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, January 4, 2024**
Meeting Time: **10:30 AM**

1. 10:30 AM - 11:30 AM: Major Subdivision for Diamond Capital, LLC, Assessor's Map D, Lot 10, zoned R-12, located at 42 Long Hill Road. (Proposal is for a 34 lot subdivision. Six (6) of the 34 units were previously approved via Transfer of Development Rights (4 at 1,400 sf and 2 at full TDR rate). A related Conditional Use Permit will also appear before the Planning Board) *(SUBD-2023-0006 and COND-2023-0062)

PLAN SNAPSHOT REPORT SUBD-2023-0006
FOR CITY OF DOVER, N.H.

Plan Type:	Subdivision Plan - Major	**Project:**		**App Date:**	12/07/2023
Work Class:	New Construction	**District:**	None	**Exp Date:**	02/10/2024
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: 34 new lots with (6) of the lots previously approved via TDR request.

Parcel:	D0010-000000 Main	**Address:**	42 Long Hill Rd Main Dover, NH	**Zone:**

Applicant
Diamond Capital LLC
Sarah Savage
170 Commerce Way Suite 200
Suite 200
Portsmouth, NH 03801
Home: (978) 255-2410
Business: (978) 255-2410
Mobile: (617) 823-4456

Engineer
Civilworks New England
Steve Haight
181 Watson Road PO Box 1166
Dover, NH 03820
Business: (603) 749-0443
Mobile: (603) 817-6651

Owner
Diamond Capital LLC
Sarah Savage
170 Commerce Way Suite 200
Suite 200
Portsmouth, NH 03801
Home: (978) 255-2410
Business: (978) 255-2410
Mobile: (617) 823-4456

Landscape Architect
Ironwood Design Group LLC
Business: (603) 772-0590

Wetlands Scientist
Damon Burt
38 garland road
Strafford, NH 03884
Home: (603) 969-5574
Business: (603) 969-5574
Mobile: (603) 969-5574

Architect
Sarah Hourihane
135 Spur Road
Dover, NH 03820
Mobile: (603) 553-6911

Applicant
Jase R Gregoire
P.O. Box 1166
Dover, NH 03821
Business: (603) 749-0443

Plan Custom Fields

Proposed Number of New Lots	34	Existing Number of Lots	1	Parcel Map/Lot	D/10
Parcel Zoning Overlay	None	Select Subdivision Type	Transfer of Development Rights	Parcel Zoning	R-12
Property Address	42 Long Hill Road	Existing Parcel Size (Ac)	11.01	Existing Parcel Size (sqft)	479596
Proposed Use Detail		Owner Name	Diamond Capital, LLC	Deed Page	230
Deed Book	5038	Owner Address	170 Commerce Way, Suite 200	Deed Date	
Refuse Removal	Public	New Change in Impervious/Paved Area (sq ft)	41815	Estimated Construction Value	900000.00
Owner Phone	(617) 823-4456	Parcel Feedback		Owner EMail	sarah@savagebuilders.com
If purchasing units, how many?	6	TDR Relief Sought (Check all that apply.)	Purchase Units	Existing Use Detail	
TDR Detail		subdroadtype	Municipal	Water Source?	Municipal
Distance to City Water (ft)	50	Distance to City Sewer (ft)	715	Sewer Service?	Private
Proposed Road Length (ft)	1600	Subdivision Regulations section(s) to be waived		Justification for waiver request(s)	

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Jase_Gregoire_12/7/2023.jpg	12/07/2023 11:20	Gregoire, Jase		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00006119	Planning Subdivision Lot Fee	$5,100.00	$0.00
	Planning Subdivision Application Fee	$200.00	$0.00

PLAN SNAPSHOT REPORT (SUBD-2023-0006)

		Total for Invoice INV-00006119	**$5,300.00**	**$0.00**
NOT INVOICED	Planning Impervious Paved Area Fee		$2,927.05	$0.00
		Total for Invoice NOT INVOICED	**$2,927.05**	**$0.00**
		Grand Total for Plan	**$8,227.05**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		12/11/2023 10:01	
Confirm application complete v.1	Generic Action		12/11/2023 10:01
Technical Review Committee Meeting Agenda v.1	Task	12/11/2023 10:13	
Land Use Plan Technical Review v.1	Receive Submittal		
Technical Review Committee Meeting v.1	Hold Meeting		
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Stamped and Signed v.1	Generic Action		
Recording v.1	Task		
Document Archival v.1	Generic Action		
Property Info Group v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #: SUBD-2023-0006	Date Received:
	Amount Paid:	Time Received:

APPLICANT AND OWNER INFORMATION

Name of Applicant: Diamond Capital, LLC Telephone # 617-823-4456

Address of Applicant: 170 Commerce Way, Suite 200 Portsmouth, NH 03801

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

Address of Property Owner: SAME

E-Mail Address: sarah@savagebuilders.com

PROPERTY INFORMATION

Address of Property: Long Hill Road

Assessor's Map # D Lot(s) # 10

Zoning District(s) R-12 Overlay District(s) NONE

Size of Parcel: 479,399 s.f. (11.01 ac.) Property Deed: Book 5038 Page: 230

Existing Use of Property: Single Family Residential

SUBDIVISION INFORMATION

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

Existing Number of Lots: 1 Proposed Number of Lots: 34

TDR Relief sought (Check All That Apply): □ Lot Size □ Frontage □ Setback □ 30' Buffer ☑ Purchase 6 units

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

A TDR request was granted on 3/28/23 to approve the purchase of six (6) additional lots, 4 lots to be deed restricted to 1400 s.f. homes.

Circle one for each category:

Water: (City)/Well (circle one) How far is city water from the property? at Long Hill Road entrance

Sewer: (City)/Septic (circle one) How far is city sewer from the property? 715± ft. at intersection of Long Hill & Old Rochester Rds

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

Refuse removal: (Public)/Private (circle one) | Estimated Length of Proposed Road: 1600± feet

Estimated value of construction: $900,000 New impervious area (in s.f.): 41,815 s.f.

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: Chapter 157-45 SIDEWALKS

Justification for waiver request(s) (*attach additional sheets as needed*): See attached Waiver request.

SURVEYOR INFORMATION

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

Address P.O. Box 681 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

LANDSCAPE ARCHITECT INFORMATION

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

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

Professional License #: NH PLA #026 E-mail address: jhyland@fewood.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Damon E. Burt, CWS - Fraggle Rock Environmental, Inc.

Address 38 Garland Road Strafford, NH 03884 Telephone #: 603-969-5574

Professional License #: NH CWS# 163 E-mail address: frenvironmental@gmail.com

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: _____

SIGNATURES

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

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

x Signature of Property Owner: _____ Date: 12/6/23

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

Signature of Agent: _____ Date: 12/6/23

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

x Signature of Property Owner: _____ Date: 12/6/23

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

x Signature of Property Owner: _____ Date: 12/6/23

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

CERTIFICATION OF FEES

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

x Signature of Property Owner: _____ Date: 12/6/23

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

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

x Signature of Property Owner: _____ Date: 12/6/23

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

City of Dover, New Hampshire
SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 2019]

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

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

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

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

APPLICANT: Diamond Capital, LLC File Number: P23-

PROJECT TITLE: LONG HILL PLACE

PROPERTY LOCATION: 42 Long Hill Road Tax Map: D Lot: 10

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

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

REVIEWED BY: _____ DATE_____ TRC DATE_____

PROJECT NARRATIVE

for
LONG HILL PLACE
Open Space Subdivision
Long Hill Road, Dover, NH
Tax Map D, Lot 10

PROJECT OVERVIEW

This proposed project, "Long Hill Place", is located on an 11 +/- acre parcel, shown on Tax Map D, as Lot 10. This proposal is for a conventional subdivision development of thirty-four (34) single family lots, thirty-one (31) lots located on a newly constructed public 50 foot wide right of way (Naples Way), and three (3) lots having driveway access from Long Hill Road, including the existing home. The lots range in size from 7,350 s.f. to 28,669 s.f. A Transfer of Development Rights request was granted on March 28, 2023, to allow the purchase of 6 additional lots, 4 of which will be deed restricted for homes of 1400 s.f.

Additional site improvements will include the installation of underground utilities, connection to the existing city water service located in Long Hill Road, and city sewer services located approximately 715± feet away at the intersection of Long Hill Road and Old Rochester Road, and a comprehensive stormwater mitigation and management system and the associated site grading.

Planning Board subdivision approval for the proposed house lots and a conditional use permit for proposed impacts to a wetland buffer are required. The proposed impact is limited to the grading and drainage structures associated with the construction of a wet pond. There are no wetland impacts from the proposed development.

This wet pond, conveyance swale and associated drainage structures, and grading are within Lots 12 through 22. An easement benefiting the City of Dover will be created for these lots.

This project consists of the following outline of general construction:

- Select clearing and grubbing of land area required to construct the proposed roadway.
- The design of a 50-foot wide right of way for the construction of a 24-foot wide, 1600 l.f. paved roadway.
- Installation of underground utilities and a wet pond with a comprehensive stormwater mitigation and management system and the associated site grading.
- Site landscaping.

PROJECT LOCATION AND SITE CHARACTERISTICS

The subject parcel is within the Medium Density Residential (R-12) District and is approximately 11.1 +/- acres in size, has frontage along Long Hill Road and consists of an existing house with outbuildings serviced by private septic and well.

PROJECT NARRATIVE

for
LONG HILL PLACE
Open Space Subdivision
Long Hill Road, Dover, NH
Tax Map D, Lot 10

WETLAND BUFFER IMPACTS

There are no wetland impacts for this project. A Conditional Use Permit will be sought for the proposed wetland buffer impact, which is limited to grading associated with the construction of a wet pond and a comprehensive stormwater mitigation and management system. The proposed site design consists of 3,572 s.f. of impact to the wetland buffer over proposed Lots 12 through 22. An easement benefiting the City of Dover will be created for these lots.

LANDSCAPING

The project design consists of a 30-foot-wide visual vegetative perimeter buffer. The construction of the wet pond and associated drainage structures and grading will impact a portion of this buffer. Landscaping efforts will be made to revegetate this area upon completion.

DRAINAGE

The project has been designed to treat and mitigate stormwater on site. All site drainage will flow overland or be captured by a closed drainage system which will direct runoff to a wet pond. The drainage mitigation system has been designed to mitigate post development flows to less than existing conditions and provides mitigation of both stormwater quantity and quality. A Stormwater Inspection and Maintenance Plan has been prepared and has been submitted to the city for review along with the supporting data.

TRAFFIC

Civilworks New England has prepared a traffic analysis and issued a traffic memorandum which is included as an attachment to this application. The analysis concludes that the development will have minimal impact on the existing traffic stream on Long Hill Road.

UTILITIES

The proposed house lots along Long Hill Road and along the newly constructed 50 foot right of way (Naples Way) will connect to existing City water located within the Long Hill Road right of way and septic service, approximately 715± feet away at the intersection of Long Hill Road and Old Rochester Road. Electric service will be provided by the existing power poles owned by Eversource also located in the Long Hill Road right-of-way.

SOLID WASTE

All house lots created by this subdivision will be served by City provided curb side trash pickup.

POSTAL SERVICES

All lots for this development will have curb side mailboxes.

WAIVER REQUEST

for
LONG HILL PLACE
Subdivision
Long Hill Road, Dover, NH
Tax Map D, Lot 10

As part of this subdivision application, the applicant is seeking relief from the following regulation:

§ 157-45 Sidewalks.

A sidewalk is required on at least one side of a street in the urban core and may be required by the Planning Board on both sides of the street where it is deemed appropriate. Sidewalks shall be of bituminous concrete or portland cement concrete. Bituminous concrete shall not be less than 2 1/2 inches in thickness and placed over a six-inch gravel base. Portland cement concrete sidewalks shall not be less than four inches in thickness, reinforced by eight-by-eight, six-by-six wire mesh and placed on a suitable base not less than 12 inches thick. Portland cement concrete sidewalks that cross driveways shall be not less than six inches thick and meet all the standards listed above. All sidewalks shall be five feet in width and constructed adjacent to the property line within the street right-of-way. Sidewalks shall be designed to be free from obstruction; all streetlights, street trees, mailboxes, newspaper bins, trash receptacles, or any other type of obstruction shall be placed in the grass area between the sidewalk and the curb.

The proposed subdivision is in the R-12 Medium Density District and is for 34 lots, 31 of which are accessed from a proposed public road (name to be determined) off Long Hill Road. Three lots, including the existing home, front directly on Long Hill Road.

There are no sidewalks along Long Hill Road. Likewise, we are seeking relief from sidewalks along the proposed public road off Long Hill Road. Having no sidewalks would maintain a similar feel as other properties in this area without sidewalks. It is our opinion that this location does not fall within the urban core. Therefore, granting this waiver is in general conformance and intent of the subdivision regulations.

DONNA P. BENTON, AICP
Director of Planning and
Community Development
d.benton@dover.nh.gov

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

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

NOTICE OF DECISION

March 29, 2023

Diamond Capital, LLC
c/o Francis X. Bruton, III, Esquire
Bruton & Berube, PLLC
601 Central Avenue
Dover, NH 03820

Re: Consideration and acceptance of Transfer of Development Rights Request for Diamond Capital, LLC, Assessor's Map D, Lot 10, zoned R-12, located at 42 Long Hill Road. (Requesting to purchase (6) six TDR units for a project up to 34 residential lots including the existing single family home.) (TRAN-2023-0001)

Dear Diamond Capital, LLC:

Please be advised that on Tuesday, March 28, 2023 the Dover Planning Board voted to conditionally approve the request to grant up to six Transfer of Development Rights (TDR) units/lots and found the criteria of 170-27.2 have been met. The intention understood by the Planning Board is for four of the units to be deed-restricted to 1,400 s.f. and two to be the full TDR rate. **The specific subsequent conditions are included with this letter.**

In addition to the subsequent conditions of approval, please provide the following to the Planning Office:

☐One (1) full size plat and One (1) 11" x 17" plat (plus any additional plats for the applicant or owner)

☐One (1) PDF digital version of the plat

If you have any questions, please do not hesitate to contact my office.

Sincerely,

Donna Benton

Donna Benton, AICP
Director of Planning & Community Development

EC: Building Inspection Office
Engineering Office
Assessing Office
McEneaney Survey Associates

Subsequent Conditions to be Met Prior to Granting of Transfer of Development Rights:	**Submitted**	**Received**
1. Recognition by the applicant in writing that the applicant understands the Board voted to allow up to a maximum amount but that they have the ability to reduce that unit count after seeing more fully-engineered plans, waiver requests, or any other relief requested.	☐	☐
2. Payment of TDR fees.	☐	☐
3. Revise the application narrative to meet the most recent request	☐	☐
4. Future subdivision plat shall show the 30' visual buffer	☐	☐

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

STANDARD TRAFFIC IMPACT ASSESSMENT AND ANALYSIS

prepared for

LONG HILL PLACE

Tax Map D, Lot 10

Long Hill Road - Dover, New Hampshire

December 4, 2023

1. Description of Site

The proposed project calls for construction of a 34-lot residential subdivision for single family detached homes on an 11.1-acre parcel of land located and accessed along Long Hill Road. The parcel is shown as Lot 10 on Tax Map D and is in the Medium Density Residential (R-12) District. The parcel is separated from the Non-Residential (C) District by City-owned land utilized as a park. Land on the opposite side of Long Hill Road is also located in the R-12 District and is occupied by single-family residences.

2. Description of Roadways

The segment of Long Hill Road, on which the project fronts, has a continuously a straight alignment between Old Rochester Road, located approximately 830 ft. east of the existing parcel access, and a point approximately 500 ft. west of the existing parcel access driveway. The pavement width is 24 ft. in this segment with two (2) 12 ft. wide lanes. There is a 3 ft. shoulder along the southerly side of Long Hill Road and the front lawns of the existing houses along the northerly side of the road meet the edge of pavement. There are two (2) driveways and Philip Street accessing Long Hill Road opposite the project site frontage (see Existing Conditions Plan). Philip Street intersects Long Hill Road opposite the westerly front corner of the project site. There were no sidewalks, crosswalks, or handicap ramps observed in the area.

The posted speed limit is 30 miles per hour. Data supplied by the Dover Police Department from 2010 indicates an 85th percentile speed of 42 miles per hour and an average of 36 miles per hour.

3. Sight Distance

Available sight distance at the proposed access drive to Long Hill Road is based on measurements obtained on November 27, 2023. Methodology was based on the requirements of Section 157-60, Definitions, for All-Season Sight Distance. The driver's "eye" was set back 14 ft. from the edge of pavement.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

Sight distance available in both directions from the proposed site access point exceeds 400 ft. with the following stipulations:

1) Minor brush and small tree (less than 4-inch caliper) removed is required to the west of the proposed access, and;

2) the existing white vinyl paddock fence will need to be removed or relocated to an alignment 15 ft. from the edge of pavement.

These modifications will ensure that sight distance from the proposed site access is acceptable.

4. Trip Generation

The estimated trip generation for the proposed 34-lot subdivision is presented in Table 1 below. The trip generation rate data was derived from the ITE Trip Generation Manual, 11th edition and copies of the data sheets are included in Attachment A. Data presented includes estimated average weekday trip ends, as well as estimated trip ends during A.M. and P.M. peak hours of the adjacent street (Long Hill Road) and estimated average Saturday trip ends.

TABLE 1
Estimated Average Vehicle Trip Ends [(1)]

Average Weekday	AM Peak Hour Adjacent Street	PM Peak Hour Adjacent Street	Average Saturday
320	24	32	322
(160 in / 160 out)	(6 in / 18 out)	(20 in / 12 out)	(161 in / 161 out)

[(1)] A trip end is a single or one-direction vehicle movement either entering or entering a study site.

5. Trip Distribution

Long Hill Road serves as a rural connector roadway as well as a local access to existing residential development east of the Spaulding Turnpike. Traffic is primarily directed to and from Old Rochester Road and nearby NH Route 108, both of which access Dover business areas and the Spaulding Turnpike (via Exit 9) to the south and medical offices and Rochester to the north. Based on traffic counts just to the west of Philip Street obtained by the Dover Police Department in 2010, it appears 64 percent of traffic travels to the ease, toward Old Rochester Road/NH Route 108 in the AM and 36 percent travels westbound on the segment of Long Hill Road. Similarly, in the PM scenario, 42 percent travels to the east and 58 percent to the west.

6. Public Transit

The closest available public transit is provided by COAST. Route 12, according to the schedule/map published on the COAST website, appears to provide service between Rochester and the Dover Transportation Center with multiple stops. One of the stops is on NH Route 108 by the Strafford Farms Restaurant and located approximately 0.4 miles from the project site.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

STANDARD TRAFFIC IMPACT ASSESSMENT AND ANALYSIS

prepared for

LONG HILL PLACE

Tax Map D, Lot 10

Long Hill Road - Dover, New Hampshire

December 4, 2023

ATTACHMENT A

ITE Trip Generation Manual, 11th edition
Data Sheets

Land Use Code 210
Single-Family Detached Housing

Land Use: 210
Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates based on a small sample of sites are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 251), and higher than those for senior adult housing -- single-family (Land Use 251). Further analysis of this housing type will be conducted in a future edition of *Trip Generation Manual*.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

For 30 of the study sites, data on the number of residents and number of household vehicles are available. The overall averages for the 30 sites are 3.6 residents per dwelling unit and 1.5 vehicles per dwelling unit.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Arizona, California, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Jersey, North Carolina, Ohio, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, and West Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077,1078, 1079

Single-Family Detached Housing
(210)

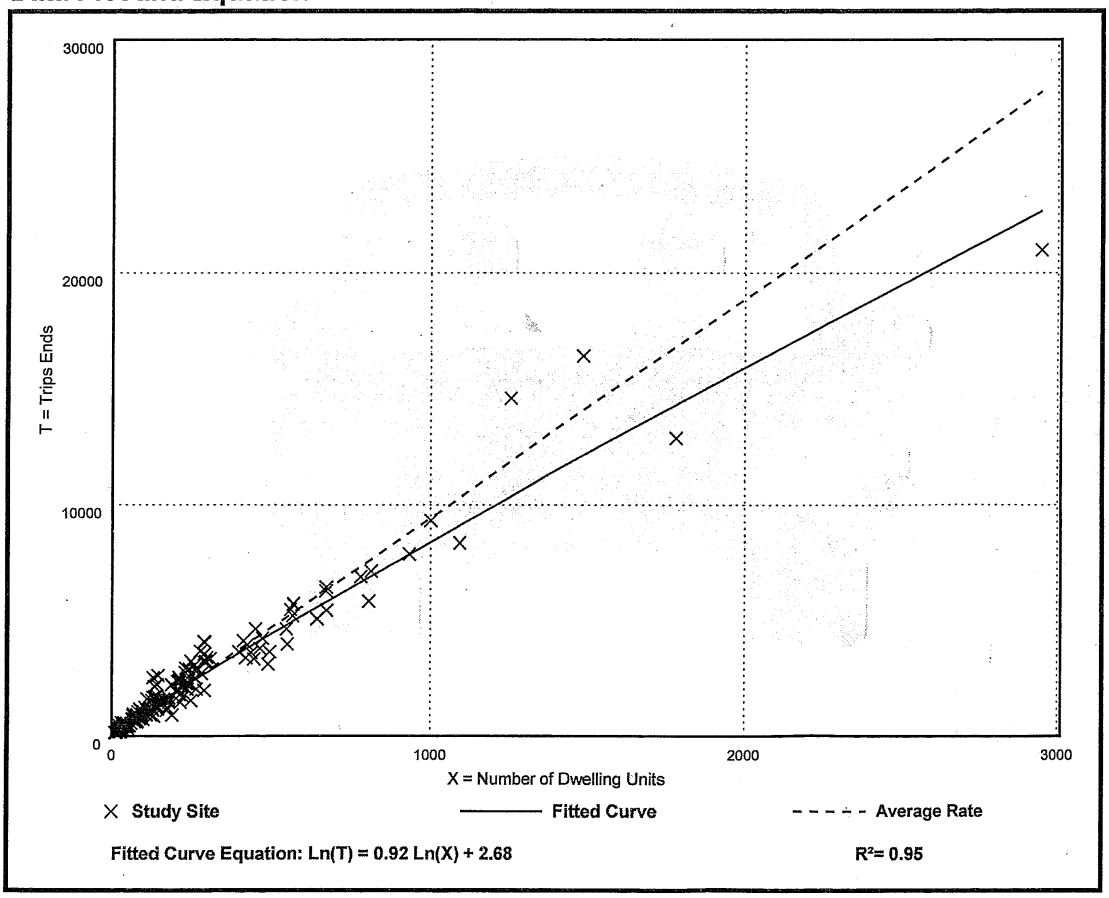
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68

R^2= 0.95

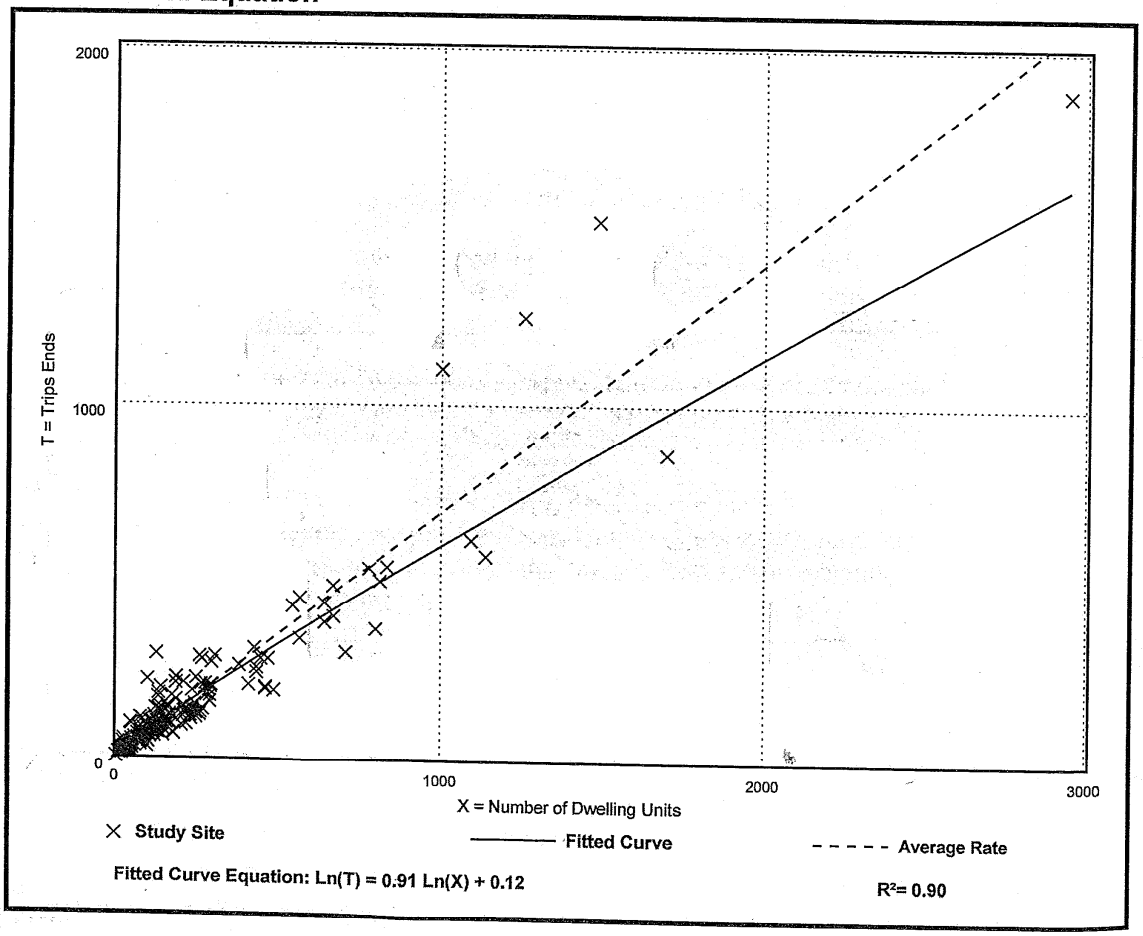
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



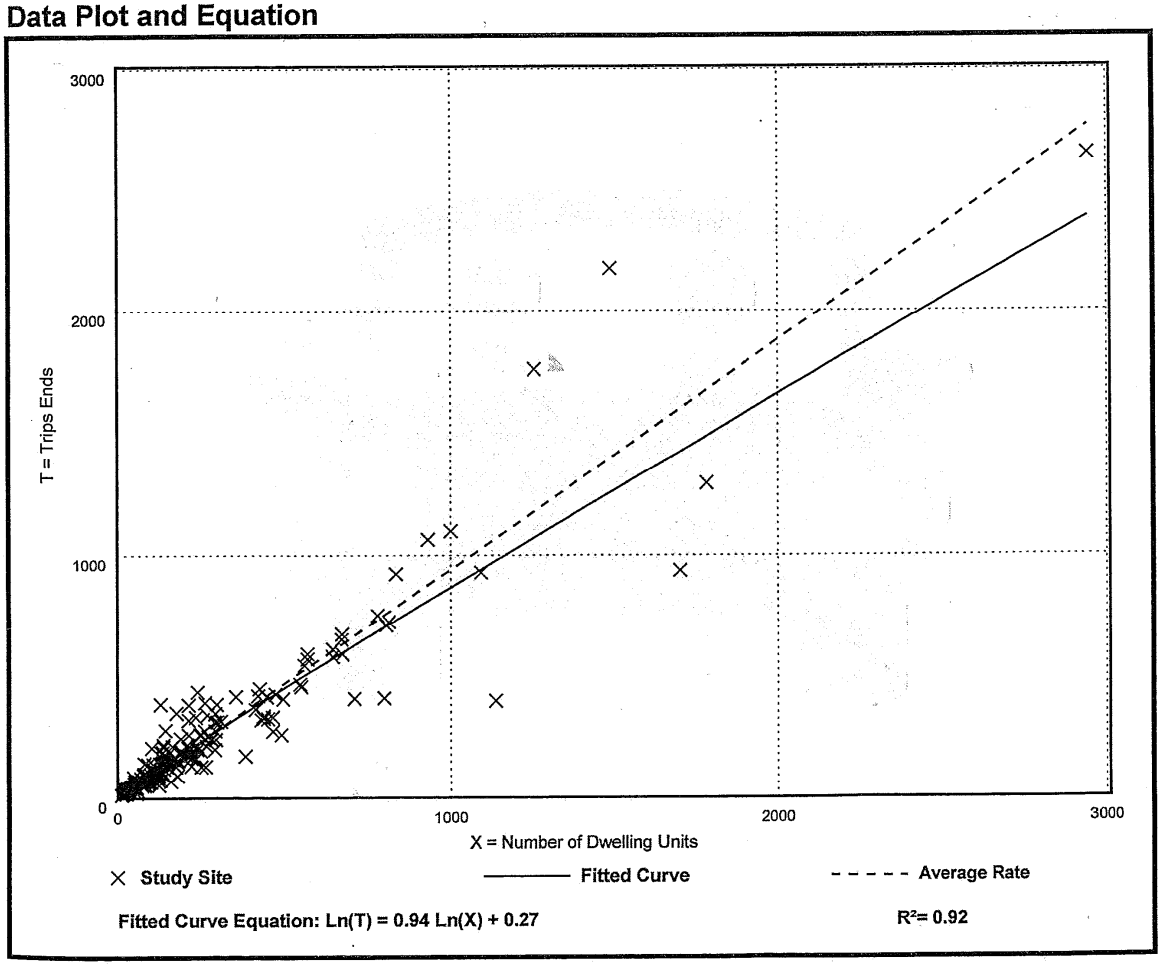
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.94 Ln(X) + 0.27

R^2= 0.92

Single-Family Detached Housing
(210)

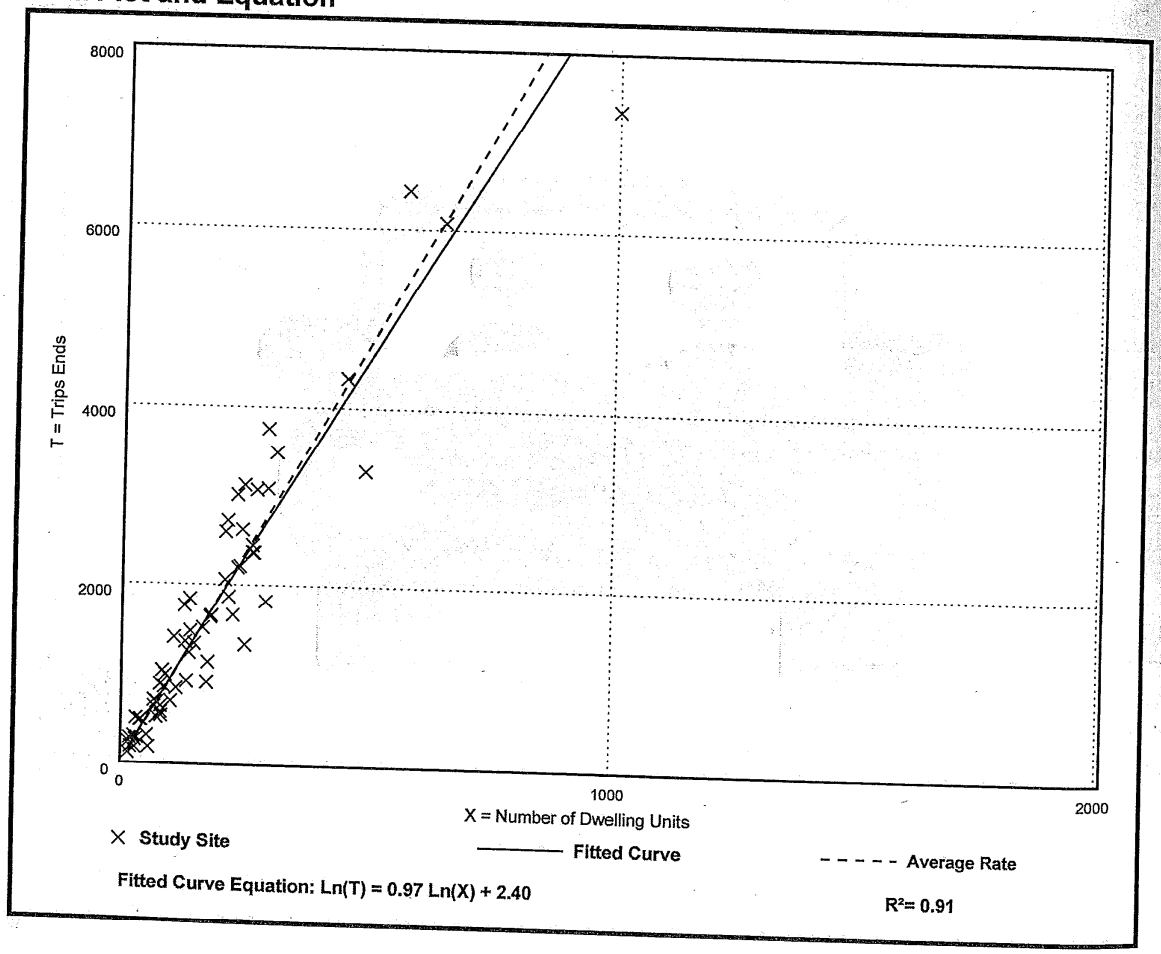
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 63
Avg. Num. of Dwelling Units: 179
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.48	3.36 - 16.52	2.26

Data Plot and Equation



Stormwater Management System Inspection & Maintenance Plan

For

LONG HILL PLACE
TAX MAP D, LOT 10

42 Long Hill Road
Dover, New Hampshire
Strafford County

November 2023

Prepared For:

DIAMOND CAPITAL, LLC
170 Commerce Way Suite 200
Portsmouth, NH 03801

Prepared By:

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

Introduction

Civilworks New England (CNE), has prepared the following Stormwater Management System Inspection & Maintenance Plan for **Long Hill Place.** The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

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

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

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

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

Owner(s)

Diamond Capital, LLC
Sarah Savage
170 Commerce Way, Suite 200
Portsmouth, NH 03801

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

Contact / Responsible Party

Diamond Capital, LLC
Sarah Savage
170 Commerce Way, Suite 200
Portsmouth, NH 03801

Phone: (603) 457-9000
Email: sarah@savagebuilders.com

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

Management Company

Diamond Capital, LLC
Sarah Savage
170 Commerce Way, Suite 200
Portsmouth, NH 03801

Phone: (603) 457-9000
Email: sarah@savagebuilders.com

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

Inspection Schedule / Record Retention

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

Stormwater Management System Components

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

- Pipes/Culverts
- Wet Pond
- Grass Lined Conveyance Swale
- Energy Dissipation Structures (rip rap)/ Plunge Pool/ Sediment Forebay
- Outlet Structure
- Catch Basins/ Manholes
- Pavement
- Litter / Trash Removal

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

Control of Invasive Species

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

Inspection and Maintenance Plan

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

PIPES/CULVERTS:

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

WET POND:

- Inspect at least once per year.
- Periodic mowing to control vegetation growth.
- Remove any woody debris.
- Remove any debris from pond and outlet structure.
- Remove accumulated sediment.

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.

ENERGY DISSIPATION STRUCTURES (RIP RAP)/ PLUNGE POOL/ SEDIMENT FOREBAY:

- Inspect at least once a year.
- Inspect for sediment accumulation.
- Remove all debris immediately.
- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas, they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.
- Vegetated areas shall be mowed to maintain a 4" start of vegetative growth.

OUTLET STRUCTURE:

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

CATCH BASINS/ MANHOLES

- 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.

PAVEMENT:

- Minimize sanding.

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

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS

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

ANTI-ICING AND SALT MINIMIZATION

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

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for sediment accumulation and clogging	≥ 2 in. sediment depth
Wet Pond	Bi-Annually (at least)	• Check for sediment accumulation • Check for woody vegetation growth • Check for debris	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly,
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
Energy Dissipation (ED) Structures (RipRap)/ Plunge Pool/ Sediment Forebay	Annually	• Check for displaced stones • Check for woody vegetation • Check for sediment accumulation • Check for erosion	≥ 3 in. sediment Remove annually Replace/ reset dislodged stone immediately
Outlet Structure	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
Catch Basins/ Manholes	Annually	• Check for sediment accumulation • Check for floatable contaminants	≥ 1 ft. sediment depth Remove all floatables
Pavement • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As Req. 1 - 2 x's Year Periodically	• Minimize use to prevent tracking issues • RECORD APPLICATION RATES • Sweep or vacuum to prevent tracking issues • Check for trash/debris	Sweep to prevent issues Minimize as Req. Sweep/Vacuum as needed Remove when noticed
Litter / Trash Removal	Periodically	• Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

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

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance: _____ Inspector: _____

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

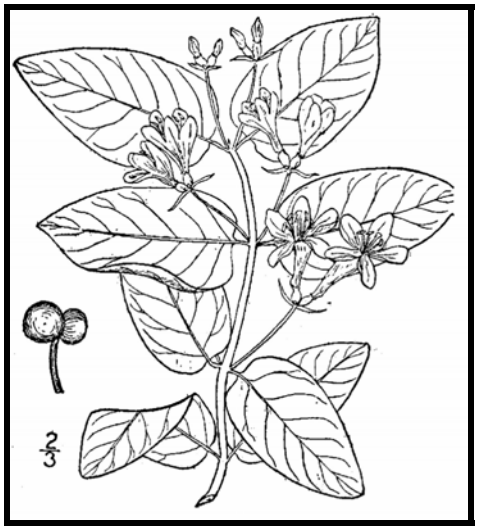
Deicing Salt Quantity Use Log

Date	Amount of Material Applied	Comments

University of New Hampshire Cooperative Extension

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

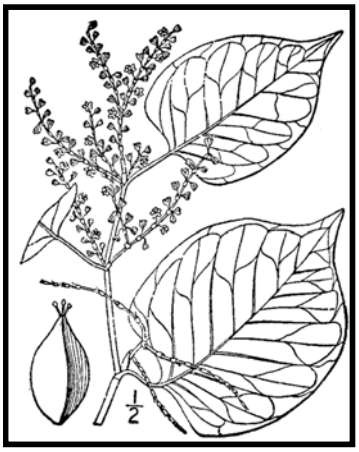
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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.



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.

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.

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.

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

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

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

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

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

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

January 2010

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DRAINAGE ANALYSIS

LONG HILL PLACE
TAX MAP D, LOT 10

42 Long Hill Road
Dover, New Hampshire
Strafford County

November 2023

Prepared For:

Diamond Capital, LLC
170 Commerce Way Suite 200
Portsmouth, NH 03801

Prepared By:

Civilworks New England
PO Box 1166
181 Watson Road
Dover, NH 03820

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- 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 Outlet Protection

5.0 APPENDIX C – NRCS WEB SOIL SURVEY

6.0 APPENDIX D – SITE SPECIFIC SOILS REPORT & MAP

7.0 APPENDIX E – WATERSHED PLANS
E-1 Pre-Development Conditions
E-2 Post-Development Conditions

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcels located at 42 Long Hill Road in Dover NH. The 11.01± acre parcel is identified on Tax Map D, Lot 10, and is bounded by Long Hill Road to the north, residential lot to the west and south, and City of Dover land to the east. The site currently consists of an existing house, with a detached garage, two barns, a grass pasture, and wooded areas along the east, south, west property line.

To effectively analyze the pre-development subject parcel, the site has been divided into 3 watersheds, discharge points A, B, & C. Watshed A drains from the front yard of the existing house to a low point located along the westerly property line. Watershed B drains from the existing riding trail to a localized low point located along the westerly property line. Watershed C is the largest and drains from Long Hill Road and a ridge line that runs east to west throughout the site to a wetland located along the southerly property line. The site is located in a Coastal and Great Bay Region community, the extreme precipitation estimates from Northeast Regional Climate Center were increased by 15%

The project proposes the demolition of the existing structures, the construction of a 33-lot subdivision with associated site improvements, 1,600 lf paved roadway, stormwater drainage structures, and underground utilities. Municipal water and sewer services will be available at each home location. The proposed drainage structure incorporated to mitigate stormwater runoff is a large wet pond. A closed drainage system consisting of pipes and catch basins, along with a grassed conveyance swale will be utilized for the conveyance of post condition stormwater runoff. The development incorporates outlet protection at all outlets of drainage structures to mitigate flow velocities. The proposed stormwater drainage structures (catch basins, manholes, yard drains, pipes, basins, energy dissipation, etc.) will be maintained by the project proponent as outlined within the Stormwater Management Systems Inspection & Maintenance Manual (Stormwater I&M Manual).

The post development analyzes runoff to the same three (3) discharge points as the pre-development model (Watershed A, B, & C). Watershed C is further subdivided into 11 sub-catchments to model the proposed drainage system. This provides a direct comparison to the pre-development model. The proposed drainage system is designed to accommodate stormwater runoff from the full build out of the site. The 11 subcatchments within watershed C include estimated impervious areas for proposed driveways and houses. The site is located in a Coastal and Great Bay Region community, the extreme precipitation estimates from Northeast Regional Climate Center were increased by 15% both in the pre-development and post-development models.

The site specific soils report provided by Michael Cuomo CSS#006 indicated that the soils located on-site are HSG B. The test pit data showed that there is a highwater table located on-site and it was determined that groundwater recharge is not feasible. A waiver from Chapter Env-Wq 1500 will be requested as part of the Alteration of Terrain Permit Application.

This analysis indicates that the proposed stormwater measures and stormwater management plan will treat and mitigate stormwater runoff in accordance with Env-Wq

1500 and the City of Dover's stormwater regulations. 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 watersheds and sub-catchment areas were delineated using topographic data provided by McEneaney Survey Associates of New England and wetland data provided by Damon E. Burt, Wetland Scientist (CWS) #163 and field located by McEneaney Survey Associates of New England.

2.1.2 Soils

Soil types were determined utilizing NRCS Web Soile Survey (WSS) mapping tool at http://websoilsurvey.nrcs.usda.gov which references the Strafford County, New Hampshire Soil Survey Area, Version 23, Sep 9, 2022 and a site specific soils map prepared by Michael Cuomo (CSS) #006 on May 9, 2023. The soil drainage classifications used for this analysis are Class A & B.

Hydrologic Drainage Class A:

WSS	Map Name
WdA	Windsor Loam sand

Hydrologic Drainage Class B:

SSSS	Map Name
300A	Udipsamments
313A	Deerfield
314A	Pipestone
915A	Deerfield variant

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 3.61", 5.43", 6.85", and 8.19" rainfall depths respectively. The rain fall data has been peaked by 15% in accordance with NH DES Alteration of Terrain requirements as the site is located within the Coastal Region.

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 CONDTIONS

For purposes of this analysis the subject parcel was analyzed with 3 points of analysis.

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)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.14	0.5	1.8	3.0	4.2
B	0.03	0.1	0.4	0.6	0.8
C	0.46	1.7	4.8	7.5	10.1

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed utilizing the same summing points as the pre-development analysis.

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

Watershed	**Post-Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.02	0.0	0.3	0.4	0.6
B	0.00	0.0	0.1	0.2	0.3
C	1.13	1.7	4.8	7.5	10.1

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)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.14/**0.02**	0.5/**0.0**	1.8/**0.3**	3.0/**0.4**	4.2/**0.6**
B	0.03/**0.00**	0.1/**0.0**	0.4/**0.1**	0.6/**0.2**	0.8/**0.3**
C	0.46/**1.13**	1.7/**1.7**	4.8/**4.8**	7.5/**7.5**	10.1/**10.1**

2.5 STORMWATER DESIGN

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

2.5.1 Stormwater Best Management Practices

The project incorporates a large wet pond to mitigate flow and water quality from the proposed development. Pre-treatment for the wet pond includes off-line deep sump catch basins.

2.5.2 Groundwater Recharge

The site specific soils report provided by Michael Cuomo CSS#006 indicated that the soils located on-site are HSG B. The test pit data showed that there is a highwater table located on-site and it was determined that groundwater recharge is not feasible. A waiver from Chapter Env-Wq 1500 will be requested as part of the Alteration of Terrain Permit Application.

2.5.3 Pollutant Removal

The site stormwater design captures 100% of the proposed onsite impervious area and directs it to the best management practice that provides pollutant removal. The project is designed in accordance with Alteration of Terrain.

2.5.4 Outlet Protection

BMP's, conveyance structures, and outlet protection have been sized to convey the 50-year, 24 hour storm event. All proposed rip-rap applications shall consist of min. d50 = 6" stone with a stone layer thickness of 12" (min) on a filter fabric layer over a 6" thick (min) gravel base. See the plan set for rip-rap locations and the drainage details for additional 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 | Map | Satellite | Terrain

Locate by Address → | Locate by Lat/Lon 43.231 °N -70.90 °W → | Locate by State/County



Select Options

Smoothing	Delivery
Yes	Popup

Submit

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This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) | Natural Resources Conservation Service (NRCS)

Cornell University | USDA 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	No
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.231 degrees North
Longitude	70.902 degrees West
Elevation	60 feet
Date/Time	Wed Apr 12 2023 15:11:59 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	0.49	0.66	0.81	1.00	1yr	0.70	0.98	1.13	1.58	2.01	~~2.59~~	2.87	1yr	2.29	2.76	3.16	3.89	4.45	1yr
2yr	0.32	0.49	0.61	0.82	1.01	1.19	2yr	0.87	1.17	1.38	1.86	2.40	~~3.14~~	3.50	2yr	2.78	3.37	3.86	4.59	5.23	2yr
5yr	0.37	0.57	0.70	0.96	1.23	1.47	5yr	1.06	1.44	1.71	2.31	2.95	3.96	4.48	5yr	3.50	4.31	4.93	5.79	6.55	5yr
10yr	0.41	0.63	0.79	1.10	1.42	1.73	10yr	1.22	1.69	2.02	2.72	3.46	~~4.72~~	5.40	10yr	4.18	5.20	5.95	6.91	7.76	10yr
25yr	0.48	0.74	0.92	1.31	1.72	2.14	25yr	1.49	2.09	2.50	3.37	4.26	~~5.96~~	6.93	25yr	5.28	6.66	7.61	8.72	9.73	25yr
50yr	0.55	0.83	1.04	1.49	2.01	2.51	50yr	1.73	2.46	2.94	3.97	4.99	~~7.12~~	8.36	50yr	6.30	8.04	9.18	10.41	11.55	50yr
100yr	0.62	0.94	1.18	1.70	2.33	2.95	100yr	2.01	2.89	3.46	4.68	5.85	~~8.50~~	10.10	100yr	7.52	9.71	11.07	12.43	13.72	100yr
200yr	0.71	1.06	1.34	1.95	2.71	3.48	200yr	2.34	3.40	4.08	5.53	6.85	10.15	12.19	200yr	8.98	11.72	13.35	14.85	16.29	200yr
500yr	0.84	1.25	1.61	2.34	3.32	4.31	500yr	2.87	4.22	5.07	6.88	8.46	12.84	15.66	500yr	11.37	15.06	17.12	18.79	20.47	500yr

2.98
3.61
5.43
6.85
8.19
9.78

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	1.25	1.54	2.07	2.45	1yr	1.84	2.36	2.93	3.43	4.10	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.18	2yr	0.86	1.15	1.36	1.82	2.35	3.05	3.40	2yr	2.70	3.27	3.74	4.47	5.08	2yr
5yr	0.35	0.54	0.67	0.91	1.16	1.40	5yr	1.00	1.37	1.61	2.14	2.77	3.69	4.12	5yr	3.27	3.96	4.60	5.39	6.09	5yr
10yr	0.38	0.59	0.73	1.02	1.31	1.60	10yr	1.13	1.56	1.81	2.43	3.12	4.24	4.77	10yr	3.75	4.58	5.31	6.21	6.97	10yr
25yr	0.44	0.66	0.83	1.18	1.55	1.91	25yr	1.34	1.87	2.11	2.83	3.63	5.07	5.76	25yr	4.49	5.54	6.47	7.49	8.34	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.19	50yr	1.52	2.14	2.36	3.19	4.07	5.81	6.63	50yr	5.14	6.38	7.51	8.62	9.53	50yr
100yr	0.54	0.81	1.02	1.47	2.02	2.51	100yr	1.74	2.45	2.65	3.57	4.53	6.66	7.63	100yr	5.89	7.34	8.72	9.92	10.88	100yr
200yr	0.60	0.90	1.14	1.65	2.30	2.87	200yr	1.98	2.81	2.96	4.01	5.05	7.62	8.78	200yr	6.74	8.44	10.11	11.41	12.43	200yr
500yr	0.70	1.04	1.33	1.94	2.75	3.46	500yr	2.38	3.39	3.44	4.65	5.84	9.07	10.55	500yr	8.03	10.15	12.29	13.75	14.76	500yr

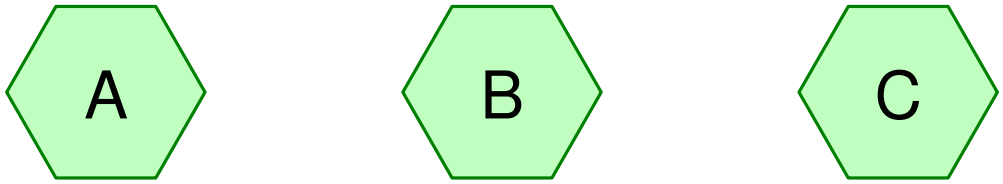
Upper Confidence Limits

	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	1.73	2.20	2.82	3.08	1yr	2.50	2.96	3.39	4.18	4.75	1yr
2yr	0.33	0.51	0.62	0.84	1.04	1.24	2yr	0.90	1.22	1.47	1.95	2.51	3.25	3.62	2yr	2.87	3.48	3.99	4.75	5.40	2yr
5yr	0.39	0.60	0.75	1.03	1.31	1.58	5yr	1.13	1.54	1.85	2.49	3.19	4.22	4.85	5yr	3.73	4.66	5.29	6.22	6.98	5yr
10yr	0.46	0.70	0.87	1.21	1.57	1.91	10yr	1.35	1.87	2.23	3.03	3.84	5.18	6.05	10yr	4.59	5.82	6.67	7.63	8.50	10yr
25yr	0.56	0.84	1.05	1.50	1.97	2.46	25yr	1.70	2.41	2.87	3.95	4.94	6.83	8.13	25yr	6.04	7.81	8.93	10.04	11.06	25yr
50yr	0.64	0.98	1.22	1.75	2.36	2.97	50yr	2.03	2.91	3.48	4.81	6.00	8.40	10.18	50yr	7.43	9.79	11.17	12.34	13.52	50yr
100yr	0.75	1.13	1.42	2.05	2.81	3.59	100yr	2.43	3.51	4.22	5.88	7.30	10.33	12.76	100yr	9.14	12.27	13.96	15.20	16.53	100yr
200yr	0.87	1.31	1.66	2.40	3.35	4.34	200yr	2.89	4.25	5.13	7.18	8.86	12.74	16.01	200yr	11.27	15.40	17.46	18.71	20.24	200yr
500yr	1.07	1.58	2.04	2.96	4.21	5.57	500yr	3.64	5.45	6.63	9.39	11.49	16.84	21.62	500yr	14.90	20.79	23.50	24.67	26.47	500yr

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A – 1

EXISTING WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 22032-Pre
Prepared by {enter your company name here}
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.079	39	>75% Grass cover, Good, HSG A (A, C)
4.034	61	>75% Grass cover, Good, HSG B (A, C)
0.885	96	Gravel surface, HSG B (B, C)
0.125	98	Paved parking, HSG A (A, C)
0.189	98	Paved parking, HSG B (A, C)
0.082	98	Roofs, HSG B (A, C)
0.054	98	Unconnected pavement, HSG B (C)
0.015	30	Woods, Good, HSG A (A, C)
5.763	55	Woods, Good, HSG B (A, B, C)
11.225	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.220	HSG A	A, C
11.006	HSG B	A, B, C
0.000	HSG C	
0.000	HSG D	
0.000	Other	
11.225		**TOTAL AREA**

A – 1

NODE LISTING – 2-YR

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=132,880 sf 4.58% Impervious Runoff Depth=0.54"
Flow Length=678' Slope=0.0160 '/' Tc=27.0 min CN=59 Runoff=0.5 cfs 0.14 af

Subcatchment B: B Runoff Area=20,846 sf 0.00% Impervious Runoff Depth=0.67"
Flow Length=250' Slope=0.0310 '/' Tc=19.8 min CN=62 Runoff=0.1 cfs 0.03 af

Subcatchment C: C Runoff Area=335,256 sf 4.03% Impervious Runoff Depth=0.71"
Flow Length=1,185' Tc=40.2 min CN=63 Runoff=1.7 cfs 0.46 af

Total Runoff Area = 11.225 ac Runoff Volume = 0.62 af Average Runoff Depth = 0.66"
95.99% Pervious = 10.776 ac 4.01% Impervious = 0.450 ac

A – 1

NODE LISTING – 10-YR

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=132,880 sf 4.58% Impervious Runoff Depth=1.49"
Flow Length=678' Slope=0.0160 '/' Tc=27.0 min CN=59 Runoff=1.8 cfs 0.38 af

Subcatchment B: B Runoff Area=20,846 sf 0.00% Impervious Runoff Depth=1.71"
Flow Length=250' Slope=0.0310 '/' Tc=19.8 min CN=62 Runoff=0.4 cfs 0.07 af

Subcatchment C: C Runoff Area=335,256 sf 4.03% Impervious Runoff Depth=1.79"
Flow Length=1,185' Tc=40.2 min CN=63 Runoff=4.8 cfs 1.15 af

Total Runoff Area = 11.225 ac Runoff Volume = 1.59 af Average Runoff Depth = 1.70"
95.99% Pervious = 10.776 ac 4.01% Impervious = 0.450 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

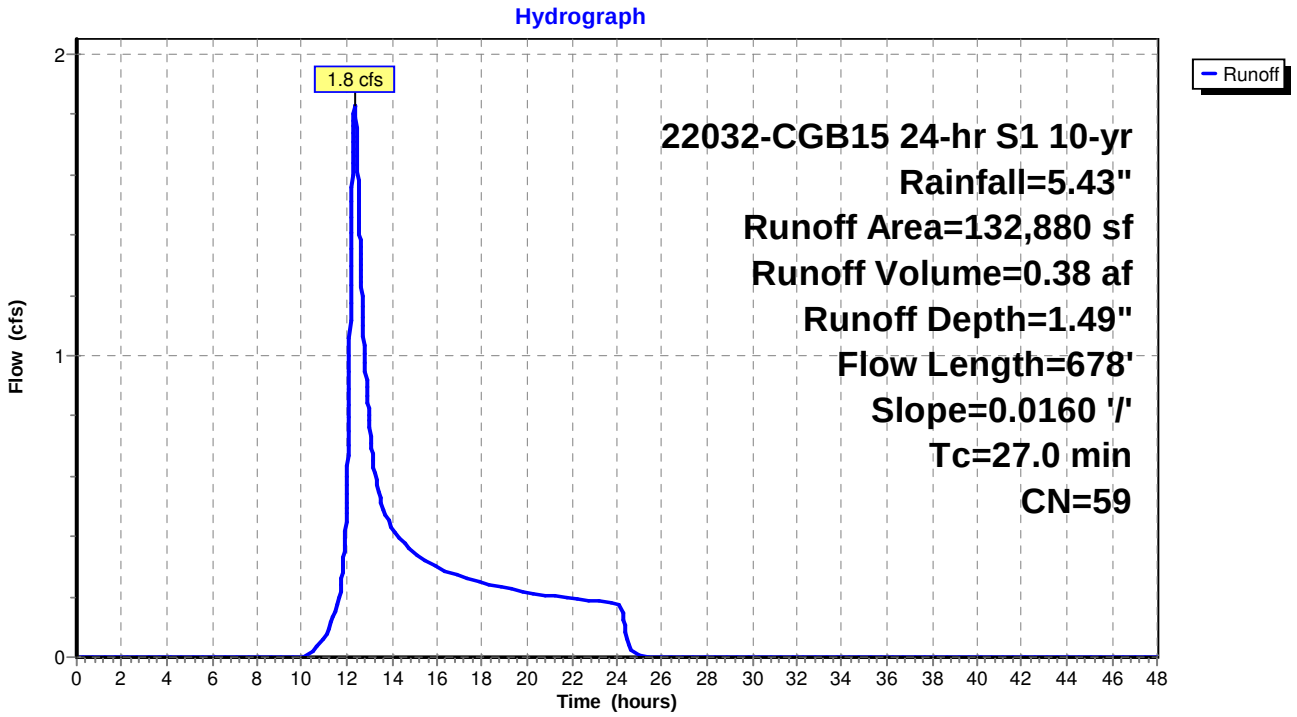
Runoff = 1.8 cfs @ 12.33 hrs, Volume= 0.38 af, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
129	30	Woods, Good, HSG A
2,972	39	>75% Grass cover, Good, HSG A
3,826	98	Paved parking, HSG A
70,199	55	Woods, Good, HSG B
53,492	61	>75% Grass cover, Good, HSG B
803	98	Paved parking, HSG B
1,459	98	Roofs, HSG B
132,880	59	Weighted Average
126,792		95.42% Pervious Area
6,088		4.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0160	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.6	246	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	30	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	143	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2	159	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.0	678	Total			

Subcatchment A: A



Summary for Subcatchment B: B

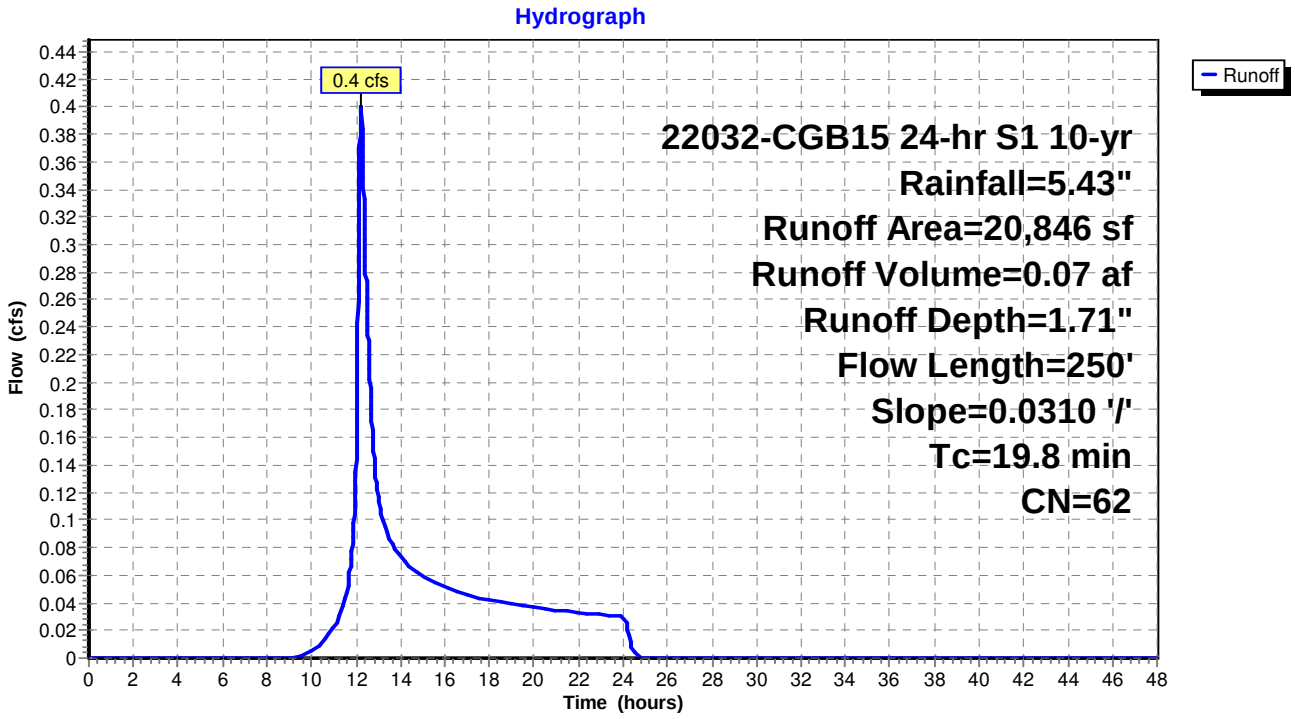
Runoff = 0.4 cfs @ 12.24 hrs, Volume= 0.07 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
17,327	55	Woods, Good, HSG B
3,519	96	Gravel surface, HSG B
20,846	62	Weighted Average
20,846		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0310	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.8	150	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.8	250	Total			

Subcatchment B: B



Summary for Subcatchment C: C

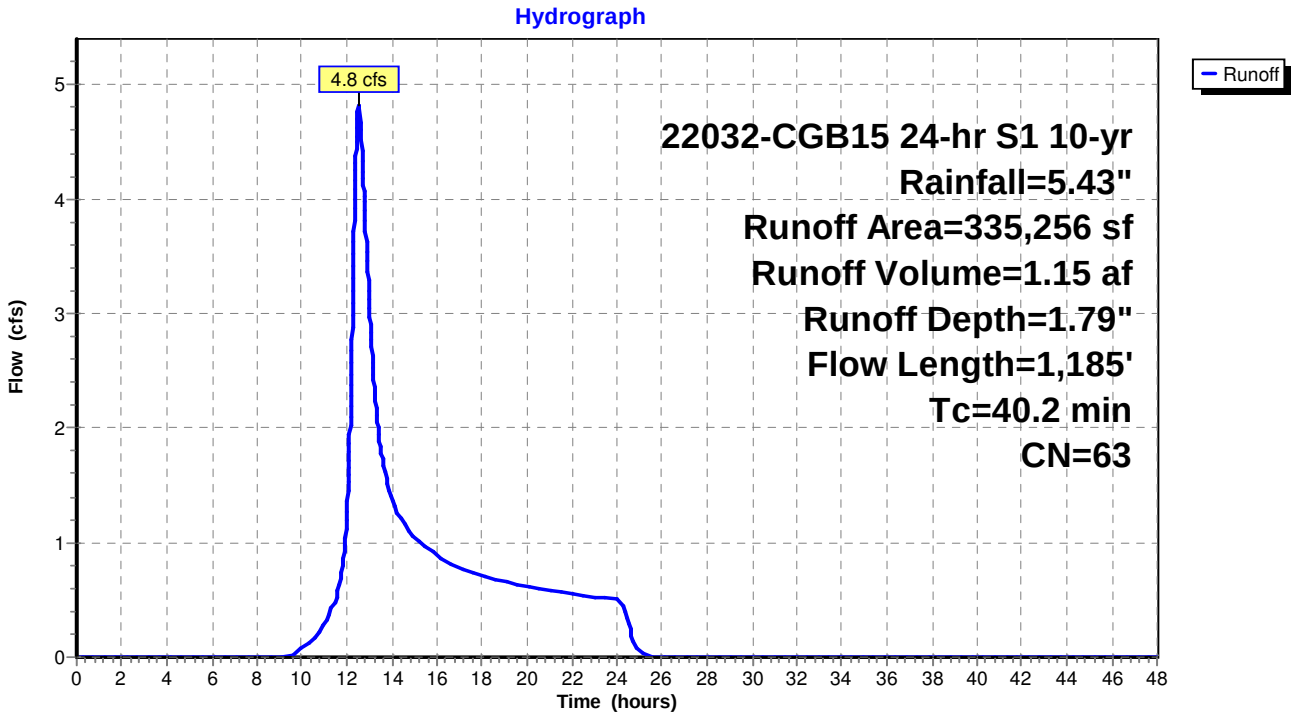
Runoff = 4.8 cfs @ 12.55 hrs, Volume= 1.15 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
544	30	Woods, Good, HSG A
476	39	>75% Grass cover, Good, HSG A
1,635	98	Paved parking, HSG A
163,492	55	Woods, Good, HSG B
122,220	61	>75% Grass cover, Good, HSG B
35,014	96	Gravel surface, HSG B
2,358	98	Unconnected pavement, HSG B
7,411	98	Paved parking, HSG B
2,106	98	Roofs, HSG B
335,256	63	Weighted Average
321,746		95.97% Pervious Area
13,510		4.03% Impervious Area
2,358		17.45% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.6	100	0.0170	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	93	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.8	97	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	44	0.0170	2.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.9	435	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	76	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	130	0.0370	3.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.6	210	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
40.2	1,185	Total			

Subcatchment C: C



A – 1

NODE LISTING – 25-YR

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=132,880 sf 4.58% Impervious Runoff Depth=2.40"
Flow Length=678' Slope=0.0160 '/' Tc=27.0 min CN=59 Runoff=3.0 cfs 0.61 af

Subcatchment B: B Runoff Area=20,846 sf 0.00% Impervious Runoff Depth=2.69"
Flow Length=250' Slope=0.0310 '/' Tc=19.8 min CN=62 Runoff=0.6 cfs 0.11 af

Subcatchment C: C Runoff Area=335,256 sf 4.03% Impervious Runoff Depth=2.79"
Flow Length=1,185' Tc=40.2 min CN=63 Runoff=7.5 cfs 1.79 af

Total Runoff Area = 11.225 ac Runoff Volume = 2.51 af Average Runoff Depth = 2.68"
95.99% Pervious = 10.776 ac 4.01% Impervious = 0.450 ac

A – 1

NODE LISTING – 50-YR

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=132,880 sf 4.58% Impervious Runoff Depth=3.36"
Flow Length=678' Slope=0.0160 '/' Tc=27.0 min CN=59 Runoff=4.2 cfs 0.85 af

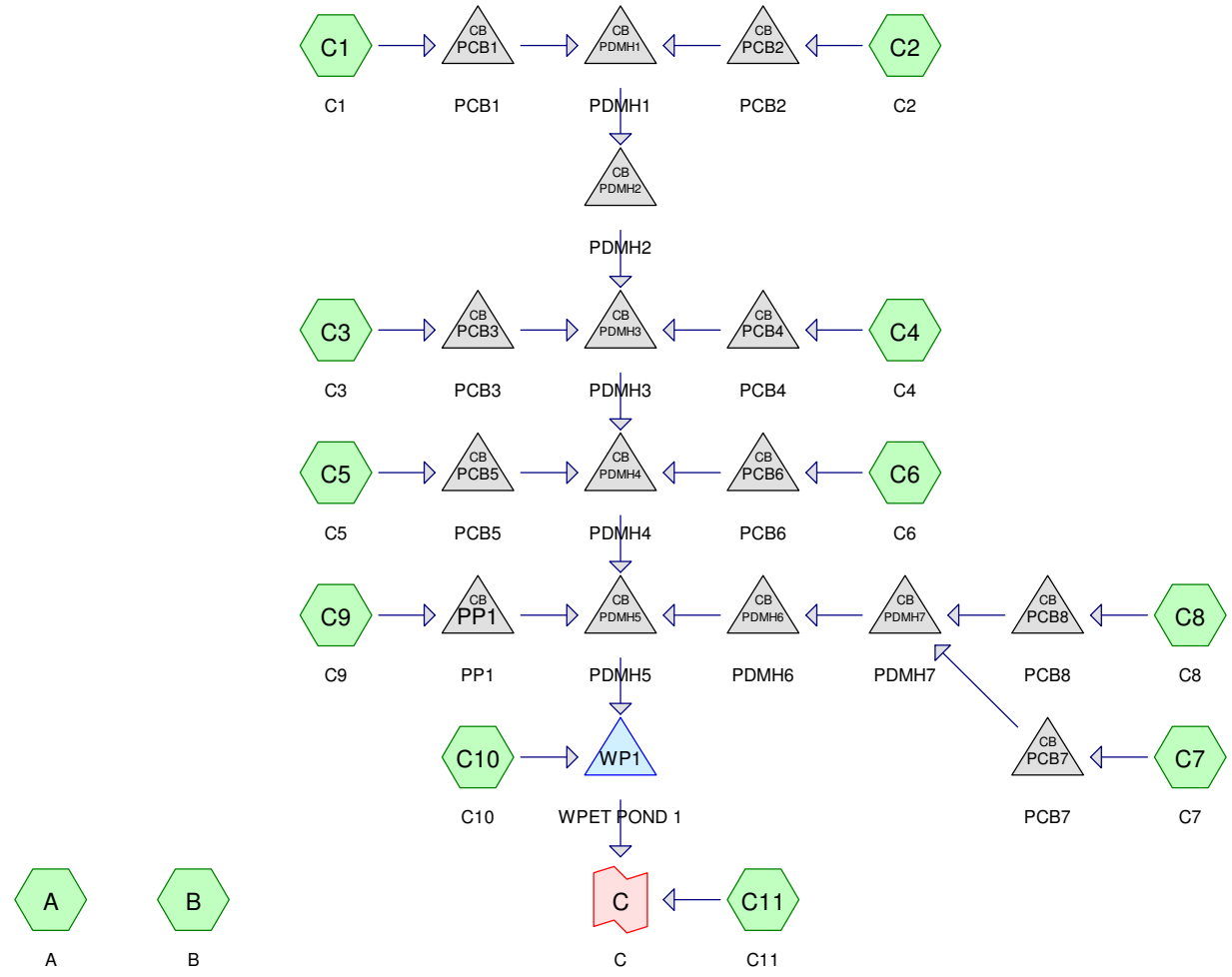
Subcatchment B: B Runoff Area=20,846 sf 0.00% Impervious Runoff Depth=3.70"
Flow Length=250' Slope=0.0310 '/' Tc=19.8 min CN=62 Runoff=0.8 cfs 0.15 af

Subcatchment C: C Runoff Area=335,256 sf 4.03% Impervious Runoff Depth=3.82"
Flow Length=1,185' Tc=40.2 min CN=63 Runoff=10.1 cfs 2.45 af

Total Runoff Area = 11.225 ac Runoff Volume = 3.45 af Average Runoff Depth = 3.69"
95.99% Pervious = 10.776 ac 4.01% Impervious = 0.450 ac

A – 2

DEVELOPED WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 22032-Post
Prepared by {enter your company name here}
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.064	39	>75% Grass cover, Good, HSG A (C1, C10, C2)
5.936	61	>75% Grass cover, Good, HSG B (A, B, C1, C10, C11, C2, C3, C4, C5, C6, C7, C8, C9)
0.012	98	Paved parking, HSG A (C1, C10)
0.706	98	Paved parking, HSG B (C1, C10, C2, C3, C4, C5, C6, C7, C8, C9)
0.133	98	Paved roads w/curbs & sewers, HSG A (C1, C10, C2)
0.962	98	Paved roads w/curbs & sewers, HSG B (C1, C2, C3, C4, C5, C6, C7, C8)
1.685	98	Roofs, HSG B (C1, C10, C9)
0.012	30	Woods, Good, HSG A (C10)
1.716	55	Woods, Good, HSG B (A, B, C10, C11)
11.225	**71**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.220	HSG A	C1, C10, C2
11.006	HSG B	A, B, C1, C10, C11, C2, C3, C4, C5, C6, C7, C8, C9
0.000	HSG C	
0.000	HSG D	
0.000	Other	
11.225		**TOTAL AREA**

A – 2

NODE LISTING – 2-YR

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=19,824 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=181' Slope=0.0250 '/' Tc=20.2 min CN=56 Runoff=0.0 cfs 0.02 af

Subcatchment B: B Runoff Area=4,364 sf 0.00% Impervious Runoff Depth=0.46"
Flow Length=18' Slope=0.3300 '/' Tc=1.1 min CN=57 Runoff=0.0 cfs 0.00 af

Link C: C Inflow=1.7 cfs 1.13 af
Primary=1.7 cfs 1.13 af

Subcatchment C1: C1 Runoff Area=33,031 sf 50.27% Impervious Runoff Depth=1.65"
Flow Length=298' Tc=16.5 min CN=79 Runoff=0.8 cfs 0.10 af

Subcatchment C10: C10 Runoff Area=275,315 sf 28.39% Impervious Runoff Depth=1.13"
Flow Length=947' Slope=0.0170 '/' Tc=37.8 min CN=71 Runoff=2.8 cfs 0.60 af

Subcatchment C11: C11 Runoff Area=35,088 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=290' Slope=0.0370 '/' Tc=19.1 min CN=56 Runoff=0.1 cfs 0.03 af

Subcatchment C2: C2 Runoff Area=4,631 sf 85.73% Impervious Runoff Depth=2.84"
Flow Length=273' Tc=3.2 min CN=93 Runoff=0.3 cfs 0.03 af

Subcatchment C3: C3 Runoff Area=4,567 sf 84.30% Impervious Runoff Depth=2.74"
Flow Length=292' Tc=3.4 min CN=92 Runoff=0.3 cfs 0.02 af

Subcatchment C4: C4 Runoff Area=9,892 sf 88.06% Impervious Runoff Depth=2.94"
Flow Length=309' Tc=3.5 min CN=94 Runoff=0.7 cfs 0.06 af

Subcatchment C5: C5 Runoff Area=5,878 sf 82.85% Impervious Runoff Depth=2.74"
Flow Length=273' Tc=3.2 min CN=92 Runoff=0.4 cfs 0.03 af

Subcatchment C6: C6 Runoff Area=6,543 sf 87.54% Impervious Runoff Depth=2.84"
Flow Length=334' Tc=3.7 min CN=93 Runoff=0.5 cfs 0.04 af

Subcatchment C7: C7 Runoff Area=4,846 sf 85.14% Impervious Runoff Depth=2.84"
Flow Length=314' Tc=3.5 min CN=93 Runoff=0.3 cfs 0.03 af

Subcatchment C8: C8 Runoff Area=4,865 sf 87.09% Impervious Runoff Depth=2.84"
Flow Length=316' Tc=3.6 min CN=93 Runoff=0.3 cfs 0.03 af

Subcatchment C9: C9 Runoff Area=80,138 sf 27.60% Impervious Runoff Depth=1.13"
Flow Length=514' Tc=20.8 min CN=71 Runoff=1.1 cfs 0.17 af

Pond PCB1: PCB1 Peak Elev=195.15' Inflow=0.8 cfs 0.10 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.8 cfs 0.10 af

Pond PCB2: PCB2 Peak Elev=194.99' Inflow=0.3 cfs 0.03 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.3 cfs 0.03 af

Pond PCB3: PCB3 Peak Elev=193.11' Inflow=0.3 cfs 0.02 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.3 cfs 0.02 af

Pond PCB4: PCB4 Peak Elev=193.15' Inflow=0.7 cfs 0.06 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.7 cfs 0.06 af

Pond PCB5: PCB5 Peak Elev=192.72' Inflow=0.4 cfs 0.03 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.4 cfs 0.03 af

Pond PCB6: PCB6 Peak Elev=192.73' Inflow=0.5 cfs 0.04 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.5 cfs 0.04 af

Pond PCB7: PCB7 Peak Elev=194.07' Inflow=0.3 cfs 0.03 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.3 cfs 0.03 af

Pond PCB8: PCB8 Peak Elev=194.07' Inflow=0.3 cfs 0.03 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.3 cfs 0.03 af

Pond PDMH1: PDMH1 Peak Elev=194.94' Inflow=0.9 cfs 0.13 af
15.0" Round Culvert n=0.012 L=132.0' S=0.0070 '/' Outflow=0.9 cfs 0.13 af

Pond PDMH2: PDMH2 Peak Elev=193.93' Inflow=0.9 cfs 0.13 af
15.0" Round Culvert n=0.012 L=158.0' S=0.0069 '/' Outflow=0.9 cfs 0.13 af

Pond PDMH3: PDMH3 Peak Elev=193.10' Inflow=1.7 cfs 0.21 af
15.0" Round Culvert n=0.012 L=94.0' S=0.0049 '/' Outflow=1.7 cfs 0.21 af

Pond PDMH4: PDMH4 Peak Elev=192.71' Inflow=2.6 cfs 0.28 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0049 '/' Outflow=2.6 cfs 0.28 af

Pond PDMH5: PDMH5 Peak Elev=192.15' Inflow=3.6 cfs 0.50 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0055 '/' Outflow=3.6 cfs 0.50 af

Pond PDMH6: PDMH6 Peak Elev=193.29' Inflow=0.7 cfs 0.05 af
15.0" Round Culvert n=0.012 L=90.0' S=0.0194 '/' Outflow=0.7 cfs 0.05 af

Pond PDMH7: PDMH7 Peak Elev=193.96' Inflow=0.7 cfs 0.05 af
15.0" Round Culvert n=0.012 L=104.0' S=0.0051 '/' Outflow=0.7 cfs 0.05 af

Pond PP1: PP1 Peak Elev=193.16' Inflow=1.1 cfs 0.17 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/' Outflow=1.1 cfs 0.17 af

Pond WP1: WPET POND 1 Peak Elev=189.50' Storage=26,778 cf Inflow=4.5 cfs 1.10 af
Outflow=1.6 cfs 1.10 af

Total Runoff Area = 11.225 ac Runoff Volume = 1.15 af Average Runoff Depth = 1.23"
68.84% Pervious = 7.728 ac 31.16% Impervious = 3.498 ac

A – 2

NODE LISTING – 10-YR

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=19,824 sf 0.00% Impervious Runoff Depth=1.27"
Flow Length=181' Slope=0.0250 '/' Tc=20.2 min CN=56 Runoff=0.3 cfs 0.05 af

Subcatchment B: B Runoff Area=4,364 sf 0.00% Impervious Runoff Depth=1.34"
Flow Length=18' Slope=0.3300 '/' Tc=1.1 min CN=57 Runoff=0.1 cfs 0.01 af

Link C: C Inflow=4.8 cfs 2.31 af
Primary=4.8 cfs 2.31 af

Subcatchment C1: C1 Runoff Area=33,031 sf 50.27% Impervious Runoff Depth=3.18"
Flow Length=298' Tc=16.5 min CN=79 Runoff=1.4 cfs 0.20 af

Subcatchment C10: C10 Runoff Area=275,315 sf 28.39% Impervious Runoff Depth=2.45"
Flow Length=947' Slope=0.0170 '/' Tc=37.8 min CN=71 Runoff=5.9 cfs 1.29 af

Subcatchment C11: C11 Runoff Area=35,088 sf 0.00% Impervious Runoff Depth=1.27"
Flow Length=290' Slope=0.0370 '/' Tc=19.1 min CN=56 Runoff=0.5 cfs 0.09 af

Subcatchment C2: C2 Runoff Area=4,631 sf 85.73% Impervious Runoff Depth=4.62"
Flow Length=273' Tc=3.2 min CN=93 Runoff=0.4 cfs 0.04 af

Subcatchment C3: C3 Runoff Area=4,567 sf 84.30% Impervious Runoff Depth=4.51"
Flow Length=292' Tc=3.4 min CN=92 Runoff=0.4 cfs 0.04 af

Subcatchment C4: C4 Runoff Area=9,892 sf 88.06% Impervious Runoff Depth=4.73"
Flow Length=309' Tc=3.5 min CN=94 Runoff=1.0 cfs 0.09 af

Subcatchment C5: C5 Runoff Area=5,878 sf 82.85% Impervious Runoff Depth=4.51"
Flow Length=273' Tc=3.2 min CN=92 Runoff=0.6 cfs 0.05 af

Subcatchment C6: C6 Runoff Area=6,543 sf 87.54% Impervious Runoff Depth=4.62"
Flow Length=334' Tc=3.7 min CN=93 Runoff=0.6 cfs 0.06 af

Subcatchment C7: C7 Runoff Area=4,846 sf 85.14% Impervious Runoff Depth=4.62"
Flow Length=314' Tc=3.5 min CN=93 Runoff=0.5 cfs 0.04 af

Subcatchment C8: C8 Runoff Area=4,865 sf 87.09% Impervious Runoff Depth=4.62"
Flow Length=316' Tc=3.6 min CN=93 Runoff=0.5 cfs 0.04 af

Subcatchment C9: C9 Runoff Area=80,138 sf 27.60% Impervious Runoff Depth=2.45"
Flow Length=514' Tc=20.8 min CN=71 Runoff=2.3 cfs 0.38 af

Pond PCB1: PCB1 Peak Elev=195.35' Inflow=1.4 cfs 0.20 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=1.4 cfs 0.20 af

Pond PCB2: PCB2 Peak Elev=195.11' Inflow=0.4 cfs 0.04 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.4 cfs 0.04 af

Pond PCB3: PCB3 Peak Elev=193.65' Inflow=0.4 cfs 0.04 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.4 cfs 0.04 af

Pond PCB4: PCB4 Peak Elev=193.67' Inflow=1.0 cfs 0.09 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=1.0 cfs 0.09 af

Pond PCB5: PCB5 Peak Elev=193.43' Inflow=0.6 cfs 0.05 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.05 af

Pond PCB6: PCB6 Peak Elev=193.44' Inflow=0.6 cfs 0.06 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.06 af

Pond PCB7: PCB7 Peak Elev=194.14' Inflow=0.5 cfs 0.04 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.5 cfs 0.04 af

Pond PCB8: PCB8 Peak Elev=194.14' Inflow=0.5 cfs 0.04 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.5 cfs 0.04 af

Pond PDMH1: PDMH1 Peak Elev=195.11' Inflow=1.5 cfs 0.24 af
15.0" Round Culvert n=0.012 L=132.0' S=0.0070 '/' Outflow=1.5 cfs 0.24 af

Pond PDMH2: PDMH2 Peak Elev=194.14' Inflow=1.5 cfs 0.24 af
15.0" Round Culvert n=0.012 L=158.0' S=0.0069 '/' Outflow=1.5 cfs 0.24 af

Pond PDMH3: PDMH3 Peak Elev=193.65' Inflow=2.5 cfs 0.37 af
15.0" Round Culvert n=0.012 L=94.0' S=0.0049 '/' Outflow=2.5 cfs 0.37 af

Pond PDMH4: PDMH4 Peak Elev=193.43' Inflow=3.7 cfs 0.48 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0049 '/' Outflow=3.7 cfs 0.48 af

Pond PDMH5: PDMH5 Peak Elev=192.92' Inflow=5.6 cfs 0.94 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0055 '/' Outflow=5.6 cfs 0.94 af

Pond PDMH6: PDMH6 Peak Elev=193.42' Inflow=0.9 cfs 0.09 af
15.0" Round Culvert n=0.012 L=90.0' S=0.0194 '/' Outflow=0.9 cfs 0.09 af

Pond PDMH7: PDMH7 Peak Elev=194.04' Inflow=0.9 cfs 0.09 af
15.0" Round Culvert n=0.012 L=104.0' S=0.0051 '/' Outflow=0.9 cfs 0.09 af

Pond PP1: PP1 Peak Elev=193.46' Inflow=2.3 cfs 0.38 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/' Outflow=2.3 cfs 0.38 af

Pond WP1: WPET POND 1 Peak Elev=190.38' Storage=37,438 cf Inflow=9.1 cfs 2.23 af
Outflow=4.6 cfs 2.23 af

Total Runoff Area = 11.225 ac Runoff Volume = 2.37 af Average Runoff Depth = 2.54"
68.84% Pervious = 7.728 ac 31.16% Impervious = 3.498 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment A: A

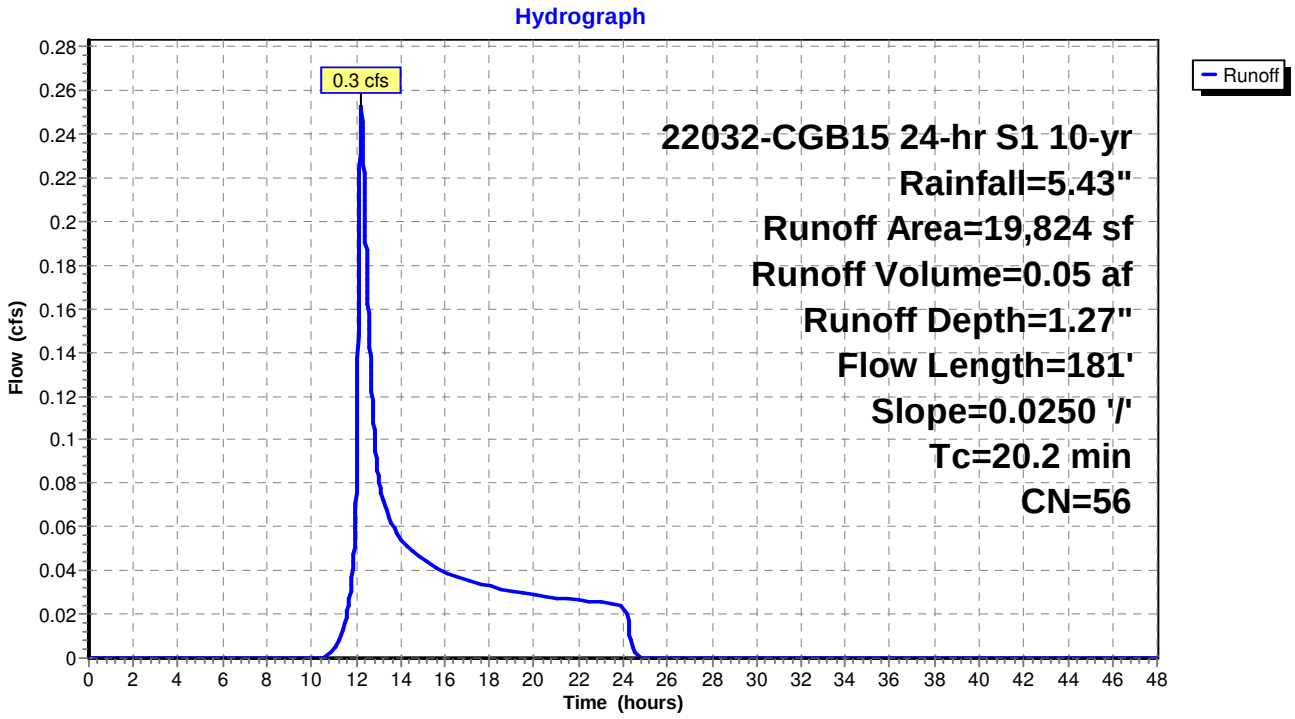
Runoff = 0.3 cfs @ 12.25 hrs, Volume= 0.05 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
17,852	55	Woods, Good, HSG B
1,972	61	>75% Grass cover, Good, HSG B
19,824	56	Weighted Average
19,824	56	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	100	0.0250	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.7	81	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.2	181	Total			

Subcatchment A: A



Summary for Subcatchment B: B

[49] Hint: Tc<2dt may require smaller dt

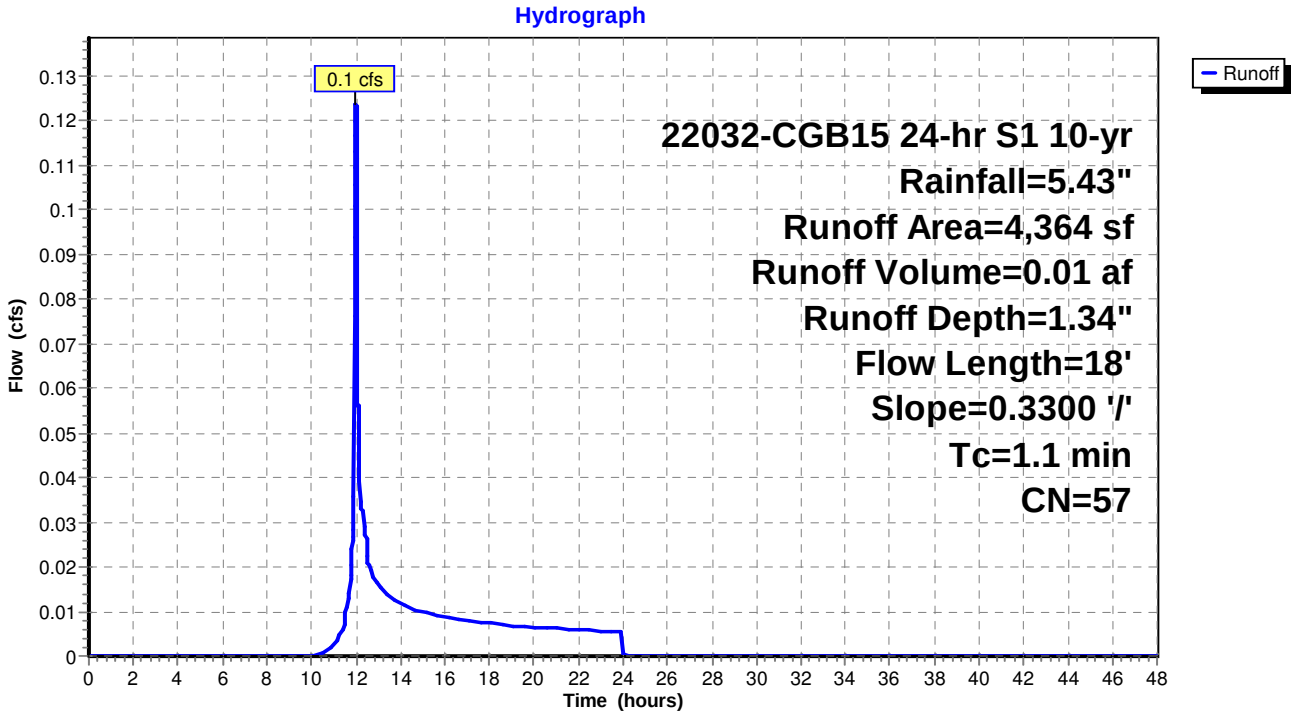
Runoff = 0.1 cfs @ 12.00 hrs, Volume= 0.01 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
2,727	55	Woods, Good, HSG B
1,637	61	>75% Grass cover, Good, HSG B
4,364	57	Weighted Average
4,364	57	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	18	0.3300	0.27		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"

Subcatchment B: B

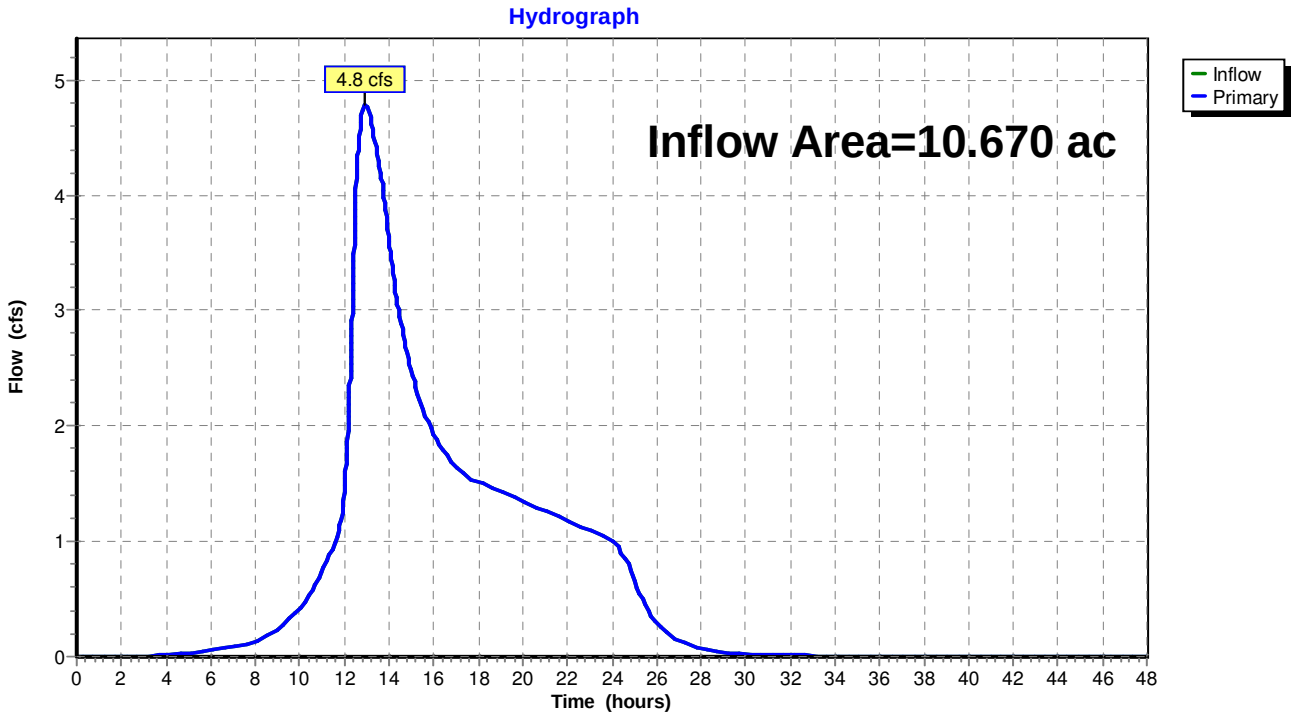


Summary for Link C: C

Inflow Area = 10.670 ac, 32.78% Impervious, Inflow Depth = 2.60" for 10-yr event
Inflow = 4.8 cfs @ 12.96 hrs, Volume= 2.31 af
Primary = 4.8 cfs @ 12.96 hrs, Volume= 2.31 af, Atten= 0%, Lag= 0.0 min

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

Link C: C



Summary for Subcatchment C1: C1

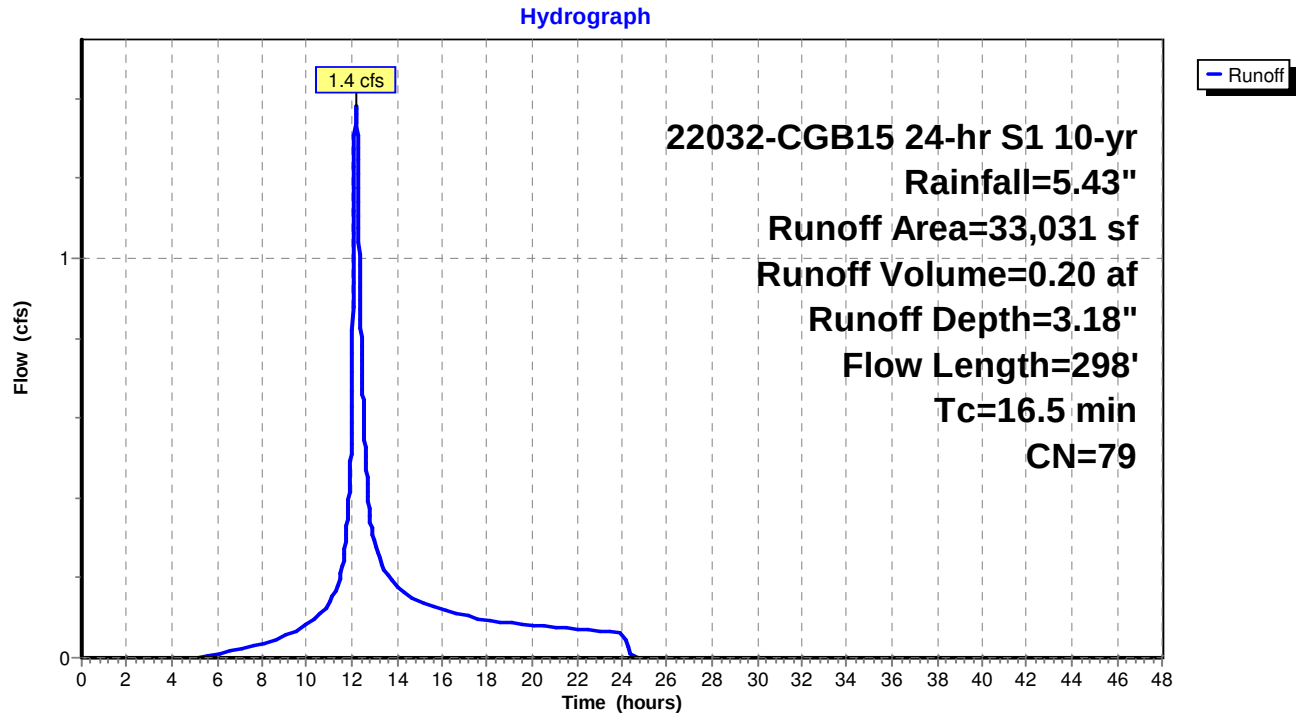
Runoff = 1.4 cfs @ 12.18 hrs, Volume= 0.20 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
966	39	>75% Grass cover, Good, HSG A
2,114	98	Paved roads w/curbs & sewers, HSG A
135	98	Paved parking, HSG A
15,460	61	>75% Grass cover, Good, HSG B
9,006	98	Paved roads w/curbs & sewers, HSG B
1,938	98	Paved parking, HSG B
3,412	98	Roofs, HSG B
33,031	79	Weighted Average
16,426	60	49.73% Pervious Area
16,605	98	50.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	98	0.0150	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.5	298	Total			

Subcatchment C1: C1



Summary for Subcatchment C10: C10

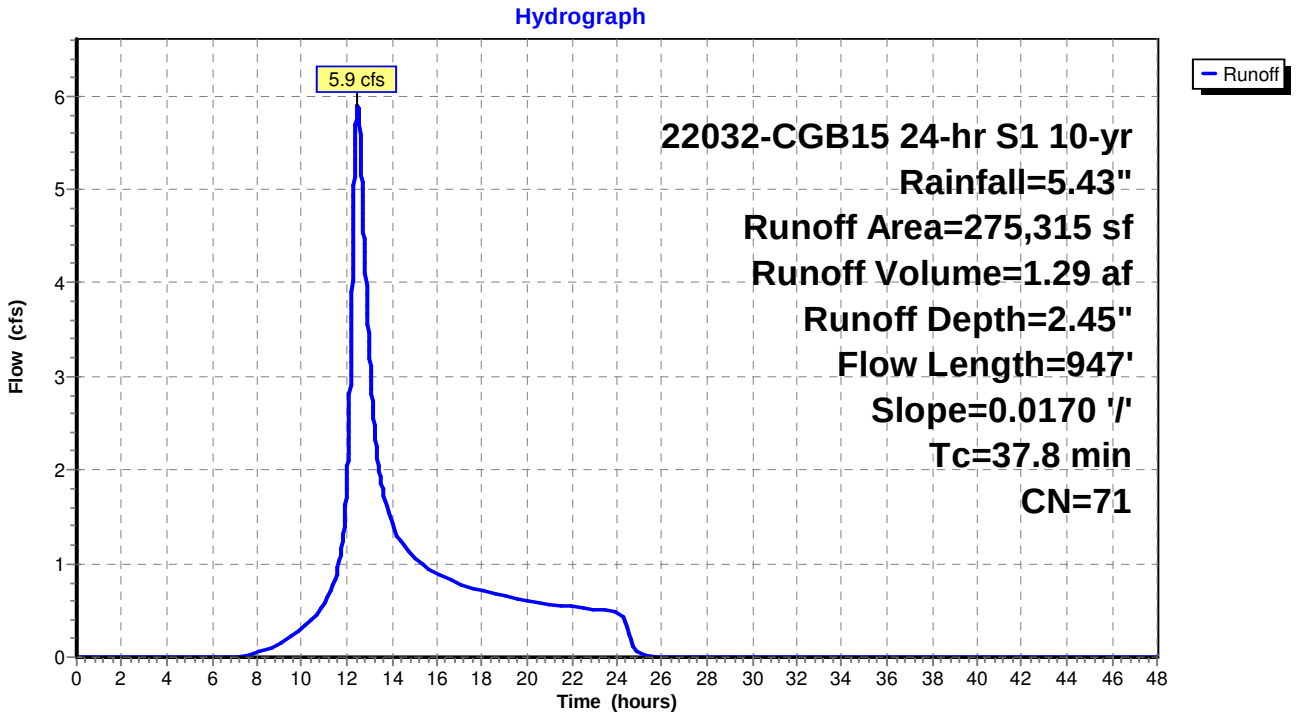
Runoff = 5.9 cfs @ 12.47 hrs, Volume= 1.29 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
505	30	Woods, Good, HSG A
1,806	39	>75% Grass cover, Good, HSG A
3,273	98	Paved roads w/curbs & sewers, HSG A
389	98	Paved parking, HSG A
23,207	55	Woods, Good, HSG B
171,643	61	>75% Grass cover, Good, HSG B
21,434	98	Paved parking, HSG B
53,058	98	Roofs, HSG B
275,315	71	Weighted Average
197,161	60	71.61% Pervious Area
78,154	98	28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.6	100	0.0170	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	93	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	754	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
37.8	947	Total			

Subcatchment C10: C10



Summary for Subcatchment C11: C11

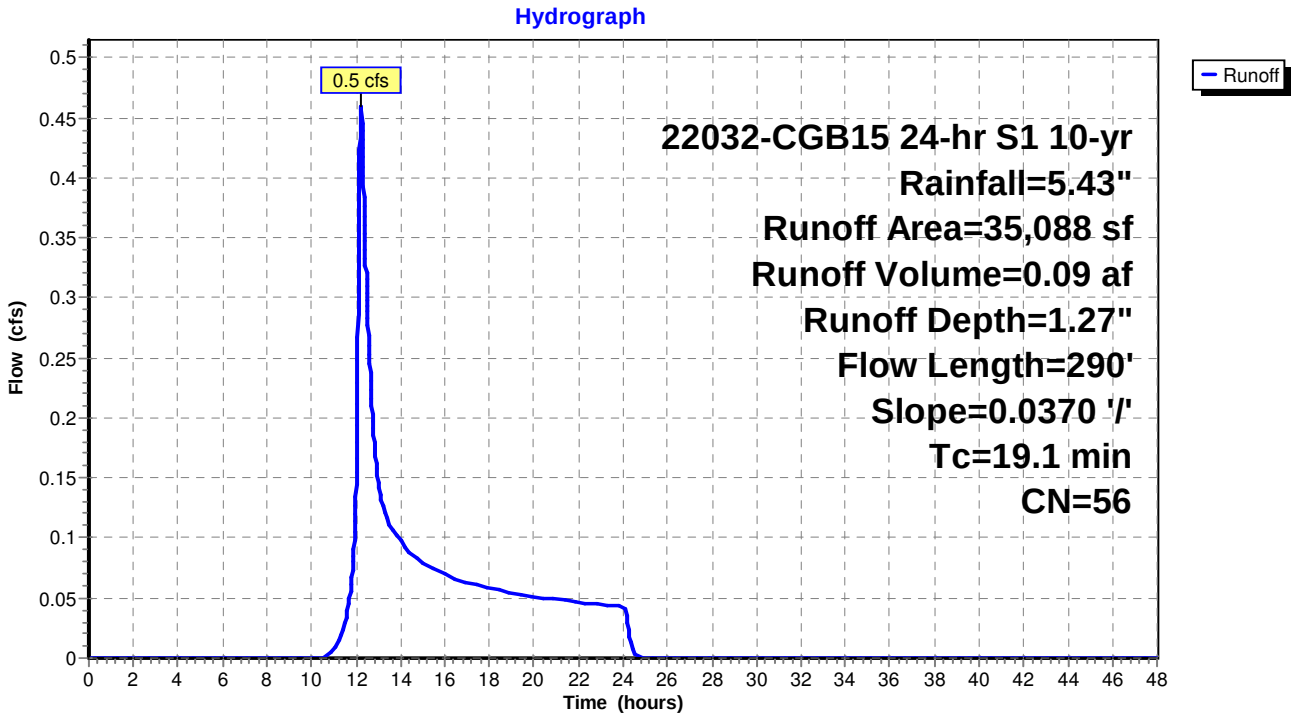
Runoff = 0.5 cfs @ 12.24 hrs, Volume= 0.09 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
30,960	55	Woods, Good, HSG B
4,128	61	>75% Grass cover, Good, HSG B
35,088	56	Weighted Average
35,088	56	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0370	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
3.3	190	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.1	290	Total			

Subcatchment C11: C11



Summary for Subcatchment C2: C2

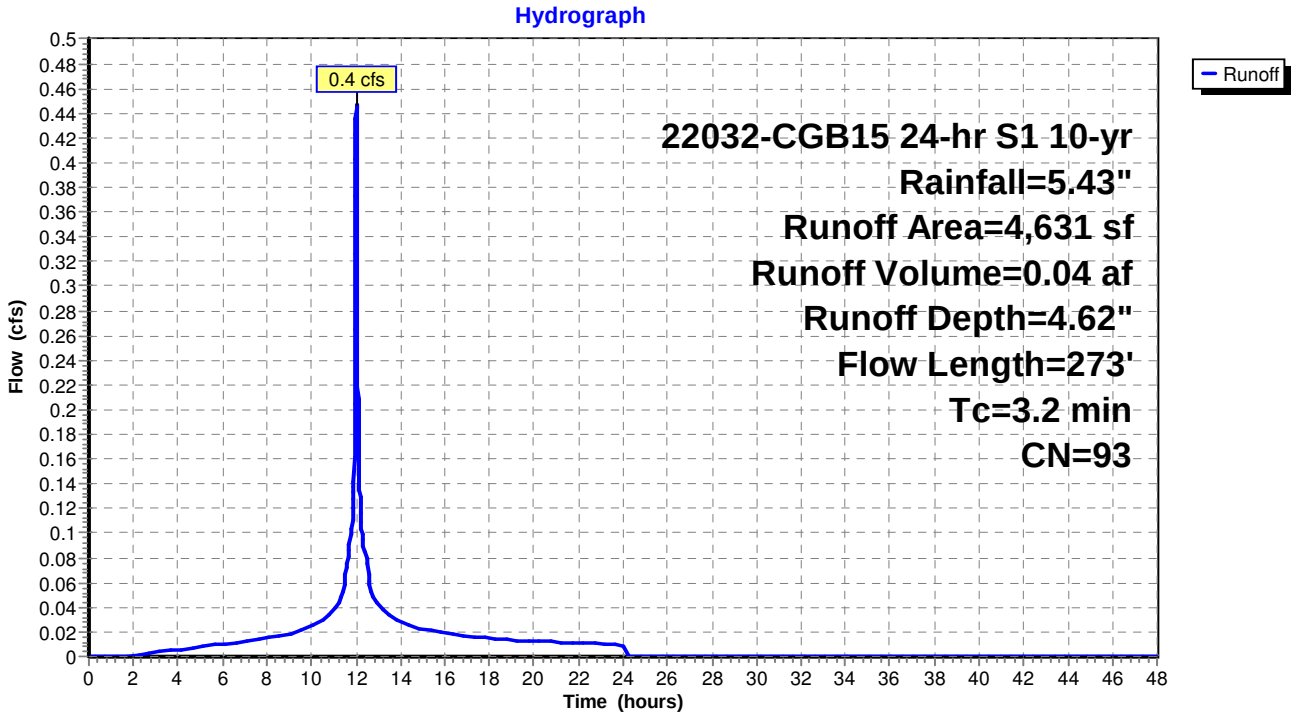
Runoff = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
2	39	>75% Grass cover, Good, HSG A
392	98	Paved roads w/curbs & sewers, HSG A
659	61	>75% Grass cover, Good, HSG B
3,401	98	Paved roads w/curbs & sewers, HSG B
177	98	Paved parking, HSG B
4,631	93	Weighted Average
661	61	14.27% Pervious Area
3,970	98	85.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.2	268	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	273	Total			

Subcatchment C2: C2



Summary for Subcatchment C3: C3

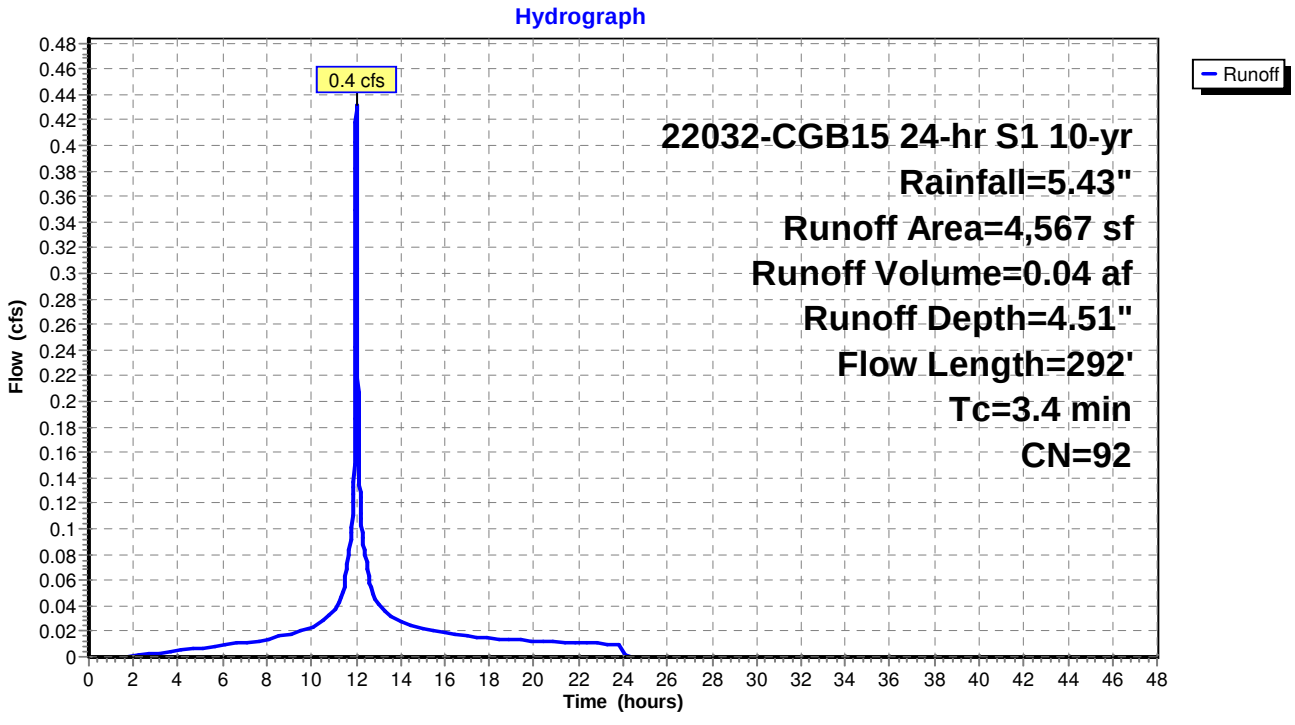
Runoff = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af, Depth= 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
717	61	>75% Grass cover, Good, HSG B
3,668	98	Paved roads w/curbs & sewers, HSG B
182	98	Paved parking, HSG B
4,567	92	Weighted Average
717	61	15.70% Pervious Area
3,850	98	84.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.4	287	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.4	292	Total			

Subcatchment C3: C3



Summary for Subcatchment C4: C4

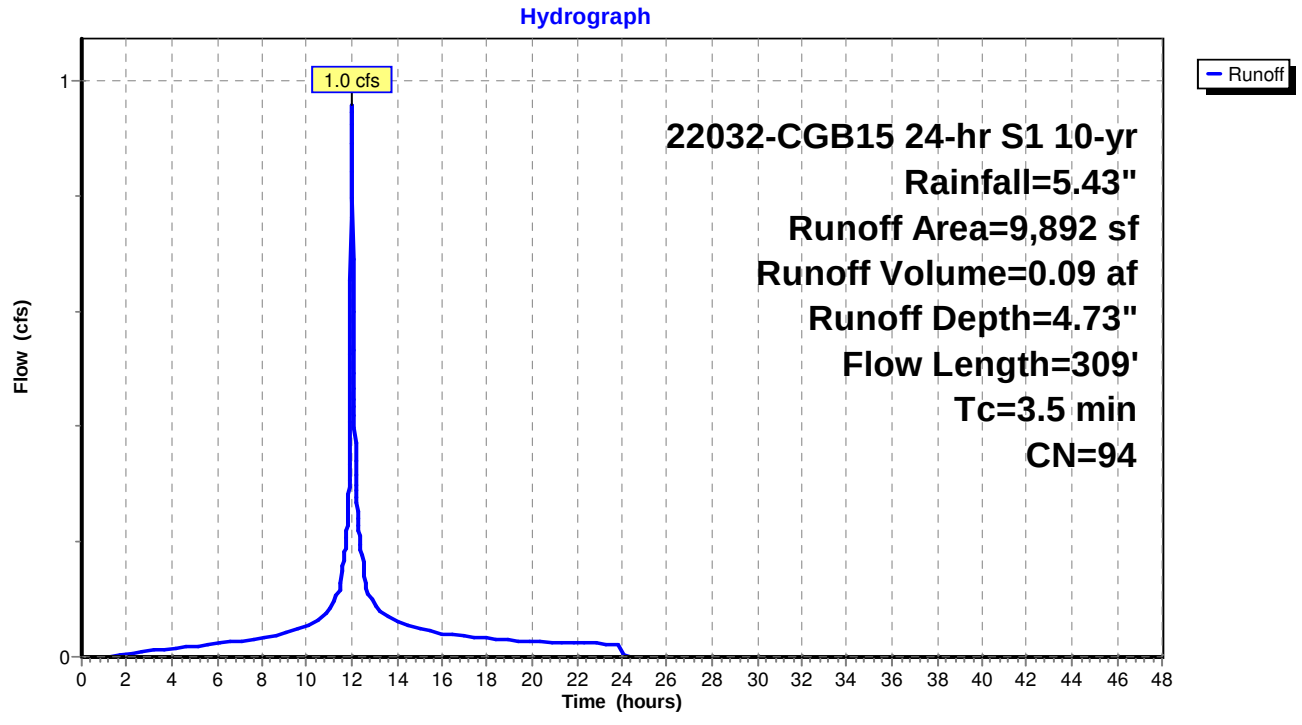
Runoff = 1.0 cfs @ 12.01 hrs, Volume= 0.09 af, Depth= 4.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
1,181	61	>75% Grass cover, Good, HSG B
8,216	98	Paved roads w/curbs & sewers, HSG B
495	98	Paved parking, HSG B
9,892	94	Weighted Average
1,181	61	11.94% Pervious Area
8,711	98	88.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.5	304	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	309	Total			

Subcatchment C4: C4



Summary for Subcatchment C5: C5

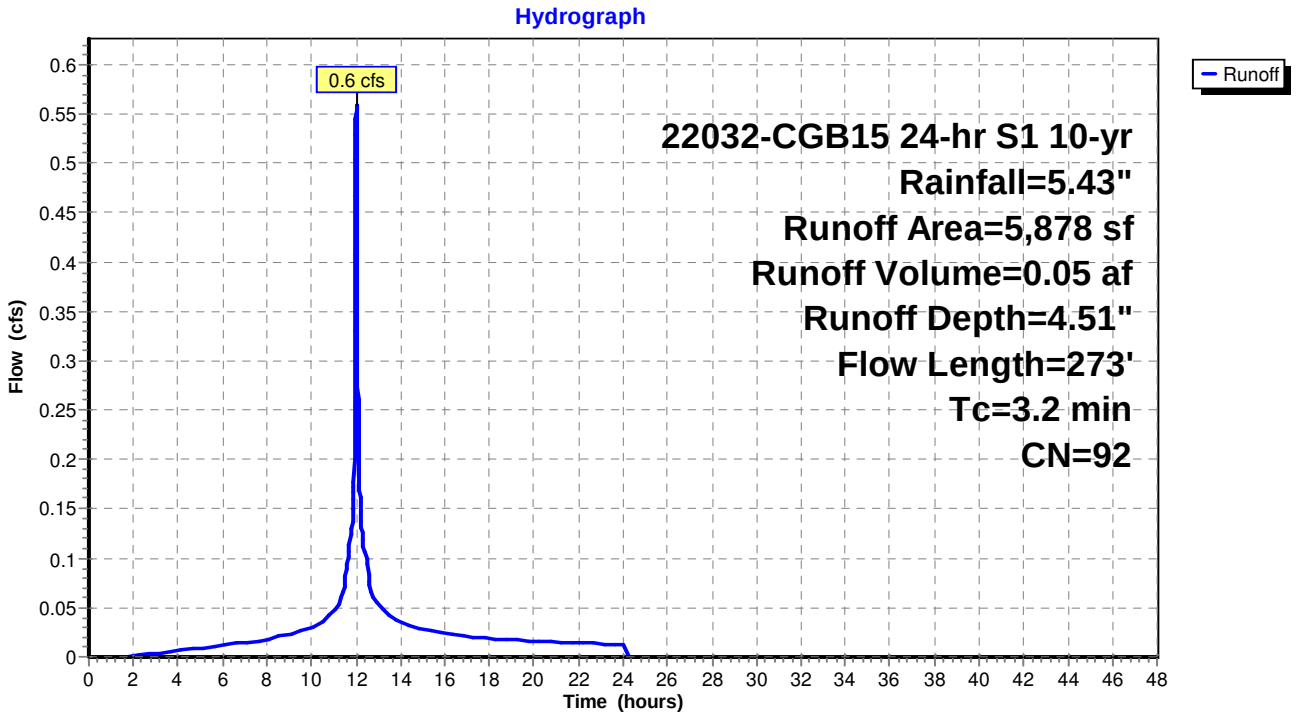
Runoff = 0.6 cfs @ 12.01 hrs, Volume= 0.05 af, Depth= 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
1,008	61	>75% Grass cover, Good, HSG B
4,782	98	Paved roads w/curbs & sewers, HSG B
88	98	Paved parking, HSG B
5,878	92	Weighted Average
1,008	61	17.15% Pervious Area
4,870	98	82.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.2	268	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	273	Total			

Subcatchment C5: C5



Summary for Subcatchment C6: C6

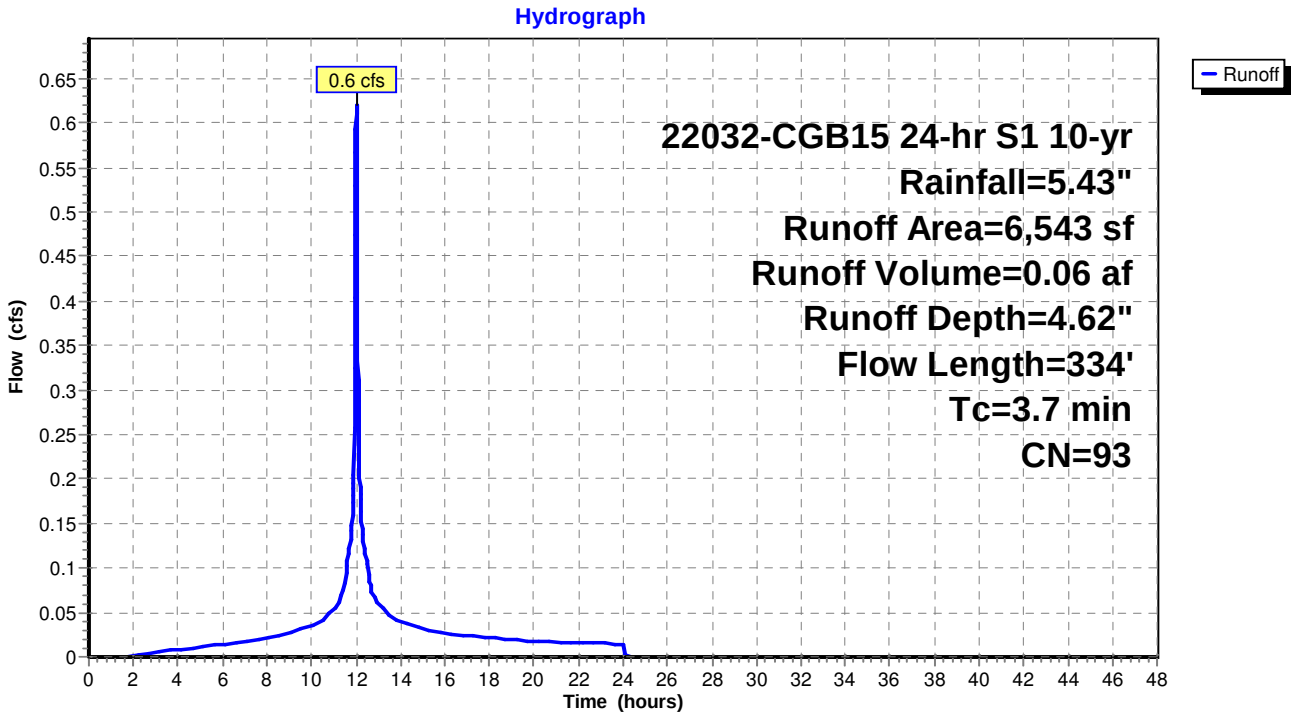
Runoff = 0.6 cfs @ 12.01 hrs, Volume= 0.06 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
815	61	>75% Grass cover, Good, HSG B
5,127	98	Paved roads w/curbs & sewers, HSG B
601	98	Paved parking, HSG B
6,543	93	Weighted Average
815	61	12.46% Pervious Area
5,728	98	87.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.7	329	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.7	334	Total			

Subcatchment C6: C6



Summary for Subcatchment C7: C7

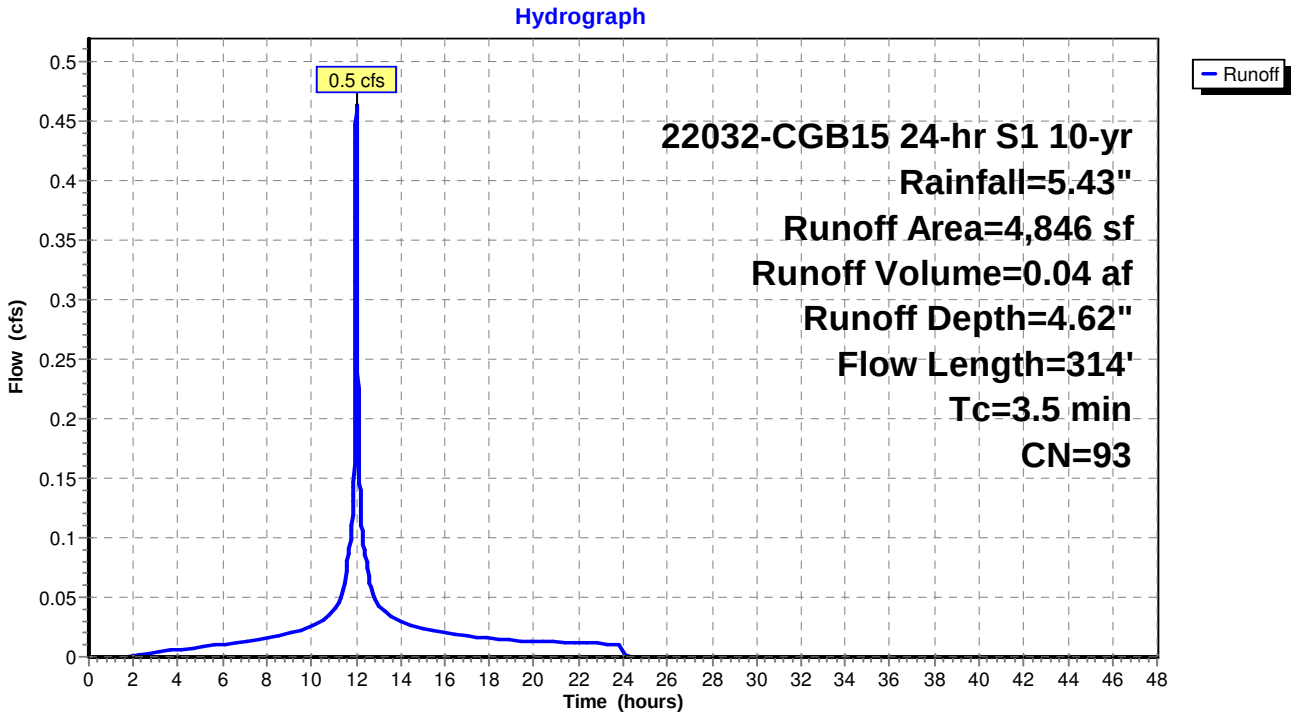
Runoff = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
720	61	>75% Grass cover, Good, HSG B
3,863	98	Paved roads w/curbs & sewers, HSG B
263	98	Paved parking, HSG B
4,846	93	Weighted Average
720	61	14.86% Pervious Area
4,126	98	85.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.5	309	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	314	Total			

Subcatchment C7: C7



Summary for Subcatchment C8: C8

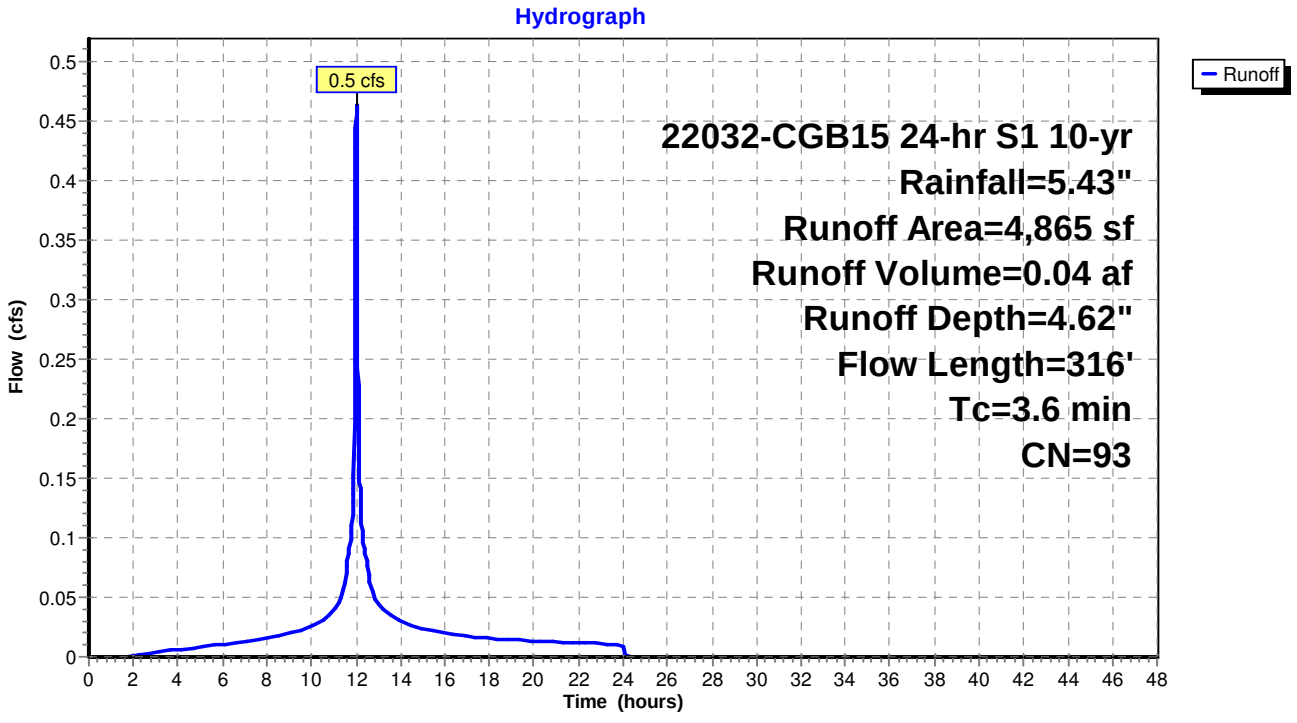
Runoff = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
628	61	>75% Grass cover, Good, HSG B
3,855	98	Paved roads w/curbs & sewers, HSG B
382	98	Paved parking, HSG B
4,865	93	Weighted Average
628	61	12.91% Pervious Area
4,237	98	87.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	5	0.0300	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.6	311	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.6	316	Total			

Subcatchment C8: C8



Summary for Subcatchment C9: C9

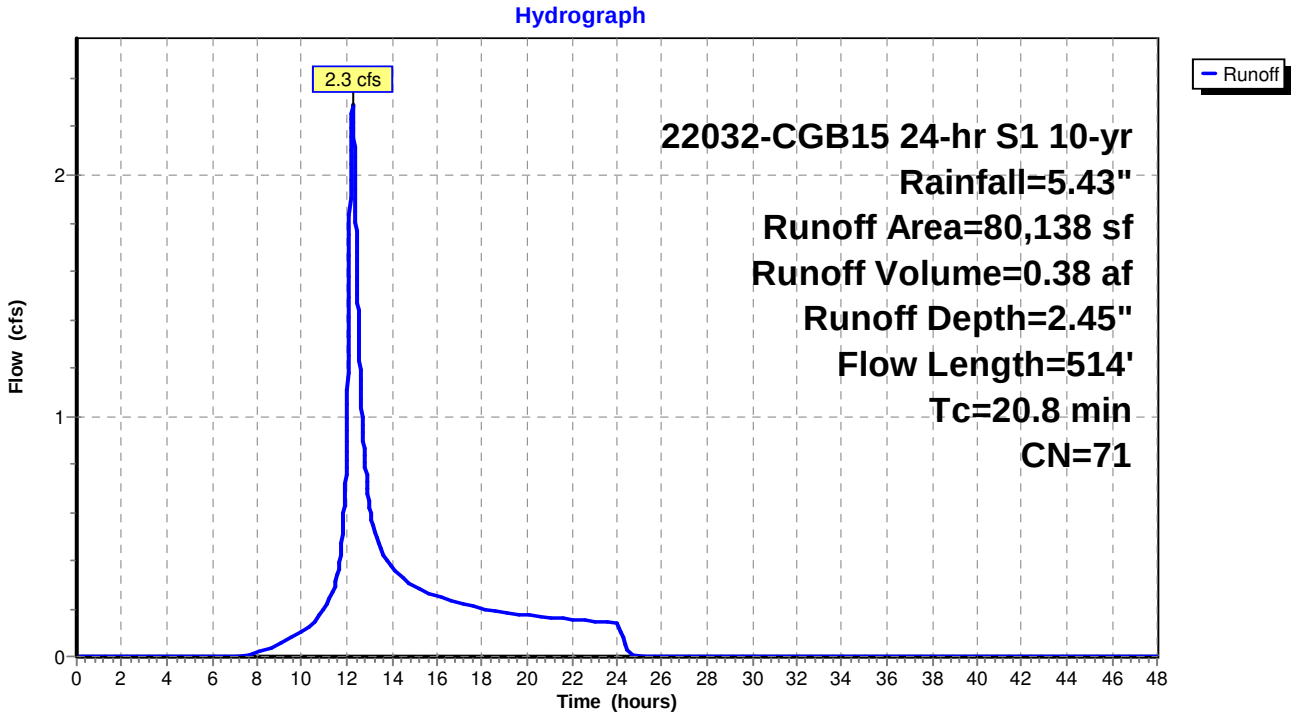
Runoff = 2.3 cfs @ 12.24 hrs, Volume= 0.38 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
22032-CGB15 24-hr S1 10-yr Rainfall=5.43"

Area (sf)	CN	Description
58,023	61	>75% Grass cover, Good, HSG B
5,186	98	Paved parking, HSG B
16,929	98	Roofs, HSG B
80,138	71	Weighted Average
58,023	61	72.40% Pervious Area
22,115	98	27.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
10.4	438	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.8	514	Total			

Subcatchment C9: C9



Summary for Pond PCB1: PCB1

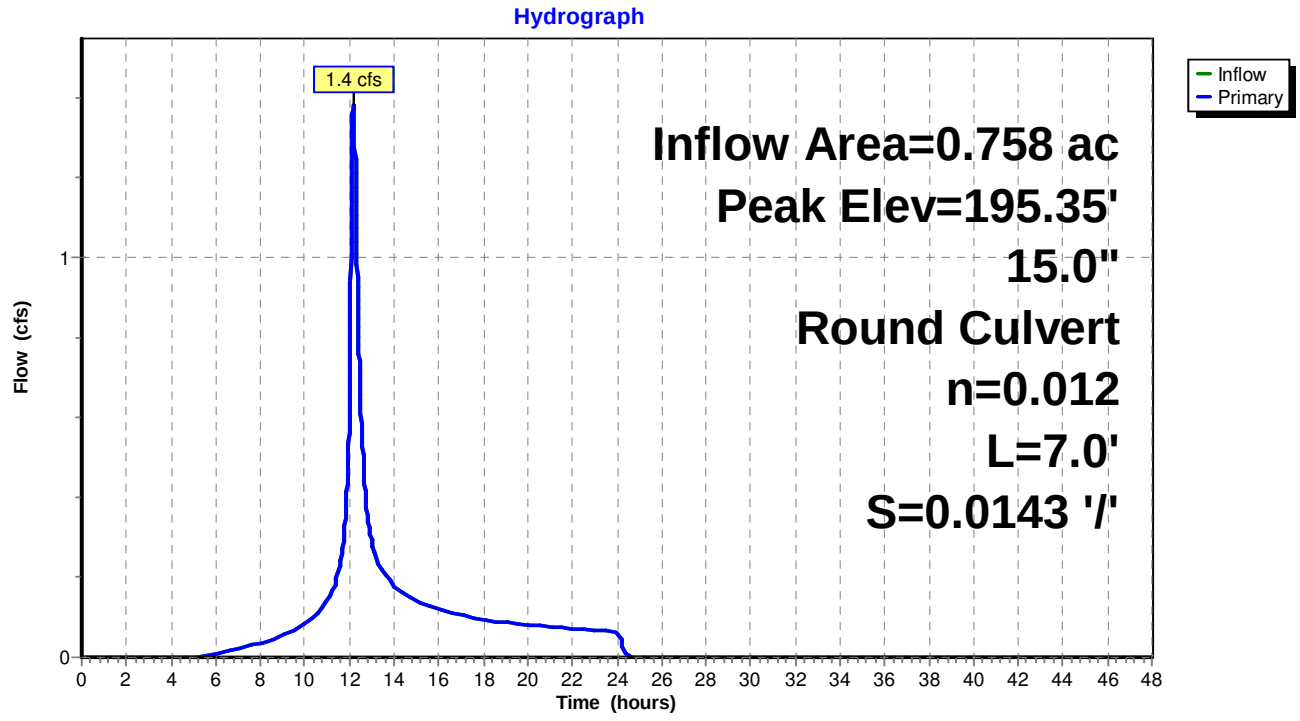
Inflow Area = 0.758 ac, 50.27% Impervious, Inflow Depth = 3.18" for 10-yr event
Inflow = 1.4 cfs @ 12.18 hrs, Volume= 0.20 af
Outflow = 1.4 cfs @ 12.18 hrs, Volume= 0.20 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.18 hrs, Volume= 0.20 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 195.35' @ 12.18 hrs
Flood Elev= 199.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	194.68'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 194.68' / 194.58' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.4 cfs @ 12.18 hrs HW=195.34' TW=195.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.4 cfs @ 3.03 fps)

Pond PCB1: PCB1



Summary for Pond PCB2: PCB2

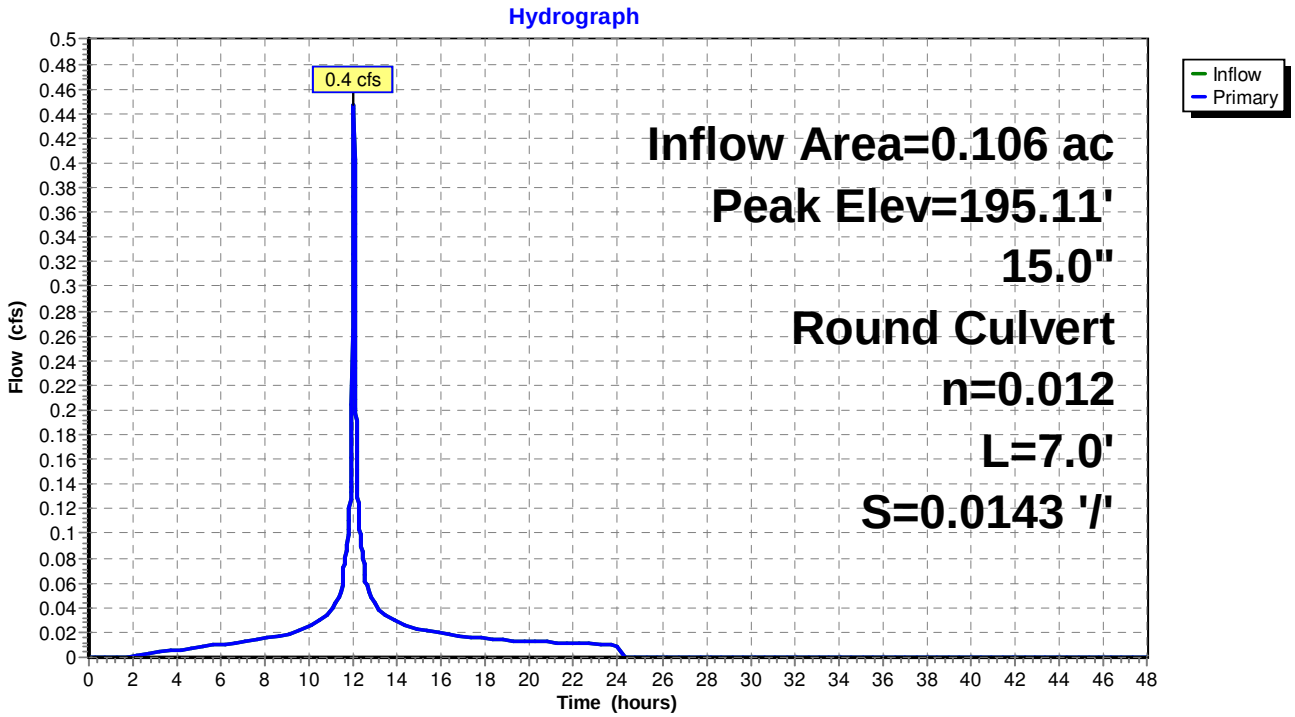
Inflow Area = 0.106 ac, 85.73% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af
Outflow = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 195.11' @ 12.17 hrs
Flood Elev= 199.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	194.68'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 194.68' / 194.58' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.01 hrs HW=195.09' TW=195.00' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.4 cfs @ 1.77 fps)

Pond PCB2: PCB2



Summary for Pond PCB3: PCB3

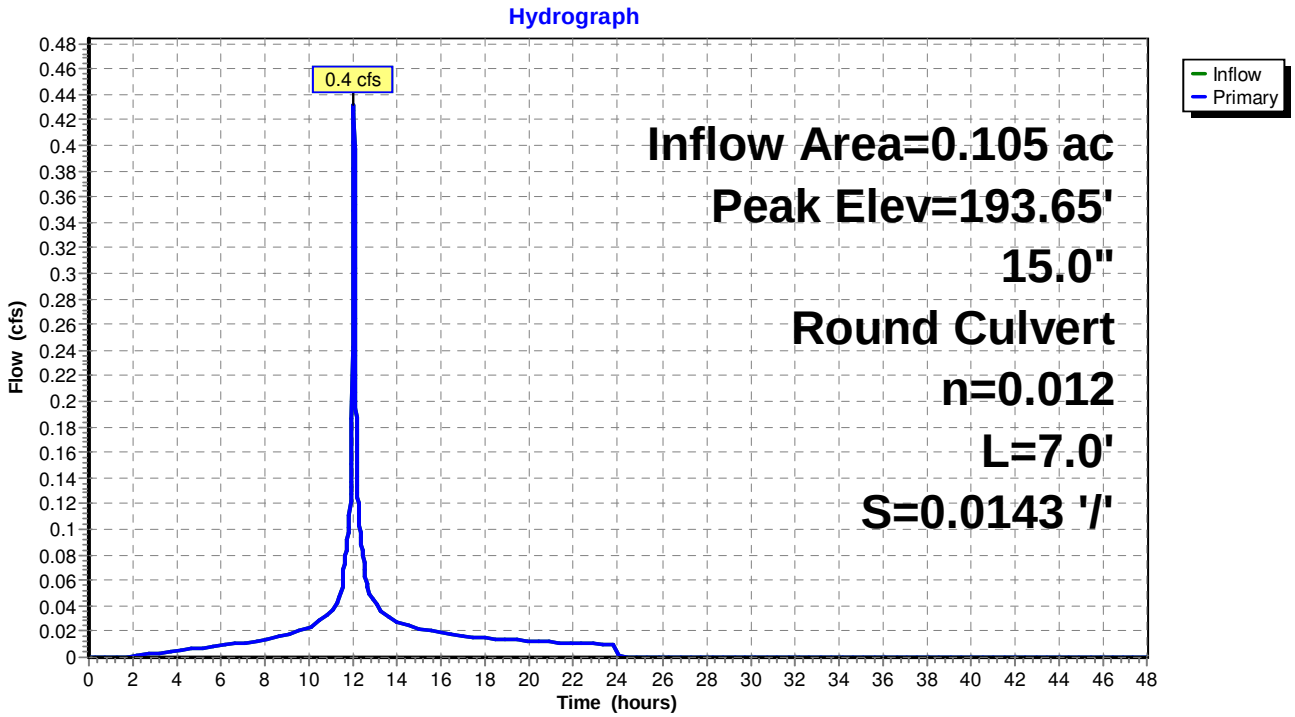
Inflow Area = 0.105 ac, 84.30% Impervious, Inflow Depth = 4.51" for 10-yr event
Inflow = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af
Outflow = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.01 hrs, Volume= 0.04 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.65' @ 12.04 hrs
Flood Elev= 196.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	192.46'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 192.46' / 192.36' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.01 hrs HW=193.40' TW=193.43' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)

Pond PCB3: PCB3



Summary for Pond PCB4: PCB4

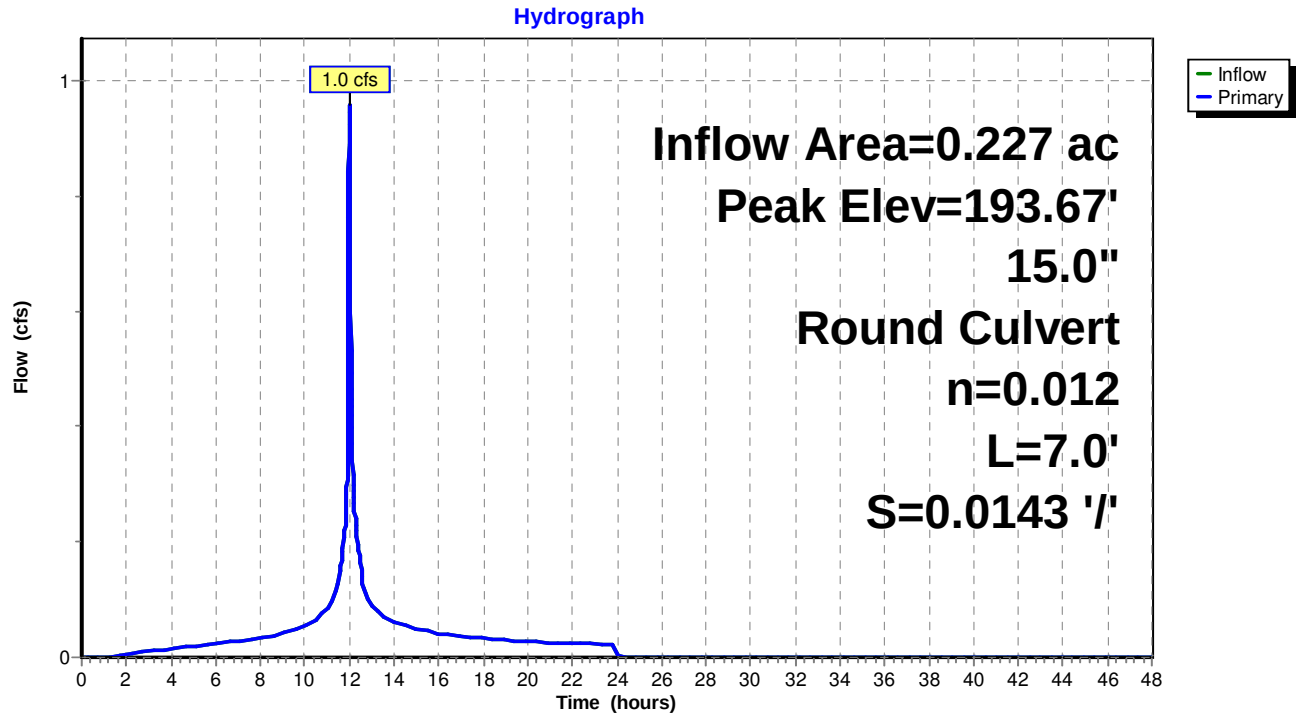
Inflow Area = 0.227 ac, 88.06% Impervious, Inflow Depth = 4.73" for 10-yr event
Inflow = 1.0 cfs @ 12.01 hrs, Volume= 0.09 af
Outflow = 1.0 cfs @ 12.01 hrs, Volume= 0.09 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.01 hrs, Volume= 0.09 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.67' @ 12.04 hrs
Flood Elev= 196.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	192.46'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 192.46' / 192.36' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.01 hrs HW=193.43' TW=193.44' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)

Pond PCB4: PCB4



Summary for Pond PCB5: PCB5

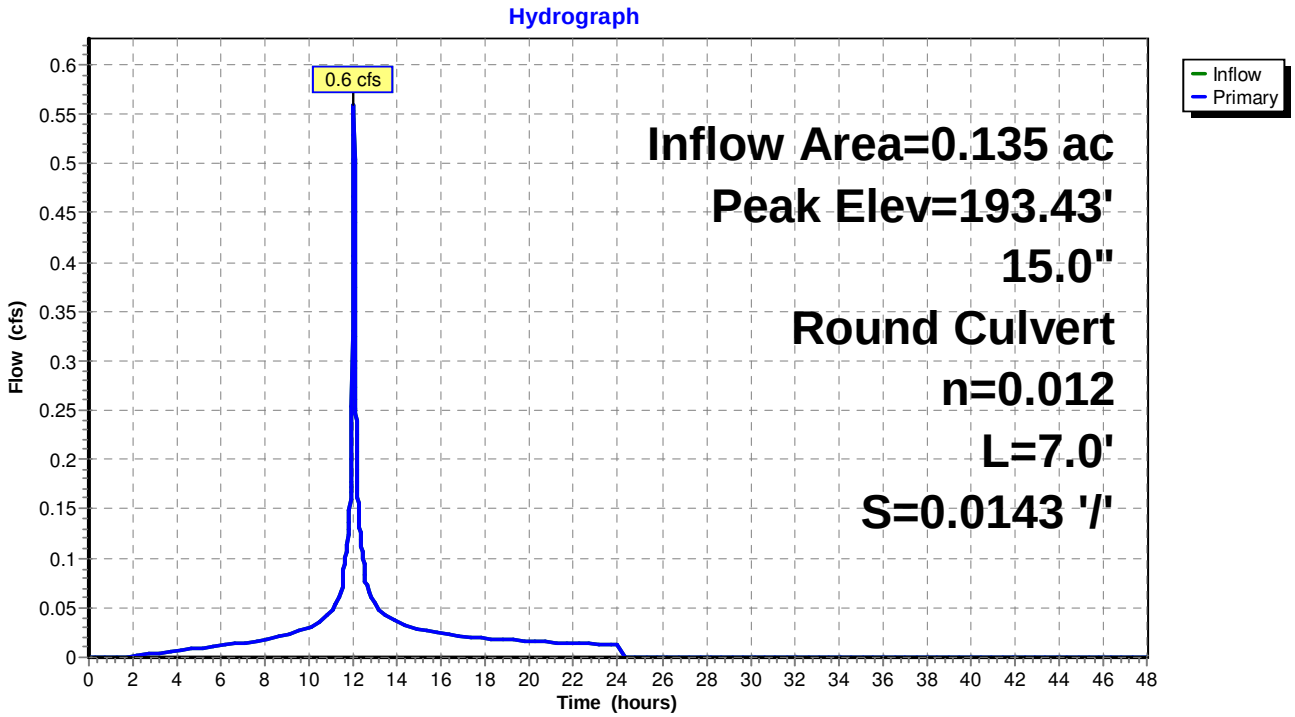
Inflow Area = 0.135 ac, 82.85% Impervious, Inflow Depth = 4.51" for 10-yr event
Inflow = 0.6 cfs @ 12.01 hrs, Volume= 0.05 af
Outflow = 0.6 cfs @ 12.01 hrs, Volume= 0.05 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.01 hrs, Volume= 0.05 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.43' @ 12.03 hrs
Flood Elev= 196.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	191.90'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 191.90' / 191.80' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.01 hrs HW=193.09' TW=193.26' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)

Pond PCB5: PCB5



Summary for Pond PCB6: PCB6

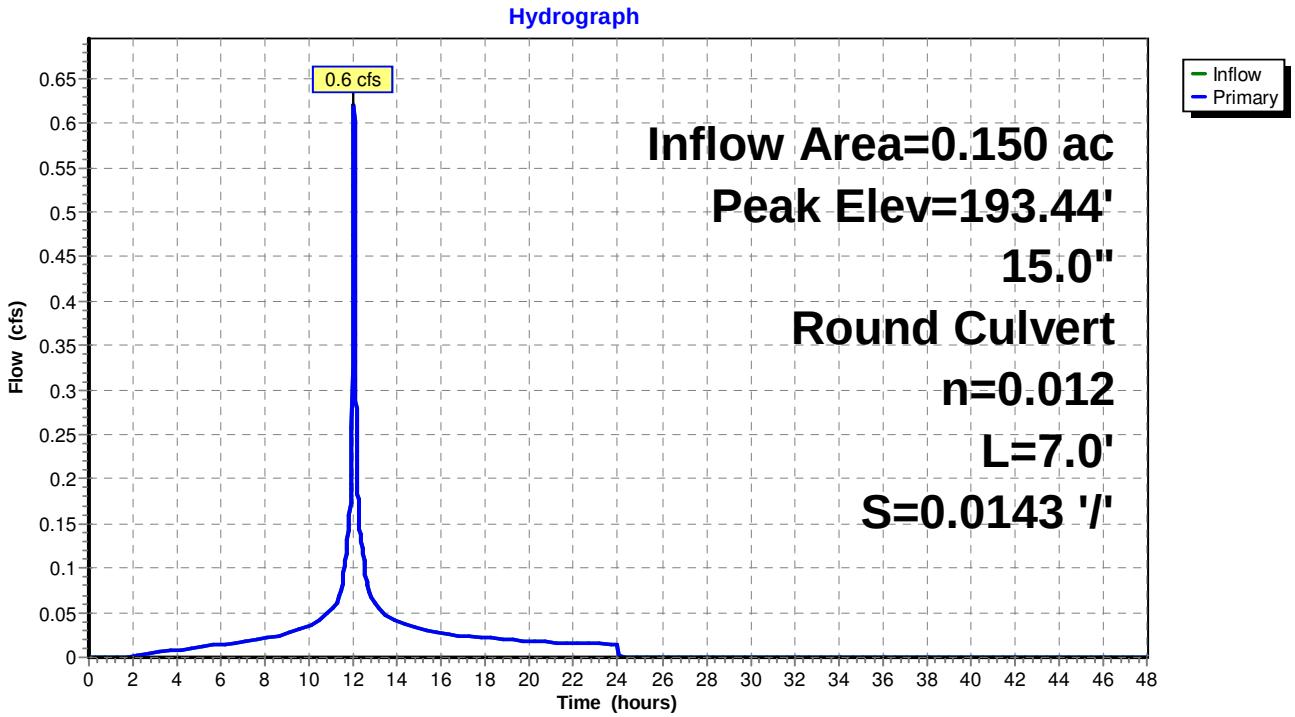
Inflow Area = 0.150 ac, 87.54% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.6 cfs @ 12.01 hrs, Volume= 0.06 af
Outflow = 0.6 cfs @ 12.01 hrs, Volume= 0.06 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.01 hrs, Volume= 0.06 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.44' @ 12.03 hrs
Flood Elev= 196.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	191.90'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 191.90' / 191.80' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.01 hrs HW=193.16' TW=193.34' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)

Pond PCB6: PCB6



Summary for Pond PCB7: PCB7

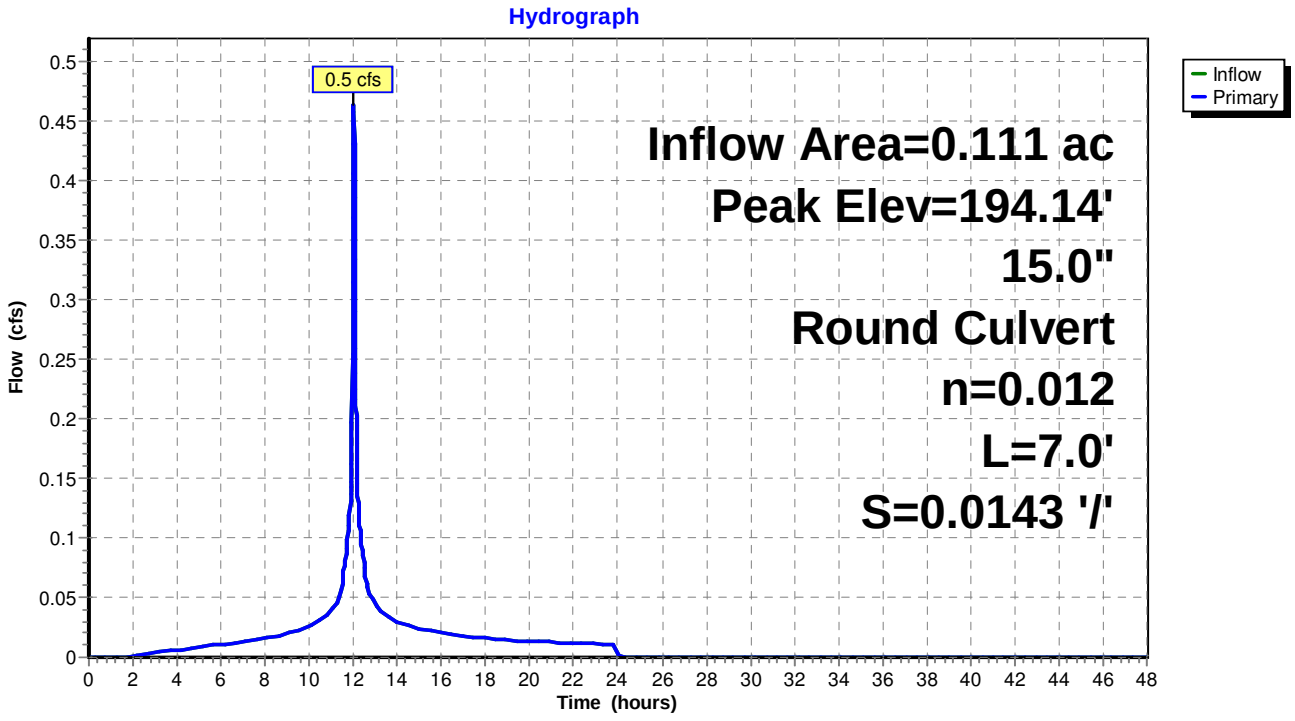
Inflow Area = 0.111 ac, 85.14% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af
Outflow = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 194.14' @ 12.02 hrs
Flood Elev= 198.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	193.73'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 193.73' / 193.63' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.5 cfs @ 12.01 hrs HW=194.14' TW=194.04' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.5 cfs @ 1.94 fps)

Pond PCB7: PCB7



Summary for Pond PCB8: PCB8

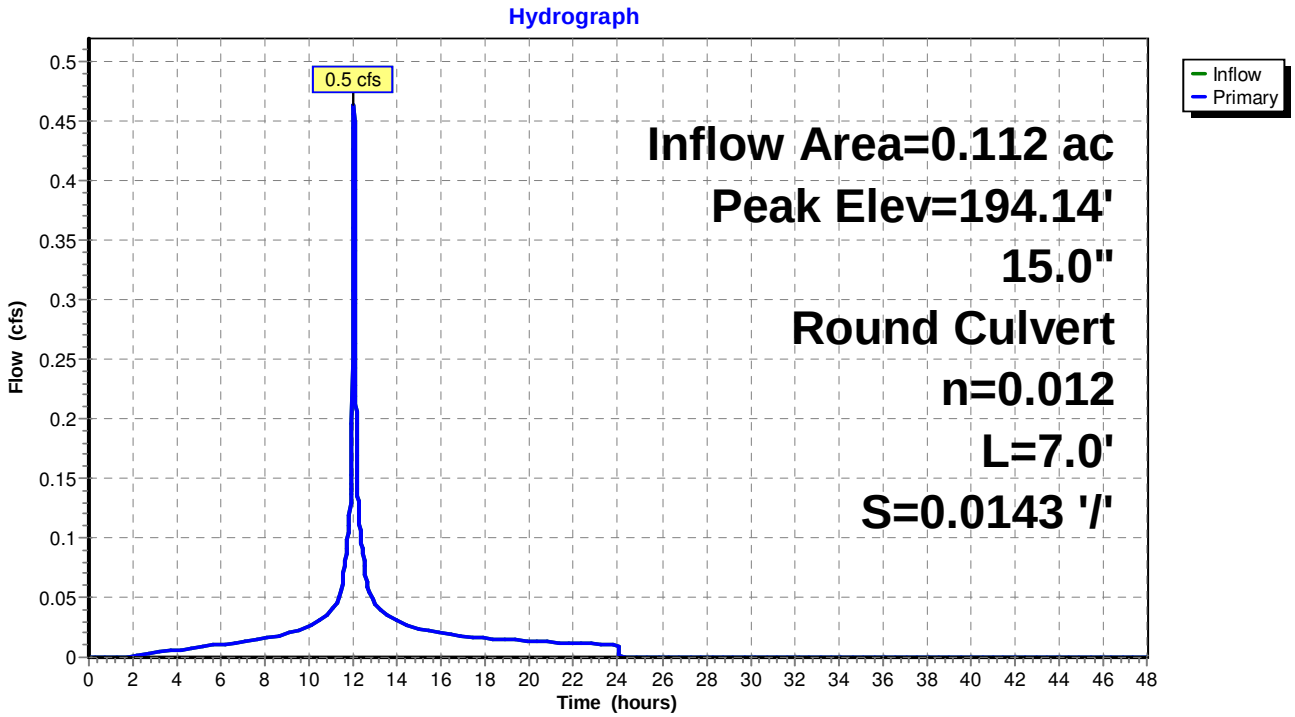
Inflow Area = 0.112 ac, 87.09% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af
Outflow = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.01 hrs, Volume= 0.04 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 194.14' @ 12.02 hrs
Flood Elev= 198.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	193.73'	**15.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 193.73' / 193.63' S= 0.0143 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.5 cfs @ 12.01 hrs HW=194.14' TW=194.04' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.5 cfs @ 1.93 fps)

Pond PCB8: PCB8



Summary for Pond PDMH1: PDMH1

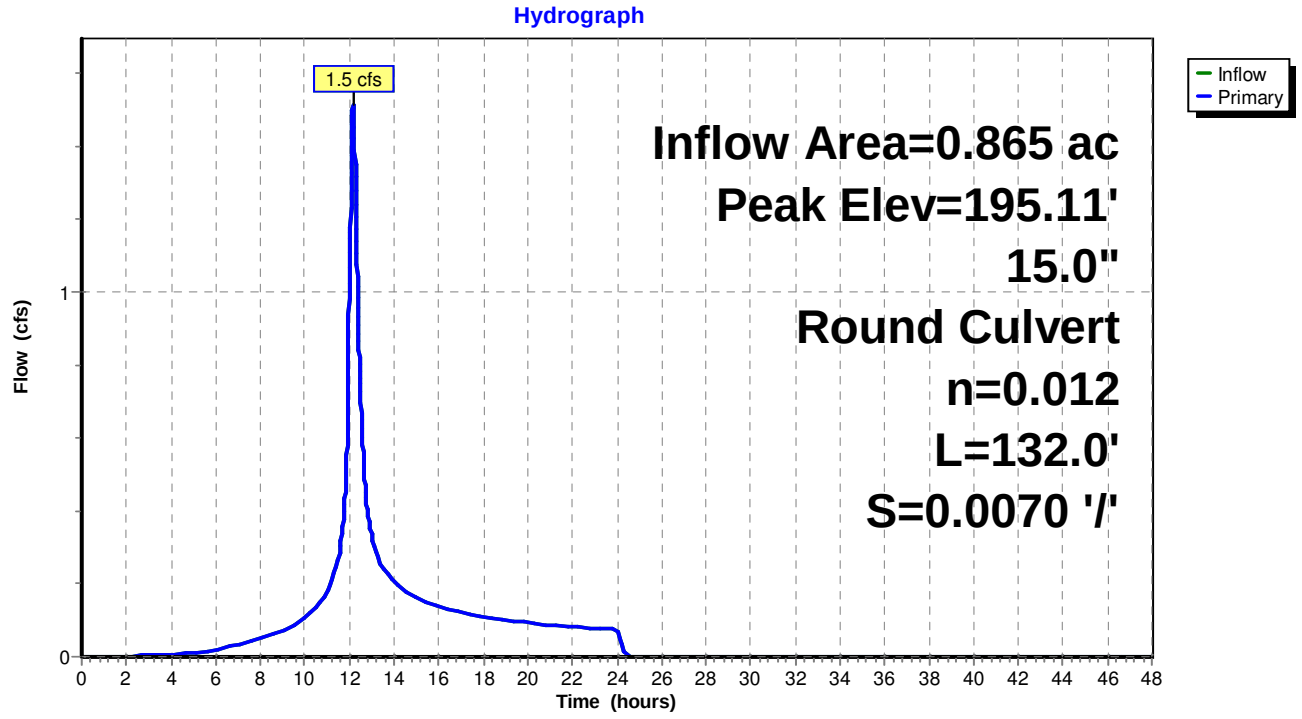
Inflow Area = 0.865 ac, 54.63% Impervious, Inflow Depth = 3.35" for 10-yr event
Inflow = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af
Outflow = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 195.11' @ 12.16 hrs
Flood Elev= 199.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	194.48'	**15.0" Round Culvert** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 194.48' / 193.55' S= 0.0070 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.16 hrs HW=195.11' TW=194.12' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.5 cfs @ 3.60 fps)

Pond PDMH1: PDMH1



Summary for Pond PDMH2: PDMH2

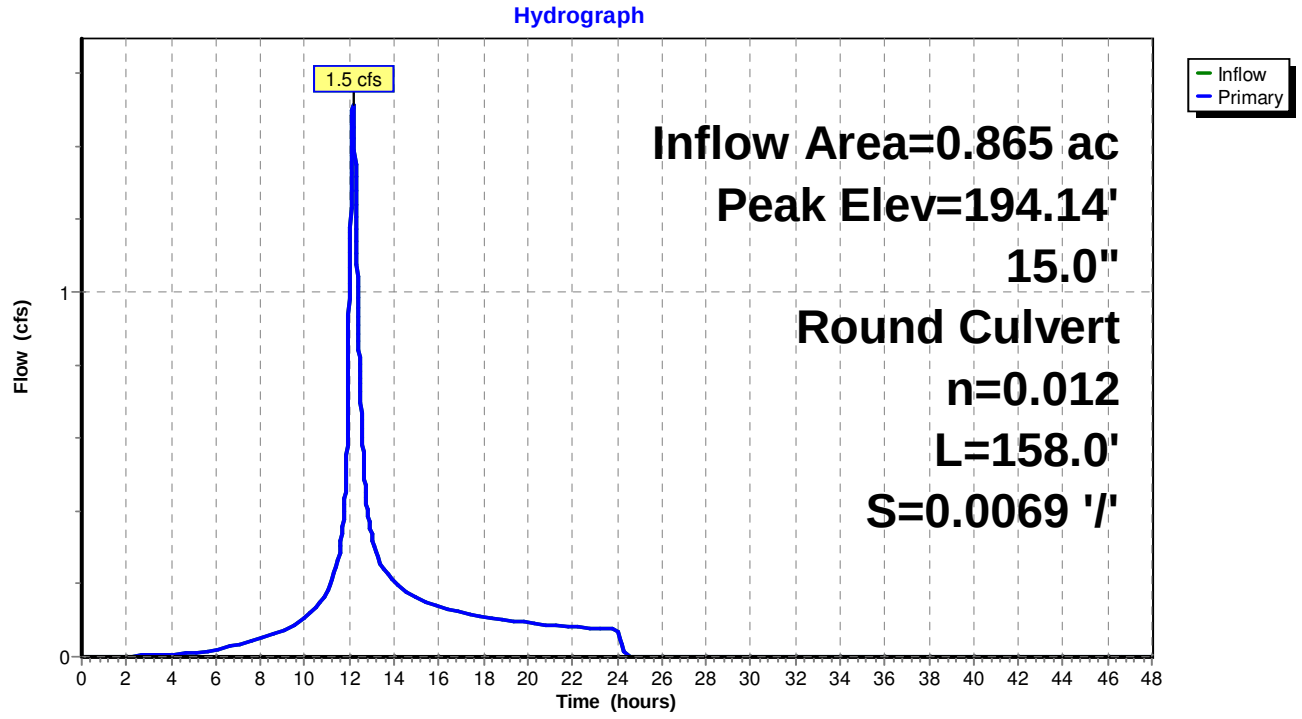
Inflow Area = 0.865 ac, 54.63% Impervious, Inflow Depth = 3.35" for 10-yr event
Inflow = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af
Outflow = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.16 hrs, Volume= 0.24 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 194.14' @ 12.04 hrs
Flood Elev= 198.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	193.45'	**15.0" Round Culvert** L= 158.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 193.45' / 192.36' S= 0.0069 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.16 hrs HW=194.12' TW=193.19' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.5 cfs @ 3.33 fps)

Pond PDMH2: PDMH2



Summary for Pond PDMH3: PDMH3

[80] Warning: Exceeded Pond PCB3 by 0.14' @ 12.02 hrs (2.1 cfs 0.01 af)
[80] Warning: Exceeded Pond PCB4 by 0.11' @ 12.02 hrs (1.8 cfs 0.00 af)

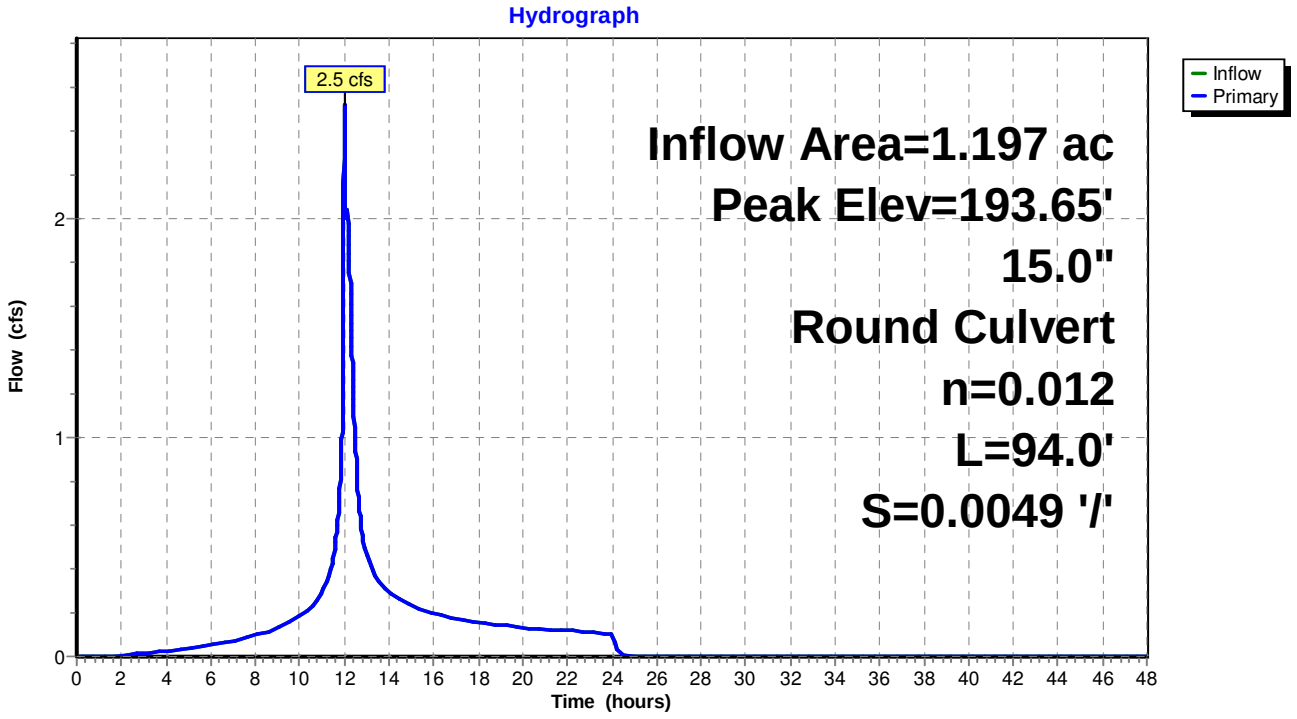
Inflow Area = 1.197 ac, 63.58% Impervious, Inflow Depth = 3.72" for 10-yr event
Inflow = 2.5 cfs @ 12.02 hrs, Volume= 0.37 af
Outflow = 2.5 cfs @ 12.02 hrs, Volume= 0.37 af, Atten= 0%, Lag= 0.0 min
Primary = 2.5 cfs @ 12.02 hrs, Volume= 0.37 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.65' @ 12.03 hrs
Flood Elev= 197.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	192.26'	**15.0" Round Culvert** L= 94.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 192.26' / 191.80' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.8 cfs @ 12.02 hrs HW=193.54' TW=193.39' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.8 cfs @ 1.82 fps)

Pond PDMH3: PDMH3



Summary for Pond PDMH4: PDMH4

[80] Warning: Exceeded Pond PCB5 by 0.21' @ 12.01 hrs (2.7 cfs 0.01 af)
[80] Warning: Exceeded Pond PCB6 by 0.21' @ 12.01 hrs (2.7 cfs 0.01 af)

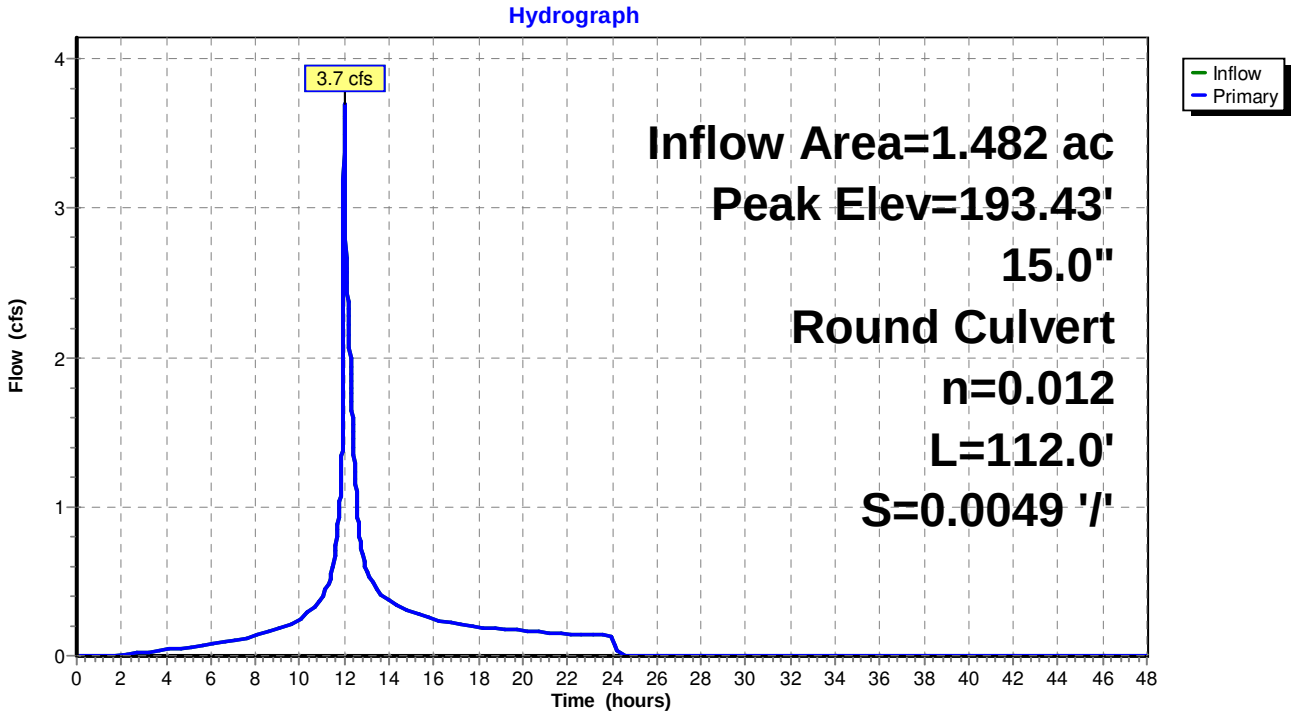
Inflow Area = 1.482 ac, 67.76% Impervious, Inflow Depth = 3.88" for 10-yr event
Inflow = 3.7 cfs @ 12.02 hrs, Volume= 0.48 af
Outflow = 3.7 cfs @ 12.02 hrs, Volume= 0.48 af, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 12.02 hrs, Volume= 0.48 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.43' @ 12.02 hrs
Flood Elev= 197.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	191.70'	**15.0" Round Culvert** L= 112.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 191.70' / 191.15' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.5 cfs @ 12.02 hrs HW=193.37' TW=192.91' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.5 cfs @ 2.82 fps)

Pond PDMH4: PDMH4



Summary for Pond PDMH5: PDMH5

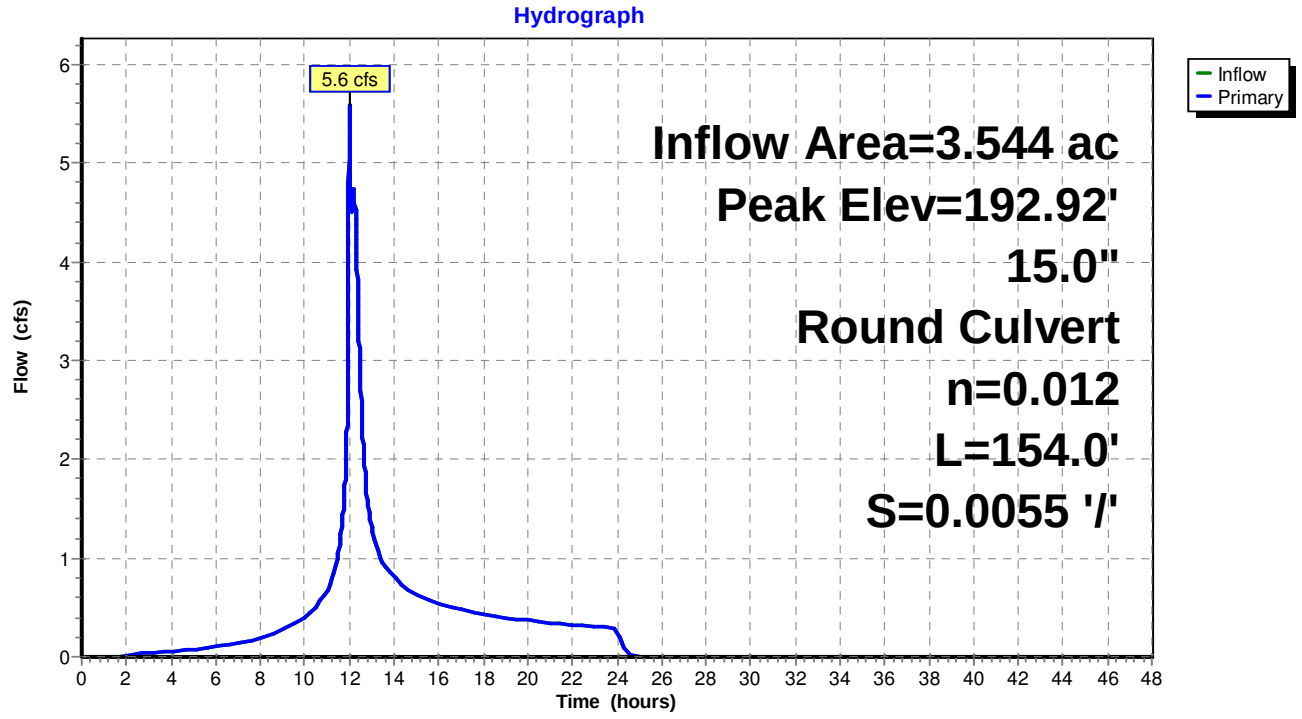
Inflow Area = 3.544 ac, 48.07% Impervious, Inflow Depth = 3.18" for 10-yr event
Inflow = 5.6 cfs @ 12.02 hrs, Volume= 0.94 af
Outflow = 5.6 cfs @ 12.02 hrs, Volume= 0.94 af, Atten= 0%, Lag= 0.0 min
Primary = 5.6 cfs @ 12.02 hrs, Volume= 0.94 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 192.92' @ 12.02 hrs
Flood Elev= 197.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	191.05'	**15.0" Round Culvert** L= 154.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 191.05' / 190.20' S= 0.0055 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.6 cfs @ 12.02 hrs HW=192.91' TW=189.17' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.6 cfs @ 4.55 fps)

Pond PDMH5: PDMH5



Summary for Pond PDMH6: PDMH6

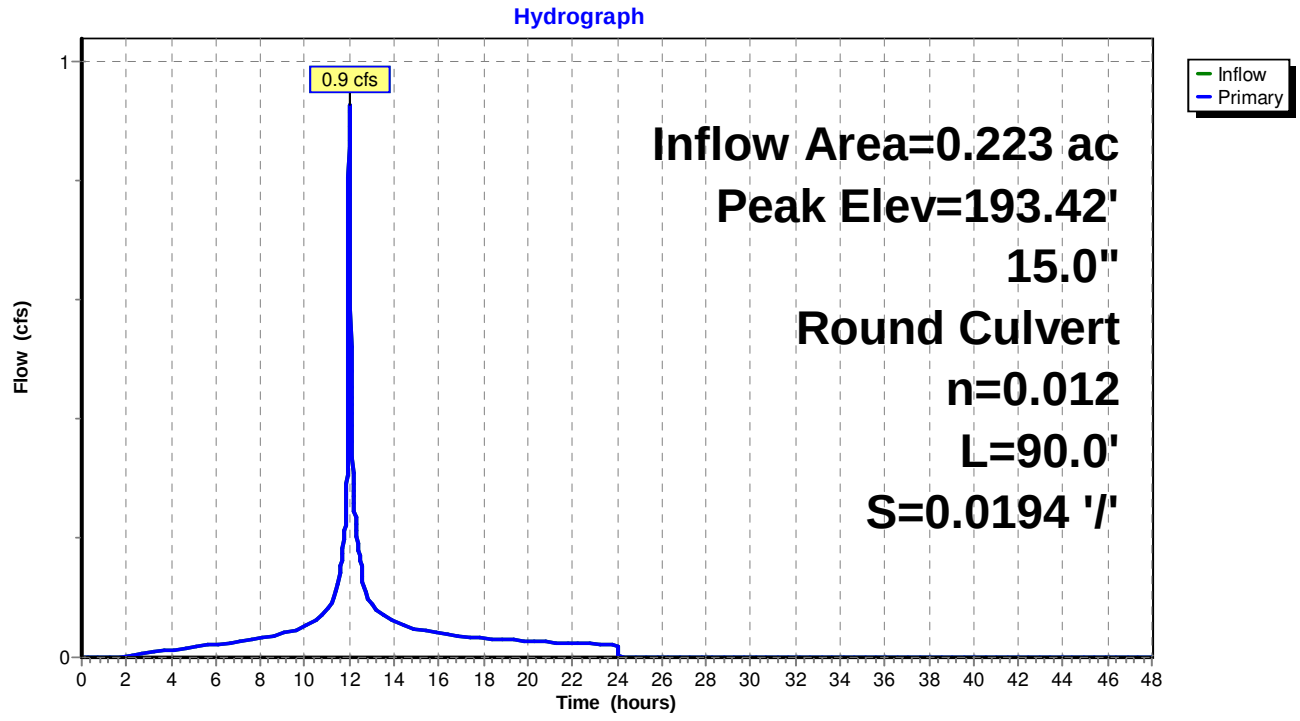
Inflow Area = 0.223 ac, 86.12% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af
Outflow = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.42' @ 12.02 hrs
Flood Elev= 197.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	192.90'	**15.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 192.90' / 191.15' S= 0.0194 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.9 cfs @ 12.01 hrs HW=193.41' TW=192.90' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.9 cfs @ 2.74 fps)

Pond PDMH6: PDMH6



Summary for Pond PDMH7: PDMH7

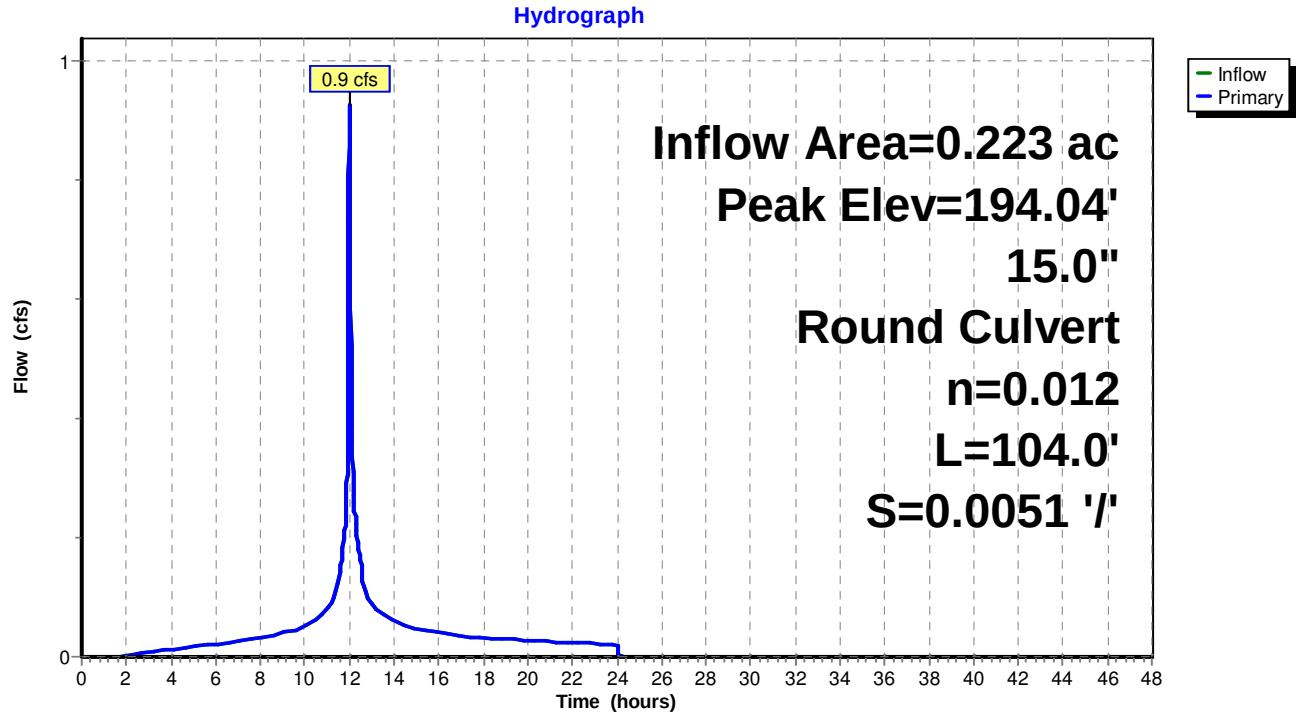
Inflow Area = 0.223 ac, 86.12% Impervious, Inflow Depth = 4.62" for 10-yr event
Inflow = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af
Outflow = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.01 hrs, Volume= 0.09 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 194.04' @ 12.02 hrs
Flood Elev= 198.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	193.53'	**15.0" Round Culvert** L= 104.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 193.53' / 193.00' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.9 cfs @ 12.01 hrs HW=194.04' TW=193.41' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.9 cfs @ 2.87 fps)

Pond PDMH7: PDMH7



Summary for Pond PP1: PP1

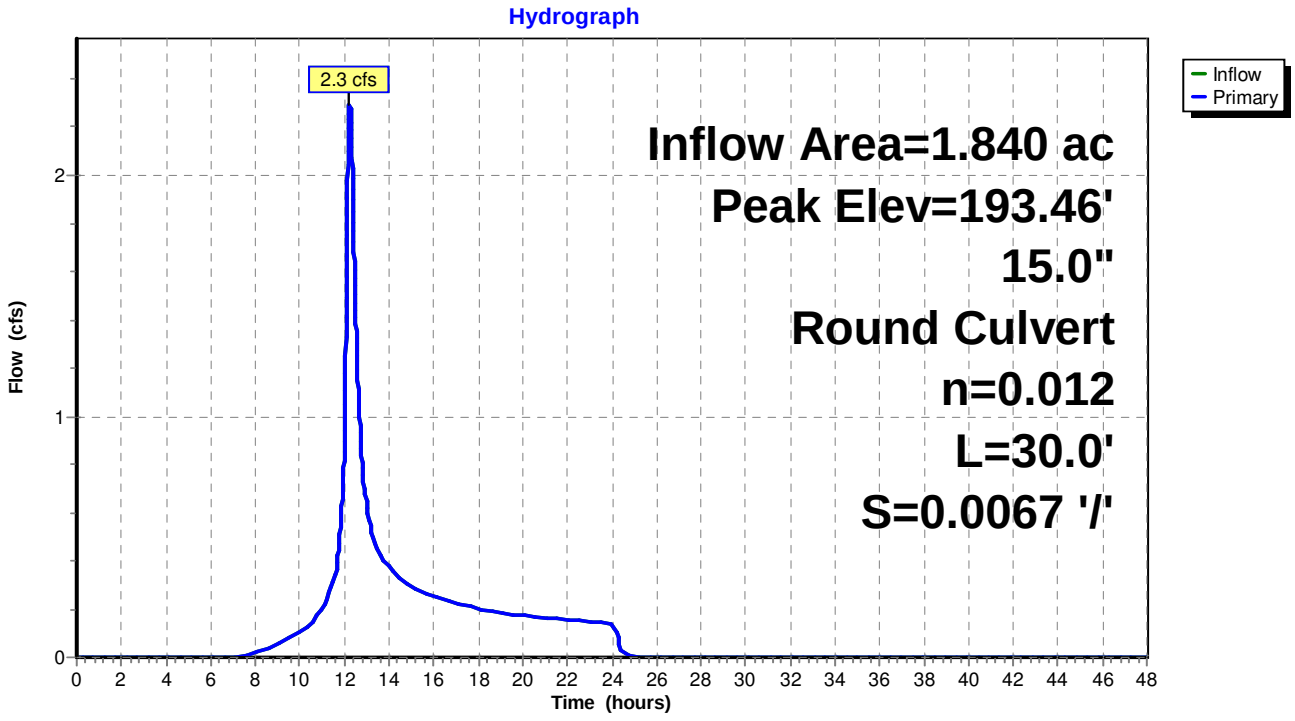
Inflow Area = 1.840 ac, 27.60% Impervious, Inflow Depth = 2.45" for 10-yr event
Inflow = 2.3 cfs @ 12.24 hrs, Volume= 0.38 af
Outflow = 2.3 cfs @ 12.24 hrs, Volume= 0.38 af, Atten= 0%, Lag= 0.0 min
Primary = 2.3 cfs @ 12.24 hrs, Volume= 0.38 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.46' @ 12.24 hrs
Flood Elev= 196.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	192.60'	**15.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 192.60' / 192.40' S= 0.0067 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.24 hrs HW=193.46' TW=192.37' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.3 cfs @ 3.59 fps)

Pond PP1: PP1



Summary for Pond WP1: WPET POND 1

Inflow Area = 9.865 ac, 35.46% Impervious, Inflow Depth = 2.71" for 10-yr event
Inflow = 9.1 cfs @ 12.33 hrs, Volume= 2.23 af
Outflow = 4.6 cfs @ 12.98 hrs, Volume= 2.23 af, Atten= 49%, Lag= 38.6 min
Primary = 4.6 cfs @ 12.98 hrs, Volume= 2.23 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 188.00' Surf.Area= 4,429 sf Storage= 13,974 cf
Peak Elev= 190.38' @ 12.98 hrs Surf.Area= 12,899 sf Storage= 37,438 cf (23,463 cf above start)
Flood Elev= 192.25' Surf.Area= 18,296 sf Storage= 65,293 cf (51,318 cf above start)

Plug-Flow detention time= 232.8 min calculated for 1.91 af (86% of inflow)
Center-of-Mass det. time= 104.5 min (993.6 - 889.0)

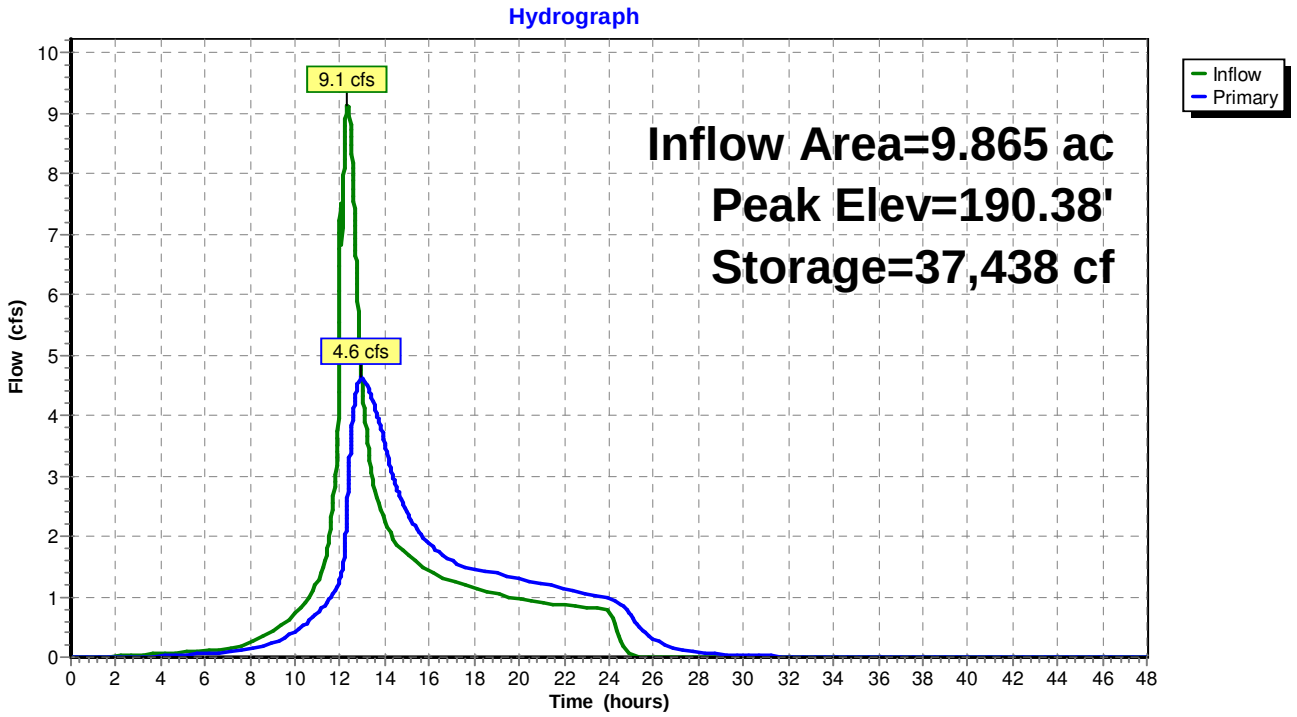
Volume	Invert	Avail.Storage	Storage Description
#1	183.00'	65,293 cf	**Wet Pond (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
183.00	1,402	154.7	0	0	1,402
184.00	1,894	173.6	1,642	1,642	1,922
186.00	3,049	211.3	4,897	6,539	3,140
188.00	4,429	249.0	7,435	13,974	4,595
189.00	10,672	499.2	7,325	21,300	19,497
190.00	12,198	518.0	11,427	32,726	21,101
192.00	16,157	703.4	28,262	60,989	39,163
192.25	18,296	722.3	4,304	65,293	41,314

Device	Routing	Invert	Outlet Devices
#1	Primary	186.50'	**18.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 186.50' / 186.20' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Device 1	188.00'	**6.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	189.40'	**12.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	190.30'	**12.0" W x 5.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	191.00'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	191.60'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.6 cfs @ 12.98 hrs HW=190.38' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 4.6 cfs of 15.0 cfs potential flow)
- **2=Orifice/Grate** (Orifice Controls 2.0 cfs @ 6.94 fps)
- **3=Orifice/Grate** (Orifice Controls 2.5 cfs @ 3.81 fps)
- **4=Orifice/Grate** (Orifice Controls 0.1 cfs @ 0.88 fps)
- **5=Orifice/Grate** (Controls 0.0 cfs)
- **6=Orifice/Grate** (Controls 0.0 cfs)

Pond WP1: WPET POND 1



A – 2

NODE LISTING – 25-YR

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=19,824 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=181' Slope=0.0250 '/' Tc=20.2 min CN=56 Runoff=0.4 cfs 0.08 af

Subcatchment B: B Runoff Area=4,364 sf 0.00% Impervious Runoff Depth=2.21"
Flow Length=18' Slope=0.3300 '/' Tc=1.1 min CN=57 Runoff=0.2 cfs 0.02 af

Link C: C Inflow=7.5 cfs 3.34 af
Primary=7.5 cfs 3.34 af

Subcatchment C1: C1 Runoff Area=33,031 sf 50.27% Impervious Runoff Depth=4.45"
Flow Length=298' Tc=16.5 min CN=79 Runoff=1.8 cfs 0.28 af

Subcatchment C10: C10 Runoff Area=275,315 sf 28.39% Impervious Runoff Depth=3.60"
Flow Length=947' Slope=0.0170 '/' Tc=37.8 min CN=71 Runoff=8.4 cfs 1.89 af

Subcatchment C11: C11 Runoff Area=35,088 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=290' Slope=0.0370 '/' Tc=19.1 min CN=56 Runoff=0.8 cfs 0.14 af

Subcatchment C2: C2 Runoff Area=4,631 sf 85.73% Impervious Runoff Depth=6.02"
Flow Length=273' Tc=3.2 min CN=93 Runoff=0.5 cfs 0.05 af

Subcatchment C3: C3 Runoff Area=4,567 sf 84.30% Impervious Runoff Depth=5.91"
Flow Length=292' Tc=3.4 min CN=92 Runoff=0.5 cfs 0.05 af

Subcatchment C4: C4 Runoff Area=9,892 sf 88.06% Impervious Runoff Depth=6.14"
Flow Length=309' Tc=3.5 min CN=94 Runoff=1.1 cfs 0.12 af

Subcatchment C5: C5 Runoff Area=5,878 sf 82.85% Impervious Runoff Depth=5.91"
Flow Length=273' Tc=3.2 min CN=92 Runoff=0.7 cfs 0.07 af

Subcatchment C6: C6 Runoff Area=6,543 sf 87.54% Impervious Runoff Depth=6.02"
Flow Length=334' Tc=3.7 min CN=93 Runoff=0.7 cfs 0.08 af

Subcatchment C7: C7 Runoff Area=4,846 sf 85.14% Impervious Runoff Depth=6.02"
Flow Length=314' Tc=3.5 min CN=93 Runoff=0.6 cfs 0.06 af

Subcatchment C8: C8 Runoff Area=4,865 sf 87.09% Impervious Runoff Depth=6.02"
Flow Length=316' Tc=3.6 min CN=93 Runoff=0.6 cfs 0.06 af

Subcatchment C9: C9 Runoff Area=80,138 sf 27.60% Impervious Runoff Depth=3.60"
Flow Length=514' Tc=20.8 min CN=71 Runoff=3.2 cfs 0.55 af

Pond PCB1: PCB1 Peak Elev=195.50' Inflow=1.8 cfs 0.28 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=1.8 cfs 0.28 af

Pond PCB2: PCB2 Peak Elev=195.36' Inflow=0.5 cfs 0.05 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.5 cfs 0.05 af

Pond PCB3: PCB3 Peak Elev=194.90' Inflow=0.5 cfs 0.05 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.5 cfs 0.05 af

Pond PCB4: PCB4 Peak Elev=194.92' Inflow=1.1 cfs 0.12 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=1.1 cfs 0.12 af

Pond PCB5: PCB5 Peak Elev=194.59' Inflow=0.7 cfs 0.07 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.7 cfs 0.07 af

Pond PCB6: PCB6 Peak Elev=194.59' Inflow=0.7 cfs 0.08 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.7 cfs 0.08 af

Pond PCB7: PCB7 Peak Elev=194.25' Inflow=0.6 cfs 0.06 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.06 af

Pond PCB8: PCB8 Peak Elev=194.26' Inflow=0.6 cfs 0.06 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.06 af

Pond PDMH1: PDMH1 Peak Elev=195.35' Inflow=2.0 cfs 0.33 af
15.0" Round Culvert n=0.012 L=132.0' S=0.0070 '/' Outflow=2.0 cfs 0.33 af

Pond PDMH2: PDMH2 Peak Elev=195.00' Inflow=2.0 cfs 0.33 af
15.0" Round Culvert n=0.012 L=158.0' S=0.0069 '/' Outflow=2.0 cfs 0.33 af

Pond PDMH3: PDMH3 Peak Elev=194.90' Inflow=3.1 cfs 0.50 af
15.0" Round Culvert n=0.012 L=94.0' S=0.0049 '/' Outflow=3.1 cfs 0.50 af

Pond PDMH4: PDMH4 Peak Elev=194.58' Inflow=4.5 cfs 0.64 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0049 '/' Outflow=4.5 cfs 0.64 af

Pond PDMH5: PDMH5 Peak Elev=193.82' Inflow=7.1 cfs 1.31 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0055 '/' Outflow=7.1 cfs 1.31 af

Pond PDMH6: PDMH6 Peak Elev=193.91' Inflow=1.1 cfs 0.11 af
15.0" Round Culvert n=0.012 L=90.0' S=0.0194 '/' Outflow=1.1 cfs 0.11 af

Pond PDMH7: PDMH7 Peak Elev=194.20' Inflow=1.1 cfs 0.11 af
15.0" Round Culvert n=0.012 L=104.0' S=0.0051 '/' Outflow=1.1 cfs 0.11 af

Pond PP1: PP1 Peak Elev=193.89' Inflow=3.2 cfs 0.55 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/' Outflow=3.2 cfs 0.55 af

Pond WP1: WPET POND 1 Peak Elev=190.98' Storage=45,529 cf Inflow=12.8 cfs 3.20 af
Outflow=7.2 cfs 3.20 af

Total Runoff Area = 11.225 ac Runoff Volume = 3.44 af Average Runoff Depth = 3.68"
68.84% Pervious = 7.728 ac 31.16% Impervious = 3.498 ac

A – 2

NODE LISTING – 50-YR

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=19,824 sf 0.00% Impervious Runoff Depth=3.03"
Flow Length=181' Slope=0.0250 '/' Tc=20.2 min CN=56 Runoff=0.6 cfs 0.11 af

Subcatchment B: B Runoff Area=4,364 sf 0.00% Impervious Runoff Depth=3.14"
Flow Length=18' Slope=0.3300 '/' Tc=1.1 min CN=57 Runoff=0.3 cfs 0.03 af

Link C: C Inflow=10.1 cfs 4.37 af
Primary=10.1 cfs 4.37 af

Subcatchment C1: C1 Runoff Area=33,031 sf 50.27% Impervious Runoff Depth=5.69"
Flow Length=298' Tc=16.5 min CN=79 Runoff=2.2 cfs 0.36 af

Subcatchment C10: C10 Runoff Area=275,315 sf 28.39% Impervious Runoff Depth=4.74"
Flow Length=947' Slope=0.0170 '/' Tc=37.8 min CN=71 Runoff=10.8 cfs 2.50 af

Subcatchment C11: C11 Runoff Area=35,088 sf 0.00% Impervious Runoff Depth=3.03"
Flow Length=290' Slope=0.0370 '/' Tc=19.1 min CN=56 Runoff=1.2 cfs 0.20 af

Subcatchment C2: C2 Runoff Area=4,631 sf 85.73% Impervious Runoff Depth=7.35"
Flow Length=273' Tc=3.2 min CN=93 Runoff=0.6 cfs 0.07 af

Subcatchment C3: C3 Runoff Area=4,567 sf 84.30% Impervious Runoff Depth=7.23"
Flow Length=292' Tc=3.4 min CN=92 Runoff=0.6 cfs 0.06 af

Subcatchment C4: C4 Runoff Area=9,892 sf 88.06% Impervious Runoff Depth=7.47"
Flow Length=309' Tc=3.5 min CN=94 Runoff=1.3 cfs 0.14 af

Subcatchment C5: C5 Runoff Area=5,878 sf 82.85% Impervious Runoff Depth=7.23"
Flow Length=273' Tc=3.2 min CN=92 Runoff=0.8 cfs 0.08 af

Subcatchment C6: C6 Runoff Area=6,543 sf 87.54% Impervious Runoff Depth=7.35"
Flow Length=334' Tc=3.7 min CN=93 Runoff=0.9 cfs 0.09 af

Subcatchment C7: C7 Runoff Area=4,846 sf 85.14% Impervious Runoff Depth=7.35"
Flow Length=314' Tc=3.5 min CN=93 Runoff=0.6 cfs 0.07 af

Subcatchment C8: C8 Runoff Area=4,865 sf 87.09% Impervious Runoff Depth=7.35"
Flow Length=316' Tc=3.6 min CN=93 Runoff=0.6 cfs 0.07 af

Subcatchment C9: C9 Runoff Area=80,138 sf 27.60% Impervious Runoff Depth=4.74"
Flow Length=514' Tc=20.8 min CN=71 Runoff=4.1 cfs 0.73 af

Pond PCB1: PCB1 Peak Elev=196.80' Inflow=2.2 cfs 0.36 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=2.2 cfs 0.36 af

Pond PCB2: PCB2 Peak Elev=196.73' Inflow=0.6 cfs 0.07 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.07 af

Pond PCB3: PCB3 Peak Elev=196.41' Inflow=0.6 cfs 0.06 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.06 af

Pond PCB4: PCB4 Peak Elev=196.44' Inflow=1.3 cfs 0.14 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=1.3 cfs 0.14 af

Pond PCB5: PCB5 Peak Elev=195.97' Inflow=0.8 cfs 0.08 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.8 cfs 0.08 af

Pond PCB6: PCB6 Peak Elev=195.97' Inflow=0.9 cfs 0.09 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.9 cfs 0.09 af

Pond PCB7: PCB7 Peak Elev=195.01' Inflow=0.6 cfs 0.07 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.07 af

Pond PCB8: PCB8 Peak Elev=195.01' Inflow=0.6 cfs 0.07 af
15.0" Round Culvert n=0.012 L=7.0' S=0.0143 '/' Outflow=0.6 cfs 0.07 af

Pond PDMH1: PDMH1 Peak Elev=196.73' Inflow=2.4 cfs 0.42 af
15.0" Round Culvert n=0.012 L=132.0' S=0.0070 '/' Outflow=2.4 cfs 0.42 af

Pond PDMH2: PDMH2 Peak Elev=196.57' Inflow=2.4 cfs 0.42 af
15.0" Round Culvert n=0.012 L=158.0' S=0.0069 '/' Outflow=2.4 cfs 0.42 af

Pond PDMH3: PDMH3 Peak Elev=196.40' Inflow=3.7 cfs 0.63 af
15.0" Round Culvert n=0.012 L=94.0' S=0.0049 '/' Outflow=3.7 cfs 0.63 af

Pond PDMH4: PDMH4 Peak Elev=195.95' Inflow=5.4 cfs 0.80 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0049 '/' Outflow=5.4 cfs 0.80 af

Pond PDMH5: PDMH5 Peak Elev=194.91' Inflow=8.6 cfs 1.67 af
15.0" Round Culvert n=0.012 L=154.0' S=0.0055 '/' Outflow=8.6 cfs 1.67 af

Pond PDMH6: PDMH6 Peak Elev=194.96' Inflow=1.3 cfs 0.14 af
15.0" Round Culvert n=0.012 L=90.0' S=0.0194 '/' Outflow=1.3 cfs 0.14 af

Pond PDMH7: PDMH7 Peak Elev=195.00' Inflow=1.3 cfs 0.14 af
15.0" Round Culvert n=0.012 L=104.0' S=0.0051 '/' Outflow=1.3 cfs 0.14 af

Pond PP1: PP1 Peak Elev=195.03' Inflow=4.1 cfs 0.73 af
15.0" Round Culvert n=0.012 L=30.0' S=0.0067 '/' Outflow=4.1 cfs 0.73 af

Pond WP1: WPET POND 1 Peak Elev=191.52' Storage=53,436 cf Inflow=16.3 cfs 4.17 af
Outflow=9.7 cfs 4.16 af

Total Runoff Area = 11.225 ac Runoff Volume = 4.51 af Average Runoff Depth = 4.82"
68.84% Pervious = 7.728 ac 31.16% Impervious = 3.498 ac

APPENDIX B

DESIGN

B – 1

STORMWATER BEST MANAGEMENT PRACTICES

STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **Wet Pond 1 (WP1)**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

9.87	ac	A = Area draining to the practice	
3.50	ac	A_I = Impervious area draining to the practice	
0.35	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.37	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
3.64	ac-in	WQV= 1" x Rv x A	
13,226	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
1,323	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
6,613	cf	50% x WQV (check calc for extended detention volume)	
N/A	cf	V_{SED} = Sediment forebay volume	**≥ 10%WQV**
13,974	cf	V_{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no	cf	Extended Detention?[1]	**≤ 50% WQV**
-		V_{ED} = Volume of extended detention (if "yes" is given in box above)	
		E_{ED} = Elevation of WQV if "yes" is given in box above[2]	
-	cfs	$2Q_{avg}$ = 2* V_{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q_{EDmax} below)	
	cfs	Q_{EDmax} = Discharge at the E_{ED} (attach stage-discharge table)	**< $2Q_{avg}$**
-	hours	T_{ED} = Drawdown time of extended detention = $2V_{ED}/Q_{EDmax}$	**≥ 24-hrs**
3.00	:1	Pond side slopes	**≥3:1**
191.00	ft	Elevation of seasonal high water table	
188.00	ft	Elevation of lowest pond outlet	
185.00	ft	Max floor = Maximum elevation of pond bottom (ft)	
180.00	ft	Minimum floor (to maintain depth at less than 8')	**≤ 8 ft**
183.00	ft	Elevation of pond floor[3]	**≤ Max floor and > Min floor**
150.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
65.00	ft	Average width ([average of the top width + average bottom width]/2)	
2.31	:1	Length to average width ratio	**≥ 3:1**
Yes	Yes/No	Is the perimeter curvilinear.	**← Yes**
Yes	Yes/No	Are the inlet and outlet located as far apart as possible.	**← Yes**
No	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:		The pond will be pumped if necessary	
Trash Rack		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
191.52	ft	Peak elevation of the 50-year storm event	
192.25	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	**←yes**

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV **if** the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes: As discussed at the AoT pre-application meeting a waiver from Env-Wq 1500 has been requested for the Length to width ratio and sediment forebay requirement

Summary for Pond WP1: WPET POND 1

Inflow Area = 9.865 ac, 35.46% Impervious, Inflow Depth = 5.07" for 50-yr event
Inflow = 16.3 cfs @ 12.33 hrs, Volume= 4.17 af
Outflow = 9.7 cfs @ 12.85 hrs, Volume= 4.16 af, Atten= 41%, Lag= 30.9 min
Primary = 9.7 cfs @ 12.85 hrs, Volume= 4.16 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 188.00' Surf.Area= 4,429 sf Storage= 13,974 cf
Peak Elev= 191.52' @ 12.85 hrs Surf.Area= 15,151 sf Storage= 53,436 cf (39,462 cf above start)
Flood Elev= 192.25' Surf.Area= 18,296 sf Storage= 65,293 cf (51,318 cf above start)

Plug-Flow detention time= 173.8 min calculated for 3.84 af (92% of inflow)
Center-of-Mass det. time= 95.3 min (962.8 - 867.6)

Volume	Invert	Avail.Storage	Storage Description
#1	183.00'	65,293 cf	**Wet Pond (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
183.00	1,402	154.7	0	0	1,402
184.00	1,894	173.6	1,642	1,642	1,922
186.00	3,049	211.3	4,897	6,539	3,140
188.00	4,429	249.0	7,435	13,974	4,595
189.00	10,672	499.2	7,325	21,300	19,497
190.00	12,198	518.0	11,427	32,726	21,101
192.00	16,157	703.4	28,262	60,989	39,163
192.25	18,296	722.3	4,304	65,293	41,314

Device	Routing	Invert	Outlet Devices
#1	Primary	186.50'	**18.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 186.50' / 186.20' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Device 1	188.00'	**6.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	189.40'	**12.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	190.30'	**12.0" W x 5.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	191.00'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	191.60'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.7 cfs @ 12.85 hrs HW=191.52' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 9.7 cfs of 17.6 cfs potential flow)
- **2=Orifice/Grate** (Orifice Controls 2.5 cfs @ 8.64 fps)
- **3=Orifice/Grate** (Orifice Controls 4.3 cfs @ 6.42 fps)
- **4=Orifice/Grate** (Orifice Controls 2.0 cfs @ 4.83 fps)
- **5=Orifice/Grate** (Orifice Controls 0.9 cfs @ 2.37 fps)
- **6=Orifice/Grate** (Controls 0.0 cfs)

B – 2

OUTLET PROTECTION

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 22032
Date: 11/8/2023
Structure: PDMH5

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (ft)
Tw= Tailwater depth above the invert of the pipe (ft)
La= Apron length
w_1= Apron width at pipe outlet
w_2= Apron width at downstream end of apron

Input:

Outlet elev:	190.2
Tailwater elev:	190.98
Tw:	0.78
Q:	7.1
D_0:	1.25

Apron Dimensions

w_1=	**4**	(ft)
w_2=	**14**	(ft)
La=	**24**	(ft)

Apron Length:

Tw > .5D_0		Tw < .5D_0
La: 23.991		La: 17.895

Apron Width:

Tw > .5D_0		Tw < .5D_0
w_2: 13.35		w_2: 21.64

w_1: 3.75

w_1=	3.75
w_2=	13.3464157
La=	23.9910393

RipRap Sizing

d_{50}=	0.28	(ft)
d_{50}=	3.36	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.42	TO	0.56	100
0.36	TO	0.50	85
0.28	TO	0.42	50
0.08	TO	0.14	15

Minimum Depth of Rock= 0.84 (ft)

Summary for Pond PDMH5: PDMH5

[80] Warning: Exceeded Pond PP1 by 0.04' @ 12.00 hrs (1.0 cfs 0.00 af)

Inflow Area =	3.544 ac,	48.07% Impervious,	Inflow Depth =	4.43"	for 25-yr event
Inflow =	7.1 cfs @	12.02 hrs,	Volume=	1.31 af	
Outflow =	7.1 cfs @	12.02 hrs,	Volume=	1.31 af,	Atten= 0%, Lag= 0.0 min
Primary =	7.1 cfs @	12.02 hrs,	Volume=	1.31 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 193.82' @ 12.02 hrs
Flood Elev= 197.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	191.05'	**15.0" Round Culvert** L= 154.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 191.05' / 190.20' S= 0.0055 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.1 cfs @ 12.02 hrs HW=193.81' TW=189.67' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 7.1 cfs @ 5.78 fps)

OUTLET PROTECTION DESIGN CALCS

Plunge Pool - Circular Pipe

Job #: 22032
Date: 11/13/2023
Structure: WP1

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (ft)
Tw= Tailwater depth above the invert of the pipe (ft)
F= Scour Hole Depth; 0 = 1/2 Pipe depth, 1 = Full Pipe Depth
L= Scour Hole Bottom Length
La= Scour Hole Overall Length
W= Scour Hole Bottom Width
Wa= Scour Hole Overall Width

Input:

Outlet elev:	186.2
Tailwater elev:	186.4
Tw:	0.2
F:	1
Q:	7.2
D_0:	1.5

Scour Hole Dimensions

L=	**4.5**	(ft)
La=	**13.5**	(ft)
Wa=	**3.0**	(ft)
Wb=	**12.0**	(ft)

Scour Length:

F = .5D_0		F = D_0	
L:	4.50	L:	4.50
La:	9.00	La:	13.50

Scour Width:

F = .5D_0		F = D_0	
W:	3.00	W:	3.00
Wa:	7.50	Wa:	12.00

RipRap Sizing

d_{50}=	0.33	(ft)
d_{50}=	3.98	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.50	TO	0.66	100
0.43	TO	0.60	85
0.33	TO	0.50	50
0.10	TO	0.17	15

Minimum Depth of Rock=	1.00	(ft)

Summary for Pond WP1: WPET POND 1

Inflow Area = 9.865 ac, 35.46% Impervious, Inflow Depth = 3.90" for 25-yr event
Inflow = 12.8 cfs @ 12.33 hrs, Volume= 3.20 af
Outflow = 7.2 cfs @ 12.89 hrs, Volume= 3.20 af, Atten= 44%, Lag= 33.4 min
Primary = 7.2 cfs @ 12.89 hrs, Volume= 3.20 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 188.00' Surf.Area= 4,429 sf Storage= 13,974 cf
Peak Elev= 190.98' @ 12.89 hrs Surf.Area= 14,060 sf Storage= 45,529 cf (31,554 cf above start)
Flood Elev= 192.25' Surf.Area= 18,296 sf Storage= 65,293 cf (51,318 cf above start)

Plug-Flow detention time= 196.6 min calculated for 2.88 af (90% of inflow)
Center-of-Mass det. time= 100.2 min (977.3 - 877.1)

Volume	Invert	Avail.Storage	Storage Description
#1	183.00'	65,293 cf	**Wet Pond (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
183.00	1,402	154.7	0	0	1,402
184.00	1,894	173.6	1,642	1,642	1,922
186.00	3,049	211.3	4,897	6,539	3,140
188.00	4,429	249.0	7,435	13,974	4,595
189.00	10,672	499.2	7,325	21,300	19,497
190.00	12,198	518.0	11,427	32,726	21,101
192.00	16,157	703.4	28,262	60,989	39,163
192.25	18,296	722.3	4,304	65,293	41,314

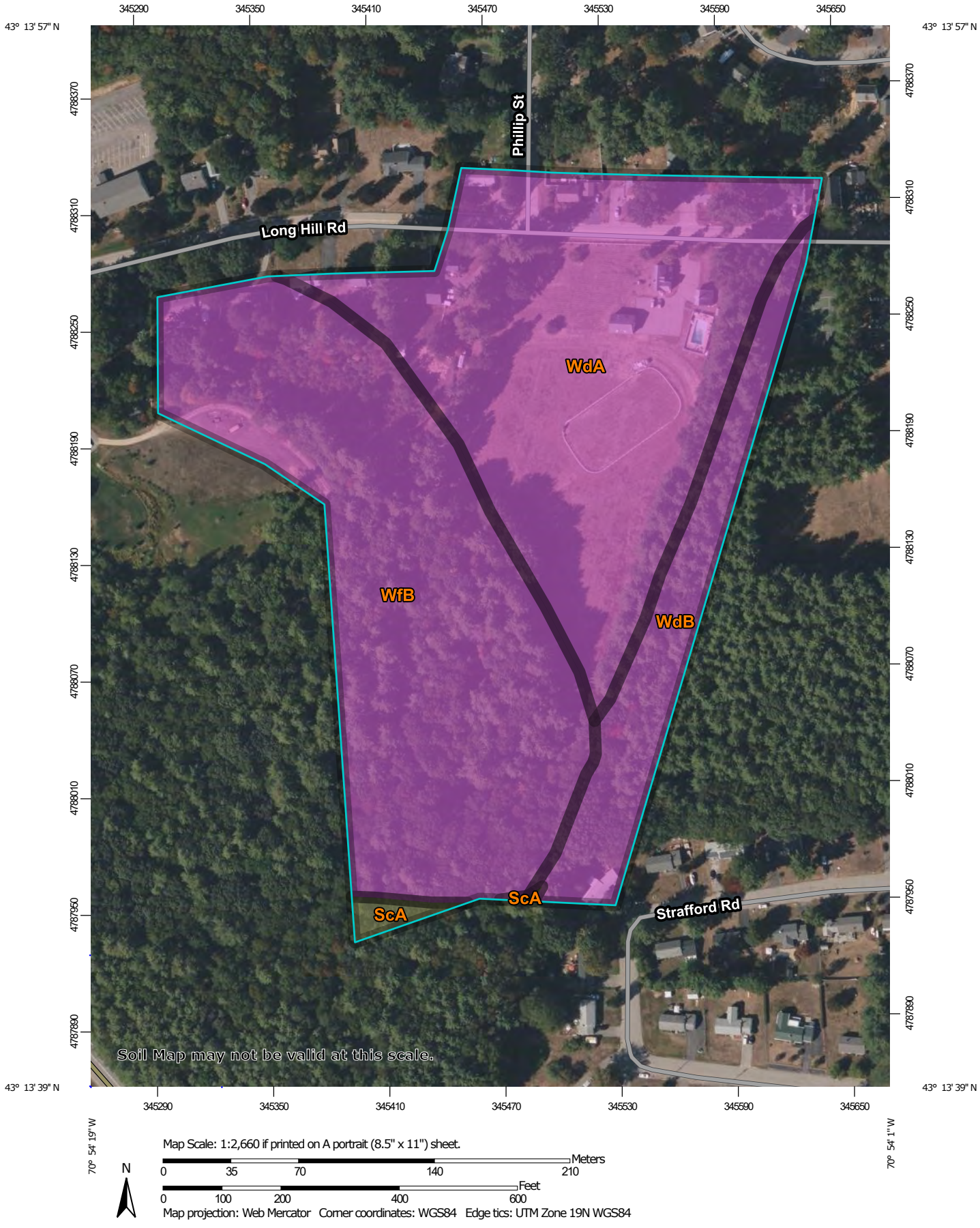
Device	Routing	Invert	Outlet Devices
#1	Primary	186.50'	**18.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 186.50' / 186.20' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Device 1	188.00'	**6.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	189.40'	**12.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	190.30'	**12.0" W x 5.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	191.00'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	191.60'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.2 cfs @ 12.89 hrs HW=190.98' TW=186.41' (Dynamic Tailwater)
↑**1=Culvert** (Passes 7.2 cfs of 16.4 cfs potential flow)
- **2=Orifice/Grate** (Orifice Controls 2.3 cfs @ 7.88 fps)
- **3=Orifice/Grate** (Orifice Controls 3.6 cfs @ 5.35 fps)
- **4=Orifice/Grate** (Orifice Controls 1.4 cfs @ 3.26 fps)
- **5=Orifice/Grate** (Controls 0.0 cfs)
- **6=Orifice/Grate** (Controls 0.0 cfs)

APPENDIX C

NRCS WEB SOIL SURVEY

Hydrologic Soil Group—Strafford County, New Hampshire
(CNE22032-WSS-HSG)



Map Scale: 1:2,660 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ScA	Scantic silt loam, 0 to 3 percent slopes	C/D	0.2	0.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	A	8.6	43.1%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	2.3	11.7%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	A	8.9	44.3%
Totals for Area of Interest			**20.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX D

SITE SPECIFIC SOILS REPORT & MAP

Michael Cuomo, Soil Scientist
6 York Pond Road, York, Maine 03909
207 363 4532
mcuomosoil@gmail.com

Stephen J. Haight, P.E., President
Civilworks New England
181 Watson Road
P.O. Box 1166
Dover, New Hampshire 03821

9 May 2023

Dear Mr. Haight;

This report is in reference to the property at 42 Long Hill Road in Dover, NH. A Site Specific soil map was prepared for this 11 acre parcel in May of 2023 to assist in planning and permitting re-development.

This report is a component of the Site Specific Soil Map and must be submitted with it for regulatory review. The map and this report comply with *'Site Specific Soil Mapping Standards for New Hampshire and Vermont'* SSSNNE Special Publication no. 3. The hydrologic soil groups given below are taken from *'Ksat Values for New Hampshire Soils'* SSSNNE Special Publication no. 5.

Soil Map Unit Descriptions:

Udipsamments (map unit 300)
Drainage class: well drained.
Parent material: topsoil stockpile over glacio-fluvial outwash.
Texture range: fine sandy loam to sand.
Description: see test pit MC11.
Landscape position: upland.
Landform: man-made stockpile.
Slope range: 0 to 3%.
Bedrock class: very deep.
Hydrologic group: B.
Flood hazard: not a floodplain soil.

Inclusions: none noted.
Use and management: land use limitations are slight. Once the topsoil is removed, the natural soil remaining is Deerfield.

Deerfield (map unit 313)
Drainage class: moderately well drained.
Parent material: glacio-fluvial outwash.
Texture range: fine sandy loam to sand.
Description: see test pit MC1.
Landscape position: upland.
Landform: plains and terraces.
Slope range: 0 to 3%.
Bedrock class: very deep.
Hydrologic group: B.
Flood hazard: not a floodplain soil.
Inclusions: areas of recent human disturbance, such as stockpiling unstable fill, were observed. There is also an abandoned horse track and riding trails where the surface has been modified. Soil disturbance associated with the existing house, driveway, and out buildings were observed.
Use and management: land uses are slightly limited by the presence of groundwater seasonally within 1.25 to 3.0 feet of the surface. This limitation can be overcome by appropriate fill, grading and drainage.

Pipestone (map unit 314)
Drainage class: poorly drained.
Parent material: glacio-fluvial outwash.
Texture range: loamy sand to coarse sand.
Description: see soil observation A.
Landscape position: low.
Landform: depressions, swales.
Slope range: 0-3%.
Bedrock class: very deep.
Hydrologic group: B.
Flood hazard: minor overbank flooding from the small stream is anticipated.
Inclusions: an intermittent stream channel exists within the map unit.
Use and management: land uses are very limited by saturation to the surface, low bearing strength in and near the intermittent stream channel, and minor seasonal flooding. This is a wetland soil and some parts of the map unit are regulated

wetlands.

Deerfield variant (map unit 915)

Drainage class: somewhat poorly drained.
Parent material: glacio-fluvial outwash.
Texture range: fine sandy loam to coarse sand.
Description: see test pit MC7.
Landscape position: foot slope and bordering wetlands.
Landform: plains and terraces.
Slope range: 0 to 3%.
Bedrock class: very deep.
Hydrologic group: B.
Flood hazard: not a floodplain soil.
Inclusions: areas of excavation close to the water table are included in these map units. There are also abandoned riding trails where the surface has been modified and piles of debris.
Use and management: land uses are limited by the presence of groundwater seasonally within 1.0 foot of the surface. This limitation can be overcome by appropriate fill, grading and drainage.

Please call if you have questions regarding this work.

Sincerely,

Michael Cuomo

Michael Cuomo
NH Certified Soil Scientist #6



Site Specific Soil Map Legend

Symbol	Soil Name	Slope	Drainage Class	Hydrologic Soil Group
300A	Udipsamments	0-3%	Well drained	B
313A	Deerfield	0-3%	Moderately well drained	B
314A	Pipestone	0-3%	Poorly drained	B
915A	Deerfield variant	0-3%	Somewhat poorly drained	B

This map is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product intended for development planning and engineering interpretations. It was produced by a professional soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a report that accompanies this map.

Michael Cuomo
NH Cert. Soil Scientist #006
9 May 2023

Michael Cuomo, Soil Scientist
6 York Pond Road, York, Maine 03909
207 363 4532
mcuomosoil@gmail.com

TEST PIT DATA

Client: Civilworks New England
Location: 42 Long Hill Road, Dover, NH
Date: 4 May 2023

Test Pit Number: MC1

Depth	Description
0-10"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
10-20"	Strong brown (7.5YR 4/6) loamy sand, blocky, friable.
20-33"	Yellowish brown (10YR 5/6) sand, single grain, loose.
33-90"	Light yellowish brown (2.5Y 6/4) sand, massive, friable, redox.
90-120"	Olive brown (2.5Y 4/4) sand, single grain, loose, redox.

Depth to Seasonal High Water Table: 33"
Depth to Bedrock: none
Observed Water: none
Soil name: Deerfield (map unit 313)

Test Pit Number: MC2

Depth	Description
0-10"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
10-20"	Dark yellowish brown (10YR 4/6) fine sandy loam, blocky, friable.
20-36"	Yellowish brown (10YR 5/6) sand, single grain, loose.
36-72"	Light olive brown (2.5Y 5/4) sand, massive, friable, redox.
72-120"	Olive brown (2.5Y 4/4) sand, massive, friable, redox.

Depth to Seasonal High Water Table: 36"
Depth to Bedrock: none
Observed Water: none
Soil name: Deerfield (map unit 313)

Test Pit Number: MC3

Depth	Description
0-10"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
10-22"	Strong brown (7.5YR 4/6) fine sandy loam, blocky, friable.
22-30"	Light yellowish brown (2.5Y 6/4) fine sand, massive, friable, redox.
30-90"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.
90-120"	Grayish brown (2.5Y 5/2) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 22"

Depth to Bedrock: none

Observed Water: none

Soil name: Deerfield (map unit 313)

Test Pit Number: MC4

Depth	Description
0-10"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
10-20"	Strong brown (7.5YR 4/6) fine sandy loam, blocky, friable.
20-30"	Dark yellowish brown (10YR 4/6) sand, single grain, loose.
30-90"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.
90-120"	Grayish brown (2.5Y 5/2) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 30"

Depth to Bedrock: none

Observed Water: none

Soil name: Deerfield (map unit 313)

Test Pit Number: MC5

Depth	Description
0-9"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
9-16"	Strong brown (7.5YR 4/6) fine sandy loam, blocky, friable.
16-26"	Dark yellowish brown (10YR 4/6) sand, single grain, loose.
26-108"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 26"

Depth to Bedrock: none

Observed Water: none

Soil name: Deerfield (map unit 313)

Test Pit Number: MC6

Depth	Description
2"	Forest litter.
0-9"	Very dark grayish brown (10YR 3/2) fine sandy loam, granular, friable.
9-13"	Brownish yellow (10YR 6/6) fine sandy loam, blocky, friable.
13-18"	Yellowish brown (10YR 5/6) fine sandy loam, blocky, friable, redox.
18-40"	Olive yellow (2.5Y 6/6) sand, massive, loose, redox.
40-96"	Light yellowish brown (2.5Y 6/3) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 13"
Depth to Bedrock: none
Observed Water: 36"
Soil name: Deerfield somewhat poorly drained variant (map unit 915)

Test Pit Number: MC7

Depth	Description
2"	Forest litter.
0-10"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
10-13"	Yellowish brown (10YR 5/4) fine sandy loam, blocky, friable.
13-18"	Yellowish brown (10YR 5/4) fine sandy loam, blocky, friable, redox.
18-40"	Brown (7.5YR 5/4) coarse sand, massive, loose, redox.
40-104"	Light yellowish brown (2.5Y 6/3) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 13"
Depth to Bedrock: none
Observed Water: 30"
Soil name: Deerfield somewhat poorly drained variant (map unit 915)

Test Pit Number: MC8

Depth	Description
2"	Forest litter.
0-6"	Brown (7.5YR 4/4) fine sandy loam, granular, friable.
6-12"	Light yellowish brown (10YR 6/4) fine sandy loam, blocky, friable.
12-18"	Light yellowish brown (2.5Y 6/4) fine sandy loam, blocky, friable, redox.
18-96"	Light yellowish brown (2.5Y 6/3) fine sand, massive, friable, redox.

Depth to Seasonal High Water Table: 12"
Depth to Bedrock: none
Observed Water: 30"
Soil name: Deerfield somewhat poorly drained variant (map unit 915)

Test Pit Number: MC9

Depth	Description
3"	Forest litter.
0-8"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
8-16"	Dark yellowish brown (10YR 4/6) fine sandy loam, blocky, friable.
16-24"	Yellowish brown (10YR 5/4) loamy sand, massive, friable.
24-96"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 24"
Depth to Bedrock: none
Observed Water: 40"
Soil name: Deerfield (map unit 313)

Test Pit Number: MC10

Depth	Description
3"	Forest litter.
0-10"	Brownish yellow (10YR 6/6) fine sandy loam, granular, friable.
10-20"	Yellowish brown (10YR 5/6) loamy sand, granular, friable.
20-36"	Light yellowish brown (2.5Y 6/4) sand, massive, loose, redox.
36-96"	Light yellowish brown (2.5Y 6/3) fine sand, massive, loose, redox.

Depth to Seasonal High Water Table: 20"
Depth to Bedrock: none
Observed Water: 48"
Soil name: Deerfield (map unit 313)

Test Pit Number: MC11

Depth	Description
2"	Forest litter.
0-36"	Dark brown (10YR 3/3) loamy sand topsoil stockpile, massive, friable.
36-46"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
46-52"	Dark yellowish brown (10YR 4/6) fine sandy loam, blocky, friable.
52-60"	Yellowish brown (10YR 5/6) loamy sand, blocky, friable.
60-112"	Light yellowish brown (2.5Y 6/3) fine sand, massive, loose, redox.

Depth to Seasonal High Water Table: 60"
Depth to Bedrock: none
Observed Water: 66"
Soil name: Udipsamments (map unit 300)

Test Pit Number: MC12

Depth	Description
2"	Forest litter.
0-6"	Dark brown (10YR 3/3) fine sandy loam, granular, friable.
6-15"	Dark yellowish brown (10YR 4/6) fine sandy loam, blocky, friable.
15-20"	Yellowish brown (10YR 6/6) loamy sand, blocky, friable.
20-28	Yellowish brown (10YR 6/6) sand, single grain, loose.
28-100"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 28"
Depth to Bedrock: none
Observed Water: 40"
Soil name: Deerfield (map unit 313)

Test Pit Number: MC13

Depth	Description
1"	Forest litter.
0-5"	Black (10YR 2/1) fine sandy loam, granular, friable.
5-12"	Strong brown (7.5YR 4/6) fine sandy loam, blocky, friable.
12-18"	Dark yellowish brown (10YR 4/6) loamy sand, blocky, friable.
18-30"	Olive yellow (2.5Y 6/6) sand, single grain, loose, redox.
30-72"	Light olive brown (2.5Y 5/4) sand, massive, loose, redox.
72-106"	Light yellowish brown (2.5Y 6/3) sand, massive, loose, redox.

Depth to Seasonal High Water Table: 18"
Depth to Bedrock: none
Observed Water: none
Soil name: Deerfield (map unit 313)

Test Pit Number: MC14

Depth	Description
3"	Forest litter.
0-8"	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
8-20"	Yellowish brown (10YR 5/6) fine sandy loam, blocky, friable.
20-24"	Yellowish brown (10YR 5/4) loamy sand, blocky, friable.
24-36"	Light yellowish brown (2.5Y 6/4) fine sand, massive, friable, redox.
36-60"	Light yellowish brown (2.5Y 6/3) sand, massive, loose, redox.
60-96"	Light olive brown (2.5Y 5/3) fine sand, massive, friable, redox.

Depth to Seasonal High Water Table: 24"
Depth to Bedrock: none
Observed Water: 48"
Soil name: Deerfield (map unit 313)

Test Pit Number: MC15

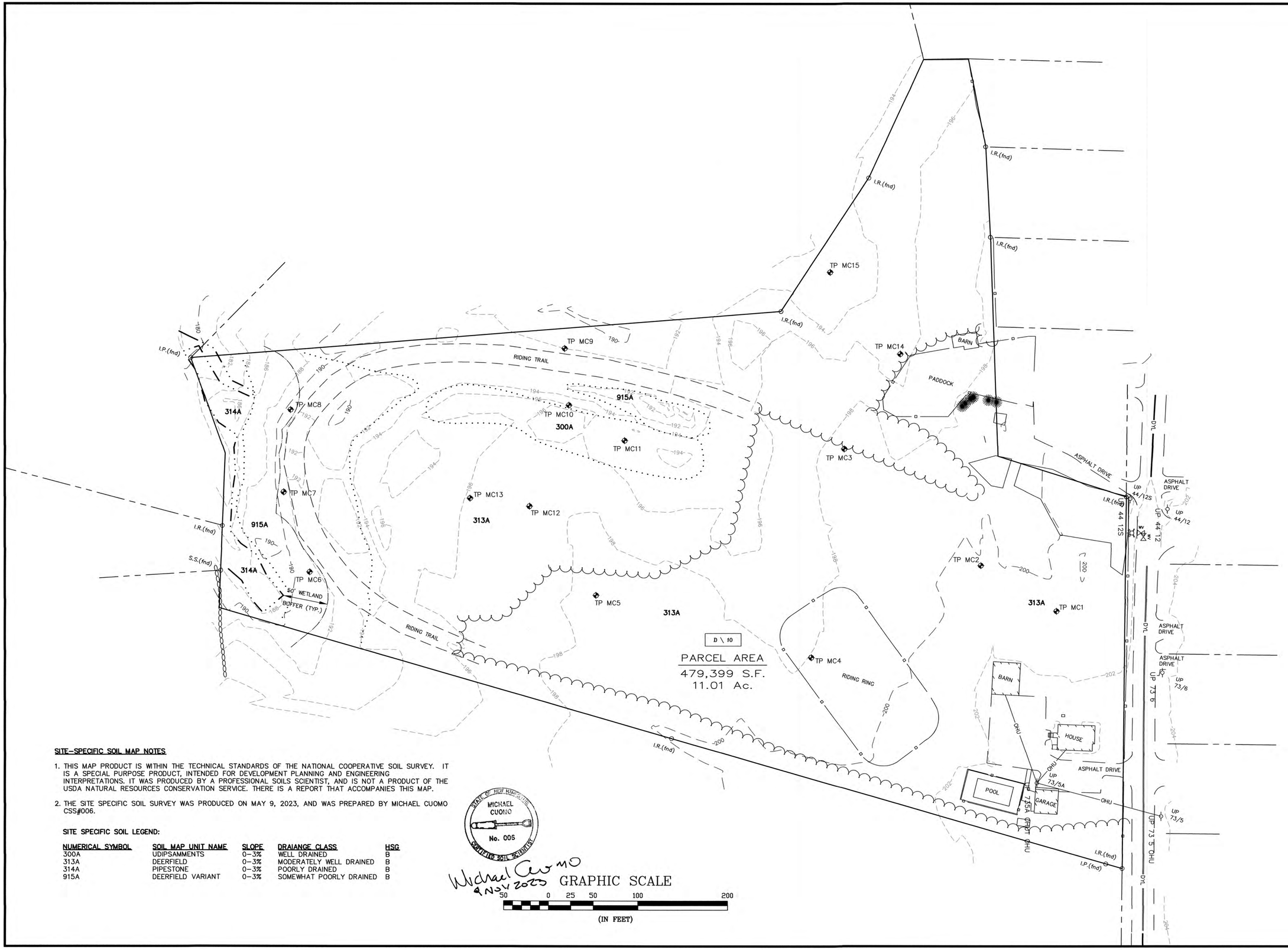
Depth	Description
2"	Forest litter.
0-15	Very dark brown (10YR 2/2) fine sandy loam, granular, friable.
15-24"	Yellowish brown (10YR 5/6) fine sandy loam, blocky, friable.
24-32"	Light yellowish brown (2.5Y 6/4) loamy fine sand, blocky, friable, redox.
32-72"	Light olive brown (2.5Y 5/4) fine sand, massive, loose, redox.
72-100"	Dark grayish brown (2.5Y 4/2) loamy fine sand, massive, friable, redox.

Depth to Seasonal High Water Table: 24"
Depth to Bedrock: none
Observed Water: 48"
Soil name: Deerfield (map unit 313)

Soil Observation A (made with hand auger)

Depth	Description
2"	Forest litter.
0-10	Black (2.5Y 2.5/1) loamy sand, massive, friable, redox.
10-15"	Very dark gray (2.5Y 3/1) loamy sand, massive, friable, redox.
15-21	Grayish brown (2.5Y 5/2) loamy sand, massive, friable, redox.
21-30"	Dark yellowish brown (10YR 4/6) fine sand, massive, friable, redox.
30-33"	Olive brown (2.5Y 4/4) coarse sand, massive, loose, redox.
33-40"	Light yellowish brown (2.5Y 6/3) fine sand, massive, friable, redox.

Depth to Seasonal High Water Table: surface
Depth to Bedrock: none
Observed Water: 12"
Soil name: Pipestone (map unit 314)



SITE-SPECIFIC SOIL MAP NOTES

1. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR DEVELOPMENT PLANNING AND ENGINEERING INTERPRETATIONS. IT WAS PRODUCED BY A PROFESSIONAL SOILS SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

2. THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED ON MAY 9, 2023, AND WAS PREPARED BY MICHAEL CUOMO CSS#006.

SITE SPECIFIC SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	SLOPE	DRAIANGE CLASS	HSG
300A	UDIPSAMMENTS	0-3%	WELL DRAINED	B
313A	DEERFIELD	0-3%	MODERATELY WELL DRAINED	B
314A	PIPESTONE	0-3%	POORLY DRAINED	B
915A	DEERFIELD VARIANT	0-3%	SOMEWHAT POORLY DRAINED	B

Michael Cuomo 9 Nov 2023

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

NO.	REVISION	APP'D	DATE

DATE: 11-2-2023
SCALE: 1"=50'
DRAWN BY: CAD
DESIGN BY: CAD
APPROVED BY:MC
PROJECT NO: 23032
FILE: SOILS

SITE SPECIFIC SOILS REPORT

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

TDR SUBDIVISION
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D LOT 10

S-1

APPENDIX E

WATERSHED PLANS

E – 1

PRE-DEVELOPMENT CONDITIONS

NRCS WEB SOIL SURVEY SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	SLOPE	DRAINAGE CLASS	HSG
WdA	WINDSOR LOAMY SAND	0–3%	WELL DRAINED	A

SITE SPECIFIC SOIL LEGEND:

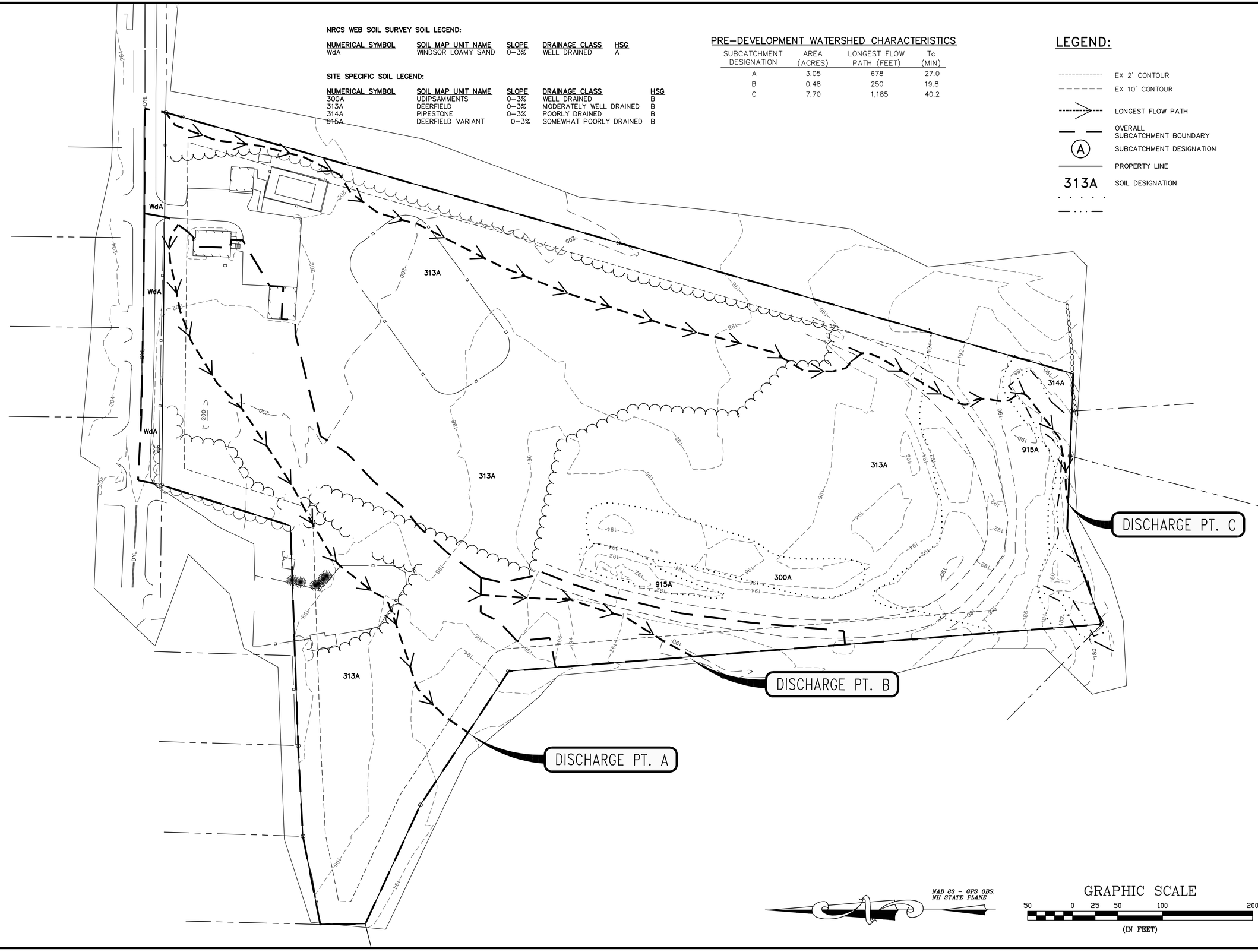
NUMERICAL SYMBOL	SOIL MAP UNIT NAME	SLOPE	DRAINAGE CLASS	HSG
300A	UDIPSAMMENTS	0–3%	WELL DRAINED	B
313A	DEERFIELD	0–3%	MODERATELY WELL DRAINED	B
314A	PIPESTONE	0–3%	POORLY DRAINED	B
915A	DEERFIELD VARIANT	0–3%	SOMEWHAT POORLY DRAINED	B

PRE–DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	3.05	678	27.0
B	0.48	250	19.8
C	7.70	1,185	40.2

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (A) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- 313A SOIL DESIGNATION



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CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 11–8–23
SCALE: 1"=50'
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: DRN

PRE–DEVELOPMENT WATERSHED PLAN

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

TDR SUBDIVISION
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D LOT 10

WS1

E – 2

POST-DEVELOPMENT CONDITIONS

NRCS WEB SOIL SURVEY SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	SLOPE	DRAINAGE CLASS	HSG
WdA	WINDSOR LOAMY SAND	0–3%	WELL DRAINED	A

SITE SPECIFIC SOIL LEGEND:

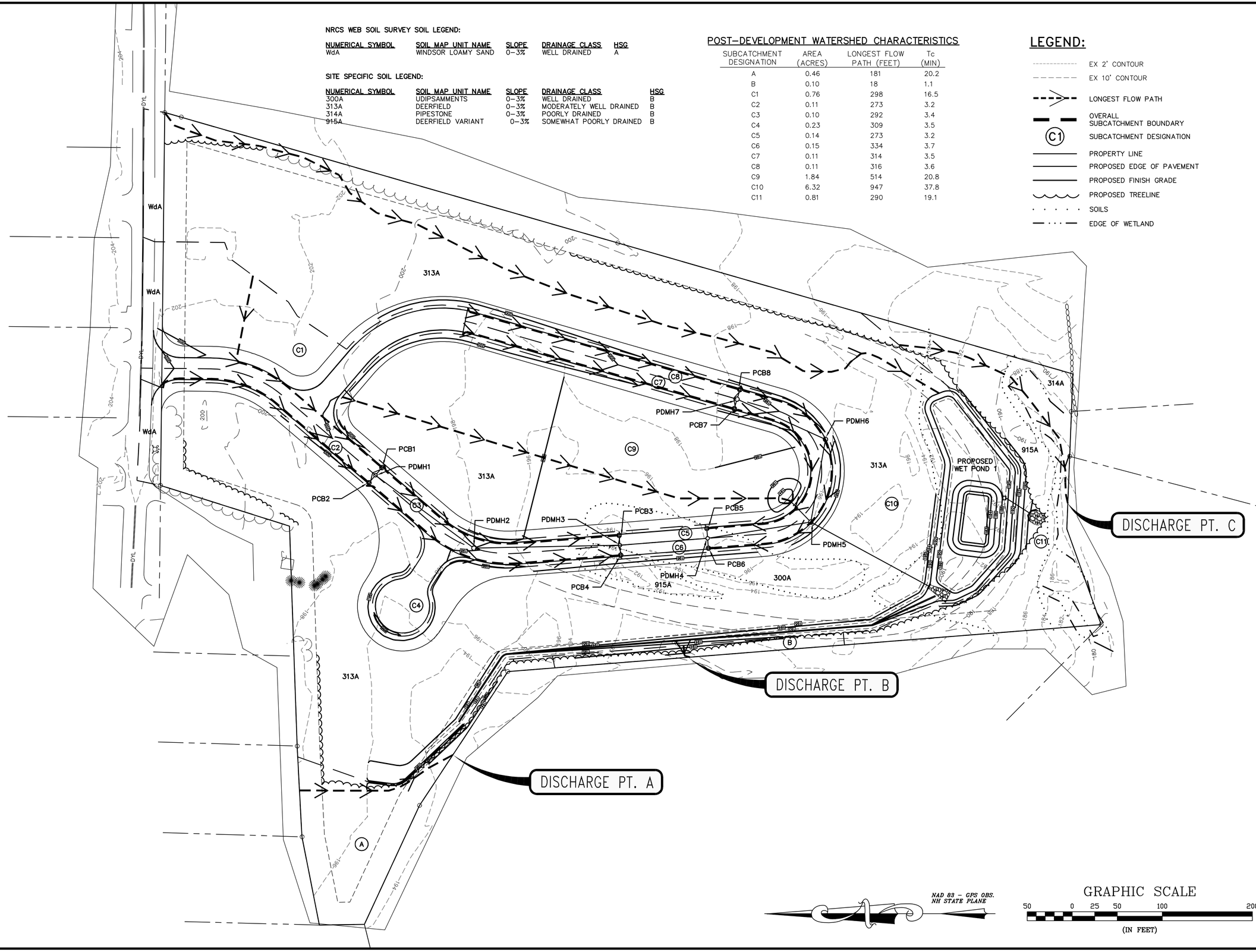
NUMERICAL SYMBOL	SOIL MAP UNIT NAME	SLOPE	DRAINAGE CLASS	HSG
300A	UDIPSAMMENTS	0–3%	WELL DRAINED	B
313A	DEERFIELD	0–3%	MODERATELY WELL DRAINED	B
314A	PIPESTONE	0–3%	POORLY DRAINED	B
915A	DEERFIELD VARIANT	0–3%	SOMEWHAT POORLY DRAINED	B

POST–DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.46	181	20.2
B	0.10	18	1.1
C1	0.76	298	16.5
C2	0.11	273	3.2
C3	0.10	292	3.4
C4	0.23	309	3.5
C5	0.14	273	3.2
C6	0.15	334	3.7
C7	0.11	314	3.5
C8	0.11	316	3.6
C9	1.84	514	20.8
C10	6.32	947	37.8
C11	0.81	290	19.1

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (C1) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED FINISH GRADE
- PROPOSED TREELINE
- SOILS
- EDGE OF WETLAND



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

NO.	REVISION	APP'D	DATE

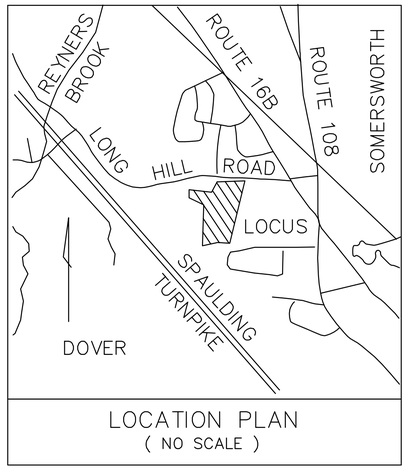
DATE: 11-8-23
SCALE: 1"=50'
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: DRN

POST–DEVELOPMENT WATERSHED PLAN

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

TDR SUBDIVISION
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D LOT 10

WS2



LOCATION PLAN
(NO SCALE)

LONG HILL PLACE
SUBDIVISION PLAN

TAX MAP D, LOT 10
42 LONG HILL ROAD
DOVER, NH
DECEMBER 07, 2023

OWNER/APPLICANT
DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801

_____ _____
DATE

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

LAND SURVEYOR
McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 1166
DOVER, NH 03821
(603) 742-0911

WETLAND SCIENTIST
DAMON E. BURT, CWS #00163
FRAGGLE ROCK ENVIRONMENTAL
38 GARLAND ROAD
STRAFFORD, NH 03884
(603) 969-5574

LANDSCAPE ARCHITECT
IRONWOOD DESIGN GROUP LLC
55 MAIN STREET #129
NEWMARKET, NH 03857
(603) 772-0590

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PLANNING FILE NO.:



ABUTTERS LIST

TAX MAP	LOT NO.	NAME & ADDRESS
D 10	10	DIAMOND CAPITAL LLC 170 COMMERCE WAY PORTSMOUTH, NH 03801
D 10-A	10-A	CITY OF DOVER 288 CENTRAL AVE DOVER, NH 03820
A 13-M	13-M	ZICKEFOOSE DANIEL J & NUGENT DEBORAH S 29 LONG HILL ROAD DOVER, NH 03820
A 9-G	9-G	BROWN ANDREW JUSTIN 2 ALLAN STREET DOVER, NH 03820
A 9-D	9-D	LEWIS KYLED & LEWIS LORA B 8 ALLAN STREET DOVER, NH 03820
A 9-F	9-F	KETEL LICIAM & KETEL STEPHEN M A ALLAN STREET DOVER, NH 03820
A 9-E	9-E	CRAFT JENNIFER A 6 ALLAN STREET DOVER, NH 03820
A 13-I	13-I	CARON JUDITH L & WENDY L RIGAZIO CO-TRUSTEES, THE JUDITH L CARON REVOCABLE LIVING TRUST 7 PHILIP STREET DOVER, NH 03820
A 16-B	16-B	PIKE JOHN E & REGINA K TRUSTEES PIKE FAMILY TRUST 2 PHILIP STREET DOVER, NH 03820
A 11	11	ALLEN WILLIAM R ALLEN GAIL S 33 LONG HILL ROAD DOVER, NH 03820
A 12	12	HARPER KELLY A & LOOMER MATHEW 39 LONG HILL ROAD DOVER, NH 03820
A 13-E	13-E	DROUIN CHRISTOPHER M & DROUIN DIANA E 43 LONG HILL ROAD DOVER, NH 03820
A 13-H	13-H	HILLS GEPFFREY 47 LONG HILL ROAD DOVER, NH 03820
A 13-N	13-N	MOODY TIMOTHY S & MOODY KRISTIN L 51 LONG HILL ROAD DOVER, NH 03820
A 16-A	16-A	PARKER THOMAS J & TUCKER SHENANNE R 57 LONG HILL ROAD DOVER, NH 03820
A 16-D	16-D	FERLAND NORMAN R FERLAND RACHEL L 63 LONG HILL ROAD DOVER, NH 03820
A 16-E	16-E	MALES KATHLEEN B 67 LONG HILL ROAD DOVER, NH 03820
A 16-F	16-F	GAIGE ROBIN L 71 LONG HILL ROAD DOVER, NH 03820
A 16-G	16-G	STACY NEAL H STACY LISA R 75 LONG HILL ROAD DOVER, NH 03820
A 16-H	16-H	JEHOVAHS WITNESSES INC C/O/ PARISH ADMINISTRATOR 430 STOCKDALE CIRCLE ROLLINSFORD, NH 03869
A 53-E	53-F	GAGNE NANCY GAGNE GARY A 86 LONG HILL ROAD DOVER, NH 03820

ABUTTERS LIST

TAX MAP	LOT NO.	NAME & ADDRESS
A 53-E	53-E	CHARLAND JOSPEH & VACCARO GERALDINE 82 LONG HILL ROAD DOVER, NH 03820
A 53-D	53-D	BAKER PETER N & MALONEY JULIE A 78 LONG HIL ROAD DOVER, NH 03820
A 53-C	53-C	ABBOTT DAVID 74 LONG HILL ROAD DOVER, NH 03820
A 53-B	53-B	NELSON CHRISTOPHER W & RAPAJ ALINA A 70 LONG HILL ROAD DOVER, NH 03820
A 53-A	53-A	STEPHANY RYAN T & DIONNE SHELLY E 66 LONG HILL ROAD DOVER, NH 03820
A 53	53	BATTIS BONNIE & PAUL TRUSTEES BATTIS BONNIE & PAUL LIVING TRUSTS 60 LONG HILL ROAD DOVER, NH 03820
A 53-G-1	53-G-1	PLANTE SHANNON & PLANTE JORDAN 92 LONG HILL ROAD DOVER, NH 03820
A 53-G-2	53-G-2	CASSIDY KENT M CASSIDY ANN M 96 LONG HILL ROAD DOVER, NH 03820
D 10-S	10-S	SIMARDR JAMES & KROLL-SIMARD KATHLEEN M 25 STRAFFORD ROAD DOVER, NH 03820
D 10-Y	10-Y	FOGG ALEX L & RAMMER BETHANIE 27 STRAFFORD ROAD DOVER, NH 03820
D 10-R	10-R	GOWDY DONALD R JR & ROSEMARY A TRUSTEES GOWDY FAMILY REVOCABLE TRUST 29 STRAFFORD ROAD DOVER, NH 03820
D 10-L	10-L	LYNCH JAMES P & SULLIVAN BRENDA L 11 WELLINGTON AVENUE DOVER, NH 03820
D 10-H	10-H	KOZLOWSKI KRZYSZTOF S & RENATA W TRUSTEE THE KOZLOWSKI LIVING TRUST 9 ACADEMY STREET ROCHESTER, NH 03867
D 10-X	10-X	DANEAU ROBERT R & THERESA Y TRUSTEES DANEAU R AND T REVOCABLE TRUST 23 STAFFORD ROAD DOVER, NH 03820
D 10-B	10-B	OUIMETTE ANDREW P & DANIELLE E TRUSTEES OUIMETTE FAMILY REVOCABLE TRUST 21 STRAFFORD ROAD DOVER, NH 03820
D 10-E	10-E	DALEY DAWN A 20 STRAFFORD ROAD DOVER, NH 03820
D 9-C	9-C	WATERHOUSE TIMOTHY J & WATERHOUSE MELISSA S 26 WELLINGTON AVNUE DOVER, NH 03820

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

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

NO.	REVISION	APP'D	DATE

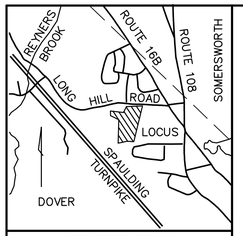
DATE: 12-7-23
SCALE: 1"=120'
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

NEIGHBORHOOD PLAN

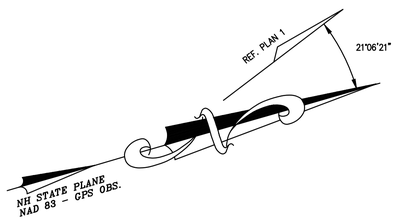
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

2



LOCATION PLAN
(NO SCALE)



REFERENCE PLANS:

1.) LOT LINE ADJUSTMENTS FOR EDMOND GRADY AND GEORGE RIVERS, LONG HILL & STRAFFORD ROADS, DOVER, NEW HAMPSHIRE; SCALE: 1" = 100'; DATED: 10/18/88; BY: McENEANEY SURVEY ASSOCIATES, INC.; RECORDED S.C.R.D. PLAN 35–131.

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
S.S.(fnd) – STEEL STAKE (FOUND)
I.R.(fnd) – IRON ROD (FOUND)
I.P.(fnd) – IRON PIPE (FOUND)
UP 73/5 – UTILITY POLE W/ I.D. NUMBERS
WV – WATER GATE VALVE
WSO – WATER SHUT OFF
HYD – FIRE HYDRANT
ELEV. – ELEVATION
202 – CONTOUR LINE – 2' INTERVAL
WETLAND
EDGE OF WETLAND
TBM – TEMPORARY BENCHMARK
SOIL BOUNDARY
WfB – SOIL CLASSIFICATION

No.	Bearing	Distance
L1	N87°45'03"W	41.60'
L2	N87°45'02"W	50.00'
L3	N00°48'56"W	50.00'

A / 53D
PETER N. BAKER
JULIE A. MALONEY
78 LONG HILL ROAD
DOVER, NH 03820
2923 / 609

A / 53C
DAVID J. ABBOTT
74 LONG HILL ROAD
DOVER, NH 03820
3492 / 431

A / 53B
CHRISTOPHER W. NELSON
ALINA A. RAPAJ
70 LONG HILL ROAD
DOVER, NH 03820
4809 / 761

A / 53A
RYAN T. STEPHANY
SHELLY E. DIONE
66 LONG HILL ROAD
DOVER, NH 03820
4886 / 104

A / 53C–1
SHANNON PLANTE
JORDAN PLANTE
92 LONG HILL ROAD
DOVER, NH 03820
4190 / 659

A / 53
BONNIE BATTIS LIVING TRUST
PAUL BATTIS LIVING TRUST
60 LONG HILL ROAD
DOVER, NH 03820
4230 / 356

A / 16A
THOMAS J. PARKER
SHENANNE R. TUCKER
57 LONG HILL ROAD
DOVER, NH 03820
2845 / 738

A / 13N
TIMOTHY S. MOODY
KRISTIN L. MOODY
51 LONG HILL ROAD
DOVER, NH 03820
3565 / 858

A / 13H
GEOFFREY HILLS
47 LONG HILL ROAD
DOVER, NH 03820
4577 / 678

A / 13E
CHRISTOPHER M. DROUIN
DIANA E. DROUIN
43 LONG HILL ROAD
DOVER, NH 03820
3306 / 999

A / 12
KELLY A. HARPER
MATTHEW LOOMER
39 LONG HILL ROAD
DOVER, NH 03820
4437 / 292

A / 53C–2
KENT M. CASSIDY
ANN M. CASSIDY
96 LONG HILL ROAD
DOVER, NH 03820
2093 / 697

D / 9C
TIMOTHY J. WATERHOUSE
MELISSA S. WATERHOUSE
26 WELLINGTON AVENUE
DOVER, NH 03820
4157 / 476

D / 10S
JAMES R. SIMARD
KATHLEEN M. KROLL–SIMARD
25 STRAFFORD ROAD
DOVER, NH 03820
4911 / 430

D / 10A
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
981 / 350

D \ 10
PARCEL AREA
479,399 S.F.
11.01 Ac.

L3 N78°51'44"E 99.88'
N65°07'14"W 145.58'
N86°57'54"E 100.84'
N56°35'48"W 178.01'
N88°01'04"E 244.33'
N17°30'48"E 150.10'
S89°21'22"E 413.98'
660.62' N04°31'35"W
S70°14'55"W 112.90'
N87°45'02"W 80.52'
L2
L1
(525.55')
(523.38')
S16°03'48"W 1048.93'

WfB
WdA
WdB

BARN
PADDOCK
RIDING RING
EXISTING HOUSE
GARAGE
POOL
ENCROACHMENTS ONTO SUBJECT PARCEL BY ABUTTING PARCEL
RIDING TRAIL
50' WETLAND BUFFER (TYP.)
EXISTING TREE LINE (TYP.)
ASPHALT DRIVE
PUBLIC; VARIABLE WIDTH R.O.W.
LONG HILL ROAD
PHILLIP STREET
I.R.(fnd)
I.P.(fnd)
S.S.(fnd)
UP 44/12S
UP 44/12
UP 73/6
UP 73/5A
UP 73/5
OHU
DYK

TBM 1
"X" ON FLANGE BOLT
ELEV. 204.30

TBM 2
NAIL SET IN UP 73/5
ELEV. 204.48

MATCH TO SHEET 4

NOTES:

1.) OWNER OF RECORD:
DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801
S.C.R.D. VOLUME 5038, PAGE 230.

2.) D \ 10 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 479,399 S.F. / 11.01 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A TRANSFER OF DEVELOPMENT RIGHTS (TDR) SUBDIVISION BASED ON CALCULATIONS FOR A SINGLE FAMILY DETACHED RESIDENTIAL UNIT.

5.) ZONING DISTRICT: RURAL RESIDENTIAL (R–12)

ON MARCH 28, 2023 THE DOVER PLANNING BOARD VOTED TO CONDITIONALLY APPROVE THE REQUEST TO GRANT UP TO SIX TRANSFER OF DEVELOPMENT RIGHTS (TDR) UNITS/LOTS AND FOUND THE CRITERIA OF 170–27.2 HAVE BEEN MET.

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= N/A
MINIMUM FRONTAGE	= 40 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 20 FEET
SIDE SETBACK	= 10 FEET
REAR SETBACK	= 10 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.

7.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING NOVEMBER 2022 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

8.) 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 .

9.) THE SOIL TYPES ON THE SITE ARE:
WdA WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
WfB WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 0 TO 8 PERCENT SLOPES.
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

10.) WETLANDS SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES, ON OCTOBER 7, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE SUBJECT PARCEL IS CURRENTLY SERVICED BY MUNICIPAL WATER AND SUBSURFACE DISPOSAL SYSTEM. MUNICIPAL SEWER IS AVAILABLE AT THE INTERSECTION OF LONG HILL ROAD AND OLD ROCHESTER ROAD (APPROXIMATELY 715'±).

SHEET 3

EXISTING CONDITIONS PLAN OF LAND
OF
LONG HILL PLACE
PREPARED FOR
DIAMOND CAPITAL, LLC
TAX MAP D, LOT No. 10
42 LONG HILL ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. ––

DRAWN BY: KJF / RJM	FILE: 2429\D\22–2429 TDR SUBD
SCALE: 1" = 50'	DATE: NOVEMBER 28, 2023

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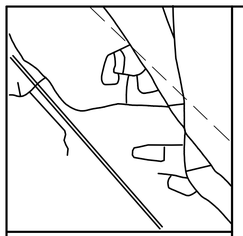
NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22–2429	EXIST. COND.	22–11	32–45
PROJECT NO	TYPE	FIELDBOOK & PAGES	

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

STATE OF NEW HAMPSHIRE – No. 661 – KEVIN M. McENEANEY – LICENSED LAND SURVEYOR – SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911
SURVEYING – PLANNING – CONSULTING



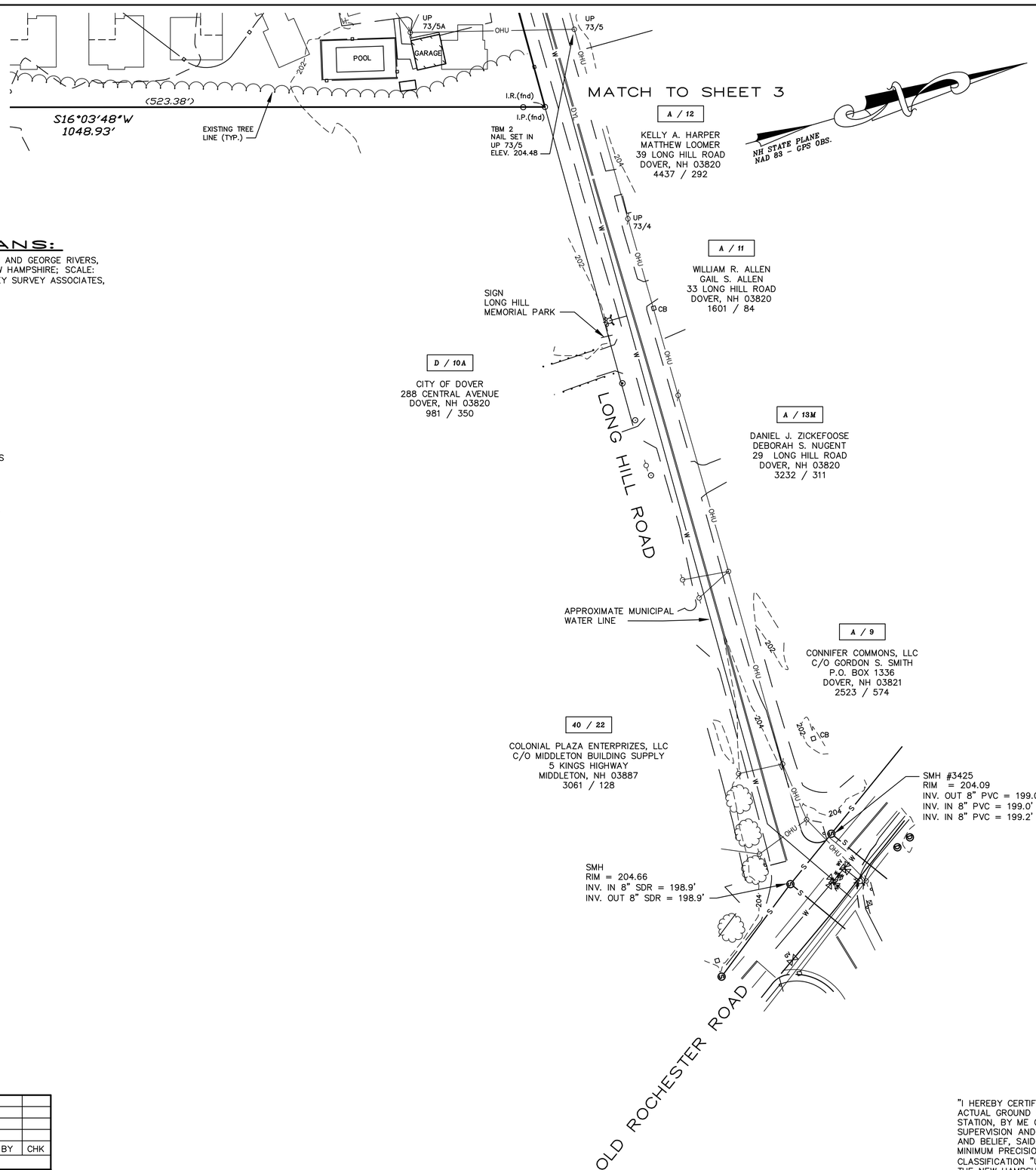
LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENTS FOR EDMOND GRADY AND GEORGE RIVERS, LONG HILL & STRAFFORD ROADS, DOVER, NEW HAMPSHIRE; SCALE: 1" = 100'; DATED: 10/18/88; BY: McENEANEY SURVEY ASSOCIATES, INC.; RECORDED S.C.R.D. PLAN 35–131.

LEGEND

S.F.	– SQUARE FEET
Ac.	– ACRE
(TYP.)	– TYPICAL
±	– MORE OR LESS
S.C.R.D.	– STRAFFORD COUNTY REGISTRY OF DEEDS
S.S.(fnd)	– STEEL STAKE (FOUND)
I.R.(fnd)	– IRON ROD (FOUND)
I.P.(fnd)	– IRON PIPE (FOUND)
UP 73/5	– UTILITY POLE W/ I.D. NUMBERS
WV	– WATER GATE VALVE
WSO	– WATER SHUT OFF
HYD	– FIRE HYDRANT
ELEV.	– ELEVATION
202	– CONTOUR LINE – 2' INTERVAL
	– WETLAND
	– EDGE OF WETLAND
TBM	– TEMPORARY BENCHMARK
	– SOIL BOUNDARY
WfB	– SOIL CLASSIFICATION



NOTES:

1.) THE INTENT OF THIS PLAN IS TO DEPICT THE EXISTING CONDITIONS OF THE PORTION OF LONG HILL ROAD BETWEEN THE SUBJECT PARCEL AND OLD ROCHESTER ROAD.

2.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022. TOPOGRAPHIC INFORMATION SHOWN IS BASED ON FIELD OBSERVATIONS MADE DURING NOVEMBER 2022 BY THIS OFFICE. CONTOUR INTERVAL IS 2 FOOT.

3.) 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.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22–2429	EXIST. COND.	22–11	32–45
PROJECT NO	TYPE	FIELDBOOK & PAGES	

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

SHEET 4

LONG HILL ROAD
EXISTING CONDITIONS PLAN OF LAND
OF
LONG HILL PLACE
PREPARED FOR
DIAMOND CAPITAL, LLC
TAX MAP D, LOT No. 10
42 LONG HILL ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. ––

DRAWN BY: KJF / RJM	FILE: 2429\D\22–2429 TDR SUBD
SCALE: 1" = 50'	DATE: NOVEMBER 28, 2023

50 25 0 25 50 100 150 200

STATE OF NEW HAMPSHIRE — No. 661 KEVIN M. McENEANEY — LICENSED LAND SURVEYOR — SIGNATURE

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

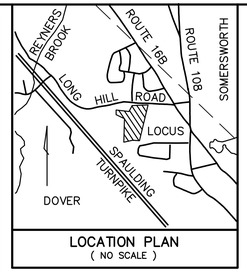
SURVEYING – PLANNING – CONSULTING

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C1	17°38'13"	150.00	46.17	45.99	N09°27'45"E
C2	90°00'00"	25.00	39.27	35.36	N45°38'38"E
C3	85°10'58"	25.00	37.17	33.84	N06°48'13"W
C4	17°30'24"	150.00	45.83	45.65	N27°02'04"E
C5	18°32'21"	150.00	48.54	48.32	N40°07'32"W
C6	25°01'36"	150.00	65.52	65.00	N18°20'33"W
C7	21°53'34"	150.00	57.31	56.97	N05°07'01"E
C8	02°29'23"	95.00	4.13	4.13	N17°18'30"E
C9	18°33'47"	95.00	30.78	30.64	N27°50'05"E
C10	24°18'23"	95.00	40.30	40.00	N49°16'10"E
C11	24°18'23"	95.00	40.30	40.00	N73°34'33"E
C12	24°18'23"	95.00	40.30	40.00	S82°07'04"E
C13	24°18'23"	95.00	40.30	40.00	S57°48'41"E
C14	24°18'23"	95.00	40.30	40.00	S33°30'18"E
C15	16°49'32"	95.00	27.90	27.80	S12°56'21"E
C16	56°15'04"	75.00	73.63	70.71	S29°05'44"E
C17	03°33'22"	150.00	9.31	9.31	S02°44'54"E
C18	43°01'07"	50.00	37.54	36.67	S35°42'43"E
C19	50°34'53"	50.00	44.14	42.72	S11°05'17"W
C20	58°36'54"	50.00	51.15	48.95	S65°41'10"W
C21	82°10'27"	75.00	107.57	98.58	S81°41'31"W
C22	27°47'07"	50.00	24.25	24.01	N71°06'49"W
C23	90°00'00"	25.00	39.27	35.36	S44°21'22"E
C24	39°57'39"	100.00	69.74	68.34	S20°37'28"W
C25	08°42'07"	100.00	15.19	15.17	N00°10'31"W
C26	36°25'45"	100.00	63.58	62.52	N22°23'25"E
C27	90°00'00"	25.00	39.27	35.36	N85°36'17"E
C28	56°15'16"	100.00	98.18	94.29	S21°16'05"E
C29	09°12'15"	100.00	16.06	16.05	S11°27'41"W
C30	159°24'37"	45.00	125.20	88.55	N84°13'53"W
C31	90°00'00"	45.00'	70.69'	63.64'	N49°31'35"W
C32	12°39'46"	95.00'	21.00'	20.95'	S45°32'56"E

No.	Bearing	Distance
L1	S89°21'22"E	53.39'
L2	N00°38'38"E	29.55'
L3	S16°03'48"W	60.00'
L4	N49°23'43"W	24.15'
L5	N49°23'43"W	11.80'
L6	N16°03'48"E	13.23'
L7	S16°03'48"W	50.00'
L8	N16°03'48"E	45.87'
L9	S16°03'48"W	30.00'
L10	N87°45'03"W	41.60'
L11	N87°45'02"W	50.00'
L12	S04°31'35"E	12.29'
L13	N04°31'35"W	42.84'
L14	S04°31'35"E	21.67'
L15	S57°13'16"E	30.67'
L16	N56°35'48"W	50.23'
L17	N00°48'56"W	50.00'
L18	N88°01'04"E	53.82'
L19	N88°01'04"E	62.22'
L20	S40°36'17"W	28.04'
L21	N57°13'16"W	7.82'
L22	N17°30'48"E	63.13'
L23	S00°38'38"W	29.55'
L24	S40°36'17"W	19.47'
L25	S13°06'23"W	15.05'
L26	N40°36'17"E	18.27'
L27	S49°23'43"E	35.34'
L28	S49°31'35"E	63.64'
L29	S81°56'05"E	68.39'
L30	S77°49'37"E	54.75'
L31	N69°46'19"E	58.36'
L32	N76°49'35"E	20.69'
L33	S20°19'50"E	45.00'
L34	N33°24'12"E	30.00'
L35	S29°09'30"E	59.51'

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
S.S.(fnd) – STEEL STAKE (FOUND)
I.R.(fnd) – IRON ROD (FOUND)
I.P.(fnd) – IRON PIPE (FOUND)
UP 73/5 – UTILITY POLE W/ I.D. NUMBERS
WV – WATER GATE VALVE
WSO – WATER SHUT OFF
HYD – FIRE HYDRANT
ELEV. – ELEVATION
– WETLAND
– EDGE OF WETLAND
TBM – TEMPORARY BENCHMARK



LOCATION PLAN
(NO SCALE)

A / 53D
PETER N. BAKER
JULIE A. MALONEY
78 LONG HILL ROAD
DOVER, NH 03820
2923 / 609

A / 53C
DAVID J. ABBOTT
74 LONG HILL ROAD
DOVER, NH 03820
3492 / 431

A / 53B
CHRISTOPHER W. NELSON
ALINA A. RAPAJ
70 LONG HILL ROAD
DOVER, NH 03820
4809 / 761

A / 53A
RYAN T. STEPHANY
SHELLY E. DIONE
66 LONG HILL ROAD
DOVER, NH 03820
4886 / 104

A / 53G-1
SHANNON PLANTE
JORDAN PLANTE
92 LONG HILL ROAD
DOVER, NH 03820
4190 / 659

A / 53
BONNIE BATTIS LIVING TRUST
PAUL BATTIS LIVING TRUST
60 LONG HILL ROAD
DOVER, NH 03820
4230 / 356

A / 16A
THOMAS J. PARKER
SHENANNE R. TUCKER
57 LONG HILL ROAD
DOVER, NH 03820
2845 / 738

A / 13N
TIMOTHY S. MOODY
KRISTIN L. MOODY
51 LONG HILL ROAD
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3565 / 858

A / 13H
GEOFFREY HILLS
47 LONG HILL ROAD
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4577 / 678

A / 13E
CHRISTOPHER M. DROUIN
DIANA E. DROUIN
43 LONG HILL ROAD
DOVER, NH 03820
3306 / 999

A / 12
KELLY A. HARPER
MATTHEW LOOMER
39 LONG HILL ROAD
DOVER, NH 03820
4437 / 292

A / 53G-2
KENT M. CASSIDY
ANN M. CASSIDY
96 LONG HILL ROAD
DOVER, NH 03820
2093 / 697

D / 9C
TIMOTHY J. WATERHOUSE
MELISSA S. WATERHOUSE
26 WELLINGTON AVENUE
DOVER, NH 03820
4157 / 476

D / 10S
JAMES R. SIMARD
KATHLEEN M. KROLL-SIMARD
25 STRAFFORD ROAD
DOVER, NH 03820
4911 / 430

D / 10A
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
981 / 350

D \ 10 – 1 — 7,811 S.F. SEE NOTE 12
D \ 10 – 2 — 8,680 S.F. SEE NOTE 12
D \ 10 – 3 — 18,171 S.F.
D \ 10 – 4 — 12,264 S.F.
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D \ 10 – 8 — 7,350 S.F.
D \ 10 – 9 — 7,350 S.F.
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D \ 10 – 11 — 10,650 S.F.
D \ 10 – 12 — 19,805 S.F.
D \ 10 – 13 — 21,342 S.F.
D \ 10 – 14 — 25,224 S.F.
D \ 10 – 15 — 13,775 S.F.
D \ 10 – 16 — 7,932 S.F.
D \ 10 – 17 — 8,400 S.F.
D \ 10 – 18 — 8,400 S.F.
D \ 10 – 19 — 8,400 S.F.
D \ 10 – 20 — 7,512 S.F.
D \ 10 – 21 — 9,178 S.F.
D \ 10 – 22 — 28,669 S.F.
D \ 10 – 23 — 14,214 S.F.
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D \ 10 – 26 — 11,680 S.F.
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D \ 10 – 31 — 11,176 S.F.
D \ 10 – 32 — 8,099 S.F. SEE NOTE 12
D \ 10 – 33 — 7,137 S.F.
D \ 10 EASE — 3,221 S.F. 30' PEDESTRIAN EASEMENT
D \ 10 PS — 5,250 S.F. PUMP STATION

NAPLES WAY
PHILLIP STREET
LONG HILL ROAD (PUBLIC: VARIABLE WIDTH R.O.W.)
PROPOSED 50' WIDE RIGHT OF WAY
NH STATE PLANE NAD 83 – GPS OBS.
30' WIDE VISUAL BUFFER (TYP.)
UTILITY EASEMENT AREA = 47,866 S.F.
UTILITY EASEMENT
UTILITY EASEMENT 578 S.F.
50' WETLAND BUFFER (TYP.)
BUILDING SETBACK LINE (TYP.)
EXISTING HOUSE
ASPHALT DRIVE
TBM 1 "X" ON FLANGE BOLT ELEV. 204.30
TBM 2 NAIL SET IN UP 73/5 ELEV. 204.48

TDR DENSITY CALCULATIONS:

SINGLE FAMILY DETACHED METHOD:
PARENT LOT – ENVIRONMENTAL CONSTRAINTS = BASE LOT SIZE
BASE LOT SIZE IS THEN REDUCED BY FIFTEEN (15) PERCENT = NET AREA
NET AREA IS THEN MULTIPLIED BY A FACTOR DETERMINED BY THE AMOUNT OF WETLANDS = DEVELOPABLE AREA
DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE = BASE NUMBER

PARENT LOT = 479,399 S.F.
ENVIRONMENTAL CONSTRAINTS = 4,766 S.F.
(479,399 S.F. – 4,766 S.F. = 474.633 S.F.)
BASE LOT SIZE = 474.633 S.F.

BASE LOT SIZE IS THEN REDUCED BY FIFTEEN (15) PERCENT
(474.633 X 0.85 = 403,438 S.F.)
NET AREA = 403,438 S.F.

PERCENTAGE OF PARCEL THAT IS WETLAND = 2.4 PERCENT
(479,399 S.F. / 4,766 S.F. = .01)
0<10% = FACTOR = 0.85
(403,438 S.F. X 0.85 = 342,923 S.F.)
DEVELOPABLE AREA = 342,923 S.F.

DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE (R–12)
(342,923 / 12,000 S.F. = 28.6)
BASE NUMBER = 28 UNITS

NOTES:

1.) OWNER OF RECORD:

OWNER SIGNATURE

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801
S.C.R.D. VOLUME 5038, PAGE 230.

2.) D \ 10 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 479,399 S.F. / 11.01 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A TRANSFER OF DEVELOPMENT RIGHTS (TDR) SUBDIVISION BASED ON CALCULATIONS FOR A SINGLE FAMILY DETACHED RESIDENTIAL UNIT.

5.) ZONING DISTRICT: RURAL RESIDENTIAL (R–12)

ON MARCH 28, 2023 THE DOVER PLANNING BOARD VOTED TO CONDITIONALLY APPROVE THE REQUEST TO GRANT UP TO SIX TRANSFER OF DEVELOPMENT RIGHTS (TDR) UNITS/LOTS AND FOUND THE CRITERIA OF 170–27.2 HAVE BEEN MET.

DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = N/A
MINIMUM FRONTAGE = 40 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT SETBACK = 20 FEET
SIDE SETBACK = 10 FEET
REAR SETBACK = 10 FEET
MAXIMUM BUILDING HEIGHT = 35 FEET

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.

7.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING NOVEMBER 2022 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

8.) 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 .

9.) THE SOIL TYPES ON THE SITE ARE:
WdA WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
WfB WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 0 TO 8 PERCENT SLOPES.
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

10.) WETLANDS SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES, ON OCTOBER 7, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE SUBJECT PARCEL IS CURRENTLY SERVICED BY MUNICIPAL WATER AND SUBSURFACE DISPOSAL SYSTEM. MUNICIPAL SEWER IS AVAILABLE AT THE INTERSECTION OF LONG HILL ROAD AND OLD ROCHESTER ROAD (APPROXIMATELY 715'±).

12.) PER DOVER PLANNING BOARD FOUR UNITS WILL BE DEED RESTRICTED TO 1,400 S.F. OR LESS.
THE DEED RESTRICTED LOTS SHALL BE D/10–1, D/10–2, D/10–29 & D/10–32.

SHEET 5

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENTS FOR EDMOND GRADY AND GEORGE RIVERS, LONG HILL & STRAFFORD ROADS, DOVER, NEW HAMPSHIRE; SCALE: 1" = 100'; DATED: 10/18/88; BY: McENEANEY SURVEY ASSOCIATES, INC.; RECORDED S.C.R.D. PLAN 35–131.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22–2429	TDR SUBD	22–11 32–45
PROJECT NO	TYPE	FIELDBOOK & PAGES

⊙ – IRON ROD WITH IDENTIFICATION CAP TO BET SET AT PROPERTY CORNERS
□ – GRANITE BOUND WITH DRILL HOLE TO BET SET AT RIGHT OF WAY POINTS OF CURVATURE

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

STATE OF NEW HAMPSHIRE — No. 661 — KEVIN M. McENEANEY — LICENSED LAND SURVEYOR — SIGNATURE

TDR SUBDIVISION PLAN
OF
LONG HILL PLACE
PREPARED FOR
DIAMOND CAPITAL, LLC
TAX MAP D, LOT No. 10
42 LONG HILL ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 23–__

DRAWN BY: RJM	FILE: 2429\D\22–2429 TDR SUBD
SCALE: 1" = 50'	DATE: NOVEMBER 28, 2023

50 25 0 25 50 100 150 200

McENEANEY SURVEY ASSOCIATES of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911

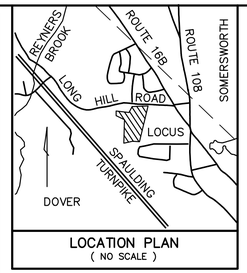
SURVEYING – PLANNING – CONSULTING

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	17°38'13"	150.00	46.17	45.99	N09°27'45"E
C2	90°00'00"	25.00	39.27	35.36	N45°38'38"E
C3	85°10'58"	25.00	37.17	33.84	N06°48'13"W
C4	17°30'24"	150.00	45.83	45.65	N27°02'04"E
C5	18°32'21"	150.00	48.54	48.32	N40°07'32"W
C6	25°01'36"	150.00	65.52	65.00	N18°20'33"W
C7	21°53'34"	150.00	57.31	56.97	N05°07'01"E
C8	02°29'23"	95.00	4.13	4.13	N17°18'30"E
C9	18°33'47"	95.00	30.78	30.64	N27°50'05"E
C10	24°18'23"	95.00	40.30	40.00	N49°16'10"E
C11	24°18'23"	95.00	40.30	40.00	N73°34'33"E
C12	24°18'23"	95.00	40.30	40.00	S82°07'04"E
C13	24°18'23"	95.00	40.30	40.00	S57°48'41"E
C14	24°18'23"	95.00	40.30	40.00	S33°30'18"E
C15	16°49'32"	95.00	27.90	27.80	S12°56'21"E
C16	56°15'04"	75.00	73.63	70.71	S29°05'44"E
C17	03°33'22"	150.00	9.31	9.31	S02°44'54"E
C18	43°01'07"	50.00	37.54	36.67	S35°42'43"E
C19	50°34'53"	50.00	44.14	42.72	S11°05'17"W
C20	58°36'54"	50.00	51.15	48.95	S65°41'10"W
C21	82°10'27"	75.00	107.57	98.58	S81°41'31"W
C22	27°47'07"	50.00	24.25	24.01	N71°06'49"W
C23	90°00'00"	25.00	39.27	35.36	S44°21'22"E
C24	39°57'39"	100.00	69.74	68.34	S20°37'28"W
C25	08°42'07"	100.00	15.19	15.17	N00°10'31"W
C26	36°25'45"	100.00	63.58	62.52	N22°23'25"E
C27	90°00'00"	25.00	39.27	35.36	N85°36'17"E
C28	56°15'16"	100.00	98.18	94.29	S21°16'05"E
C29	09°12'15"	100.00	16.06	16.05	S11°27'41"W
C30	159°24'37"	45.00	125.20	88.55	N84°13'53"W
C31	90°00'00"	45.00'	70.69'	63.64'	N49°31'35"W
C32	12°39'46"	95.00'	21.00'	20.95'	S45°32'56"E

No.	Bearing	Distance
L1	S89°21'22"E	53.39'
L2	N00°38'38"E	29.55'
L3	S16°03'48"W	60.00'
L4	N49°23'43"W	24.15'
L5	N49°23'43"W	11.80'
L6	N16°03'48"E	13.23'
L7	S16°03'48"W	50.00'
L8	N16°03'48"E	45.87'
L9	S16°03'48"W	30.00'
L10	N87°45'03"W	41.60'
L11	N87°45'02"W	50.00'
L12	S04°31'35"E	12.29'
L13	N04°31'35"W	42.84'
L14	S04°31'35"E	21.67'
L15	S57°13'16"E	30.67'
L16	N56°35'48"W	50.23'
L17	N00°48'56"W	50.00'
L18	N88°01'04"E	53.82'
L19	N88°01'04"E	62.22'
L20	S40°36'17"W	28.04'
L21	N57°13'16"W	7.82'
L22	N17°30'48"E	63.13'
L23	S00°38'38"W	29.55'
L24	S40°36'17"W	19.47'
L25	S13°06'23"W	15.05'
L26	N40°36'17"E	18.27'
L27	S49°23'43"E	35.34'
L28	S49°31'35"E	63.64'
L29	S81°56'05"E	68.39'
L30	S77°49'37"E	54.75'
L31	N69°46'19"E	58.36'
L32	N76°49'35"E	20.69'
L33	S20°19'50"E	45.00'
L34	N33°24'12"E	30.00'
L35	S29°09'30"E	59.51'

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
S.S.(fnd) – STEEL STAKE (FOUND)
I.R.(fnd) – IRON ROD (FOUND)
I.P.(fnd) – IRON PIPE (FOUND)
UP 73/5 – UTILITY POLE W/ I.D. NUMBERS
WV – WATER GATE VALVE
WSO – WATER SHUT OFF
HYD – FIRE HYDRANT
ELEV. – ELEVATION
202 – CONTOUR LINE – 2' INTERVAL
30' WIDE VISUAL BUFFER (TYP.)
– WETLAND
– EDGE OF WETLAND
TBM – TEMPORARY BENCHMARK
– SOIL BOUNDARY
WfB – SOIL CLASSIFICATION



LOCATION PLAN
(NO SCALE)

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D \ 10 PS
5,250 S.F.
PUMP STATION

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3,221 S.F.
30' PEDESTRIAN EASEMENT

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EXISTING HOUSE
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NAPLES WAY
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TBM 1 "X" ON FLANGE BOLT ELEV. 204.30
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DEVELOPABLE AREA IS THEN DIVIDED BY THE MINIMUM LOT SIZE (R–12)
(342,923 / 12,000 S.F. = 28.6)
BASE NUMBER = 28 UNITS

NOTES:

1.) OWNER OF RECORD:
DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE 03801
S.C.R.D. VOLUME 5038, PAGE 230.

2.) D \ 10 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 479,399 S.F. / 11.01 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A TRANSFER OF DEVELOPMENT RIGHTS (TDR) SUBDIVISION BASED ON CALCULATIONS FOR A SINGLE FAMILY DETACHED RESIDENTIAL UNIT.

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ON MARCH 28, 2023 THE DOVER PLANNING BOARD VOTED TO CONDITIONALLY APPROVE THE REQUEST TO GRANT UP TO SIX TRANSFER OF DEVELOPMENT RIGHTS (TDR) UNITS/LOTS AND FOUND THE CRITERIA OF 170–27.2 HAVE BEEN MET.

DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = N/A
MINIMUM FRONTAGE = 40 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT SETBACK = 20 FEET
SIDE SETBACK = 10 FEET
REAR SETBACK = 10 FEET
MAXIMUM BUILDING HEIGHT = 35 FEET

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.
VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.

7.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING NOVEMBER 2022 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

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9.) THE SOIL TYPES ON THE SITE ARE:
WdA WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
WfB WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 0 TO 8 PERCENT SLOPES.
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

10.) WETLANDS SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES, ON OCTOBER 7, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE SUBJECT PARCEL IS CURRENTLY SERVICED BY MUNICIPAL WATER AND SUBSURFACE DISPOSAL SYSTEM. MUNICIPAL SEWER IS AVAILABLE AT THE INTERSECTION OF LONG HILL ROAD AND OLD ROCHESTER ROAD (APPROXIMATELY 715'±).

12.) PER DOVER PLANNING BOARD FOUR UNITS WILL BE DEED RESTRICTED TO 1,400 S.F. OR LESS.
THE DEED RESTRICTED LOTS SHALL BE D/10–1, D/10–2, D/10–29 & D/10–32.

SHEET 6

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENTS FOR EDMOND GRADY AND GEORGE RIVERS, LONG HILL & STRAFFORD ROADS, DOVER, NEW HAMPSHIRE; SCALE: 1" = 100'; DATED: 10/18/88; BY: McENEANEY SURVEY ASSOCIATES, INC.; RECORDED S.C.R.D. PLAN 35–131.

⊙ – IRON ROD WITH IDENTIFICATION CAP TO BET SET AT PROPERTY CORNERS
□ – GRANITE BOUND WITH DRILL HOLE TO BET SET AT RIGHT OF WAY POINTS OF CURVATURE

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

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22–2429	TDR SUBD	22–11	32–45
PROJECT NO	TYPE	FIELDBOOK & PAGES	

TDR SUBDIVISION TOPOGRAPHIC PLAN
OF
LONG HILL PLACE
PREPARED FOR
DIAMOND CAPITAL, LLC
TAX MAP D, LOT No. 10
42 LONG HILL ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. ––

DRAWN BY: RJM	FILE: 2429\D\22–2429 TDR SUBD
SCALE: 1" = 50'	DATE: NOVEMBER 28, 2023

50 25 0 25 50 100 150 200

STATE OF NEW HAMPSHIRE — No. 661 — LICENSED LAND SURVEYOR — KEVIN M. McENEANEY — SIGNATURE

McENEANEY SURVEY ASSOCIATES of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

GENERAL NOTES

1. OWNER OF RECORD:
   DIAMOND CAPITAL, LLC
   170 COMMERCE WAY
   PORTSMOUTH, NEW HAMPSHIRE 03801
   S.C.R.D. VOLUME 5038, PAGE 230.
2. D / 10 – DENOTES TAX MAP AND PARCEL NUMBER.
3. TOTAL PARCEL AREA = 479,399 S.F. / 11.01 Ac.
4. ZONING DISTRICT: RURAL RESIDENTIAL (R–12)
   DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 12,000 S.F.
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 100 FEET

   BUILDING SETBACK REQUIREMENTS:

FRONT SETBACK	= 15–25 FEET
SIDE SETBACK	= 15 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET

5. BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.
   VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.
6. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND IN NOVEMBER 2022 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
7. 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.
8. WETLANDS SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES, ON OCTOBER 7, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.
9. THE SUBJECT PARCEL IS CURRENTLY SERVICED BY MUNICIPAL WATER AND SUBSURFACE DISPOSAL SYSTEM. MUNICIPAL SEWER IS AVAILABLE AT THE INTERSECTION OF LONG HILL ROAD AND OLD ROCHESTER ROAD (APPROXIMATELY 715'±).

DEMOLITION NOTES:

1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT AND POLES.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF–SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
9. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF–SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.
10. EXISTING ("OLD") WATER SERVICES TO THE SUBJECT SITE SHALL BE DISCONNECTED AND SHUT–OFF AT THE WATER MAIN.
11. EXISTING SEWER SERVICES TO BE CUT AND PERMANENTLY CAPPED AT PROPERTY LINE AS APPLICABLE.
12. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
13. ALL STONEWALLS THAT NEED TO BE REMOVED FOR CONSTRUCTION SHALL BE STOCKPILED AND REUSED ON SITE.

PERMIT SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:

   ALTERATION OF TERRAIN: PENDING

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.

   TRANS–2023–0001 TO ALLOW UP TO AN ADDITIONAL 6 UNITS (VIA TDR) TO A MAXIMUM OF 34 RESIDENTIAL UNITS: GRANTED 3–28–23

   SUBDIVISION: PENDING
   CONDITIONAL USE PERMIT: PENDING

WAIVER SUMMARY:

1. A WAIVER REQUEST FROM SECTION 157–45 TO NOT CONSTRUCT SIDEWALKS.

SUBDIVISION NOTES:

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND (SEE EXISTING CONDITIONS PLAN IN THIS PLAN SET).
2. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 1,600 LF OF PUBLIC ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 34 LOT SINGLE FAMILY SUBDIVISION.
3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
4. 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.
5. ON–SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
6. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
7. SEE DETAILS FOR SIGN LEGENDS.
8. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE 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.
9. 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.
10. 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.
11. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
12. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
13. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBANCE ACTIVITY OCCURS.
14. AS–BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS–BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO–REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
15. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM, SATURDAY HOURS 9 AM–4 PM, AND NO SUNDAY AND NO FEDERAL HOLIDAY WORK HOURS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.
16. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
17. 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.
18. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
19. 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.
20. REFUSE PICKUP WILL BE BY MUNICIPAL SERVICES.
21. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
22. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
23. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
24. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
25. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL. (HTTPS: //WWW.UNH.EDU/UNHSC/PTAPP)
26. NO ROADWAY WITH PRIVATE UTILITY EASEMENTS SHALL BE ACCEPTED AS A PUBLIC ROAD BY THE CITY UNLESS THE EASEMENTS ARE EXPUNGED PRIOR TO THE TRANSFER OF LAND TO THE CITY. LICENSE AGREEMENTS FOR ANY AND ALL PRIVATE UTILITIES WITHIN THE RIGHT OF WAY MAY BE GRANTED BY THE CITY UPON ACCEPTANCE OF THE UNENCUMBERED ROADWAY CONSISTENT WITH APPLICABLE STATE LAW.
27. INDIVIDUAL AND SHARED DRIVEWAYS THAT ARE LONGER THAN 150 LF FROM THE ACCESS ROAD SHALL BE THE STANDARD WIDTH AS SPECIFIED IN NFPA1.
28. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI–117.1) AND NH RSA 155–A: 5.

GRADING NOTES:

1. ALL ROAD DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

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

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEETS.
11. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
13. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR THIS PROJECT. THE SWPPP MUST INCLUDE THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE SITE. PARTIES RESPONSIBLE FOR DEVELOPING THE SWPPP SHOULD REFER TO THE EPA NPDES CONSTRUCTION GENERAL PERMITS NOTICE OF INTENT FOR A COMPLETE OUTLINE OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
14. ALL TREATMENT AND PRE–TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
15. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
16. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND AND WETLAND BUFFER AREAS PRIOR TO CONSTRUCTION.

UTILITY NOTES:

1. THE PROJECT SITE IS SERVED BY CITY WATER AND ON–SITE SEWER.
2. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION AND SIZE OF EXISTING UTILITIES. THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO WORK BEING PERFORMED. CALL DIGSAFE AT 1–888–388–7233 OR "811".
4. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SUBDIVISION PLANS SHALL SHOW ANY EASEMENTS FOR THESE SERVICES.
5. UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE TV CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH/PER EVERSOURCE, VERIZON, COMCAST, AND UNITIL STANDARDS.
6. SEE ELECTRICAL DRAWINGS AND DETAILS FOR OUTDOOR LIGHTING CONDUIT LOCATIONS.
7. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
8. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
9. SEWAGE LOADING (PER ENV. – Wq 1008.03 TABLE 1008–1)

   19 HOMES – 2 BEDROOM
   38 BDRMS x 150 GALS./DAY/BDRM = 5,700 GPD

   15 HOMES – 3 BEDROOM
   45 BDRMS x 150 GALS./DAY/BDRM = 6,750 GPD

   INFILTRATION:

   300 GPD/INCH DIAMETER/MILE SEWER x 8" SEWER MAIN" x 1,645/5,280 = 747.7 GPD (ROUNDED TO 750 GPD)

   *INFILTRATION ALLOWANCE BASED ON 1,645 L.F. OF 8" PIPE

   TOTAL DESIGN FLOW = 13,200 GPD
10. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
11. APPROVED BACKFLOW PREVENTORS SHALL BE INSTALLED ON BOTH FIRE AND DOMESTIC WATER LINES. AS APPLICABLE
12. ALL UNUSED WATER SERVICES SHALL BE REMOVED BACK TO THE CORPORATION AT THE MAIN.
13. TAPPING SLEEVE AND GATES SHALL BE STAINLESS STEEL.
14. USE FOSTER GATES TO TEES WHERE ANCHOR TEE'S ARE NOT USED.
15. CURB BOXES SHALL BE PLACED AT THE PUBLIC RIGHT OF WAY AND OUT OF PAVEMENT AS POSSIBLE.

UTILITY CONTACTS

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

LEGEND

		——— · · · ———	EDGE OF WET
S.F.	SQUARE FEET	——— · · ———	50' WETLAND BUFFER
Ac.	ACRE	——•——	PROPOSED SIGN
±	MORE OR LESS	——74——	PROPOSED FINISH GRADE
(TYP)	TYPICAL	x 74.00	PROPOSED SPOT GRADE
S.C.R.D.	STRAFFORD COUNTY REGISTRY OF DEEDS	═══	PAVEMENT WITH CURB
TBR	TO BE REMOVED	——□——□——	SILT BARRIER
D.I.	DUCTILE IRON	——PG——	PROPOSED GAS
DIA.	DIAMETER	——PW——	PROPOSED WATER
R.O.W.	RIGHT OF WAY	——PE——	PROPOSED ELECTRIC
TP	TEST PIT	——POHW——	PROPOSED OVERHEAD UTILITY WIRES
V.I.F.	VERIFY IN FIELD	——PS——	PROPOSED SEWER
	EXISTING UTILITY POLE	——PFM——	PROPOSED FORCEMAIN
	EXISTING SIGN	——PD——	PROPOSED DRAIN LINE
	EXISTING WATER SHUT–OFF	——PUD——	PROPOSED UNDERDRAIN LINE
	EXISTING WATER VALVE	PFES	PROPOSED FLARED END SECTION
	EXISTING GAS VALVE		PROPOSED CATCHBASIN
	EXISTING HYDRANT		
	EXISTING LIGHT/SIGNAL POLE		PROPOSED DRAIN MANHOLE
	EXISTING SEWER MANHOLE		
	EXISTING DRAINAGE MANHOLE		PROPOSED THRUST BLOCK
	EXISTING CATCHBASIN		PROPOSED WATER SHUTOFF
5'R	PAVEMENT RADIUS		
SGC	SLOPED GRANITE CURB		PROPOSED FIRE HYDRANT
x 74.00	EXISTING SPOT GRADE		
– – –94– – –	EXISTING GRADE		PROPOSED UTILITY POLE
——OHU——	OVERHEAD UTILITY		
——E——	EXISTING ELECTRIC		
——W——	EXISTING WATER LINE		PROPOSED RIPRAP
——S——	EXISTING SEWER LINE		
——D——	EXISTING DRAINAGE LINE		PROPOSED CONCRETE
——G——	EXISTING GAS LINE		
· · · · · · ·	SOIL BOUNDARY		
			PROPOSED 50' WETLAND BUFFER IMPACT

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

NO.	REVISION	APP'D	DATE

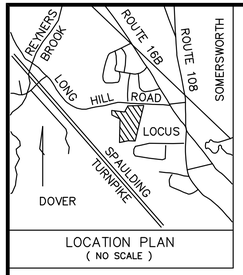
DATE: 12–7–23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

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

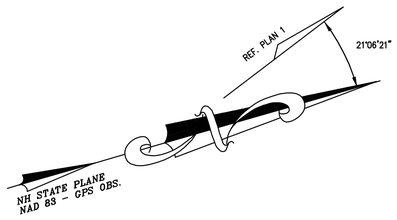
NOTE SHEET

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10



LOCATION PLAN
(NO SCALE)



GENERAL NOTES

1. OWNER OF RECORD:
   DIAMOND CAPITAL, LLC
   170 COMMERCE WAY
   PORTSMOUTH, NEW HAMPSHIRE 03801
   S.C.R.D. VOLUME 5038, PAGE 230.
2. D / 10 – DENOTES TAX MAP AND PARCEL NUMBER.
3. TOTAL PARCEL AREA = 479,399 S.F. / 11.01 Ac.
4. ZONING DISTRICT: RURAL RESIDENTIAL (R–12)
   DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 12,000 S.F.
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 100 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 15–25 FEET
SIDE SETBACK	= 15 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET

PLAN REFERENCE:

1. "EXISTING CONDITIONS PLAN OF LAND" PREPARED FOR DIAMOND CAPITAL, LLC, TAX MAP D, LOT NO. 10, 42 LONG HILL ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, PREPARED BY: MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND, SCALE: 1"=50', DATED NOVEMBER 28, 2023.

LOT 22, LOT 21, LOT 23, LOT 20, LOT 19, LOT 18, LOT 17, LOT 16, LOT 15, LOT 14, LOT 13, LOT 12, LOT 11, LOT 10, LOT 9, LOT 8, LOT 7, LOT 6, LOT 5, LOT 4, LOT 3, LOT 2, LOT 1, LOT 24, LOT 25, LOT 26, LOT 27, LOT 28, LOT 29, LOT 30, LOT 31, LOT 32, LOT 33, LOT D–10, LOT D–10 EASE, LOT D–10 PS

PROPOSED TREELINE
PROPOSED CONCRETE TRANSFORMER PAD
PROPOSED WET POND
PROPOSED WETLAND BUFFER IMPACT=3,572.5 S.F.
PROPOSED PUMP HOUSE
PROPOSED STOP SIGN & STOP BAR
PROPOSED UTILITY POLE
30' WIDE VISUAL BUFFER (TYP.)
50' WETLAND BUFFER (TYP.)
50' R.O.W
NAPLES WAY
LONG HILL ROAD
ASPHALT DRIVE
SGC
OHU
UP 73.5 OHU
UP 73.4 OHU
UP 73.6 OHU
UP 44.12
UP 73.5 DRD
CB RIM=207.76
21+75.25
21+00
4+00
6+00
7+00
10+00
11+00
12+00
13+00
14+00
15+00
15+32.10
1+00
2+00
137'R
113'R
82'R
58'R
30'R
20'R
33'R
200.76

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

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

NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: 1"=60'
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

OVERALL SITE LAYOUT PLAN

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

8

MATCHLINE

MATCHLINE

BARN TO BE REMOVED/RELOCATED TO OWNERS PROPERTY

FENCE TO BE REMOVED AND STOCKPILED ON OWNERS PROPERTY

BARN

PADDOCK

PROPOSED TREELINE

LANDSCAPE TO BE REMOVED

FENCE TO BE REMOVED

TREELINE TO BE REMOVED

TREELINE TO BE REMOVED

TREELINE TO BE REMOVED

TREELINE TO BE REMOVED

TREELINE TO BE REMOVED

PROPOSED TREELINE

RIDING TRAIL TO BE REMOVED

ASPHALT DRIVE

ASPHALT DRIVE

DYL

UP 44 12S

UP 44 12

W

W

OHU

CUT SHRUBS AND BRANCHES AS NEEDED TO MAINTAIN SIGHT DISTANCE

FENCE TO BE RELOCATED

ASPHALT DRIVE

DYL

ASPHALT DRIVE

UP 73 6

OHU

PROPOSED SAWCUT LIMITS (TYP)

FENCE TO BE REMOVED

PAVEMENT TO BE REMOVED

BARN TO BE REMOVED

HOUSE TO BE RENOVATED

BARN

OHU

OVERHEAD WIRE TO BE REMOVED

HOUSE

RIDING RING

OHU

POOL, CONCRETE & FENCE TO BE REMOVED

UTILITY POLE TO BE REMOVED

ASPHALT DRIVE

UP 735A

OHU

POOL

GARAGE

OVERHEAD WIRE TO BE REMOVED

UP 73 5

OHU

W

DYL

WALK TO BE REMOVED

SHED TO BE REMOVED

GARAGE TO BE REMOVED

PROPOSED TREELINE

TREELINE TO BE REMOVED

MATCHLINE

REF. PLAN 1

21°06'21"

NH STATE PLANE
NAD 83 - GPS OBS.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

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FILE: SITE.DWG

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

DEMOLITION PLAN "A"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

9

MATCHLINE

PROPOSED TREELINE

TREELINE TO BE REMOVED

30' WIDE VISUAL BUFFER (TYP.)

RIDING TRAIL

RIDING TRAIL TO BE REMOVED

TREELINE TO BE REMOVED

PROPOSED TREELINE

50' WETLAND BUFFER (TYP.)

RIDING TRAIL

REF. PLAN 1

21°06'21"

NH STATE PLANE
NAD 83 - GPS OBS.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

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CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

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DEMOLITION PLAN "B"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

10

MATCHLINE

LOT D-10-22

PROPOSED 8" SILTSOXX (TYP)

PROPOSED CONVEYANCE SWALE (SEE DETAIL)

LOT D-10-21

LOT D-10-23

MATCHLINE

LOT D-10-20

PROPOSED CHECK DAM (TYP)

LOT D-10-19

LOT D-10-18

PDMH3
RIM=197.15
INV.IN=192.36
INV.OUT=192.26

PCB4
RIM=196.91
INV.OUT=192.46

PIPE 4

LOT D-10-24

PDMH1
RIM=199.37
INV.IN=194.58
INV.OUT=194.48

PCB2
RIM=199.13
INV.OUT=194.68

LOT D-10-25

LOT D-10-26

PIPE 6

PIPE 5

PIPE 7

PDMH2
RIM=198.0
INV.IN=193.55
INV.OUT=193.45

PIPE 3

PIPE 2

PIPE 1

PCB3
RIM=196.91
INV.OUT=192.46

PCB1
RIM=199.13
INV.OUT=194.68

LOT D-10-32

LOT D-10-33

LOT D-10-27

LOT D-10-31

LOT D-10-30

LOT D-10-29

LOT D-10-28

PROPOSED CONSTRUCTION ENTRANCE

PDMH7
RIM=198.42
INV.IN=193.63
INV.OUT=193.53

PIPE 13

LOT D-10-1

LOT D-10-3

LOT D-10

LO4 D-10-4

LOT D-10-2

LOT D-10-10

LOT D-10-9

LOT D-10-8

LOT D-10-7

LOT D-10-6

LOT D-10-5

ASPHALT DRIVE

DYL

OHU

UP 44 12S

UP 44 12

UP 73 6

UP 73 5

W

WV

21+75.25

21+00

20+00

4+00

15+32.10

15+00

14+00

13+00

12+00

11+00

1+00

0+00

5.0%

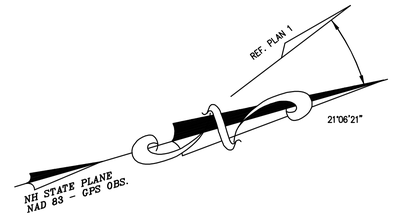
PROPOSED 8" SILTSOXX (TYP)

MATCHLINE

LOT D-10-22

GRADING NOTES:

1. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEETS.
2. 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.
3. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
4. ALL CONVEYANCE SWALE SIDE SLOPES AND SWALE BOTTOM SHALL BE NORTH AMERICAN GREEN SC150BN, SEE EROSION CONTROL DETAILS.



GRAPHIC SCALE

30 0 15 30 60 120

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

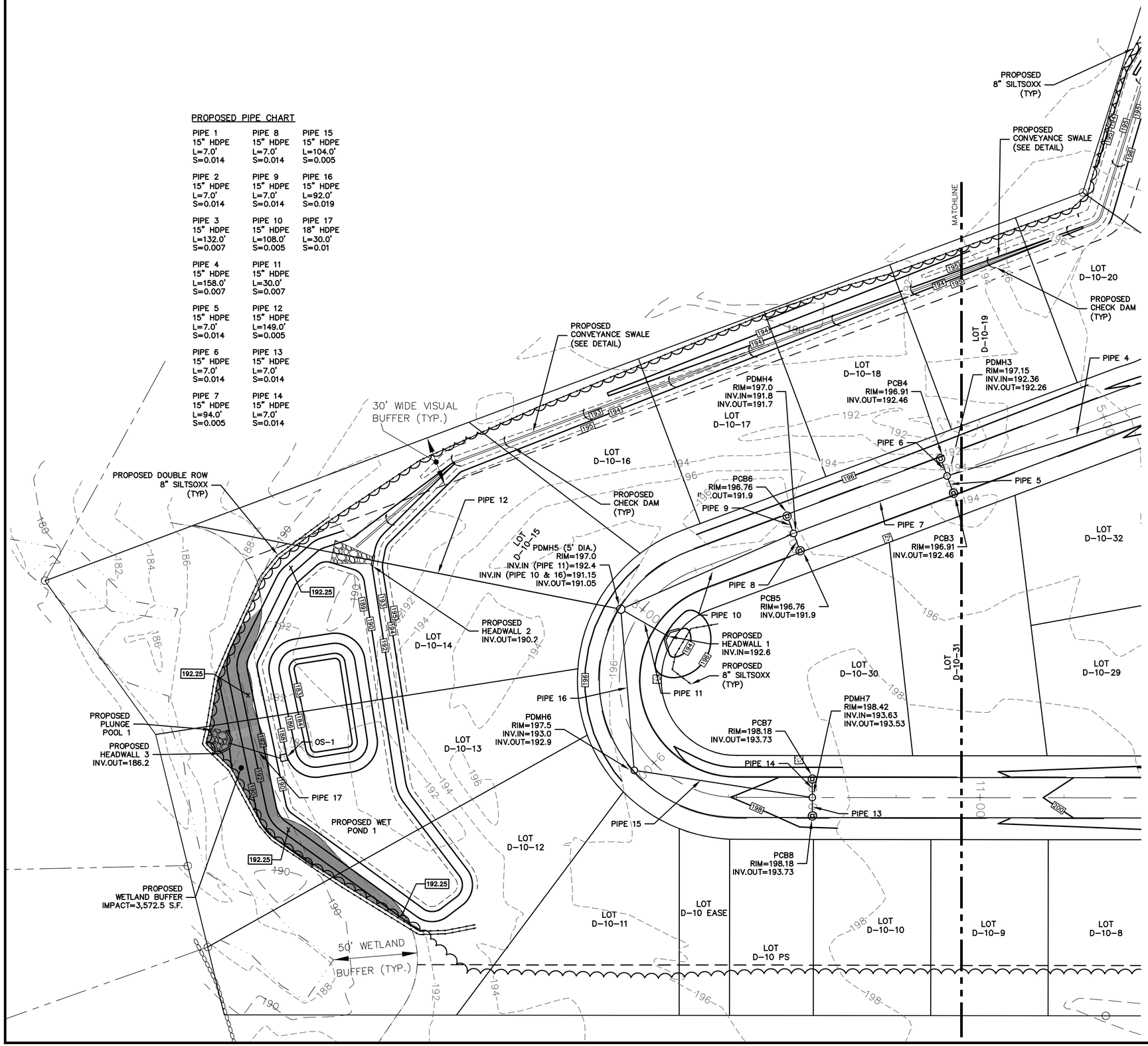
GRADING, DRAINAGE, & EROSION CONTROL PLAN "A"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

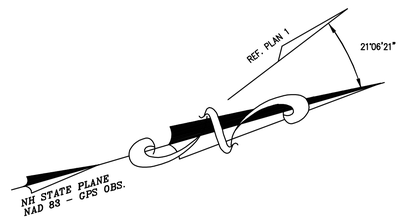
PROPOSED PIPE CHART

PIPE 1 15" HDPE L=7.0' S=0.014	PIPE 8 15" HDPE L=7.0' S=0.014	PIPE 15 15" HDPE L=104.0' S=0.005
PIPE 2 15" HDPE L=7.0' S=0.014	PIPE 9 15" HDPE L=7.0' S=0.014	PIPE 16 15" HDPE L=92.0' S=0.019
PIPE 3 15" HDPE L=132.0' S=0.007	PIPE 10 15" HDPE L=108.0' S=0.005	PIPE 17 18" HDPE L=30.0' S=0.01
PIPE 4 15" HDPE L=158.0' S=0.007	PIPE 11 15" HDPE L=30.0' S=0.007	
PIPE 5 15" HDPE L=7.0' S=0.014	PIPE 12 15" HDPE L=149.0' S=0.005	
PIPE 6 15" HDPE L=7.0' S=0.014	PIPE 13 15" HDPE L=7.0' S=0.014	
PIPE 7 15" HDPE L=94.0' S=0.005	PIPE 14 15" HDPE L=7.0' S=0.014	



GRADING NOTES:

1. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEETS.
2. 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.
3. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
4. ALL CONVEYANCE SWALE SIDE SLOPES AND SWALE BOTTOM SHALL BE NORTH AMERICAN GREEN SC150BN, SEE EROSION CONTROL DETAILS.



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

GRADING, DRAINAGE, & EROSION CONTROL PLAN "B"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

12

MATCHLINE

MATCHLINE

LOT D-10-22 F.F. 200.6 PE

LOT D-10-21 F.F. 200.6

F.F. 200.6 LOT D-10-23

PSMH9 RIM=197.7 INV.IN=189.6 INV.OUT=189.5

PSMH7 RIM=199.59 INV.OUT=190.5

PSMH8 RIM=198.45 INV.IN=190.1 INV.OUT=190.0

PROPOSED HYDRANT (SEE DETAIL)

LOT D-10-20 F.F. 200

LOT D-10-19 F.F. 200

LOT D-10-18 F.F. 199.5

F.F. 200.6 LOT D-10-24

PSMH3 RIM=200.1 INV.IN=192.3 INV.OUT=192.2

ASPHALT DRIVE

ASPHALT DRIVE

DYL

UP 44 12 5

UP 44 12

LOT D-10-25

F.F. 203

LOT D-10-26 F.F. 203.25

PSMH2 RIM=201.0 INV.IN=193.2 INV.OUT=193.1

PROPOSED 6" REDUCER WITH GATE VALVE (TYP)

PROPOSED 12X8 SADDLE WITH GATE VALVE

ASPHALT DRIVE

PROPOSED UTILITY POLE

PROPOSED HYDRANT (SEE DETAIL)

PROPOSED 8X8 TEE WITH GATE VALVE AND THRUST BLOCK

PROPOSED FORCEMAIN FOR ADDITIONAL INFORMATION SEE OFFSITE UTILITY IMPROVEMENTS PLAN

ROHW

OHU

UP 73 6

LOT D-10-1 F.F. 204.8

LOT D-10-3 F.F. 203.5

LOT D-10 OHU

LOT D-10-2 F.F. 205.4

PROPOSED WATER SHUTOFF (TYP)

UP 73 5 OHU

DYL

LOT D-10-27 F.F. 202

PSMH4 RIM=201.2 INV.IN=190.8 INV.OUT=190.7

LOT D-10-28 F.F. 204

LOT D-10-29 F.F. 203

LOT D-10-32 F.F. 200

LOT D-10-33 F.F. 201.5

LOT D-10-31 F.F. 202

LOT D-10-30 F.F. 199.5

LOT D-10-10 F.F. 201

LOT D-10-9 F.F. 202

LOT D-10-8 F.F. 203

LOT D-10-7 F.F. 204

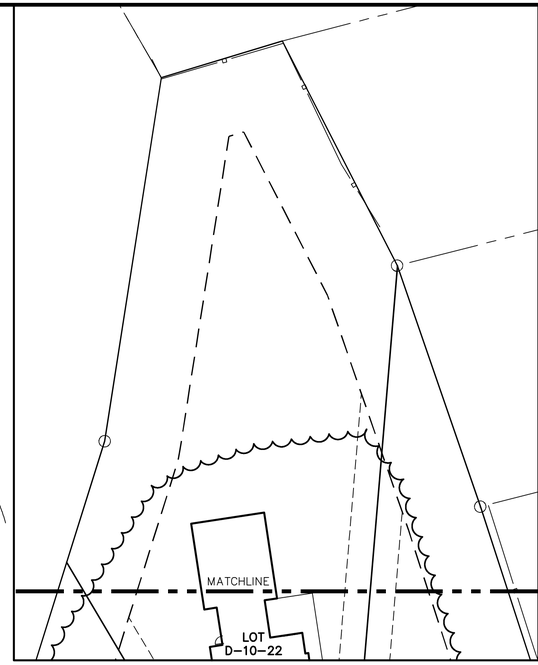
LOT D-10-6 F.F. 204

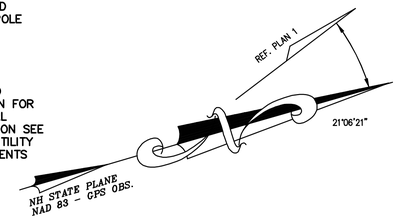
LOT D-10-5 F.F. 204

LO4 D-10-4 F.F. 203.5

PSMH1 RIM=203.0 INV.OUT=195.2

PSMH5 RIM=201.3 INV.IN=189.6 INV.OUT=189.5





GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

UTILITY NOTES:

1. ALL SEWER SERVICES TO BE 4" SDR 35.
2. SEWER MAIN TO BE 8" MINIMUM SDR 35.
3. ALL WATER SERVICES TO BE 3/4" MINIMUM POLY OR COPPER.
4. WATER MAIN TO BE 8" DUCTILE IRON CLASS 52 WRAPPED.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

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DRAWN BY: SRD
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APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

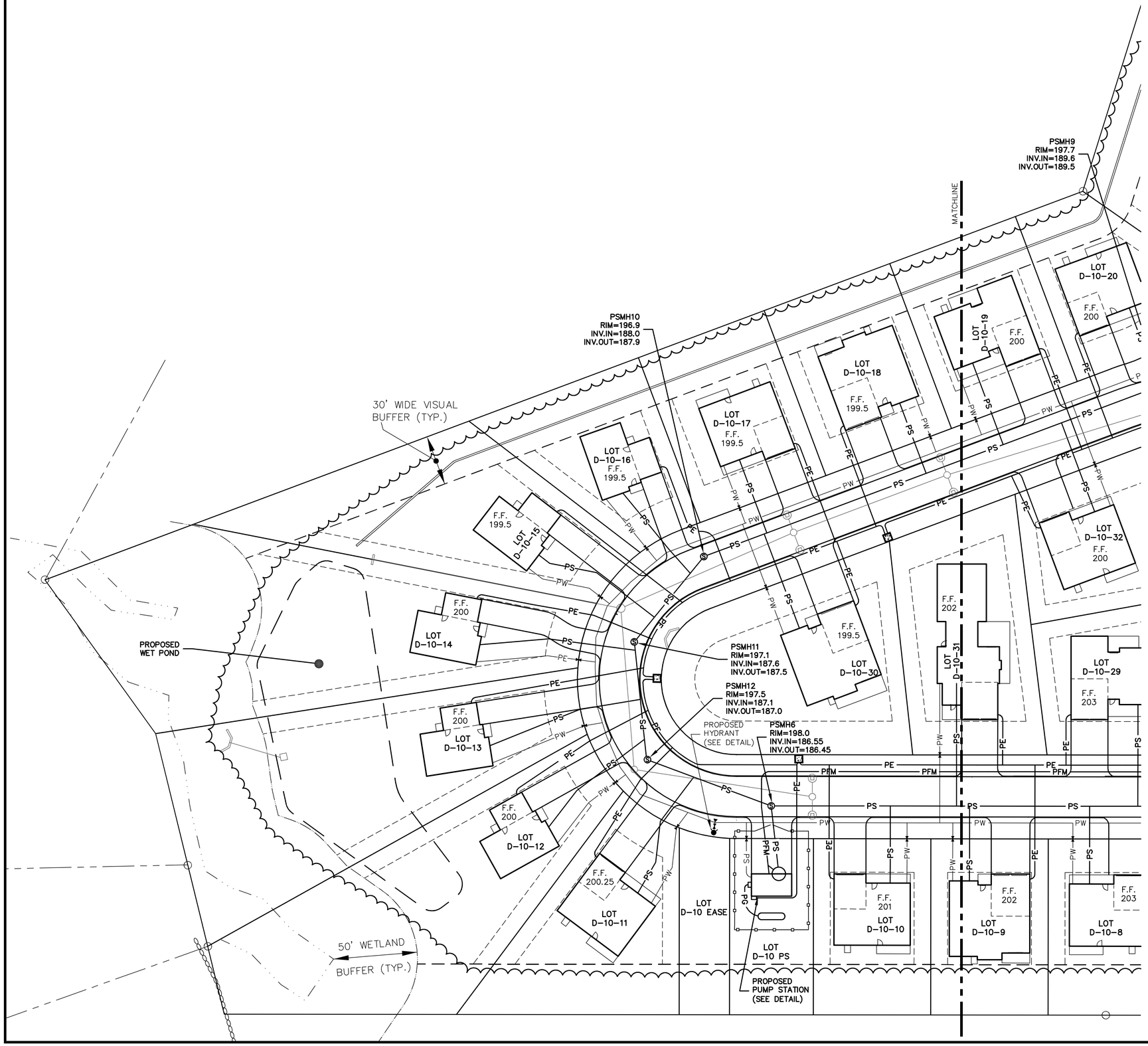
CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

UTILITY PLAN "A"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

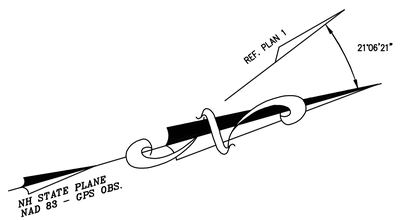
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

13



UTILITY NOTES:

1. ALL SEWER SERVICES TO BE 4" SDR 35.
2. SEWER MAIN TO BE 8" MINIMUM SDR 35.
3. ALL WATER SERVICES TO BE 3/4" MINIMUM POLY OR COPPER.
4. WATER MAIN TO BE 8" DUCTILE IRON CLASS 52 WRAPPED.



GRAPHIC SCALE

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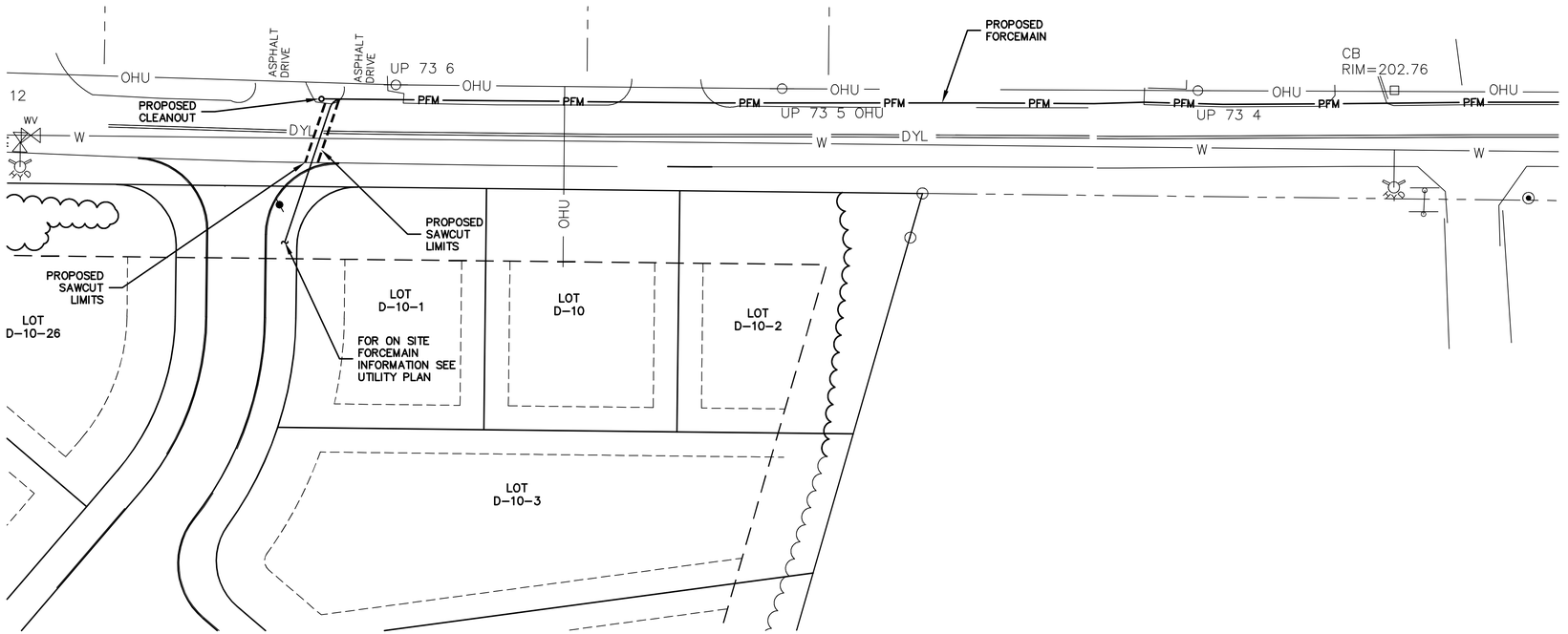
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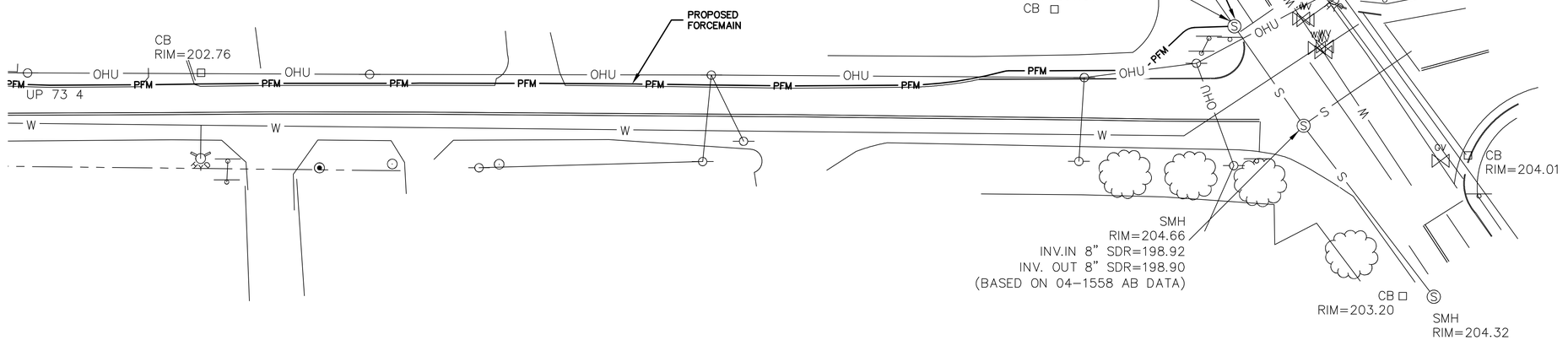
GNE CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

UTILITY PLAN "B"

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10





NOTES:
1. PROPOSED SEWER FORCEMAIN TO BE INSTALLED A MINIMUM 1' OFF OF THE EXSISTING EDGE OF PAVEMENT.
2. ANY IMPACTS TO THE EXISTING PAVEMENT OR DRIVEWAYS SHALL BE REPLACED IN PLACE AND IN KIND.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

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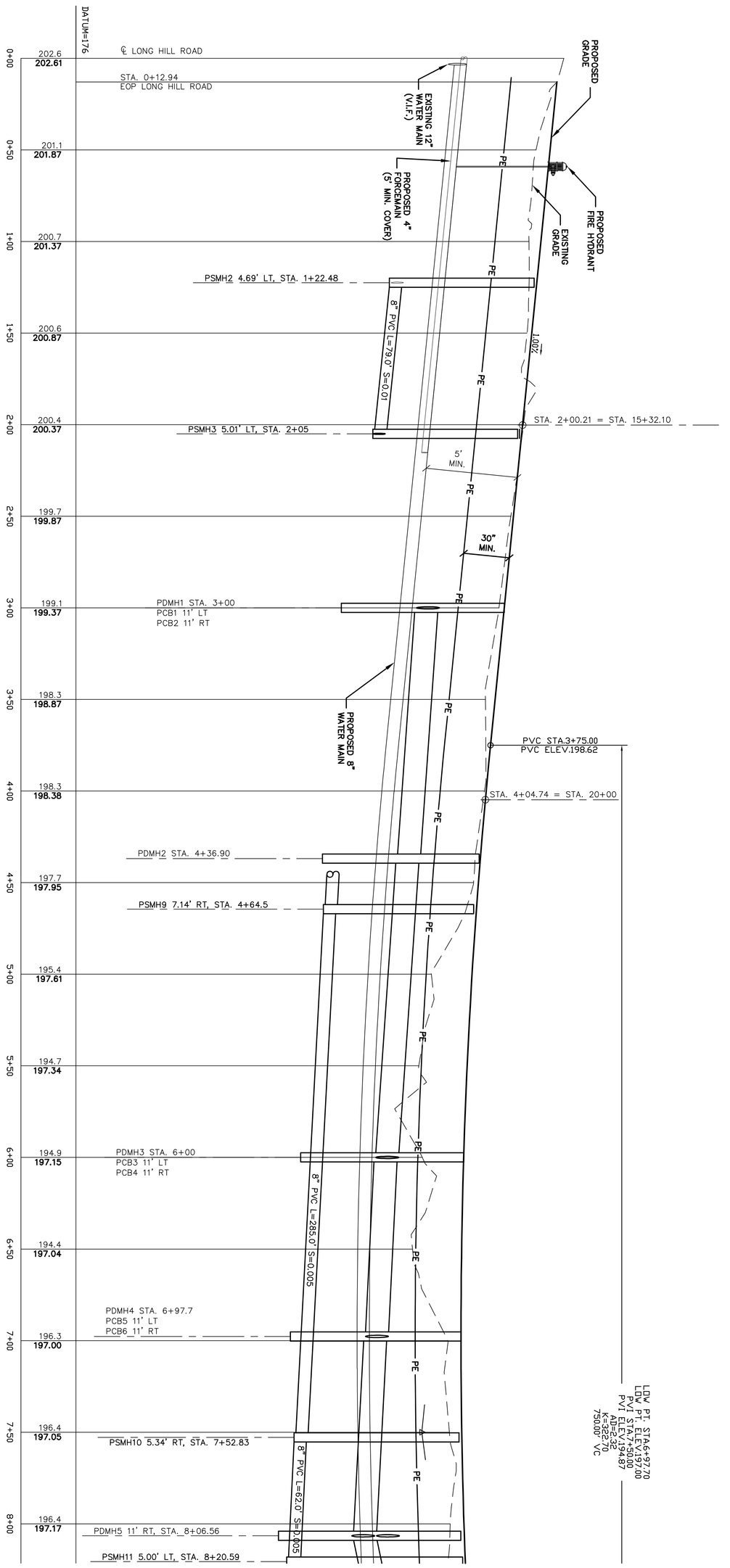
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GNE CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

OFFSITE UTILITY IMPROVEMENTS PLAN

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10



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

PLANNING FILE NO.:

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SCALE: 1"-=30'					
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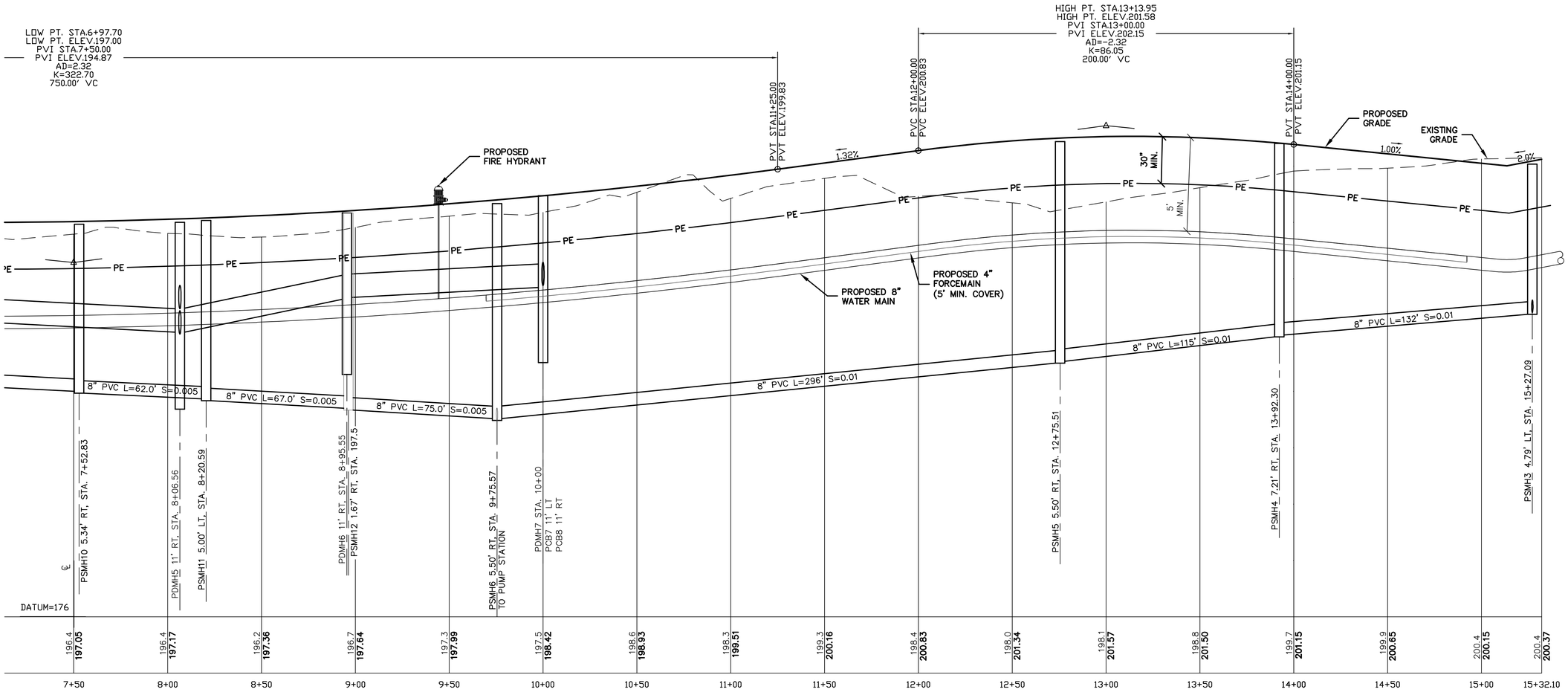
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

PROPOSED ROAD PROFILE

16

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801



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

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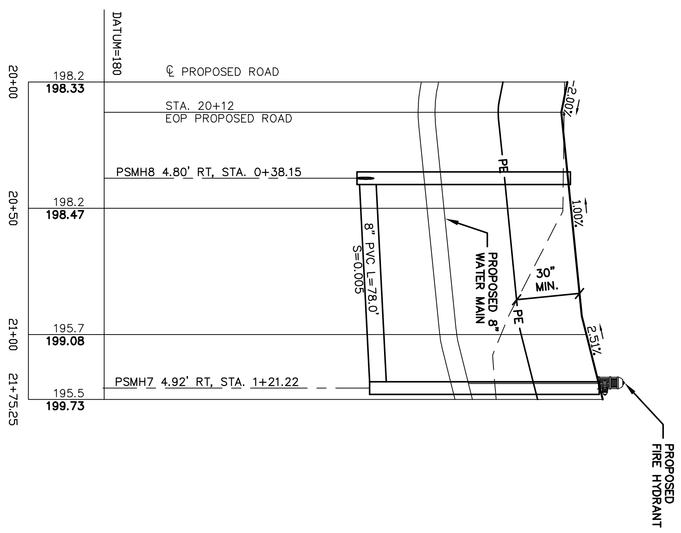
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CIVIL & WATERSHED ENGINEERING
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PROPOSED ROAD PROFILE

LONG HILL PLACE
42 LONG HILL ROAD
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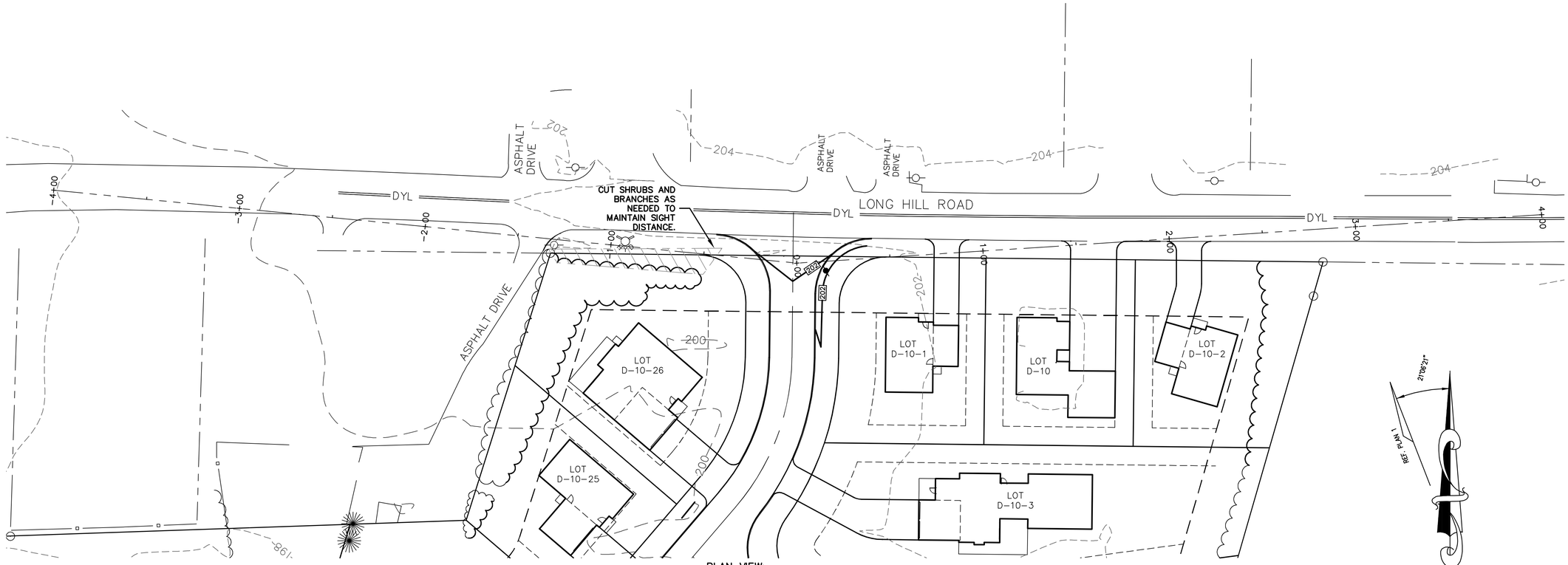
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170 COMMERCE WAY
PORTSMOUTH, NH 03801



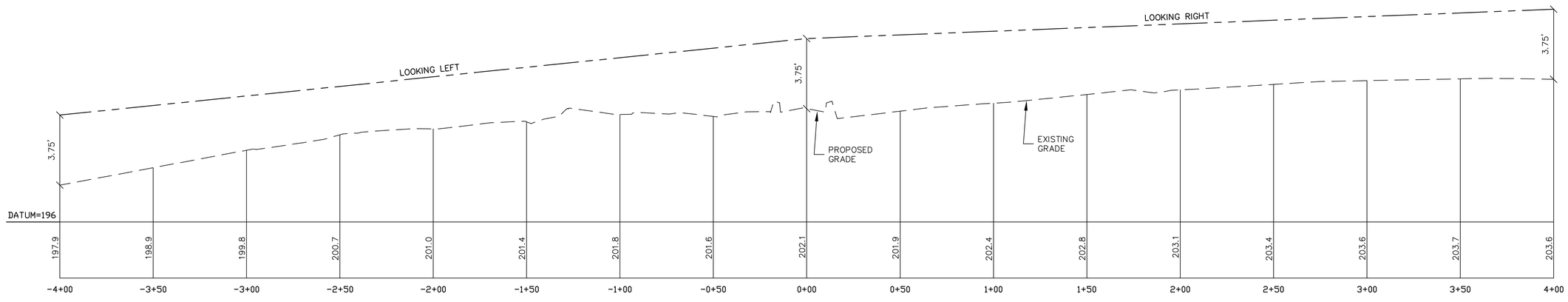
PROPOSED ROAD PROFILE
CUL-DE-SAC
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

PLANNING FILE NO.:

PROPOSED ROAD PROFILE					
18	LONG HILL PLACE 42 LONG HILL ROAD DOVER, NH 03820 TAX MAP D, LOT 10	DIAMOND CAPITAL, LLC 170 COMMERCE WAY PORTSMOUTH, NH 03801	DATE: 12-7-23 SCALE: 1"-=30' DRAWN BY: SRD DESIGN BY: JRG APPROVED BY:SJH PROJECT NO: 22032 FILE: SITE.DWG	NO. / REVISION / APP'D / DATE	NOT FOR CONSTRUCTION FOR PERMIT USE ONLY CNE CIVILWORKS NEW ENGLAND CIVIL & WATERFRONT ENGINEERING 181 Watson Road, PO Box 1166 Dover, New Hampshire 03821 603.749.0443



PLAN VIEW:
HORIZONTAL SCALE: 1"=30'



PROFILE VIEW
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

PLANNING FILE NO.:

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
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CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

ALL SEASON SAFE SIGHT DISTANCE

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

19

DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 1,600 LF OF PUBLIC ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 34 LOT SINGLE FAMILY SUBDIVISION.

PROJECT NAME AND LOCATION

LONG HILL PLACE
TAX MAP D, LOT 10 — *LATITUDE N43° 13' 53"*
42 LONG HILL ROAD — *LONGITUDE W70° 54' 07"*
DOVER, NH

DISTURBED AREA

±403,178 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 NECCESSARY 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 FOLLOMNG 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 OTHERWISED 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 NECCESSARY.*
- *c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.*
- *d. EROSION CONTROL 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 INTERFERRING 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 NITORGEN 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 FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   - a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   - b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (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 STABALIZATION 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.

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

CATCH BASINS & STORMWATER TREATMENT STRUCTURES

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

SPILL PREVENTION

A. MATERIAL MANAGEMENT PRACTICES
THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING
1. 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 MAINTENACE 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 FERTILZER 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 SPILLS 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 ACCESSED 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 THAT 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.

PER 153-10 F:
ALL SITE IMPROVEMENTS WHICH REQUIRE BLASTING OF LAND SHALL MEET THE FOLLOWING REQUIRMENTS PRIOR TO ANY BLASTING OCCURING.

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

WINTER CONSTRUCTION NOTES

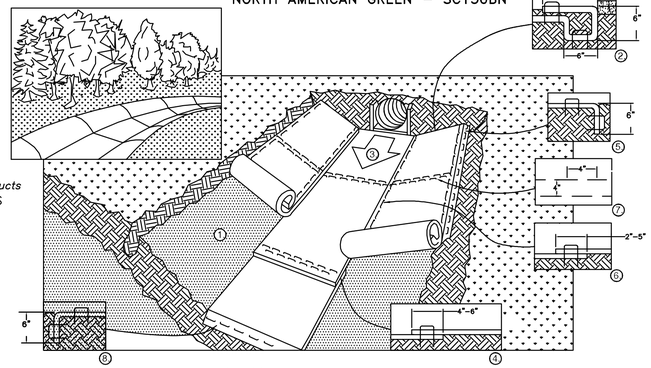
1. *ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS 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.*

ENV-WQ 1510: BEST MANAGEMENT PRACTICES FOR BLASTING

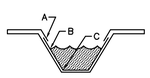
1) ALL ACTIVITIES ASSOCIATED WITH BLASTING NEED TO BE OPTIMIZED TO PREVENT THE RELEASE OF CHEMICALS ASSOCIATED WITH BLASTING ACTIVITIES TO THE ENVIRONMENT.
*2) IF MORE THAN 5,000 CY OF ROCK REMOVAL IS REQUIRED DRINKING WATER WELLS MUST BE IDENTIFIED AND LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONC

CHANNEL INSTALLATION
NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



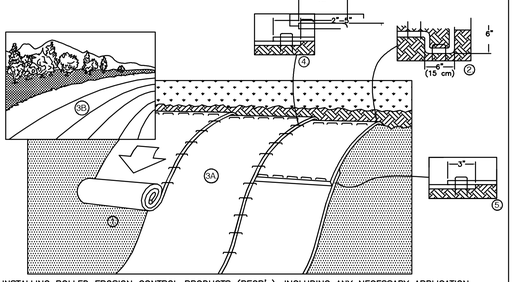
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

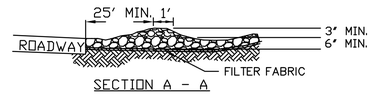
NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



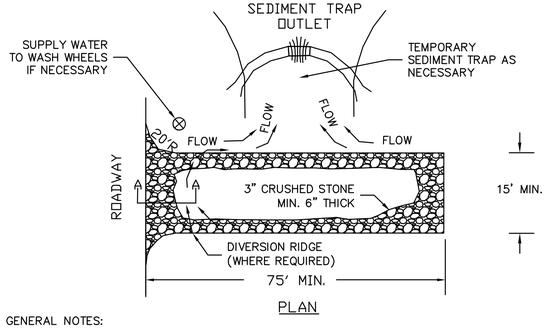
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE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

NOTE:
1. THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.
2. ALL EROSION CONTROL MATS SHALL BE INSTALLED ON ALL CUT & FILL SLOPES.

DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%



SECTION A – A



PLAN

A. GENERAL NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORM WATER RUNOFF FROM ROADS
2. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE IS REQUIRED TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
3. LOCATE THE CONSTRUCTION ENTRANCES AND EXITS, A MINIMUM OF 100 FEET FROM INTERSECTIONS, TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES THAT HAVE STEEP GRADES AND ENTRANCES AT CURVES IN ROADS.
4. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.

B. SPECIFICATIONS (TEMPORARY CONSTRUCTION ENTRANCE/EXITS SHOULD MEET THE FOLLOWING REQUIREMENTS).

1. STONE SIZE MINIMUM: USE SHOULD BE 3" CRUSHED STONE.
2. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET.
3. THE MINIMUM WIDTH OF THE PAD SHOULD BE 15 FEET OR THE WIDTH OF THE ENTRANCE, WHICHEVER IS GREATER
4. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
5. THE PAD SHOULD BE AT LEAST 6" THICK.
6. A GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
7. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF–SITE.
8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

C. MAINTENANCE REQUIREMENTS (THE ENTRANCE/EXIT SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT).

1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.
2. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY. WHEN WHEEL WASHING IS REQUIRED, IT SHOULD BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT–TRAPPING DEVICE. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES OR WATERWAYS.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE

SEEKING REPORTS OF RARE TURTLES

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



Blanding's turtle (state endangered)
- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



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



Eastern box turtle (state endangered)
- Small terrestrial turtle with highly domed shell
- Irregular yellow or orange markings over brown/black base



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

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

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

PLANNING FILE NO.:

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE

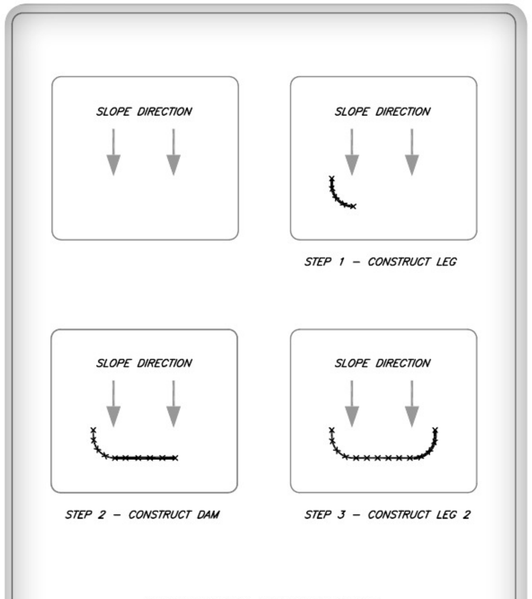
DATE: 12–7–23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

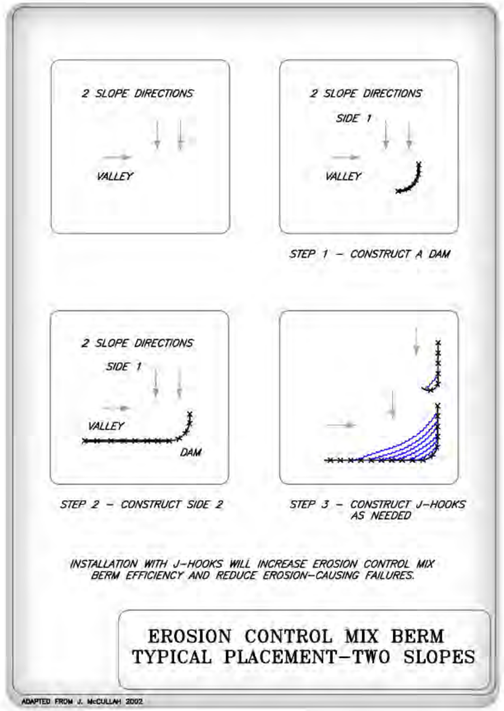
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

EROSION CONTROL DETAILS

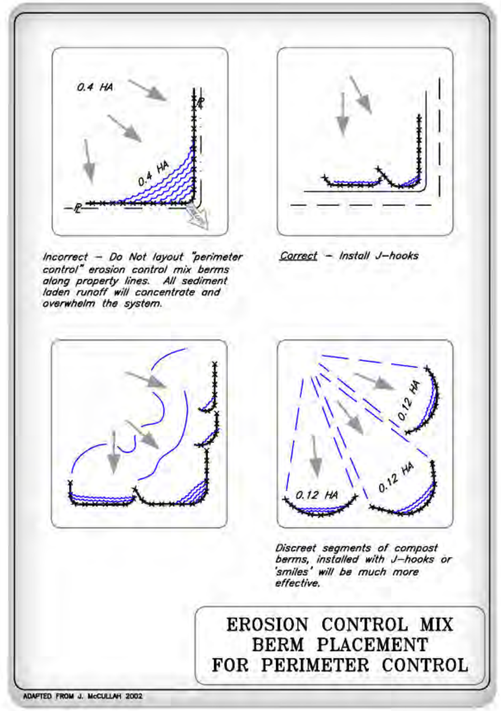
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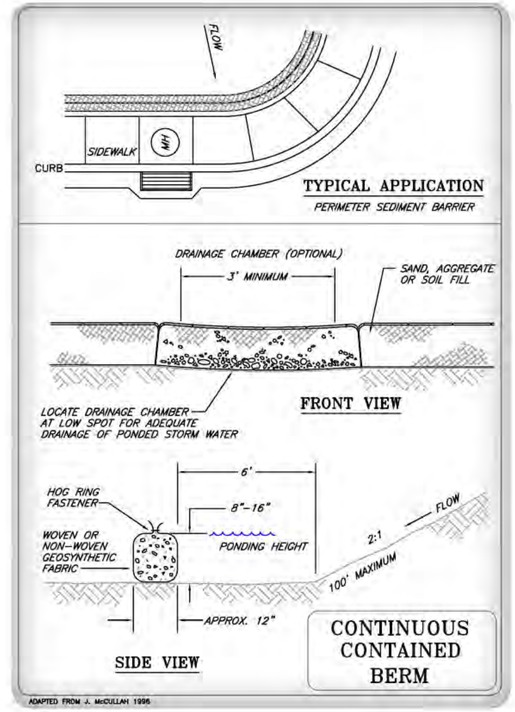
DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



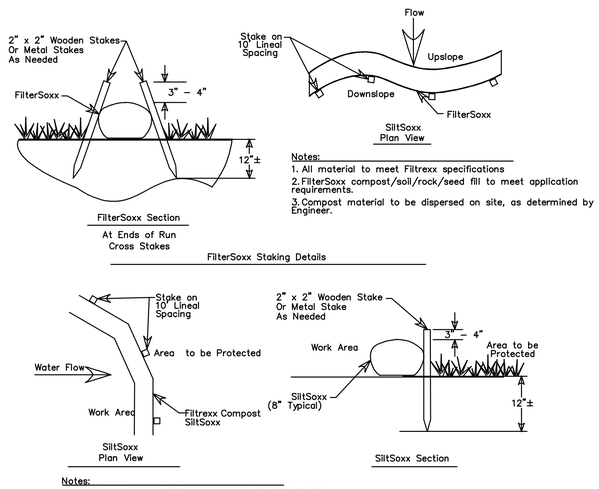
DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3

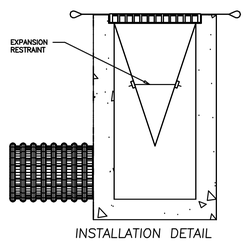


DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3





OIL-ABSORBANT SILTSACK®

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.
AS SUPPLIED BY AH HARRIS OF PORTSMOUTH OR APPROVED EQUAL

REGULAR FLOW SILTSACK®

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

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

HI-FLOW SILTSACK®

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

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

DETAIL OF INLET SEDIMENT CONTROL DEVICE
NOT TO SCALE

PLANNING FILE NO.:
NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

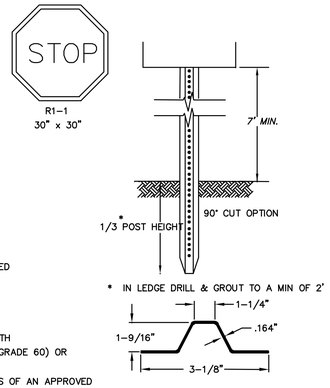
GNE
CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

EROSION CONTROL DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
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TAX MAP D, LOT 10

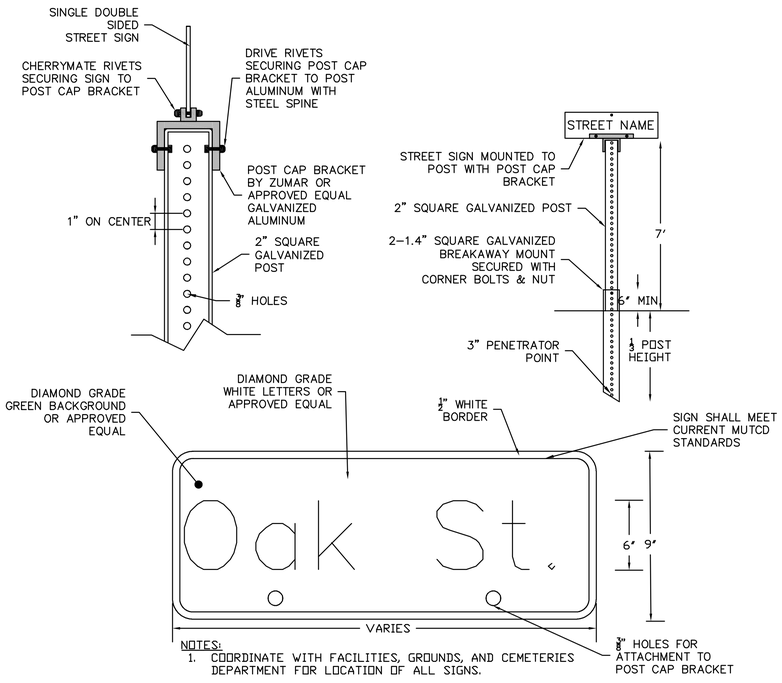
22



NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

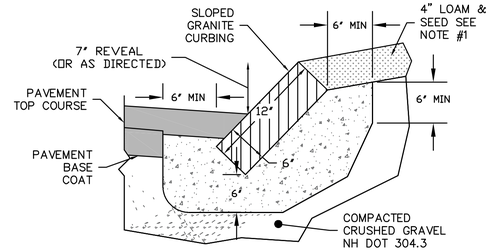
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN
BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

SIGN LEGEND & SIGN POST
NOT TO SCALE



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

CITY OF DOVER D-1 STREET SIGN DETAIL
NOT TO SCALE



SLOPED GRANITE CURB

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

NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET 1/2" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

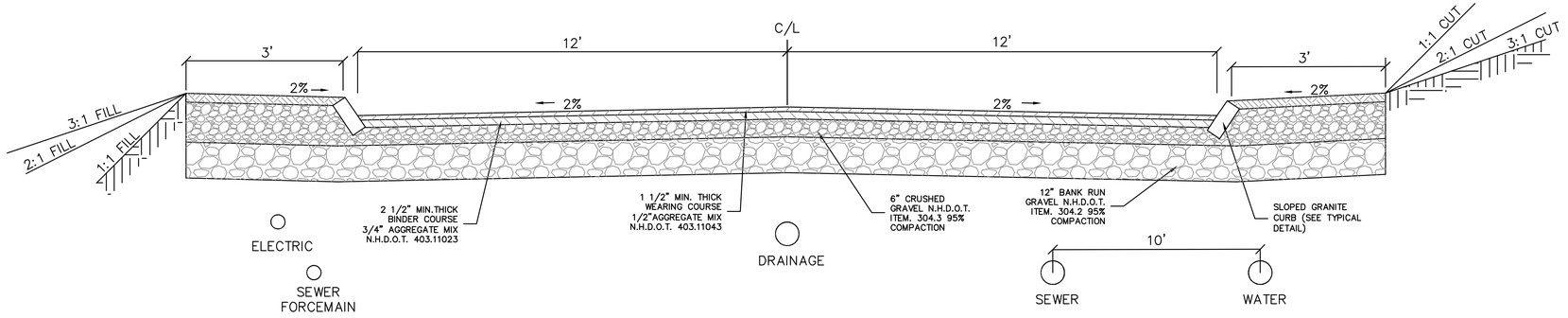
CITY OF DOVER D-8 GRANITE CURB DETAIL
NOT TO SCALE

LENGTH AS REQUIRED (SEE SITE PLAN)

NOTE: PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS. APPLY TWO COATS.

STOP BAR & LEGEND

PAVEMENT MARKINGS
NOT TO SCALE



TYPICAL CROSS SECTION
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

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

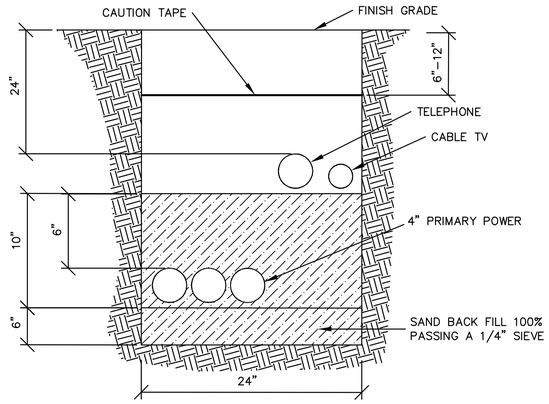
NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

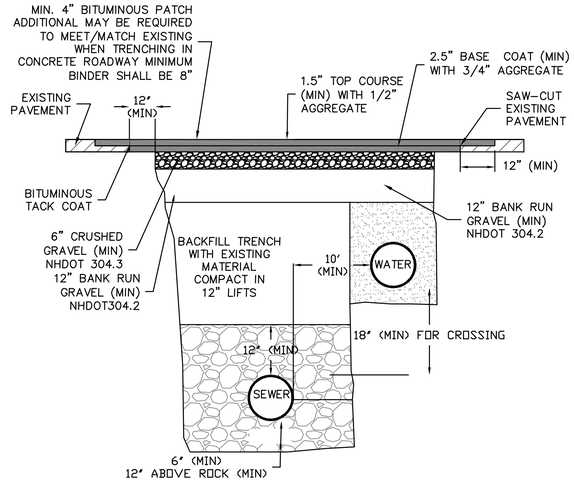
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10



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

UTILITY TRENCH

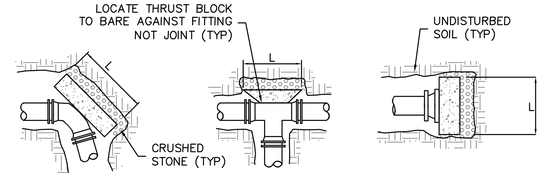
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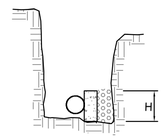


NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL

NOT TO SCALE





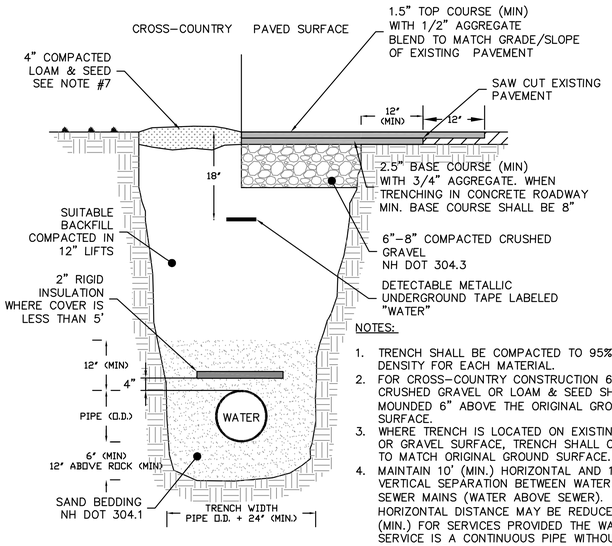
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	System Pressure: 125 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

CITY OF DOVER D-15
THRUST BLOCK DETAIL

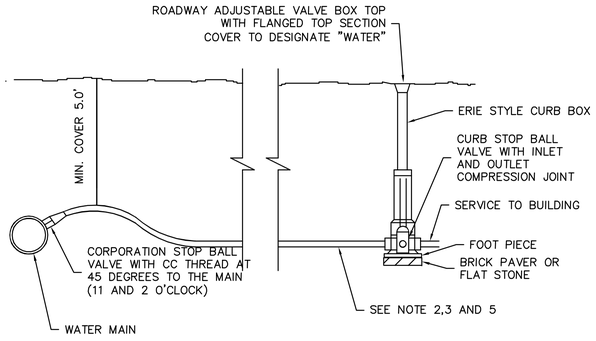
NOT TO SCALE



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

CITY OF DOVER D-4
WATER TRENCH DETAIL

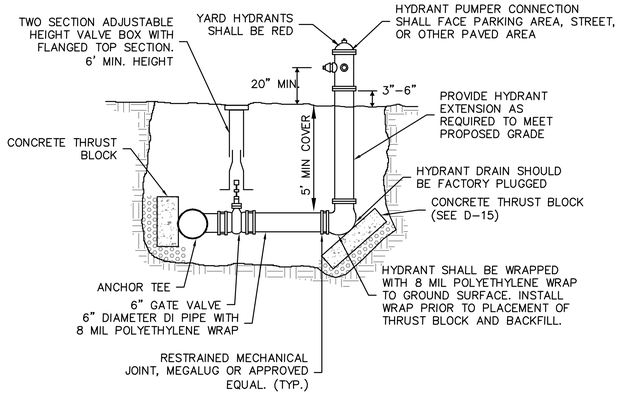
NOT TO SCALE



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

CITY OF DOVER D-13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



NOTES:
1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.

CITY OF DOVER D-14
FIRE HYDRANT DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

NO.	REVISION	APP'D	DATE

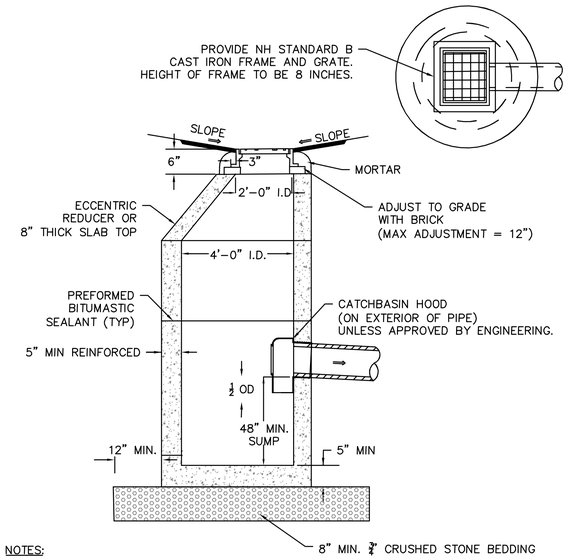
CNE CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

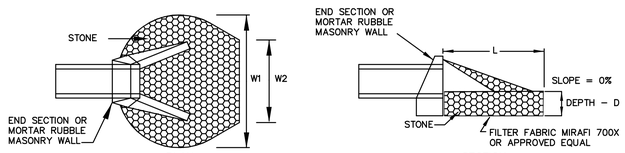


NOTES:

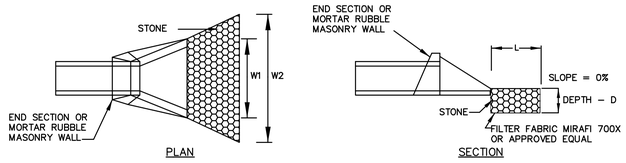
1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.

CITY OF DOVER D-19
CATCHBASIN DETAIL

NOT TO SCALE



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO DEFINED CHANNEL



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

MAINTENANCE

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

STONE GRADATION

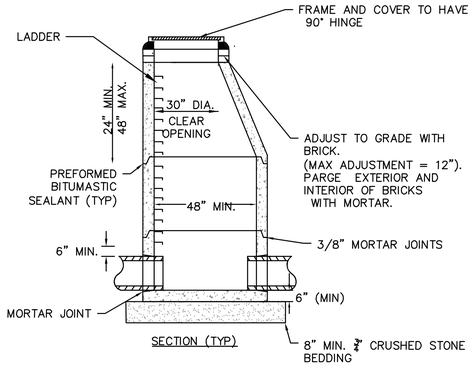
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

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

OUTLET FROM	W1(ft)	W2(ft)	L(ft)	D (ft)	D50(IN)	CHANNEL TYPE
PDMH5	4	14	24	1	6	UNDEFINED
OS-1	SEE PLUNGE POOL DETAIL					

RIP RAP OUTLET PROTECTION
NOT TO SCALE

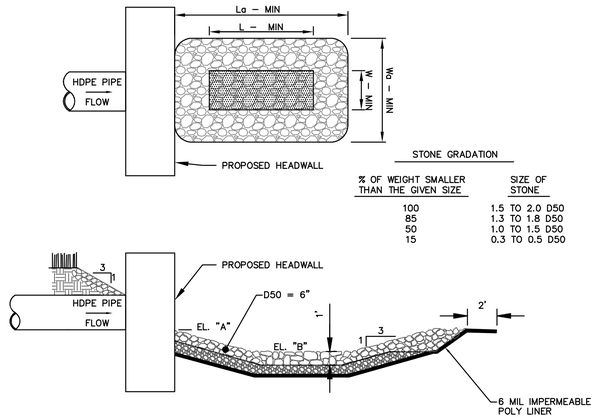


NOTES:

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

CITY OF DOVER D-20
DRAIN MANHOLE DETAIL

NOT TO SCALE



STONE GRADATION

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

DIMENSIONS AND ELEVATIONS

POOL	OUTLET FROM	L	La	W	Wa	EL. "A"	EL. "B"
PLUNGE POOL 1	WET POND 1	4.5'	13.5'	3.0'	12.0'	186.2	184.7

CONSTRUCTION SPECIFICATIONS

1. PLUNGE POOL AREAS AND EXTENTS OF RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. STONE FOR THE PLUNGE POOL 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. PLUNGE POOL SHALL BE CONSTRUCTED ON A 6" THICK (MIN) CRUSHED GRAVEL BASE.

PLUNGE POOL DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.:

NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

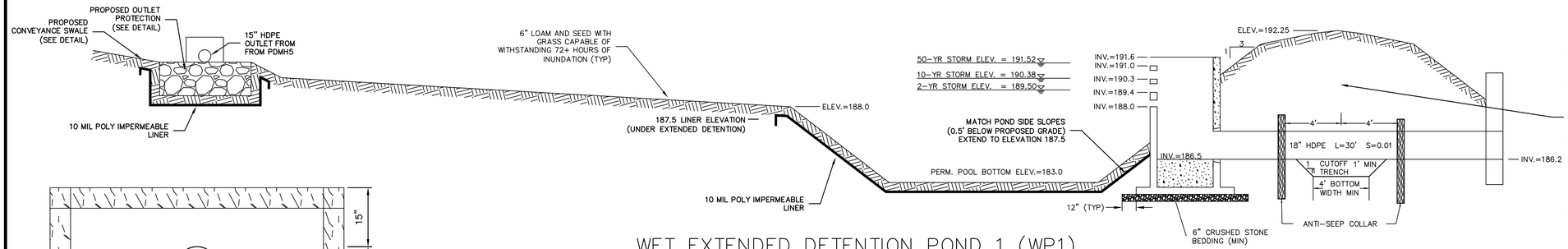
CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

DETAILS

25

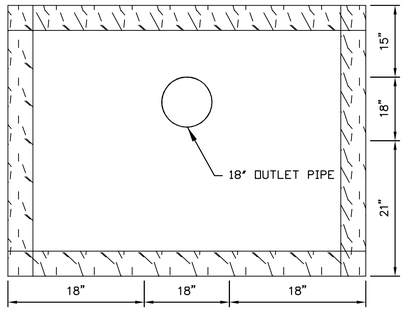


WET EXTENDED DETENTION POND 1 (WP1)

NOT TO SCALE

EMBANKMENT SPECIFICATIONS

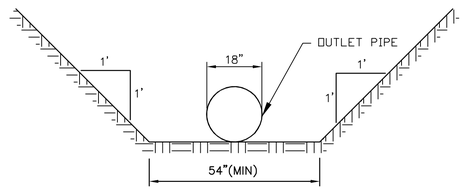
THE CORE OF THE EMBANKMENT INCLUDING THE CUTOFF TRENCH SHALL BE CONSTRUCTED OF CLAY BORROW. THIS MATERIAL SHALL CONTAIN AT LEAST 50% BY WEIGHT PARTICLES PASSING A #200 SIEVE. IT SHALL CONTAIN NO PARTICLES LARGER THAN 6 INCHES. THE MATERIAL SHALL HAVE A PLASTIC INDEX OF 8 OR GREATER. THE EMBANKMENT AREA AND CUTOFF TRENCH SHALL BE STRIPPED OF ALL ORGANIC SOILS PRIOR TO PLACEMENT OF CLAY BORROW. THE CLAY BORROW SHALL BE PLACED IN LIFTS OF 12 INCHES OR LESS AND BE COMPACTED TO AT LEAST 90% OF ASTM D-1557. THE CLAY SHALL BE PLACED AND COMPACTED AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%. NO ORGANIC SOILS OR FROZEN MATERIAL SHALL BE PLACED IN THE CLAY BORROW. MINIMUM CORE THICKNESS SHALL BE SIX (6) FEET. THE SHELL FOR THE EMBANKMENT MAY BE CONSTRUCTED OF EXISTING ON SITE MATERIALS. NO ORGANIC SOILS OR FROZEN MATERIAL SHALL BE USED AS SHELL MATERIAL



WET POND 1 OUTLET PIPE ANTI-SEEP COLLAR DETAIL

NOT TO SCALE

NOTES:
1. ANTI-SEEP COLLARS SHALL BE WATERPROOF AND HAVE A WATERPROOF CONNECTION TO THE PIPE.
2. ANTI-SEEP COLLARS TO BE AGRI DRAIN OR APPROVED EQUAL.



WET POND 1 OUTLET PIPE TRENCH DETAIL

NOT TO SCALE

DETENTION AREA EARTH EMBANKMENT:
1. SEE GRADING PLAN FOR BERM WIDTHS.
2. SIDE SLOPES – THREE HORIZONTAL TO ONE VERTICAL (3:1) OR UNLESS OTHERWISE NOTED.
3. FILL MATERIALS SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.
4. FILL MATERIALS SHALL BE A MIXTURE OF STONES (NOT EXCEEDING 6" IN DIAMETER) AND A FINE SANDY SILT MATERIAL.
5. THE SOIL USED FOR THE SEDIMENT FOREBAY BERM SHALL HAVE A MINIMUM PERCOLATION RATE OF 10 MINUTES AN INCH.
6. SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

DETENTION AREA BERM BASE PREPARATION:
1. THE BASE AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED BERM. THE BASE AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF MATERIAL.
2. REMOVE ALL SOFT ORGANIC MATTER, PEAT, DEBRIS AND FOREIGN MATERIAL TO A DEPTH AS NEEDED (1' MIN) TO REACH AN UNYIELDING BASE OF VIRGIN SOIL.

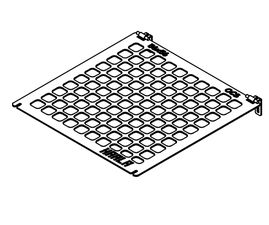
EXECUTION:
1. FILL MATERIALS SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
2. FILL MATERIALS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
3. ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
4. FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. PLACE THE MORE IMPERVIOUS SOIL (HIGHER PERCENTAGE PASSING THE #200 SIEVE) IN THE UPSTREAM TWO-THIRDS (2/3) OF THE BERM. THE MORE GRANULAR SOIL MATERIAL SHOULD BE PLACED IN THE REMAINING DOWNSTREAM ONE-THIRD PORTION OF THE BERM.
5. INSTALL ANTI-SEEP COLLARS CONCURRENTLY WITH FILL MATERIAL PLACEMENT.
6. INSTALL CUT-OFF TRENCH CONCURRENTLY WITH FILL MATERIAL PLACEMENT. THE CUT OFF TRENCH SHALL BE LOCATED AT OR SLIGHTLY UPSTREAM OF THE CENTER LINE OF THE BERM. IT SHALL EXTEND UP THE ABUTMENTS AS REQUIRED AND BE DEEP ENOUGH TO EXTEND INTO A RELATIVELY IMPERVIOUS LAYER.
7. THE CUTOFF TRENCH SHALL HAVE A BOTTOM WIDTH ADEQUATE TO ACCOMMODATE THE EQUIPMENT USED FOR EXCAVATION, BACKFILL AND COMPACTION OPERATIONS. CUTOFF TRENCH TO BE EXCAVATED AND BACKFILLED PRIOR TO PLACING PIPE.
8. CUTOFF TRENCH SIDE SLOPES SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL.

MOISTURE CONTROL
THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.

COMPACTION
FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI-SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS.

MAINTENANCE:
MAINTENANCE IS NECESSARY TO ENSURE THAT THE WET POND WILL CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. THE "HOMEOWNERS ASSOCIATION" IS RESPONSIBLE FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA.

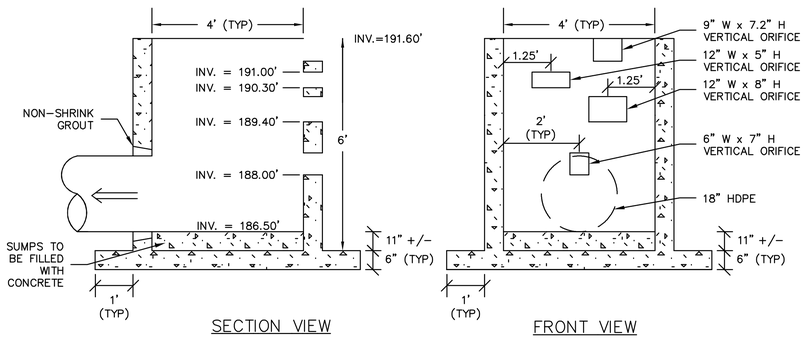
1. EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE. IF SUCH ISSUES ARE NOTED THEY SHALL BE RECTIFIED AS SOON AS PRACTICAL.
2. VEGETATION – THE VEGETATED AREAS OF THE BERM SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES SHOULD BE KEPT OFF THE BERM AREA.
3. INLETS AND OUTLETS – SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED.
4. SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE STRUCTURE INLET ELEVATION. THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.



NOTES:
1. UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

HAALA MC56X56

NOT TO SCALE

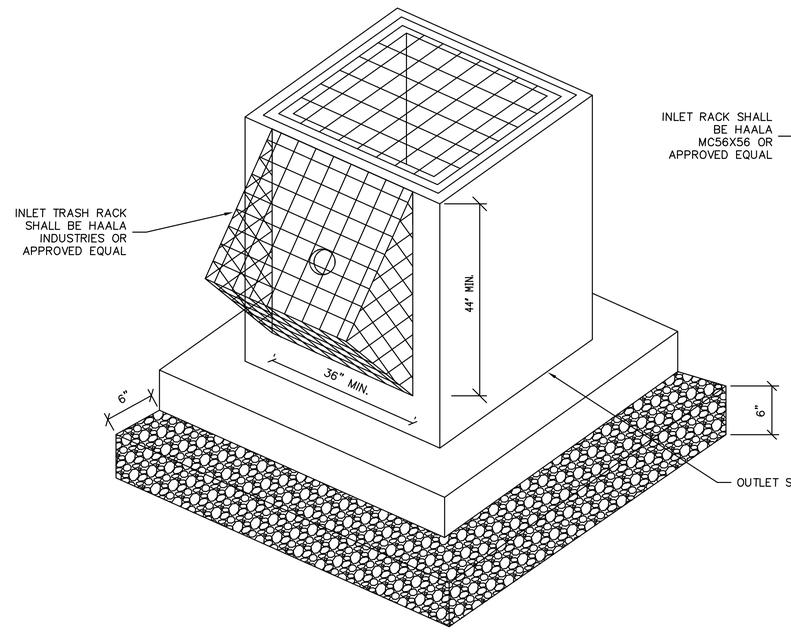


NOTE:

1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

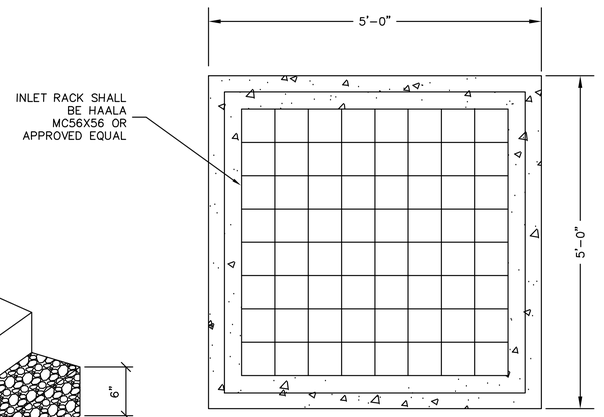
OS-1 OUTLET STRUCTURE DETAIL

NOT TO SCALE



TYPICAL INLET TRASH RACKS

NOT TO SCALE



GRATE

NOTE:

1. OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.
3. INLET GRATES AND TRASH RACKS SHALL BE HAALA PRODUCTS OR APPROVED EQUAL.

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PLANNING FILE NO.:

NO.	REVISION	APP'D	DATE

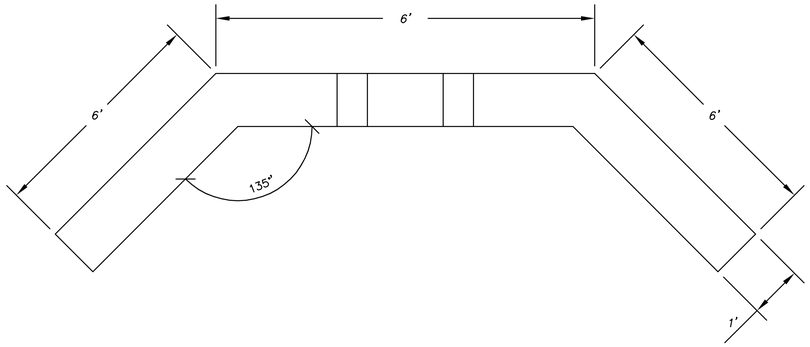
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SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

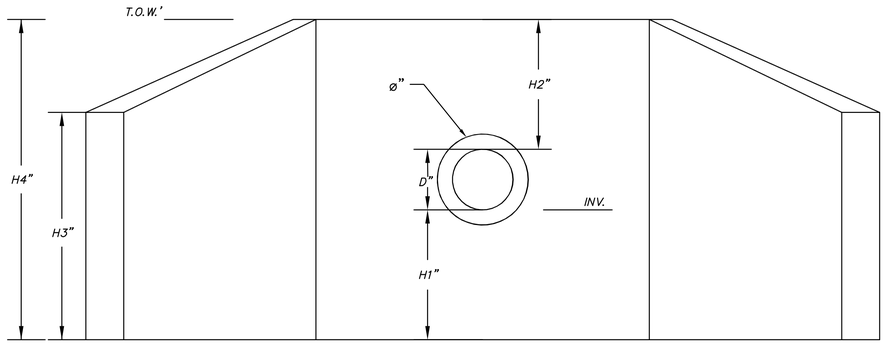
GNE CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

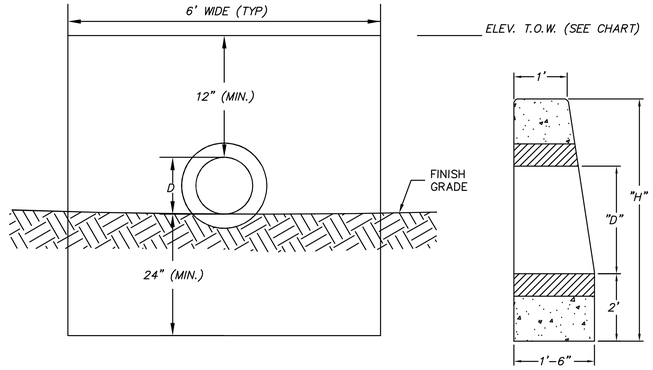




HEADWALL DETAIL CHART

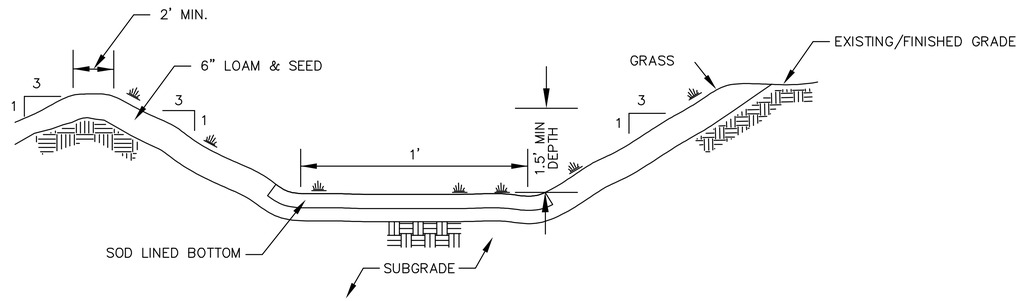
HEADWALL	T.O.W.	D	ø	INV.	H1	H2	H3	H4
HW-1	196.23	15"	22"	192.6	22.5"	28.5"	3.5'	5.5'
HW-3	189.45	18"	26"	186.2	21"	21"	3'	5.0'

HEADWALL DETAIL
NOT TO SCALE



HEADWALL DETAIL CHART

HEADWALL	T.O.W.	D	INV.	H
HW-2	193.0	15"	190.2	5'



NOIES:
1. THE CONVEYANCE SWALE SHALL HAVE A MINIMUM SLOPE OF 0.005 FT/FT.
2. SEE GRADING PLAN FOR LIMITS OF EXTENT.

MAINTENANCE
TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION, HOWEVER IT SHOULD NOT BE MOWED TOO CLOSELY, MAINTAIN A MINIMUM 4" STAND OF VEGETATION. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.

THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

GRASS LINED CONVEYANCE SWALE DETAIL
NOT TO SCALE

PLANNING FILE NO.:

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

NO.	REVISION	APP'D	DATE

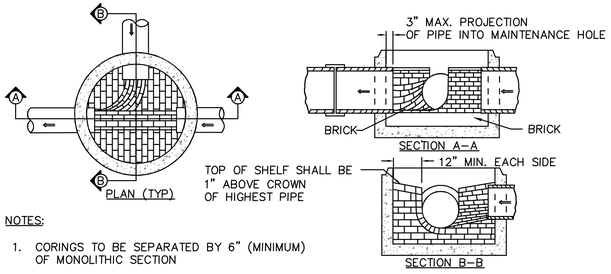
DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
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DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

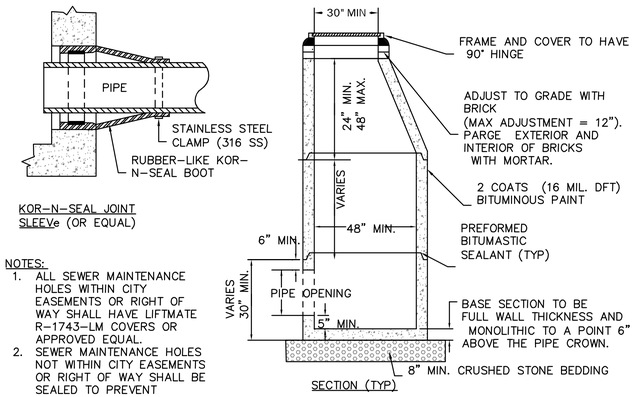
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

27



NOTES:

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

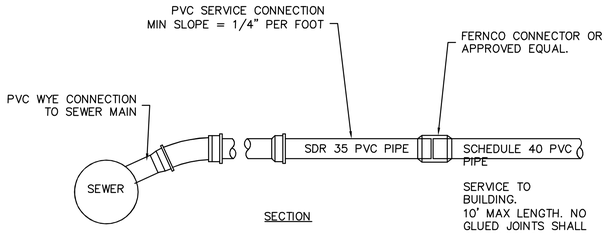


NOTES:

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

CITY OF DOVER D–16
SEWER MANHOLE DETAIL

NOT TO SCALE

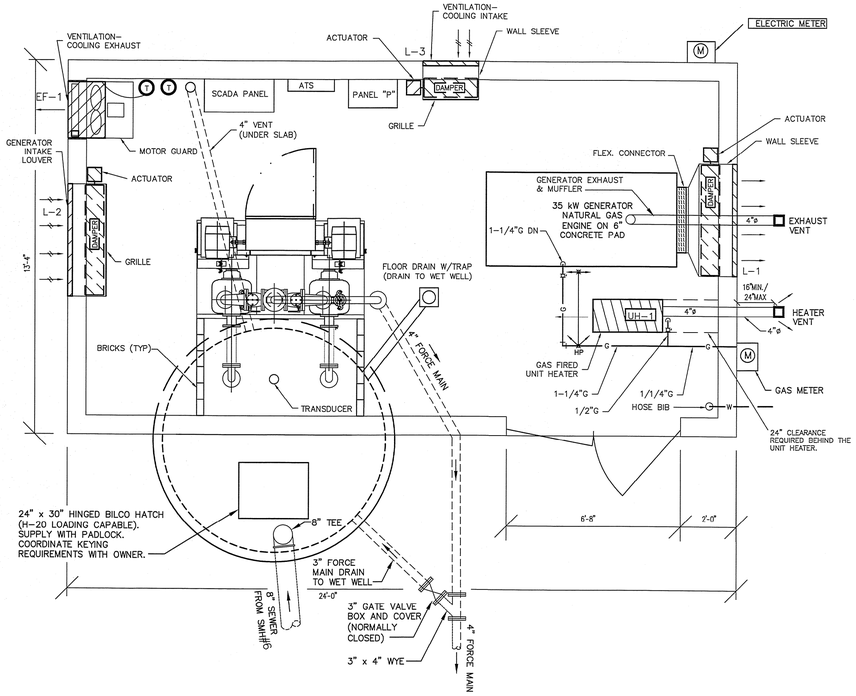


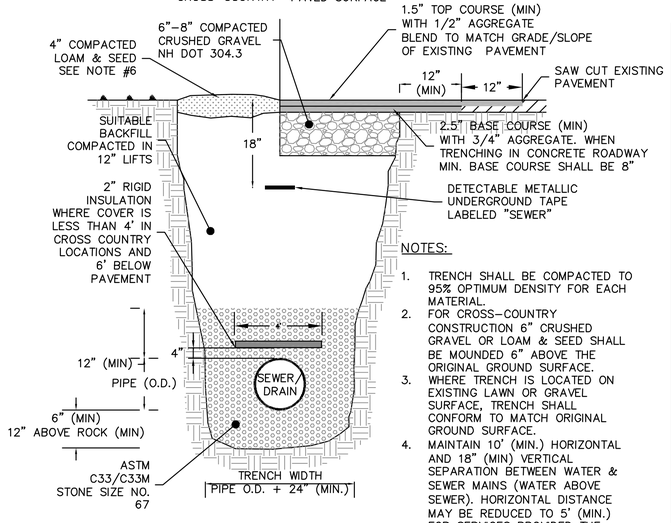
NOTES:

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

CITY OF DOVER D–17
SEWER SERVICE DETAIL

NOT TO SCALE



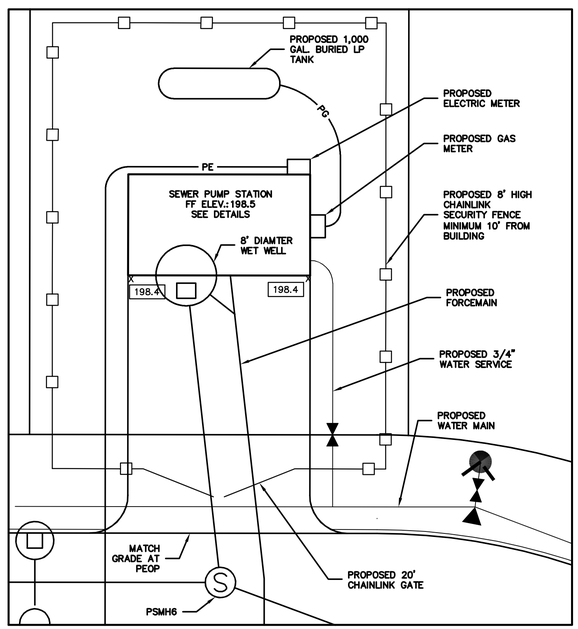


NOTES:

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

CITY OF DOVER D–3
SEWER TRENCH DETAIL

NOT TO SCALE



PLAN VIEW
PUMP STATION DETAIL
SCALE: 1"=10'

HVAC NOTES:

EF–1
SIDEWALL PROPELLER FAN, GREENHECK MODEL SE1–18–436–C6, OR APPROVED EQUAL, 1108 CFM @ .25"SP, 1/6HP, 860RPM. ACCESSORIES SHALL INCLUDE, WALL COLLAR, HEAVY DUTY MOTORIZED BACKDRAFT DAMPER, DAMPER GUARD, MOTOR SIDE GUARD. MOUNT FAN HIGH ON WALL.

L–1 & L–2
LOUVERS ASSOCIATED WITH GENERATOR. GREENHECK MODEL ESD–202, OR APPROVED EQUAL, 48"x48"x2"D, EXTRUDED ALUMINUM, 6.01SQ.FT. FREE AREA EACH, (5.9 MIN. REQ'D). ACCESSORIES INCLUDE: FLANGED FRAME, BIRD SCREEN, KYNAR FINISH. EACH LOUVER ASSEMBLY SHALL ALSO INCLUDE A 2–POSITION MOTORIZED DAMPER, GREENHECK MODEL HCD–136, 48"x48"x8", INSULATED AIR FOIL BLADES. CONSTRUCTION FEATURES – 14 GAUGE 3043S FRAME, 20 GA. 3043S BLADES, SILICONE RUBBER BLADE SEALS, 1/2" DIA. SS AXLE, WEATHER RESISTANT LINKAGE. TWO POSITION DAMPER ACTUATORS SHALL BE SIEBE MODEL MA–418–500, OR APPROVED EQUAL, 120V, AUXILARY SWITCH, 60 LB–IN TORQUE.

L–3
VENTILATION INTAKE LOUVER, SAME LOUVER AND DAMPER SPECIFICATIONS AS L–1&L–2 EXCEPT 24"x24"x2" DIMENSIONS. TWO POSITION DAMPER ACTUATOR SHALL BE SIEBE MODEL MA–405–500, OR APPROVED EQUAL, 120V, AUXILARY SWITCH, 16 LB–IN TORQUE.

DUCTWORK
L–1. THE GENERATOR DISCHARGE LOUVER SHALL BE DUCTED FROM THE DUCT FLANGE AT THE GENERATOR RADIATOR TO THE WALL LOUVER ASSEMBLY. STARTING AT THE RADIATOR THE DUCT WORK SHALL INCLUDE A FLEXIBLE CONNECTOR, BEFORE TRANSITIONING FROM 28"x20" TO THE 48"x48" LOUVER/DAMPER ASSEMBLY WALL SLEEVE. THE WALL SLEEVE FOR EACH LOUVER/DAMPER ASSEMBLY SHALL BE HEAVY GAUGE GALVANIZED METAL, AND SHALL EXTEND INTO THE BUILDING AS FAR AS REQUIRED TO ACCOMMODATE THE DAMPER.

L–2 & L–3. THE GENERATOR INTAKE LOUVER (L–2), AND THE VENTILATION INTAKE LOUVER (L–3) SHALL BE SLEEVED SIMILARLY TO L–1. EACH INTERIOR DUCT OPENING SHALL BE COVERED WITH A GRILLE, METAL–AIRE MODEL CCG, OR APPROVED EQUAL. THE GRILLES SHALL BE SIZED SO THAT THE GRILLE FLANGES DO NOT EXTEND BEYOND THE OUTSIDE DIMENSION OF THE WALL SLEEVES, RESULTING IN A CLEAR APPEARANCE.

UH–1
INDOOR POWER VENTED GAS FIRED FAN TYPE UNIT HEATER. REZNOR, MODEL FE–25, OR APPROVED EQUAL. 25000 BTUH INPUT, 20000 BTUH OUTPUT, 1.9 FLA, 1/50 HP, 1/2" GAS CONNECTION, 4" VENT CONNECTION, WEIGHT–76LBS, 14"WX30"HX32"D, REMOTE THERMOSTAT (SEE THERMOSTAT NOTE BELOW). REQUIRED CLEARANCES FROM COMBUSTIBLES ARE: TOP AND FLUE – 6", SIDES –18", BOTTOM–12". 24" BACK CLEARANCE REQUIRED FOR SERVICE PURPOSES. OPTIONAL FEATURES SHALL INCLUDE: E–3 (409) STAINLESS STELL HEAT EXCHANGER AND BURNER, VENT CAP, MANUAL SHUT–OFF VALVE AND UNION.

HVAC NOTES (CONTINUED):

UNIT HEATER VENTING. THE VENT PIPING SHALL BE 4" 20 GAUGE GALVANIZED STEEL. USE AT LEAST 2 NON–CORROSIVE SCREWS PER VENT JOINT. SEAL ALL JOINTS WITH ALUMINUM OR TEFLON TAPE SUITABLE FOR 550 DEGREES F. SUPPORT THE VENT PIPING WITH STRAP STEEL OR CHAIN. TERMINATE WITH VENT CAP PROVIDED BY THE MANUFACTURER.

GAS PIPING
LOW PRESSURE GAS PIPING FROM THE METER TO THE UNIT HEATER AND THE GENERATOR SHALL BE SCHEDULE 40 STEEL WITH SCREWED FITTINGS, INSTALLED IN STRICT ACCORDANCE WITH NFPA 54.

CONTROL SEQUENCES

1. L–1 & L–2. THE DAMPERS ASSOCIATED WITH LOUVERS L–1 AND L–2 SHALL BE OPEN DURING GENERATOR OPERATION, AND CLOSED WHEN THE GENERATOR IS NOT OPERATING.

2. UH–1
THE REMOTE HEATING THERMOSTAT SHALL ACTIVATE UH–1 TO MAINTAIN THE THERMOSTAT HEATING SET–POINT.

3. EF–1 & L–3
THE REMOTE COOLING THERMOSTAT SHALL ACTIVATE EF–1 AND OPEN THE DAMPER ASSOCIATED WITH L–3 TO MAINTAIN THE THERMOSTAT COOLING SET–POINT.

THERMOSTAT
THE HEATING/COOLING THERMOSTATS SHALL BE HONEYWELL MODEL T7100D1001/Q7100A1044, OR APPROVED EQUAL, TWO POSITION, LOW VOLTAGE, ELECTRONIC THERMOSTAT, 1–STAGE HEAT, 1–STAGE VENTILATION–COOL, AUTO OR MANUAL CHANGEOVER, PROTECTIVE COVER HONEYWELL MODEL TG512B1007.

ELECTRICAL WORK
ELECTRICAL WORK BY HEATING & VENTILATION CONTRACTOR INCLUDES: LOW VOLTAGE WIRING AND LOW VOLTAGE TRANSFORMERS. ALL OTHER ELECTRICAL WORK SHALL BE BY THE ELECTRICAL CONTRACTOR.

PUMP STATION NOTES

PUMP STATION TO BE GORHAM–RUPP BASE–MOUNTED, DUPLEX PUMP STATION WITH SELF–PRIMING PUMPS, AND TRANSDUCER WITH MECHANICAL FLOAT BACKUP CONTROLS FOR PUMP OPERATION. THE PUMP STATION SHALL HAVE AIR RELEASE VALVES, HOUR METERS FOR EACH PUMP, AUTOMATIC PUMP, ALTERNATION, AND HIGH WATER ALARM. CONTROLS SHALL INHIBIT SIMULTANEOUS START OF BOTH MOTORS.

MODEL NO. T3CSC–B–4 IMPELLER 8.75" HORSEPOWER 7.5 VOLTAGE 208 – THREE PHASE

DESIGN FLOW:

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

19 HOMES – 2 BEDROOM
38 BDRMS x 150 GALS./DAY/BDRM = 5,700 GPD

15 HOMES – 3 BEDROOM
45 BDRMS x 150 GALS./DAY/BDRM = 6,750 GPD

INFILTRATION:

300 GPD/INCH DIAMETER/MILE SEWER x 8" SEWER MAIN" x 1,645/5,280 = 747.7 GPD (ROUNDED TO 750 GPD)

*INFILTRATION ALLOWANCE BASED ON 1,645 L.F. OF 8" PIPE

TOTAL DESIGN FLOW = 13,200 GPD

PLANNING FILE NO.:

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE

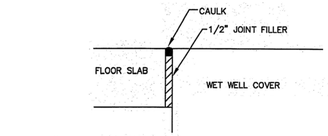
DATE: 12–7–23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DETAILS

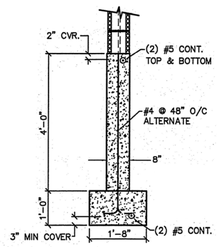
DIAMOND CAPITAL, LLC
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TAX MAP D, LOT 10

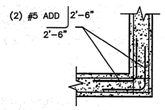
28



1 CONTROL JOINT DETAIL
NOT TO SCALE

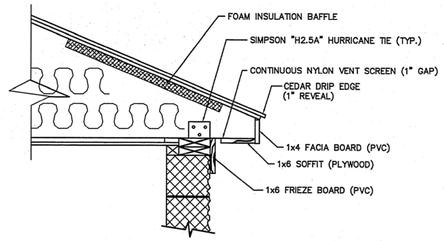


SECTION
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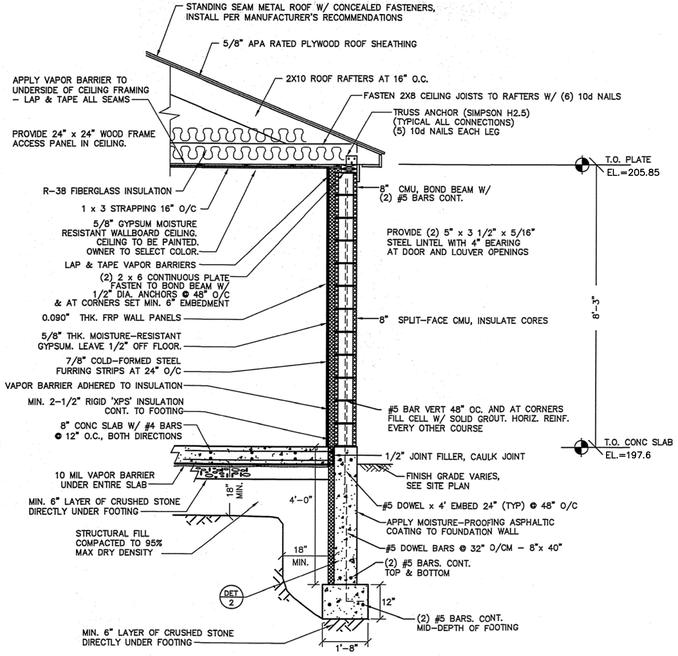


FOOTING AND WALL CORNER PLAN DETAIL
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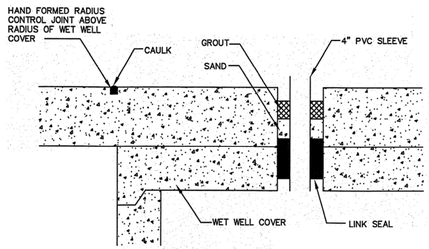
2 FOUNDATION DETAILS
AS NOTED



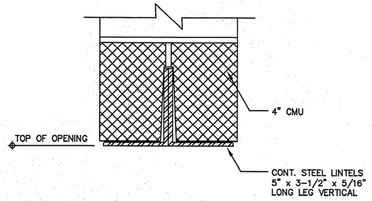
3 SOFFIT DETAIL
3/4" = 1 FT



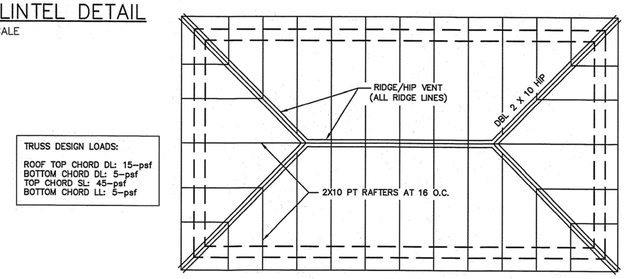
9 BUILDING SECTION
1/2" = 1 FT



4 PIPE PENETRATION
NOT TO SCALE

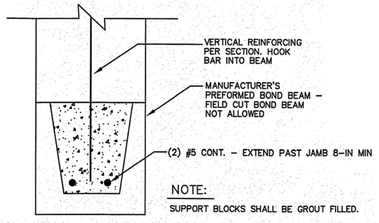


6 TYPICAL LINTEL DETAIL
NOT TO SCALE



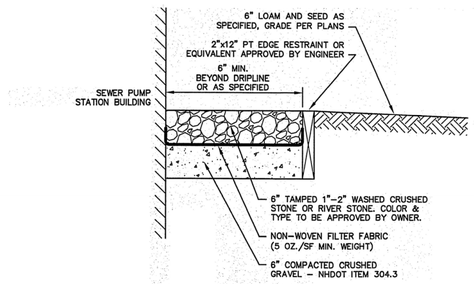
TRUSS DESIGN LOADS:
ROOF TOP CHORD DL: 15–psf
BOTTOM CHORD DL: 5–psf
TOP CHORD SL: 45–psf
BOTTOM CHORD LL: 5–psf

ROOF TRUSS FRAMING PLAN

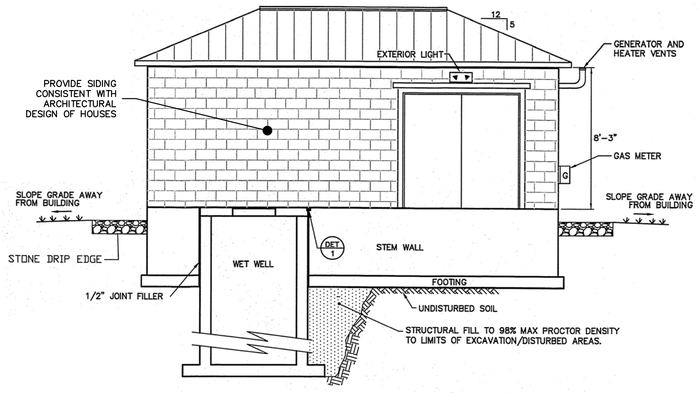


NOTE:
SUPPORT BLOCKS SHALL BE GROUT FILLED.

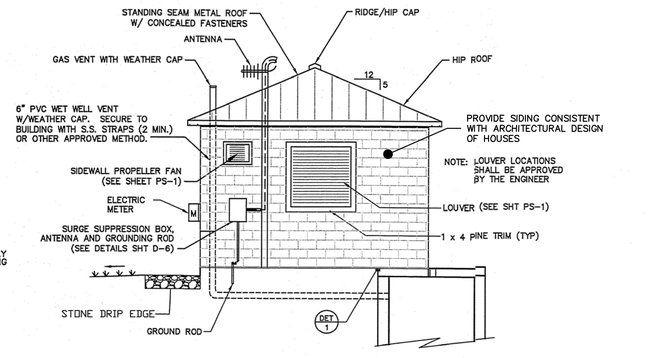
5 TYPICAL BOND BEAM DETAIL
NOT TO SCALE



7 STONE DRIP EDGE
NOT TO SCALE



SOUTH ELEVATION



WEST ELEVATION

8 PUMPING STATION ELEVATIONS
1" = 4 FT

BUILDING NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION, AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITIES AND SERVICES. THE APPROXIMATE LOCATIONS OF UTILITIES AND SERVICES ARE SHOWN ON THE PLANS. NOTIFY DIG–SAFE (1–800–255–4977) PRIOR TO COMMENCING CONSTRUCTION.
2. ALL BUILDING CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL BUILDING CODES.
3. CONTRACTOR TO CONSTRUCT CONCRETE WORK SUCH THAT:
   A) BUILDING FLOOR SLAB PENETRATIONS TO WET WELL ARE GAS–TIGHT, SEE DETAIL.
   B) BUILDING FOOTING AND FOUNDATION SHALL BE UNAFFECTED BY FROST ACTION.
   C) CONCRETE SLAB SHALL HAVE A HARDENED FINISH AND BE STEEL FLOATED FOR A SMOOTH SURFACE.
   D) ELECTRICAL CONDUIT SHALL BE BELOW SLAB, NO CONDUIT SHALL RUN ALONG FLOOR.
   E) REINFORCED CONCRETE TO BE 4,000 PSI STRENGTH.
   F) FILL CONCRETE TO BE 2,000 PSI STRENGTH.
   G) PROVIDE (4) #4 BARS AT 45° AT ALL WALL PENETRATIONS.
4. ALL ANCHORS AND BOLTS IN WET WELL TO BE 316 STAINLESS STEEL.
5. WASTEWATER PIPING IN THE WET WELL SHALL BE DUCTILE IRON CLASS 53, 125 POUND, FLANGED. THRUST BLOCKS SHALL BE INSTALLED AT EACH BEND FOR PRESSURE PIPING.
6. THE CONTRACTOR IS TO PROVIDE NECESSARY NATURAL GAS SERVICE IN CONFORMANCE WITH ALL LOCAL CODES.
7. CONTRACTOR TO PAINT ALL PIPE, COLOR PER CODE.
8. WALLBOARD SHALL BE PAINTED WITH OIL BASE PAINT, 3 COATS, WHITE.
9. CONTRACTOR SHALL PAINT ALL WALLBOARD AND TRIM, COLOR TO BE SELECTED BY OWNER.
10. PLACE CMU TO CONTINUE RUNNING BOND.
11. COLOR OF 8" SPLIT FACE CMU TO BE DETERMINED BY CITY OF DOVER.
12. PLACE FOOTING ON UNDISTURBED NATIVE SOIL OR ON COMPACTED FILL AS SPECIFIED.
13. DOOR SHALL BE STEEL FRAME AND SOLID STEEL CORE. HANDICAP SILL WITH THERMAL BREAK SS HARDWARE. KEYING TO MATCH EXISTING OWNER'S LOCK SYSTEM. OWNER TO SELECT COLOR. INSTALL CHANNEL UNDER DOOR SILL WHERE IT PROTRUDES BEYOND BUILDING.
14. ALL VAPOR BARRIERS SHALL BE TAPED AND SEALED AT ALL PENETRATIONS AND LAPPED AT TRANSITIONS BETWEEN CEILING, WALLS, AND FLOOR.

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PLANNING FILE NO.:

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CIVIL & WASTEWATER ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

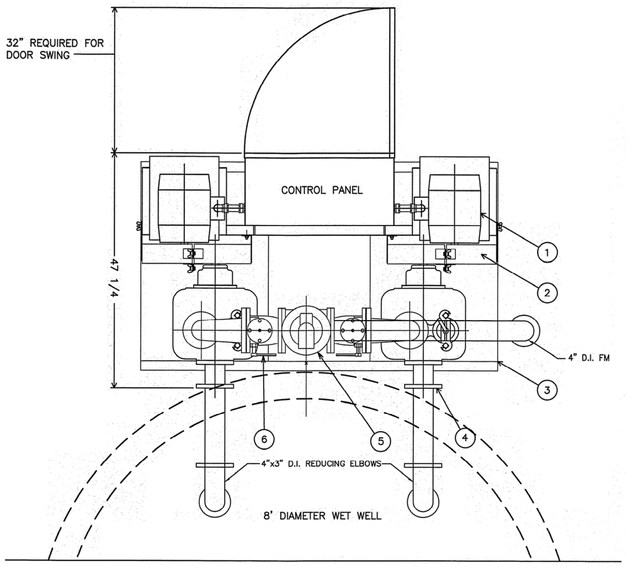
NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

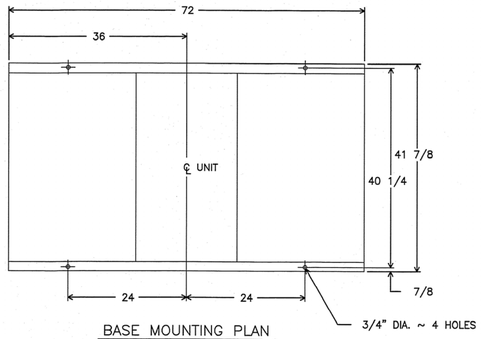
LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10



PUMPING EQUIPMENT PLAN

NOT TO SCALE
(ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED)

ALL DIMENSIONS "TYPICAL" AND SUBJECT TO CONFORMATION BY PUMP SUPPLIER



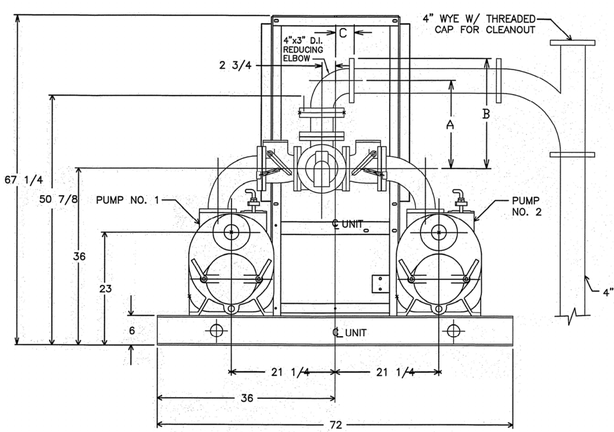
BASE MOUNTING PLAN

NOT TO SCALE
(ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED)

ITEM	DESCRIPTION	MAT'L & SIZE
1	MOTOR	CAST IRON
2	BELT GUARD ASSY	STEEL
3	STATION BASE ASSY	STEEL
4	PUMP	CAST IRON T3CSC-B-4
5	DISCHARGE PLUG VALVE	CAST IRON 4"
6	DISCHARGE CHECK VALVE	CAST IRON 4"
7	CONTROL PANEL FRAME	STEEL
8	CONTROL PANEL	STEEL 36" X 30"
9	MOTOR BASE ASSY	STEEL

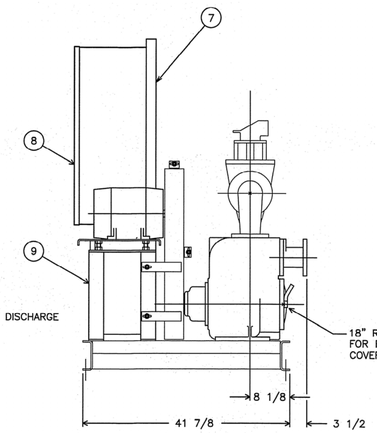
RIGHT & LEFT HAND DISCHARGE						
PLUMBING			A	B	C	D
SUCT.	DISCH.	HDR.				
4"	4"	4"	17 7/8	22 3/8	3 3/4	9 1/4

PUMP PERFORMANCE	
CAPACITY	150 GPM
TOTAL DYNAMIC HEAD	45.0
TOTAL DYNAMIC SUCTION LIFT	20.7
MAXIMUM STATIC SUCTION LIFT	18.4
STATIC DISCHARGE HEAD	-1.7
MAXIMUM REPRIMING LIFT	16.4



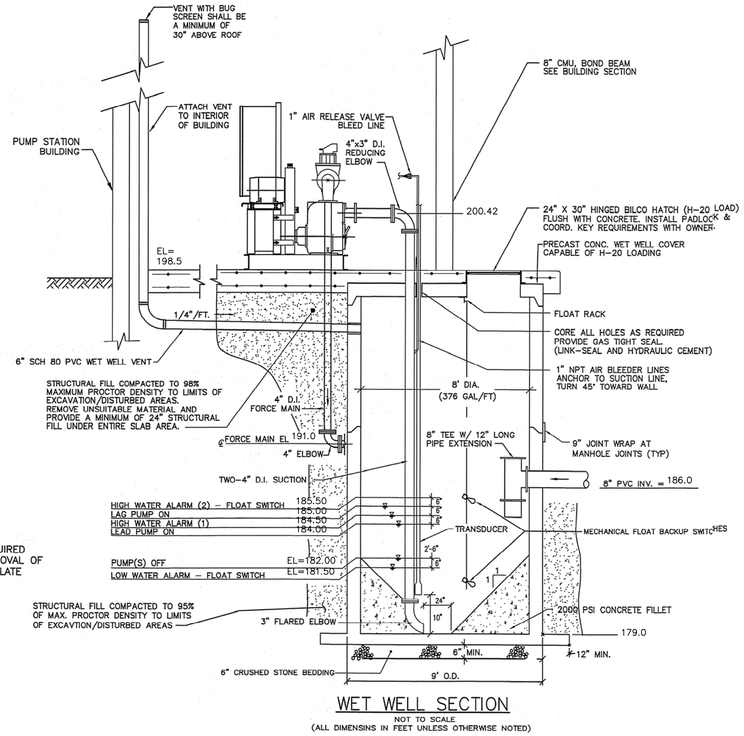
PUMP SECTION WITH RIGHT HAND DISCHARGE

NOT TO SCALE
(ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED)



PUMP SIDE SECTION

NOT TO SCALE
(ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED)



WET WELL SECTION

NOT TO SCALE
(ALL DIMENSINS IN FEET UNLESS OTHERWISE NOTED)

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CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

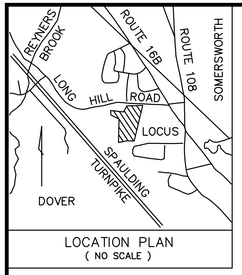
NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

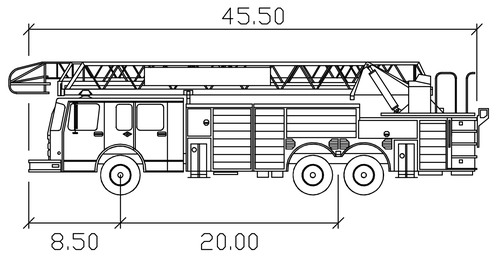
DETAILS

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

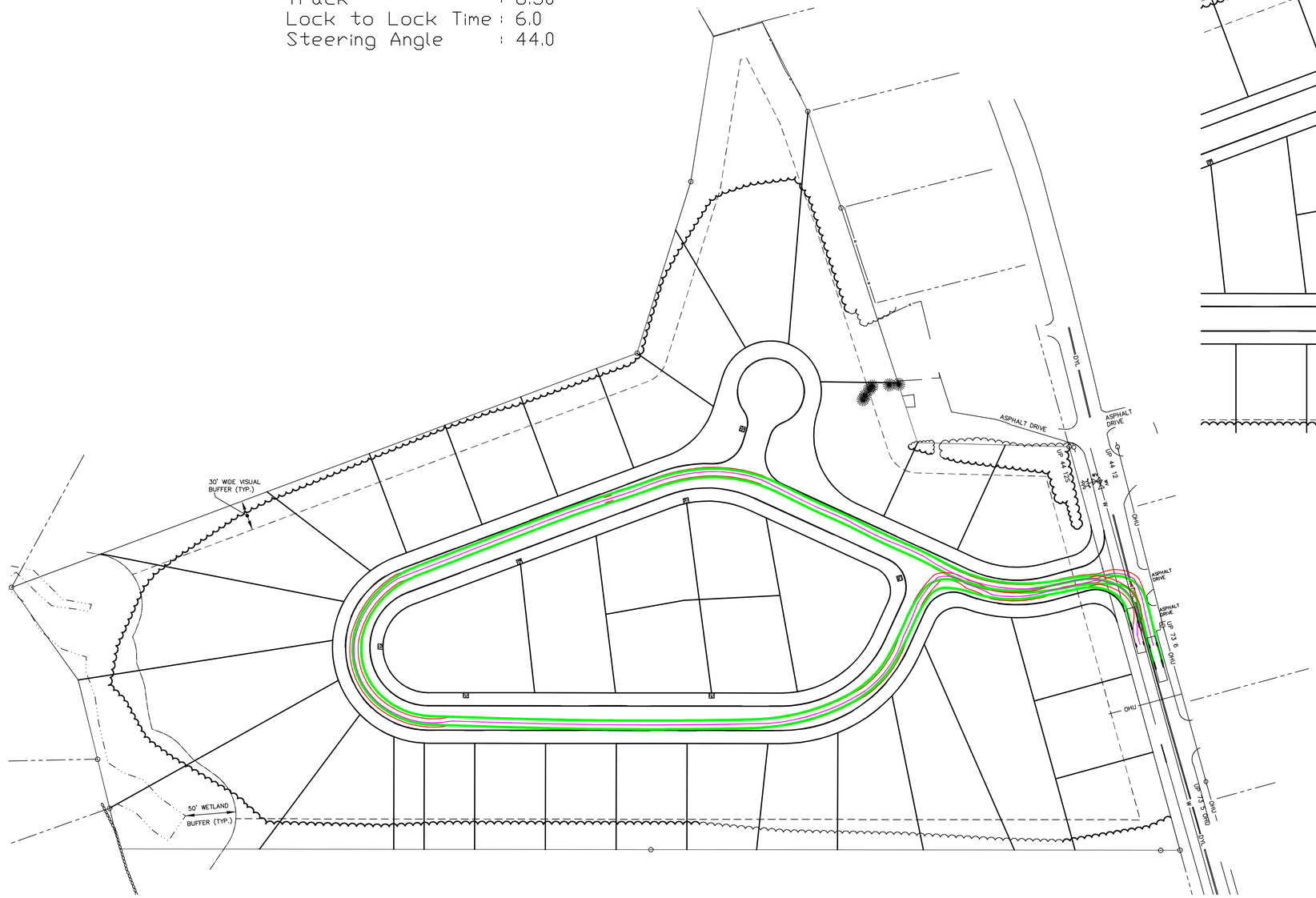


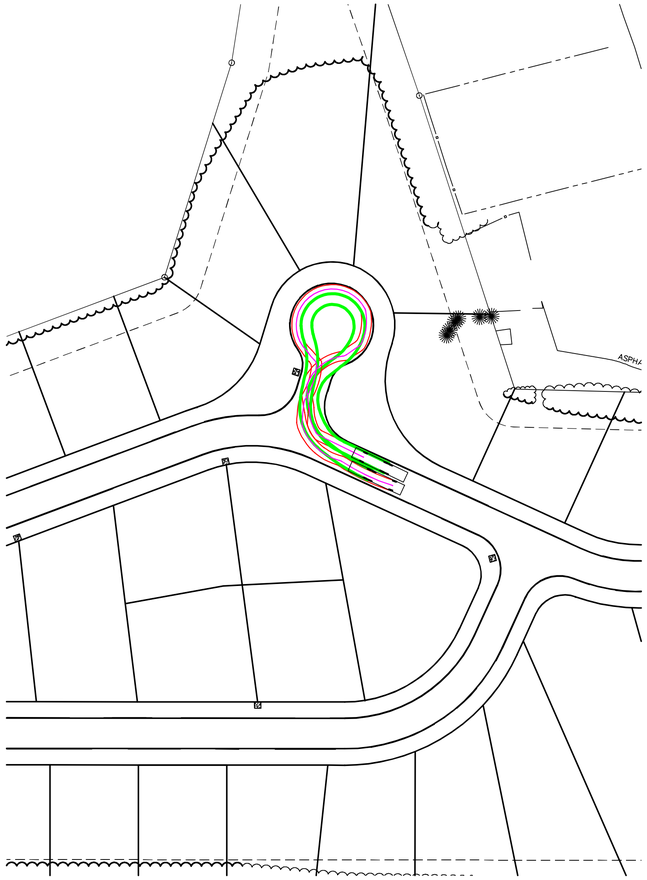
LOCATION PLAN
(NO SCALE)

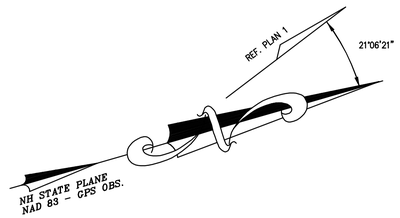


Dover ladder feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0







GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

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CIVIL & MUNICIPAL ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

PLANNING FILE NO.:

NO.	REVISION	APP'D	DATE

DATE: 12-7-23
SCALE: 1"=60'
DRAWN BY: SRD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 22032
FILE: SITE.DWG

DOVER LADDER FIRE TURCK MOVEMENT PLAN

LONG HILL PLACE
42 LONG HILL ROAD
DOVER, NH 03820
TAX MAP D, LOT 10

DIAMOND CAPITAL, LLC
170 COMMERCE WAY
PORTSMOUTH, NH 03801

31

BUILDING 1:

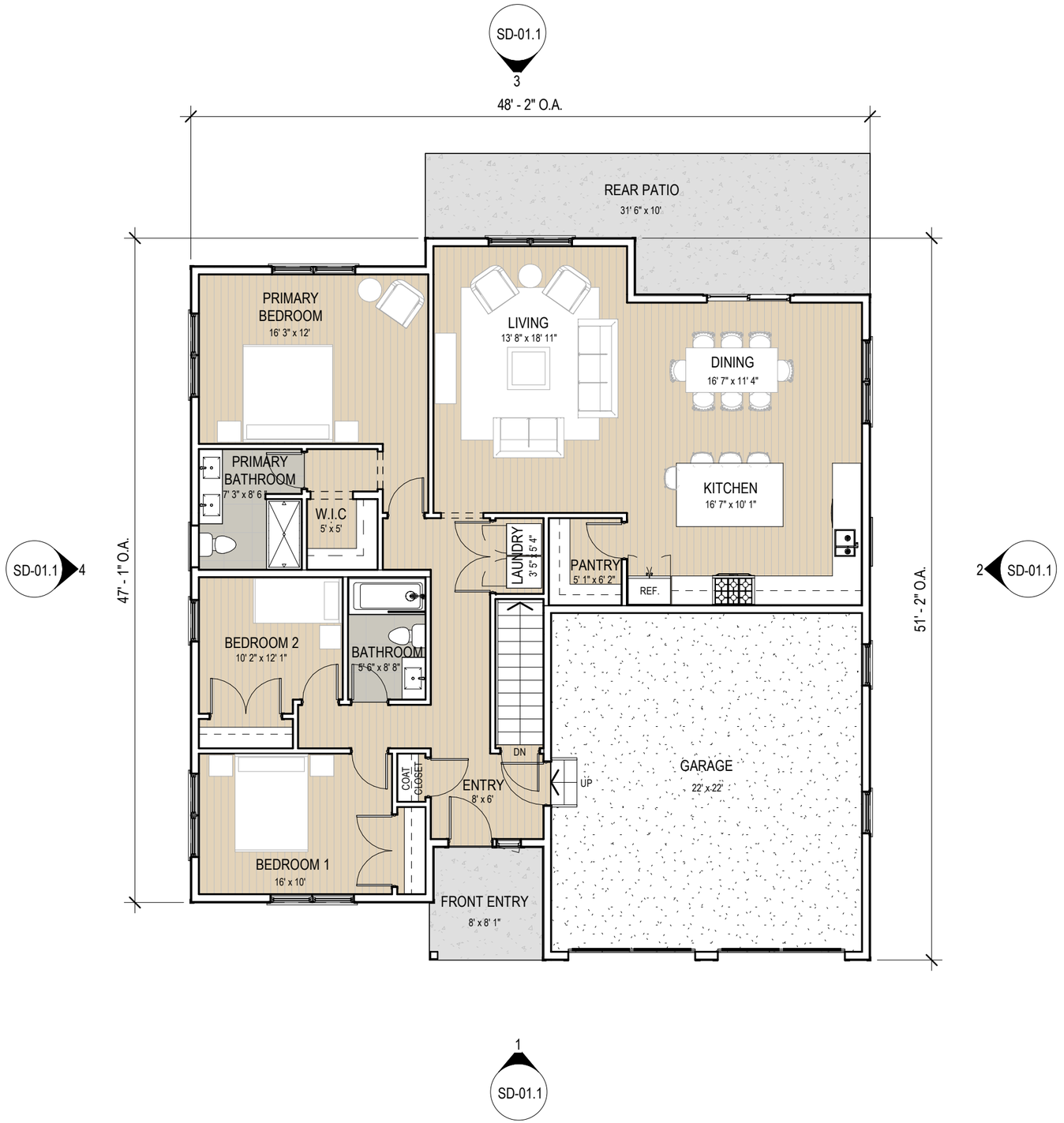
2 BED, 2 BATH

HEATED SF

FIRST FLOOR SF	= 1,620 SF
TOTAL HEATED SF	**= 1,620 SF**

UNHEATED SF

GARAGE	= 531 SF



1 BUILDING 1 - FIRST FLOOR PLAN
1/8" = 1'-0"

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

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE ONE - FLOOR PLAN
DRAWING NUMBER: SD-01

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1 BUILDING 1 - ELEVATION 1
1/8" = 1'-0"



2 BUILDING 1 - ELEVATION 2
1/8" = 1'-0"



3 BUILDING 1 - ELEVATION 3
1/8" = 1'-0"



4 BUILDING 1 - ELEVATION 4
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE ONE - ELEVATIONS
DRAWING NUMBER: SD-01.1

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BUILDING 2:

3 BED, 2.5 BATH

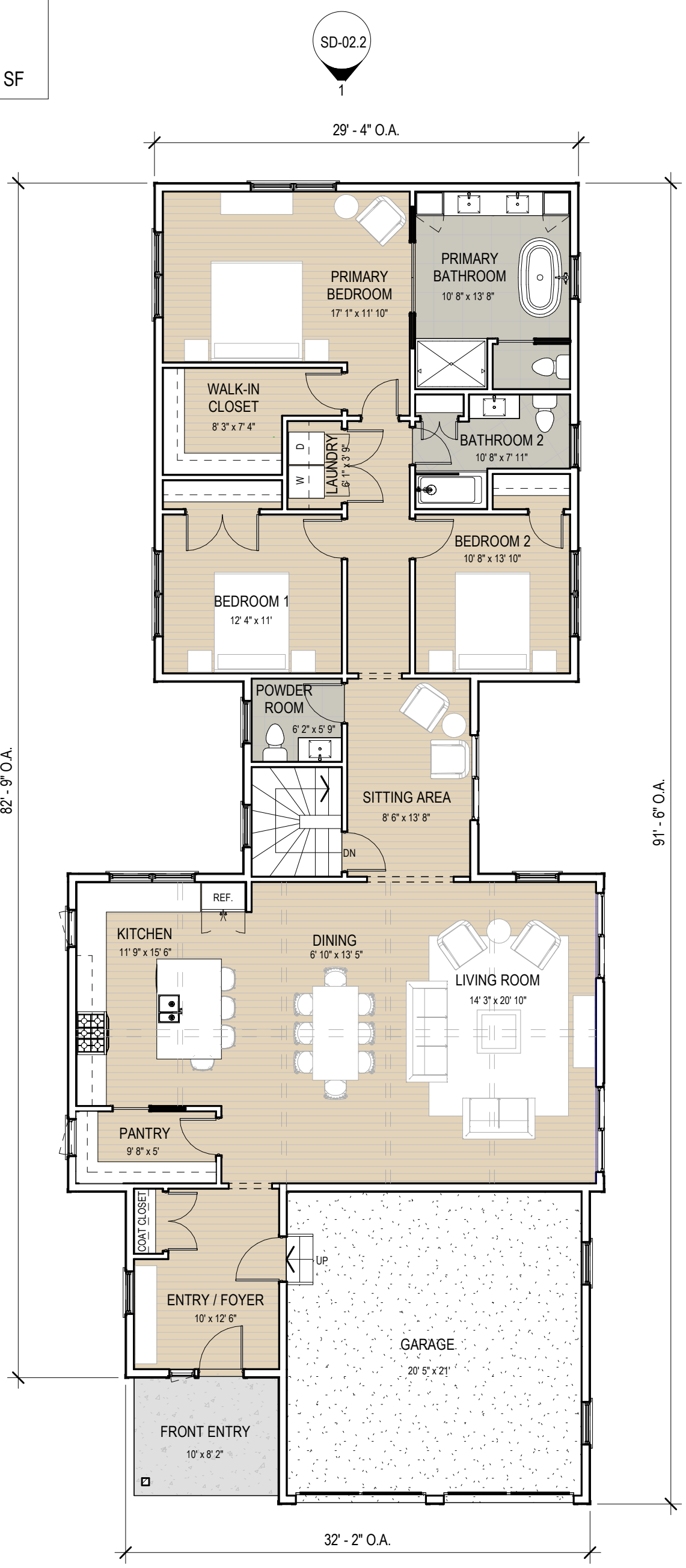
HEATED SF

FIRST FLOOR SF	= 2,124 SF
TOTAL HEATED SF	**= 2,124 SF**

UNHEATED SF

GARAGE	= 464 SF

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1 BUILDING 2 - FIRST FLOOR PLAN
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE TWO - FLOOR PLAN
DRAWING NUMBER: SD-02

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1 BUILDING 2 - ELEVATION 1
1/8" = 1'-0"



2 BUILDING 2- ELEVATION 2
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE TWO - ELEVATIONS 1
DRAWING NUMBER: SD-02.1

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1 BUILDING 2 - ELEVATION 3
1/8" = 1'-0"



2 BUILDING 2 - ELEVATION 4
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE TWO - ELEVATIONS 2
DRAWING NUMBER: SD-02.2

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BUILDING 3:

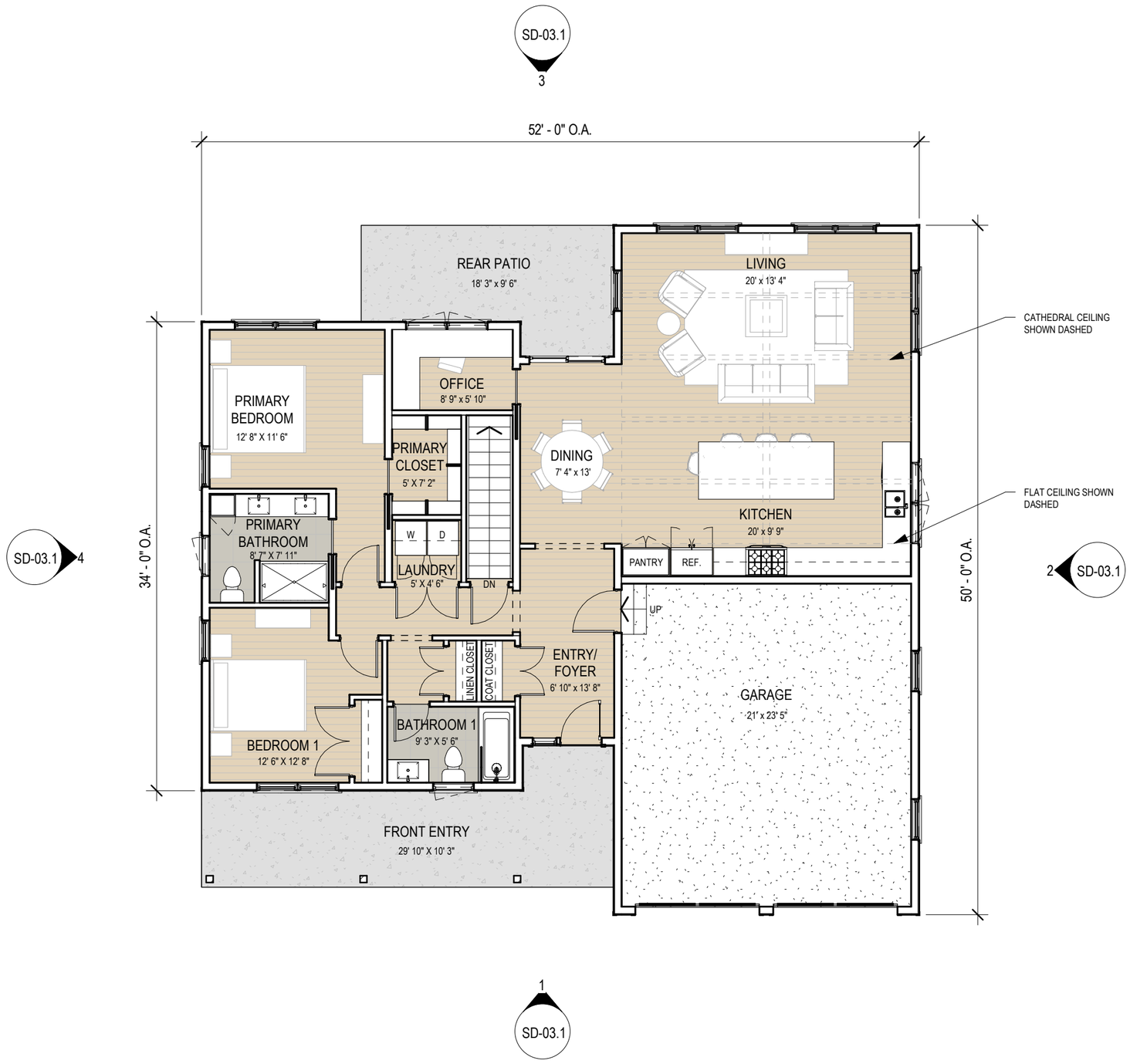
2 BED, 2 BATH

HEATED SF

FIRST FLOOR SF	= 1,504 SF
TOTAL HEATED SF	**= 1,504 SF**

UNHEATED SF

GARAGE	= 495 SF



1 BUILDING 3 - FIRST FLOOR PLAN
1/8" = 1'-0"

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CLIENT:
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LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE THREE - FLOOR PLAN
DRAWING NUMBER: SD-03

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1 BUILDING 3 - ELEVATION 1
1/8" = 1'-0"

2 BUILDING 3 - ELEVATION 2
1/8" = 1'-0"



3 BUILDINGS 3 - ELEVATION 3
1/8" = 1'-0"

4 BUILDING 3 - ELEVATION 4
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME:
BUILDING TYPE THREE - ELEVATIONS

DRAWING NUMBER:
SD-03.1

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BUILDING 4:

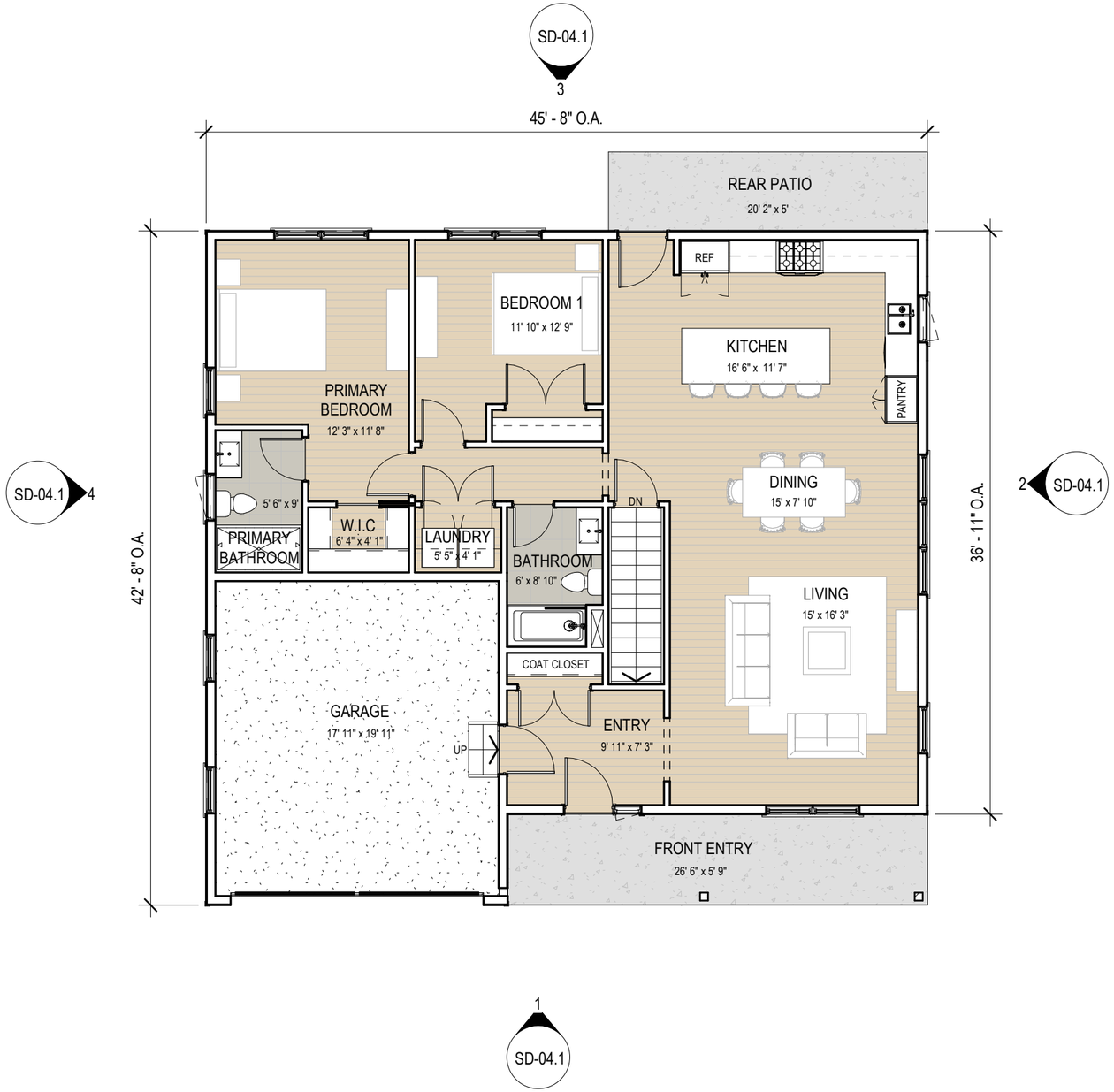
2 BED, 2 BATH

HEATED SF

FIRST FLOOR SF	= 1,359 SF
TOTAL HEATED SF	**= 1,359 SF**

UNHEATED SF

GARAGE	= 360 SF



1 BUILDING 4 - FIRST FLOOR PLAN
1/8" = 1'-0"

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SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE FOUR - FLOOR PLAN
DRAWING NUMBER: SD-04

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1 BUILDING 4 - ELEVATION 1
1/8" = 1'-0"



2 BUILDING 4 - ELEVATION 2
1/8" = 1'-0"



3 BUILDING 4 - ELEVATION 3
1/8" = 1'-0"



4 BUILDING 4 - ELEVATION 4
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE FOUR - ELEVATIONS
DRAWING NUMBER: SD-04.1

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BUILDING 5:

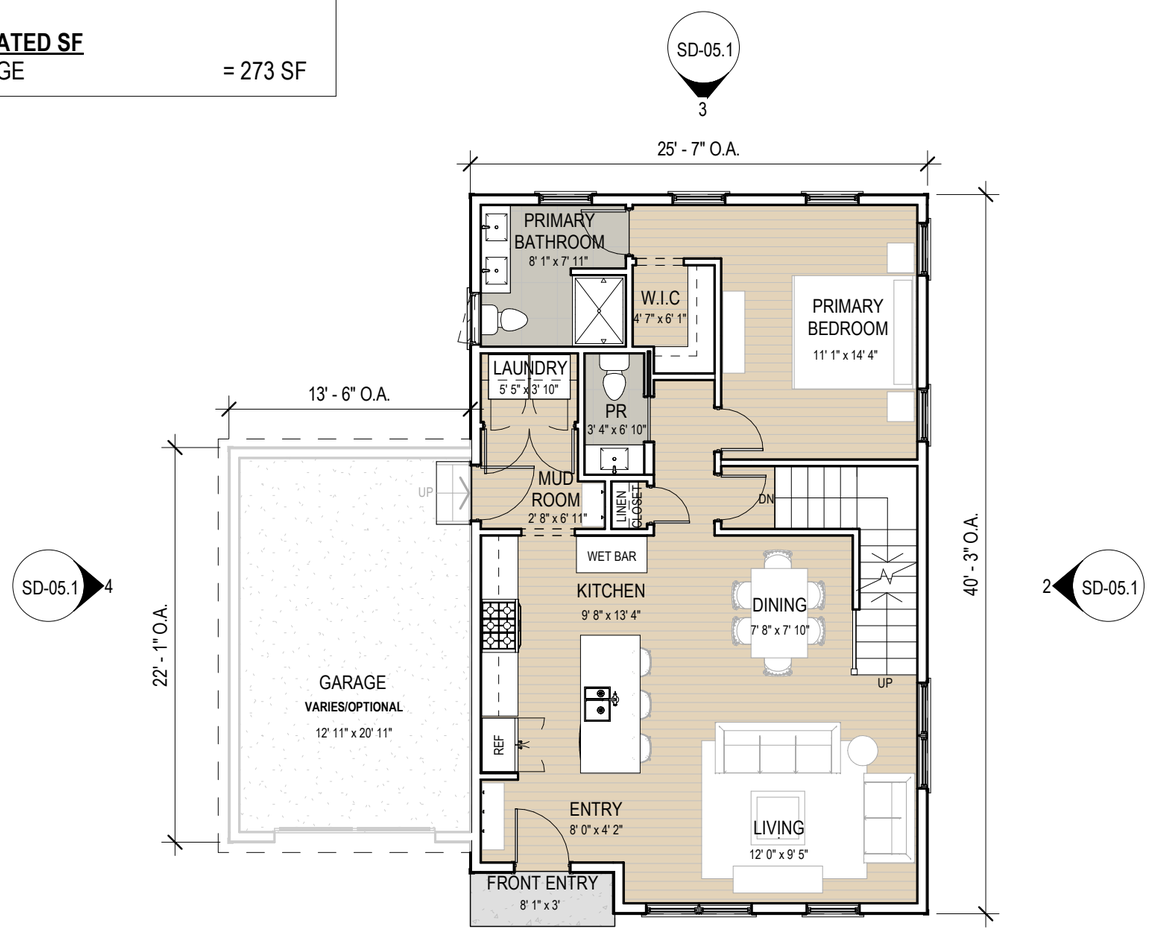
3 BED, 2.5 BATH

HEATED SF

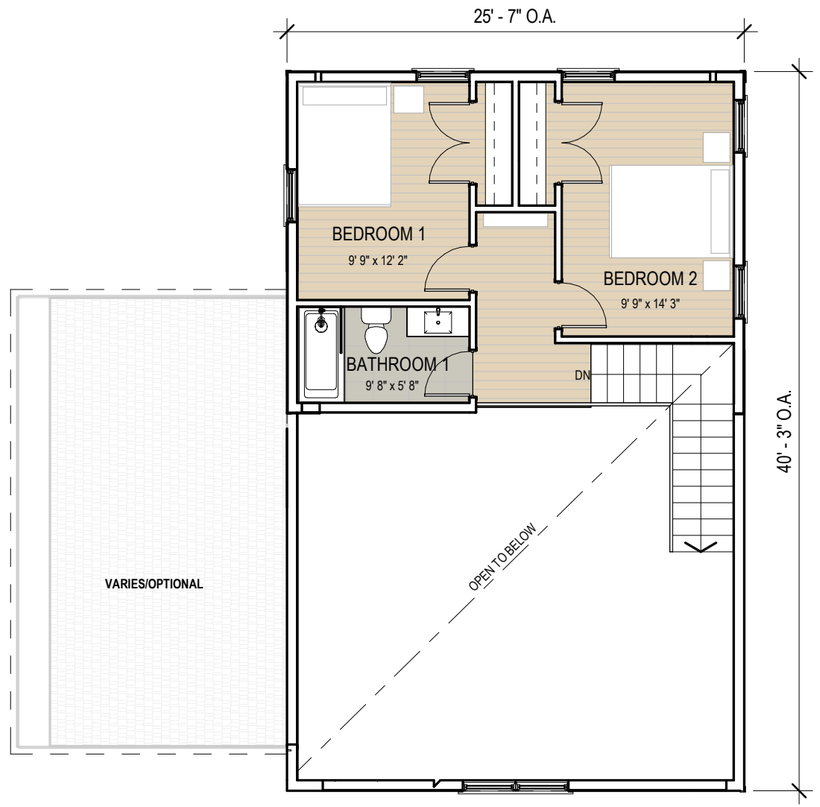
FIRST FLOOR SF	= 944 SF
SECOND FLOOR SF	= 436 SF
TOTAL HEATED SF	**= 1,400 SF**

UNHEATED SF

GARAGE	= 273 SF



1 BUILDING 5 - FIRST FLOOR PLAN
1/8" = 1'-0"



6 BUILDING 5 - SECOND FLOOR PLAN
1/8" = 1'-0"

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SOUTH BERWICK, ME 03908
207 384 2049
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CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

DRAWING NAME: BUILDING TYPE FIVE - FLOOR PLAN
DRAWING NUMBER: SD-05

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1 BUILDING 5 - ELEVATION 1
1/8" = 1'-0"



2 BUILDING 5 - ELEVATION 2
1/8" = 1'-0"



3 BUILDING 5 - ELEVATION 3
1/8" = 1'-0"



4 BUILDING 5 - ELEVATION 4
1/8" = 1'-0"

CLIENT:
MIKE & SARAH SAVAGE

LONG HILL BUILDING DEVELOPMENT

DRAFT

PROJECT NUMBER: 23.12
DATE: OCT 2023
SCALE: AS NOTED

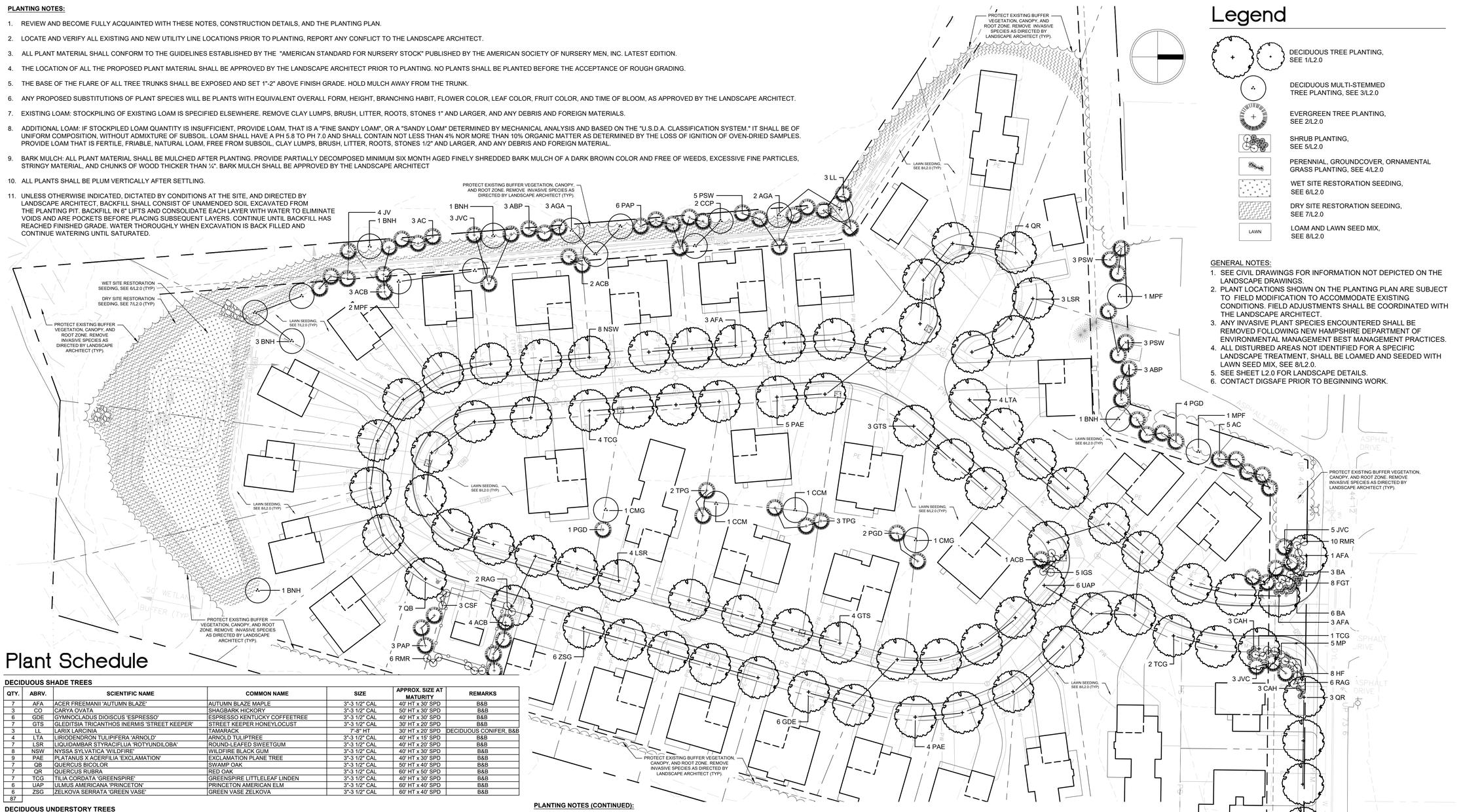
DRAWING NAME:
BUILDING TYPE FIVE - ELEVATIONS

DRAWING NUMBER:
SD-05.1

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PLANTING NOTES:

1. REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN.
2. LOCATE AND VERIFY ALL EXISTING AND NEW UTILITY LINE LOCATIONS PRIOR TO PLANTING, REPORT ANY CONFLICT TO THE LANDSCAPE ARCHITECT.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. BARK MULCH: ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING. PROVIDE PARTIALLY DECOMPOSED MINIMUM SIX MONTH AGED FINELY SHREDDED BARK MULCH OF A DARK BROWN COLOR AND FREE OF WEEDS, EXCESSIVE FINE PARTICLES, STRINGY MATERIAL, AND CHUNKS OF WOOD THICKER THAN ¼". BARK MULCH SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT
10. ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING.
11. UNLESS OTHERWISE INDICATED, DICTATED BY CONDITIONS AT THE SITE, AND DIRECTED BY 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.



Plant Schedule

DECIDUOUS SHADE TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE	APPROX. SIZE AT MATURITY	REMARKS
7	AFA	ACER FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	3"-3 1/2" CAL	40' HT x 30' SPD	B&B
3	CO	CARYA OVATA	SHAGBARK HICKORY	3"-3 1/2" CAL	50' HT x 30' SPD	B&B
6	GDE	GYMNOCLADUS DIOISCUS 'ESPRESSO'	ESPRESSO KENTUCKY COFFEETREE	3"-3 1/2" CAL	40' HT x 30' SPD	B&B
7	GTS	GLEDITSIA TRICANTHOS INERMIS 'STREET KEEPER'	STREET KEEPER HONEYLOCUST	3"-3 1/2" CAL	30' HT x 20' SPD	B&B
3	LL	LARIX LARCINIA	TAMARACK	7'-8" HT	30' HT x 20' SPD	DECIDUOUS CONIFER, B&B
4	LTA	LIRIODENDRON TULIPIFERA 'ARNOLD'	ARNOLD TULIPTREE	3"-3 1/2" CAL	40' HT x 15' SPD	B&B
7	LSR	LIQUIDAMBAR STYRACIFLUA 'ROTYUNDILOBA'	ROUND-LEAFED SWEETGUM	3"-3 1/2" CAL	40' HT x 20' SPD	B&B
8	NSW	NYSSA SYLVATICA 'WILDFIRE'	WILDFIRE BLACK GUM	3"-3 1/2" CAL	40' HT x 30' SPD	B&B
9	PAE	PLATANUS X ACERFILIA 'EXCLAMATION'	EXCLAMATION PLANE TREE	3"-3 1/2" CAL	40' HT x 30' SPD	B&B
7	QB	QUERCUS BICOLOR	SWAMP OAK	3"-3 1/2" CAL	50' HT x 40' SPD	B&B
7	QR	QUERCUS RUBRA	RED OAK	3"-3 1/2" CAL	60' HT x 50' SPD	B&B
7	TCG	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	3"-3 1/2" CAL	40' HT x 30' SPD	B&B
6	UAP	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	3"-3 1/2" CAL	60' HT x 40' SPD	B&B
6	ZSG	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	3"-3 1/2" CAL	60' HT x 40' SPD	B&B
87						

DECIDUOUS UNDERSTORY TREES

5	AGA	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	8'-10" HT	20' HT x 20' SPD	B&B, MULTI-STEMMED
7	BNH	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	8'-10" HT	40' HT x 20' SPD	B&B, MULTI-STEMMED
2	CCM	CERCIS CANADENSIS 'MINNESOTA STRAIN'	MINNESOTA STRAIN REDBUD	7'-8" HT	20' HT x 20' SPD	B&B, MULTI-STEMMED
2	CCP	CARPINUS CAROLINIANA 'PALISADE'	PALISADE AMERICAN HORNBEAM	8'-10" HT	20' HT x 15' SPD	B&B, MULTI-STEMMED
2	GMG	CORNUS MAS 'GOLDEN GLORY'	GOLDEN GLORY CORNELIANCHERRY	7'-8" HT	20' HT x 15' SPD	B&B, MULTI-STEMMED
4	MPF	MALUS 'PRAIRIEFIRE'	PRAIRIEFIRE CRABAPPLE	7'-8" HT	20' HT x 15' SPD	B&B, MULTI-STEMMED
22						

EVERGREEN TREES

6	ABP	ABIES BALSAMEA 'PHANEROLEPIS'	CANAAN FIR	6'-7" HT	30' HT x 15' SPD	B&B
8	AC	ABIES CONCOLOR	WHITE FIR	6'-7" HT	30' HT x 15' SPD	B&B
10	ACB	ABIES CONCOLOR 'BLUE CLOAK'	BLUE CLOAK FIR	6'-7" HT	18' HT x 10' SPD	B&B
4	JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	7'-8" HT	30' HT x 15' SPD	B&B
11	JVC	JUNIPERUS VIRGINIANA 'CANAERTII'	CANAERT EASTERN RED CEDAR	6'-7" HT	20' HT x 15' SPD	B&B
9	PAP	PICEA ABIES 'PAULS SELECT'	PAULS SELECT NORWAY SPRUCE	6'-7" HT	20' HT x 15' SPD	B&B
7	PGD	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	8'-10" HT	25' HT x 15' SPD	B&B
11	PSW	PINUS STROBUS 'WHITE MOUNTAIN'	WHITE MOUNTAIN WHITE PINE	7'-8" HT	30' HT x 20' SPD	B&B
5	TPG	THUJA PLICATA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	7'-8" HT	30' HT x 20' SPD	B&B
71						

SHRUBS

6	CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	WHITE COMPACT SUMMERSWEET	#3	3' HT x 3' SPD	CONTAINER
3	CSF	CORNUS SERICEA 'FIREDANCE'	FIRE DANCE RED OSIER DOGWOOD	#3	3' HT x 5' SPD	CONTAINER
8	FGT	FORSYTHIA 'GOLD TIDE'	GOLD TIDE FORSYTHIA	#3	2' HT x 5' SPD	CONTAINER
5	IGS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	#5	4' HT x 5' SPD	CONTAINER
5	MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	#5	7' HT x 7' SPD	CONTAINER
8	RAG	RHUS AROMATICA 'GROW LOW'	GROW LOW SUMAC	#3	2' HT x 6' SPD	CONTAINER
16	RMR	RHODODENDRON MAXIMUM 'ROSEUM'	ROSEBAY RHODODENDRON	#5	6' HT x 6' SPD	CONTAINER
51						

PERENNIALS, GROUNDCOVER, ORNAMENTAL GRASS

9	BA	BAPTISIA AUSTRALIS	FALSE INDIGO	#2	3' HT x 3' SPD	CONTAINER
8	HF	HEMEROCALLIS FLAVA	DAYLILLY	#2	3' HT x 3' SPD	CONTAINER
17						

PLANTING NOTES (CONTINUED):

12. 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.
13. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
14. LOAMING: LOOSEN SUBGRADE AND EXISTING LOAM AREAS BY DISCING OR ROTOTILLING TO MINIMUM DEPTH OF 6". 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.
20. 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.

DRAWING SUBMITTED FOR CITY REVIEW

Legend

- DECIDUOUS TREE PLANTING, SEE 1/L2.0
- DECIDUOUS MULTI-STEMMED TREE PLANTING, SEE 3/L2.0
- EVERGREEN TREE PLANTING, SEE 2/L2.0
- SHRUB PLANTING, SEE 5/L2.0
- PERENNIAL, GROUNDCOVER, ORNAMENTAL GRASS PLANTING, SEE 4/L2.0
- WET SITE RESTORATION SEEDING, SEE 6/L2.0
- DRY SITE RESTORATION SEEDING, SEE 7/L2.0
- LAWN — LOAM AND LAWN SEED MIX, SEE 8/L2.0

GENERAL NOTES:

1. SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
2. 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.
3. ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
4. ALL DISTURBED AREAS NOT IDENTIFIED FOR A SPECIFIC LANDSCAPE TREATMENT, SHALL BE LOAMED AND SEEDED WITH LAWN SEED MIX, SEE 8/L2.0.
5. SEE SHEET L2.0 FOR LANDSCAPE DETAILS.
6. CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

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LONG HILL PLACE

42 Long Hill Road Dover, NH 03820

TAX MAP D LOT 10

SHEET TITLE

LANDSCAPE PLAN

REVISION LOG

REV#	DATE	DESCRIPTION

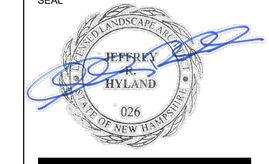
PROJECT NO.	23036.0
DESIGN BY	J. HYLAND
DRAWN BY	S. WRIGHT
CHECKED BY	D.JENSEN / J. HYLAND
DATE	DECEMBER 5, 2023

SCALE

0' 40' 80'

SCALE: 1" = 40'-0"

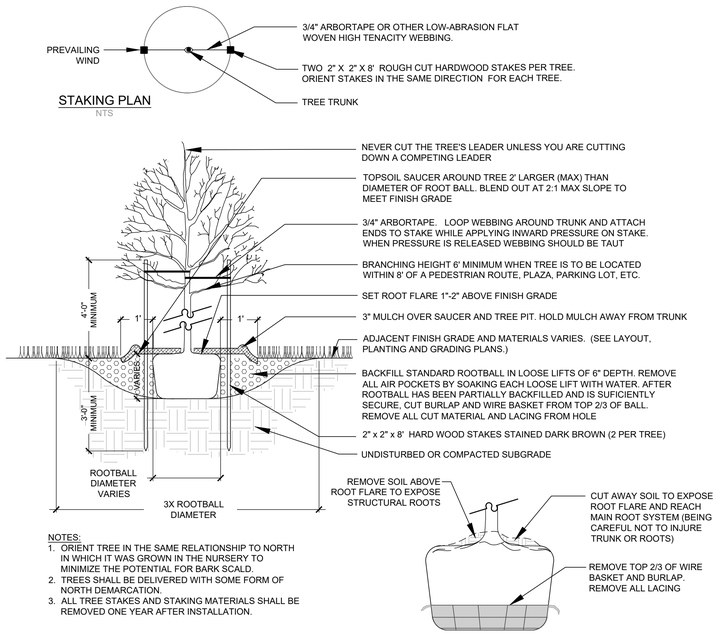
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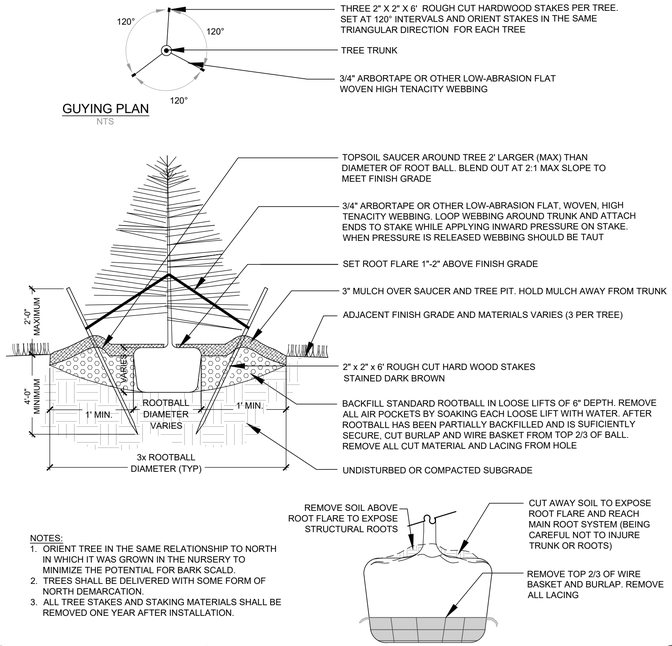
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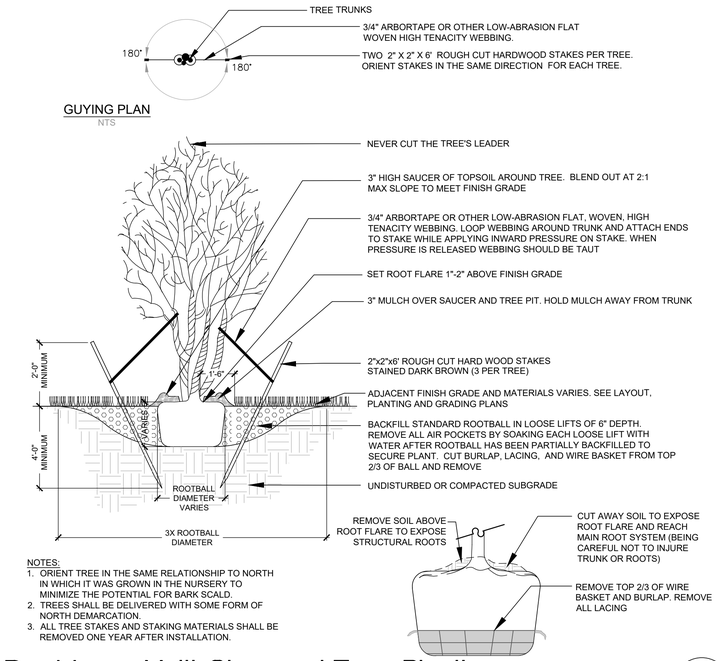
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

Deciduous Tree Planting
Not to Scale ©IRONWOOD 2023 1 L2.0



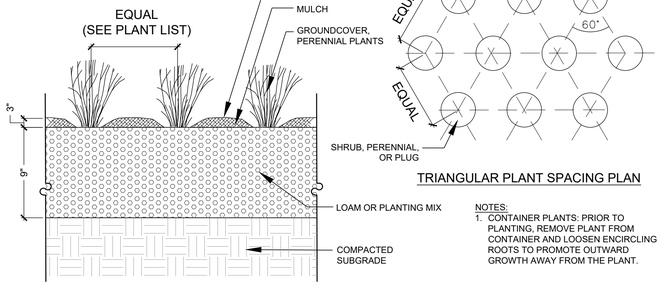
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

Evergreen Tree Planting
Not to Scale ©IRONWOOD 2023 2 L2.0



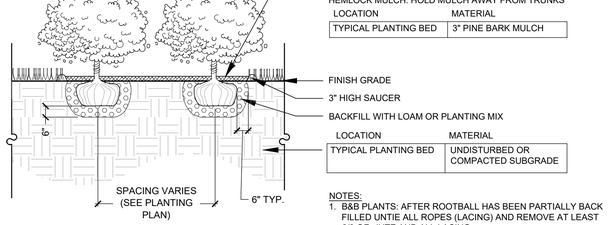
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.
3. ALL TREE STAKES AND STAKING MATERIALS SHALL BE REMOVED ONE YEAR AFTER INSTALLATION.

Deciduous Multi-Stemmed Tree Planting
Not to Scale ©IRONWOOD 2023 3 L2.0



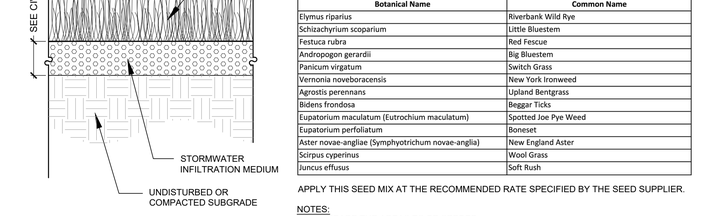
NOTES:
1. CONTAINER PLANTS: PRIOR TO PLANTING, REMOVE PLANT FROM CONTAINER AND LOOSEN ENCIRCLING ROOTS TO PROMOTE OUTWARD GROWTH AWAY FROM THE PLANT.

Perennial, Groundcover, Ornamental Grass Planting
Not to Scale ©IRONWOOD 2023 4 L2.0



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 ©IRONWOOD 2023 5 L2.0



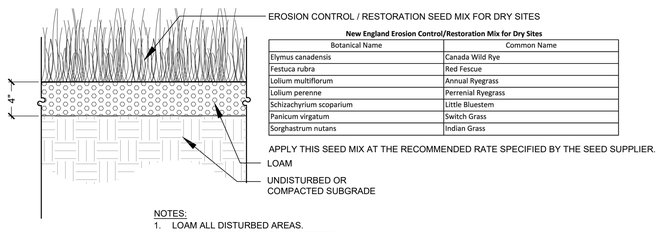
New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites

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-anglia)	New England Aster
Scirpus cyperinus	Wool Grass
Juncus effusus	Soft Rush

APPLY THIS SEED MIX AT THE RECOMMENDED RATE SPECIFIED BY THE SEED SUPPLIER.

NOTES:
1. PREPARE THE AREAS TO BE SEEDED.
2. USE SPECIFIED SEED MIX (OR APPROVED EQUAL) FROM NEW ENGLAND WETLAND PLANTS, 820 WEST STREET, AMHERST, MA 01002, 413-548-8000. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS FOR SEEDING.
3. INSTALL JUTE MATING ON SLOPES GREATER THAN 3:1.

Wet Site Restoration Seeding
Not to Scale ©IRONWOOD 2023 6 L2.0



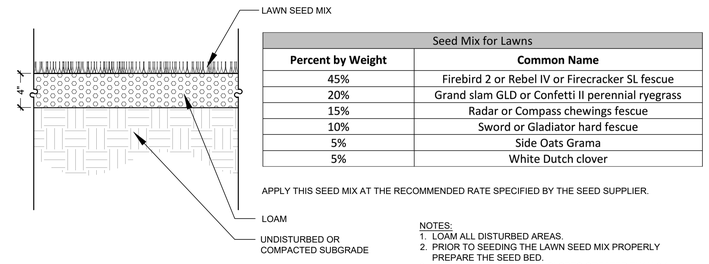
New England Erosion Control/Restoration Mix for Dry Sites

Botanical Name	Common Name
Elymus canadensis	Canada Wild Rye
Festuca rubra	Red Fescue
Lolium multiflorum	Annual Ryegrass
Lolium perenne	Perrenial Ryegrass
Schizachyrium scoparium	Little Bluestem
Panicum virgatum	Switch Grass
Sorghastrum nutans	Indian Grass

APPLY THIS SEED MIX AT THE RECOMMENDED RATE SPECIFIED BY THE SEED SUPPLIER.

NOTES:
1. LOAM ALL DISTURBED AREAS.
2. PREPARE THE AREAS TO BE SEEDED.
3. USE SPECIFIED SEED MIX (OR APPROVED EQUAL) FROM NEW ENGLAND WETLAND PLANTS, 820 WEST STREET, AMHERST, MA 01002, 413-548-8000. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS FOR SEEDING.
4. INSTALL JUTE MATING ON SLOPES GREATER THAN 3:1.

Loam and Dry Site Restoration Seeding
Not to Scale ©IRONWOOD 2023 7 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

APPLY THIS SEED MIX AT THE RECOMMENDED RATE SPECIFIED BY THE SEED SUPPLIER.

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 ©IRONWOOD 2023 8 L2.0

DRAWING SUBMITTED FOR CITY REVIEW

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LONG HILL PLACE
42 Long Hill Road Dover, NH 03820
TAX MAP D LOT 10

SHEET TITLE
LANDSCAPE DETAILS

REVISION LOG

REV#	DATE	DESCRIPTION
-	-	-

PROJECT NO.	23036.0
DESIGN BY	J. HYLAND
DRAWN BY	S. WRIGHT
CHECKED BY	D.JENSEN / J. HYLAND
DATE	DECEMBER 5, 2023
SCALE	AS NOTED

SEAL



L2.0

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Landscape Best Management Practices
Operations and Maintenance Plan

Long Hill Place

42 Long Hill Road
Dover, New Hampshire 03820

December 5, 2023

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 42 Long Hill Drive 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 planting beds.
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 2 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 three 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, shape and form. **Do not shear.**
5. Energize the irrigation system, repair damaged components, test the system, adjust heads, and update programing.
6. Conduct a soil test to measure at a minimum, pH, phosphorus, potassium, calcium, and magnesium. Follow the recommendations provided with the soil test results.
7. Apply fertilizer only when required. A single application of fertilizer each year before Memorial Day is encouraged.

Monthly Tasks

June

No additional items

July

No additional items

August

Mow dry and wet site restoration areas at 6”-9” height after August 15 and before November 30.

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

1. Winterize irrigation system.

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 such as azalea and rhododendron varietals, 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				
Remove weeds	X		X	X	X		
Cut down ornamental grasses			X				
Remove accumulated leaves, litter, and plant debris		X					X

Stormwater Detention Facilities

Introduction

The stormwater facilities, including planted bioretention areas, are used to attenuate flow and treat stormwater. The stormwater treatment areas consist of a large basin and linear swales seeded with a variety of native, adaptable, and rugged perennial grasses, and sometimes additional flowering plants. There are maintenance tasks associated with stormwater facilities.

Erosion

The soil in the facility and in areas draining to the facility shall be inspected for erosion. Eroded areas shall be filled with soil or mulch and seeded with the approved seed mix for the location.

Sediment Accumulation & Clogging

The accumulation of sediment within the facility may reduce its infiltration capacity and impair performance. The facility shall be inspected for accumulation of sediment and excessive sediment shall be removed with the area re-mulched and replanted as appropriate and necessary.

Outlet Structure Maintenance

The facility outlet structure requires monitoring. Periodically, the orifice on the outlet pipe may clog with debris. Any found debris should be removed and appropriately disposed of off-site.

Debris & Litter

Debris and litter should be removed 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 facility vegetation should be mowed annually in the fall.

Snow Storage

Snow shall not be dumped directly onto the facility.

Chlorides

The bioretention area is not suitable for treating chlorides. Chloride use on source surface areas tributary to the bioretention 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. Aggressive sweeping in these areas, along with pretreatment sumps and filter strips, will minimize the negative impact of the sand on the bioretention facility.

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					
Mow perennial grass material planted in the dry and wet restoration areas					X		