Cynanchum rossicum</i>) giant hogweed (<i>Heracleum mantegazzianum</i>) ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket (<i>Hesperis matronalis</i>) perennial pepperweed (<i>Lepidium latifolium</i>) purple loosestrife (<i>Lythrum salicaria</i>) Japanese stilt grass (<i>Microstegium vimineum</i>) mile-a-minute weed (<i>Polygonum perfoliatum</i>)	Fruits and Seeds 	Prior to flowering Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. During and following flowering Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (<i>Phragmites australis</i>) Japanese knotweed (<i>Polygonum cuspidatum</i>) Bohemian knotweed (<i>Polygonum x bohemicum</i>)	Fruits, Seeds, Plant Fragments Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	Small infestation ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. Large infestation ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010



SITE PLAN
FOR
LOCUST STREET RESIDENTIAL
DEVELOPMENT

TAX MAP 12, LOT 35-1
LOCUST STREET
DOVER, NH
FEBRUARY 29, 2024
REV. APRIL 25, 2024

OWNER/APPLICANT 17-19 SUMMER STREET PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844

SITE CIVIL ENGINEER



DATE

LAND SURVEYOR

MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 1166
181 WATSON ROAD
DOVER, NH 03821
(603) 742-0911

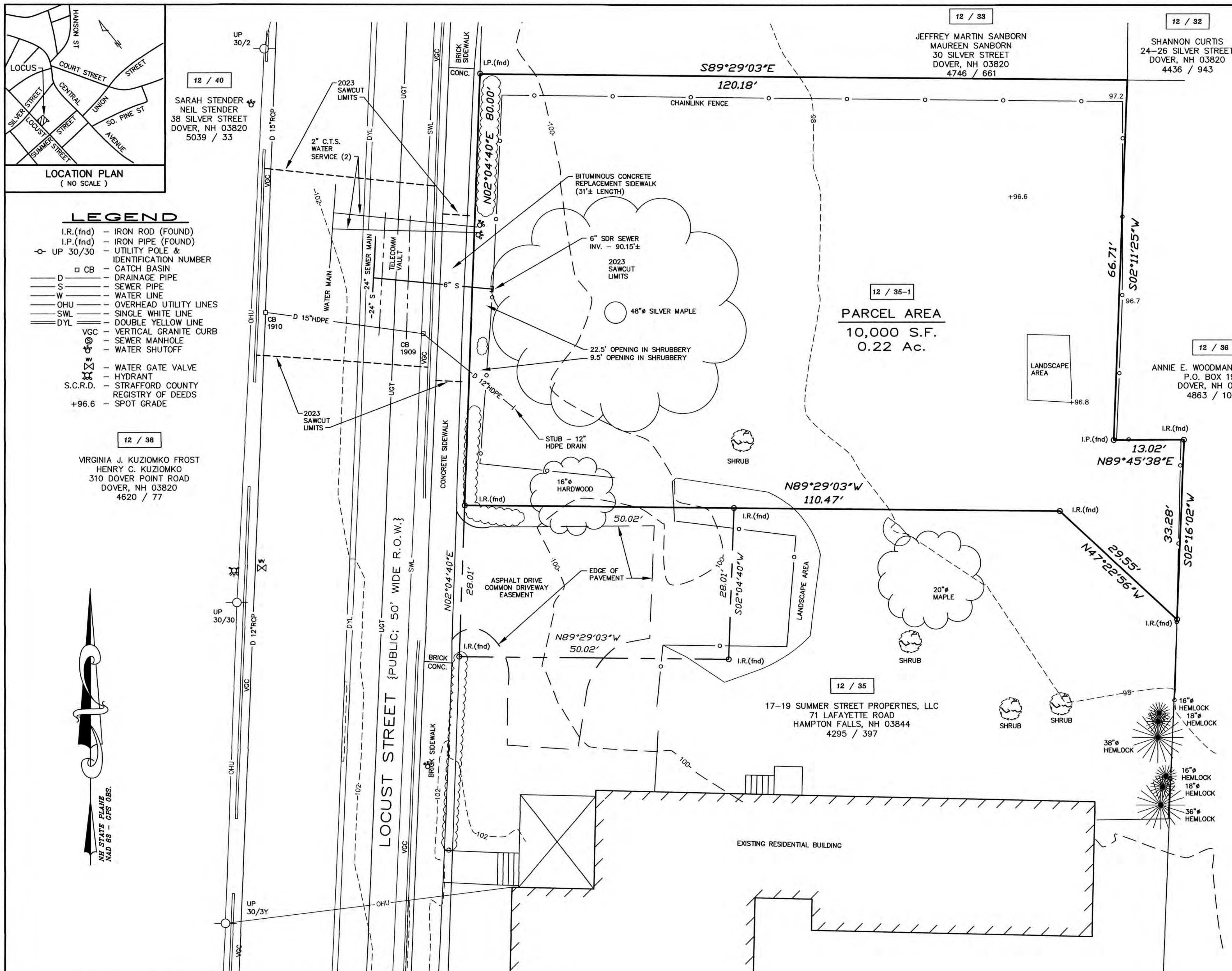
ARCHITECT

DISTINCTION BY DESIGN
49 OAK STREET
DOVER, NH 03820
(603) 401-7294

LANDSCAPE ARCHITECT

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<u>SHEET INDEX</u>	<u>SHEET</u>
COVER SHEET	1
NEIGHBORHOOD PLAN	2
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	3
NOTE SHEET	4
DEMOLITION PLAN	5
SITE PLAN	6
GRADING, DRAINAGE & EROSION CONTROL PLAN	7
UTILITY PLAN	8
EROSION CONTROL NOTES	9
EROSION CONTROL DETAILS	10-11
DETAIL SHEETS	12-15
LIGHTING PLAN	16
LIGHTING DETAILS	17
<u>ARCHITECTURAL PLANS</u>	
BASEMENT PLAN	A1.0
FIRST FLOOR PLAN	A1.1
SECOND FLOOR PLAN	A1.2
ATTIC PLAN	A1.3
EXTERIOR ELEVATIONS/ STREET VIEW	A2.0
EXTERIOR ELEVATIONS	A2.1
STREET SCAPE PLAN	A2.2
<u>LANDSCAPE PLANS</u>	
LANDSCAPE PLAN	L1.0
LANDSCAPE DETAILS	L2.0



NOTES:

- OWNER OF RECORD:
17-19 SUMMER STREET PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NEW HAMPSHIRE 03844
S.C.R.D. VOLUME 4925, PAGE 399
- K / 19** - DENOTES TAX MAP AND PARCEL NUMBER.
- PARCEL AREA: 10,000 S.F. / 0.22 Ac.
- THE INTENT OF THIS PLAN IS TO DEPICT THE PARCEL BOUNDARIES AND EXISTING SITE CONDITIONS AS OF MAY 24, 2023; AND TO SHOW NOVEMBER 2023 UTILITY AND DRAINAGE IMPROVEMENTS WITHIN THE LOCUST STREET RIGHT OF WAY.
- ZONING DISTRICT: HERITAGE RESIDENTIAL

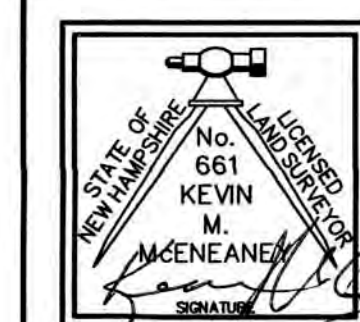
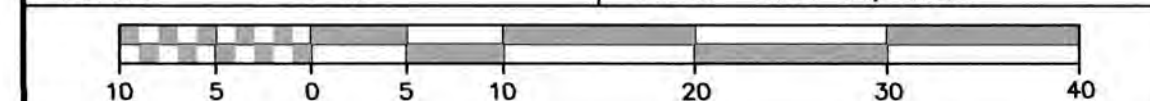
DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = 10,000 S.F.
MAXIMUM LOT COVERAGE = 40 PERCENT
MINIMUM FRONTAGE = 80 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT SETBACK = 8.7 FEET ± 5 FEET
SIDE SETBACK = 15 FEET
REAR SETBACK = 30 FEET
MAXIMUM BUILDING HEIGHT = 40 FEET
- THE SUBJECT PARCEL IS NOT LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0330E, EFFECTIVE DATE SEPTEMBER 30, 2015.
- BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED REFERENCE PLAN #1. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED MAY 24, 2023. CONTOUR INTERVAL IS TWO (2) FEET.
- PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM REFERENCE PLAN #1.
- ACCESS NOTE: THE PARCEL IS TO BE ACCESSED FROM LOCUST STREET OVER A COMMON DRIVEWAY ACCESS EASEMENT LOT 12/35.
- 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.

2023 DRAINAGE STRUCTURE SCHEDULE

CB 1909 (REPLACE CB 1826)	
RIM	= 100.92'
INV. IN 12" HDPE	= 92.4' (SITE)
INV. OUT 15" HDPE	= 92.1' (CB 1910)
SUMP	= 89.3'
CB 1910 (REPLACE CB 1827)	
RIM	= 100.97'
INV. IN 15" HDPE	= 92.1' (CB 1909)
INV. IN 12" RCP	= 91.7'
INV. OUT 15" RCP	= 91.7'
SUMP	= 89.8'

EXISTING CONDITIONS PLAN
PREPARED FOR
17-19 SUMMER STREET PROPERTIES, LLC
TAX MAP 12, LOT No. 35-1
LOCUST STREET
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DRAWN BY: **KJF, RJM** FILE: MSA\2508\03-2508
SCALE: 1" = 10' DATE: MAY 31, 2023



McEaney
Survey
Associates
of NEW ENGLAND
P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

REFERENCE PLANS:

- SUBDIVISION PLAN LAND OF KEVIN P. MCLEAN & ANGELA M. LAZZARO, 17/19 SUMMER STREET, DOVER, N.H., TAX MAP 12, LOT 35; SCALE: 1" = 20'; DATED: NOVEMBER 19, 2019, REVISED THROUGH 2-25-2020; BY: BERRY SURVEYING & ENGINEERING; RECORDED S.C.R.D. PLAN 12090.

NO.	DATE	DESCRIPTION	BY	CHK
2	2/13/24	CORRECT PIPE INVERT TO 92.1' OUT	RJM	KMM
1	12/1/23	UPDATE TO 2023 UTILITY CONSTRUCTION AS-BUILT	RJM	KMM
REVISIONS				
23-2508	EXIST. COND.	23-04	52-57	
PROJECT NO	TYPE	FIELDBOOK & PAGES		

THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED CONSTRUCTION OF A ±2,400 S.F. 4 UNIT RESIDENTIAL BUILDING WITH ASSOCIATED SITE IMPROVEMENTS.

2. OWNER(S) OF RECORD:
17-19 SUMMER STREET PROPERTIES, LLC
71 LAFAYETTE ROADHAMPTON FALLS, NEW HAMPSHIRE 03844
SEE COVER SHEET FOR AUTHORIZED SIGNATURE

3. THE PARCEL IS SHOWN ON CITY OF DOVER ASSESSOR'S MAP 12, LOT 35-1.

4. THE SUBJECT PARCEL(S) CONTAIN(S) 0.22 ACRES (10,000 SQ. FT.) OF LAND. THERE ARE NO ACRES CURRENTLY IN CURRENT USE.

5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 4925, PAGE NO. 399.

6. REFERENCE PLANS:
SUBDIVISION PLAN OF LAND OF KEVIN P. MCLEAN & ANGELA M. LAZZARO, 17/19 SUMMER STREET, DOVER, N.H., TAX MAP 12, LOT 35; SCALE: 1"= 20'; DATED: NOVEMBER 19, 2019, REVISED THROUGH 2-25-2020; BY: BERRY SURVEYING & ENGINEERING; RECORDED S.C.R.D. PLAN 12090.

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

8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS:
ZONING DISTRICT: HERITAGE RESIDENTIAL
SUB-DISTRICT: N/A
ZONING OVERLAY DISTRICTS: N/A
DIMENSIONAL REQUIREMENTS:

	REQUIRED	PROVIDED
MINIMUM LOT SIZE	10,000 SF	10,000 SF
MINIMUM LOT FRONTAGE	80 FT.	80 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	8.7'±5 FT.	21± FT.
SIDE	15 FT.	15.8± FT.
REAR	30 FT.	31± FT.
ABUT-A-STREET	20 FT.	N/A
MAXIMUM/MINIMUM LOT COVERAGE	40%	24.4±%
MINIMUM/MAXIMUM BLDG. HEIGHT	24/40 FT.	24/37± FT.
DIMENSIONAL REQUIREMENTS - 3-4 FAMILY:		
MINIMUM LOT SIZE	10,000 SF	10,000 SF
MINIMUM LOT FRONTAGE	80 FT.	80 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	20 FT.	21± FT.
SIDE	15 FT.	15.8± FT.
REAR	30 FT.	31± FT.
ABUT-A-STREET	20 FT.	N/A
MINIMUM OPEN SPACE	56.7%	63.4%
MINIMUM/MAXIMUM BLDG. HEIGHT	24/40 FT.	24/37± FT.
PARKING SETBACKS:		
FRONT	10 FT.	10.2± FT.
SIDE	5 FT.	0 FT.*

*EASEMENT PROVIDES A SHARED ACCESS AND PARKING LOT BETWEEN THE TWO PROPERTIES.

9. OFF STREET PARKING REQUIREMENTS:

	MAXIMUM	PROVIDED
PARKING DIMENSIONS	9 x 18	9 x 18
ASILE DIMENSIONS	24 FT.	24 FT.

SEE SITE PLAN FOR PARKING CALCULATION TABLE.

10. THE PROJECT INCLUDES THE FOLLOWING TWO WAIVER REQUESTS FROM THE BOARD:
153.14.B (3) RELIEF FROM INSTALLING UNDERGROUND UTILITIES.
153.14.E (2) RELIEF FROM PARKING LOT LIGHTING COVERAGE.

11. THE PROJECT DOES NOT REQUIRE VARIANCES OR SPECIAL EXCEPTIONS TO BE GRANTED BY THE ZONING BOARD. SEE 'PROJECT VARIANCE / PERMIT SUMMARY' SECTION IF APPLICABLE.

12. THE PROJECT REQUIRES A CONDITIONAL USE PERMIT TO ALLOW 4-UNITS IN THE HR DISTRICT PER 170-20.B. (2), (3). SEE 'PROJECT VARIANCE / PERMIT SUMMARY' SECTION IF APPLICABLE.

13. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM REFERENCE PLAN 1.
AS-BUILT PLANS OF THE PROJECT SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER CITY ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.

15. THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 33017C0330E, EFFECTIVE DATE, SEPTEMBER 30, 2015.

16. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON MAY 24, 2023.

17. ELEVATIONS ARE BASED ON U.S.G.S. NAVD 1988 DATUM BASED ON GPS OBSERVATION DATED MAY 24, 2023.

18. THERE ARE NO WETLANDS ON THE SUBJECT PARCEL.

19. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SEE WAIVER REQUEST TO ALLOW OVERHEAD UTILITIES.

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

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

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

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

24. CONTRACTOR SHALL FOLLOW THE PERMANENT STABILIZATION MEASURES SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION AS NOTED WITHIN THE PLANNING BOARD APPROVED PLANS. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

25. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.

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

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

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

29. ALL PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR, AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

30. HOURS OF SITE WORK MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY 9 AM- 4 PM. NO SITE WORK SHALL BE DONE ON FEDERAL HOLIDAYS.

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

32. THE PROPOSED USE FOR THE SITE (STRUCTURE) IS MULTI-FAMILY.

33. THE PROJECT DOES NOT REQUIRE FEDERAL OR STATE PERMITS.SEE 'PROJECT VARIANCE / PERMIT SUMMARY' SECTION IF APPLICABLE.

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

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

- ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.
37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. [HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP](https://extension.unh.edu/stormwater-center/PTAP)
38. THE OWNER OF RECORD SHALL RECORD, AT THE REGISTRY OF DEEDS, DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
39. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED, IN ACCORDANCE WITH ALL APPLICABLE CODES, TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
40. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE 1, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
42. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
43. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM, AS REQUIRED, BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY THE CITY OF DOVER INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A: 5.
47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
48. DESIGN ENGINEER OF RECORD SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.
49. THE APPLICANT SHALL PROVIDE THE CITY OF DOVER AN EASEMENT TO ACCESS WATERLINE AND HYDRANTS TO MAINTAIN WATER QUALITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

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.
5. IT IS THE CONTRACTOR'S 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. STONES FROM REMOVED STONEWALLS SHALL REMAIN ON-SITE. STONES SHALL BE REPURPOSED ON-SITE AND SHALL NOT BE USED AS FILL.
9. 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.
10. 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.

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
3. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
4. SEE DETAILS FOR SIGN LEGENDS.
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. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THE COMPONENTS OF THE DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNER'S 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.
7. 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.
8. 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.
9. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
10. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR AND WILL BE VIA DUMPSTER ON-SITE.
11. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
12. ALL EXTERIOR DOORS ARE MANUAL AND OPENED FROM THE INTERIOR BY PANIC HARDWARE. ALL EXTERIOR DOORS SHALL COMPLY WITH ADA AND ALL LOCAL BUILDING CODE REQUIREMENTS.

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING.
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. 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.
10. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF THE FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
11. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
12. CONTRACTOR SHALL NOTIFY THE CITY OF DOVER AND THE DESIGN ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF PERMANENT STORMWATER BMP'S TO PROVIDE THE CITY AND THE ENGINEER THE OPPORTUNITY TO WITNESS THE CONSTRUCTION AND MATERIALS.
13. DENSITY REQUIREMENTS:

<u>LOCATION</u>	<u>MINIMUM DENSITY</u>
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.

1. FEDERAL AND STATE PERMITS ARE NOT APPLICABLE.
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.

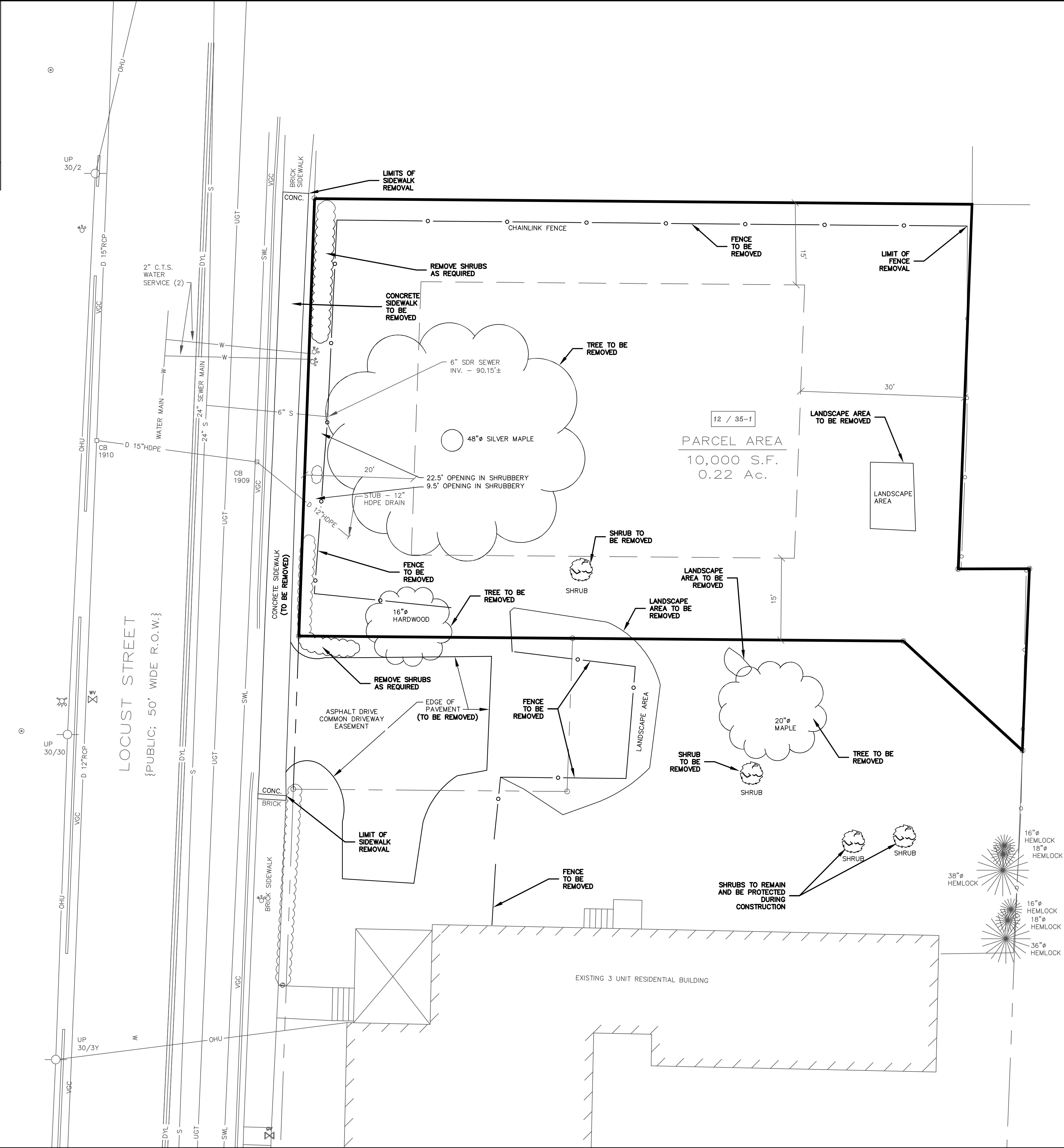
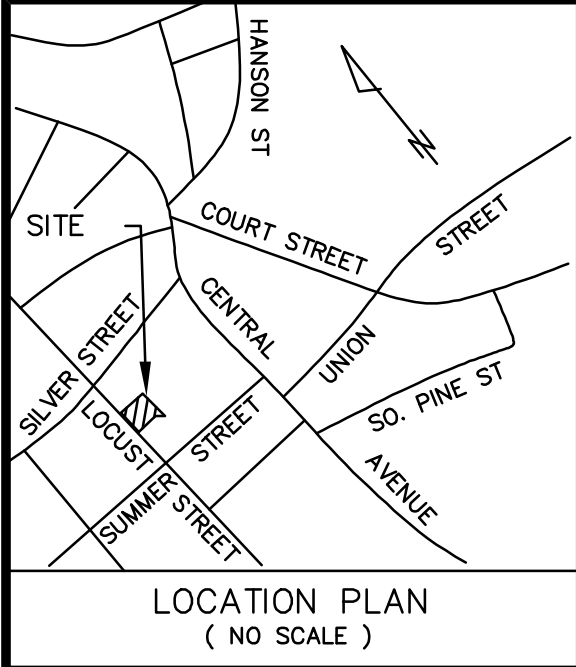
CONDITIONAL USE PERMIT: CUP-2024-_____ - PENDING

S.F.	SQUARE FEET	⊙	EXISTING DRAINAGE MANHOLE	—PS—	PROPOSED SEWER
Ac.	ACRE	○	EXISTING CATCHBASIN	—PW—	PROPOSED WATER
±	MORE OR LESS	5' R	PAVEMENT RADIUS	—PE—	PROPOSED ELECTRIC
(TYP.)	TYPICAL	VGC	VERTICAL GRANITE CURB	—PD—	PROPOSED DRAIN LINE
S.C.R.D.	STRAFFORD REGISTRY OF DEEDS	x 74.00	EXISTING SPOT GRADE	—FD—	PROPOSED FOUNDATION DRAIN LINE
NHHD	NEW HAMPSHIRE HIGHWAY DEPT.			—PUD—	PROPOSED UNDERDRAIN LINE
TBR	TO BE REMOVED	-----94-----	EXISTING GRADE	○	PROPOSED YARDRAIN/ OUTLET STRUCTURE
ELEV.	ELEVATION	—OHW—	OVERHEAD UTILITIES	◊	INLET PROTECTION
INV.	INVERT	—E—	EXISTING ELECTRIC		
R.O.W.	RIGHT-OF-WAY	—W—	EXISTING WATER LINE		PROPOSED BRICK
	EXISTING UTILITY POLE	—S—	EXISTING SEWER LINE		
	EXISTING SIGN	—D—	EXISTING DRAINAGE LINE		
	EXISTING WATER SHUT-OFF	—UGT—	EXISTING UNDERGROUND TELEPHONE		PROPOSED BITUMINOUS SIDEWALK
	EXISTING WATER VALVE				
	EXISTING GAS VALVE	—74—	PROPOSED FINISH GRADE	TP#3	
	EXISTING HYDRANT	x [74.00]	PROPOSED SPOT GRADE		TEST PIT
	EXISTING LIGHT/SIGNAL POLE	—	PAVEMENT WITH CURB	BH#3	
	EXISTING SEWER MANHOLE	—	SILT BARRIER		BORE HOLE

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR 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 AT NO ADDITIONAL COST TO THE OWNER. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
3. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
5. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
6. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.
7. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED AND CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER SEWER DEPARTMENT STANDARDS.
8. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
9. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
10. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
11. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
12. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
13. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
14. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
15. THE CONTRACTOR SHALL CONDUCT A "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
16. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
17. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
18. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
19. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ADJUTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ADJUTERS WITH THE UTILITY COMPANY AND AFFECTED ADJUTER.
20. THE UTILITY SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
21. THE PROPOSED STRUCTURE SHALL COMPLY WITH CHAPTER 81, ARTICLE IV, SECTION 81-27 AND THE STATE BUILDING CODES OF THE CODE OF THE CITY OF DOVER.
22. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION.
23. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
24. SEWAGE LOADING (PER NHDES ENV-WQ 1008.03)
APARTMENT - 2 OR MORE BEDROOM
4 APARTMENT x 2 BEDROOM/APARTMENT x 150 GPD/BEDROOM
= 1,200 GPD.

WATER & SEWER: — CITY OF DOVER COMMUNITY SERVICES DEPARTMENT
PUBLIC WORKS & UTILITIES
CONTACT: KEN MAVROGEORGE, PE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)—516—6450
EMAIL: K.MAVROGEORGE@DOVER.NH.GOV

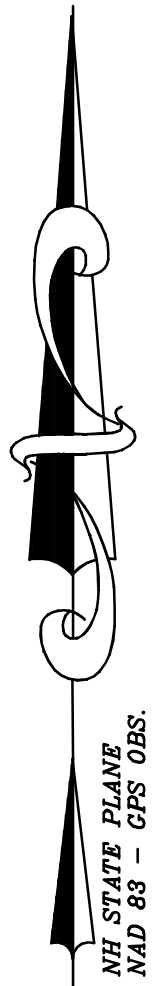
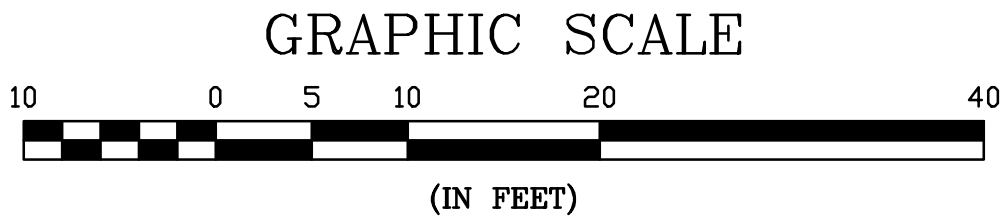
ELECTRIC: — EVERSOURCE
CONTACT: TREVER EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)—332—7515
EMAIL: TREVER.EMMONS@EVERSOURCE.COM



2023 DRAINAGE STRUCTURE SCHEDULE

CB 1909 (REPLACE CB 1826)
RIM=100.92'
INV.IN 12" HDPE=92.4' (SITE)
INV.OUT 15" HDPE=92.1' (CB 1910)
SUMP=89.3'

CB 1910 (REPLACE CB 1827)
RIM=100.97'
INV.IN 15" HDPE=92.1' (CB 1909)
INV.IN 12" RCP= 91.7'
INV.OUT 15" RCP= 91.7'
SUMP= 89.8'

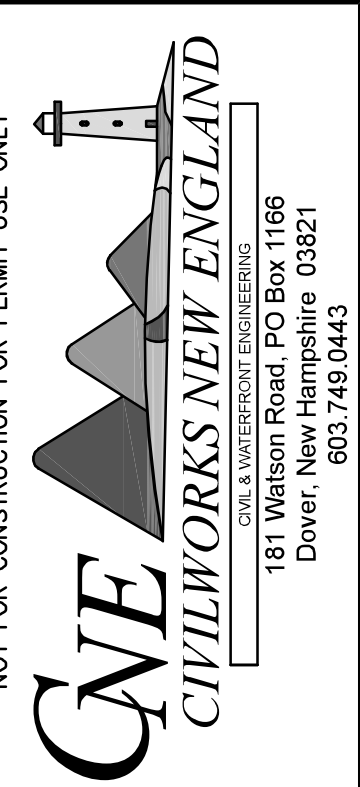


PLANNING FILE NO.: SITE-2024-0003

DEMOLITION PLAN

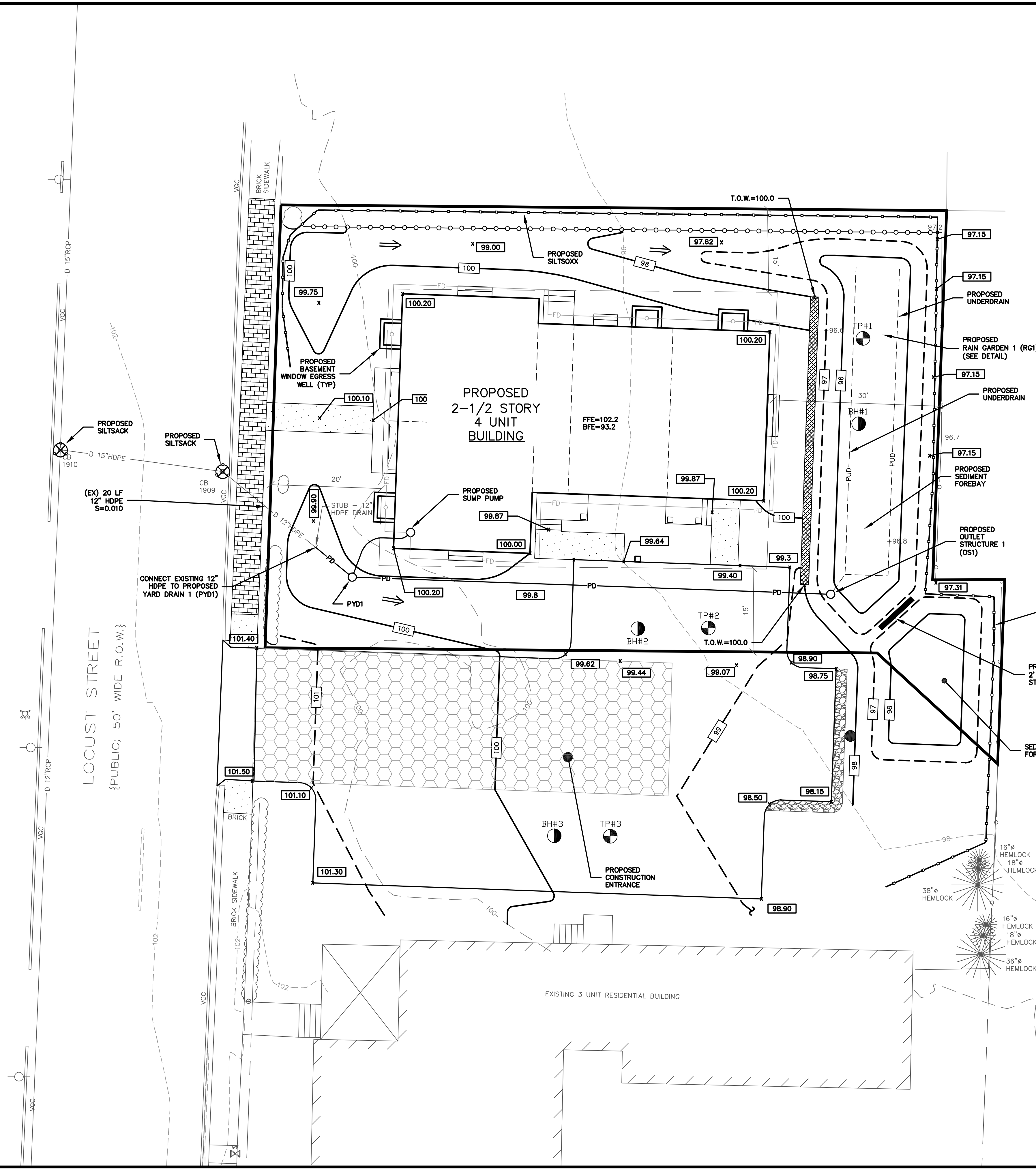
17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844

LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH



DATE	2-29-24	NO.	1	REVISION PER TRC COMMENTS	APP'D	DATE
SCALE: 1"=10'						
DRAWN BY: SRD						
DESIGN BY: SRD						
APPROVED BY: SJH						
PROJECT NO: 23029						
FILE: SITE.DWG						

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY



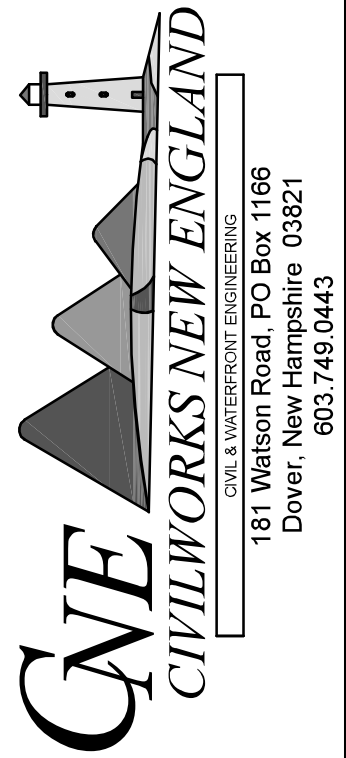
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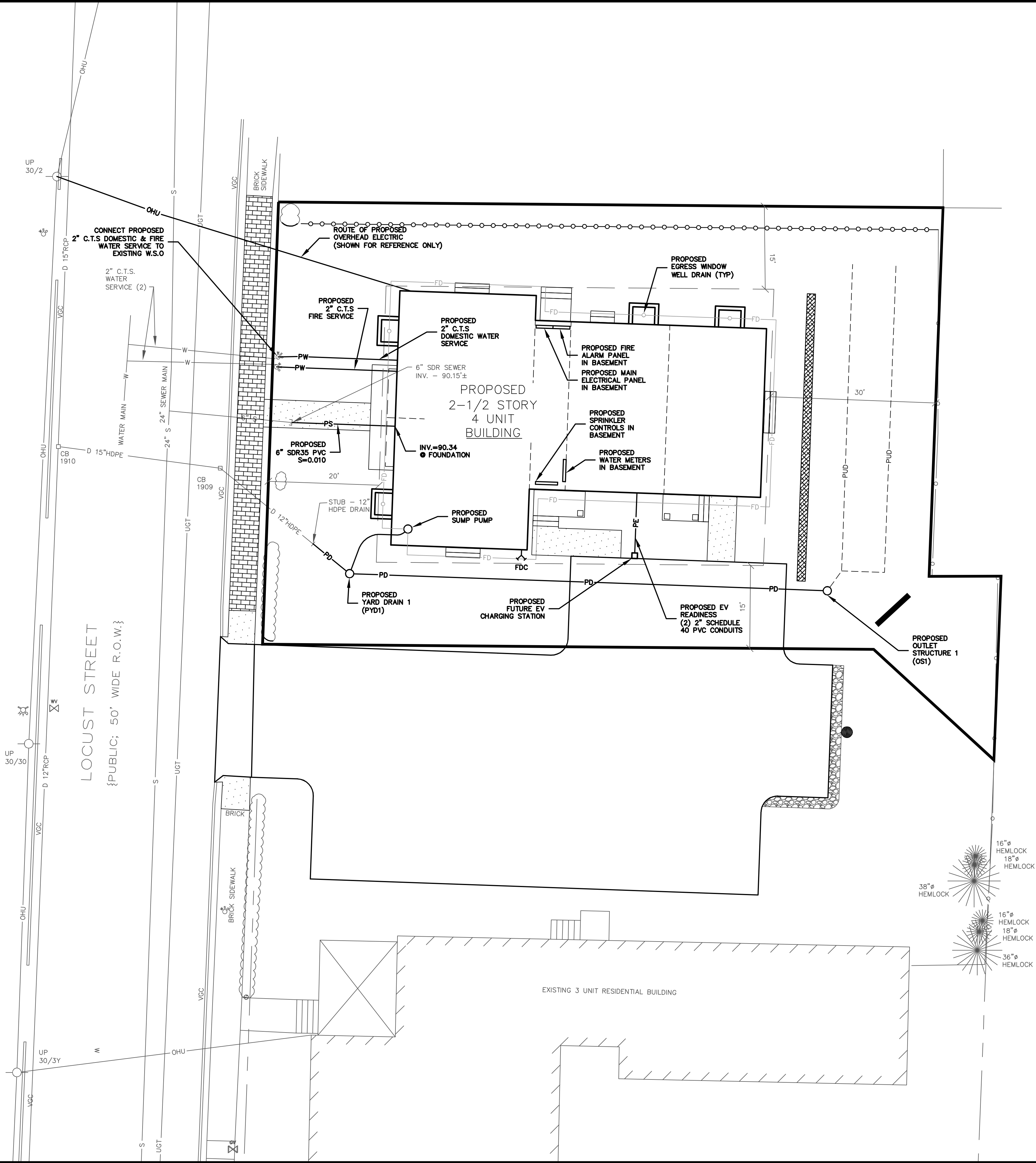
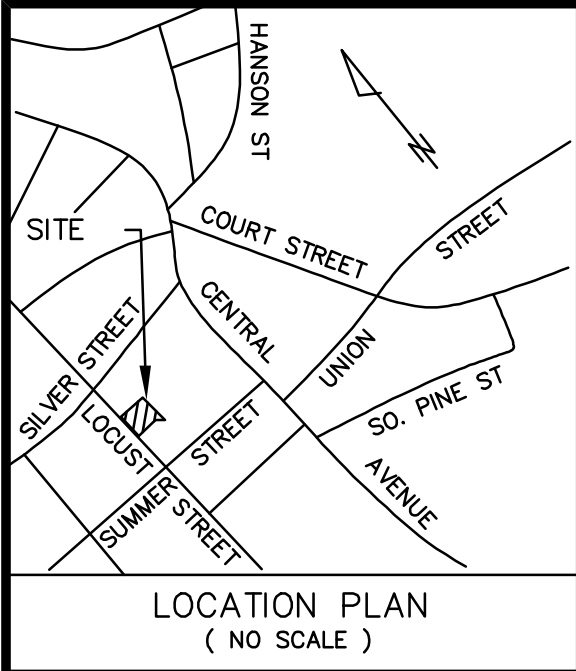
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(IN FEET)

17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844





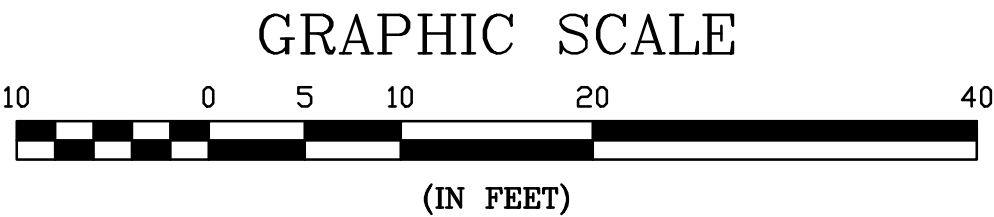
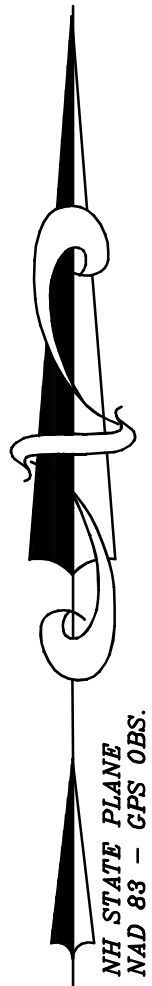
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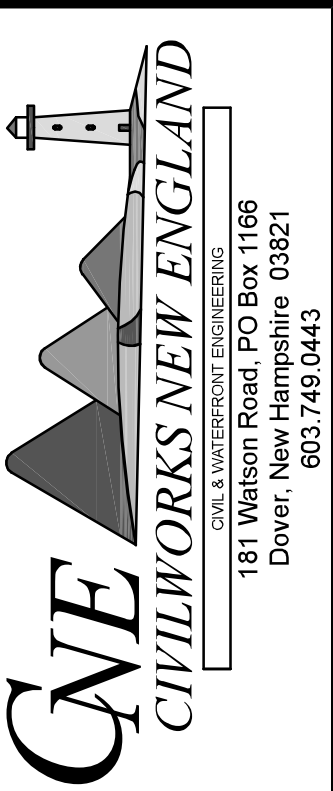
PYD1
RIM=99.90
INV.IN=94.75 (1 1/2")
INV.IN=92.68 (12")
INV.OUT=92.68 (12")

OS1
RIM=96.60
INV.IN=93.42 (6")
INV.OUT=93.42 (12")



PLANNING FILE NO.: SITE-2024-0003

UTILITY PLAN		NOT FOR CONSTRUCTION FOR PERMIT USE ONLY									
8	LOCUST STREET RESIDENTIAL DEVELOPMENT DOVER, NH	17-19 SUMMER STREET PROPERTIES, LLC 71 LAFAYETTE ROAD HAMPTON FALLS, NH 03844									



DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF A 2,400 S.F., 4 UNIT RESIDENTIAL BUILDING WITH ASSOCIATED DRAINAGE, UTILITY IMPROVEMENTS AND SITE ACCESS.

PROJECT NAME AND LOCATION

17-19 SUMMER STREET PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NEW HAMPSHIRE 03844

LATITUDE N43° 11' 23"
LONGITUDE W70° 52' 31"

DISTURBED AREA

±14,500 S.F.

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 ROUGH 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 FOUNDATION FOOTINGS AND WALLS.
10. INSTALL UTILITIES.
11. PLACE GRAVELS AND FINE GRADE.
12. STABILIZE ROADWAYS AND PARKING AREAS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
14. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
15. 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.
16. 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 IF 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 OR 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. THIS 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 1000 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 TACKIFIER 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 MIX MULCH USED FOR TEMPORARY STABILIZATION 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 MAY 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. BEDDING – STONES 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 HARROW, 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)
RATE:
TYPE LBS. PER ACRE LBS. PER 1,000 S.F.
TALL FESCUE 20 0.45
CREEPING RED 20 0.45
FESCUE
BIRDSFOOT TREFOLI 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 (SLURRY 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 SEEDED 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. SEEDED 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 RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED 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 RESULTANT 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 ALL 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 AREA BEING DRAINED. 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 DESIGN DEPTH 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 DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL 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:

1. 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:
a. THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH 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.
C. 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 STORAGE AREA ON 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 AGR 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 ACCEESSED ON THE INTERNET AT
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 MATERIAL STOCKPILES;
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; AND
v) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

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 GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF 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 DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

PLANNING FILE NO.: SITE - 2024-0003

EROSION CONTROL NOTES

LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH

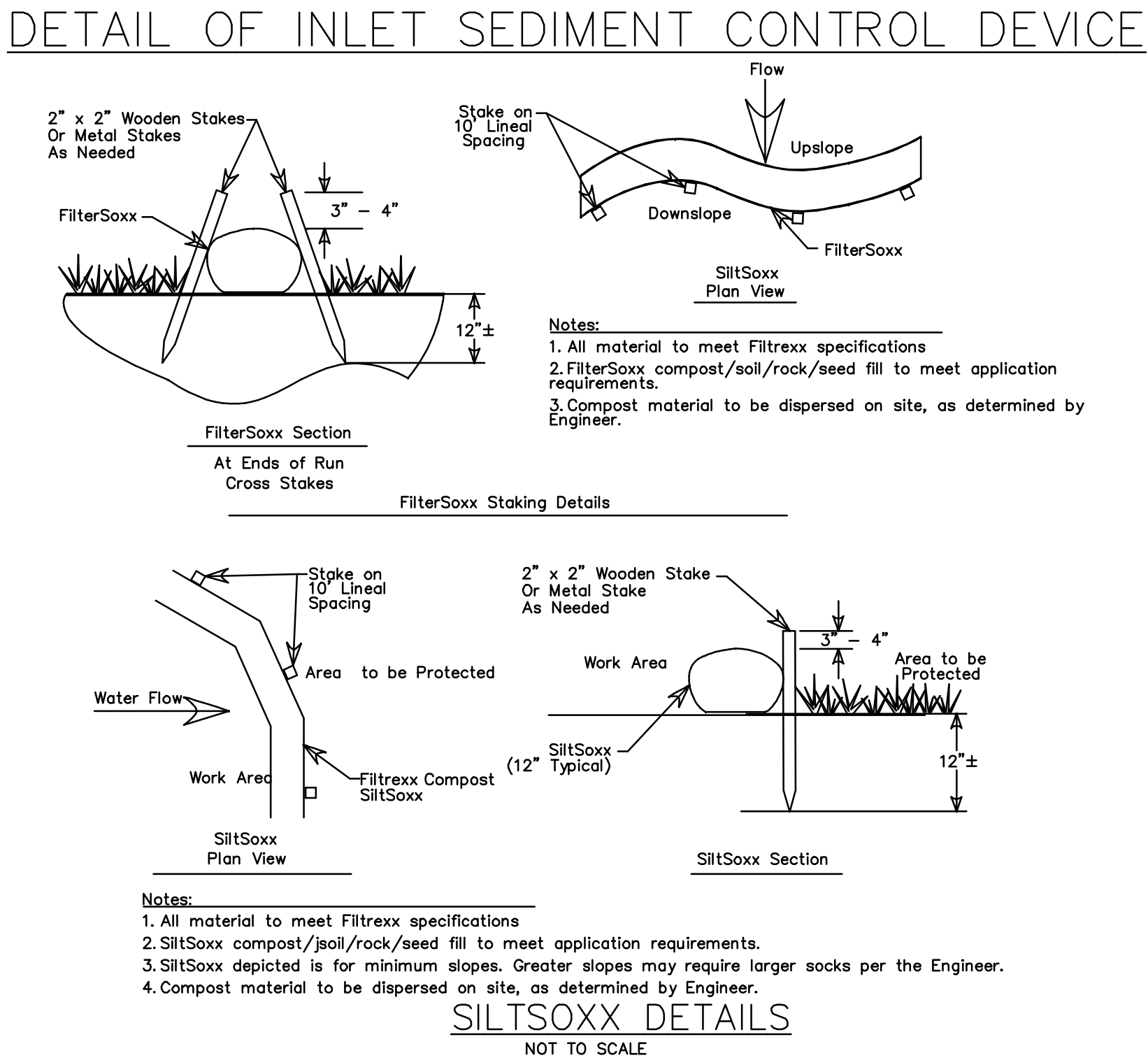
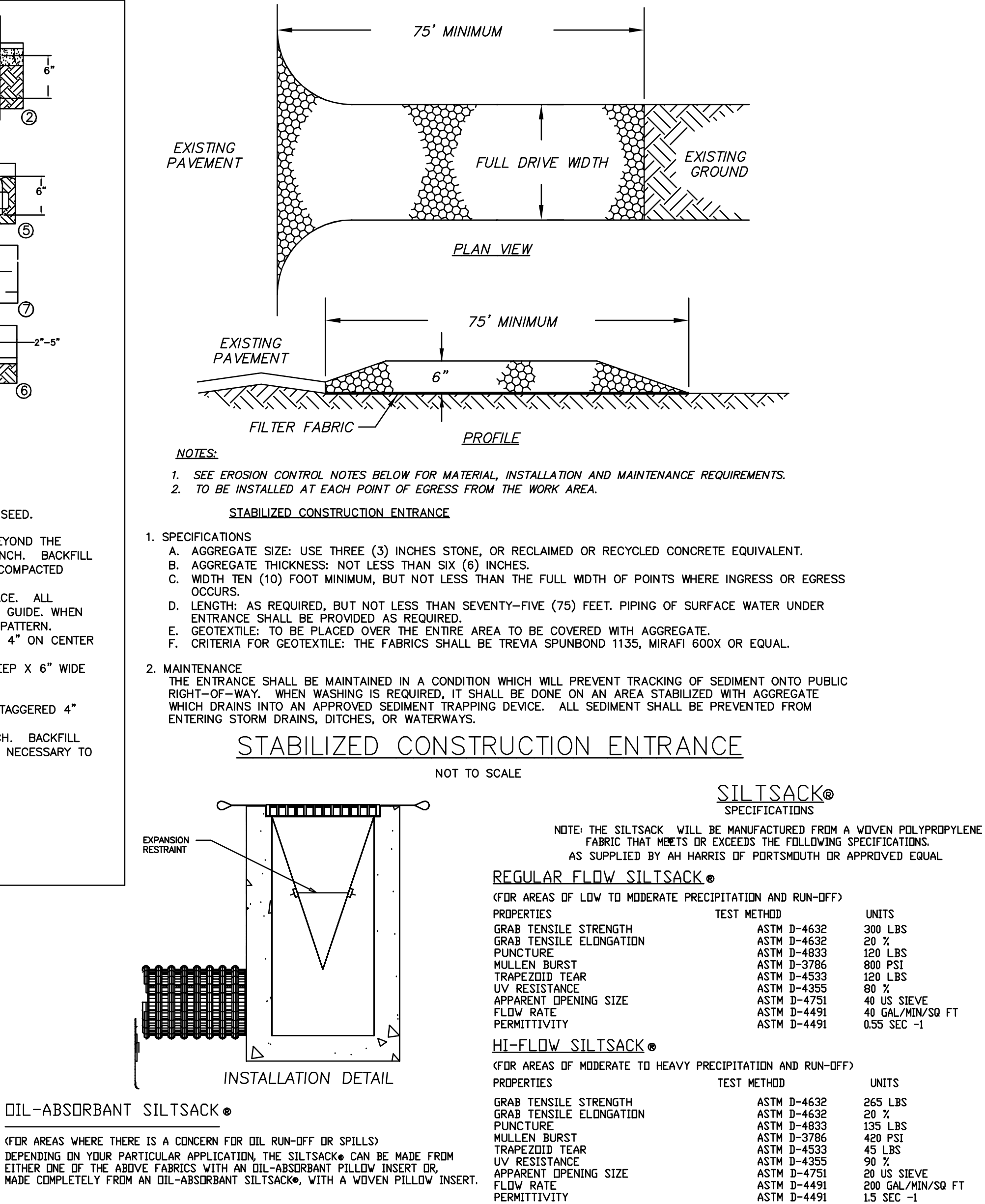
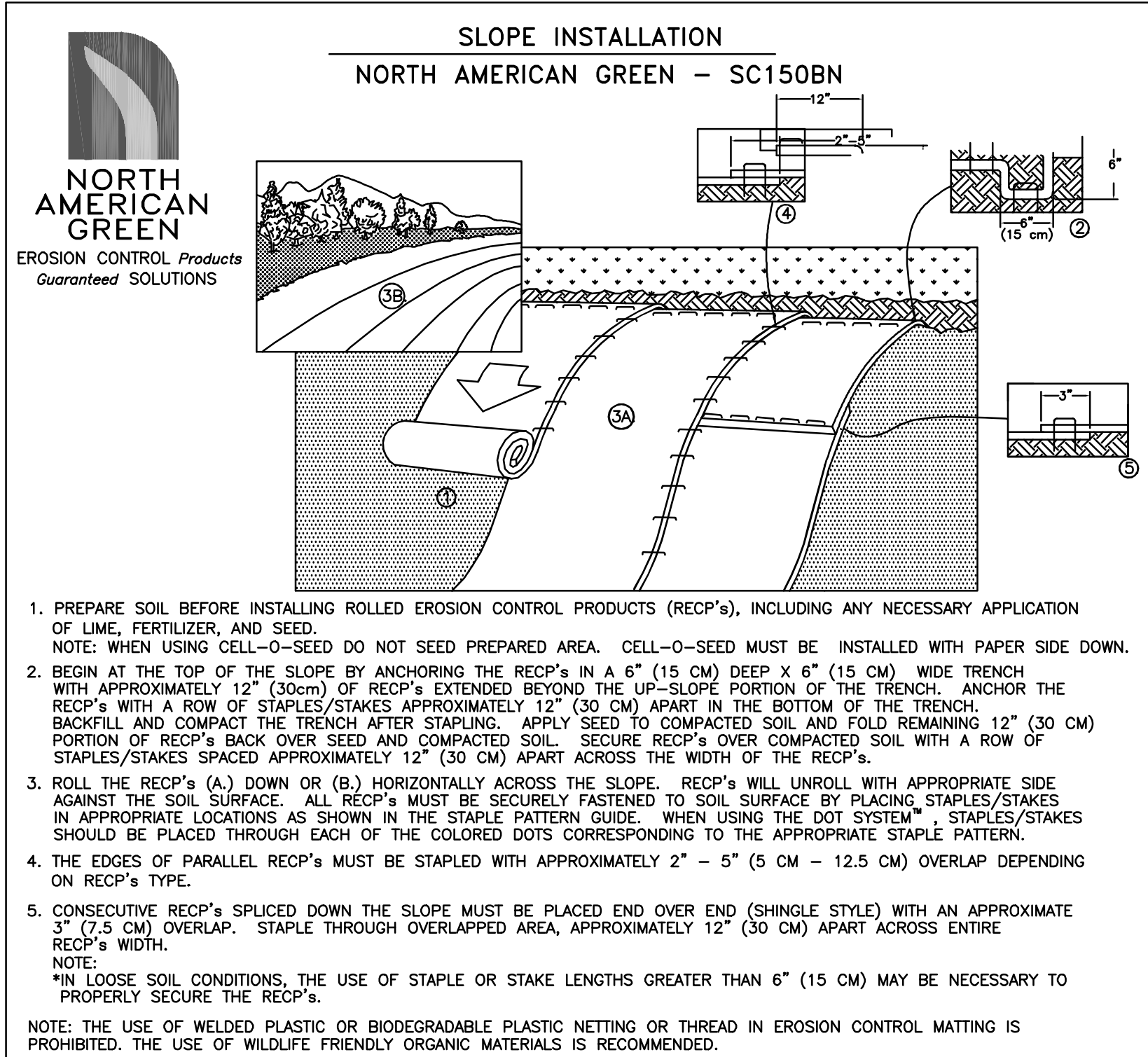
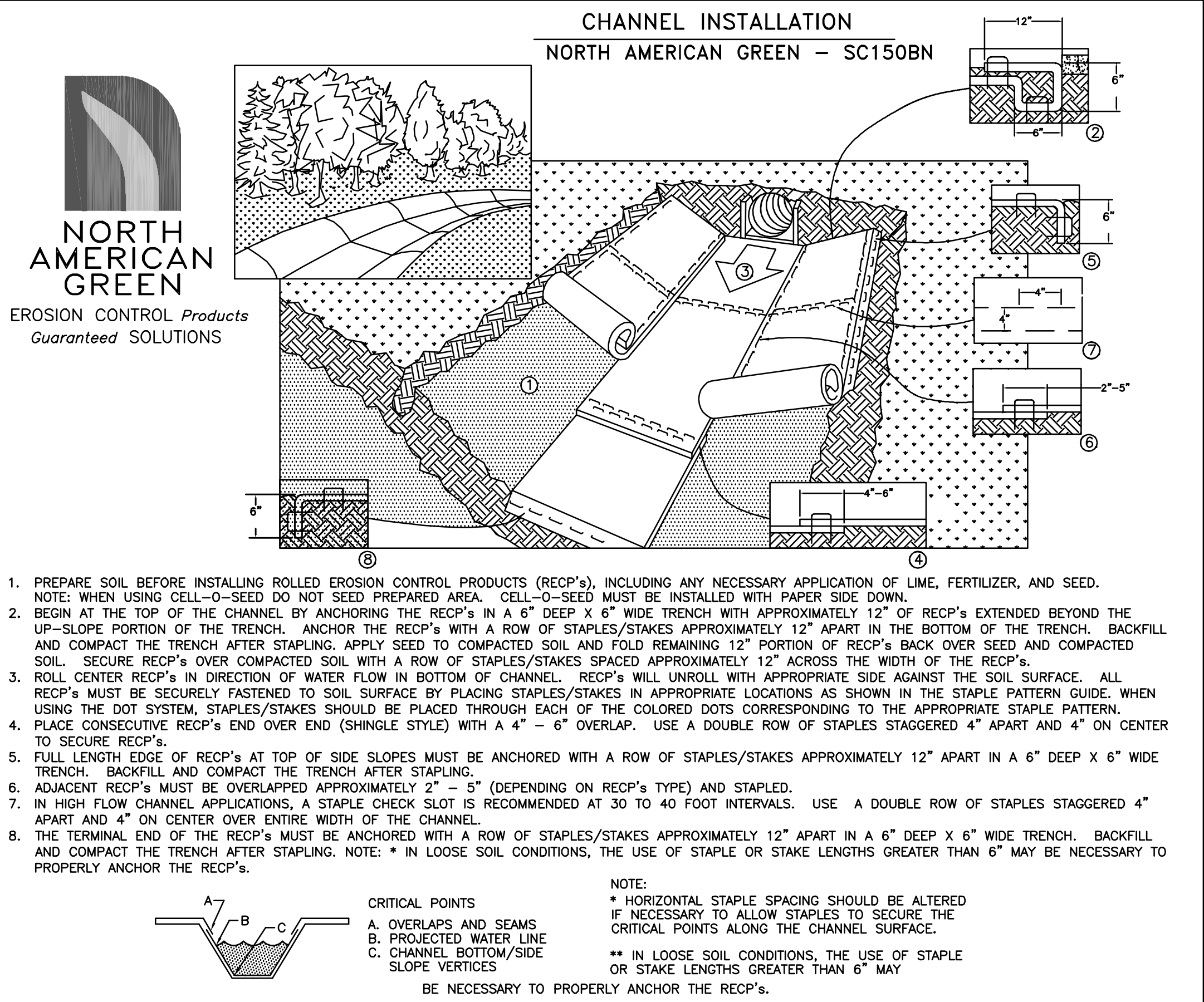
17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844

DATE: 2-29-24
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY: SJH
PROJECT NO: 23029
FILE: SITE.DWG

1 REVISION PER TRC COMMENTS
S/H 4-25-24
REVISION
DATE

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CNE CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, NH 03821
603.748.0443



PLANNING FILE NO.: SITE—2024—0003

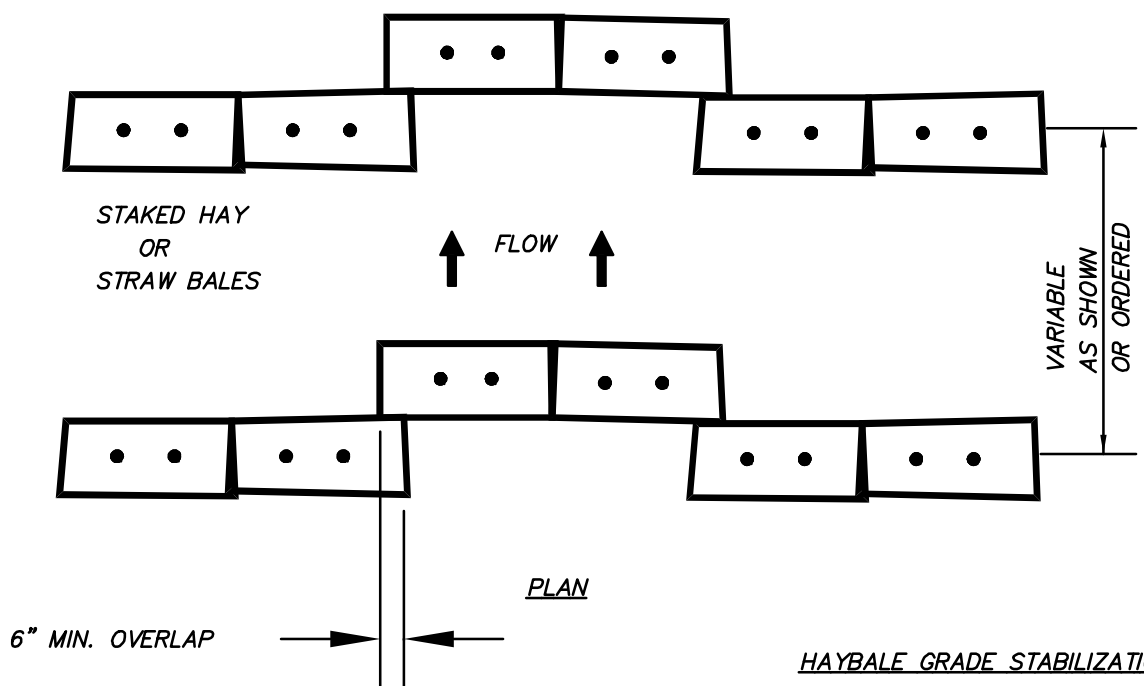
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REVISION	REVISION PER TRC COMMENTS	DATE
1	4-25-24	DATE

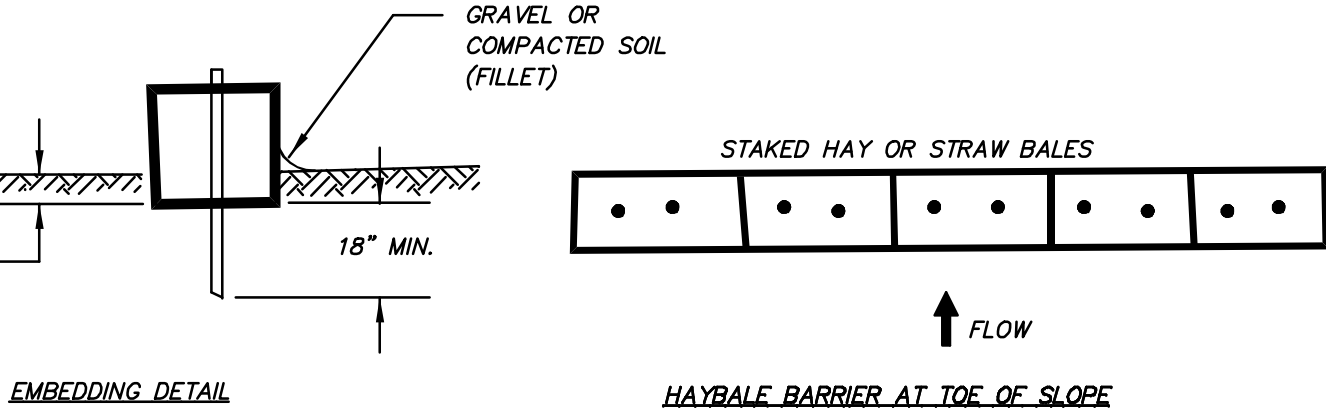
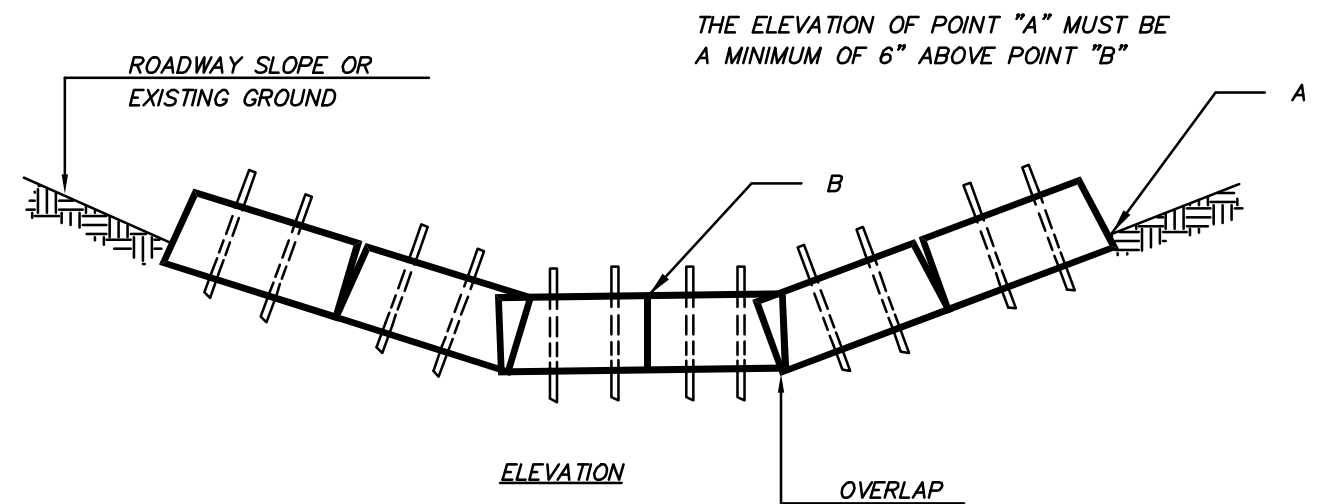
EROSION CONTROL DETAILS

17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844

LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH

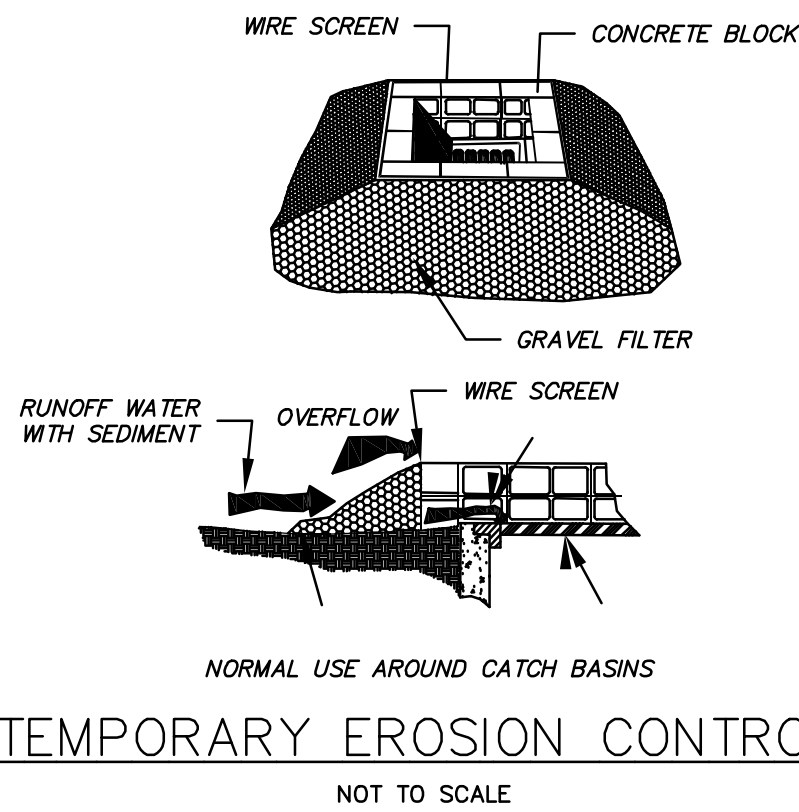


- CONSTRUCTION SPECIFICATIONS
- BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 - EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
 - BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" x 2" STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
 - INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 - BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
 - REMOVE AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING HAYBALES.



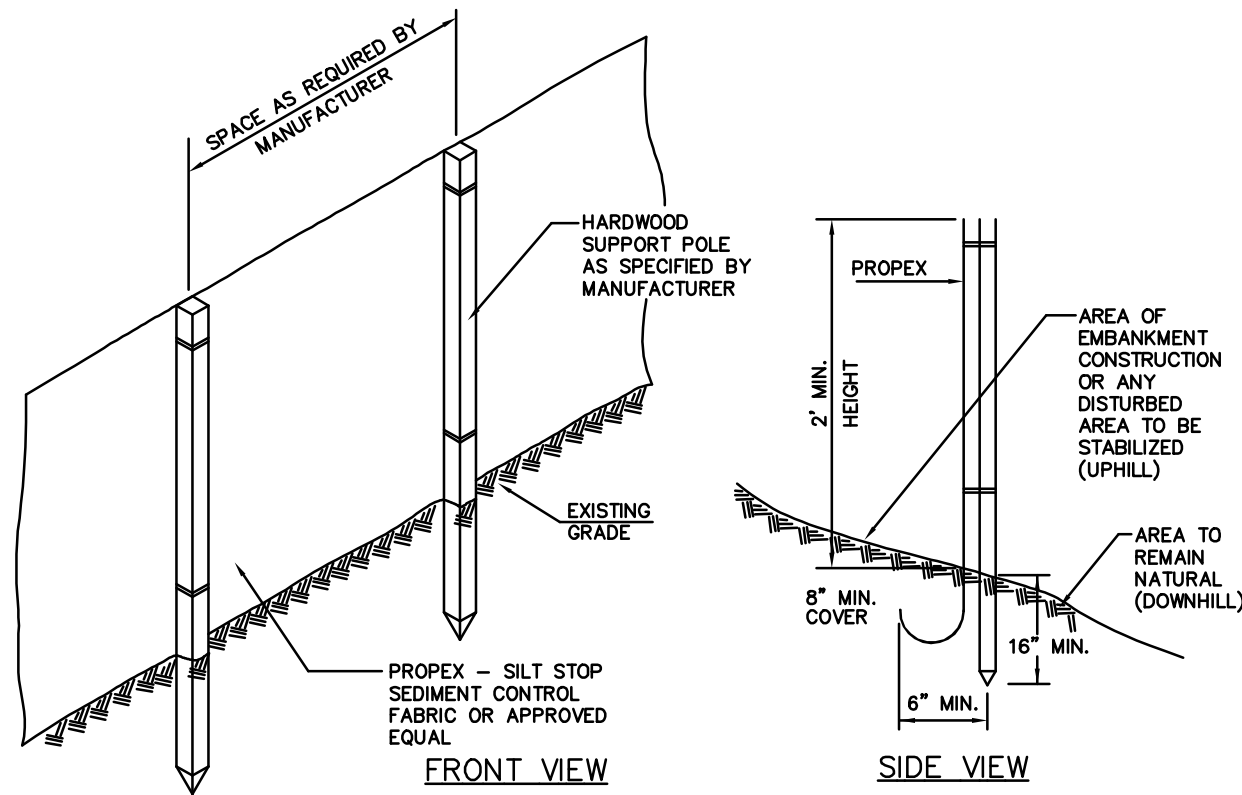
HAYBALE NOTES AND DETAILS

NOT TO SCALE



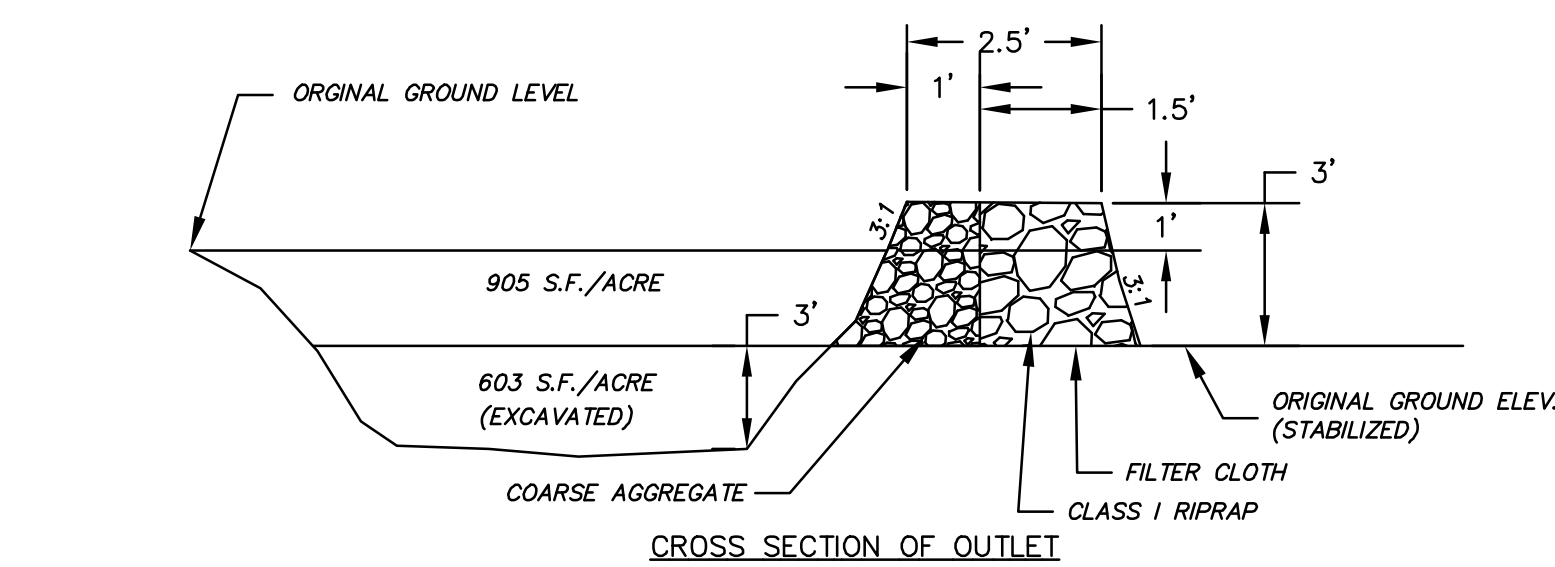
TEMPORARY EROSION CONTROL

NOT TO SCALE

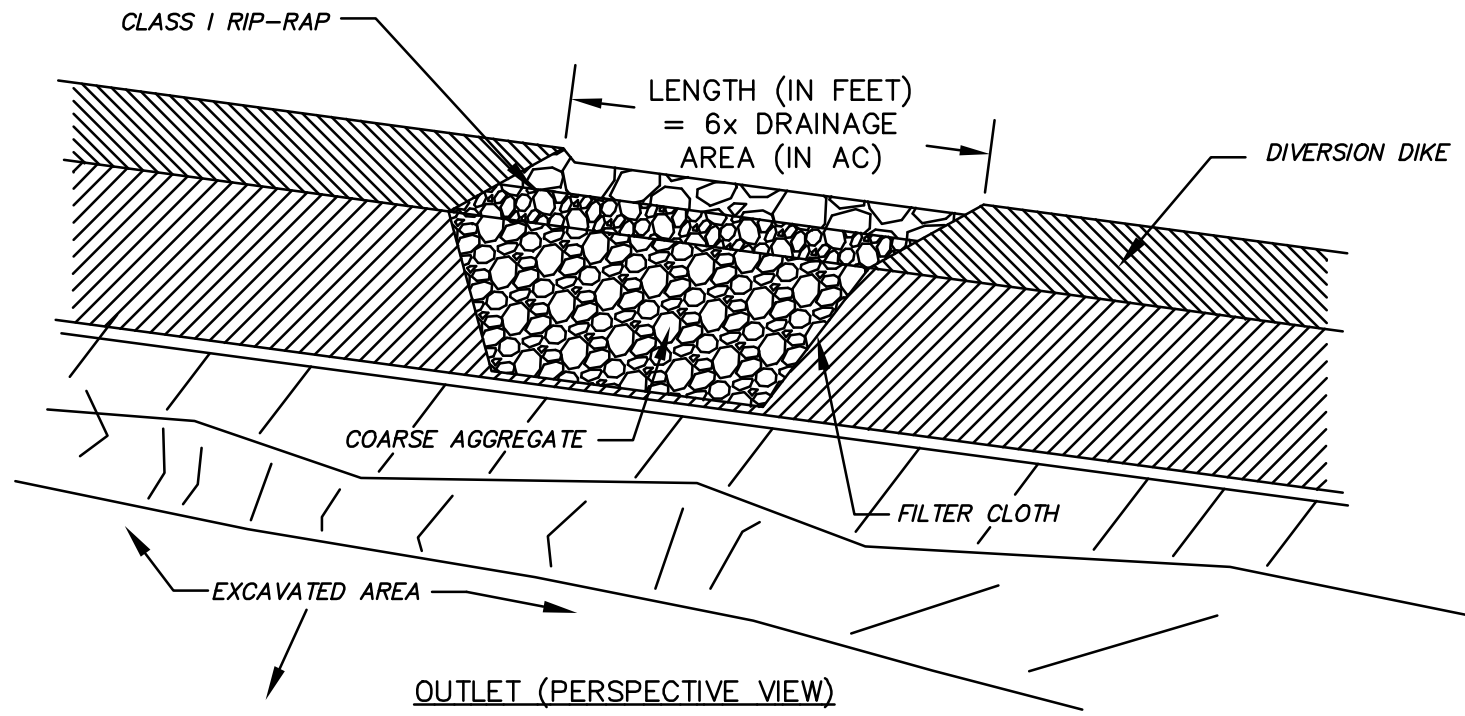


SILT FENCE DETAIL

NOT TO SCALE



CROSS SECTION OF OUTLET

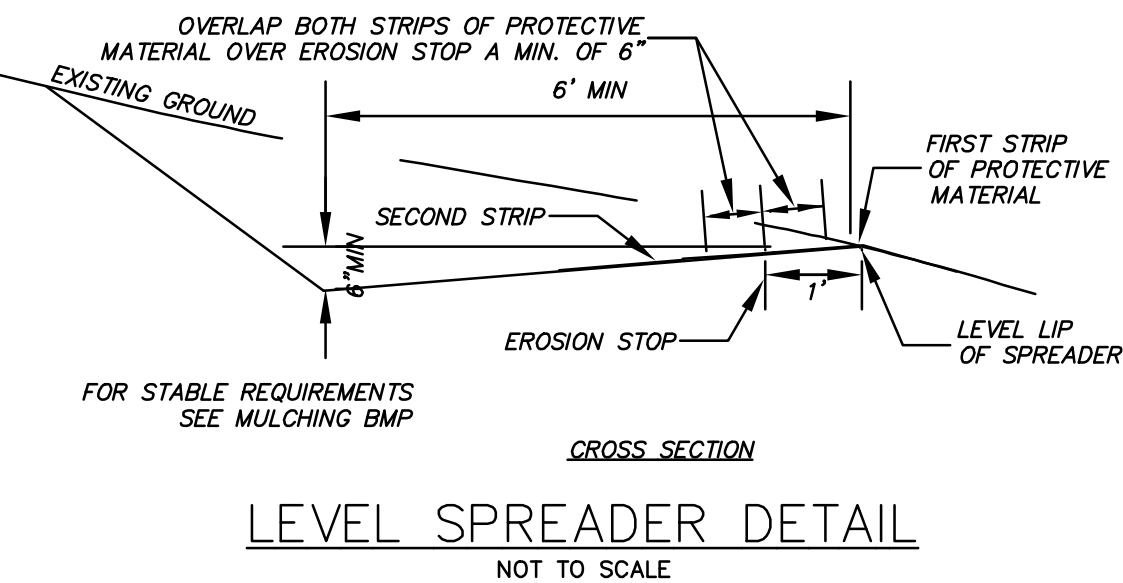
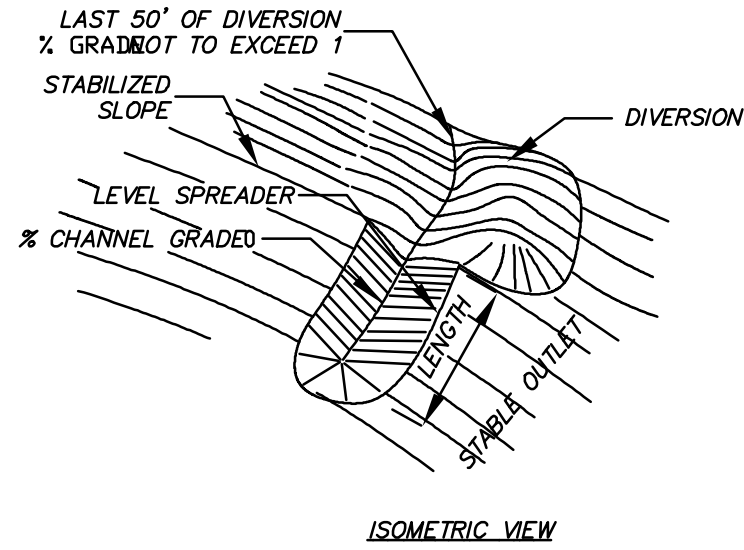


OUTLET (PERSPECTIVE VIEW)

- NOTES:
- COARSE AGGREGATE SHALL MEET NHDOT 304.5 SPECIFICATIONS AND SHALL NOT CONTAIN MORE THAN 5% FINES PASSING THE #200 SIEVE.
 - FILTER CLOTH SHALL BE MIRAFI 700X OR APPROVED EQUAL.
 - CLASS I RIPRAP SHALL MEET NHDOT 583 SS SPECIFICATIONS.
 - THE MAXIMUM CONTRIBUTING AREA TO THE TRAP SHALL BE LESS THAN 5 AC.
 - THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED.
 - MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

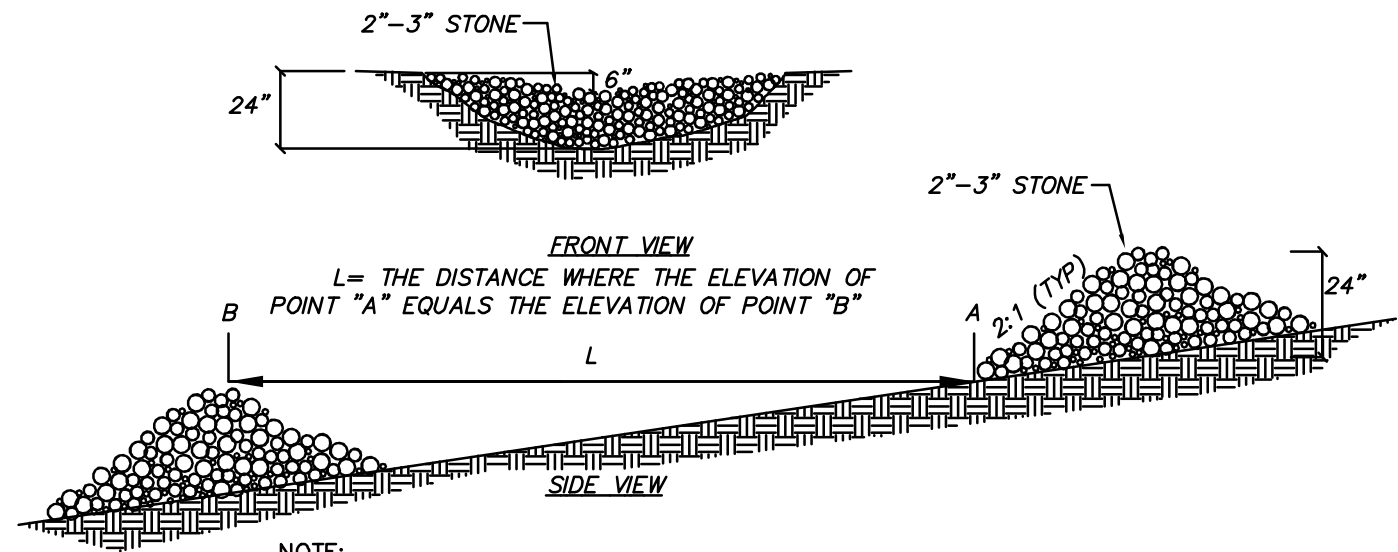
TEMPORARY SEDIMENT TRAP

NOT TO SCALE



LEVEL SPREADER DETAIL

NOT TO SCALE



STONE CHECK DAM

NOT TO SCALE

PLANNING FILE NO.: SITE-2024-0003

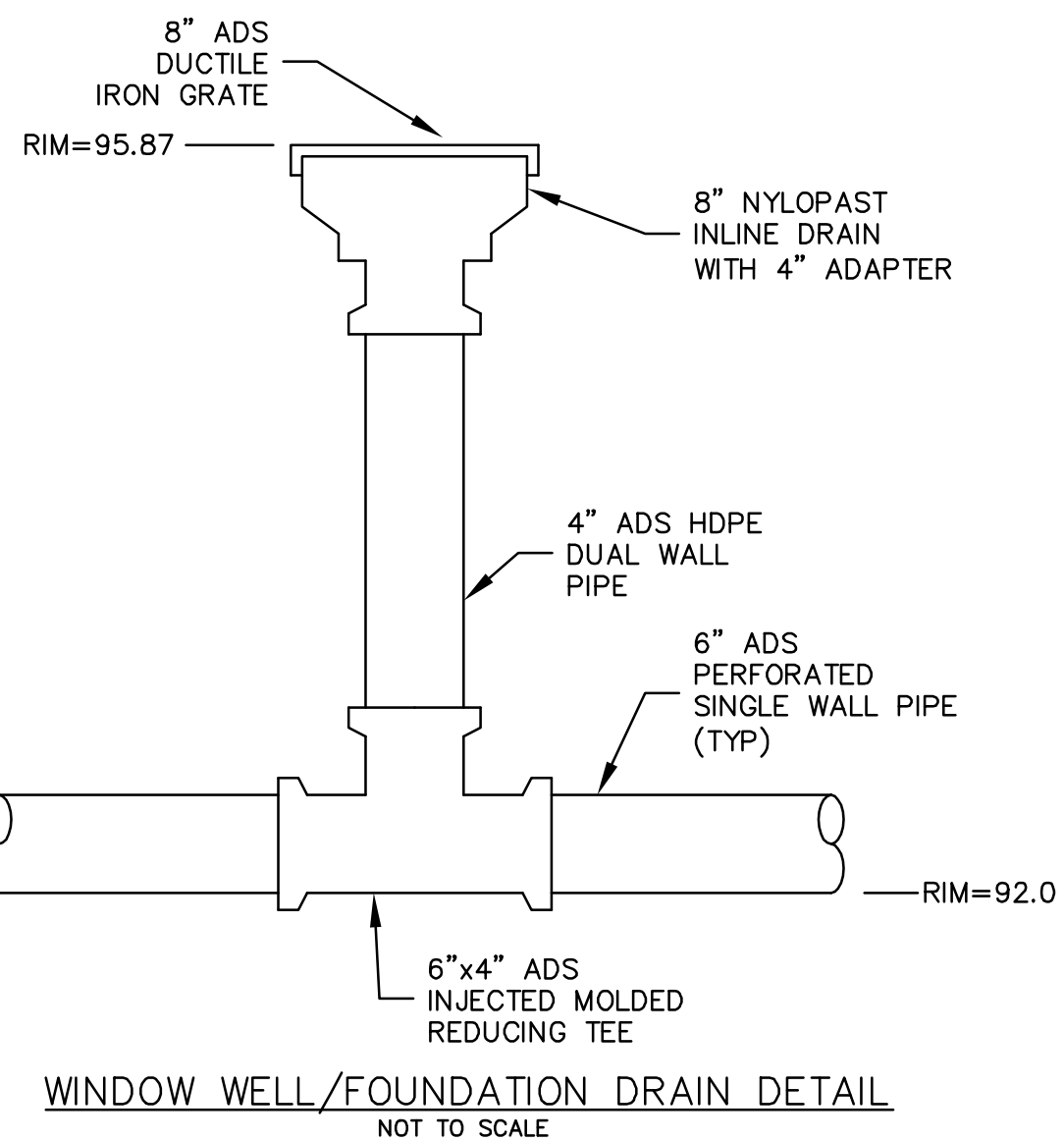
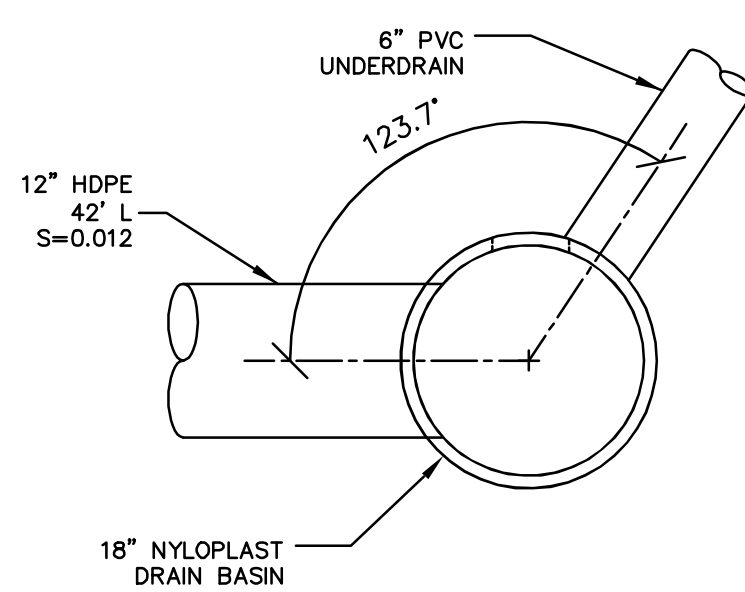
EROSION CONTROL DETAILS		17-19 SUMMER STREET PROPERTIES, LLC 71 LAFAYETTE ROAD HAMPTON FALLS, NH 03844	
LOCUST STREET RESIDENTIAL DEVELOPMENT DOVER, NH			

DATE	SCALE	DRAWN BY	DESIGN BY	PROJECT NO.	FILE SITE	NO.	REVISION	APPD	DATE
2-29-24	AS SHOWN	SRD	SRD	23029	DWG	1			
							REVISION PER TRC COMMENTS		
							BY: SJH		
							4-25-24		

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Dover, NH 03821
603.749.0443



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

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 OVERLAPPING 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.

4" LOAM AND SEED (TYP)

3

1

18" NYLOPLAST SOLID COVER ASSEMBLY

RIM INV.=99.90

18"

18" NYLOPLAST DRAIN BASIN

12" HDPE PIPE

INV.=94.75

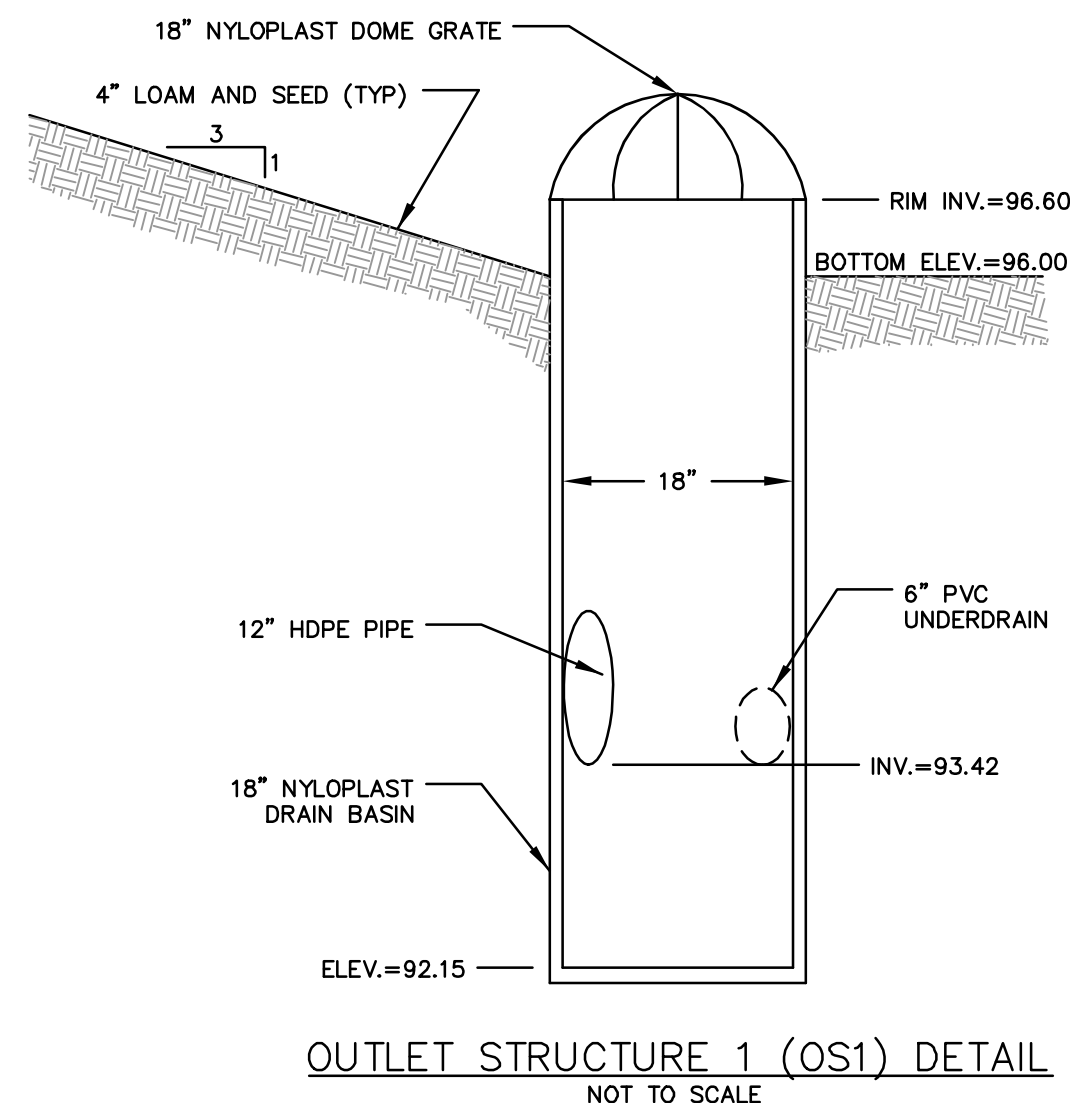
12" HDPE PIPE

INV.=92.68

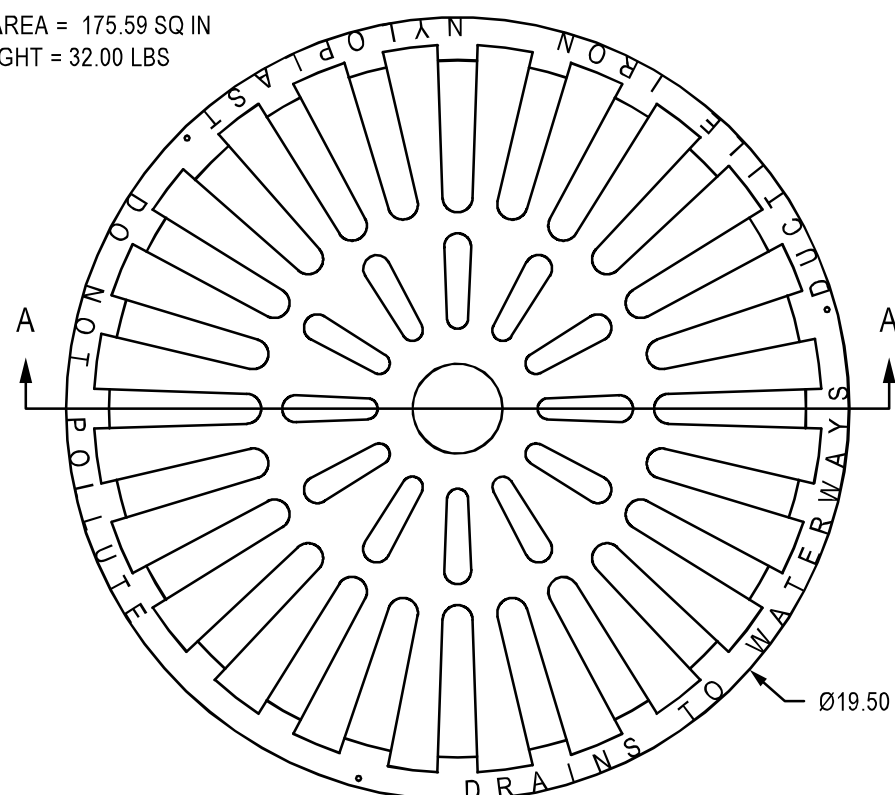
ELEV.=92.20

YARD DRAIN 1 (YD1) DETAIL

NOT TO SCALE

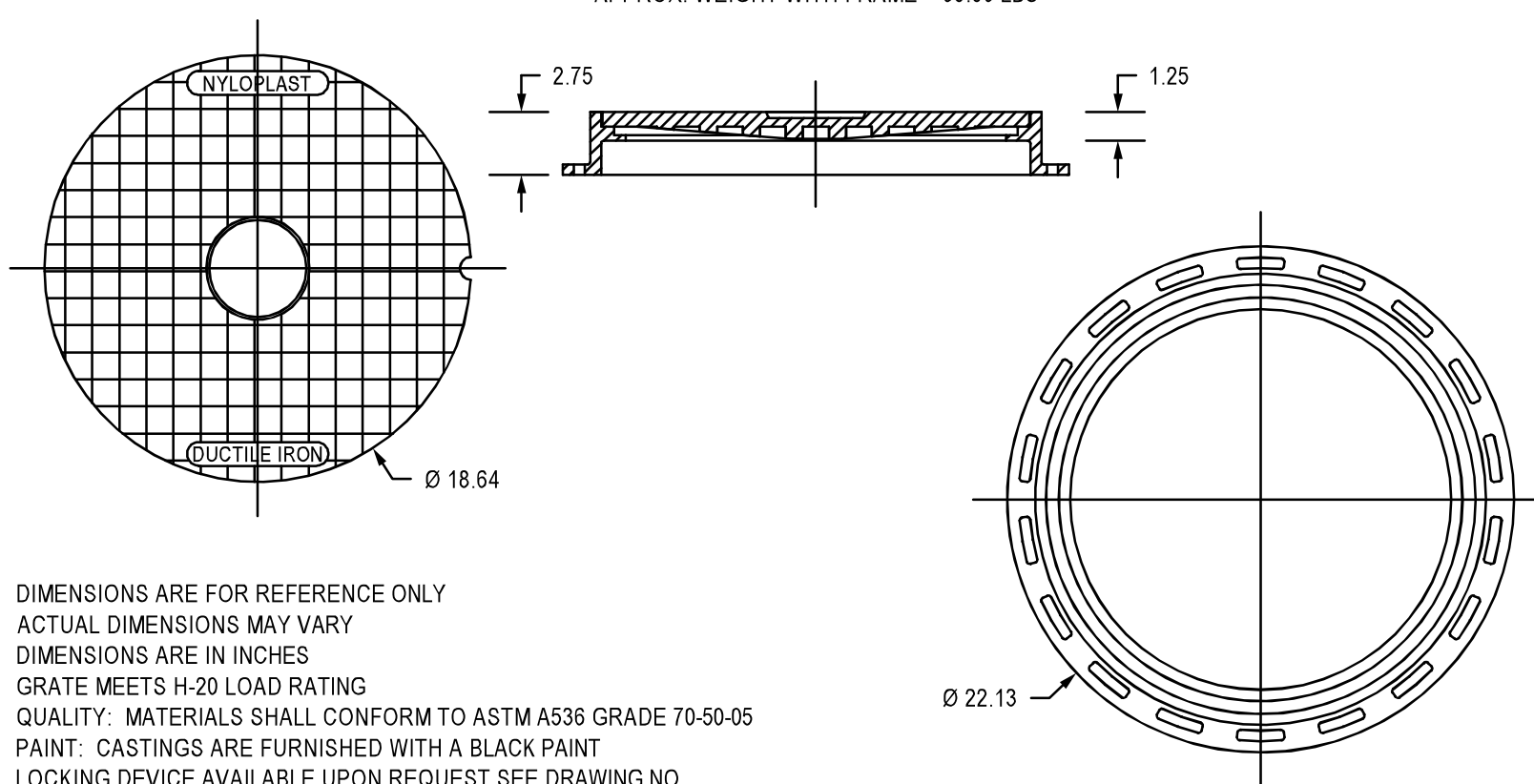


APPROX. DRAIN AREA = 175.59 SQ IN
APPROX. WEIGHT = 32.00 LBS



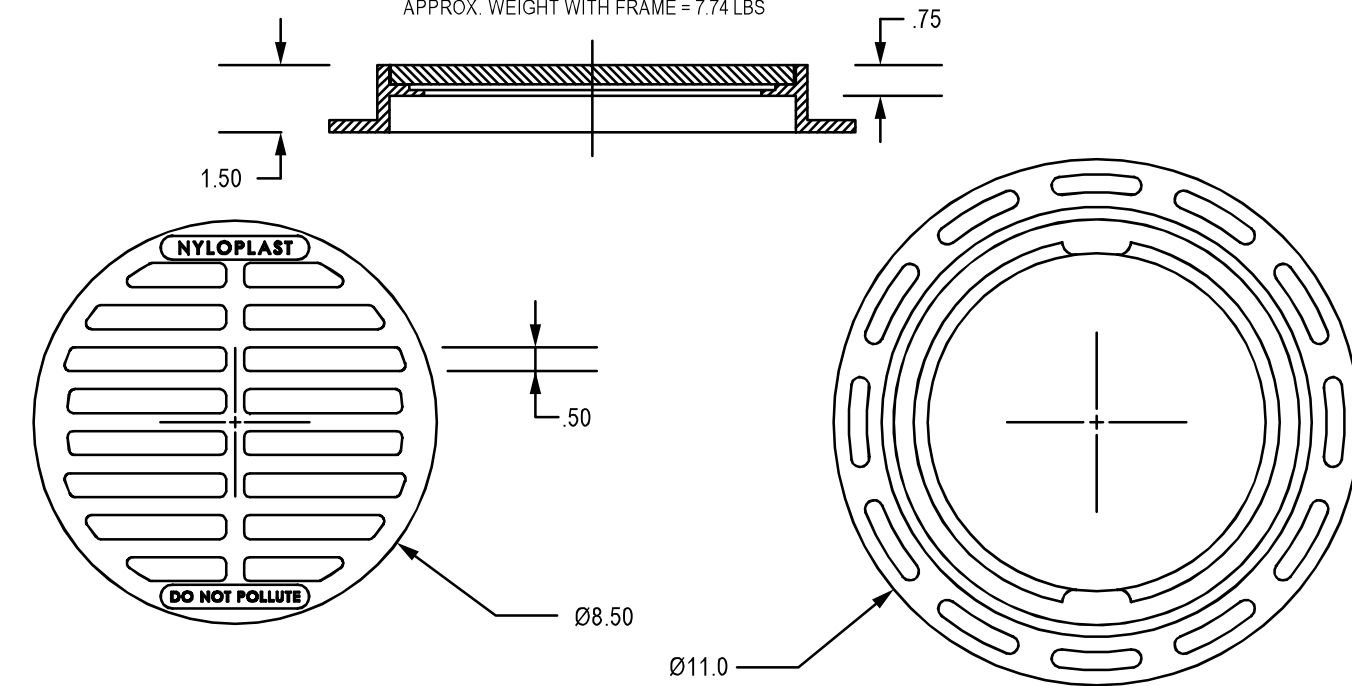
DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST

APPROX. WEIGHT WITH FRAME = 68.50 LBS



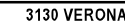
DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO.
7001-110-027

APPROX. DRAIN AREA = 22.53 SQ IN
APPROX. WEIGHT WITH FRAME = 7.74 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE HAS LIGHT DUTY RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY
ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF
JUSTICE, 28 CFR PART 36
LOCKING DEVICE AVAILABLE UPON REQUEST

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REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.				DATE 03-08-10 PROJECT NO./NAME REVISED BY CCA			
©2013 NYLOPLAST				DATE 08-30-13 TITLE 18 IN SOLID COVER ASSEMBLY - TYPE C			
DWG SIZE A		SCALE 1:10		SHEET 1 OF 1		DWG NO. 7001-110-214 REV D	

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		DATE: 6-22-18	DUCTILE IRON		
		APPD BY: NMH	PROJECT NO: NAME		
		DATE: 6-22-18			
		DWG SIZE: A	SCALE:	SHEET: 1 OF 1	DWG NO.: 7001-110-537
		 # 1 IN STANDARD GRATE ASSEMBLY - TYPE B			REV: A

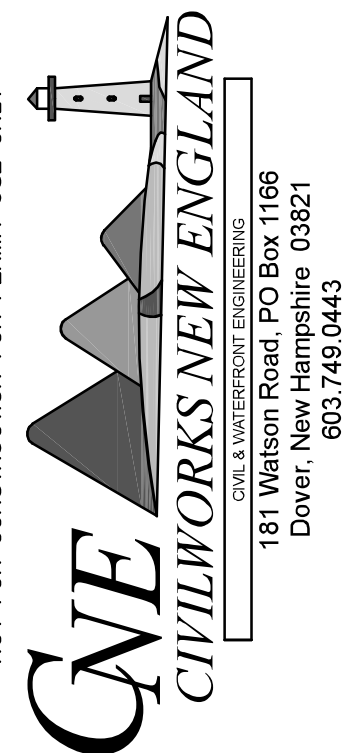
PLANNING FILE NO.: SITE-2024-0003

DETAILS

**LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH**

**17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844**

13



1. DO NOT BEGIN CONSTRUCTION OF THE BIOTRETENTION AREAS UNTIL LAWN AREA ON THE ENTIRE SITE IS ESTABLISHED WITH AT LEAST 80 PERCENT TURF. PREVENT SILTATION INTO THE BIOTRETENTION AREA.
2. 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.
3. 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.
4. MATERIALS: CRUSHED STONE LAYER SHALL MEET NHDOT 304.4. PEA STONE SHALL CONTAIN NO MORE THAN 5% FINE. #20 SIEVE. THE #200 SIEVE. TOPSOIL SHALL CONTAIN 15 TO 25% FINE. PASSING THE #200 SIEVE. MULCH SHALL BE SHREDDED HARDWOOD, AGED IN A STOCKPILE OR STORED FOR AT LEAST 12 MONTHS. UNDERDRAIN SHALL BE PERFORATED 6" PVC OR TRIPLE WALL PE PIPE. REFER TO LANDSCAPE DRAWINGS FOR GRASS SEED MIXES AND PLANTINGS. FERTILIZATION OF THE FILTER AREA SHALL BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.
5. 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).
6. 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. 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.
7. GRASS SEED SHALL BE NATIVE NON-INVASIVE SPECIES, SEE LANDSCAPE ARCHITECT DRAWINGS. ALL MATERIALS SHALL BE SUBMITTED TO, AND APPROVED BY, THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.



POND	POND ELEVATION					
	A	B	C	D	E	F
RG1	97.15	96.00	94.50	94.25	93.42	93.08

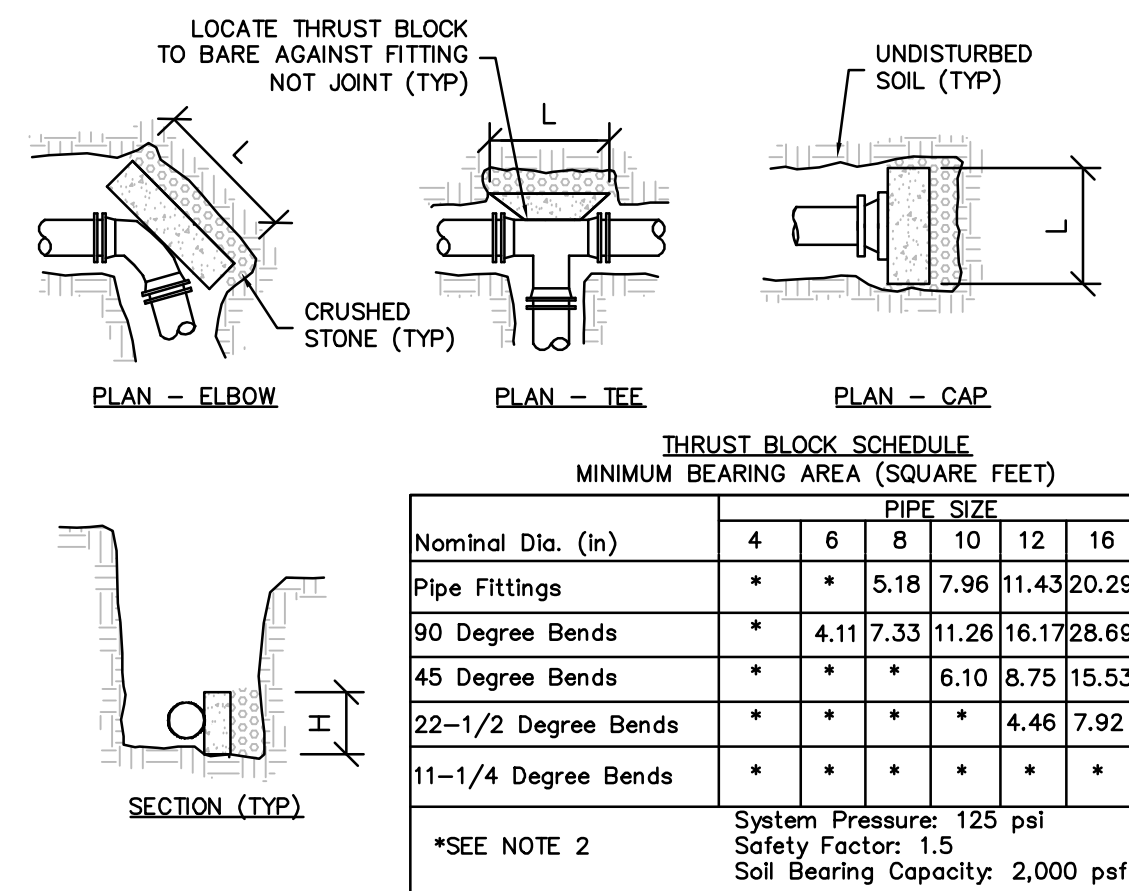
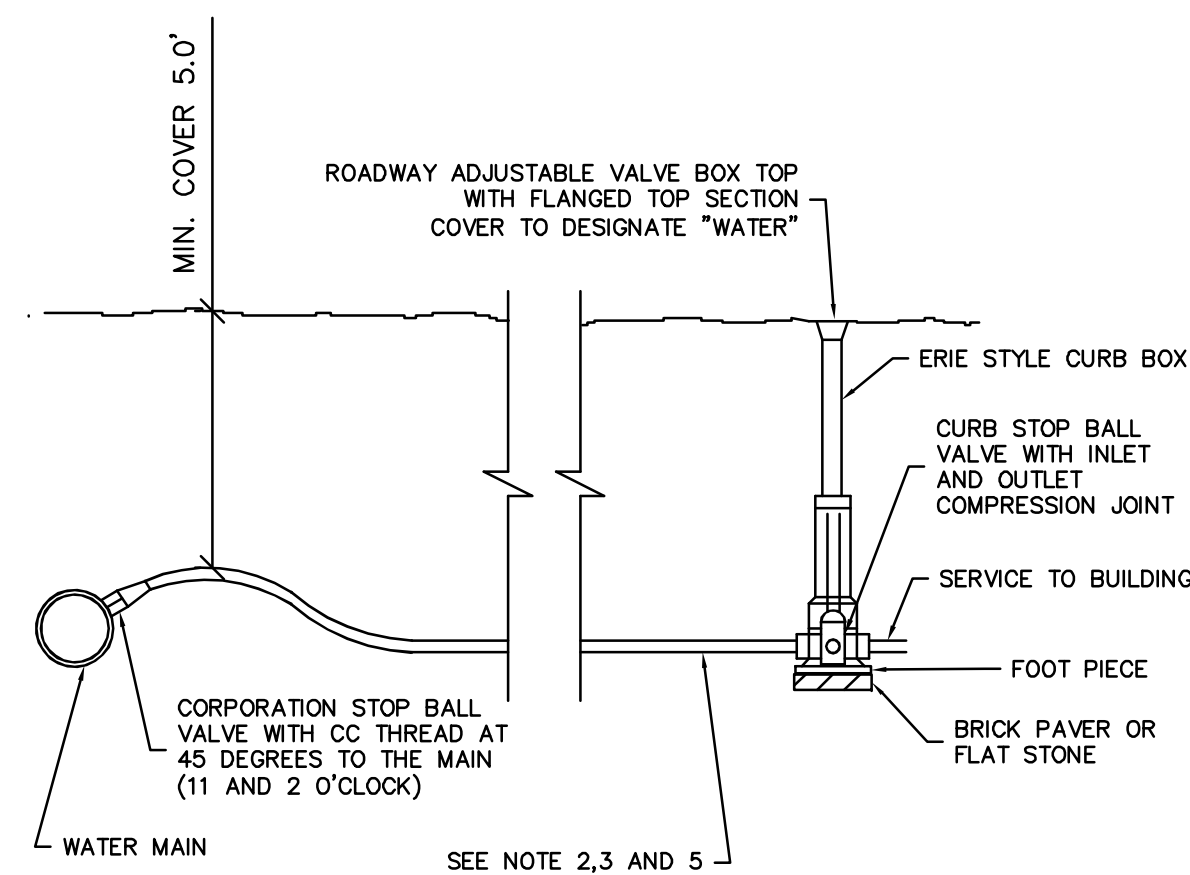
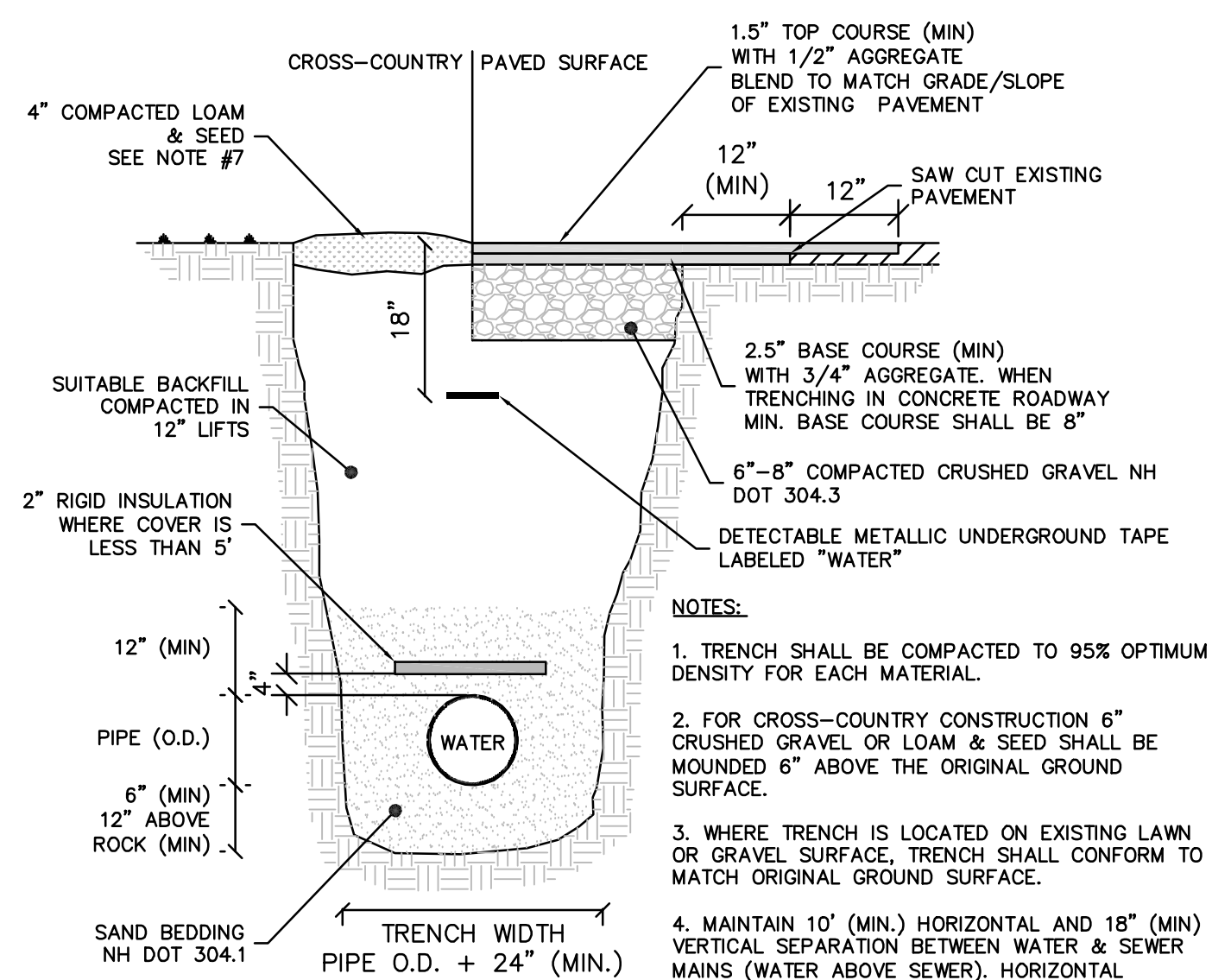
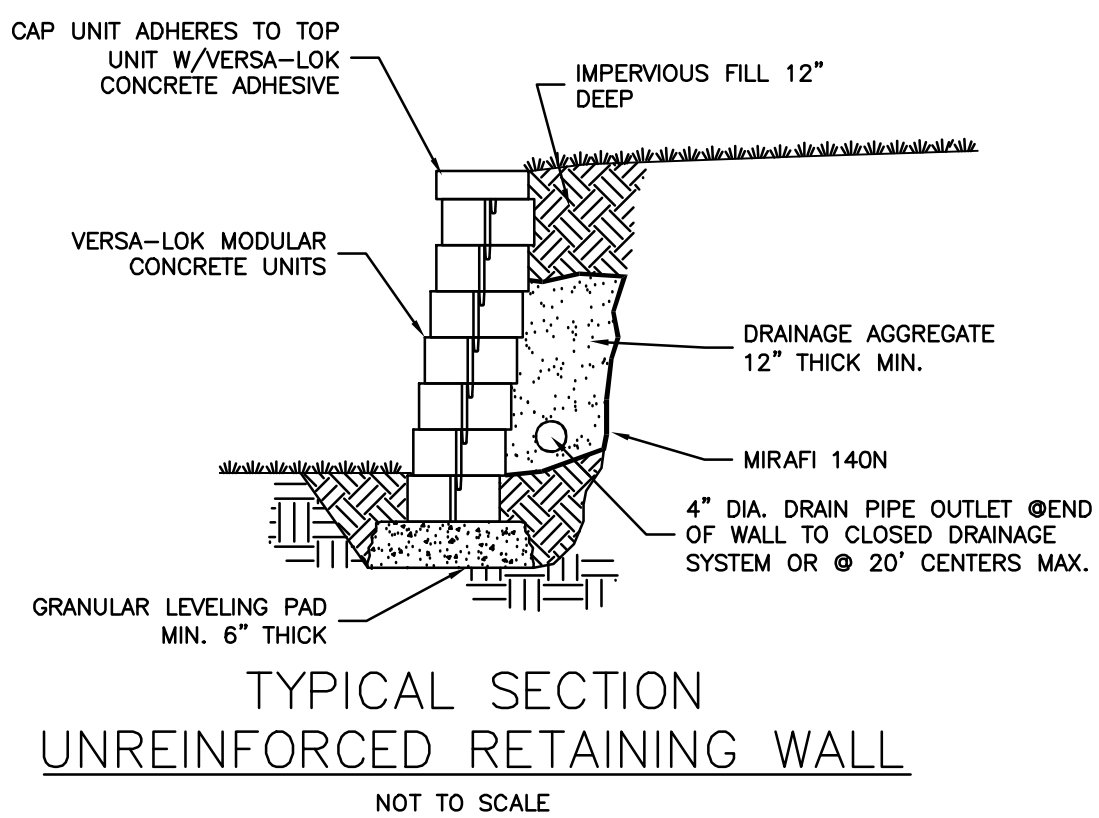
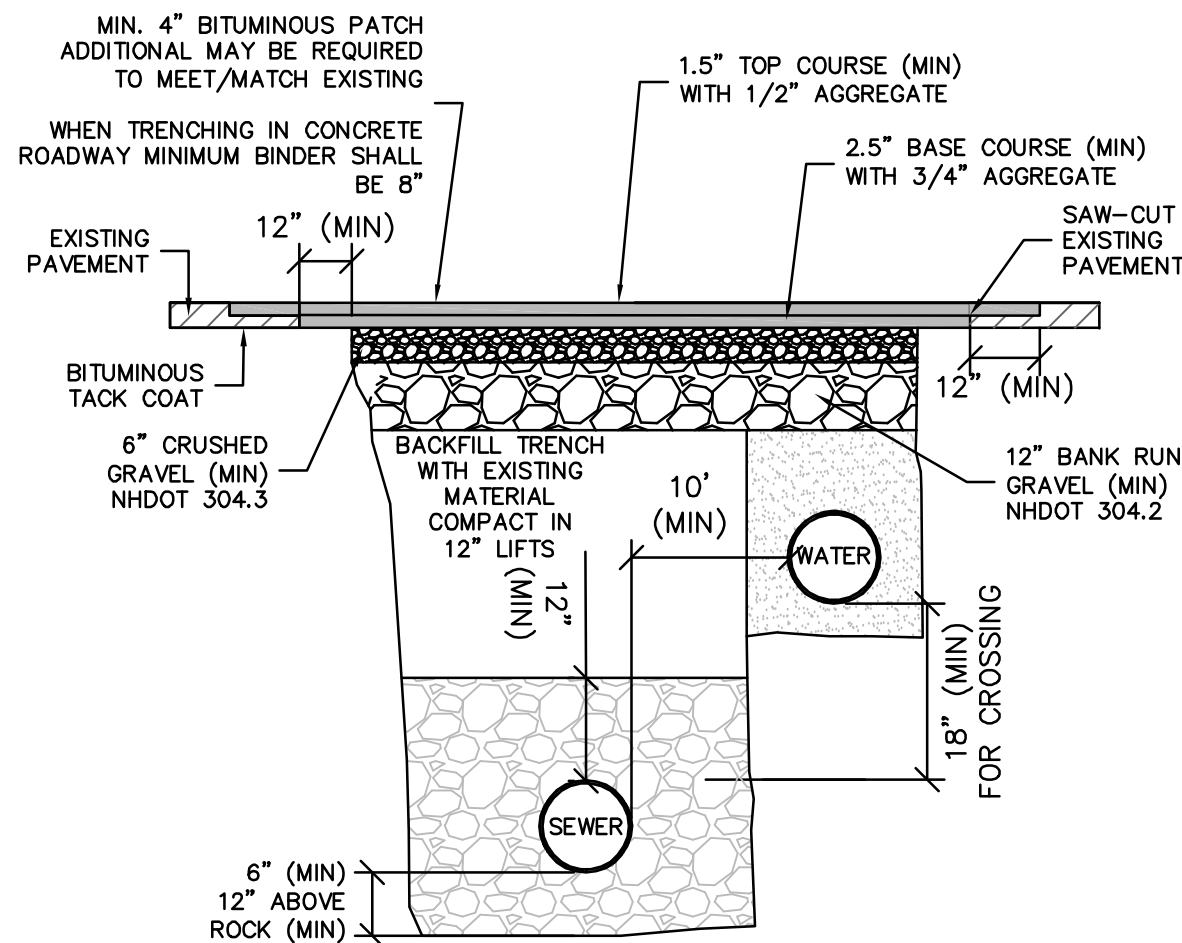
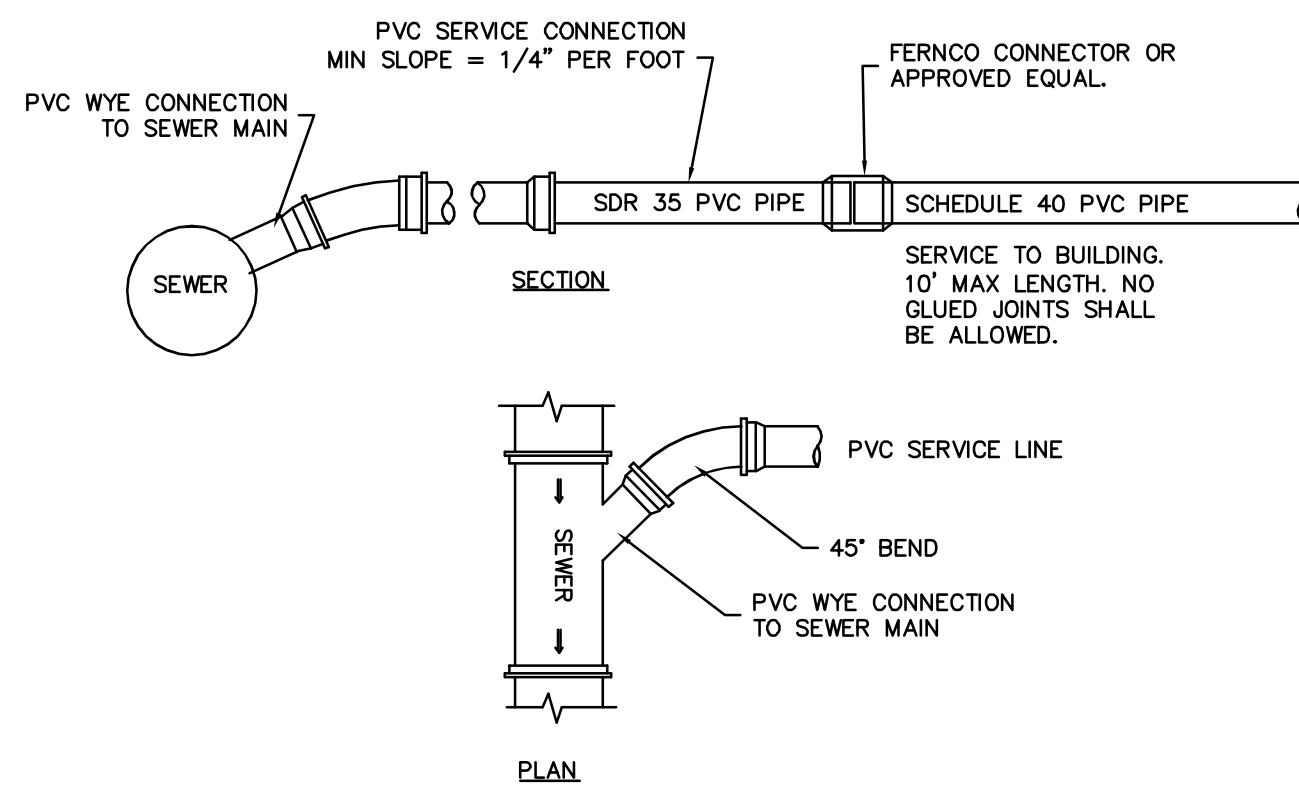
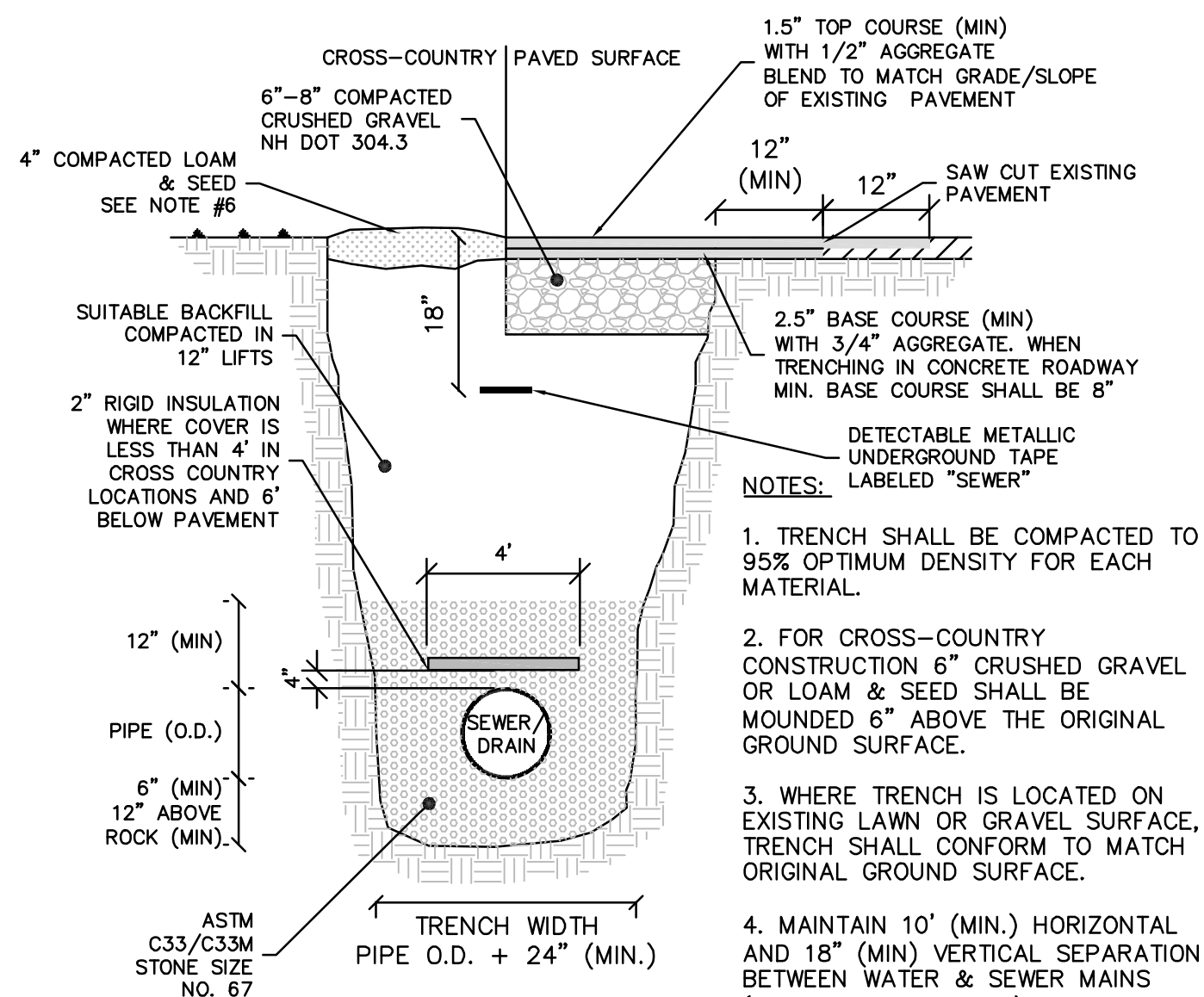
BIORETENTION FILTER MEDIA SPECIFICATIONS			
COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
MODERATELY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

NOT TO SCALE



<u>SIEVE DESIGNATION</u>	<u>PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE</u>
12-INCH	100%
6-INCH	84%–100%
3-INCH	68%–83%
1-INCH	42%–55%
NO. 4	8%–12%

NOT TO SCALE



PLANNING FILE NO.: SITE-2024-0003

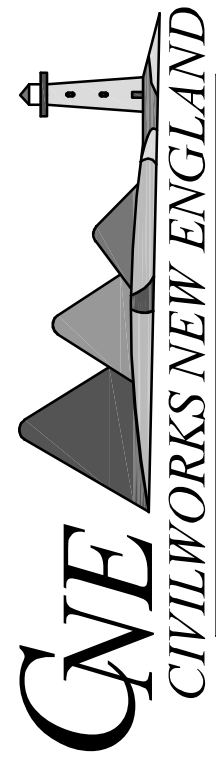
DETAILS

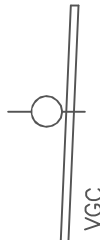
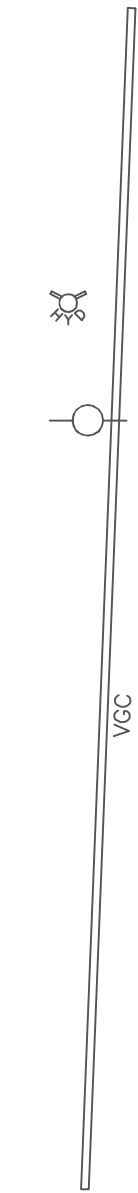
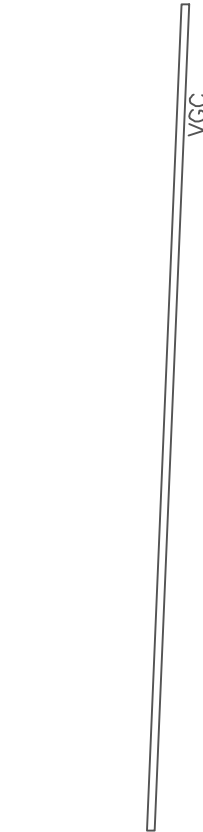
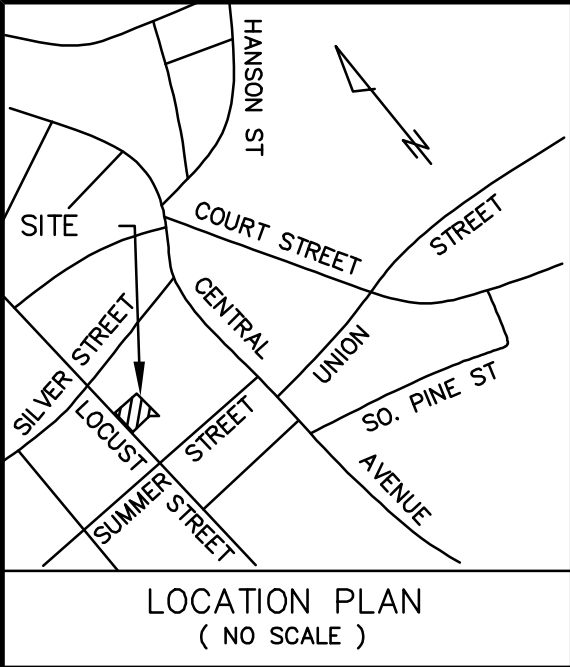
**LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH**

**17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844**

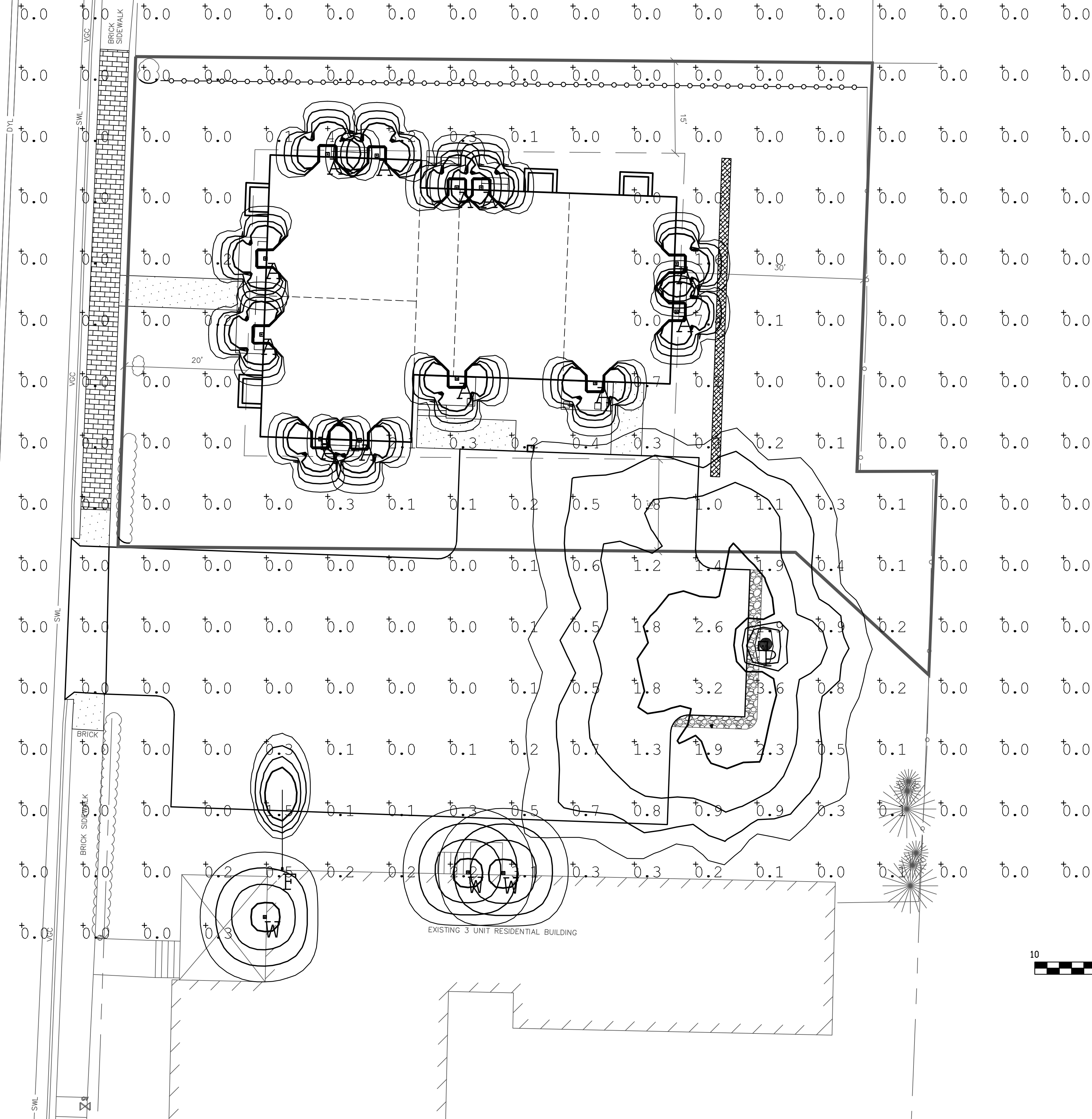
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NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

[illegible]



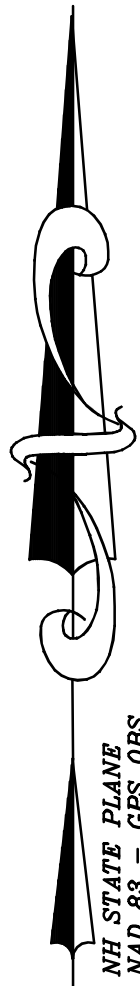
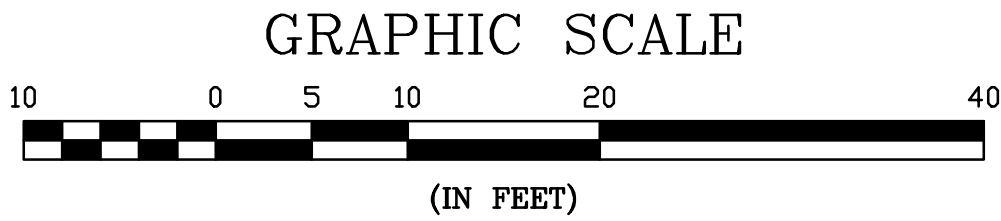
LOCUST STREET
{PUBLIC; 50' WIDE R.O.W.}



Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
⬢	12	A	Single	UVA-8W-30001-W30-01-120/277V	LIGMAN
⊕	1	F	Single	EXISTING FLOOD LIGHT	EXISTING
⬢	1	P	Single	CSL-P-3M-30-T4-TBK-BG-BLS / APQ20-12-BLK	Amerlux, LLC
⬢	3	W	Single	EXISTING DOOR LIGHT	EXISTING

PARKING LOT

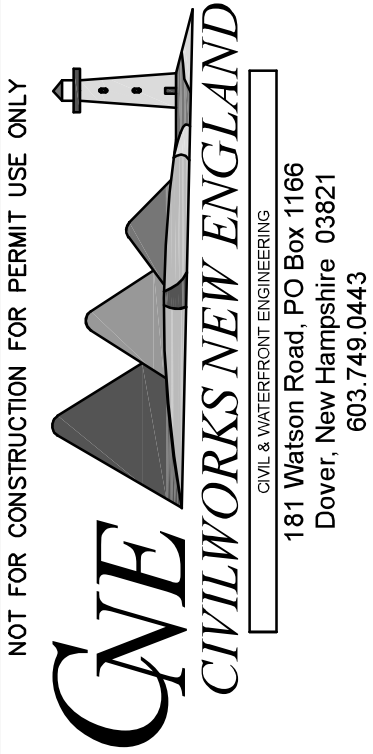
Illuminance (Fc)
Average = 0.46
Maximum = 3.2
Minimum = 0.0
Avg/Min Ratio = N.A.
Max/Min Ratio = N.A.



PLANNING FILE NO.: SITE-2024-0003

LIGHTING PLAN

17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844



181 Watson Road, PO Box 1166
Dover, NH 03821

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

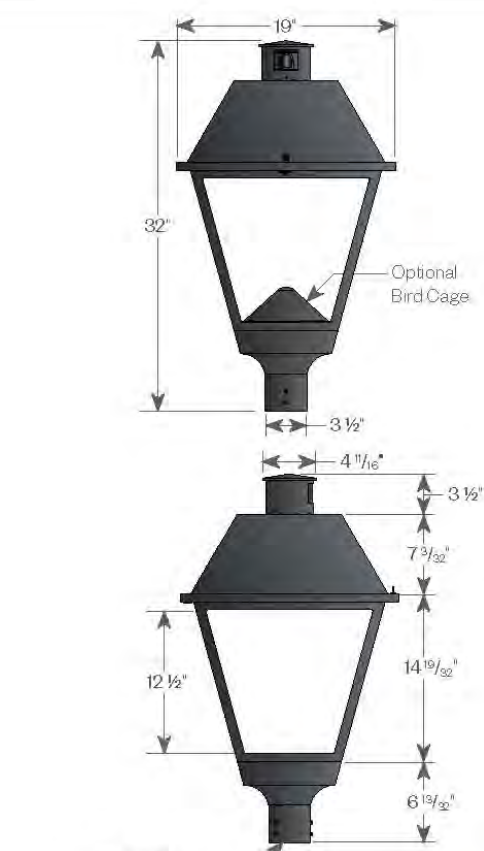
DATE	2-29-24	NO.	1	REVISION PER TRC COMMENTS	APP'D	DATE
SCALE	1"=10'					
DRAWN BY	SRD					
DESIGN BY	SRD					
APPROVED BY	SRD					
PROJECT NO.	23029					
FILE SITE	DWG					

COACH STYLE LANTERN

Post Top Mount



PROJECT:



Features

The Coach Style Lantern - Post Top (CSL-P) luminaire is a classically styled post-top lantern that offers a choice of several optical systems. Optional controls available.

Product Overview

Wattage:	24W, 44W, 60W, 79W
Lumen Output:	9,374lm (79W, T2, 4000K)
Color Temp:	3000K, 4000K
Dimming:	0-10V dimming
Luminaire Weight (approx.):	18 lbs (81 kg)
Shipping Weight (approx.):	24 lbs (10.8 kg)

TYPE:

Construction

Die-cast aluminum housing ensures rigidity and longevity in application. The rooftop casting is hinged to the cage and utilizes tool-less hardware for ease of installation and maintenance.

Optical Module

The luminaire utilizes up to four IP68 sealed optical modules consisting of a high performance LED board with an acrylic (TIR) lens to deliver maximum spacing and uniformity. A choice of Type 2 (T2), Type 3 (T3), Type 4 (T4), or Type 5 (T5), IES distributions are available with the scalability to meet application criteria. Custom configurations available.

Electrical

- 12 LEDs per module
- LED Board Drive Current 530mA (Custom drive currents available)
- Universal input voltage 120-277 VAC (50/60Hz)
- Operational Temp. -40°C/40°C
- Power consumption up to 79W
- Series wired 20kV/10kA surge protector (Per ANSI C82.77-5-2015)
- 0-10V dimming is standard
- A 247V/450V option is available
- DLC listed

Light Distribution

- Type I (T2)
- Type III (T3)
- Type IV (T4)
- Type V (T5)

CCT:

3,000K (30)

4,000K (40)

Photo Control:

- A 3-pin twistlock photocell receptacle is standard.
- An optional rotatable 7-pin (7P) twistlock photocell receptacle is available.
- The 3-pin Twistlock photocell is an accessory and must be specified (TW-POL).

Mounting

Slip fits 3/8" tenon

Finish

- Durable thermoset polyester powdercoat finish in the following:
 - Textured Black (TBK)
 - Classic Bronze (OLB)
 - Gloss Textured Bronze (GBZ)
 - Gloss Textured Black (GTB)

Optional Lens

- Textured Acrylic (TA)
- Bird Guard (BG)
- Backlight Shield (BLS) (available for T2, T3 & T4 distributions)
- Twistlock Photocell (TW-POL)
- Shorting Cap (to bypass receptacle) (SC)
- Wireless control option

EPA: 161

(2.77 with optional lens)

LIT-00066 - 08/2022 - Page 1 of 5
Amerlux reserves the right to change details that do not affect overall function and performance.
Amerlux, LLC - 175 Bauer Drive, Oakland, NJ 07036 - P: 973-882-5000 F: 973-882-2905 - amerlux.com

APQ20 Series



PROJECT:



See pg.3 for more details.

Features

- Strong, lightweight and easy to install
- Extruded aluminum shaft welded to a decorative cast aluminum base
- 3" O.D. x 3' tall tenon included for luminaire mounting
- Access door for wiring secured with stainless steel screws
- Ground lug included inside base
- Durable powder coat finish

Materials

- Base - Cast aluminum (A356)
- Shaft - Extruded Aluminum (6061-T6)
- Tenon - Cast Aluminum (A356)
- Anchor Bolts - Hot dipped galvanized
- Hardware - Stainless Steel

Finish

The post will be finished with an electrostatically applied polyester powder coat suitable for exterior use. The poles are pretreated using industry standard environmentally responsible processes for a long lasting and durable finish.

Anchorage

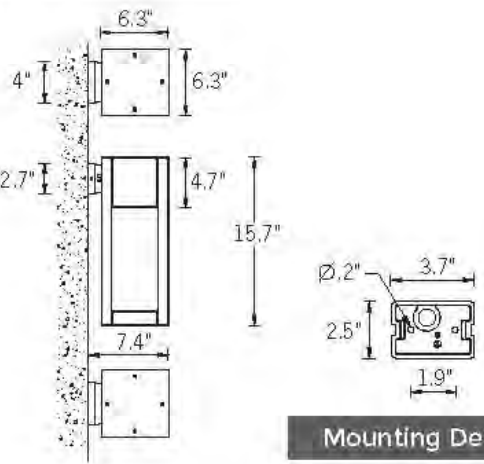
- 1/2" x 18" x 3" Hot-dipped galvanized steel L-type anchor bolts (ordered separately)

LIT-00070 - 08/2023 - Page 1 of 5
Amerlux reserves the right to change details that do not affect overall function and performance.
Amerlux, LLC - 175 Bauer Drive, Oakland, NJ 07036 - P: 973-882-5000 F: 973-882-2905 - amerlux.com

UVA-30001 Vancouver 24 Surface



8w COB 331 Lumens
IP68 - Suitable For Wet Locations
IK08 - Impact Resistant
Weight 13.6 lbs



Mounting Detail



Construction

Aluminum
Luma 30001 is copper content - Marine Grade 6060 extruded & Luma Aluminum High Pressure die casting provides excellent mechanical strength - often detailed product lines and excellent heat dissipation.
Paint
8 step degrease and phosphate process that includes acidizing and etching as well as a zinc and nickel phosphate process before product painting.
Memory Retentive Silicon Coating
Provided with special application method for "purposed" long life high temperature memory retentive silicon glasses. Maintains the specified exact profile and seal over years of use and compression.

Thermal management
Luma Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Luma used in conjunction with the driver control thermal sink below optical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

Surge Suppression
Standard 150V surge suppressor provided with all fixtures.

Build Rating

Corrosion Factory

Finishing

All Light-in products go through an extensive finishing process that includes fitting to improve paint adherence.

Paint

UV Stabilized 4.9M thick powder coat paint and baked at 200 Deg C. This process ensures that Luma products can withstand harsh environments. Rated for use in restaurants.

Inspired by Nature Finishes

The Inspired by Nature Finishing is a unique system of decorative powder coating. Our metal decoration process can easily transform the appearance of metal or aluminum product into wood grain finish.

The patented technology enables the simulation of wood grain, and even marble or granite finish through the use of decorative powder coating.

The wood grain finish is so realistic that its almost undistinguishable from real wood, even from a close visual inspection. The system of coating penetrates the entire thickness of the coat and as a result, the coating cannot be removed by normal rubbing, chipping, or scratching.

The Coating Process

After pre-treatment the prepared parts are powder coated with a specially formulated polyurethane powder. This powder provides protection against wear, abrasion, impact and corrosion and acts as the relief base color for the finished metal decoration.

The component is then wrapped with a sheet of non-porous film with the selected decoration pattern printed on it using special high temperature inks.

This printed film transfer is vacuum sealed to the surface for a complete thermo print and then transferred into a customerized oven. The oven transforms the ink into different forms within the paint layer before it becomes solid. Finally, the film is removed, and a vivid timber look on aluminum remains.

Wood grain coating can create beautiful wood-looking products of all sorts. There are over 200 combinations of designs currently in use. Wood grains can be made with different colors designs, etc.

Added Benefits

- Resistance to salt-crystal rain, accelerated aging
- Boiling water, lime and condensed water resistant
- Anti-graffiti, anti-slip, anti-microbial, anti-scratch
- Super durable (UV resistant)
- TSC free (non-toxic)

Hardware

Provided hardware is Marine grade 316 Stainless steel.

Anti-Scale Spray Adhes

Typical holes are infilled with a special anti-scale compound designed to prevent scale or threaded connections, due to electrolysis from hot, corrosive atmospheres and moisture.

Crystal Clear Low Iron Glass Lens

Provided with tempered, impact resistant crystal clear low iron glass ensuring no green glass tinge.

Optics & LED

Precise optic design provides exceptional light control and precise distribution of light.
LED CRI > 80

Lumen - Maintenance Life

LED life of 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

LIGMAN LIGHTING USA

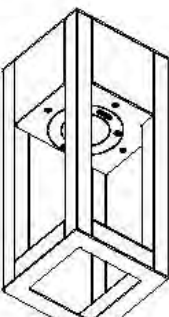
Contemporary urban lighting furniture. Open-sided, three lattice pattern options or your bespoke design.

A stylish Dark Sky Compliant square high performance wall mounted luminaire with downward light distribution using LED lamps. This light column offers optimal visual comfort through glare control by utilizing a controlled optics designed by Ligman. These luminaires have a square design providing a unique wide light distribution, offering an architecturally appealing shadow pattern on the mounted surface. The internal sides of the supporting pillars are accented by light from the LED.

Color temperature 2700K, 3000K, 3500K and 4000K. The minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian areas, precincts, building surrounds, shopping centers, squares and parks. The Vancouver comes standard with a unique waterproof internal driver housing compartment that is situated at the top of the pole to stop water and dust from entering the electrical components. This fixture is supplied completely wired with powercord and waterproof gland from the driver enclosure to the base of the column to ensure quick trouble-free installation.

Custom heights are available, please specify in options. Designed to complement the Vancouver Light Column and bollard.

Additional Options (Consult Factory For Pricing)



CB Open Bottom

PLANNING FILE NO.: SITE - 2024-0003

LIGHTING DETAILS

17-19 SUMMER STREET
PROPERTIES, LLC
71 LAFAYETTE ROAD
HAMPTON FALLS, NH 03844

LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH

17

DATE: 2-29-24	SCALE: AS SHOWN
DRAWN BY: SRD	DESIGN BY: SRD
APPROVED BY: SRD	PROJECT NO: 23029
FILE: SITE.DWG	NO.

REVISION	REVISION PER TRC COMMENTS	SJH	4-25-24	DATE
1	REVISION PER TRC COMMENTS			

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE
CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, NH 03821
603.748.0443

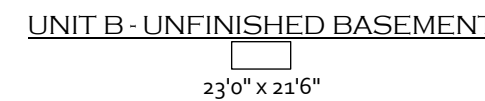
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LOCUST ST., DOVER, NH 03820

Scale: AS NOTED

BASEMENT PLAN

A1.0



COMMON CORRIDOR	205 SQ.FT.
MECAHNNICAL ROOM (BASEMENT)	147 SQ.FT.



4 UNITS RESIDENTIAL BUILDING

LOCUST ST., DOVER, NH 03820

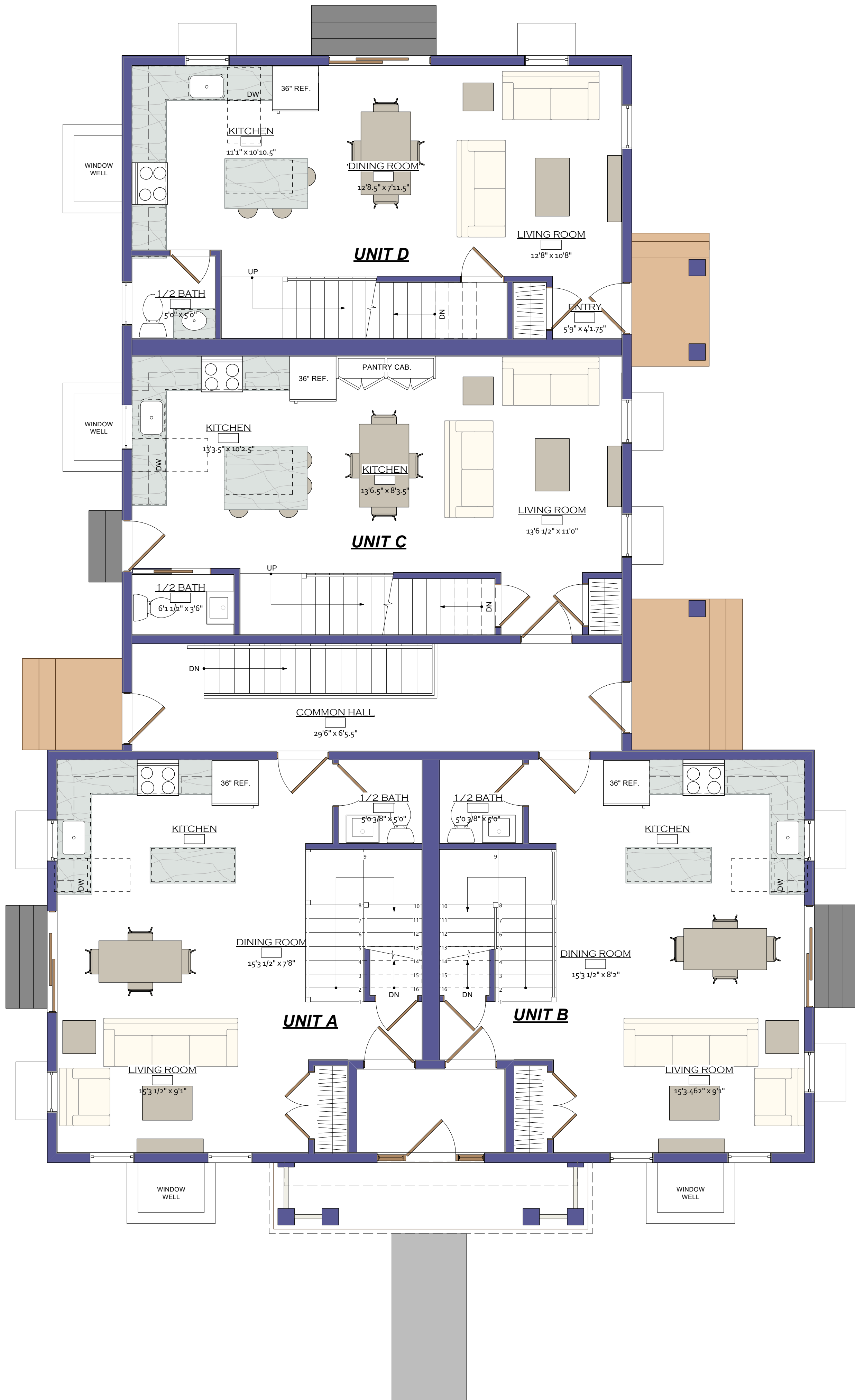
REVISION & REISSUE NOTES		
No.	Date	Notes
A	4/25/2024	REVISION BY TRC COMMENTS

SQUARE FOOTAGE	
UNIT A	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	499 SQ.FT.
UNIT A - PROPOSED FINISHED SPACE TOTAL	1647 SQ.FT.
UNIT A - UNFINISHED BASEMENT	567 SQ.FT.
UNIT B	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	479 SQ.FT.
UNIT B - PROPOSED FINISHED SPACE TOTAL	1626 SQ.FT.
UNIT B - UNFINISHED BASEMENT	567 SQ.FT.
UNIT C	
1st FLOOR GROSS SQ.FT.	536 SQ.FT.
2nd FLOOR GROSS SQ.FT.	742 SQ.FT.
ATTIC GROSS SQ.FT.	608 SQ.FT.
UNIT C - PROPOSED FINISHED SPACE TOTAL	1886 SQ.FT.
UNIT C - UNFINISHED BASEMENT	536 SQ.FT.
UNIT D	
1st FLOOR GROSS SQ.FT.	534 SQ.FT.
2nd FLOOR GROSS SQ.FT.	534 SQ.FT.
ATTIC GROSS SQ.FT.	456 SQ.FT.
UNIT D - PROPOSED FINISHED SPACE TOTAL	1525 SQ.FT.
UNIT D - UNFINISHED BASEMENT	536 SQ.FT.
COMMON CORRIDOR	205 SQ.FT.
MECAHNICAL ROOM (BASEMENT)	147 SQ.FT.

Project Manager ST	Project # 2022-02	Date 05-13-2022
Scale: AS NOTED		

FIRST FLOOR PLAN

A1.1



1 PROPOSED FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"

[illegible]

LOCUST ST., DOVER, NH 03820

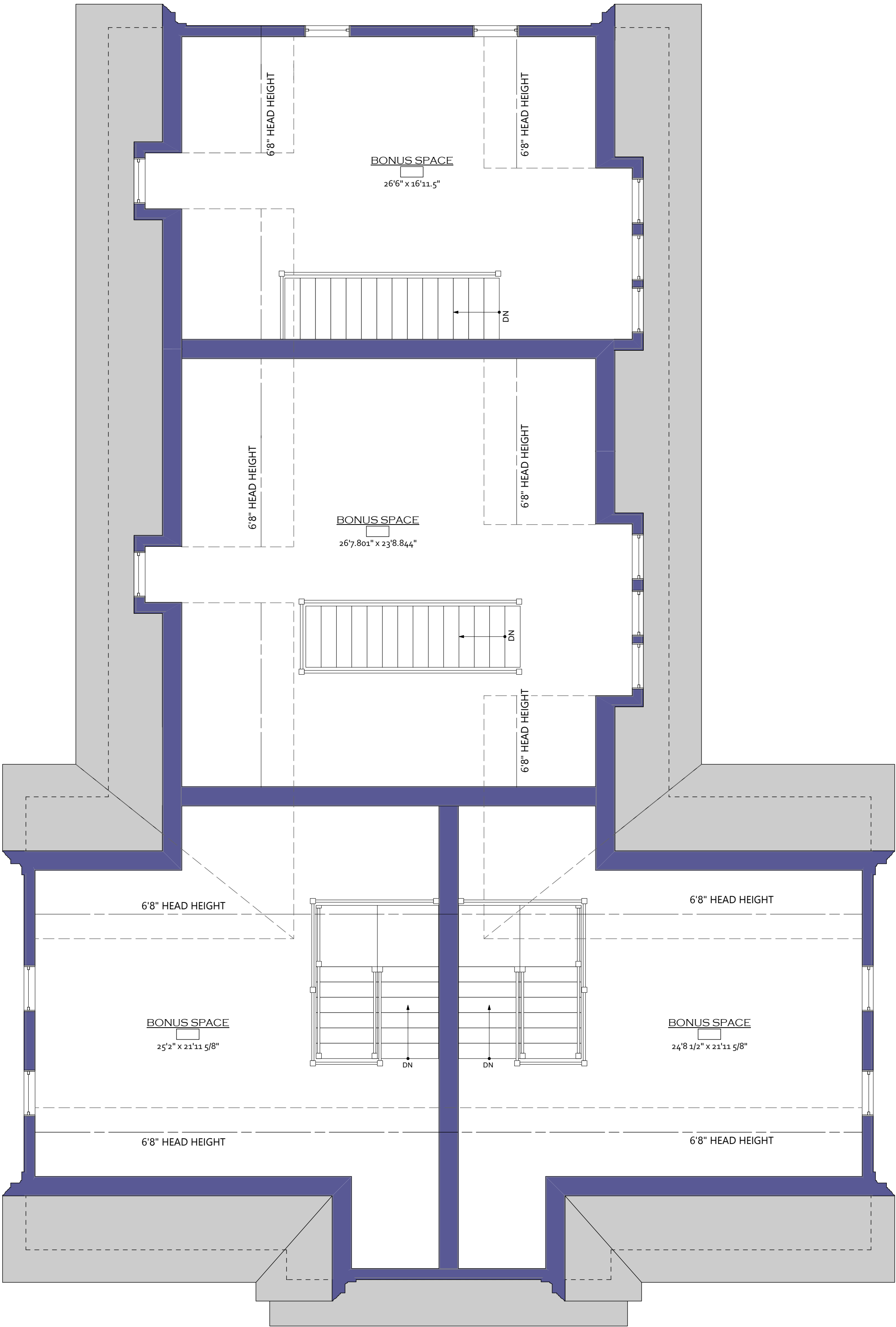
SECOND FLOOR PLAN

A1.2



PROPOSED SECOND FLOOR PLAN
Scale: 1/4" = 1'-0"

SQUARE FOOTAGE	
UNIT A	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	499 SQ.FT.
UNIT A - PROPOSED FINISHED SPACE TOTAL	1647 SQ.FT.
UNIT A - UNFINISHED BASEMENT	567 SQ.FT.
UNIT B	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	479 SQ.FT.
UNIT B - PROPOSED FINISHED SPACE TOTAL	1626 SQ.FT.
UNIT B - UNFINISHED BASEMENT	567 SQ.FT.
UNIT C	
1st FLOOR GROSS SQ.FT.	536 SQ.FT.
2nd FLOOR GROSS SQ.FT.	742 SQ.FT.
ATTIC GROSS SQ.FT.	608 SQ.FT.
UNIT C - PROPOSED FINISHED SPACE TOTAL	1886 SQ.FT.
UNIT C - UNFINISHED BASEMENT	536 SQ.FT.
UNIT D	
1st FLOOR GROSS SQ.FT.	534 SQ.FT.
2nd FLOOR GROSS SQ.FT.	534 SQ.FT.
ATTIC GROSS SQ.FT.	456 SQ.FT.
UNIT D - PROPOSED FINISHED SPACE TOTAL	1525 SQ.FT.
UNIT D - UNFINISHED BASEMENT	536 SQ.FT.
COMMON CORRIDOR	205 SQ.FT.
MECAHNICAL ROOM (BASEMENT)	147 SQ.FT.



1 PROPOSED ATTIC PLAN
Scale: 1/4" = 1'-0"

SQUARE FOOTAGE	
UNIT A	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	499 SQ.FT.
UNIT A - PROPOSED FINISHED SPACE TOTAL	1647 SQ.FT.
UNIT A - UNFINISHED BASEMENT	567 SQ.FT.
UNIT B	
1st FLOOR GROSS SQ.FT.	567 SQ.FT.
2nd FLOOR GROSS SQ.FT.	581 SQ.FT.
ATTIC GROSS SQ.FT.	479 SQ.FT.
UNIT B - PROPOSED FINISHED SPACE TOTAL	1626 SQ.FT.
UNIT B - UNFINISHED BASEMENT	567 SQ.FT.
UNIT C	
1st FLOOR GROSS SQ.FT.	536 SQ.FT.
2nd FLOOR GROSS SQ.FT.	742 SQ.FT.
ATTIC GROSS SQ.FT.	608 SQ.FT.
UNIT C - PROPOSED FINISHED SPACE TOTAL	1886 SQ.FT.
UNIT C - UNFINISHED BASEMENT	536 SQ.FT.
UNIT D	
1st FLOOR GROSS SQ.FT.	534 SQ.FT.
2nd FLOOR GROSS SQ.FT.	534 SQ.FT.
ATTIC GROSS SQ.FT.	456 SQ.FT.
UNIT D - PROPOSED FINISHED SPACE TOTAL	1525 SQ.FT.
UNIT D - UNFINISHED BASEMENT	536 SQ.FT.
COMMON CORRIDOR	205 SQ.FT.
MECAHNICAL ROOM (BASEMENT)	147 SQ.FT.



DISTINCTION
BY DESIGN
603-401-7294

REVISION & REISSUE NOTES		
No.	Date	Notes
A	4/25/2024	REVISION BY TRC COMMENTS

4 UNITS
RESIDENTIAL BUILDING
LOCUST ST., DOVER, NH 03820

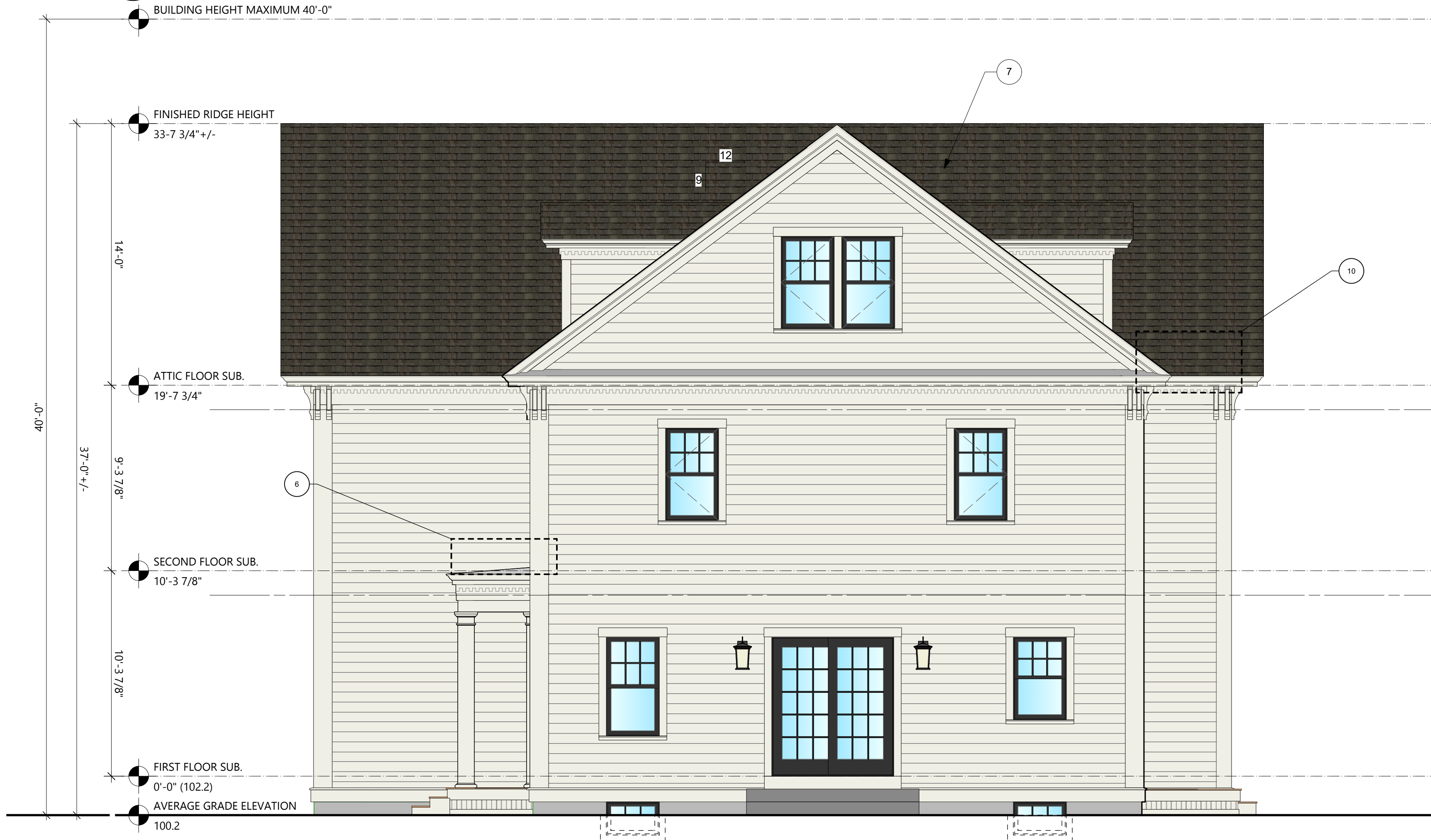
Project Manager	Project #	Date
ST	2022-02	05-13-2022
Scale: AS NOTED		

ATTIC PLAN

A1.3



1 LOCUST STREET ELEVATION
Scale: 1/4" = 1'-0"



2 REAR ELEVATION
Scale: 1/4" = 1'-0"

HERITAGE DISTRICT
ARCHITECTURAL DESIGN ELEMENTS

1	CLAPBOARD SIDING
2	STEEP ROOF PITCH
3	DENTILS AT FRIEZE BOARD
4	TUSCAN COLUMNS
5	DORMERS
6	ENTABLATURE
7	GABLES
8	TRANSOM
9	PORTICO
10	DEEP EAVE OVERHANG
11	DOMINANT FRONT GABLE CANTELIVER ABOVE FLOOR BELOW
12	BALLUSTRADE



DISTINCTION
BY DESIGN
603-401-7294

REVISION & REISSUE NOTES		
No.	Date	Notes
A	4/25/2024	REVISION BY TRC COMMENTS

4 UNITS
RESIDENTIAL BUILDING
LOCUST ST., DOVER, NH 03820

Project Manager	Project #	Date
ST	2022-02	05-13-2022
Scale: AS NOTED		

EXTERIOR ELEVATIONS

A2.0

C:\0 File Name
Summer street SD -3-REVISED.vwx



1
RIGHT ELEVATION
Scale: 1/4" = 1'-0"



2
LEFT ELEVATION
Scale: 1/4" = 1'-0"

**HERITAGE DISTRICT
ARCHITECTURAL DESIGN ELEMENTS**

1	CLAPBOARD SIDING
2	STEEP ROOF PITCH
3	DENTILS AT FRIEZE BOARD
4	TUSCAN COLUMNS
5	DORMERS
6	ENTABLATURE
7	GABLES
8	TRANSOM
9	PORTICO
10	DEEP EAVE OVERHANG
11	DOMINANT FRONT GABLE CANTELIVER ABOVE FLOOR BELOW
12	BALLUSTRADE



DISTINCTION
BY DESIGN
603-401-7294

REVISION & REISSUE NOTES

No.	Date	Notes
A	4/25/2024	REVISION BY TRC COMMENTS

4 UNITS
RESIDENTIAL BUILDING
LOCUST ST., DOVER, NH 03820

Project Manager	Project #	Date
ST	2022-02	05-13-2022

Scale: AS NOTED

EXTERIOR ELEVATIONS

A2.1



* THE RENDERINGS ARE MEANT TO DISPLAY THE DESIGN INTENT FOR THE PROJECT. REFER TO ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR SPECIFIC INFORMATION.



DISTINCTION
BY DESIGN
603-401-7294

[illegible]

4 UNITS
RESIDENTIAL BUILDING
136 LOCUST ST., DOVER, NH 03820

Project Manager ST	Project # 2022-02	Date 05/ 01 / 2024
Scale: AS NOTED		

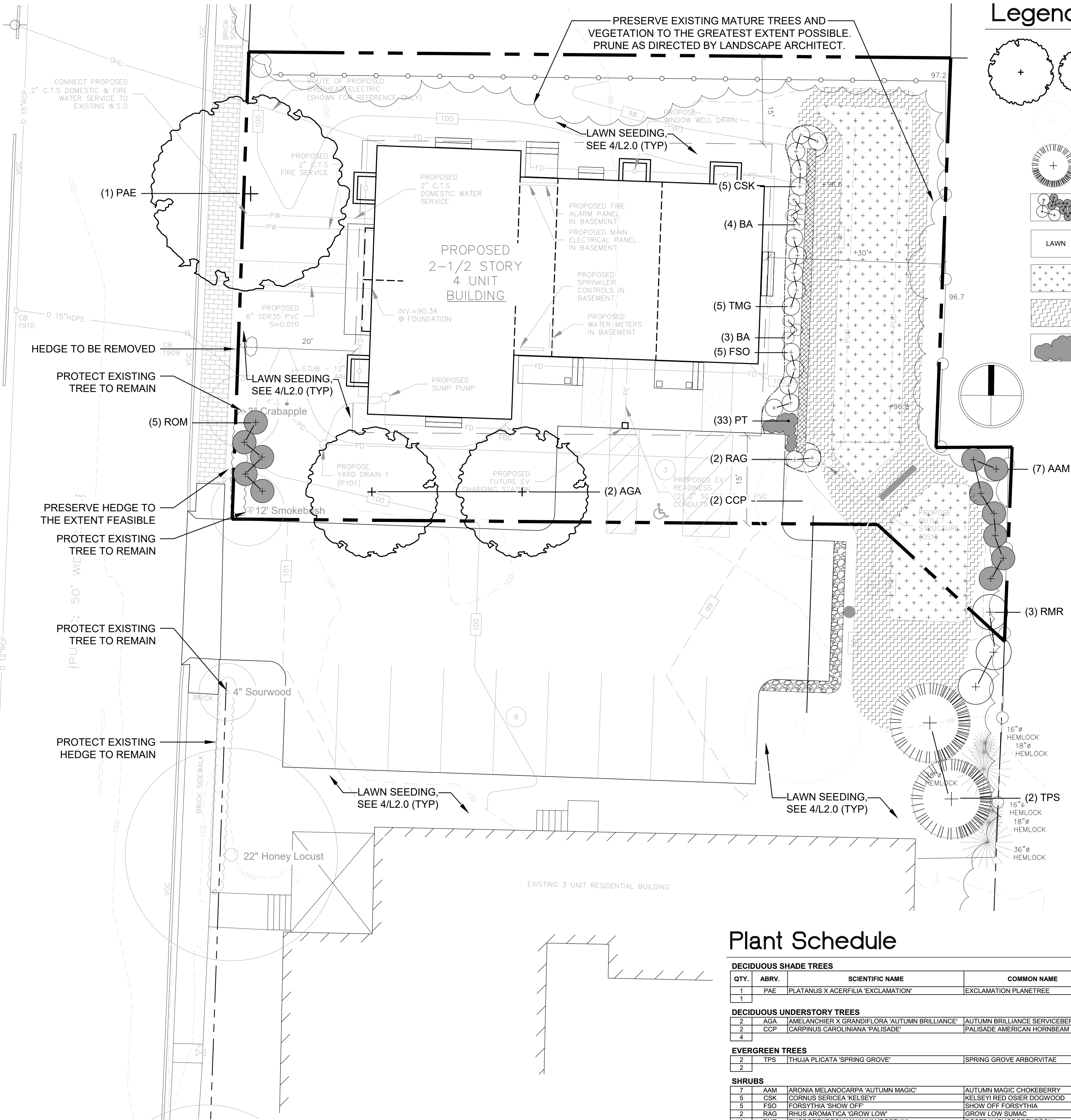
RENDERINGS

A2.2

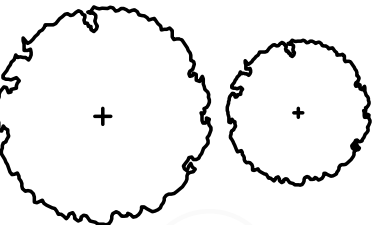
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PLANTING NOTES:

- THE CONTRACTOR SHALL REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN.
- LOCATE AND VERIFY ALL EXISTING AND NEW UTILITY LINE LOCATIONS PRIOR TO PLANTING, REPORT ANY CONFLICT TO THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE 'AMERICAN STANDARD FOR NURSERY STOCK' PUBLISHED BY THE AMERICAN SOCIETY OF NURSERY MEN, INC. LATEST EDITION.
- THE LOCATION OF ALL THE PROPOSED PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. NO PLANTS SHALL BE PLANTED BEFORE THE ACCEPTANCE OF ROUGH GRADING.
- THE BASE OF THE FLARE OF ALL TREE TRUNKS SHALL BE EXPOSED AND SET 1'-2" ABOVE FINISH GRADE. HOLD MULCH AWAY FROM THE TRUNK.
- ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES WILL BE PLANTS WITH EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER COLOR, LEAF COLOR, FRUIT COLOR, AND TIME OF BLOOM, AS APPROVED BY THE LANDSCAPE ARCHITECT.
- EXISTING LOAM: STOCKPILING OF EXISTING LOAM IS SPECIFIED ELSEWHERE. REMOVE CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND ANY DEBRIS AND FOREIGN MATERIALS.
- ADDITIONAL LOAM: IF STOCKPILED LOAM QUANTITY IS INSUFFICIENT, PROVIDE LOAM, THAT IS A "FINE SANDY LOAM," OR A "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS AND BASED ON THE "U.S.D.A. CLASSIFICATION SYSTEM." IT SHALL BE OF UNIFORM COMPOSITION, WITHOUT ADMIXTURE OF SUBSOIL. LOAM SHALL HAVE A PH 5.8 TO PH 7.0 AND SHALL CONTAIN NOT LESS THAN 4% NOR MORE THAN 10% ORGANIC MATTER AS DETERMINED BY THE LOSS OF IGNITION OF OVEN-DRIED SAMPLES. PROVIDE LOAM THAT IS FERTILE, FRIABLE, NATURAL LOAM, FREE FROM SUBSOIL, CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1/2" AND LARGER, AND ANY DEBRIS AND FOREIGN MATERIAL.
- BARK MULCH: ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING. PROVIDE PARTIALLY DECOMPOSED MINIMUM SIX MONTH AGED FINELY SHREDDED PINE BARK MULCH OF A DARK BROWN COLOR AND FREE OF WEEDS, EXCESSIVE FINE PARTICLES, STRINGY MATERIAL, AND CHUNKS OF WOOD THICKER THAN 1/4". BARK MULCH SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT.
- ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING.
- UNLESS OTHERWISE INDICATED, DICTATED BY CONDITIONS AT THE SITE, AND DIRECTED BY THE LANDSCAPE ARCHITECT, BACKFILL SHALL CONSIST OF UNAMENDED SOIL EXCAVATED FROM THE PLANTING PIT. BACKFILL IN 6" LIFTS AND CONSOLIDATE EACH LAYER WITH WATER TO ELIMINATE VOIDS AND ARE POCKETS BEFORE PLACING SUBSEQUENT LAYERS. CONTINUE UNTIL BACKFILL HAS REACHED FINISHED GRADE. WATER THOROUGHLY WHEN EXCAVATION IS BACK FILLED AND CONTINUE WATERING UNTIL SATURATED.
- IF EXISTING UNAMENDED TOP SOIL IS POOR AND NOT ACCEPTED, PROVIDE PLANTING SOIL MIXTURE CONSISTING OF 7 PARTS LOAM AND 1 PART COMPOST. MIX QUANTITY OF FERTILIZER AND SOIL AMENDMENTS AS RECOMMENDED BY SOIL ANALYSIS AND APPROVED BY THE LANDSCAPE ARCHITECT.
- WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
- LOAMING: LOOSEN SUBGRADE AND EXISTING LOAM AREAS BY DISCING OR ROTOTILLING TO MINIMUM DEPTH OF 4". REMOVE STONES GREATER THAN 1" AND ALL RUBBISH AND DEBRIS. PLACE LOAM IN TWO EQUAL LIFTS MIXING FIRST APPLICATION INTO LOOSENED SUBGRADE THEN PLACE SECOND LIFT TO BRING LOAM AFTER SETTLING AND COMPACTING TO THE LINES AND GRADES SHOWN ON THE PLANS. DO NOT HANDLE LOAM OR SUBSOIL IF IT IS WET OR FROZEN.
- AFTER LOAM HAS BEEN SPREAD, IT SHALL BE CAREFULLY PREPARED BY SCARIFYING AND HAND RAKING. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, STUMPS, LITTER AND FOREIGN MATTER, AND STONES OVER 1/2" IN DIAMETER SHALL BE REMOVED FROM THE LOAM. LOAM SHALL ALSO BE FREE OF SMALLER STONES IN EXCESSIVE QUANTITIES AS DETERMINED BY THE LANDSCAPE ARCHITECT.
- FINE GRADING: SET SUFFICIENT GRADE STAKES FOR CHECKING THE FINISHED GRADES. STAKES MUST BE SET AT THE BOTTOM AND TOP OF SLOPES. GRADES SHALL BE ESTABLISHED THAT ARE ACCURATE TO +/- 1/10TH OF A FOOT. CONNECT CONTOURS AND SPOT ELEVATIONS WITH AN EVEN SLOPE. ALL GRADING WILL INSURE DRAINAGE AWAY FROM STRUCTURES.
- FINE GRADE LAWN AREAS TO SMOOTH, FREE DRAINING, EVEN SURFACES WITH FINE TEXTURE. ROLL, RAKE AND DRAW LAWN AREAS TO FLATTEN RIDGES AND FILL DEPRESSIONS. EXCEPT AT SELECT AREAS SHOW ON THE DRAWINGS, CONTROL MOISTURE CONTENT TO MAINTAIN OPTIMUM CONDITIONS. BUT DO NOT CREATE A MUDDY CONDITION. APPLY TACKIFIED MULCH TO ALL SEEDED AREAS.
- ROLLING - TYPICAL: ROLL THE ENTIRE AREA WITH A HAND ROLLER WEIGHTING NOT MORE THAN 100 POUNDS. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM AND THE SURFACE SHALL BE RE-GRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE OR TO THE SHAPES AND CONFIGURATIONS AS SHOWN ON THE DETAILS.
- THE SILT FENCE SHALL BE LIMIT OF SEEDING UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL AREAS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE SEEDED AS INDICATED ON THE DRAWINGS.
- IN CASE OF DISCREPANCIES BETWEEN THE QUANTITIES SHOWN ON THE PLANT SCHEDULE AND THE QUANTITIES SHOWN ON THE PLANTING PLAN, THE QUANTITIES ON THE PLANTING PLAN SHALL BE PROVIDED BY THE CONTRACTOR.



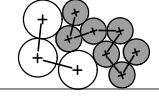
Legend



DECIDUOUS TREE PLANTING,
SEE 1/L2.0



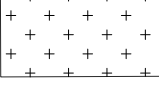
DECIDUOUS MULTI-STEMMED
TREE PLANTING, SEE 5/L2.0



EVERGREEN TREE PLANTING,
SEE 2/L2.0



SHRUB PLANTING,
SEE 3/L2.0



LOAM AND LAWN SEEDING,
SEE 4/L2.0



WET SITE RESTORATION SEEDING,
SEE 8/L2.0



DRY SITE RESTORATION SEEDING,
SEE 7/L2.0



PERENNIAL, GROUNDCOVER, ORNAMENTAL
GRASS PLANTING, SEE 6/L2.0

GENERAL NOTES:

- SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
- PLANT LOCATIONS SHOWN ON THE PLANTING PLAN ARE SUBJECT TO FIELD MODIFICATION TO ACCOMMODATE EXISTING CONDITIONS. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT.
- ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
- ALL DISTURBED AREAS NOT IDENTIFIED FOR A SPECIFIC LANDSCAPE TREATMENT, SHALL BE LOAMED AND SEEDED WITH LAWN SEED MIX, SEE 4/L2.0.
- SEE SHEET L2.0 FOR LANDSCAPE DETAILS.
- CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

Plant Schedule

DECIDUOUS SHADE TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE	APPROX. SIZE AT MATURITY	REMARKS
1	PAE	PLATANUS X ACERFILIA 'EXCLAMATION'	EXCLAMATION PLANETREE	3'-3 1/2' CAL	40' HT x 30' SPD	B&B

DECIDUOUS UNDERSTORY TREES

2	AGA	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	2 1/2'-3' CAL	20' HT x 20' SPD	B&B, SINGLE
2	CCP	CARPINUS CAROLINIANA 'PALISADE'	PALISADE AMERICAN HORNBEAM	10'-12' HT	20' HT x 15' SPD	B&B, MULTI-STEMMED

EVERGREEN TREES

2	TPS	THUJA PLICATA 'SPRING GROVE'	SPRING GROVE ARBORVITAE	7'-8' HT	20' HT x 15' SPD	B&B
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SHRUBS

7	AAM	ARONIA MELANOCARPA 'AUTUMN MAGIC'	AUTUMN MAGIC CHOKEBERRY	#5	6' HT x 4' SPD	CONTAINER
5	CSK	CORNUS SERICEA 'KELSEY'	KELSEY RED OSIER DOGWOOD	#3	3' HT x 5' SPD	CONTAINER
5	FSO	FORSYTHIA 'SHOW OFF'	SHOW OFF FORSYTHIA	#3	2' HT x 5' SPD	CONTAINER
2	RAG	RHUS AROMATICA 'GROW LOW'	GROW LOW SUMAC	#3	2' HT x 6' SPD	CONTAINER
3	RMR	RHODODENDRON MAXIMUM 'ROSEUM'	ROSEBAY RHODODENDRON	#5	6' HT x 6' SPD	CONTAINER
5	ROM	RHODODENDRON 'OLGA MEZITT'	OLGA MEZITT RHODODENDRON	#5	4' HT x 4' SPD	CONTAINER
5	TMG	TAXUS MEDIA 'GREENWAVE'	GREENWAVE YEW	#3	3' HT x 5' SPD	CONTAINER
32						

PERENNIALS, GROUNDCOVER, ORNAMENTAL GRASS

7	BA	BAPTISIA AUSTRALIS	FALSE INDIGO	#2	3' HT x 3' SPD	CONTAINER
33	PT	PACHYSANDRA TERMINALIS	SPURGE	18 CELL FLAT	PLANT @ 10" OC	CONTAINER
40						

LOCUST STREET RESIDENTIAL DEVELOPMENT

Dover, NH 03820

17-19 Summer Street Properties, LLC

71 Lafayette Road

Hampton Falls, NH 03844

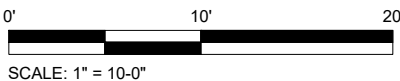
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LANDSCAPE
PLAN

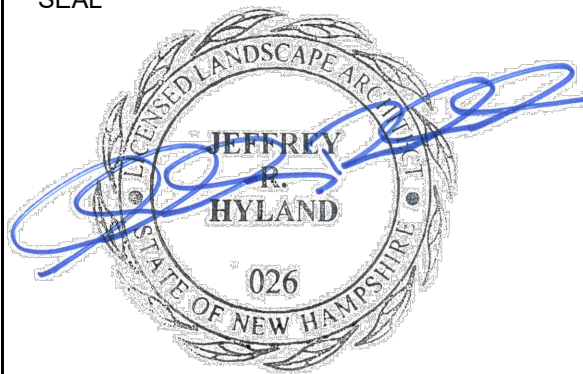
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1	△	4/14/29	REVISED TO REFLECT UPDATED CIVIL LAYOUT
	△		
	△		
	△		

REV#	DATE	DESCRIPTION
PROJECT NO.	23050.0	
DESIGN BY	J. HYLAND	
DRAWN BY	S. WRIGHT	
CHECKED BY	D.JENSEN / J. HYLAND	
DATE	JANUARY 4, 2024	
SCALE		

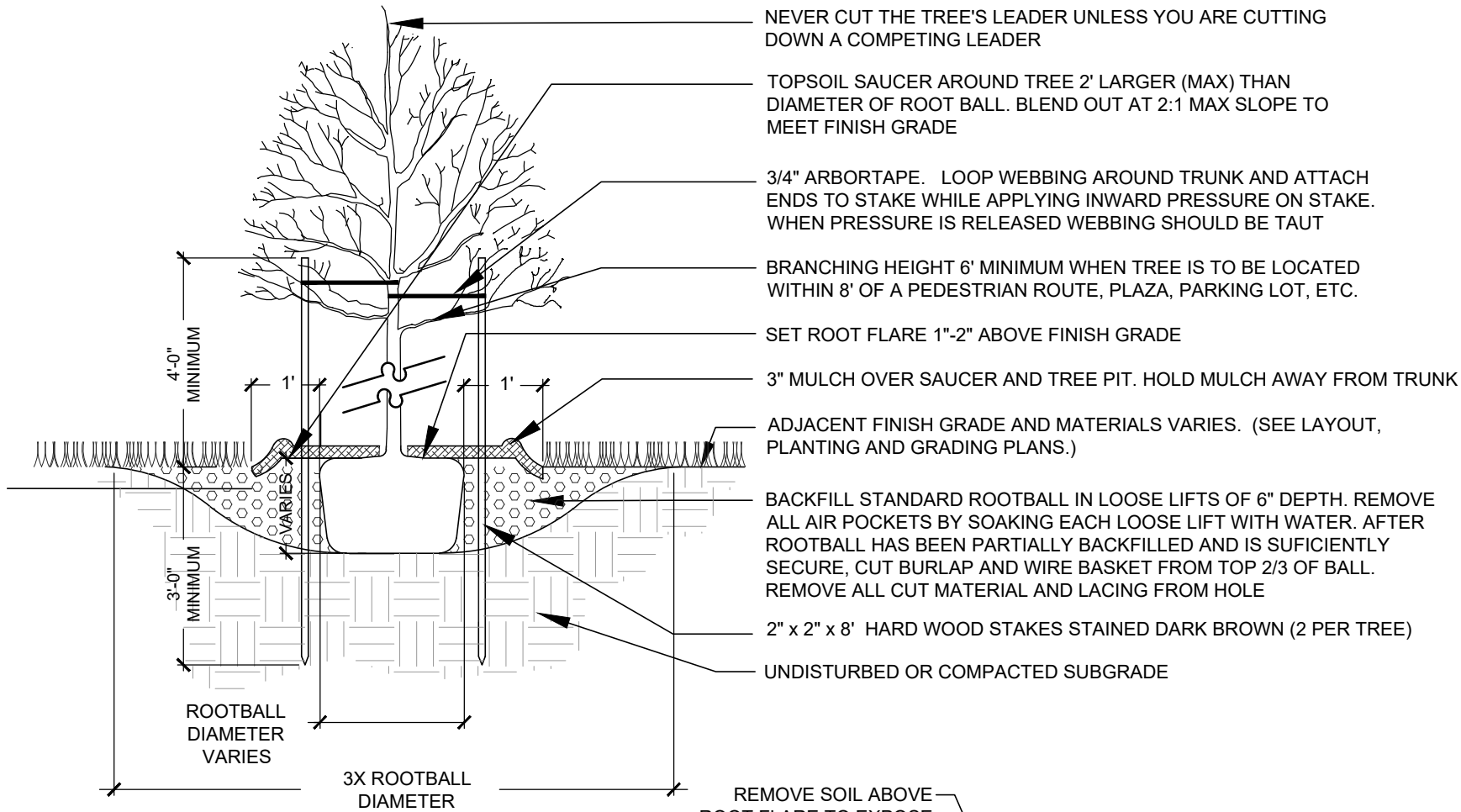
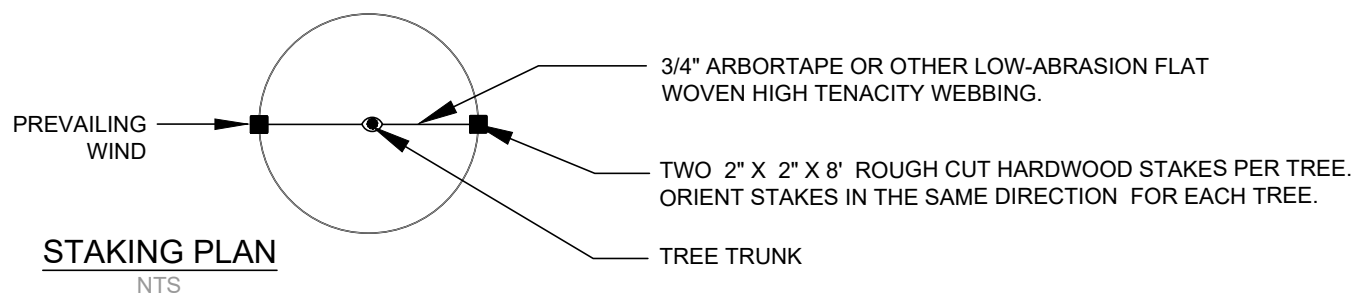


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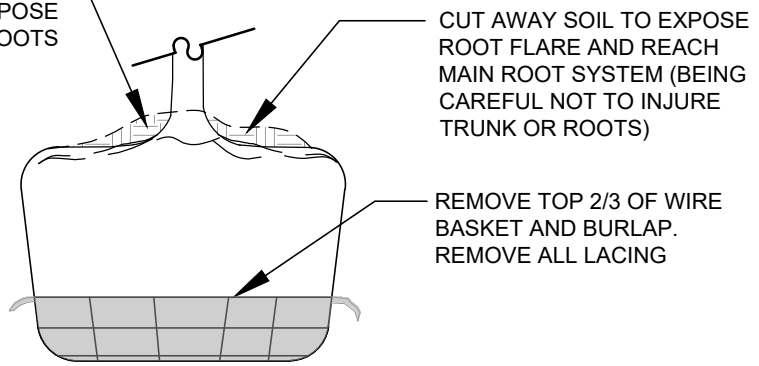


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- NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
 2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
 3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

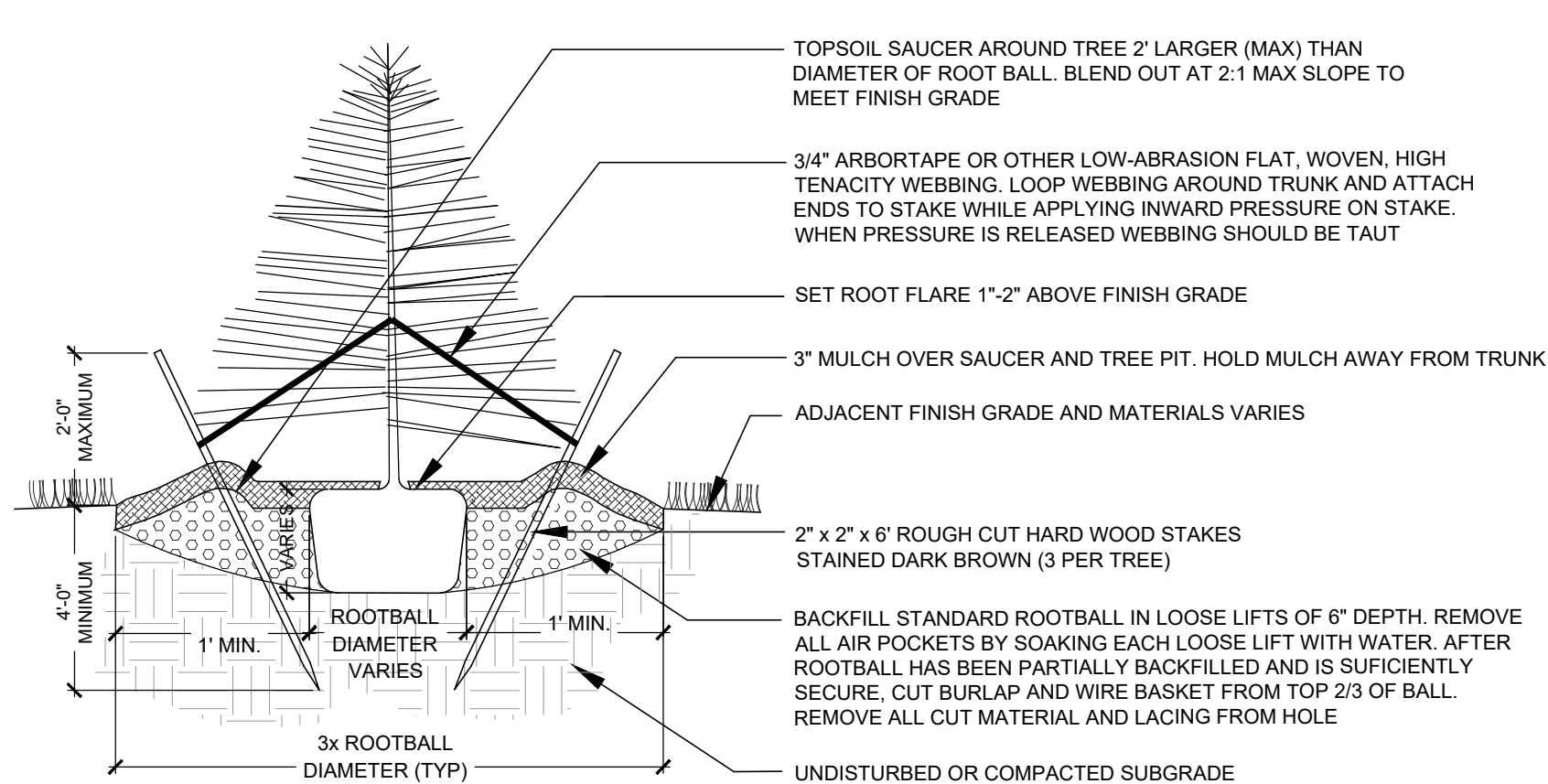
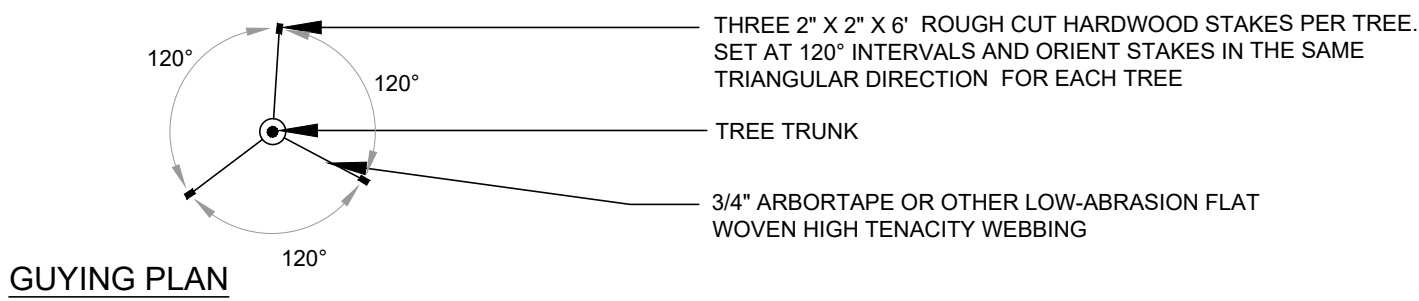


Deciduous Tree Planting

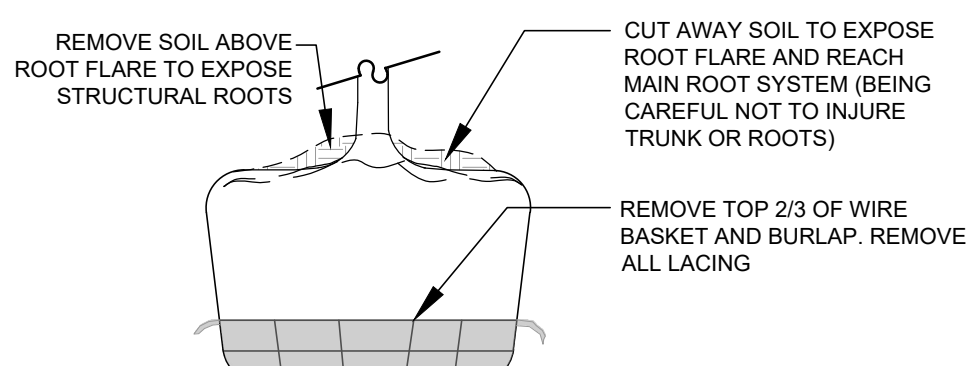
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1
L2.0



- NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
 2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
 3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

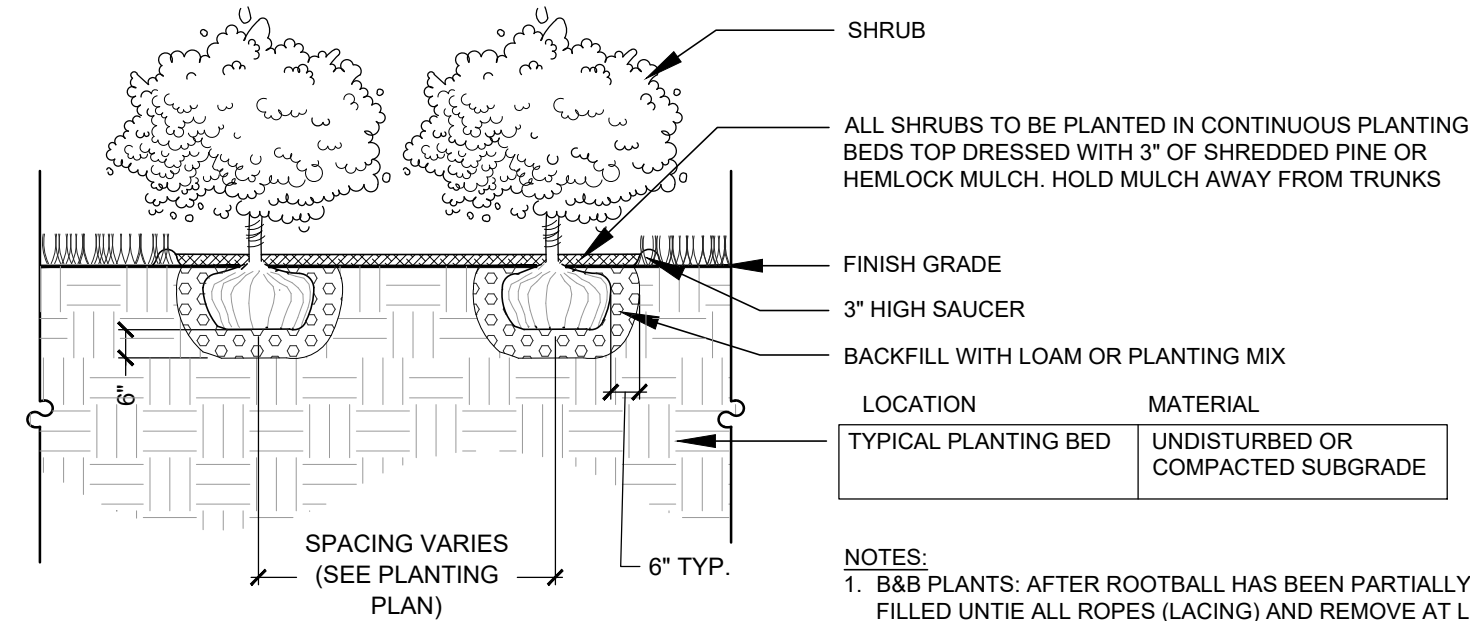


Evergreen Tree Planting

Not to Scale

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2
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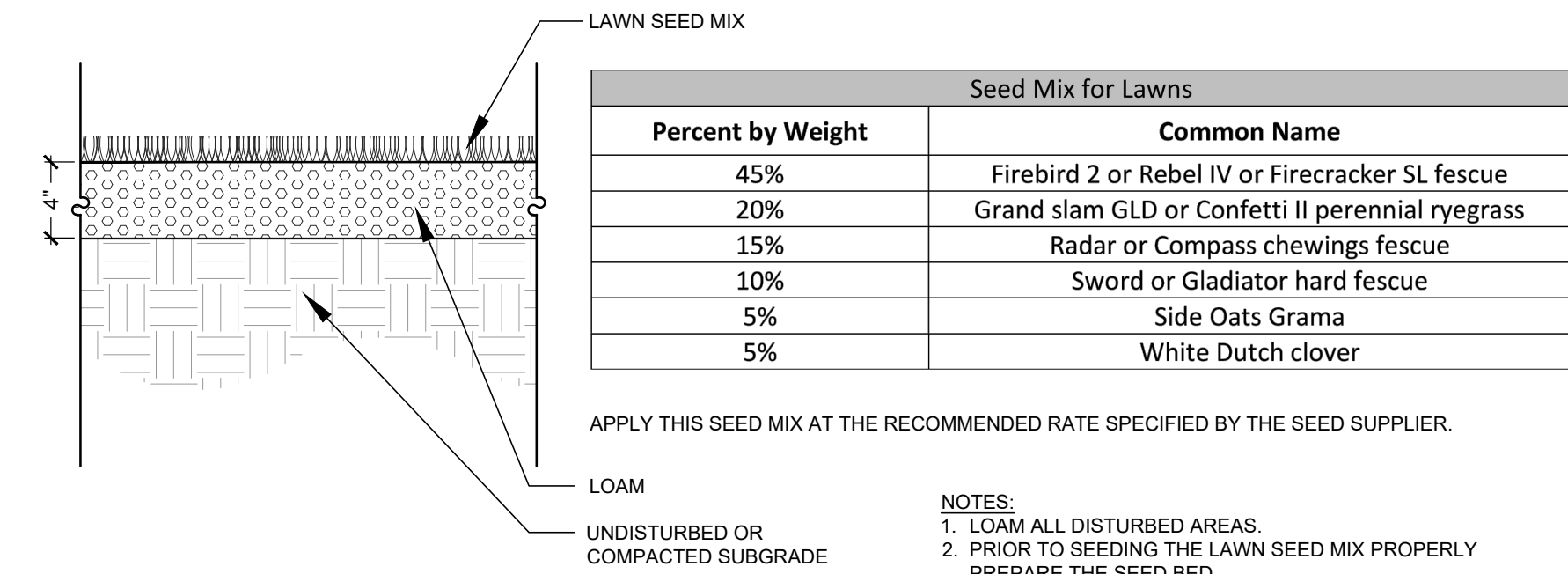
- NOTES:
1. B&B PLANTS: AFTER ROOTBALL HAS BEEN PARTIALLY BACK FILLED UNTIE ALL ROPES (LACING) AND REMOVE AT LEAST 2/3 OF JUTE AND ALL LACING.
 2. CONTAINER PLANTS: PRIOR TO PLANTING, REMOVE PLANT FROM CONTAINER AND LOOSEN ENCIRCLING ROOTS TO PROMOTE OUTWARD GROWTH AWAY FROM THE PLANT.

Shrub Planting

Not to Scale

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3
L2.0



Seed Mix for Lawns	
Percent by Weight	Common Name
45%	Firebird 2 or Rebel IV or Firecracker SL fescue
20%	Grand slam GLD or Confetti II perennial ryegrass
15%	Radar or Compass chewings fescue
10%	Sword or Gladiator hard fescue
5%	Side Oats Grama
5%	White Dutch clover

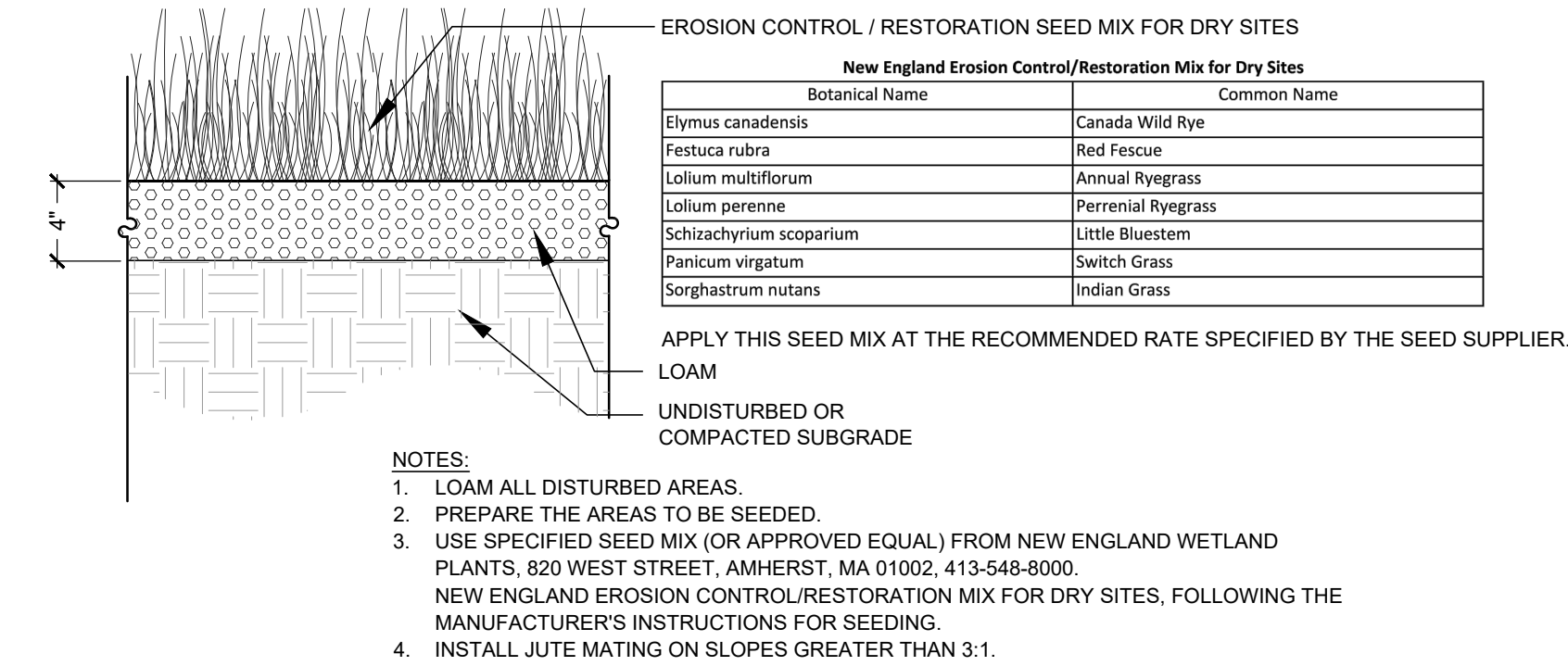
- NOTES:
1. LOAM ALL DISTURBED AREAS.
 2. PRIOR TO SEEDING THE LAWN SEED MIX PROPERLY PREPARE THE SEED BED.
 3. INSTALL JUTE MATING ON SLOPES GREATER THAN 3:1.

Loam and Lawn Seeding

Not to Scale

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4
L2.0



New England Erosion Control/Restoration Mix for Dry Sites	
Botanical Name	Common Name
Elymus canadensis	Canada Wild Rye
Festuca rubra	Red Fescue
Lolium multiflorum	Annual Ryegrass
Lolium perenne	Perennial Ryegrass
Schizachyrium scoparium	Little Bluestem
Panicum virgatum	Switch Grass
Sorghastrum nutans	Indian Grass

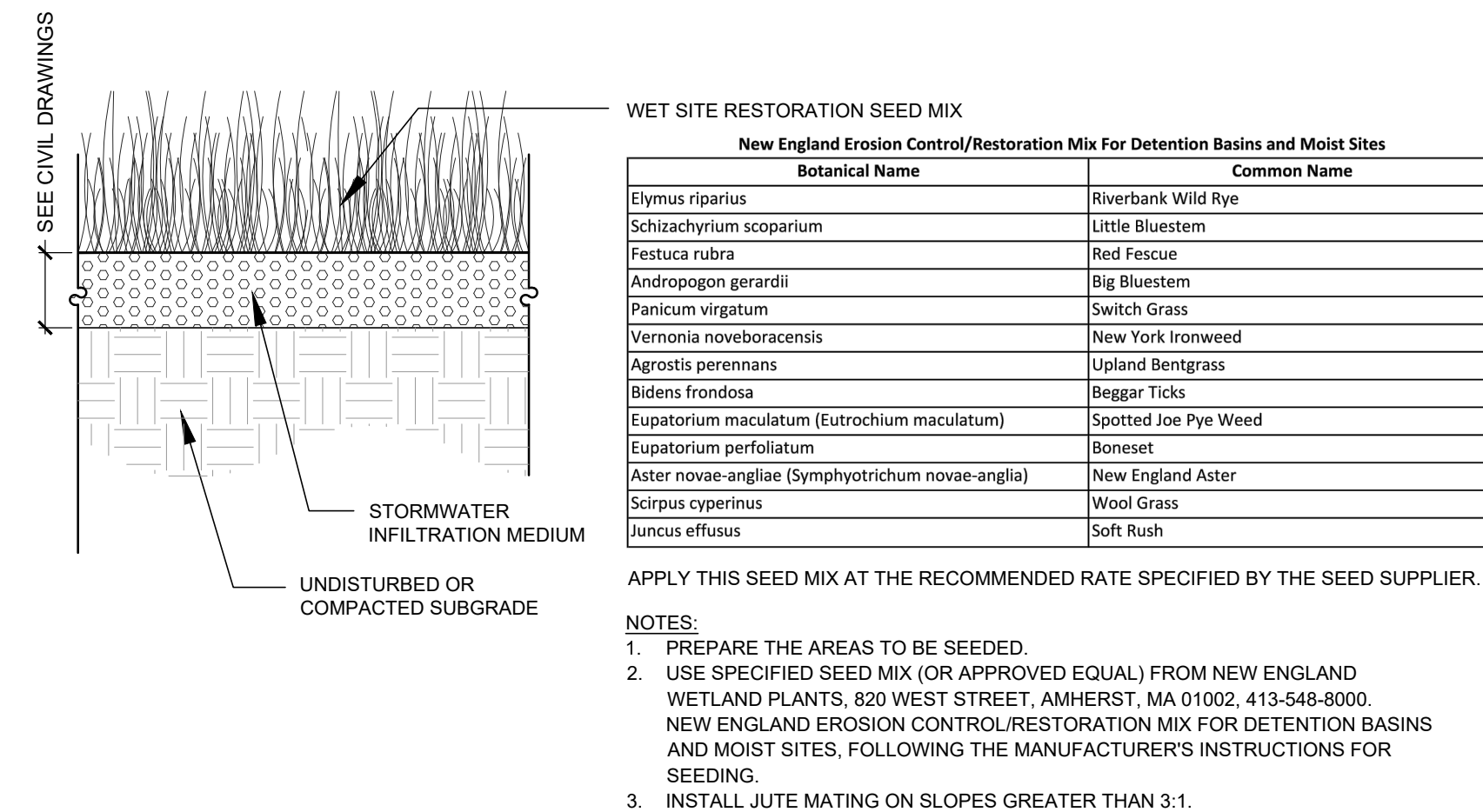
- NOTES:
1. LOAM ALL DISTURBED AREAS.
 2. PREPARE THE AREAS TO BE SEED.
 3. USE SPECIFIED SEED MIX (OR APPROVED EQUAL) FROM NEW ENGLAND WETLAND PLANTS, 820 WEST STREET, AMHERST, MA 01002, 413-548-8000.
 4. INSTALL JUTE MATING ON SLOPES GREATER THAN 3:1.

Loam and Dry Site Restoration Seeding

Not to Scale

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7
L2.0



New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites	
Botanical Name	Common Name
Elymus riparius	Riverbank Wild Rye
Schizachyrium scoparium	Little Bluestem
Festuca rubra	Red Fescue
Andropogon gerardii	Big Bluestem
Panicum virgatum	Switch Grass
Vernonia noveboracensis	New York Ironweed
Agrostis perennans	Upland Bentgrass
Bidens frondosa	Beggar Ticks
Eupatorium maculatum (Eutrochium maculatum)	Spotted Joe Pye Weed
Eupatorium perfoliatum	Boneset
Aster novae-angliae (Symphyotrichum novae-angliae)	New England Aster
Scirpus cyperinus	Wool Grass
Juncus effusus	Soft Rush

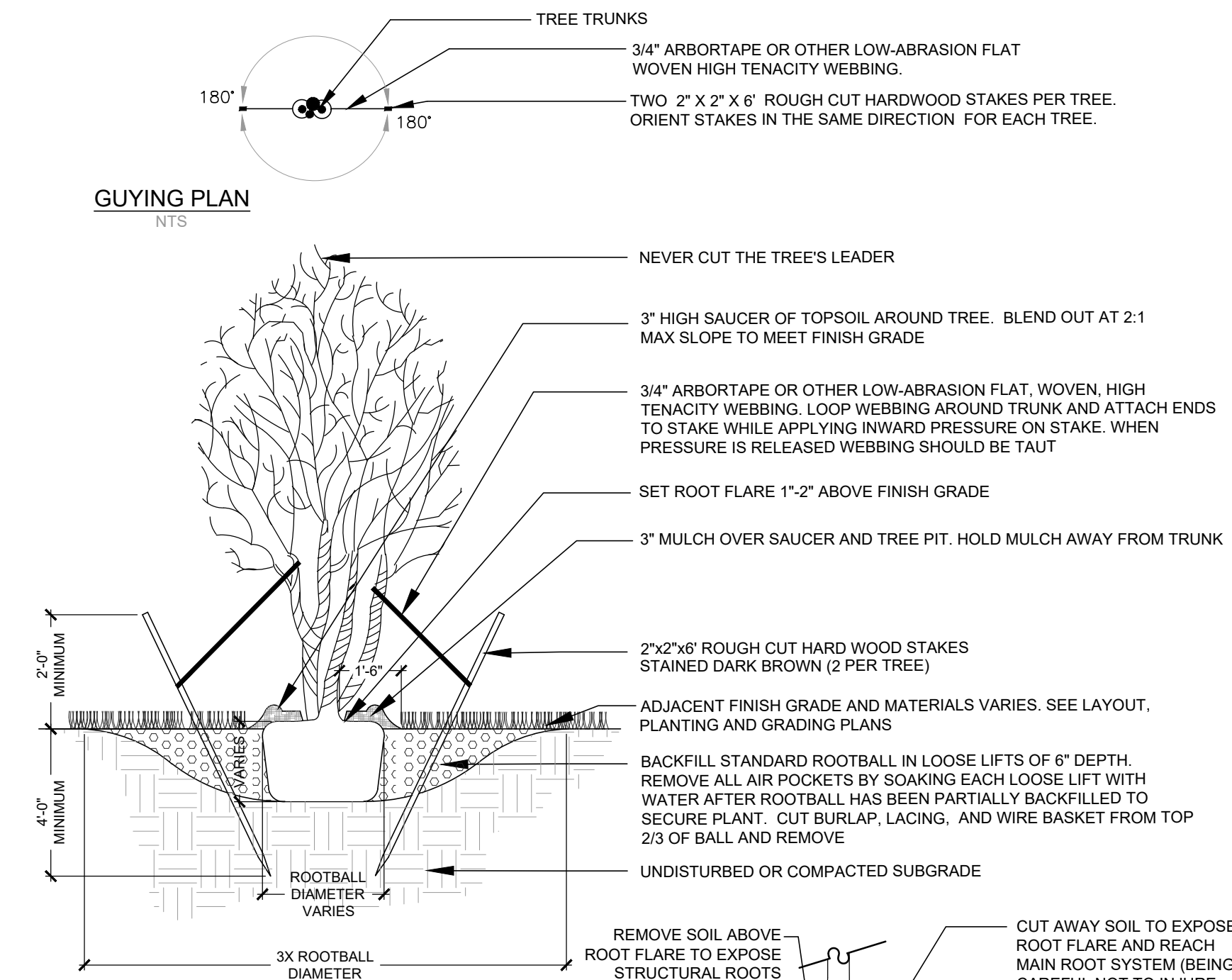
- NOTES:
1. PREPARE THE AREAS TO BE SEED.
 2. USE SPECIFIED SEED MIX (OR APPROVED EQUAL) FROM NEW ENGLAND WETLAND PLANTS, 820 WEST STREET, AMHERST, MA 01002, 413-548-8000.
 3. INSTALL JUTE MATING ON SLOPES GREATER THAN 3:1.

Wet Site Restoration Seeding

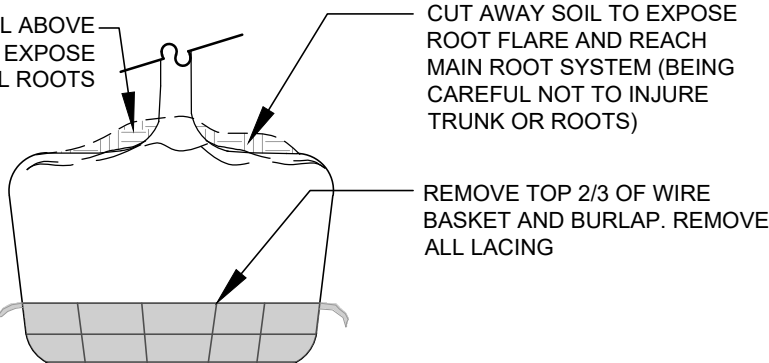
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8
L2.0



- NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
 2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
 3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

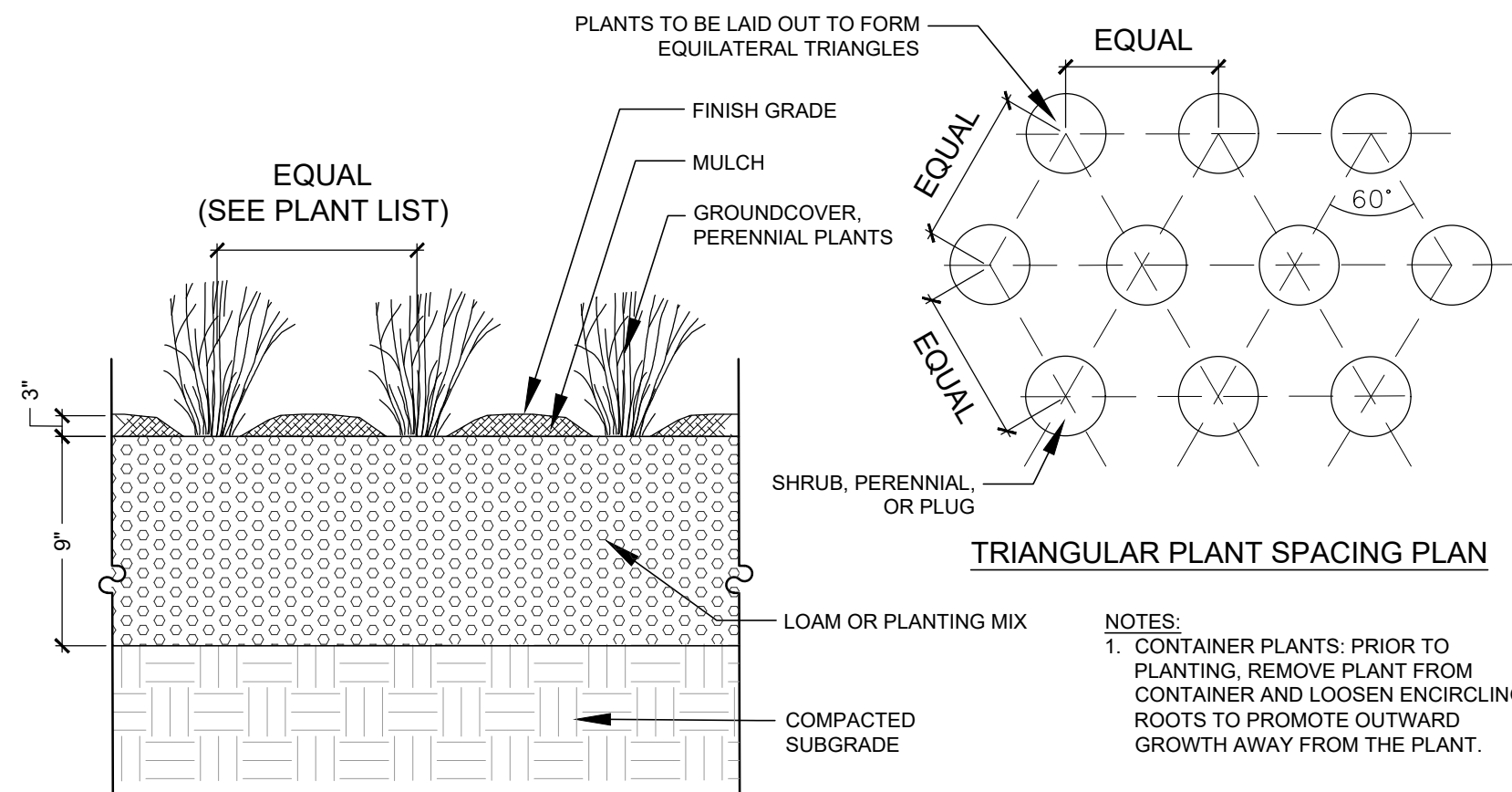


Deciduous Multi-Stemmed Tree Planting

Not to Scale

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5
L2.0



- NOTES:
1. CONTAINER PLANTS: PRIOR TO PLANTING, REMOVE PLANT FROM CONTAINER AND LOOSEN ENCIRCLING ROOTS TO PROMOTE OUTWARD GROWTH AWAY FROM THE PLANT.

Perennial, Groundcover, Ornamental Grass Planting

Not to Scale

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6
L2.0

LOCUST STREET RESIDENTIAL DEVELOPMENT

Dover, NH 03820

17-19 Summer Street Properties, LLC

71 Lafayette Road

Hampton Falls, NH 03844

SHEET TITLE

LANDSCAPE DETAILS

REVISION LOG

REV#	DATE	DESCRIPTION
1	4/14/29	REVISED TO REFLECT UPDATED CIVIL LAYOUT
2		
3		
4		
5		

REV#	DATE	DESCRIPTION
PROJECT NO.	23050.0	
DESIGN BY	J. HYLAND	
DRAWN BY	S. WRIGHT	
CHECKED BY	D.JENSEN / J. HYLAND	
DATE	JANUARY 4, 2024	
SCALE	AS NOTED	

SEAL



L2.0

DRAINAGE ANALYSIS

LOCUST STREET RESIDENTIAL DEVELOPMENT TAX MAP 12, LOT 35-1

**Locust Street
Dover, New Hampshire
Strafford County**

**February 2024
Revised: April 2024**

Prepared For:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

Prepared By:

**Civilworks NE
PO Box 1166
181 Watson Road
Dover, NH 03820**

CONTENTS

- 1.0 INTRODUCTION
- 2.0 DRAINAGE ANALYSIS
 - 2.1 DRAINAGE DESIGN PARAMETERS
 - 2.1.1 Watersheds
 - 2.1.2 Soils
 - 2.1.3 Rainfall Data
 - 2.1.4 Runoff Curve Numbers
 - 2.2 EXISTING CONDITIONS
 - 2.2.1 Table A – Existing Conditions Hydrology
 - 2.3 DEVELOPED CONDITIONS
 - 2.3.1 Table B – Developed Conditions Hydrology
 - 2.4 HYDROLOGIC COMPARISON
 - 2.4.1 Table C – Existing vs. Developed Conditions Hydrology
 - 2.5 STORMWATER DESIGN
 - 2.5.1 Stormwater Best Management Practices
 - 2.5.2 Pollutant Removal
 - 2.5.3 Groundwater Recharge
- 3.0 APPENDIX A – HYDROLOGIC CALCULATIONS
 - A Extreme Precipitation Table
 - A-1 Existing Watersheds
 - Drainage Diagram, Area, and Soil Listings
 - Node Listing – 2-yr
 - Node Listing – 10-yr
 - 10-yr Storm Summary Hydrographs
 - Node Listing – 25-yr
 - Node Listing – 50-yr
 - A-2 Developed Watersheds
 - Drainage Diagram, Area, and Soil Listings
 - Node Listing – 2-yr
 - Node Listing – 10-yr
 - 10-yr Storm Summary Hydrographs
 - Node Listing – 25-yr
 - Node Listing – 50-yr
- 4.0 APPENDIX B – DESIGN
 - B-1 Stormwater Best Management Practices
 - B-2 Pollutant Removal
 - B-3 Groundwater Recharge
- 5.0 APPENDIX C – INSPECTION AND MAINTENANCE
 - C-1 Stormwater Management System Inspection & Maintenance Plan
- 6.0 APPENDIX D – WATERSHED PLANS
 - D-1 Pre-Development Conditions
 - D-2 Post-Development Conditions

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel located on Locust Street in Dover, NH. The 0.229± acre lot is identified as Tax Map 12, Lot 35-1. This 0.445± acre hydrologic analysis includes the subject parcel and approximately 0.215± acres of offsite runoff from lawn, an existing gravel parking area, and roof runoff that flows through the parcel. The site is undeveloped and primarily consists of lawn with minimal landscaping and trees. The parcel is fairly level and slightly slopes away from Locust St to an abutting parcel. The parcel is bound by Locust Street to the west, a private residence to the north, multi-family housing to the south and the Woodman Institute to the east. The parcel is serviced by an existing 12" HDPE drain which ties into the closed drainage system located in Locust St. and has been stubbed to the site.

The project proposes the construction of a 4-unit multi-family house and an improved parking area that will be shared with the abutting 3-unit multi-family home. The project does not qualify as a redevelopment project, and as such, the stormwater design captures and treats the stormwater runoff from all impervious surfaces within the watershed. The proposed drainage system incorporates a bio-retention basin to treat stormwater. The basin is also sized to maximize the amount of onsite storage available to help buffer the increase in runoff from the proposed site. Test pits and infiltration testing indicate poor soil characteristics and ground water recharge is not feasible, as such, the bioretention pond is underdrained. Closed and open drainage systems consisting of pipes, a yard drain, and swales, are utilized for the conveyance of post construction stormwater. The proposed stormwater system captures, treats, and stores the stormwater runoff from the site and redirects it to the existing onsite closed drainage system. The proposed stormwater drainage structures (yard drain, pipes, basins, outlet structure, etc.) will be maintained by the project proponent as outlined within the Stormwater Management System Inspection & Maintenance Manual (Stormwater I&M Manual) in Appendix C.

The predevelopment watershed is identified as discharge point A. Discharge point A drains easterly from the edge of Locust Street overland through the parcel to an abutting parcel. Once exiting the site, the discharge continues through the property owned by the Woodman Institute then discharges into the City's closed drainage system located in Central Ave.

Post development analysis includes a single watershed to accurately model the proposed drainage system. This analysis indicates that the proposed stormwater measures and stormwater management plan will treat runoff in accordance with ENV-Wq 1500 of the New Hampshire Code of Administrative Rules and the City of Dover's Subdivision Regulations. The proposed site characteristics are not conducive to infiltration and as such the project proposes minor increase to the volume and flow of stormwater from the proposed site. The stormwater design maximizes the amount of onsite storage to minimize an increase in flow and also captures the stormwater on site and discharges it to the City's closed drainage system as opposed to allowing the water to flow to an abutting parcel. The proposed development of the site in conjunction with the implementation of the Stormwater I&M Manual will have minimal impact on the watersheds.

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

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 was delineated using on site topographic and as built survey data field located by McEneaney Survey Associates of New England.

2.1.2 Soils

Soil types were determined utilizing the NRCS Web Soil Survey (WSS) mapping tool at <http://websoilsurvey.nrcs.usda.gov>. The soil survey area is Strafford County, NH, the soil survey data is Version 23, dated Sep 9th, 2022 and the aerial images are dated June 19th to September 20th, 2020.

Hydrologic Drainage Class A:

Map Unit Symbol	Slopes	Map Unit Name
WfB	0 to 8 %	Windsor Loamy Fine Sand, Clay Subvariant

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center were utilized in this analysis. 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.

2.1.4 Runoff Curve Numbers

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

2.2 EXISTING CONDITIONS

For the purposes of this analysis, the subject parcel was analyzed as a single watershed that discharges to an abutting property in the predevelopment condition.

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	0.00	0.0	0.1	0.3	0.5

2.3 DEVELOPED CONDITIONS

The post development model analyzes runoff to the post development discharge point, which is the closed drainage system in Locust Street.

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>
A1	0.03	0.2	0.2	0.3	0.3

2.4 HYDROLOGIC COMPARISON

The analysis indicates that the proposed project will have negligible impact on the watershed.

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

Watershed	Pre/Post-Development Volume (af)	Pre/Post Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.00/0.03	0.0/0.2	0.1/0.2	0.3/0.3	0.5/0.3

2.5 STORMWATER DESIGN

The project incorporates best management practices to mitigate runoff as well as treat and convey stormwater.

2.5.1 Stormwater Best Management Practices

The project incorporates a bio-retention basin to mitigate flow and water quality from the proposed development. Pre-treatment for the large bio-retention basin includes a sediment forebay and grassed swales. See Appendix B-1 for Best Management Practice Design forms.

2.5.2 Pollutant Removal

The site stormwater design captures 100% of the proposed onsite and 100% of the offsite impervious area (that flows onto the site) and directs it to the best management practices that provide pollutant removal. This project effectively treats 3,500+/- SF of previously untreated predevelopment impervious area. The project incorporates the following practices and associated pollutant removal efficacies as identified in the New Hampshire Stormwater Management Manual Volume 1, Appendix E:

	TSS	TN	TP
Bio-Retention Basin:	90%	65%	65%

The pollutant removal meets or exceeds The City of Dover's, Site Review Regulations. See Appendix B-2 for the removal efficiency data as provided in Volume 1.

2.5.3 Groundwater Recharge

Test pits (3) and borehole infiltration testing (3 locations) were performed on October 2nd, 2023. The results of these tests indicate soils are a silty or sandy loam with layers of silty clay. Seasonal high water tables varied between 22 and 32 inches. Borehole infiltration testing failed at borehole locations #1 and #2 during the first iteration of testing and in the second iteration for location #3. The site is not conducive to infiltration based best management practices nor is it capable of meeting the groundwater recharge requirements of the City of Dover's Site Review Regulations. See Appendix B-3 for test pit and borehole test information.

APPENDIX A

HYDROLOGIC CALCULATIONS

Extreme Precipitation in New York & New England

An Interactive Web Tool for Extreme Precipitation Analysis

About this Project

Data & Products

Daily Monitoring

Documentation

Select Product ?

Extreme Precipitation
Tables - HTML ?

Extreme Precipitation
Tables - Text/CSV ?

Partial Duration Series -
by Point ?

Partial Duration Series -
by Station ?

Distribution Curves -
Graphical ?

Distribution Curves -
Text/TBL ?

Intensity Frequency
Duration Graphs ?

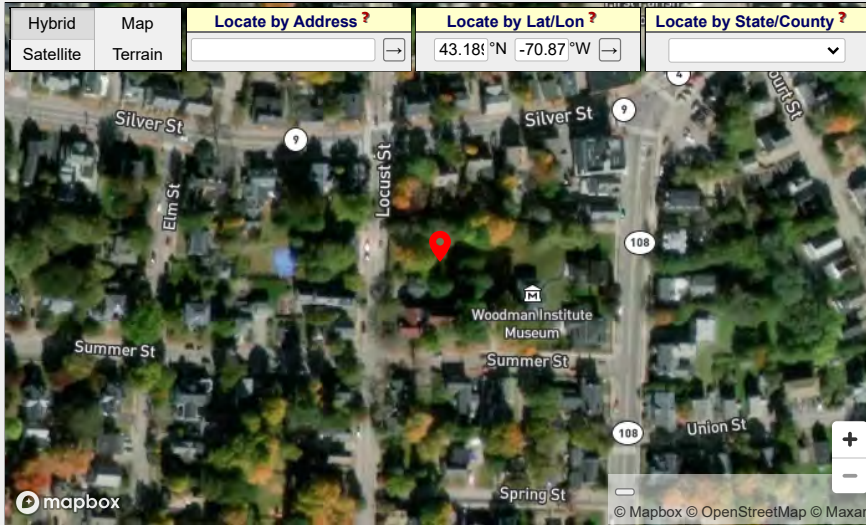
Precipitation Frequency
Duration Graphs ?

GIS Data Files ?

Regional/State Maps ?

Select Location ? Double-click map to place a marker, or enter address or latitude/longitude.

Hybrid Satellite	Map Terrain	Locate by Address ? 	Locate by Lat/Lon ? 43.18°N -70.87°W	Locate by State/County ?
---------------------	----------------	---	---	--



Select Options ?

Smoothing ?

Yes ▼

Delivery ?

Popup ▼

Submit ?

Version 2.0

Copyright 2010-2022

This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC)



Natural Resources Conservation Service (NRCS)



Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.190 degrees North
Longitude	70.875 degrees West
Elevation	20 feet
Date/Time	Mon Sep 18 2023 15:41:12 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	1yr	0.70	0.98	1.20	1.54	2.00	2.60	2.87	1yr	2.31	2.76	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	2.79	3.37	3.86	4.60	5.23	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.58	5yr	1.06	1.44	1.85	2.39	3.08	3.98	4.49	5yr	3.52	4.32	4.94	5.81	6.57	5yr
10yr	0.40	0.63	0.80	1.09	1.42	1.85	10yr	1.22	1.69	2.18	2.83	3.66	4.75	5.42	10yr	4.20	5.21	5.95	6.93	7.80	10yr
25yr	0.46	0.74	0.94	1.30	1.72	2.27	25yr	1.49	2.09	2.70	3.53	4.61	6.01	6.95	25yr	5.32	6.68	7.61	8.77	9.80	25yr
50yr	0.52	0.83	1.06	1.48	2.00	2.67	50yr	1.73	2.46	3.18	4.19	5.49	7.18	8.39	50yr	6.35	8.07	9.17	10.48	11.65	50yr
100yr	0.58	0.94	1.21	1.71	2.32	3.12	100yr	2.00	2.89	3.75	4.96	6.53	8.58	10.14	100yr	7.60	9.75	11.06	12.53	13.86	100yr
200yr	0.64	1.05	1.36	1.95	2.70	3.67	200yr	2.33	3.40	4.43	5.89	7.79	10.26	12.26	200yr	9.08	11.79	13.34	14.98	16.49	200yr
500yr	0.76	1.24	1.62	2.36	3.30	4.54	500yr	2.85	4.22	5.50	7.37	9.82	13.01	15.75	500yr	11.51	15.15	17.10	18.99	20.77	500yr

Lower Confidence Limits

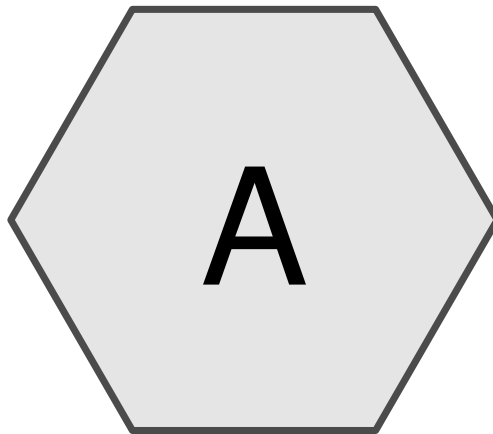
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	1yr	0.64	0.88	0.92	1.26	1.57	2.12	2.46	1yr	1.88	2.36	2.88	3.35	4.03	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.18	2yr	0.86	1.16	1.36	1.83	2.36	3.04	3.40	2yr	2.69	3.27	3.75	4.47	5.05	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	3.97	4.61	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	6.24	7.01	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	4.94	5.79	25yr	4.37	5.57	6.48	7.55	8.42	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.19	50yr	1.52	2.14	2.35	3.19	4.09	5.64	6.68	50yr	4.99	6.42	7.53	8.71	9.66	50yr
100yr	0.54	0.81	1.01	1.46	2.01	2.51	100yr	1.73	2.45	2.63	3.57	4.57	6.42	7.69	100yr	5.68	7.40	8.74	10.06	11.07	100yr
200yr	0.59	0.89	1.13	1.64	2.29	2.87	200yr	1.97	2.80	2.93	4.00	5.10	7.31	8.87	200yr	6.47	8.53	10.14	11.61	12.70	200yr
500yr	0.69	1.03	1.33	1.93	2.74	3.45	500yr	2.36	3.37	3.40	4.63	5.92	8.64	10.68	500yr	7.65	10.27	12.33	14.06	15.18	500yr

Upper Confidence Limits

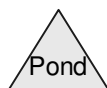
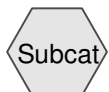
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	1yr	0.75	1.05	1.23	1.74	2.21	2.87	3.08	1yr	2.54	2.97	3.43	4.22	4.81	1yr
2yr	0.33	0.51	0.62	0.85	1.04	1.25	2yr	0.90	1.22	1.48	1.95	2.51	3.29	3.62	2yr	2.91	3.49	4.00	4.75	5.45	2yr
5yr	0.39	0.61	0.75	1.03	1.31	1.58	5yr	1.13	1.55	1.86	2.50	3.20	4.24	4.85	5yr	3.75	4.67	5.28	6.23	7.00	5yr
10yr	0.46	0.70	0.87	1.22	1.57	1.92	10yr	1.36	1.88	2.23	3.05	3.86	5.21	6.06	10yr	4.62	5.83	6.65	7.65	8.53	10yr
25yr	0.56	0.84	1.05	1.50	1.97	2.48	25yr	1.70	2.42	2.88	3.97	4.96	7.07	8.14	25yr	6.26	7.82	8.90	10.07	11.12	25yr
50yr	0.64	0.98	1.22	1.75	2.35	2.99	50yr	2.03	2.93	3.49	4.83	6.03	8.74	10.20	50yr	7.74	9.80	11.12	12.38	13.59	50yr
100yr	0.75	1.13	1.42	2.04	2.80	3.62	100yr	2.42	3.54	4.24	5.92	7.33	10.81	12.78	100yr	9.56	12.28	13.88	15.25	16.63	100yr
200yr	0.87	1.30	1.65	2.39	3.34	4.39	200yr	2.88	4.29	5.16	7.24	8.90	13.39	16.03	200yr	11.85	15.41	17.35	18.78	20.38	200yr
500yr	1.06	1.58	2.03	2.95	4.19	5.64	500yr	3.62	5.51	6.66	9.47	11.54	17.81	21.63	500yr	15.76	20.80	23.31	24.76	26.67	500yr

A – 1

EXISTING WATERSHEDS



A



Routing Diagram for 23029 - Pre

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23029 - Pre

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.365	39	>75% Grass cover, Good, HSG A (A)
0.011	96	Gravel surface, HSG A (A)
0.026	98	Paved parking, HSG A (A)
0.043	98	Roofs, HSG A (A)

23029 - Pre

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.445	HSG A	A
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	

23029 - Pre

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.365	0.000	0.000	0.000	0.000	0.365	>75% Grass cover, Good	A
0.011	0.000	0.000	0.000	0.000	0.011	Gravel surface	A
0.026	0.000	0.000	0.000	0.000	0.026	Paved parking	A
0.043	0.000	0.000	0.000	0.000	0.043	Roofs	A

A – 1

NODE LISTING – 2-YR

23029 - Pre**23029 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=19,378 sf 15.48% Impervious Runoff Depth=0.12"

Flow Length=126' Slope=0.0400 '/' Tc=9.0 min CN=50 Runoff=0.0 cfs 0.00 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.00 af Average Runoff Depth = 0.12"**84.52% Pervious = 0.376 ac 15.48% Impervious = 0.069 ac**

A – 1

NODE LISTING – 10-YR

23029 - Pre**23029 24-hr S1 10-yr Rainfall=4.75"**

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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=19,378 sf 15.48% Impervious Runoff Depth=0.59"

Flow Length=126' Slope=0.0400 '/' Tc=9.0 min CN=50 Runoff=0.1 cfs 0.02 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.02 af Average Runoff Depth = 0.59"**84.52% Pervious = 0.376 ac 15.48% Impervious = 0.069 ac**

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

Runoff = 0.1 cfs @ 12.12 hrs, Volume= 0.02 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
23029 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
15,888	39	>75% Grass cover, Good, HSG A
491	96	Gravel surface, HSG A
1,122	98	Paved parking, HSG A
1,877	98	Roofs, HSG A
19,378	50	Weighted Average
16,379		84.52% Pervious Area
2,999		15.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	126	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.15"

A – 1

NODE LISTING – 25-YR

23029 - Pre**23029 24-hr S1 25-yr Rainfall=6.01"**

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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=19,378 sf 15.48% Impervious Runoff Depth=1.15"

Flow Length=126' Slope=0.0400 '/' Tc=9.0 min CN=50 Runoff=0.3 cfs 0.04 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.04 af Average Runoff Depth = 1.15"**84.52% Pervious = 0.376 ac 15.48% Impervious = 0.069 ac**

A – 1

NODE LISTING – 50-YR

23029 - Pre**23029 24-hr S1 50-yr Rainfall=7.18"**

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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

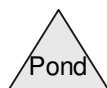
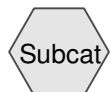
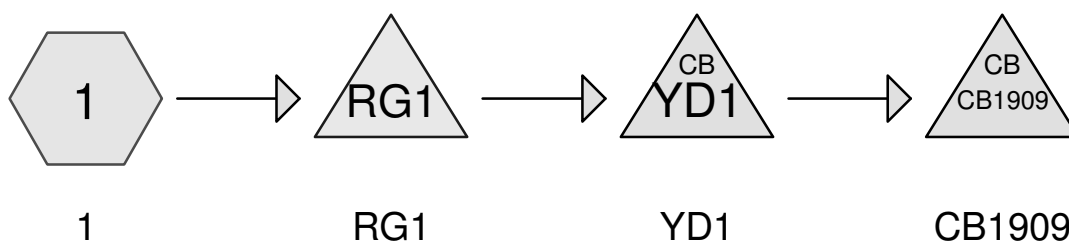
Runoff Area=19,378 sf 15.48% Impervious Runoff Depth=1.77"

Flow Length=126' Slope=0.0400 '/' Tc=9.0 min CN=50 Runoff=0.5 cfs 0.07 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.07 af Average Runoff Depth = 1.77"**84.52% Pervious = 0.376 ac 15.48% Impervious = 0.069 ac**

A – 2

DEVELOPED WATERSHEDS



Routing Diagram for 23029 - Post

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23029 - Post

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.222	39	>75% Grass cover, Good, HSG A (1)
0.002	96	Gravel surface, HSG A (1)
0.114	98	Paved parking, HSG A (1)
0.107	98	Roofs, HSG A (1)
0.445	69	TOTAL AREA

23029 - Post

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Page 3

Soil Listing (all nodes)

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

23029 - Post

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.222	0.000	0.000	0.000	0.000	0.222	>75% Grass cover, Good	1
0.002	0.000	0.000	0.000	0.000	0.002	Gravel surface	1
0.114	0.000	0.000	0.000	0.000	0.114	Paved parking	1
0.107	0.000	0.000	0.000	0.000	0.107	Roofs	1
0.445	0.000	0.000	0.000	0.000	0.445	TOTAL AREA	

A – 2

NODE LISTING – 2-YR

23029 - Post**23029 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=19,378 sf 49.77% Impervious Runoff Depth=0.75"
Flow Length=85' Slope=0.0310 '/' Tc=7.3 min CN=69 Runoff=0.3 cfs 0.03 af

Pond CB1909: CB1909

Peak Elev=92.39' Inflow=0.2 cfs 0.03 af
15.0" Round Culvert n=0.012 L=26.0' S=0.0000 '/' Outflow=0.2 cfs 0.03 af

Pond RG1: RG1

Peak Elev=93.90' Storage=212 cf Inflow=0.3 cfs 0.03 af
Outflow=0.2 cfs 0.03 af

Pond YD1: YD1

Peak Elev=92.88' Inflow=0.2 cfs 0.03 af
12.0" Round Culvert n=0.012 L=28.0' S=0.0100 '/' Outflow=0.2 cfs 0.03 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.03 af Average Runoff Depth = 0.75"
50.23% Pervious = 0.223 ac 49.77% Impervious = 0.221 ac

A – 2

NODE LISTING – 10-YR

23029 - Post

23029 24-hr S1 10-yr Rainfall=4.75"

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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=19,378 sf 49.77% Impervious Runoff Depth=1.78"
Flow Length=85' Slope=0.0310 '/' Tc=7.3 min CN=69 Runoff=0.7 cfs 0.07 af

Pond CB1909: CB1909

Peak Elev=92.44' Inflow=0.2 cfs 0.07 af
15.0" Round Culvert n=0.012 L=26.0' S=0.0000 '/' Outflow=0.2 cfs 0.07 af

Pond RG1: RG1

Peak Elev=96.05' Storage=513 cf Inflow=0.7 cfs 0.07 af
Outflow=0.2 cfs 0.07 af

Pond YD1: YD1

Peak Elev=92.93' Inflow=0.2 cfs 0.07 af
12.0" Round Culvert n=0.012 L=28.0' S=0.0100 '/' Outflow=0.2 cfs 0.07 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.07 af Average Runoff Depth = 1.78"
50.23% Pervious = 0.223 ac 49.77% Impervious = 0.221 ac

A – 2

10-YR STORM SUMMARY

23029 - Post

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23029 24-hr S1 10-yr Rainfall=4.75"

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Page 1

Summary for Subcatchment 1: 1

Runoff = 0.7 cfs @ 12.06 hrs, Volume= 0.07 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
23029 24-hr S1 10-yr Rainfall=4.75"

Area (sf)	CN	Description
9,659	39	>75% Grass cover, Good, HSG A
74	96	Gravel surface, HSG A
4,972	98	Paved parking, HSG A
4,673	98	Roofs, HSG A
19,378	69	Weighted Average
9,733		50.23% Pervious Area
9,645		49.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0310	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.15"

Summary for Pond CB1909: CB1909

Inflow Area = 0.445 ac, 49.77% Impervious, Inflow Depth > 1.78" for 10-yr event
 Inflow = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af
 Outflow = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 92.44' @ 12.33 hrs
 Flood Elev= 100.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.10'	15.0" Round Culvert L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 92.10' / 92.10' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.2 cfs @ 12.33 hrs HW=92.44' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 0.2 cfs @ 1.38 fps)

Summary for Pond RG1: RG1

Inflow Area = 0.445 ac, 49.77% Impervious, Inflow Depth = 1.78" for 10-yr event
 Inflow = 0.7 cfs @ 12.06 hrs, Volume= 0.07 af
 Outflow = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af, Atten= 65%, Lag= 16.3 min
 Primary = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Starting Elev= 93.42' Surf.Area= 742 sf Storage= 88 cf
 Peak Elev= 96.05' @ 12.33 hrs Surf.Area= 1,062 sf Storage= 513 cf (425 cf above start)
 Flood Elev= 97.15' Surf.Area= 2,127 sf Storage= 2,128 cf (2,040 cf above start)

23029 - Post

23029 24-hr S1 10-yr Rainfall=4.75"

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Page 2

Plug-Flow detention time= 48.6 min calculated for 0.06 af (97% of inflow)

Center-of-Mass det. time= 23.4 min (920.5 - 897.1)

Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	477 cf	Sediment Forebay (Irregular) Listed below (Recalc)
#2	93.08'	1,651 cf	Rain Garden 1 (Irregular) Listed below
		2,128 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
96.00	287	68.4	0	0	287
96.60	408	78.8	207	207	417
97.00	529	90.2	187	394	574
97.15	575	93.4	83	477	622

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
93.08	742	150.8	0.0	0	0	742
94.25	742	150.8	35.0	304	304	918
94.50	742	150.8	20.0	37	341	956
96.00	742	150.8	10.0	111	452	1,182
96.60	1,013	169.1	100.0	524	977	1,658
97.00	1,297	204.7	100.0	461	1,437	2,720
97.15	1,552	213.9	100.0	213	1,651	3,028

Device	Routing	Invert	Outlet Devices
#1	Primary	93.42'	12.0" Round Culvert L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.42' / 92.68' S= 0.0087 ' ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	93.42'	6.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.42' / 93.42' S= 0.0000 ' ' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Device 2	93.08'	10.000 in/hr Exfiltration over Surface area Phase-In= 0.01'
#4	Device 1	96.60'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.2 cfs @ 12.33 hrs HW=96.05' TW=92.93' (Dynamic Tailwater)

- 1=Culvert (Passes 0.2 cfs of 5.0 cfs potential flow)
 2=Culvert (Passes 0.2 cfs of 1.2 cfs potential flow)
 3=Exfiltration (Exfiltration Controls 0.2 cfs)
 4=Orifice/Grate (Controls 0.0 cfs)

Summary for Pond YD1: YD1

Inflow Area = 0.445 ac, 49.77% Impervious, Inflow Depth = 1.78" for 10-yr event
 Inflow = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af
 Outflow = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.2 cfs @ 12.33 hrs, Volume= 0.07 af

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

23029 - Post

23029 24-hr S1 10-yr Rainfall=4.75"

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Page 3

Peak Elev= 92.93' @ 12.33 hrs

Flood Elev= 100.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.68'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 92.68' / 92.40' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.2 cfs @ 12.33 hrs HW=92.93' TW=92.44' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.2 cfs @ 2.45 fps)

A – 2

NODE LISTING – 25-YR

23029 - Post

23029 24-hr S1 25-yr Rainfall=6.01"

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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=19,378 sf 49.77% Impervious Runoff Depth=2.72"
Flow Length=85' Slope=0.0310 '/' Tc=7.3 min CN=69 Runoff=1.0 cfs 0.10 af

Pond CB1909: CB1909

Peak Elev=92.46' Inflow=0.3 cfs 0.10 af
15.0" Round Culvert n=0.012 L=26.0' S=0.0000 '/' Outflow=0.3 cfs 0.10 af

Pond RG1: RG1

Peak Elev=96.32' Storage=831 cf Inflow=1.0 cfs 0.10 af
Outflow=0.3 cfs 0.10 af

Pond YD1: YD1

Peak Elev=92.95' Inflow=0.3 cfs 0.10 af
12.0" Round Culvert n=0.012 L=28.0' S=0.0100 '/' Outflow=0.3 cfs 0.10 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.10 af Average Runoff Depth = 2.72"
50.23% Pervious = 0.223 ac 49.77% Impervious = 0.221 ac

A – 2

NODE LISTING – 50-YR

23029 - Post

23029 24-hr S1 50-yr Rainfall=7.18"

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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=19,378 sf 49.77% Impervious Runoff Depth=3.66"
Flow Length=85' Slope=0.0310 '/' Tc=7.3 min CN=69 Runoff=1.3 cfs 0.14 af

Pond CB1909: CB1909

Peak Elev=92.49' Inflow=0.3 cfs 0.14 af
15.0" Round Culvert n=0.012 L=26.0' S=0.0000 '/' Outflow=0.3 cfs 0.14 af

Pond RG1: RG1

Peak Elev=96.61' Storage=1,197 cf Inflow=1.3 cfs 0.14 af
Outflow=0.3 cfs 0.14 af

Pond YD1: YD1

Peak Elev=92.98' Inflow=0.3 cfs 0.14 af
12.0" Round Culvert n=0.012 L=28.0' S=0.0100 '/' Outflow=0.3 cfs 0.14 af

Total Runoff Area = 0.445 ac Runoff Volume = 0.14 af Average Runoff Depth = 3.66"
50.23% Pervious = 0.223 ac 49.77% Impervious = 0.221 ac

APPENDIX B

DESIGN

B – 1

**STORMWATER BEST MANAGEMENT
PRACTICES**



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

Rain Garden 1 (RG1)

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

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.44	ac	A = Area draining to the practice	
0.22	ac	A _I = Impervious area draining to the practice	
0.50	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.50	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.22	ac-in	WQV = 1" x Rv x A	
804	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
201	cf	25% x WQV (check calc for sediment forebay volume)	
603	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
394	cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
	sf	A _{SA} = Surface area of the practice	
	iph	K _{sat} _{DESIGN} = Design infiltration rate ¹	
		If K _{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
96.60	ft	E _{WQV} = Elevation of WQV (attach stage-storage table)	
0.30	cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	
1.49	hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}	≤ 72-hrs
94.50	feet	E _{FC} = Elevation of the bottom of the filter course material ²	
93.42	feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable	
93.42	feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
92.60	feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.08	feet	D _{FC to UD} = Depth to UD from the bottom of the filter course	≥ 1'
1.90	feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course	≥ 1'
1.08	feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course	≥ 1'
96.61	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
97.15	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	< 10 ac
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ 75%WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes/No		Access grate provided?	← yes

YES	ac	Drainage Area no larger than 5 ac?	← yes
842	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
18.0	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet	14	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	≥ 3:1
Sheet	L1.0	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
	acres	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.) A _{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). K_{sat_design} includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

[illegible]

Summary for Pond RG1: RG1

Inflow Area = 0.445 ac, 49.77% Impervious, Inflow Depth = 3.66" for 50-yr event
 Inflow = 1.3 cfs @ 12.05 hrs, Volume= 0.14 af
 Outflow = 0.3 cfs @ 12.53 hrs, Volume= 0.14 af, Atten= 74%, Lag= 28.8 min
 Primary = 0.3 cfs @ 12.53 hrs, Volume= 0.14 af

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

Starting Elev= 93.42' Surf.Area= 742 sf Storage= 88 cf

Peak Elev= 96.61' @ 12.53 hrs Surf.Area= 1,429 sf Storage= 1,197 cf (1,108 cf above start)

Flood Elev= 97.15' Surf.Area= 2,127 sf Storage= 2,128 cf (2,040 cf above start)

Plug-Flow detention time= 44.1 min calculated for 0.13 af (98% of inflow)

Center-of-Mass det. time= 29.4 min (901.0 - 871.6)

Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	477 cf	Sediment Forebay (Irregular) Listed below (Recalc)
#2	93.08'	1,651 cf	Rain Garden 1 (Irregular) Listed below
		2,128 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
96.00	287	68.4	0	0	287
96.60	408	78.8	207	207	417
97.00	529	90.2	187	394	574
97.15	575	93.4	83	477	622

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
93.08	742	150.8	0.0	0	0	742
94.25	742	150.8	35.0	304	304	918
94.50	742	150.8	20.0	37	341	956
96.00	742	150.8	10.0	111	452	1,182
96.60	1,013	169.1	100.0	524	977	1,658
97.00	1,297	204.7	100.0	461	1,437	2,720
97.15	1,552	213.9	100.0	213	1,651	3,028

Device	Routing	Invert	Outlet Devices	Storage provided = 524 + 111 + 207 = 842 CF
#1	Primary	93.42'	12.0" Round Culvert L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.42' / 92.68' S= 0.0087 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf	
#2	Device 1	93.42'	6.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.42' / 93.42' S= 0.0000 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf	
#3	Device 2	93.08'	10.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#4	Device 1	96.60'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

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23029 24-hr S1 50-yr Rainfall=7.18"

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Page 2

Primary OutFlow Max=0.3 cfs @ 12.53 hrs HW=96.61' TW=92.98' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.3 cfs of 5.6 cfs potential flow)
- ↑ **2=Culvert** (Passes 0.3 cfs of 1.3 cfs potential flow)
- ↑ **3=Exfiltration** (Exfiltration Controls 0.3 cfs)
- ↑ **4=Orifice/Grate** (Weir Controls 0.0 cfs @ 0.29 fps)

23029 - Post

23029 24-hr S1 50-yr Rainfall=7.18"

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Page 1

Stage-Discharge for Pond RG1: RG1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
93.08	0.0	95.78	0.2
93.13	0.0	95.83	0.2
93.18	0.0	95.88	0.2
93.23	0.0	95.93	0.2
93.28	0.0	95.98	0.2
93.33	0.0	96.03	0.2
93.38	0.0	96.08	0.3
93.43	0.0	96.13	0.3
93.48	0.0	96.18	0.3
93.53	0.0	96.23	0.3
93.58	0.0	96.28	0.3
93.63	0.0	96.33	0.3
93.68	0.1	96.38	0.3
93.73	0.1	96.43	0.3
93.78	0.1	96.48	0.3
93.83	0.2	96.53	0.3
93.88	0.2	96.58	0.3
93.93	0.2	96.63	0.4
93.98	0.2	96.68	0.7
94.03	0.2	96.73	1.1
94.08	0.2	96.78	1.5
94.13	0.2	96.83	2.1
94.18	0.2	96.88	2.7
94.23	0.2	96.93	3.3
94.28	0.2	96.98	4.0
94.33	0.2	97.03	4.8
94.38	0.2	97.08	5.6
94.43	0.2	97.13	6.0
94.48	0.2		
94.53	0.2		
94.58	0.2		
94.63	0.2		
94.68	0.2		
94.73	0.2		
94.78	0.2		
94.83	0.2		
94.88	0.2		
94.93	0.2		
94.98	0.2		
95.03	0.2		
95.08	0.2		
95.13	0.2		
95.18	0.2		
95.23	0.2		
95.28	0.2		
95.33	0.2		
95.38	0.2		
95.43	0.2		
95.48	0.2		
95.53	0.2		
95.58	0.2		
95.63	0.2		
95.68	0.2		
95.73	0.2		

Ele. 99.6' ~ 0.3 cfs

Stage-Area-Storage for Pond RG1: RG1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
93.08	742	0	95.78	742	436
93.13	742	13	95.83	742	440
93.18	742	26	95.88	742	443
93.23	742	39	95.93	742	447
93.28	742	52	95.98	742	451
93.33	742	65	96.03	1,048	487
93.38	742	78	96.08	1,080	546
93.43	742	91	96.13	1,112	605
93.48	742	104	96.18	1,144	664
93.53	742	117	96.23	1,177	724
93.58	742	130	96.28	1,209	785
93.63	742	143	96.33	1,242	846
93.68	742	156	96.38	1,275	907
93.73	742	169	96.43	1,308	969
93.78	742	182	96.48	1,341	1,032
93.83	742	195	96.53	1,374	1,095
93.88	742	208	96.58	1,408	1,158
93.93	742	221	96.63	1,451	1,231
93.98	742	234	96.68	1,501	1,310
94.03	742	247	96.73	1,551	1,389
94.08	742	260	96.78	1,601	1,470
94.13	742	273	96.83	1,652	1,551
94.18	742	286	96.88	1,703	1,632
94.23	742	299	96.93	1,754	1,715
94.28	742	308	96.98	1,805	1,798
94.33	742	316	97.03	1,886	1,890
94.38	742	323	97.08	1,986	1,989
94.43	742	331	97.13	2,087	2,088
94.48	742	338	94.5' ~ 341 cf		
94.53	742	343			
94.58	742	347			
94.63	742	351			
94.68	742	354			
94.73	742	358	Storage provided = 1,183 cf - 341 cf = 842 cf		
94.78	742	362			
94.83	742	365			
94.88	742	369			
94.93	742	373			
94.98	742	377			
95.03	742	380			
95.08	742	384			
95.13	742	388			
95.18	742	391			
95.23	742	395			
95.28	742	399			
95.33	742	403			
95.38	742	406			
95.43	742	410			
95.48	742	414			
95.53	742	417			
95.58	742	421			
95.63	742	425			
95.68	742	429			
95.73	742	432			

96.6' ~ 1,183 cf

94.5' ~ 341 cf

Storage provided = 1,183 cf - 341 cf = 842 cf

B – 2

POLLUTANT REMOVAL

Appendix E. BMP Pollutant Removal Efficiency

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis

Best Management Practice (BMP) removal efficiencies for pollutant loading analysis for total suspended solids (TSS), total nitrogen (TN), and total phosphorus (TP) are presented in the table below. These removal efficiencies were developed by reviewing various literature sources and using best professional judgment based on literature values and general expectation of how values for different BMPs should relate to one another. The intent is to update this information and add BMPs and removal efficiencies for other parameters as more information/data becomes available in the future.

NHDES will consider other BMP removal efficiencies if sufficient documentation is provided.

Please note that all BMPs must be designed in accordance with the specifications in the Alteration of Terrain (AoT) Program Administrative Rules (Env-Wq 1500). If BMPs are not designed in accordance with the AoT Rules, NHDES may require lower removal efficiencies to be used in the analysis.

BMP in Series: When BMPs are placed in series, the BMP with the highest removal efficiency shall be the efficiency used in the model for computing annual loadings. Adding efficiencies together is generally not allowed because removals typically decrease rapidly with decreasing influent concentration and, in the case of primary BMPs (i.e., stormwater ponds, infiltration and filtering practices), pre-treatment is usually part of the design and is therefore, most likely already accounted for in the efficiencies cited for these BMPs.

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

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	BMP	Notes	Lit. Ref.	TSS	TN	TP
Treatment Swales	Flow Through Treatment Swale	TBA				
Vegetated Buffers	Vegetated Buffers		A, B, I	73%	40%	45%
Pre-Treatment Practices	Sediment Forebay	TBA				
	Vegetated Filter Strip		A, B, I	73%	40%	45%
	Vegetated Swale		A, B, C, F, H, I	65%	20%	25%
	Flow-Through Device - Hydrodynamic Separator		A, B, G, H	35%	10%	5%
	Flow-Through Device - ADS Underground Multichamber Water Quality Unit (WQU)		G, H	72%	10%	9%
	Other Flow-Through Devices	TBA				
	Off-line Deep Sump Catch Basin		J, K, L, M	15%	5%	5%

B – 3

GROUNDWATER RECHARGE

Job CNE#23029 - Perez
Conducted By: Michael Menary
Witnessed By: Douglas LaRosa
Date: 10/2/2023

Test Pit: 1

Date: 10/2/2023

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-10"	10YR 4/4	FINE SANDY LOAM	MASSIVE	FRIABLE		
10"-24"	10YR 5/3	SILTY LOAM	MASSIVE	FRIABLE	5YR 6/4 2% @ 24"	ROOTS @ 24" MANY FINE
24"-48"	2.5Y 6/4	SILTY CLAY	PLATTY	FIRM		

Seasonal High Water (in): 24"
Observed Water (in): NONE
Restrictive Layer (in): NONE
Bedrock/Refusal (in): NONE

Soil Series:
NHDES Soil Group:
Hydrologic Soil Group:

Depth Perc Test Inches Per Hour

Notes:

Test Pit: 2

Date: 10/2/2023

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-10"	10YR 3/4	FINE SANDY LOAM	MASSIVE	FRIABLE		
10"-22"	10YR 4/4	SANDY LOAM	MASSIVE	FRIABLE	5YR 6/4 2% @ 22"	
22"-38"	2.5Y 6/2	SILTY CLAY	BLOCKY	FRIABLE		

Seasonal High Water (in): 22"
Observed Water (in): NONE
Restrictive Layer (in): NONE
Bedrock/Refusal (in): NONE

Soil Series:
NHDES Soil Group:
Hydrologic Soil Group:

Percolation Test
 Depth Perc Test Inches Per Hour

Notes:



Test Pit: 3

Date: 10/2/2023

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-14"	10YR 3/3	FINE SANDY LOAM	MASSIVE	FRIABLE		
14-32"	5 YR 5/6	FINE SANDY LOAM	MASSIVE	FRIABLE		
32-48"	2.5Y 4/3	SILTY LOAM	MASSIVE	FRIABLE	5YR 6/4 2% @ 32"	

Seasonal High Water (in): 32
 Observed Water (in): NONE
 Restrictive Layer (in): NONE
 Bedrock/Refusal (in): NONE

Soil Series:
 NHDES Soil Group:
 Hydrologic Soil Group:

Percolation Test
 Depth Perc Test Inches Per Hour

Notes:

Test Pit:

Date:

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes

Seasonal High Water (in):
 Observed Water (in):
 Restrictive Layer (in):
 Bedrock/Refusal (in):

Soil Series:
 NHDES Soil Group:
 Hydrologic Soil Group:

Percolation Test
 Depth Perc Test Inches Per Hour

Notes:



Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>1</u>	Test Pit/Boring Hole Number:	<u>BH1</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (92.7)</u>	Surface Elevation (feet):	<u>96.7</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:00AM	0	24	0
10:00AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
10:05AM	10:20AM	24			Start
10:20AM	10:35AM	9			
10:35AM	10:50AM	5.5			
10:50AM	11:05AM	5.5			
11:05AM		5.5			Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	

Notes:

Pond Area

Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>2</u>	Test Pit/Boring Hole Number:	<u>BH1</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (92.7)</u>	Surface Elevation (feet):	<u>96.7</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:00AM	0	24	0
10:00AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
11:05AM	11:20AM	24			Start
11:20AM	11:35AM	6			
11:35AM	11:50AM	6			
11:50AM	12:05PM	6			
12:05PM		6			Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	

Notes:

Pond Area

Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>3</u>	Test Pit/Boring Hole Number:	<u>BH1</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (92.7)</u>	Surface Elevation (feet):	<u>96.7</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:00AM	0	24	0
10:00AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:05PM	12:20PM	24			Start
12:20PM	12:35PM	9			
12:35PM	12:50PM	9			
12:50PM	1:05PM	9			
1:05PM		9			Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	

Notes:

Pond Area

Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>1</u>	Test Pit/Boring Hole Number:	<u>BH2</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (94.4)</u>	Surface Elevation (feet):	<u>98.4</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:45AM	0	24	0
10:45AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
11:45AM	12:00PM	24			Start
12:00PM	12:15PM	9.5			
12:15PM	12:30PM	9.5			
12:30PM	12:45PM	9.5			
12:45PM		9.5			Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	

Notes:

Parking Area

Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>1</u>	Test Pit/Boring Hole Number:	<u>BH3</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (95.25)</u>	Surface Elevation (feet):	<u>99.25</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:45AM	0	24	0
10:45AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:15AM	12:30PM	24			Start
12:30PM	12:45PM	12			
12:45PM	1:00PM	10.5			
1:00PM	1:15PM	9.25			
1:15PM		8.25	15.75	15.75	Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	Use Test 2

Notes:

Parking Area

Stormwater Infiltration Testing Log

Project Name:	CNE#23029 - Perez	Date:	10/2/2023
Project Address:	Locus Street	Weather:	Sunny, 78°
Testing Company:	Civilworks NE	Tester's Name:	Michael Menary
Phone Number:	(603) 749-0443	Email Address:	mmenary@civilworksne.com

Test Number:	<u>2</u>	Test Pit/Boring Hole Number:	<u>BH3</u>	Test Method:	<u>Borehole Infiltration Test</u>
Test Depth (feet):	<u>4 (95.25)</u>	Surface Elevation (feet):	<u>99.25</u>	Instrument Diameter (inches):	<u>4</u>

Soil Characterization (See Test Pit Logs)

[illegible]

Presoak (Presoaked on 10/1/2023)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
10:45AM	0	24	0
10:45AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:15AM	12:30PM	24			Start
12:30PM	12:45PM	12.5			
12:45PM	1:00PM	12			
1:00PM	1:15PM	12			
1:15PM		12			Finish
Stabilized Infiltration Testing Rate (inches per hour):				Failed	

Notes:

Parking Area

APPENDIX C

INSPECTION AND MAINTENANCE

C – 1

**STORMWATER MANAGEMENT SYSTEM
INSPECTION & MAINTENANCE PLAN**

Stormwater Management System Inspection & Maintenance Plan

Prepared for:

**LOCUST STREET RESIDENTIAL DEVELOPMENT
Map 12, Lot 35-1**

**Locust Street
Dover, New Hampshire
Strafford County**

February 2024

Owner of Record:

17 – 19 SUMMER STREET PROPERTIES, LLC
71 Lafayette Road
Hampton Falls, New Hampshire 03844

Prepared By:

CIVILWORKS NEW ENGLAND
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks New England, has prepared the following Stormwater Management System Inspection & Maintenance Plan for **17 – 19 Summer Street Properties, LLC**. 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 inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

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.

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, and 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 NHDES 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:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party.

Contact / Responsible Party:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

**Ben Perez
Phone: (603) 944-0516
Email: Ben@bostonnorthdevelopment.com**

The contact information for the Contact / Responsible Party shall be kept current.

Management Company:

**17 – 19 Summer Street Properties, LLC
71 Lafayette Road
Hampton Falls, NH 03844**

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 NHDES. 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 the City of Dover Community Services Department annually before Dec 15th.

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. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Sediment Forebay
- Yard Drains
- Bioretention Basins
- Grassed Lined Conveyance Swale
- Pavement
- Litter / Trash Removal

Design elements are identified in 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.

PIPES/CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

OUTLET STRUCTURES:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

SEDIMENT FOREBAY:

- Vegetated areas shall be mowed to maintain a 4" start of vegetative growth.
- Inspect at least once per year.
- Inspect for sediment accumulation.
- Remove all debris immediately.

YARD DRAINS:

- Inspect once per year.
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately and sediment accumulations ≥ 1 foot.
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

BIORETENTION BASINS:

- Inspection, by a **qualified professional**, of the Bioretention Basin 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. If the Bioretention Basin systems do not drain within 72-hours following a rainfall event, a qualified professional should assess the condition and determine measures required to restore filtration practice (as applicable).
- 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.
- 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.

GRASS LINED CONVEYANCE SWALE:

- Inspect once per year.
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4” stand of vegetative growth.

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 Deicing Salt Quantity Use Log).
- 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
Pipes/Culverts	Annually	- Check for clogging - Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structures	Annually	- Inspect once per year. - Inspect for clogging and sediment accumulation. - Remove all debris immediately and sediment accumulations ≥ 2 inches.	≥ 2 in. sediment Remove immediately
Sediment Forebay	Annually	- Check for sediment accumulation - Check for woody vegetation growth - Check for debris - Vegetated areas shall be mowed to maintain a 4" start of vegetative growth.	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly
Yard Drains	Annually	- Check for sediment accumulation - Check for floatable contaminants - Check for hydrocarbons (oils and grease)	≥ 1 ft. sediment depth Remove all floatables Remove immediately
Bioretention Basins - Outlet Structure - Inlet/Outlet Piping - Embankments - Pond Sediment - Trash/Debris - Vegetation (Veg.)	Bi-Annually " " " " Periodically " " " "	- 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.	See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Grass Lined Conveyance Swale	Annually	- Check for sediment accumulation - Check for erosion - Ensure swale is stabilized - Maintain healthy stand of veg., 4" minimum - Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind Mow twice per year Remove/Dispose of accordingly
Pavement: - Sanding - Salt Applications - Sweep/Vacuum - Trash/Debris	Limit use As required 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 required) 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 pages contain 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]

Methods for Disposing Non-Native Invasive Plants

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



Tatarian honeysuckle

Lonicera tatarica

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

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

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

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

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

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

New Hampshire Regulations

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

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

How and When to Dispose of Invasives?

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

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

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

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

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

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

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

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



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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard (<i>Alliaria petiolata</i>) spotted knapweed (<i>Centaurea maculosa</i>) ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort (<i>Cynanchum nigrum</i>) ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort (<i>Cynanchum rossicum</i>) giant hogweed (<i>Heracleum mantegazzianum</i>) ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket (<i>Hesperis matronalis</i>) perennial pepperweed (<i>Lepidium latifolium</i>) purple loosestrife (<i>Lythrum salicaria</i>) Japanese stilt grass (<i>Microstegium vimineum</i>) mile-a-minute weed (<i>Polygonum perfoliatum</i>)	Fruits and Seeds 	Prior to flowering Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. During and following flowering Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (<i>Phragmites australis</i>) Japanese knotweed (<i>Polygonum cuspidatum</i>) Bohemian knotweed (<i>Polygonum x bohemicum</i>)	Fruits, Seeds, Plant Fragments Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	Small infestation ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. Large infestation ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

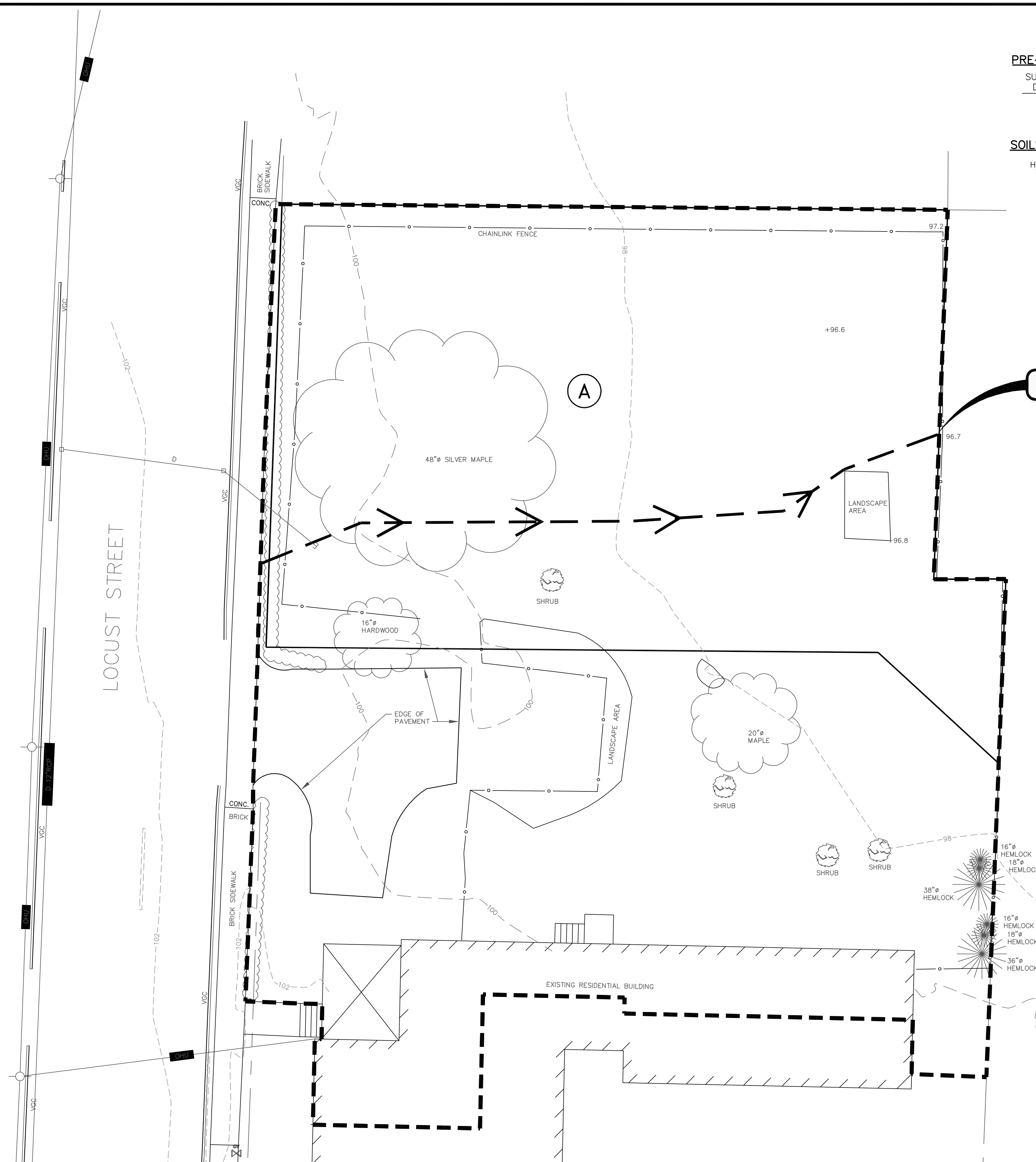
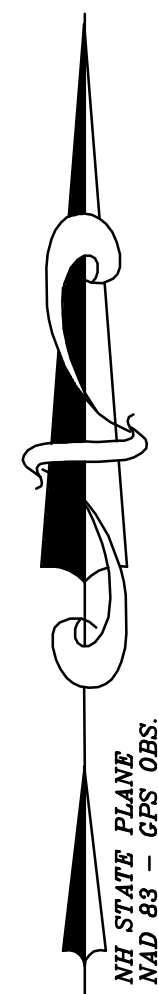
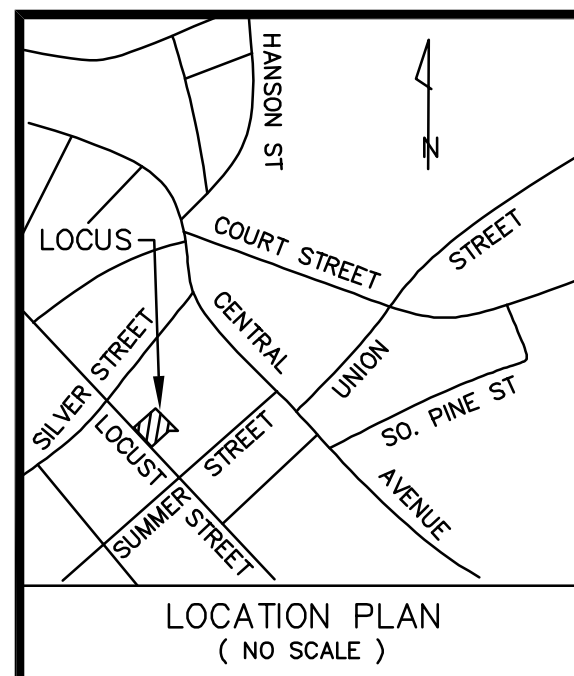
January 2010

APPENDIX D

WATERSHED PLANS

D – 1

PRE-DEVELOPMENT CONDITIONS



PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	T _c (MIN)
A	0.44	126	9.0

SOILS DATA

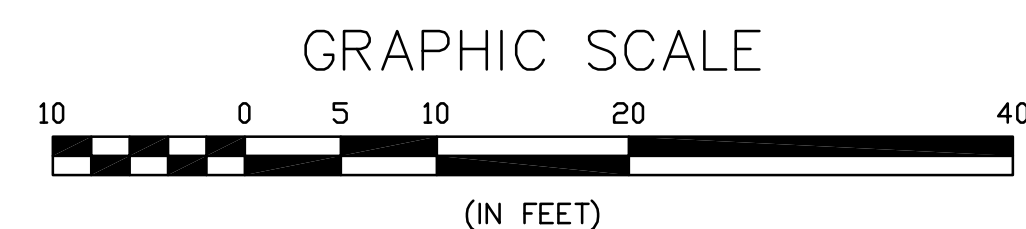
Hydrologic Drainage Class A:

WfB – Windsor Loamy Fine Sand, Clay Subsoil Variant, 0 – 8 Percent Slopes

DISCHARGE PT. A

LEGEND:

- | | |
|---|---|
|  | EX 2' CONTOUR |
|  | EX 10' CONTOUR |
|  | PROPERTY LINE |
|  | EXISTING EDGE OF PAVEMENT |
|  | EXISTING FENCE |
|  | EXISTING BUILDING |
|  | SUBCATCHMENT BOUNDARY |
|  | LONGEST FLOW PATH
WITH DIRECTION OF FLOW |
|  | SUBCATCHMENT DESIGNATION |

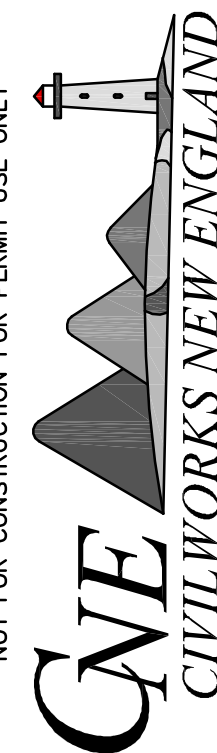


PRE-DEVELOPMENT WATERSHED PLAN

LOCUST STREET RESIDENTIAL DEVELOPMENT DOVER, NH	17-19 SUMMER STREET PROPERTIES, LLC 71 LAFAYETTE ROAD HAMPTON FALLS, NH 03844
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WS-1

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

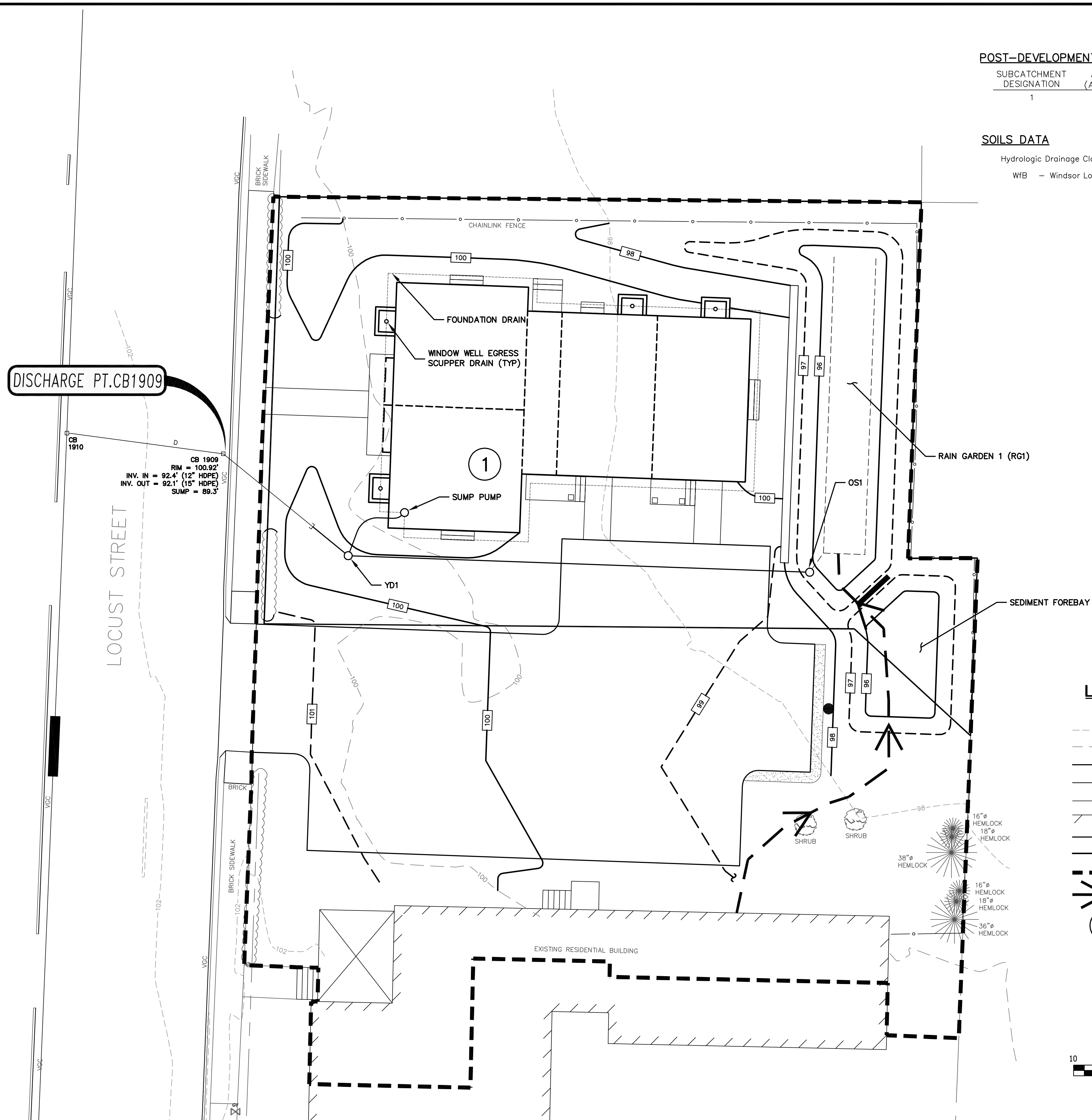
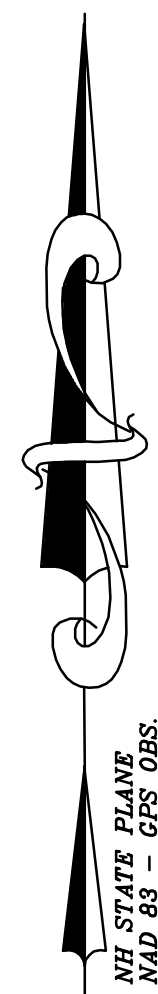
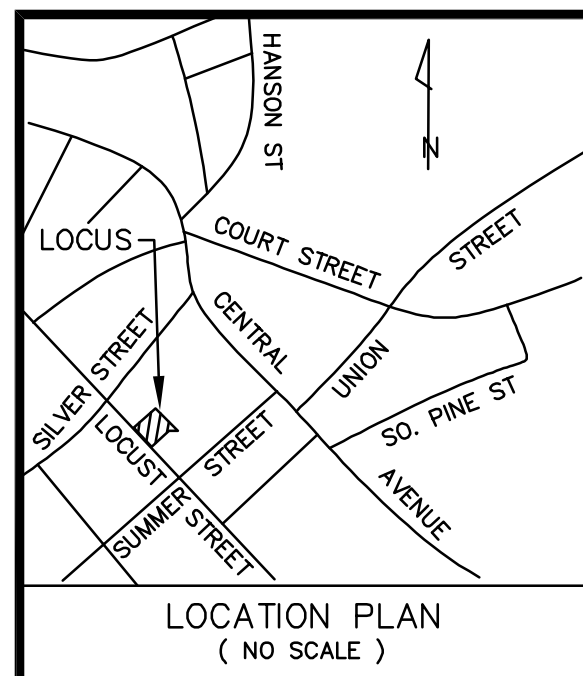


CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603 749 0443

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D – 2

POST-DEVELOPMENT CONDITIONS



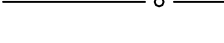
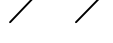
POST-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	T _c (MIN)
1	0.44	85	7.3

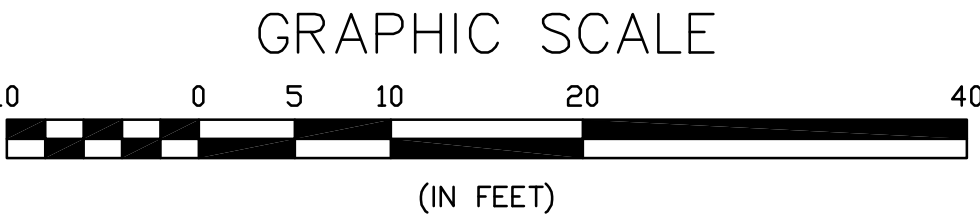
SOILS DATA

Hydrologic Drainage Class A:

WfB – Windsor Loamy Fine Sand, Clay Subsoil Variant, 0 – 8 Percent Slopes

LEGEND:

- | | |
|---|---|
|  | EX 2' CONTOUR |
|  | EX 10' CONTOUR |
|  | PROPERTY LINE |
|  | EXISTING EDGE OF PAVEMENT |
|  | EXISTING FENCE |
|  | EXISTING BUILDING |
|  | PROPOSED EDGE OF PAVEMENT |
|  | PROPOSED BUILDING |
|  | SUBCATCHMENT BOUNDARY |
|  | LONGEST FLOW PATH
WITH DIRECTION OF FLOW |
|  | SUBCATCHMENT DESIGNATION |



POST-DEVELOPMENT WATERSHED PLAN

LOCUST STREET
RESIDENTIAL DEVELOPMENT
DOVER, NH

WS-2

NE
CIVILWORKS NEW ENGLAND

CIVIL & WATERPROOF ENGINEERING

181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

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