

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, October 9, 2025**
Meeting Time: **10:30 AM**

1. Site Plan for Civilworks New England, c/o InSite Development Services, LLC (Owner: 914 Central Avenue, LLC), Assessor's Map 38, Lot 20, zoned C, located at 914 Central Avenue.
(Proposal is to construct a 10,075 s.f. childcare facility.) (SITE-2025-0016)



PLAN SNAPSHOT REPORT SITE-2025-0016 FOR CITY OF DOVER, N.H.

Plan Type: Site Plan - Major
Work Class: New Construction
Status: In Review
Valuation: \$0.00
Description: Site Plan for Childcare Development Facility

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

App Date: 09/18/2025
Exp Date: 11/22/2025
Completed: NOT COMPLETED
Approval Expire Date:

Parcel: 38020-000000	Main	Address: 914 Central Av Dover, NH	Main	Zone: C(Non-Residential - Commercial)
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Engineer Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Owner Sean Graham 1400 16th Street, Suite 300 Oak Brook, IL 60523 Business: (603) 592-3202	Architect ADA Architects 17710 Detroit Avenue Lakewood, OH 44107 Business: (216) 521-5134	Surveyor McEneaney Survey Associates P.O. Box 1166 DOVER, NH 03821 Business: (603) 742-0911
Applicant Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Landscape Architect Terrain Planning and Design Romy N Maurer 311 Kost Hill Road Hopkinton, NH 03229 Business: (603) 764-3512	Applicant Sean Graham 1400 16th Street, Suite 300 Oak Brook, IL 60523 Business: (603) 592-3202	

Plan Custom Fields

Total	0	Total2	10075	Total3	10330
Total4	0	Total5	0	Total6	0
Total7	0	Total8	0	Total9	10075
Street Classification	Municipal	Net Change in # Parking	20	Water Service	Municipal
Type		Spaces (+/-)			
Recording Number		Sewer Service	Municipal	Total Acres (GIS)	1.28
Deed Book	5108	Total SQFT	55756.8	Deed Page	1037
Deed Date		Proposed Property Use	Childcare Development Facility	Area of Parcel to be Developed (SQFT)	39520
Number of Parking	47	Number of Parking	27	Number of Employees	20
Spaces Existing		Spaces Proposed		Total	
Number of Employees in Max Shift	7	Distance to City Water	1	Distance to City Sewer	37
Type of Building to be Built	1 1/2 wood frame with brick exterior finish	Estimated Construction Value	500000.00	Refuse Removal	Private
Is there an existing Conservation Easement?	No	Existing Conservation Easement Details		TotalImpactFeeSDTOD	0.00
TotalImpactFeeTHTOD	0.00	TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00
TotalImpactFeeMHTOD	0.00	TotalImpactFeeADUTO	0.00	TotalImpactFeeAONRT	0.00
TotalImpactFeeAR55TC	0.00	TotalImpactFeeAR62TC	0.00	OD	
TotalImpactFeeRIRCT	0.00	TotalImpactFeeOCSTO	0.00	Sub Total Residential	0.00
TotalImpactFeeNHALT	0.00	TotalImpactFeeOIUTOD	0.00	TotalImpactFeeITWCT	0.00
Sub Total	0.00	Total of Impact Fees to be Assessed	0.00	OD	
Non-Residential					

PLAN SNAPSHOT REPORT (SITE-2025-0016)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_9/18/2025.jpg	09/18/2025 12:38	Haight, Steve		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013938	Planning General Application Fee	\$200.00	\$0.00
	Total for Invoice INV-2025013938	\$200.00	\$0.00
NOT INVOICED	Planning Non-Res/Mixed Use – New Construction	\$1,511.25	\$0.00
	Planning Impervious Paved Area Fee	\$723.10	\$0.00
	Total for Invoice NOT INVOICED	\$2,234.35	\$0.00
Grand Total for Plan		\$2,434.35	\$0.00

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		09/19/2025 11:58	
Confirm application complete v.1	Generic Action		09/19/2025 11:59
Technical Review Committee Meeting Agenda v.1	Task	09/19/2025 11:58	
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		
Internal Notification of Plan Completion v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		



City of Dover, New Hampshire SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only

Project #: _____

Date Received: _____

Amount Paid: _____

Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: InSite Development Services, LLC Telephone # (603) 592-3202

Address of Applicant: 1400 16th Street, Suite 300 Oak Brook, IL 60523

E-Mail Address: sgraham@insiterealestate.com

Name of Property Owner (if different from applicant): 914 Central Avenue, LLC Telephone # (603) 592-3202

Address of Property Owner: 199 New Zealand Road Seabrook, NH 03874

PROPERTY INFORMATION

Address of Property: 914 Central Avenue

Assessor's Map # 38 Lot(s) # 20

Zoning District(s) Commercial Overlay District(s) Groundwater Protection

Size of Parcel: 55,623 sq. ft. 1.28 ac. Property Deed: Book 5108 Page: 1037

Existing Use of Property: Vacant Building

SITE PLAN INFORMATION

Describe Proposed Use: Childcare Development Center

Area of Parcel to be Developed: 39,520 sq. ft.

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

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

Number of Parking Spaces: Existing 47 Proposed _____

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

Number of Employees Total: 20 In Maximum Shift: 7

Disposition of Parcel:

Building Setbacks:

Building Footprint 10,075 sq. ft.

Front Yard 95.4 ft.

Total Building Area 10,075 sq. ft.

Rear Yard 126 ft.

Paved Area 10,330 sq. ft.

Side Yard: Right 22 ft. Left 12.9 ft.

City Water? ☒ Yes ☐ No How far is city water from the property? 1 ft

City Sewer? ☒ Yes ☐ No How far is city sewer from the property? 37 ft

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

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

Relief sought (Check All That Apply):

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

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

BUILDING INFORMATION

Type of Building to be Built: 1 1/2-story building, wood frame with brick exterior finish and standard and standard architectural features

Height of Building: 27'-1" Finished Floor Elevation: 190

Number of Seats (where applicable) NA

Estimated value of construction: 500,000.00 Refuse removal: Public/Private (circle one) **Private**

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: Article IV 153-14 K.(1) (b)

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

The project is for a childcare development center adjacent to Central Avenue, a main arterial road in the City of
Dover. For added safety purposes, the proposed site layout is designed to have all parking to the front of the
building, where pick up and drop off activities will occur, allowing the childcare playground area to be at the rear
of the site furthest from Central Avenue.

SURVEYOR INFORMATION

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

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

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

ENGINEER INFORMATION

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

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

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

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) ADA Architects

Address 17710 Detroit Ave Lakewood, Ohio 44107 Telephone #: 216-521-5134

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Terrain Planning & Design, LLC

Address 311 Kast Hill Road Hopkinton, NH 03229 Telephone #: 603-491-2322

Professional License #: Romy N. Maurer, NH LLA #086 E-mail address: romy@terrainplanning.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone # _____

Address Easement Holder: _____

SIGNATURES

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

Signature of Property Owner: _____ Date: 9-10-25

Signature of Applicant (if different from owner): Larissa A. Addison Date: 9/15/25
INSITE DEVELOPMENT SERVICES, L.L.C. S.G. KN
 Larissa A. Addison, Manager

Signature of Agent: JA Date: 9/17/25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 9-10-25

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 9-10-25

Signature of Applicant (if different from owner): Larissa A. Addison Date: 9/15/25
INSITE DEVELOPMENT SERVICES, L.L.C. S.G. KN
 Larissa A. Addison, Manager

CERTIFICATION OF FEES

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

Signature of Property Owner: _____ Date: 9-10-25

Signature of Applicant (if different from owner): Larissa A. Addison Date: 9/15/25
INSITE DEVELOPMENT SERVICES, L.L.C. S.G. KN
 Larissa A. Addison, Manager

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

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
38	20	914 Central Avenue, LLC	199 New Zeland Road Seabrook, NH 03874

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Larissa A. Addison	InSite Development Services, LLC	1400 16th Street, Suite 300 Oak Brook, IL 60523

Surveyor and/or Engineer/Professional Agent:

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

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS



City of Dover, New Hampshire SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

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

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

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

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

APPLICANT: InSite Development Services, LLC File Number: SITE-2025-

PROJECT TITLE: Proposed Childcare Development Center

PROPERTY LOCATION: 914 Central Avenue Tax Map: 38 Lot: 20

	Where/How Provided	Reviewed
1. Completed and signed Application form	☒	
2. Plan Review Fees are provided	☒	
3. Electronic copy of the engineered/surveyed plan layout	☒	
4. Electronic copy of supplementary materials and application	☒	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	☒	
6. Waiver requests to the Site Plan Review Regulations, with written justification	☒	
7. Conditional Use Permit applications	☒	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	☒	
9. A colored architectural plan showing all sides of buildings	☒	
10. Folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	☒	
Location map at appropriate scale	☒	
Proposed Project 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	☒	
Location of Conservation District areas	☐	
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 width of existing and proposed access/egress ways	☒	

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

REVIEWED BY: _____ DATE _____ TRC DATE _____

SITE PLAN REVIEW APPLICATION PROJECT NARRATIVE

**For
InSite Development Services, LLC
Proposed Childcare Development Facility
Tax Map 38, Lot 20
914 Central Avenue**

September 2025

PROJECT OVERVIEW & SITE CHARACTERISTICS

The proposed site design is for a Childcare Development Facility located on a 1.28-acre parcel shown as Lot 20 on Assessor's Tax Map 38 in the Commercial (C) District. The lot is currently developed with an unoccupied 2 story wood frame building, previously a restaurant with a large, paved parking area, and is bounded by Central Avenue to the north, a McDonald's restaurant to the east, a vacant Residential property to the south and a bank to the west.

The proposed site design includes the demolition of the current structure and the construction of a proposed 10,075 square foot Childcare Development Facility, with associated parking and playground area, and utility and drainage improvements. The project will include the following general scope of improvements:

- Install erosion control measures
- Demolish the existing building and clear the site, as necessary, for new construction.
- Construct / install proposed on-site stormwater detention and treatment system, grading, and other drainage requirements.
- Construct / install proposed utility improvements.
- Construct the proposed childcare development facility, associated parking and play area.
- Install landscaping elements and stabilize remaining areas with loam and seed.

DRIVEWAY AND PARKING LOT

The proposed development will provide one (1) access along the 207± feet of frontage on Central Avenue. There is adequate site distance for the right turn only egress, and right turn only egress is allowed at this location due to a median in Central Avenue. Entrance is proposed with a 24' width driveway with 15' curb radii.

Parking for this childcare development facility is designed to be at the front of the building for safety purposes, where pick up and drop off activity will occur, allowing the childcare playground area to be at the rear of the site, furthest from Central Avenue. This parking arrangement is similar to other businesses along this portion of Central Avenue. 25 parking spaces and 2 accessible parking spaces are proposed. The site will consist of 113 kids and 20 employees maximum, typically they run their business at 70% capacity, so 80 kids and 14 employees. The daycare will have a morning and afternoon shift, so approximately 7 parking spaces will be utilized by employees a day. Their model for children drop off consists of the parents parking in the lot, and walking the child to the check-in, utilizing the remaining 20 parking spaces. Drop off time will be staggered by age, making the parking amount adequate for their business model, no stacking or queuing will occur.

GROUNDWATER PROTECTION DISTRICT SETBACK & IMPACT

There are no wetlands present on the project site. However, the entire parcel is located within the Secondary Groundwater Protection Zone. Therefore, a Conditional Permit Application is required as part of this application submission. The Development Review Model; Total recharge Pre-Development (MGAL/YR) = 0.75, Total recharge Post-Development (MGAL/YR) = 1.41. This results in an increase in post-development

recharge. Also, the site will now treat and mitigate the infiltrated runoff, while the existing, there was no treatment from the existing impervious area. The proposed site will have a minimal increase of impervious area; approximately 170 sf or 1%.

DRAINAGE

The project proposes the construction of a 10,075 square foot Childcare Development Facility along with 10,330 square feet of pavement for access and parking. To mitigate development run-off, the proposed drainage system incorporates catch basins, two (2) infiltration basins, and porous pavement. The proposed stormwater system captures, treats, stores, and infiltrates the stormwater runoff from the site and redirects it to the existing discharge points. The proposed stormwater drainage structures will be maintained by the project proponent as outlined within the Stormwater Management I&M document. The stormwater system has been designed to achieve the required pollutant removal set fourth in the stormwater regulations; calculations are included in the drainage analysis.

TRAFFIC

A traffic assessment was completed for the project and is attached as a report to this submittal. Central Ave. being an arterial road, the traffic assessment indicates that this proposed project will increase the ADT on Central Avenue by a minimal amount. Overall, and as expected, there is a minimal increase in traffic as a result of the proposed development.

UTILITIES

The proposed project will connect to the existing City of Dover water and sewer lines located in Central Avenue. Existing electric and communication services are also located on Central Avenue. Building and utility connections will be made per the City's Community Services Utility Division and Fire Department requirements and standards.

Table 1. City of Dover, NH : Development Review Model

Project Location:	914 Central Ave
<u>INPUT FACTORS</u>	
Project Total Land Area (acres)	1.28
Number of Residential units	0
Number of Bedrooms per Residence	0
On-Site Sewage Flow per Residence (gal/day)	0
N-Conc. in Effluent (mg/l)	35
Lawn Area per Residence (sq ft)	0
Pavement Area per Residence (sq ft)	0
Roof Area per Residence (square feet)	0
Number of Commercial Lots	1
Total On-Site Sewage Flow from Commercial Lots (gal/day)	1330
Lawn Area per Commercial Lot (sq ft)	30747
Pavement Area per Commercial Lot (sq ft)	14620
Roof Area per Commercial Lot (sq ft)	10076
Total Road Area in Development (sq ft)	0
Total Pervious Area (acres)	0.71
Total Impervious Area (acres)	0.57
Recharge Rate for Pervious Area (in/yr)	21.5
Recharge Rate for Impervious Area (in/yr)	38.7
Impervious Area Outside of Development Draining Into Area via Catchbasins (sq ft)	0
Impervious Area Within Development Draining from Area via Catchbasins (sq ft)	1711

Table 1. City of Dover, NH : Development Review Model

INPUT	CALCULATIONS	RESULTS
Sewage (gal/day)		CALCULATED LOADING (LBS/YR)
1,330	x N-conc (mg/l) x 3.785 L/gal x 365 days/yr ÷ 454000 mg/lb	142
Lawn area (sq ft)		
30,747	x 0.0009 lb N/sq ft	28
Pavement area (sq ft)		
12,909	x 0.00031 lb N/sq ft	4
Roof area (sq ft)		
10,076	x 0.00015 lb N/sq ft	2
Natural area (acres)		
0	x 43560 sq ft/acre x 0.000005 lb N/sq ft	0
Storm Drainage input Area (sq ft)		
0	x 0.00031 lb N/sq ft	0
	TOTAL NITROGEN LOADING (LBS/YR)	175
		TOTAL RECHARGE (MG/YR)
Recharge from Sewage (gal/day)		
1,330	x 365 days/yr : 1,000,000 gal/million gal	0.49
Total Pervious Area (sq ft)		
30,928	x 21.5 in/yr /12 in/ft x 7.48 gal/cu ft : 1,000,000 gal/million gal	0.41
Total Impervious Area (sq ft)		
22,985	x 38.7 in/yr /12 in/ft x 7.48 gal/cu ft : 1,000,000 gal/million gal	0.55
Net Recharge from Stormdrains (gal/yr)		
-41,274	1,000,000 gal/million gal	-0.04

TOTAL RECHARGE Pre- Development (MGAL/YR)	0.75
TOTAL RECHARGE Post- Development (MGAL/YR)	1.41
% Pre to Post Development Recharge Discrepancy	89.11

Note : Post- Development must be > = Pre- Development Recharge

TOTAL NITROGEN LOAD/TOTAL RECHARGE X 454,000 MG/LB / 3,785,000 L/MGAL	
Post- Dev NITROGEN Concentration (mg/l or ppm)	14.84
Nitrogen Concentration Guideline (mg/L or ppm)	5.00
Nitrogen Concentration +/- Guideline (mg/L or ppm)	9.84

PREPARED BY HORSLEY & WITTEN, INC.
June 1999

INSITE DEVELOPMENT SERVICES, L.L.C.

1400 16th Street, Suite 300

Oak Brook, Illinois 60523

September 15, 2025

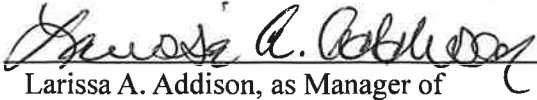
City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: LETTER OF APPLICANT AUTHORIZATION
Site Plan Review Applications & Approvals
914 Central Avenue – Tax Map 38, Lot 20

I, Larissa A. Addison, in my capacity as Manager of INSITE DEVELOPMENT SERVICES, L.L.C. ("Applicant"), authorize Civilworks New England and McEneaney Survey Associates to submit all applications made on behalf of Applicant to the City of Dover Planning Board and any other Dover Board or Committee, as well as any State of NH departments, as necessary, relative to the pursuit of approvals and permits for the development of the subject parcel.

Sincerely,



Larissa A. Addison, as Manager of
INSITE DEVELOPMENT SERVICES, L.L.C.

S.G.
KN

*914 Central Avenue, LLC
199 New Zealand Road
Seabrook, NH 03874*

September 9, 2025

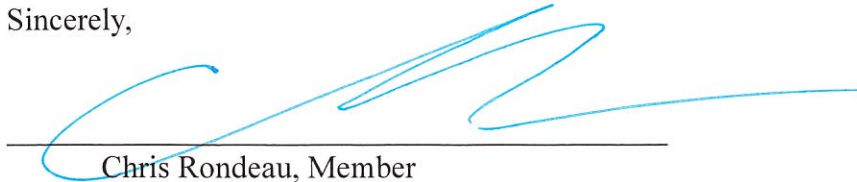
City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: LETTER OF OWNER AUTHORIZATION
Site Plan Review Applications & Approvals
914 Central Avenue – Tax Map 38, Lot 20

I, Chris Rondeau, authorize Civilworks New England and McEneaney Survey Associates to represent all applications made on behalf of me as Member of 914 Central Avenue, LLC (OWNER) to the City of Dover Planning Board and any other Dover Board or Committee, as well as any State of NH departments, as necessary, relative to the pursuit of approvals and permits for the development of the subject parcel.

Sincerely,



Chris Rondeau, Member
914 Central Avenue, LLC



City of Dover, New Hampshire

CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: INSITE DEVELOPMENT SERVICES, LLC Telephone # 603-592-3203

Address of Applicant: 1400 16th Street, Suite 300 Oak Brook, IL 60523

E-Mail Address: sgraham@insiterealestate.com

Name of Property Owner (if different from applicant): 914 Central Avenue, LLC Telephone # 603-592-3203

Address of Property Owner: 199 New Zealand Road, Seabrook, NH 03874

PROPERTY INFORMATION

Assessor's Map # 38 Lot(s) # 20

Address of Property: 914 Central Avenue

Zoning District(s) Commercial Overlay District(s) Groundwater Protection

Existing Use of Property: Vacant Building

CONDITIONAL USE PERMIT INFORMATION

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

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

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

The project proposes a 10,075 sf childcare development facility on a site that is fully within the

Secondary Groundwater Protection District, requiring a Conditional Use Permit.

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

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

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

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

SIGNATURES

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

Signature of Property Owner:  Date: 9.10.25

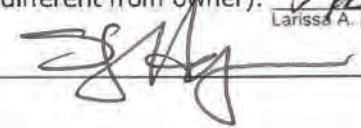
Signature of Applicant (if different from owner):  Date: 9/15/25

INSITE DEVELOPMENT SERVICES, L.L.C.

Larissa A. Addison, Manager

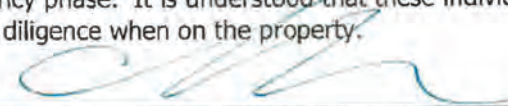
S.G.

K/L

Signature of Agent:  Date: 9/17/25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner:  Date: 9-10-25

CITY OF DOVER CONDITIONAL USE LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
38	20	914 Central Avenue, LLC	199 New Zealand Road, Seabrook, NH 03874

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Sean Graham	Insite Development Services, LLC	1400 16th Street, Suite 300 Oak Brook, IL 60523

Surveyor and/or Engineer/Professional Agent:

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

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

CONDITIONAL USE NARRATIVE
§170-33
GROUNDWATER PROTECTION ZONE
CONDITIONAL USE APPROVAL REQUIREMENTS
for
InSite Development Services, LLC
Proposed Childcare Development Facility
Tax Map 38, Lot 20
914 Central Avenue

September 2025

F. Performance standards.

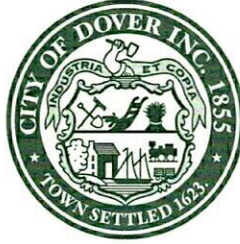
- (1) Applicability. Within the primary and secondary groundwater protection zones, the following performance standards shall apply to all new nonresidential and multifamily development, expansion of preexisting nonresidential and multifamily developments that expand the lot coverage of the existing structure(s) by more than 20%, and all subdivisions of four or more new lots:
 - (a) Post-development infiltration volumes shall be no greater than predevelopment volumes as determined by use of the Development Review Model described in Subsection G below. **As indicated in the Development Review Model; Total recharge Pre-Development (MGAL/YR) = 0.75, Total recharge Post-Development (MGAL/YR) = 1.41. This results in an increase in post-development recharge.**
 - (b) Stormwater shall be treated by use of a stormwater treatment system designed to remove no less than 80% of the annual load of total suspended solids. The removal rate shall be accomplished using best management practices installed in advance of the final infiltration system. **Pollutant removal on site consists of; 90% TSS removal, 60% TN removal, and 65% TP removal.**
 - (c) No stormwater infiltration system shall be located within the 200-day travel time of an existing or proposed municipal well as depicted on the map referenced in Subsection B above. In absence of a defined 200-day-travel-time radius, the applicant shall submit a technical evaluation from a professional engineer, hydrologist or geologist that documents that the proposed discharge is consistent with the stated purpose and intent of this requirement. **No infiltration of stormwater will occur within the 200-day travel time of a municipal well.**

(2) Specific requirements. Within the primary and secondary groundwater protection zones, the following performance standards shall apply to specific activities which may impact the groundwater quality:

(a) Sand and gravel extraction operations shall not excavate below an elevation four feet above the seasonal high-water table observed when the associated water supply well has not been operating for at least two weeks prior to the date of measurement. The operator of the sand and gravel extraction operation shall prepare for the City an annual report documenting compliance with the requirements of this section. Pursuant to RSA 155-E:11, II, the requirements of this subsection may be waived if the applicant demonstrates that such excavation will not adversely affect water quality and that written notice of such exception shall be recorded in the Registry of Deeds, and one copy filed with the New Hampshire Department of Environmental Services. **N/A**

(b) Pursuant to Chapter 81, Fire Prevention and Life Safety, § 81-24, on-premises use of heating oil tank facilities shall comply with the provisions of the National Fire Protection Association Standard NFPA 31, Installation of Oil-Burning Equipment. **N/A**

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

May 15, 2025

InSite Real Estate, LLC
Attn: Cyrus Amani
1400 16th Street, Suite 300
Oak Brook, IL 60523-8854

RE: Zoning Verification – 914 Central Ave., Map 38, Lot 20, Commercial Zoning District

Mr. Amani:

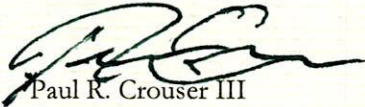
In response to your request concerning referenced parcel's compliance with zoning and applicable codes, regulations and ordinances, please be advised as follows:

1. The City of Dover is responsible for (a) enforcement of building codes, fire codes, zoning ordinances and similar codes or ordinances relating to commercial development in Dover, NH and (b) responsible for the issuance of certificates of occupancy in Dover, NH.
2. Certificates of occupancy have been issued and are in effect for the Property and, at this time, we are not aware of any circumstances that would render the certificates of occupancy invalid or cause them to be revoked.
3. The Property is zoned Commercial (C) under the laws or ordinances of the City of Dover, which zoning is proper for the current use and related amenities comprising the Property, and accordingly the Property is a conforming use; and
4. As a condition to the issuance of the certificates of occupancy by the City of Dover, NH (the "authority") a commercial property must comply with all applicable codes and ordinances including, but not limited to, building and occupancy codes, any regulations pertaining to an entry sign board, fire department codes and regulations, applicable zoning and use laws, landscaping and parking requirements, appropriate curb cut permit and provisions for applicable sanitary sewer, water, storm drainage and other utilities. The property currently complies with all applicable laws, rules and regulations pertaining to zoning, land use, and is in compliance with applicable building and fire codes except where noted herein or on accompanying materials submitted by the Building Department of the City of Dover;

5. A current search of the Authority's applicable records indicates that there are no pending violations of any applicable laws, codes, rules, regulations or ordinances described in paragraph (4) above and there are no pending rezoning applications, hearings, cases, appeals or other proceedings which could affect the zoning application of the Pro.
6. Please refer to the attached table of uses specific to the Commercial District for approved uses.
7. The property is not located in a Special Service Area or a TIF District.
8. The subject property is abutted by properties zoned Commercial, with the Medium Density Residential District (R-12) to the rear of the property.
9. Subject property was/is not a Planned Unit Development.
10. There no legal non-conforming issues.

This letter and the statements contained herein are accurate as of date hereof and all such statements are made to the best of my knowledge and belief.

Sincerely,



Paul R. Crouser III
Zoning Administrator / Assistant City Planner
Planning & Community Development
City of Dover, NH
288 Central Avenue
Dover, NH 03820
e: P.Crouser@doover.nh.gov
p: 603.516.6007 / f: 603.516.6049

Heather Mulligan

From: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Sent: Thursday, May 1, 2025 7:53 PM
To: Sean Graham
Cc: Cyrus Amani; Maxfield, Jim; Nadeau, Mike; Benton, Donna
Subject: Re: Dover, NH (914 Central Ave) - Proposed Development Questions

Sean,

I will refer you to the Dover Code which can be found here: <https://www.dover.nh.gov/government/city-charter-code/>

Please review this thoroughly and make sure that you provide a complete narrative on section 153-14 with your submission.

Ken

Ken Mavrogeorge, PE
City Engineer
City of Dover, NH
K.Mavrogeorge@dover.nh.gov
(603) 516-6450

From: Sean Graham <sgraham@insiterealestate.com>
Sent: Thursday, May 1, 2025 5:49:37 PM
To: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Cc: Cyrus Amani <camani@INSITEREALESTATE.COM>; Maxfield, Jim <J.Maxfield@dover.nh.gov>; Nadeau, Mike <mike.nadeau@dover.nh.gov>; Benton, Donna <d.benton@dover.nh.gov>
Subject: Re: Dover, NH (914 Central Ave) - Proposed Development Questions

Security Notice: External sender. Use caution with hyperlinks or attachments.

Hi Ken,

I hope you've been doing well since we last connected. I wanted to follow up on a couple items I'm tracking for our project at 914 Central Avenue in Dover.

- **Sanitary Capacity:** Your last email mentions that you recently completed a sewer capacity analysis in the area of this project. Am I correct that this means there is sufficient capacity for a daycare development (previous use was a restaurant)? Or, are there concerns about the available capacity?
- **Stormwater Management Agreement:** We're proposing an at-grade basin at the rear of our building to address any stormwater quantity/quality requirements. Does the City require a Stormwater Maintenance Agreement, Drainage Easement, or anything of that sort? If so, do you have a template you could forward for our review?

I appreciate your help as we continue working through due diligence on this project. Please feel free to give me a call if you have any questions or need anything else to get back to me.

Thanks,

Sean Graham, PE
Project Manager
Direct: 630-592-3203
Mobile: 224-619-2860
sgraham@insiterealestate.com

InSite

InSite Real Estate, LLC | 1400 16th Street, Suite 300 | Oak Brook, IL 60523-8854
Office: 630-617-9100 | Fax: 630-617-9120 | www.insiterealestate.com

From: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Sent: Monday, March 24, 2025 9:40 AM
To: Sean Graham <sgraham@insiterealestate.com>
Cc: Cyrus Amani <camani@INSITEREALSTATE.COM>; Maxfield, Jim <J.Maxfield@dover.nh.gov>; Nadeau, Mike <mike.nadeau@dover.nh.gov>; Benton, Donna <d.benton@dover.nh.gov>
Subject: RE: Dover, NH (914 Central Ave) - Proposed Development Questions

Sean,

Thanks for reaching out about this new potential development.

- Can you confirm where the nearest fire hydrant is to this property *There is a hydrant about 280 feet away across Central Ave. (See GIS snapshot below)*, and what the maximum hydrant spacing allowed is *Generally 500 feet between hydrants is the minimum*. ? Will we need to set a new fire hydrant for this project? *It would be recommended to install a hydrant along Central Ave near the new service. I am copying Jim Maxfield the Building Official who can speak more specifically on hydrant requirements.*
- Do you have any information on available water pressure in the vicinity of this project? *I am copying our Utilities Superintendent, Mike Nadeau who you can coordinate with to get a hydrant flow test at the hydrants in the area. He may have some data for recent tests.*
- Will we be allowed to have a combo domestic water and fire supply line? Or will we need to have multiple taps on the watermain? *The domestic water can tap off the fire line but there will need to be a gate valve anchored to the main at the street and additional valves on site so that the lines can be isolated.*
- Are external water meters allowed *No*, or does the meter need to be within the building *Yes*? Does the City allow a separate irrigation meter *Memo meters are allowed if installed by a licensed plumber.?*
- Are there any concerns with sanitary capacity in this region? *We've recently completed a sewer capacity analysis in the area*
- Can we connect into the existing sanitary service, assuming it's in good condition? We'll have the service flushed and televised, I just want to confirm there isn't a City requirement to connect our new service to the existing manhole. *We prefer commercial buildings use a 6 inch service. If the existing service is less than a 6 inch then we would ask that it be upgraded. The service could wye into the main within Central. Please note that Central Ave was just recently paved and any work in the ROW would need an excavation permit including pavement damage fees in accordance with the latest adopted fee schedule on the City's website.*
- Can you confirm the City is the primary Authority Having Jurisdiction for stormwater permitting *Yes.*, and no County or state approvals are required for our detention calculations? *If the disturbance exceeds 100,000 sf then the state would be involved.*
- Are there any Site Development Agreements that will be required? *Defer to Director Benton in Planning.* If so, do you have a template you could provide for my reference?

City Engineer
City of Dover, NH
271 Mast Rd.
Dover, NH 03820-4169
e: k.mavrogeorge@dover.nh.gov
p: 603.516.6454 | f: 603.516.6463

Dover: First in New Hampshire, First with you!
<http://www.dover.nh.gov>

****[Click here to read the latest City of Dover Engineering Monthly Report!](#)****

From: Sean Graham <sgraham@insiterealestate.com>
Sent: Tuesday, March 11, 2025 1:57 PM
To: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Cc: Cyrus Amani <camani@INSITEREALESTATE.COM>
Subject: Dover, NH (914 Central Ave) - Proposed Development Questions

Security Notice: External sender. Use caution with hyperlinks or attachments.

Good afternoon Ken,

I hope this email finds you well. I'm reaching out as I'm investigating a new development opportunity at 914 Central Avenue in Dover. I had a great Pre-App with Erin and Paul last week, but I'd like to ask you a few questions regarding the City's engineering requirements. We're proposing to demo the existing restaurant and redevelop the site for a new commercial daycare user. I've attached our conceptual site plan for your reference.

A few questions:

- Can you confirm where the nearest fire hydrant is to this property, and what the maximum hydrant spacing allowed is? Will we need to set a new fire hydrant for this project?
- Do you have any information on available water pressure in the vicinity of this project?
- Will we be allowed to have a combo domestic water and fire supply line? Or will we need to have multiple taps on the watermain?
- Are external water meters allowed, or does the meter need to be within the building? Does the City allow a separate irrigation meter?
- Are there any concerns with sanitary capacity in this region?
- Can we connect into the existing sanitary service, assuming it's in good condition? We'll have the service flushed and televised, I just want to confirm there isn't a City requirement to connect our new service to the existing manhole.
- Can you confirm the City is the primary Authority Having Jurisdiction for stormwater permitting, and no County or state approvals are required for our detention calculations?
- Are there any Site Development Agreements that will be required? If so, do you have a template you could provide for my reference?
- Are any bonds or letters of credit required before we can pull permits?
- Do you have a contact at NHDOT we could discuss our project with?

I appreciate your help on the front end as we sort through this project. If you need any more information from my end before you can get back to me, please do not hesitate to reach out.

Thank you!

Sean Graham, PE
Project Manager
Direct: 630-592-3203

Mobile: 224-619-2860
sgraham@insiterealestate.com

InSite

InSite Real Estate, LLC | 1400 16th Street, Suite 300 | Oak Brook, IL 60523-8854
Office: 630-617-9100 | Fax: 630-617-9120 | www.insiterealestate.com

Please consider conserving our natural resources before printing this e-mail and/or any attachments.

This electronic message and any attachments may contain information that is confidential and/or legally privileged in accordance with NH RSA 91-A and other applicable laws or regulations. It is intended only for the use of the person and/or entity identified as recipient(s) in the message. If you are not an intended recipient of this message, please notify the sender immediately and delete the material. Do not print, deliver, distribute or copy this message, and do not disclose its contents or take any action in reliance on the information it contains unless authorized to do so. Thank you.

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May 9, 2025
InSite Real Estate, LLC
1400 16th Street, Suite 300
Oak Brook, Illinois 60523-8854
Attention: Cyrus Amani

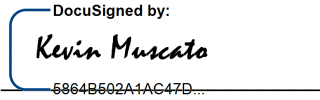
Re: - Tel/Data Availability: 914 Central Ave Dover NH

Attention: Cyrus Amani

In response to your request for service, we have determined that based on our initial investigation, Comcast Cable Communication Management LLC has the ability to construct and install certain wires, cables and other equipment over, under, across and along the property at 914 Central Ave Dover NH

A preliminary plan, if available, may be provided with this "Will Serve," letter. Notwithstanding the determination that Comcast may provide services at the Property, this letter does not represent any binding agreement for service. Additionally, this letter is non-transferrable and expires one hundred and eighty (180) days from issue date.

If you have any questions or need more information, feel free to contact us.

By: 
Name: Kevin Muscato
Kevin_Muscato@comcast.com
Title: Manager Market Development NER

March 17, 2025

Sean Graham, Project Manager
InSite Development Services, L.L.C.
1400 16th Street, Suite 300
Oak Brook, IL 60523

Dear Sean Graham:

I am responding to your request to confirm the availability of electric service for the proposed 914 Central Avenue, Dover, NH project being constructed for/by InSite Development Services, L.L.C..

The proposed project consists of a 1-story building with 0 residential units approximately 10,075 s/f of retail/office space at the ground level and parking below grade. The proposed development will be constructed along Central Avenue.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The proposed building service will be fed from Central Avenue as depicted on utility plan v1 dated 3/4/25. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

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

The attached drawing titled "Utility Plan v1" dated 3/4/2025, shows transformer locations to service your proposed project.

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

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

Respectfully,



Trevor Emmons
NH Eastern Regional Engineer, Eversource

cc: (via e-mail)
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource



March 17th, 2025

Sean Graham
Insite Real Estate

Natural Gas to Commercial Development at 914 Central Ave, Dover NH

To Whom it May Concern,

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

Unitil hereby confirms that natural gas is available for the proposed development at 914 Central Ave. in Dover, NH.

Please note that the delivery pressures available for this location are either 7" Water Column or 2 PSI.

If you have any questions, please contact me at 603-264-2033.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Wilk", with a stylized flourish at the end.

Josh Wilk
Senior Business Development Rep



T 603.227.4628
M 603.264.2033
F 603.294.5264
Email wilkj@unitil.com

WAIVER REQUEST
FOR
SITE REVIEW APPLICATION

Tax Map 38, Lot 20
914 Central Avenue

ARTICLE IV
§ 153-14 Site Design and Development Criteria

K. Location of parking lots.

- (1) Buildings should be sited closer to the street and parking areas should be located on the side or rear of lots to reduce the visual dominance of parking areas, improve pedestrian safety in parking lots, and increase the visibility of businesses to drivers. The following standards are required:

- (a) For parcels in the C and CM Districts with frontage and driveway access on an arterial or collector road, a minimum percentage of the parking spaces required by these regulations or of the number of parking spaces proposed (whichever is greater) shall be located to the side or rear of the building (i.e., no closer to the front lot line than the building) according to the following:

<u>Number of Spaces</u>	<u>Percent of Spaces to Side or Rear</u>
25 to 50	50%
51 to 75	60%
More than 75	70%

- (b) In recognition of the unique circumstances of some parcels of land, the Planning Board shall be permitted to vary the standards set forth in Subsection K(1)(a) above. The Planning Board may approve projects that do not conform strictly to the parking lot location standards above, provided that a finding is made by the Planning Board that the unique circumstances of the parcel make compliance unreasonable.

We respectfully request relief from the requirement of locating parking areas to the rear or side of the building.

The project is for a childcare development facility located adjacent to the McDonald's restaurant and Central Avenue, a main arterial road in the City of Dover. For added safety purposes, the proposed site layout is designed to have all parking to the front of the building, where pick up and drop off activity will occur, allowing the childcare playground area to be at the rear of the site, furthest from Central Avenue.

CIVILWORKS NEW ENGLAND

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

TRAFFIC ASSESSMENT MEMORANDUM

September 17, 2025

INTRODUCTION

Civilworks New England has prepared this traffic-assessment memorandum (TAM) regarding the childcare development project proposed at Tax Map 38, Lot No. 20, otherwise known as 914 Central Avenue in Dover, NH.

This TAM includes:

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

This TAM concludes that:

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

EXISTING SITE DESCRIPTION

The project site:

- is along the westerly side of Central Avenue;
- is located between McDonald's and Eastern Bank
- has a parcel area of 55,623 square feet (1.28 acres);
- contains an existing (vacant) commercial building that once housed East Ocean Chinese Restaurant and Bar;
- has an existing driveway serving the commercial building.

PROPOSED PROJECT DESCRIPTION

The project consists of a proposed 10,075 sq. ft. building that will house a child development use for 100 children and 10 employees.

However, a restaurant already exists on the property which will be removed for the project. So, the net increase will be only four units. The existing driveway, which will remain unsignalized, will be used to provide access to the new building.

ROAD DESCRIPTION

Central Avenue:

- is also known as Route 9 but is under the jurisdiction of the City of Dover in the project area.
- is oriented generally northwest – southeast with a straight/linear horizontal alignment.
- has an increased vertical grade change to the north.
- has bituminous concrete pavement in overall good condition.
- Has a raised center median in the project side area that prohibits left turns out of the site
- For travel lanes:

CIVILWORKS NEW ENGLAND

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

- has two travel lanes in the south-bound direction (project side), each having a pavement width of approximately 11 feet.
- has one left turn lane (also southeast-bound) alongside the center median that is approximately 10.5 feet
- has a 4.5 foot paved shoulder area
- has a 5 foot wide sidewalk along the site frontage.
- streetside parking is not allowed.
- has marked pavement (lane lines, “fog” side lines and left turn arrows).
- has a posted speed limit of 35 MPH in both directions in the vicinity of the property.
- has a total average daily traffic (ADT) volume of 5,551 vehicles, with 2,843 east-bound vehicles and 2,968 west-bound vehicles, as measured on Sixth Street at the Spaulding Turnpike as reported by the NHDOT for 2024.
- has a total average daily traffic (ADT) volume of 23,404 vehicles (11,553 “eastbound” and 11851 “westbound”) as reported by the NHDOT for 2024.
- includes existing utility services.

PUBLIC TRANSIT

Collaborative Alliance for Seacoast Transportation (COAST) Route 12 provides bus service in the area. Service is on Mondays through Saturdays, except holidays. A bus stop is located on the northwest side of the intersection with Indian Brook Road. Route 12 connects with:

- downtown Dover
- many stops in Somersworth and Rochester
- Dover Transportation Center = COAST Transit Center and Amtrak “Downeaster” train station

SIGHT DISTANCES

Left turns are not allowed due to the center median. Therefore, only right turning movements are possible and sight distance to the south is not relevant. The project site is on the outside of a gradual curving alignment of Dover Point Road that has limited elevation change so sight distance in both directions is optimized. Several residential driveways exist along this stretch of roadway; including two banks to the northwest and the McDonalds restaurant to the southeast.

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for appropriate sight distances in terms of stopping sight distance (SSD) for vehicles on the main road reacting to existing traffic, and intersection sight distance (ISD) for left turn movements from a stop. For a 35 mile per hour roadway, AASHTO has established the SSD to be 250 feet and ISD to be 390 feet. The available sight distance to the northwest at the proposed project driveway is at least 425 feet which is suitable for SSD at 50 miles per hour and ISD at 38 miles per hour.

Therefore, the stopping and intersection sight distances that are provided are adequate to provide a safe means of egress. Sight distance from the access drive will not be impeded by streetside parking and the unobstructed nature of the streetside, and wide paved shoulders, provide the opportunity to maintain these sightlines unhindered throughout the year.

CIVILWORKS NEW ENGLAND

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

CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual*.¹ This authoritative guide for calculating site traffic includes vehicle trip information for a day care center in a general urban/suburban that generally includes classrooms, offices, eating areas and playgrounds. A center may also provide for after-school care for school-age children. This use is known in the ITE *Trip Generation Manual* as Land Use Code 565 (LUC). In this LUC, trip data is based on the number of students.

It is important to note that a Chinese Restaurant existed on the property for a number of years; and the restaurant likely was a significant vehicle trip generator. Even though the restaurant is now closed, it is relevant to consider the proposed trips on a net increase basis versus the prior use.

Table 1 and Table 2 show calculated vehicle trip ends associated with the proposed development project and the prior restaurant use.

Table 1: Trip Generation - Day Care Center

Weekday Period	Avg. Trips	Proposed Students (X)	Vehicle Trips*		
			Total	In	Out
Daily	See Equation	100	403.2	201.6	201.6
AM Peak Hour of Generator	See Equation	100	72.7	38.5	34.2
PM Peak Hour of Generator	See Equation	100	71.7	33.7	38.0
AM Peak Hour of Adjacent Street Traffic	See Equation	100	74.4	39.4	35.0
PM Peak Hour of Adjacent Street Traffic	See Equation	100	73.4	34.5	38.9

* ITE, *Trip Generation Manual*, Data Center - Land Use Code 565

Weekday Trips = $T = 3.56(X) + 47.23$ with X being the number of students (50% entering, 50% exiting)

AM Trips - Generator = $\ln(T) = 0.77 \ln(X) + 0.74$ (53% entering, 47% exiting)

PM Trips - Generator = $\ln(T) = 0.78 \ln(X) + 0.68$ (47% entering, 53% exiting)

AM Trips - A.S.T. = $T = 0.66(X) + 8.42$ (53% entering, 47% exiting)

PM Trips - A.S.T. = $\ln(T) = 0.87 \ln(X) + 0.29$ (47% entering, 53% exiting)

(Table 2 on next page)

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

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181 WATSON ROAD
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DOVER, NH 03821-1166
PHONE: 603.749.0443

Table 2: Trip Generation - Restaurant (previous use on property)

Weekday Period	Avg. Trips	Vehicle Trips*			
		Building 1,000 SF (X)	Total	In	Out
Daily	See Equation	3.552	380.8	190.4	190.4
AM Peak Hour of Generator	See Equation	3.552	48.6	27.7	20.9
PM Peak Hour of Generator	See Equation	3.552	58.1	29.6	28.5
AM Peak Hour of Adjacent Street Traffic	See Equation	3.552	34.0	18.7	15.3
PM Peak Hour of Adjacent Street Traffic	See Equation	3.552	32.1	19.6	12.5
* ITE, <i>Trip Generation Manual, Data Center</i> - Land Use Code 932 - High-Turnover (Sit-Down) Restaurant					

Weekday Trips vs. 1,000 Sg. Ft. GFA - No Equation => Average rate = 107.2 / 1,000 (50% entering, 50% exiting)

AM Trips - Generator vs. 1,000 Sg. Ft. GFA - No Equation => Average rate = 13.68 / 1,000 (57% entering, 43% exiting)

PM Trips - Generator vs. 1,000 Sg. Ft. GFA - No Equation => Average rate = 16.35 / 1,000 (51% entering, 49% exiting)

AM Trips - A.S.T. vs. 1,000 Sg. Ft. GFA - No Equation => Average rate = 9.57 / 1,000 (55% entering, 45% exiting)

PM Trips - A.S.T. vs. 1,000 Sg. Ft. GFA - No Equation => Average rate = 9.05 / 1,000 (61% entering, 39% exiting)

TRIP DISTRIBUTION/ASSIGNMENT

All project-related trips will access the site from Central Avenue. The calculated vehicle trip generation for the development project relative to the number of vehicles already on Central Ave and the surrounding area, is such that area traffic operations are not sensitive to trip distribution/assignment of project vehicle trips.

POTENTIAL TRAFFIC IMPACTS

The calculations show total increase in vehicle trips to be generated by the project as:

- Daily (weekday) = 403.2 total trips (201.6 in and 201.6 out)
Less 380.8 previously existing trips (190.4 in and 190.4 out) [existing restaurant on property]
Net Increase = 22.4 (11.2 in and 11.2 out)
- AM peak hour (weekday) = 74.40 total trips (39.4 in and 35.0 out)
Less 48.6 previously existing trips (27.7 in and 20.9 out) [existing restaurant on property]
Net Increase = 25.8 (11.7 in and 14.1 out)
- PM peak hour (weekday) = 73.4 total trips (34.5 in and 38.9 out)
Less 58.1 previously existing trips (29.6 in and 28.5 out) [existing restaurant on property]
Net Increase = 15.3 (4.9 in and 10.4 out)

The total weekday trips for the proposed use itself represent only 1.7 percent of the current ADT on Central Avenue with the net increase being significantly less than that percentage. Therefore, the proposed project is not anticipated to add significant new traffic to the surrounding area, nor impact such.

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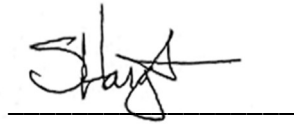
CONCLUSION

In conclusion:

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

CIVILWORKS NEW ENGLAND

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Haight', is written over a horizontal line.

Stephen J. Haight, PE

Cc: Insite Development Services, L.L.C.

Landscape Best Management Practices Operations and Maintenance Plan

Commercial Site

914 Central Avenue
Dover, New Hampshire 03820

Prepared for:

Civilworks New England
181 Watson Road
PO Box 1166
Dover, NH 03821

Prepared by:

Terrain Planning & Design, LLC
311 Kast Hill Road
Hopkinton, NH 03229



Landscape Maintenance

Introduction:

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

Weekly Tasks:

1. Prune back any shrubs overhanging curbs or sidewalks.
2. Remove litter from plants bed.
3. Remove broken or fallen branches from trees.
4. Prune sucker growth from tree trunks.
5. Remove weeds larger than 2 inches high or wide from plant beds. Weeds 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 two inches (top dressed). Mulch is not required where shrubs or groundcover completely hide the soil surface from view.
4. Gently prune shrubs at appropriate time of year based on species, for shape and form. **Do not shear.**
5. Energize the irrigation system, repair damaged components, test the system, adjust heads, and update programming.
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 per year before Memorial Day is encouraged.

Monthly Tasks

June:

No additional items

July:

No additional items

August:

No additional items

September:

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

October:

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, according to label instructions, to protect shrubs from winter die back.

December:

1. Prune any tree branches that interfere with public safety.
2. Prune street and parking lot 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 are used to attenuate flow and treat stormwater. The stormwater treatment areas consist of a large bioretention pond 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 stormwater facility is not suitable for treating chlorides. Chloride use on source surface areas tributary to the facility should be avoided if possible. In these locations, it would be prudent to eliminate or reduce application of chloride-containing deicing compounds, use alternative deicers, or apply clean sand as needed. Aggressive sweeping in these areas, along with pretreatment sumps and filter strips, will minimize the negative impact of the sand on the 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 plant material					X		

Stormwater Management System Inspection & Maintenance Plan

Prepared for:

**PROPOSED CHILDCARE DEVELOPMENT
Tax Map 38, Lot 20**

**914 Central Avenue
Dover, New Hampshire
Strafford County**

September 2025

Prepared for:

**INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523**

Prepared By:

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

Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for INSITE DEVELOPMENT SERVICES, LLC. The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

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

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

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

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

Applicant:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523

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

Contact / Responsible Party:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523
Phone: (603) 592-3202

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

Management Company:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523

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

Inspection Schedule / Record Retention

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

I, the responsible party, understands and will fulfil the requirements of this report.

Applicant: _____

Stormwater Management System Components

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

- Pipes/Culverts
- Infiltration Basin
- Sediment Forebay
- Outlet Structure
- Catch Basins
- Stone Drip Edge
- Porous Pavement
- Pavement
- Litter / Trash Removal

Design elements are identified in the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

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

Inspection and Maintenance Plan

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

PIPES/CULVERTS:

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

INFILTRATION BASIN:

- Inspect and remove any debris from inlet and outlet structures.
- Remove any accumulated sediment.
- Inspect and repair outlet structures and appurtenances.
- Inspection of infiltration components at least twice annually and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Periodic mowing of basin and embankments.
- Removal of woody vegetation from basin and embankments.
- Inspection and repair of embankments and spillways.
- If an infiltration system does not drain within 72 hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including not limited to removal of accumulated sediments or reconstruction of the infiltration bottom.

SEDIMENT FOREBAY:

- Vegetation shall be removed.
- Inspect at least once per year.
- Inspect for sediment accumulation.
- Remove all debris immediately.

OUTLET STRUCTURE(S):

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

CATCH BASIN(S):

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6 ".
- 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.

STONE DRIP EDGE:

- Inspect twice annually and following any rainfall event exceeding 2.5 inches in a 24 hour period.
- If system does not drain within 72-hours following a rainfall event, a qualified engineer should inspect the system and determine measures required to restore the condition of the facility.
- Follow the University of New Hampshire's "Methods for Disposing Non-Native Invasive Plants" for disposing of invasive species (Attached).

POROUS PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Monitor periodically, at least twice annually, within 30 minutes of a precipitation event, to ensure that the pavement surface drains effectively after storms.
- Inspect for salt accumulation, sediment, organic debris, etc. and periodically clean (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.
- Deep cleaning/unclogging of pavement may be necessary if routine and periodic maintenance is not performed and is insufficient to maintain design infiltration rates.
- Inspect adjacent non-permeable pavement sections (1-2 times per year) and ensure they are free of debris/sediment to prevent tracking.
- Inspect adjacent vegetated areas (1-2 times per year) to ensure there are no signs of erosion and sediment/organic debris run-on to the porous pavement areas.
- Inspect areas (as needed) to ensure stock piling of snow, sand/salt, mulch, soil, yard waste, etc. is not occurring.
- Inspect pavement for damaged areas (as needed) and repair as they are identified. Repair in accordance with "UNHSC Design Specifications for Porous Asphalt Pavement and Infiltration Beds". (attached)
- Seal coating and repaving with impervious materials is prohibited.

PAVEMENT:

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

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS:

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

ANTI-ICING AND SALT MINIMIZATION:

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

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	- Check for clogging - Check for sediment accumulation	Remove when noticed Clean when necessary
Infiltration Basin	Bi-Annually	- Check for sediment accumulation - Check for debris - Inspect for woody vegetation - Maintain healthy stand of veg., 4" minimum - Inspect for invasive species - Check for water draining	Remove any accumulated Sediment Remove from inlet/outlet structures Remove Immediately Mow twice per year Remove/Dispose of accordingly 72 hours after a 2.5 inch storm event in a 24 hour period
Sediment Forebay	Annually	- Check for sediment accumulation - Check for woody vegetation growth - Check for debris - Remove vegetation	Remove/ Dispose of accordingly Remove vegetation
Outlet Structure	Annually	- Inspected 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	Annually	- Check for sediment accumulation - Check for floatable contaminants	≥ 1 ft. sediment depth Remove all floatables
Stone Drip Edge	Bi-Annually	- Check for sediment accumulation, debris, and invasive species. - Check for water draining	Remove any accumulated Sediment, debris, and invasive species and dispose of accordingly. 72 hours after a 2.5 inch storm event in a 24 hour period
Porous Pavement (PP) - Sanding - Salt Applications - Accumulated Salt - Sediment/Organic debris - Adj. Vegetated Areas - Underdrain Outlet - Trash/Debris - Pavement Condition - Stockpiles - Standing Water in Pavement	Limit use As Req. Winter/Spring 1-2 x's / yr 1-2 x's / yr Annually Periodically Annually Regularly 1-2 x's / yr Rain Event	Minimize use to prevent tracking issues RECORD APPLICATION RATES Inspect surface for salt accumulation Inspect surface for sediment/organics Inspect for erosion and prevent run-on to PP Inspect outlet for blockages Inspect for trash/debris Inspect for deteriorated pavement sections Inspect for stockpiled materials Inspect for standing water within 30 min of rain event	Vacuum to prevent issues Minimize as Req. Vacuum immediately Vacuum immediately Stabilize areas Remove blockage Remove when noticed Repair as identified Remove stockpiles Power wash or compressed air blower at 30 degrees or less
Pavement: - Sanding - Salt Applications - Sweep/Vacuum - Trash/Debris	Limit use As required 1 - 2 x's Year Periodically	- Minimize use to prevent tracking issues - RECORD APPLICATION RATES - Sweep or vacuum to prevent tracking issues - Check for trash/debris	Sweep to prevent issues Minimize (as required) Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

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

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance _____ Inspector: _____

[illegible]

Deicing Salt Quantity Use Log

[illegible]

Methods for Disposing Non-Native Invasive Plants

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



Tatarian honeysuckle

Lonicera tatarica

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

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

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

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

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

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

New Hampshire Regulations

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

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

How and When to Dispose of Invasives?

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

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

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

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

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

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

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

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



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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

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

January 2010

CHECKLIST FOR INSPECTION OF PERMEABLE PAVEMENT

Location:

Inspector:

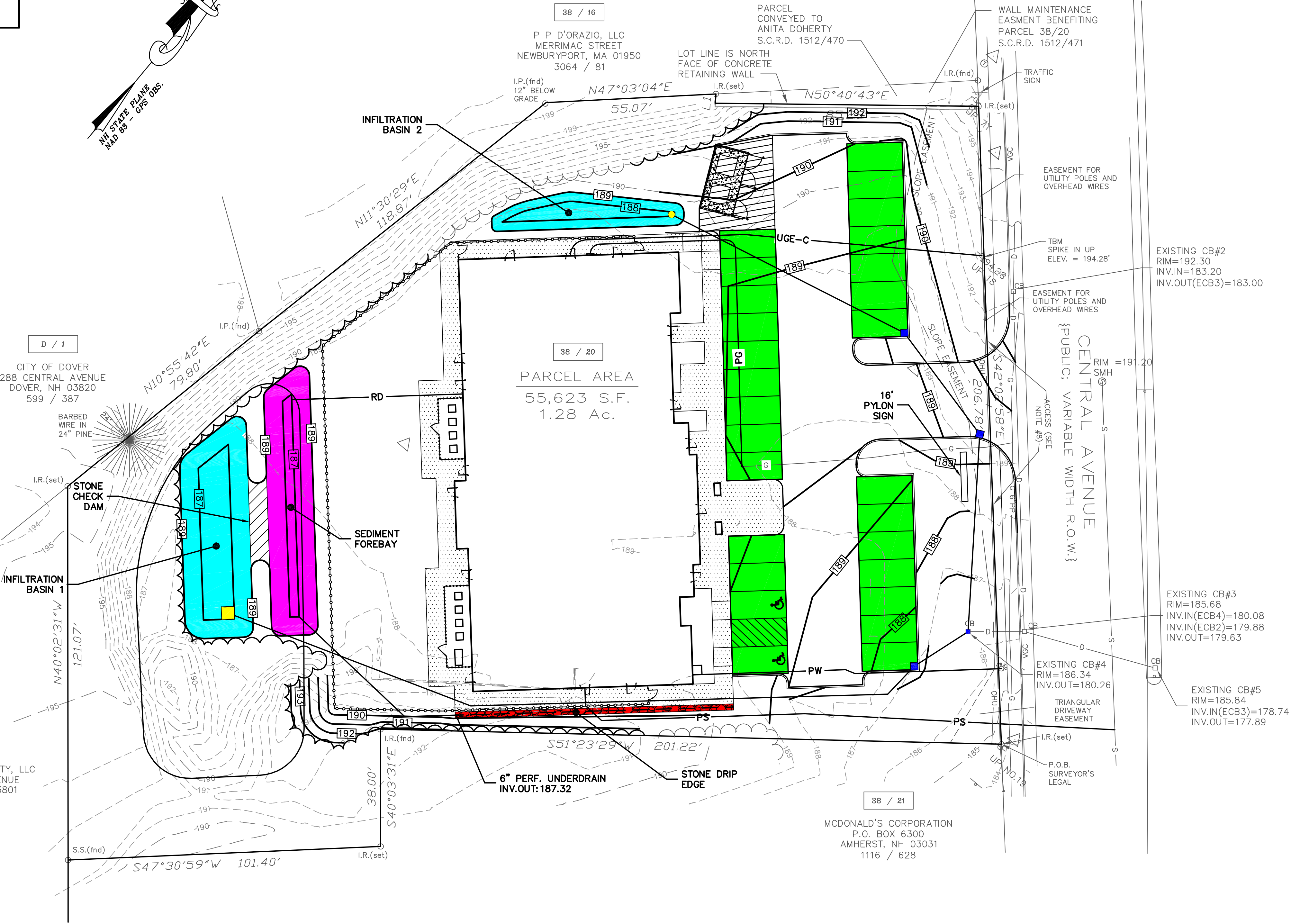
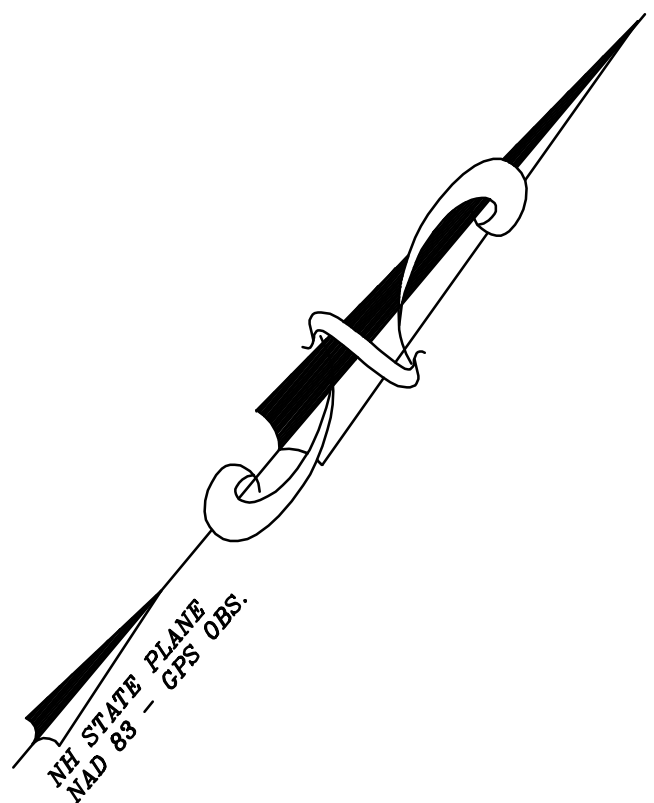
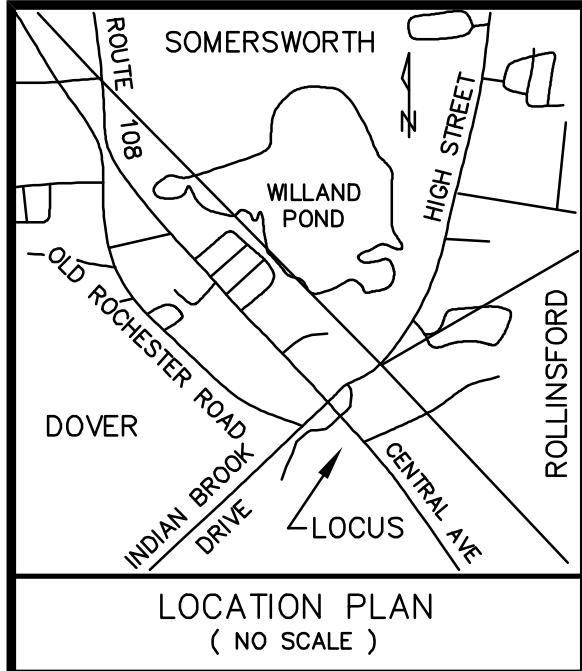
Date:

Time:

Site Conditions:

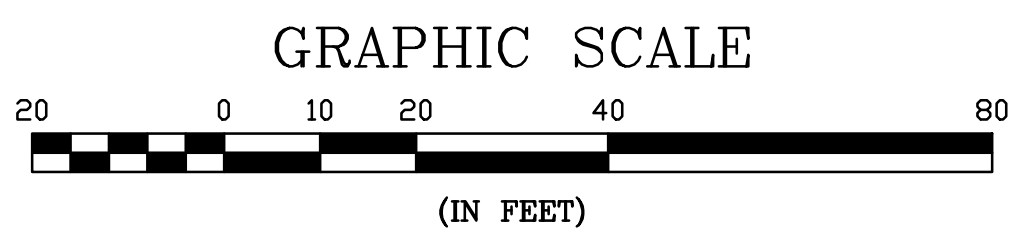
Date Since Last Rain Event:

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



LEGEND:

- INFILTRATION BASIN
- POROUS PAVEMENT
- SEDIMENT FOREBAY
- STONE DRIP EDGE
- CATCH BASIN
- OUTLET STRUCTURE



NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.743.0443

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE NO.	NO.	REVISION	APPD	DATE
9-18-25	1"=20'	ETA	MAM	BYSH	25044	25044-SITE				

BMP LOCATION PLAN

CHILDCARE DEVELOPMENT FACILITY
DOVER, NH (914 CENTRAL), LLC.
914 CENTRAL AVE
DOVER, NH 03820

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874



ECS Mid-Atlantic, LLC

Geotechnical Engineering Report

Proposed Childcare Development

914 Central Avenue
Dover, Strafford County, New Hampshire

ECS Project Number 18:6600-REV

June 19, 2025





ECS MID-ATLANTIC, LLC

Geotechnical • Construction Materials • Environmental • Facilities

June 6, 2025
Revised June 19, 2025

Mr. Rob Johnson
InSite Development Services, LLC
1400 Sixteenth Street, Suite #300
Oak Brook, Illinois 60523

ECS Project No. 18:6600-REV

Reference: Geotechnical Engineering Report
Proposed Childcare Development
914 Central Avenue
Dover, Strafford County, New Hampshire

Dear Mr. Johnson:

ECS Mid-Atlantic, LLC (ECS) has completed the subsurface exploration and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our Proposal No. 18:10825-GP-REV, dated April 4, 2025. This report presents our understanding of the geotechnical aspects of the project, results of the field exploration, laboratory testing, and our design and construction recommendations. We have revised this report to include general recommendations for pavement design.

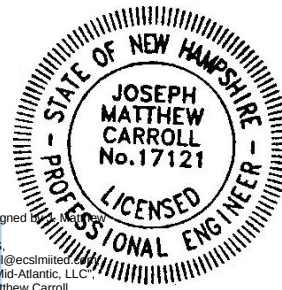
It has been our pleasure to be of service to InSite Development Services, LLC during this phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase and to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Mid-Atlantic, LLC

Ryan W. Brown, G.I.T.
Geotechnical Staff Project Manager I
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J. Matthew Carroll



J. Matthew Carroll, P.E.
Office Manager, Principal
mcarroll@ecslimited.com

Digitally signed by J. Matthew Carroll
DN: C=US,
E=mcarroll@ecslimited.com,
O=ECS Mid-Atlantic, LLC,
CN=J. Matthew Carroll
Reason: I am approving this document
Date: 2025.06.19 13:43:15-04'00'

52-6 GRUMBACHER ROAD, YORK, PA 17406 • T: 717-767-4788

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ECS New York Engineering, PLLC - An Associate of ECS Group of Companies • www.ecslimited.com

"ONE FIRM. ONE MISSION."

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APPENDICES

Appendix A – Drawings & Reports

- Site Location Diagram
- Exploration Location Diagram(s)
- Subsurface Cross-Section(s)
- Geologic Survey Map
- Soil Survey Map

Appendix B – Field Operations

- Reference Notes
- Exploration Procedures
- Boring Logs

Appendix C – Laboratory Testing

- Laboratory Testing Summary
- Plasticity Chart(s)
- Grain Size Analysis/Analyses
- Textural Triangle USDA Test(s)

Appendix D – Supplemental Report Documents

- French Drain Installation Procedure

EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned development. Further, our principal foundation recommendations are summarized. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- The proposed building can be supported by conventional shallow foundations consisting of column and/or strip footings bearing on the existing soils. The foundations can be designed for an allowable soil bearing pressure of 3,000 psf based on anticipated design loads.
- Groundwater seepage into our borings was not observed during our exploration at the depths explored.
- Natural deposits of soils that meet the definition of Satisfactory Structural Fill do appear to be present on the site at possible excavation depths.

Refer to the text of the report for site specific design and construction recommendations.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for design and construction of a proposed daycare facility at the project site. The recommendations developed for this report are based on project information supplied by InSite Development Services, LLC, including the following:

- *Concept Plan (v4.0)*, prepared by InSite, dated April 4, 2025.
- *KinderCare Learning Center Prototype 10K* (pages 1 through 11), by ADA architects, Inc., revised September 20, 2024.

Our services were provided in accordance with the Proposal No. 10825-GP-REV, dated April 4, 2025, as authorized by InSite Development Services, LLC, dated April 8, 2025, which includes the Agreement between InSite Development Services, LLC and ECS Mid-Atlantic, LLC.

This report contains the results of our subsurface exploration, site characterization, laboratory testing, engineering analyses, and recommendations for the design and construction of the proposed development.

This report includes the following:

- A review of area and site geologic conditions.
- A review of surface topographical features and site conditions.
- A brief review and description of our field and laboratory test procedures and the results of testing conducted.
- A review of subsurface soil stratigraphy with pertinent available physical properties.
- Final copies of our boring logs.
- Discussion of groundwater concerns relative to the planned construction.
- Recommended allowable soil bearing pressure and recommendations for suitable shallow foundations and anticipated maximum settlement.
- Recommendations regarding specifications for Structural Fill.
- General recommendations for pavement design.
- Discussion of parameters for slab on grade construction and modulus of subgrade reaction.
- Recommendations for site seismic design coefficients based on the 2018 IBC parameters.
- Recommendations regarding stormwater management.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The project site is located at the physical address of 914 Central Avenue in Dover, Strafford County, New Hampshire. The site is located to the west of the intersection between Central Avenue and Old English Village Road. The property is situated between business developments to the northwest and southeast, Central Avenue to the northeast, and wooded regions to the southwest. At the time of exploration, the site consisted of a vacant two (2) story building with associated parking lot and retaining walls. The site was generally flat with a total topographic relief on the order of approximately ± 4 feet.

Refer to Figure 2.1.A and the Site Location Diagram in Appendix A for a detailed depiction of the project site location.

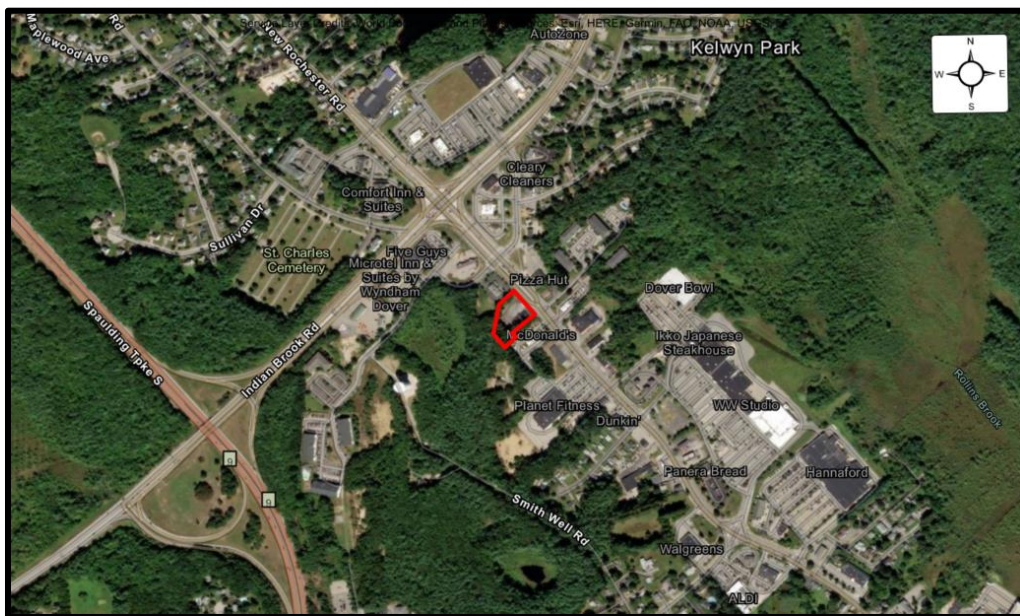


Figure 2.1.A – Site Location

2.2 PROPOSED CONSTRUCTION

Based on the *Concept Plan* (v4.0), prepared by InSite, dated April 4, 2025, and the *KinderCare Learning Center Prototype 10K* (pages 1 through 11), by ADA architects, Inc., revised September 20, 2024, we understand that the proposed development consists of a single-story daycare facility. Other site developments include parking areas, playground area, trash enclosure area, and a stormwater management area. The following information explains our understanding of the structure and assumed loads:

DESIGN VALUES	
SUBJECT	DESIGN INFORMATION / EXPECTATIONS
Approximate Building Footprint	10,075 SF
# of Stories	1 story above grade
Usage	Daycare Facility
Column Loads	Estimated - 50 Kips maximum

DESIGN VALUES	
SUBJECT	DESIGN INFORMATION / EXPECTATIONS
Wall Loads	Estimated - 4 kips/ft maximum
Lowest Finish Floor Elevation (FFE)	Assumed - EL. 195.0 Feet

If actual loads or the FFE differ from those provided above, ECS should be contacted to provide updated recommendations, if applicable.

2.3 SITE GEOLOGY

Based on the *USGS Geologic Units of New Hampshire*, the project site is mapped as being underlain by the Berwick Formation. According to *Macrostrat.com*, the Berwick Formation is part of the Merrimack Group and dominantly consists of granofels or schist and interbeds of calc-silicate granofels and minor metapelites. The Berwick Formation is a member of the Seaboard Lowland which consists of long rolling hills and jagged coastline. This area experienced the retreat of ice sheets resulting in glaciated formations.

2.4 SOIL SURVEY MAPPING

Based on our review of the Soil Survey (USDA - Natural Resources Conservation Service (websoilsurvey.nrcs.usda.gov), the site soils are mapped Hinckley loamy sand, 3 to 60 percent slopes. We have also referenced the document "Ksat Values for New Hampshire Soils" by the Society of Soil Scientists of Northern New England (SSSNE) dated September 2009. These soil types are described as having the following properties:

SOIL MAPPING SUMMARY						
Mapped Soil Unit	Soil Unit Symbol	Origin/ Type	Depth to Restrictive Feature	Depth to Water Table	Hydrologic Soil Group	KSat (in/hr)
Hinckley loamy sand, 3 to 60 percent slopes	HaB HaC HbE	Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite/schist	>80 inches	>80 inches	A	(1.42 – 99.90) (USDA) (6.0-20.0 for Horizon B) (SSSNE)

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our exploration procedures are explained in greater detail in Appendix B including the insert titled Subsurface Exploration Procedure. Our scope of work included drilling a total of seven (7) geotechnical borings. Our borings were located with a handheld GPS unit and their approximate locations are shown on the Exploration Location Diagram in Appendix A.

3.1 SUBSURFACE CHARACTERIZATION

The following sections provide generalized characterizations of the soil strata. Please refer to both the Subsurface Cross-Section in Appendix A and the boring logs in Appendix B.

SUBSURFACE STRATIGRAPHY	
Stratum	Description
n/a	Surficial Material: Topsoil Thickness 8.0 to 10.0 inches OR Asphalt Thickness 3.0 inches
I	Poorly graded SAND (SP) with varying amounts of gravel OR SANDY SILT (ML), yellowish brown, orangish brown, and gray, moist, loose to dense, 7.5YR 6/6, 10YR 7/6

3.2 GROUNDWATER OBSERVATIONS

Groundwater was not encountered during our subsurface exploration at the locations and depths explored. Additionally, no apparent signs of the seasonal high ground water table were observed while probing at our testing locations. Variations in both groundwater types (perched groundwater table aquifer) can occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors.

3.3 LABORATORY TESTING

Each sample was visually classified on the basis of texture and plasticity in accordance with ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) including USCS classification symbols. After classification, the samples were grouped in the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

The laboratory testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. Moisture (ASTM D2216), Grain Size (ASTM D6913), Hydrometer (ASTM D7928), and Atterberg Limits (ASTM D4318) were performed on representative soil samples obtained from the borings in order to aid in classifying soils according to the Unified Soil Classification System (USCS) and to quantify and correlate engineering properties. The laboratory results can be found in Appendix C.

Soil samples from this exploration program will be retained in our laboratory for a period of 60 calendar days from date of collection, corresponding to the date of completion indicated on the exploration logs. After this time, the samples will be discarded unless other instructions are received from you regarding their disposal in advance.

4.0 DESIGN RECOMMENDATIONS

4.1 FOUNDATION DESIGN

Provided subgrades and Structural Fills are prepared as discussed herein, the proposed structures can be supported by conventional shallow foundations consisting of column and continuous wall footings. The design of the foundations shall utilize the following parameters:

FOUNDATION DESIGN PARAMETERS		
Design Parameter	Column Footing	Wall Footing
Net Allowable Bearing Pressure ¹	3,000 psf	3,000 psf
Acceptable Bearing Soil Material	Stratum I or Structural Fill	Stratum I or Structural Fill
Minimum Width	24 inches	18 inches
Minimum Footing Embedment Depth for Interior Foundations (below slab or finished grade)	36 inches	36 inches
Minimum Footing Embedment Depth for Exterior Foundations (below slab or finished grade)	48 inches	48 inches
Estimated Total Settlement (max.)	1 inch	1 inch
Estimated Differential Settlement	Less than ½ inch between columns	Less than ½ inch over 35 feet

Note¹: Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation.

Most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. If soft/loose soils, unsuitable existing fill, or otherwise unsuitable soils are observed at the footing bearing elevations, the unsuitable soils should be undercut and removed.

Foundation undercut excavations, if required, should be widening by 1 foot on each side for every foot of over excavation (equivalent to a 1(H):1(V) slope for improved bearing area) where overexcavation exceeds 2 feet in depth. The undercut areas should be backfilled with Structural Fill (such as NH Item 304.3 aggregate) and compacted under engineering review until the designed bearing elevation has been reached. As an alternate, lean concrete ($f'_c=1,000$ psi) may be used to backfill the undercut. If lean concrete is used, the excavation should be 6 inches larger than the footing on each side and no additional lateral overexcavation is necessary.

4.2 FLOOR SLABS

Provided subgrades and Structural Fills are prepared as discussed herein, the proposed floor slabs can be constructed as Ground Supported Slabs (or Slab-On-Grade). Based on a proposed lowest finished floor elevation of approximately EL. 195.0 feet, it appears that the slabs will bear on newly compacted Structural fill or *Stratum I - SAND (SP)* or *SANDY SILT (ML)*. The following graphic depicts our soil-supported slab recommendations:

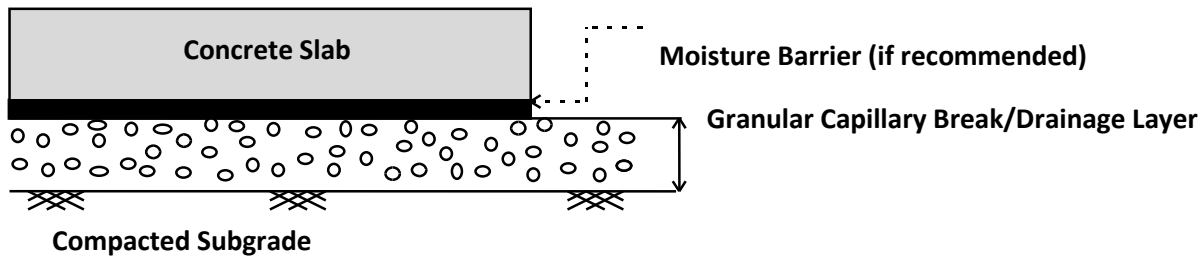


Figure 4.2.A

1. Drainage Layer Thickness: 6 inches minimum recommended
2. Drainage Layer Material: Coarse Graded Aggregate
3. Subgrade compacted to **95%** maximum dry density in Accordance with ASTM D698

Soft or yielding soils may be encountered in some areas. Those soils should be removed and replaced with compacted Structural Fill in accordance with the recommendations included in this report.

Subgrade Modulus: Provided the Structural Fill and Granular Drainage Layer are constructed in accordance with our recommendations, the slab may be designed assuming a modulus of subgrade reaction, k_1 of 125 pci (lbs./cu. inch). The modulus of subgrade reaction value is based on a 1 ft by 1 ft plate load test basis.

Moisture Barrier: Before the placement of concrete, a moisture barrier may be placed on top of the granular drainage layer to provide additional protection against moisture penetration through the floor slab. When a moisture barrier is used, special attention should be given to surface curing of the slab to reduce the potential for uneven drying, curling and/or cracking of the slab. Depending on proposed flooring material types, the structural engineer and/or the architect may choose to eliminate the vapor barrier.

Slab Isolation: Soil-supported slabs should be isolated from the foundations and foundation-supported elements of the structure so that differential movement between the foundations and slab will not induce excessive shear and bending stresses in the floor slab. Where the structural configuration prevents the use of a free-floating slab such as in a drop down footing/monolithic slab configuration, the slab should be designed with suitable reinforcement and load transfer devices to preclude overstressing of the slab.

4.3 SEISMIC DESIGN CHARACTERISTICS

The International Building Code (IBC) 2018 requires site classification for seismic design based on the upper 100 feet of a soil profile. At least two methods are utilized in classifying sites, namely the shear wave velocity (v_s) method and the Standard Penetration Resistance (N-value) method. The latter method (Standard Penetration Resistance) was used in classifying this site.

SEISMIC SITE CLASSIFICATION			
Site Class	Soil Profile Name	Shear Wave Velocity, V_s , (ft./s)	N value (bpf)
A	Hard Rock	$V_s > 5,000$ fps	N/A
B	Rock	$2,500 < V_s \leq 5,000$ fps	N/A
C	Very dense soil and soft rock	$1,200 < V_s \leq 2,500$ fps	>50
D	Stiff Soil Profile	$600 \leq V_s \leq 1,200$ fps	15 to 50
E	Soft Soil Profile	$V_s < 600$ fps	<15

Based upon our interpretation of the subsurface conditions, the appropriate Seismic Site Classification is “D” as shown in the preceding table.

The Site Class definition should not be confused with the Seismic Design Category designation which the Structural Engineer typically assesses. If a higher site classification is beneficial to the project, we can provide additional testing methods that may yield more favorable results.

4.4 PAVEMENTS

Subgrade Characteristics: Based on the results of our borings, it appears that the pavement subgrades will consist mainly of *Stratum I - SAND* (SP) material. Stratum I can be used for support of the proposed pavements provided the exposed subgrade passes a proofroll as described in **Section 5.2.2** of this report under the supervision of ECS. The removal of some deleterious material should be anticipated. California Bearing Ratio (CBR) testing was not performed as part of this study. Therefore, we have assumed a CBR value of 3% for preliminary design purposes.

For preliminary design the general pavement sections below can be considered and are guidelines that may or may not comply with local jurisdictional minimums.

PROPOSED PAVEMENT SECTIONS	
MATERIAL	FLEXIBLE PAVEMENT
	Light Duty
Asphaltic Wearing Course (Superpave - 9.5mm)	1.5 inch
Asphaltic Base Course (Superpave - 19.0mm)	3.0 inch
Crushed Stone Base	6.0 inch

Light duty sections are appropriate for vehicular traffic and parking areas. Large, front loading trash dumpsters frequently impose concentrated front wheel loads on pavements during loading. This type of loading typically results in rutting of asphalt pavement and ultimately pavement failures. For preliminary design purposes, we recommend that the pavement in trash pickup areas consist of a 6-inch thick, 4,000 psi, reinforced concrete slab over 6-inches of dense graded aggregate. When traffic loading becomes available ECS or the Civil Engineer can design the pavements.

Prior to subbase placement and paving, CBR testing of the subgrade soils (both natural and fill soils) should be performed to determine the soil engineering properties for final pavement design.

4.5 STORMWATER MANAGEMENT AREAS

4.5.1 Stormwater Management Facilities

General: The plan provided to ECS displayed the proposed location for the stormwater management facility. Stormwater management facilities are expected to consist of an at-grade basin. The recommendations presented below should be considered during design and construction.

4.5.1.a Infiltration Characteristics

Our subsurface exploration consisted of the oversight of one (1) boring drilled to explore the subsurface conditions and characterize the site in the area proposed for stormwater management. The boring was classified utilizing USDA terminology as well as the *National Engineering Handbook, MEH Part 630 Hydrology Chapter 7*. Refer to the attached Boring Log B-03 for more information about the materials encountered in the general area proposed for stormwater management.

The available published soil information revealed that the soils are mapped as Hydrologic Soil Group A materials. Additionally, our lab testing revealed that the soils in the general area of the proposed basin classified as Loam. However, *The Hydrology National Engineering Handbook, Chapter 7*, states that loams are typically assigned to Hydrologic Soil Group B based on the fines percentage being greater than 10%.

Based on the correlations from Rawls, Brakensiek, and Saxton (1982), the correlated minimum infiltration rate based on the USDA lab classification is 0.52 inches per hour, although it is expected that the actual field rates will be higher. Based on the *New Hampshire Stormwater Manual, Volume 2 (2008)*, additional field verification testing for final design may be required.

ECS recommends that specific construction notes appear on the plans requiring full-time observation of the excavation of the basins by the authorized ECS representative to verify suitable conditions are present. ECS can assist in developing these notes once plans become more final.

4.5.1.b Embankment/Outlet Structures/Slopes

Embankment construction or cut slopes to facilitate basin construction should incorporate side slopes of 3(H):1(V) or flatter. If steeper slopes are necessary, ECS should be contacted to review the proposed slope geometry.

Fill materials should be placed to a minimum of 95% of the maximum dry density of the material, as determined by the Standard Proctor method (ASTM D698). The moisture content of the materials should be within $\pm 3\%$ of the optimum.

Storm water management facilities with embankments should include the construction of a clay core having a minimum thickness of 2 feet. Clay suitable for this use should consist of CL or CH materials, having a minimum of 70% fines (passing #200 sieve), a minimum liquid limit (LL) of 40 and minimum plasticity index (PI) of 20. This material should be approved by the Geotechnical Engineer. Clay core materials should be compacted to 95% of the standard proctor maximum dry density at a moisture content that is at or up to 3% above the optimum. Limited laboratory testing of the on-site soils indicated that the site does not appear to contain soils that meet the criteria for reuse as clay core materials.

4.5.1.c Temporary Sediment Basin Fill Embankments

Soils used in temporary sediment basin fill embankments should satisfy the requirements for fill discussed below and should be placed and compacted to the specification requirements for Structural Fill. Care should be taken not to track heavy equipment over the basin bottom during construction.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 STORMWATER CONSTRUCTION RECOMMENDATIONS

It is recommended that verification of the subgrade conditions at the time of construction be conducted by an authorized ECS representative.

During excavation of the basin, the materials at the bottom of basin should be verified to be consistent with those encountered in the exploration. Proper performance of infiltration facilities will be influenced by the variability in the subsurface. It will be important that construction equipment does not traffic on the materials at the infiltration bed elevation, and that hand probing on an approximately 25 foot grid or isolated test pits be provided to evaluate proper offset distances from bedrock limiting zones.

We recommend SWM facilities be located a minimum of 25 feet from adjacent buildings, taken from edge of SWM facility to outside of footing. The allowable buffer distance is highly dependent on site constraints including but not limited to, foundation type, subgrade soils, geology, structural loading, foundation bearing elevation, invert elevation, and groundwater. If site constraints prohibit this recommendation, the facility may be located closer to a building subject to the review and approval of ECS. It is important to note that the close proximity of buildings will generally not negatively impact the functionality of the stormwater facilities, but water infiltration and a reduced buffer may negatively affect the bearing capacity of adjacent structures.

5.2 SUBGRADE PREPARATION

5.2.1 Stripping and Grubbing

The subgrade preparation should consist of stripping vegetation, rootmat, topsoil, unsuitable existing fill, asphalt, and other soft or unsuitable materials from the 10-foot expanded building and 5-foot expanded pavement limits, and 5 feet beyond the toe of Structural Fills. Borings and test pits performed in “undisturbed” areas of the site contained an observed 8 to 10 inches of topsoil. Deeper topsoil or organic laden soils may be present in wet, low-lying, and poorly drained areas. In wooded areas, the root balls may extend as deep as about 2 feet and will require additional localized stripping depth to completely remove the organics. ECS should be retained to verify that topsoil and unsuitable surficial materials have been removed prior to the placement of Structural Fill or construction of structures.

5.2.2 Proofrolling

Prior to fill placement or other construction on subgrades, the subgrades should be evaluated by an ECS field technician. The exposed subgrade should be thoroughly proofrolled with construction equipment having a minimum axle load of 10 tons [e.g. fully loaded tandem-axle dump truck]. Proofrolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of an ECS technician. This procedure is intended to assist in identifying localized yielding materials.

Where proofrolling identifies areas that are unstable or “pumping” subgrade those areas should be repaired prior to the placement of subsequent Structural Fill or other construction materials. Methods of stabilization include undercutting, moisture conditioning, or chemical stabilization. The situation should be discussed with ECS to determine the appropriate procedure. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

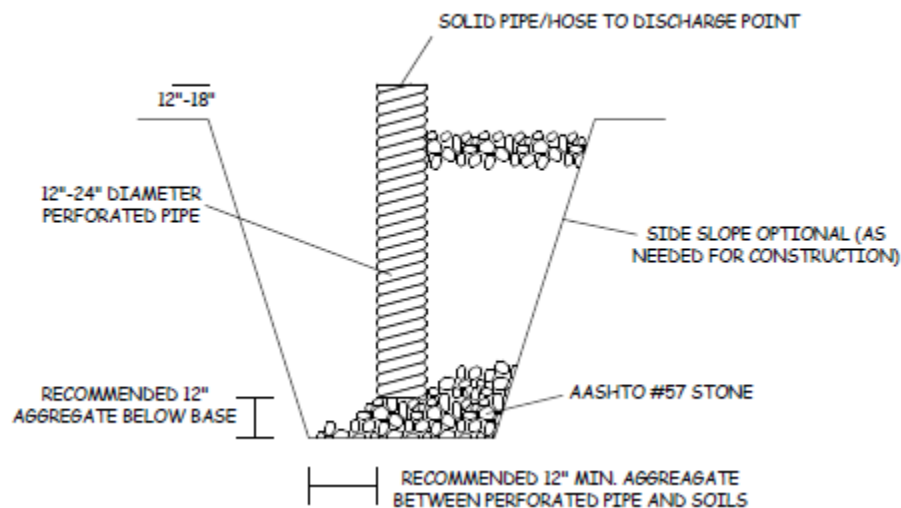
5.2.3 Site Temporary Dewatering

The contractor shall make their own assessment of temporary dewatering needs based upon the limited subsurface groundwater information presented in this report. Soil sampling is not continuous, and thus soil and groundwater conditions may vary between sampling intervals (typically 5 feet). If the contractor believes additional subsurface information is needed to assess dewatering needs, they should obtain such information at their own expense. ECS makes no warranties or guarantees regarding the adequacy of the provided information to determine dewatering requirements; such recommendations are beyond our scope of services.

Dewatering systems are a critical component of many construction projects. Dewatering systems must be selected, designed, and maintained by a qualified and experienced (specialty or other) contractor familiar with the succinct geotechnical and other aspects of the project. The failure to properly design and maintain a dewatering system for a given project can result in delayed construction, unnecessary foundation subgrade undercuts, detrimental phenomena such as 'running sand' conditions, internal erosion (i.e., 'piping'), the migration of 'fines' down-gradient towards the dewatering system, localized settlement of nearby infrastructure, foundations, slabs-on-grade and pavements, etc. Water discharged from a site dewatering system shall be discharged in accordance with local, state and federal requirements.

Strategies for Addressing Perched Groundwater:

The typical primary strategy for addressing perched groundwater seeping into excavations is pumping from trench (or French) and sump pits with sump pumps. A typical sump pump drain (found in a sump pit or along a French drain) is depicted below. The inlet of the sump pump is placed at the bottom of the corrugated pipe and the discharge end of the sump is directed to an appropriate stormwater drain.



Sump Pit/Pump Diagram

Details of a typical French drainage installation are included in Appendix D. A typical French drain consists of an 18 to 24-inch wide by 18 to 24-inch deep bed of AASHTO #57 (or similar open graded aggregate) aggregate wrapped in a medium duty, non-woven geotextile and (sometimes) containing a 6-inch diameter, Schedule 40 PVC perforated or slotted pipe. Actual dimensions should be as determined

necessary by ECS during construction. After the installation has been completed, the geotextile should be wrapped over the top of the aggregate and pipe followed by placement of backfill. The top of the drain should be positioned at least 18 inches below the design subgrade elevations. Drains should not be routed within the expanded building limits.

Pumping wells or a vacuum system could also be used to address perched groundwater. These techniques often are only effective during the initial depletion of the perched water quantity and may quickly be ineffective at addressing accumulation of water from rain, snow, etc.

5.3 EARTHWORK OPERATIONS

5.3.1 Removal of Existing Structures

Development of the project will include demolishing the existing building and associated infrastructure at the site. Existing foundation elements and utilities within the footprint of the proposed building should be removed and backfilled with compacted Structural Fill placed under engineering review. Existing foundations or slabs situated within the proposed pavement areas should be over-excavated and removed such that the top of the concrete is a minimum of 2 feet below the finished subgrade elevation.

The concrete foundations and concrete pavements may be processed for reuse as Structural Fill provided steel reinforcement is removed, and the material is well-graded containing no fragments larger than 4-inches in diameter and conforms to the parameters presented in **Section 5.3.2** regarding index properties and placement. It should be noted that concrete reuse is not recommended in areas that are sensitive to pH and areas with perforated piping as it may clog the openings. If existing slabs are to remain, they should be rubblized to allow downward migration of water.

5.3.2 Structural Fill Materials

Prior to placement of Structural Fill, representative bulk samples (about 50 pounds) of on-site and/or off-site borrow should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications.

Satisfactory Structural Fill Materials: Materials satisfactory for use as Structural Fill should consist of inorganic soils with the following engineering properties and compaction requirements.

STRUCTURAL FILL INDEX PROPERTIES	
Subject	Property
Building and Pavement Areas (Fine-Grained Soils)	LL < 40, PI < 20
Max. Particle Size	4 inches
Minimum Dry Density	105 pcf

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	Requirement
Compaction Standard	Standard Proctor, ASTM D698
Required Compaction	95% of Max. Dry Density
Moisture Content	±2 % points of the soil's optimum value
Loose Thickness	8 inches prior to compaction

On-Site Borrow Suitability: Natural deposits of soils that meet the definition of Satisfactory Structural Fill do appear to be present on the site at possible excavation depths, provided they are moisture conditioned and meet the minimum unit weight recommendations for soil, as specified in the table above.

Fill Placement: Fill materials should not be placed on frozen soils, on frost-heaved soils, and/or on excessively wet soils. Borrow fill materials should not contain frozen materials at the time of placement, and frozen or frost-heaved soils should be removed prior to placement of Structural Fill or other fill soils and aggregates. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

5.3.3 Proposed Steepened Slopes

Slopes comprised of Structural Fill or in-situ natural soils may be constructed at a slope of 3(H):1(V) or flatter. Slopes steeper than 3(H):1(V) should be evaluated by ECS. Slopes should be properly vegetated to reduce the likelihood of surficial erosion and sloughing.

5.4 FOUNDATION AND SLAB OBSERVATIONS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a 1 to 3-inch thick "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.

Footing Subgrade Observations: Most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. It is important to have ECS observe the foundation subgrade prior to placing foundation concrete, to confirm the bearing soils are what was anticipated.

Slab Subgrade Verification: Prior to placement of a drainage layer, the subgrade should be prepared in accordance with the recommendations found in **Section 5.2.2 Proofrolling**.

5.5 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrades should be observed and probed for stability by ECS. Loose or unsuitable materials encountered should be removed and replaced with suitable compacted Structural Fill, or pipe stone bedding material.

Utility Backfilling: The granular bedding material (often AASHTO #57 stone) should be at least 4 inches thick, but not less than that specified by the civil engineer's project drawings and specifications. We recommend that the bedding materials be placed up to the springline of the pipe. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Structural Fill and Fill Placement.

Utility Excavation Dewatering: It is possible that perched water may be encountered by utility excavations which extend below existing grades. It is expected that removal of perched water which seeps into excavations could be accomplished by pumping from sumps excavated in the trench bottom and which are backfilled with AASHTO No. 57 Stone or open graded bedding material. Should water conditions beyond the capability of sump pumping be encountered, the contractor should submit a Dewatering Plan in accordance with project specifications.

Excavation Safety: Excavations and slopes should be constructed and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing, constructing, and maintaining stable temporary excavations and slopes. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by InSite Development Services, LLC. If any of this information is inaccurate, either due to our interpretation of the documents provided or if the site's design changed, ECS should be contacted immediately to review the report in light of the changes and provide additional or alternate recommendations as required to reflect the proposed construction.

We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

Appendix A - Drawings and Reports

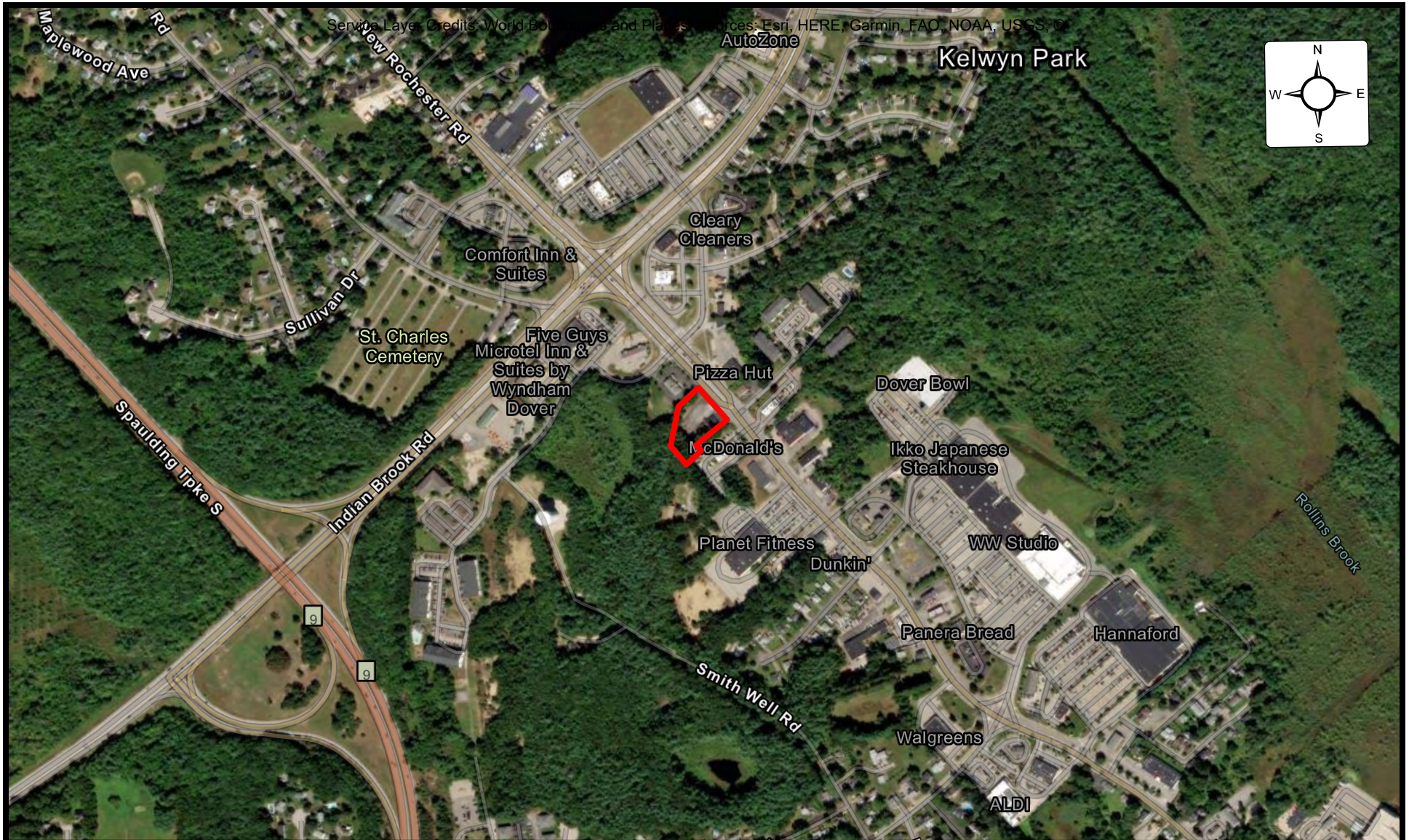
Site Location Diagram

Exploration Location Diagram(s)

Subsurface Cross-Section(s)

Geologic Survey Map

Soil Survey Map



SITE LOCATION DIAGRAM PROPOSED CHILDCARE DEVELOPMENT

**914 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE
INSITE DEVELOPMENT SERVICES, LLC**

ENGINEER
JMC2

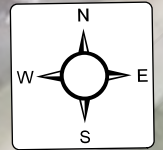
SCALE
1" = 700'

PROJECT NO.
18:6600

SHEET
1 OF 1

DATE
5/13/2025

Service Layer Credits: World Boundaries and Places: Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, ©



Legend



Approximate Boring Locations



Approximate Cross-Section Location

EXPLORATION LOCATION DIAGRAM PROPOSED CHILDCARE DEVELOPMENT

914 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE
INSITE DEVELOPMENT SERVICES, LLC

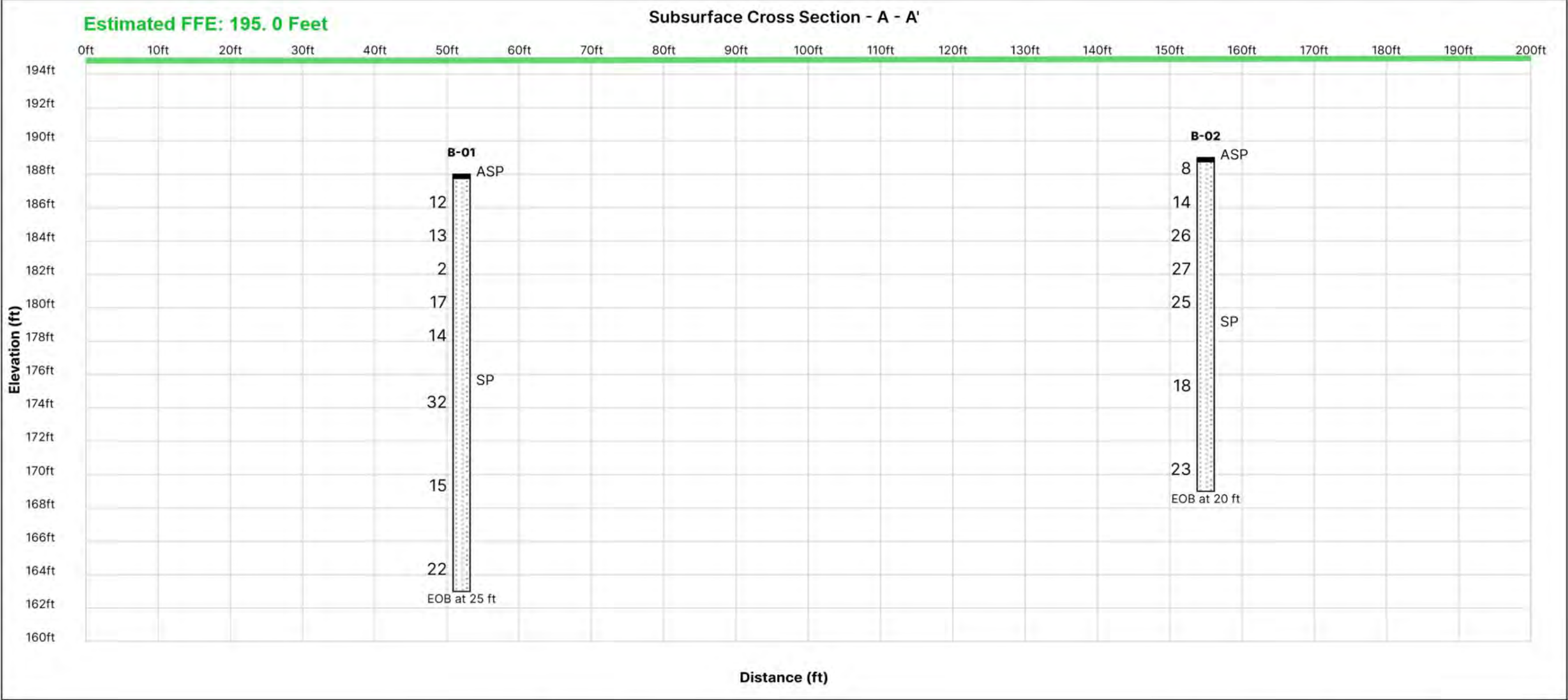
ENGINEER
JMC2

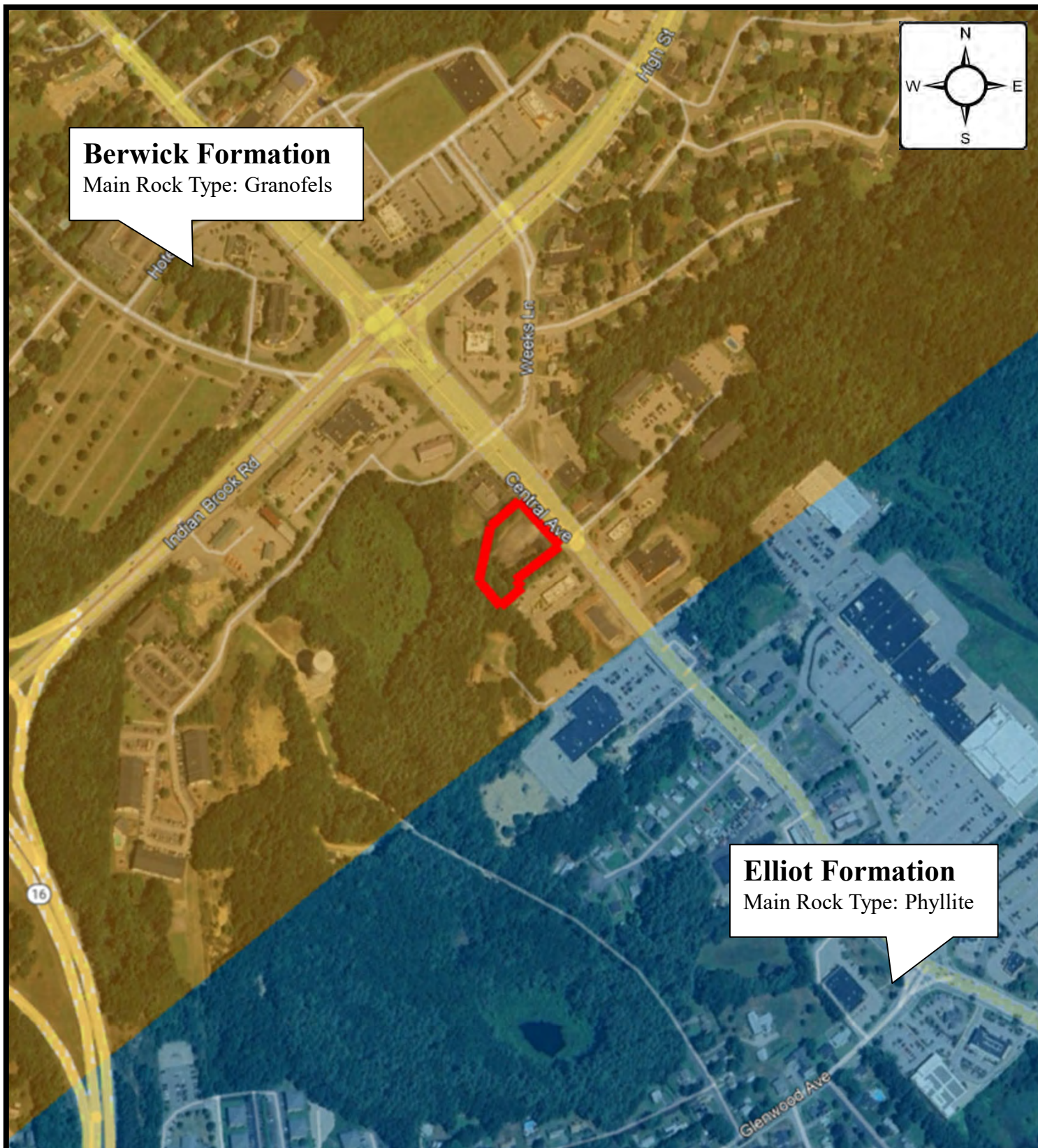
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1" = 60'

PROJECT NO.
18:6600

SHEET
1 OF 1

DATE
5/13/2025

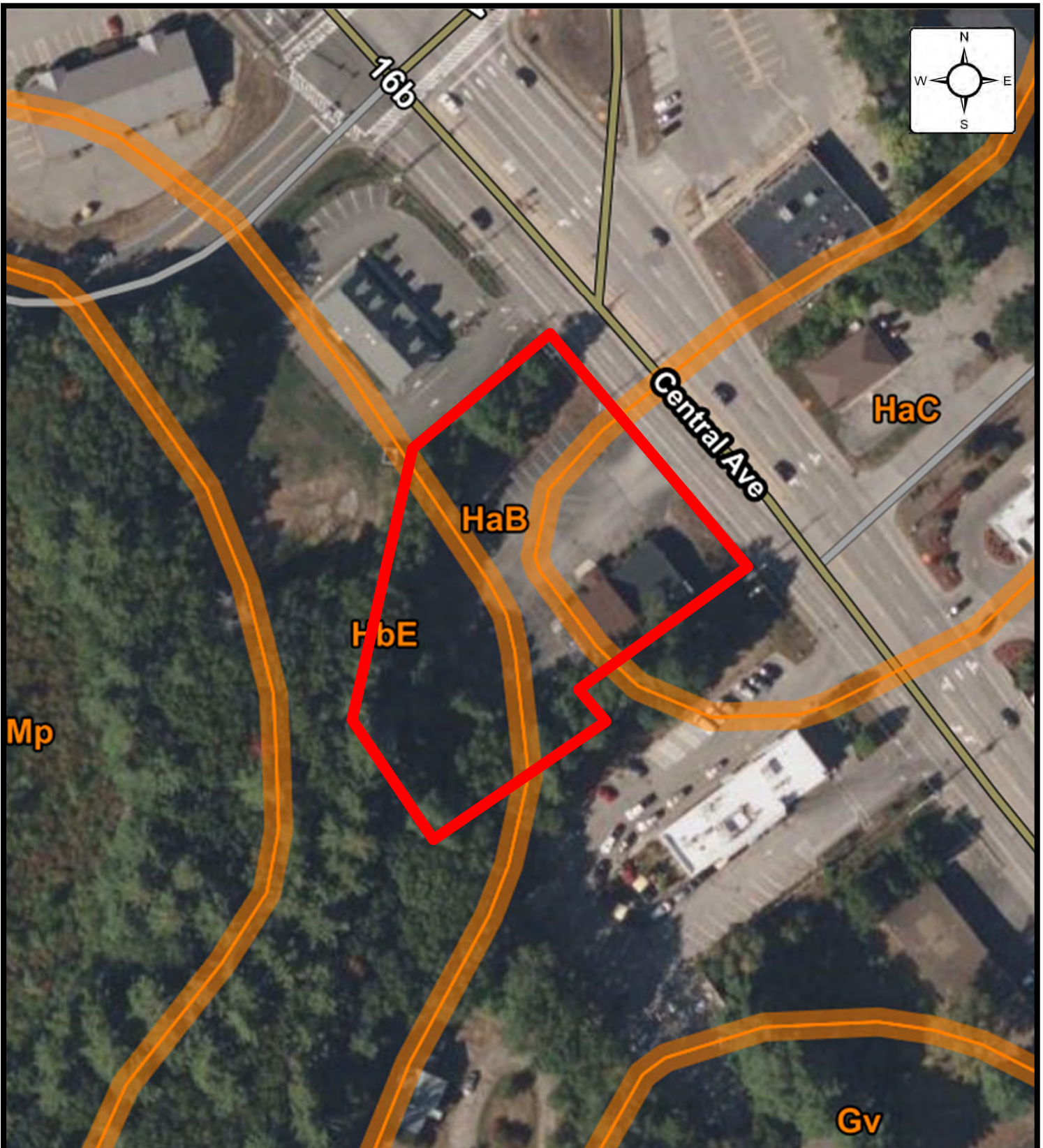




GEOLOGIC SURVEY MAP PROPOSED CHILDCARE DEVELOPMENT

**914 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE
INSITE DEVELOPMENT SERVICES, LLC**

DRAFTER	RB15
SCALE	NTS
PROJECT NO.	18:6600
DATE	5/13/2025
SOURCE	NH Bedrock Geology - Formations https://www.nhgeodata.unh.edu



SOIL SURVEY MAP PROPOSED CHILDCARE DEVELOPMENT

914 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE
INSITE DEVELOPMENT SERVICES, LLC

DRAFTER	RB15
SCALE	NTS
PROJECT NO.	18:6600
DATE	5/13/2025
SOURCE	Web Soil Survey https://websoilsurvey.nrcs.usda.gov

Appendix B – Field Operations

Reference Notes

Exploration Procedures

Boring Logs



REFERENCE NOTES FOR BORING LOGS

MATERIAL^{1,2}

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	GW WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM SILTY GRAVEL gravel-sand-silt mixtures
	GC CLAYEY GRAVEL gravel-sand-clay mixtures
	SW WELL-GRADED SAND gravelly sand, little or no fines
	SP POORLY-GRADED SAND gravelly sand, little or no fines
	SM SILTY SAND sand-silt mixtures
	SC CLAYEY SAND sand-clay mixtures
	ML SILT non-plastic to medium plasticity
	MH ELASTIC SILT high plasticity
	CL LEAN CLAY low to medium plasticity
	CH FAT CLAY high plasticity
	OL ORGANIC SILT or CLAY non-plastic to low plasticity
	OH ORGANIC SILT or CLAY high plasticity
	PT PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION	PARTICLE SIZES
Boulders	12 inches (300 mm) or larger
Cobbles	3 inches to 12 inches (75 mm to 300 mm)
Gravel: Coarse	¾ inch to 3 inches (19 mm to 75 mm)
Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand: Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, QP ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective (ex: "Silty")	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT ⁵	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS⁶

	WL (First Encountered)
	WL (Completion)
	WL (Seasonal High Water)
	WL (Stabilized)

FILL AND ROCK

FILL	POSSIBLE FILL	PROBABLE FILL	ROCK

¹Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

²To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

³Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

⁴Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

⁵Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

⁶The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

⁷Minor deviation from ASTM D 2488-17 Note 14.

⁸Percentages are estimated to the nearest 5% per ASTM D 2488-17.



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

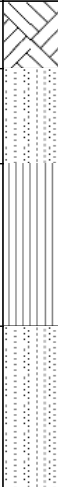
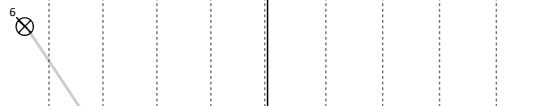
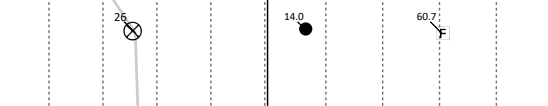
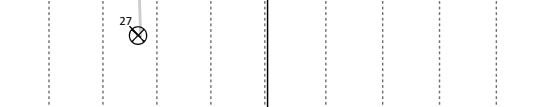
SPT Procedure:

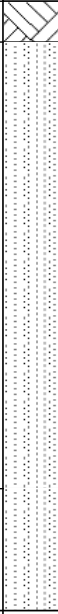
- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.

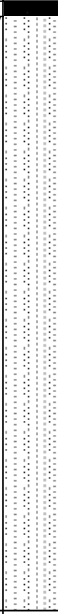
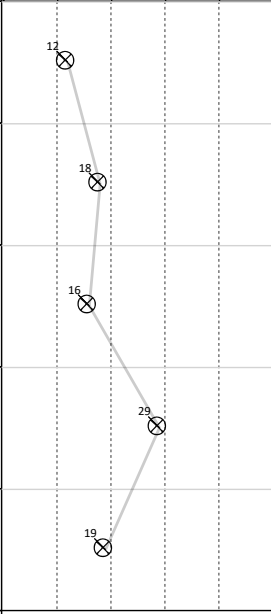


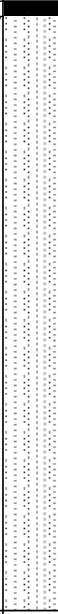
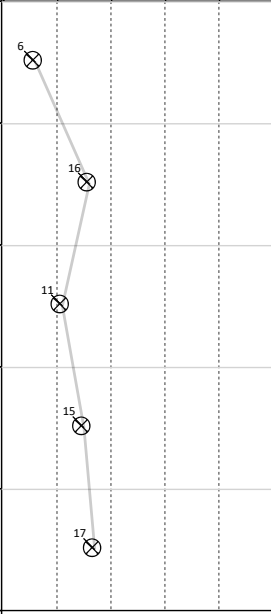
**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

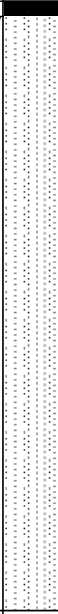
[illegible]

CLIENT: InSite Development Services, LLC				PROJECT NO.: 18:6600		BORING NO.: B-03		SHEET: 1 OF 1							
PROJECT NAME: Proposed Childcare Development				DRILLER/CONTRACTOR: New England Boring Contractors											
SITE LOCATION: 914 Central Avenue, Dover, New Hampshire, 03103									LOSS OF CIRCULATION						
LATITUDE: 43.219931			LONGITUDE: -70.886653		STATION:		SURFACE ELEVATION: 187		BOTTOM OF CASING						
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N VALUE)*	RQD% 0 20 40 60 80 100 REC% 0 20 40 60 80 100 Fines% 0 20 40 60 80 100 MC% 0 20 40 60 80 100 TCP 0 10 20 30 40 50 ModCal 0 10 20 30 40 50 SPT 0 10 20 30 40 50 PL 0 20 40 60 80 100 MC 0 20 40 60 80 100 LL 0 20 40 60 80 100					
5	S-1	SS	24	18	Topsoil [Thickness=10"]. (SP) POORLY GRADED SAND - orangish brown, moist, loose 7.5YR 6/6.			185	1-2-4-7 (6)						
	S-2	SS	24	22	(ML) SANDY SILT - yellowish brown and gray, moist, medium dense 10YR 7/6.				7-14-12-17 (26)						
	S-3	SS	24	24	(SP) POORLY GRADED SAND - orangish brown and gray, moist, medium dense 7.5YR 6/6.				15-15-12-14 (27)						
					END OF BORING AT 6ft										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL															
 WL (First Encountered):				Not Enc.		BORING STARTED:				05/08/2025		CAVE IN DEPTH:		Not Observed	
 WL (Completion):				Not Enc.		BORING COMPLETED:				05/08/2025		HAMMER TYPE: Automatic			
 WL (Seasonal High Water):				Not Enc.		EQUIPMENT:		LOGGED BY:		DRILLING METHOD:					
 WL (Stabilized):				Not Enc.		Mobile B-53		SAAS		Hollow Stem Auger (0'-6')					
GEOTECHNICAL BOREHOLE LOG															

CLIENT: InSite Development Services, LLC				PROJECT NO.: 18:6600		BORING NO.: B-04		SHEET: 1 OF 1			
PROJECT NAME: Proposed Childcare Development				DRILLER/CONTRACTOR: New England Boring Contractors							
SITE LOCATION: 914 Central Avenue, Dover, New Hampshire, 03103									LOSS OF CIRCULATION 		
LATITUDE: 43.220454		LONGITUDE: -70.886479		STATION:		SURFACE ELEVATION: 190		BOTTOM OF CASING 			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N VALUE)*	RQD% 0 20 40 60 80 100 REC% 0 20 40 60 80 100 TCP 0 10 20 30 40 50 ModCal 0 20 40 60 80 100 SPT 0 20 40 60 80 100 PL 0 20 40 60 80 100 MC 0 20 40 60 80 100 LL 0 20 40 60 80 100	
5	S-1	SS	24	18	Topsoil [Thickness=8"]. (SP) POORLY GRADED SAND - trace gravel, yellowish brown, moist, loose to medium dense.			190	1-3-6-8 (9)		
	S-2	SS	24	24					6-7-6-6 (13)		
	S-3	SS	24	12				185	3-3-5-7 (8)		
	S-4	SS	24	16					9-7-8-13 (15)		
	S-5	SS	24	20	(SP) POORLY GRADED SAND WITH GRAVEL - sub-rounded gravel, yellowish orange, moist, medium dense.				15-21-25-20 (46)		
					END OF BORING AT 10ft			180			
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):		Not Enc.		BORING STARTED:		05/08/2025		CAVE IN DEPTH: 6ft			
 WL (Completion):		Not Enc.		BORING COMPLETED:		05/08/2025		HAMMER TYPE: Automatic			
 WL (Seasonal High Water):		Not Enc.		EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
 WL (Stabilized):		Not Enc.		Mobile B-53		SAA5		Hollow Stem Auger (0'-10')			
GEOTECHNICAL BOREHOLE LOG											

CLIENT: InSite Development Services, LLC					PROJECT NO.: 18:6600		BORING NO.: B-05		SHEET: 1 OF 1			
PROJECT NAME: Proposed Childcare Development					DRILLER/CONTRACTOR: New England Boring Contractors							
SITE LOCATION: 914 Central Avenue, Dover, New Hampshire, 03103									LOSS OF CIRCULATION			
LATITUDE: 43.220426			LONGITUDE: -70.886301		STATION:		SURFACE ELEVATION: 188		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N VALUE)*	RQD% 0 20 40 60 80 100 REC% 0 20 40 60 80 100 TCP 0 10 20 30 40 50 ModCal 0 20 40 60 80 100 SPT 0 20 40 60 80 100 PL MC LL		
5	S-1	SS	24	14	Asphalt [3.00"] (SP) POORLY GRADED SAND - trace gravel, orangish brown, moist, medium dense.			185	8-5-7-4 (12)	12		
	S-2	SS	24	18					11-9-9-10 (18)	18		
	S-3	SS	24	19					4-8-8-10 (16)	16		
	S-4	SS	24	20					12-10-19-13 (29)	29		
	S-5	SS	24	18					9-11-8-16 (19)	19		
					END OF BORING AT 10ft							
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
 WL (First Encountered):					Not Enc.	BORING STARTED:			05/08/2025	CAVE IN DEPTH: 8ft		
 WL (Completion):					Not Enc.	BORING COMPLETED:			05/08/2025	HAMMER TYPE: Automatic		
 WL (Seasonal High Water):					Not Enc.	EQUIPMENT:		LOGGED BY:	DRILLING METHOD:			
 WL (Stabilized):					Not Enc.	Mobile B-53		SAA5	Hollow Stem Auger (0'-10')			
GEOTECHNICAL BOREHOLE LOG												

CLIENT: InSite Development Services, LLC				PROJECT NO.: 18:6600		BORING NO.: B-06		SHEET: 1 OF 1				
PROJECT NAME: Proposed Childcare Development				DRILLER/CONTRACTOR: New England Boring Contractors								
SITE LOCATION: 914 Central Avenue, Dover, New Hampshire, 03103									LOSS OF CIRCULATION			
LATITUDE: 43.220301		LONGITUDE: -70.886152		STATION:		SURFACE ELEVATION: 188		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N VALUE)*	RQD%  REC%  TCP  ModCal  SPT  		
5	S-1	SS	24	12	Asphalt [3.00"] (SP) POORLY GRADED SAND - trace gravel, yellowish brown, moist, loose to medium dense.			185	9-2-4-6 (6)			
	S-2	SS	24	22				6-8-8-9 (16)				
	S-3	SS	24	22				4-5-6-6 (11)				
	S-4	SS	24	20				7-8-7-8 (15)				
	S-5	SS	24	21				6-8-9-9 (17)				
					END OF BORING AT 10ft							
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
 WL (First Encountered):		Not Enc.		BORING STARTED:		05/08/2025		CAVE IN DEPTH: 6ft				
 WL (Completion):		Not Enc.		BORING COMPLETED:		05/08/2025		HAMMER TYPE: Automatic				
 WL (Seasonal High Water):		Not Enc.		EQUIPMENT:		LOGGED BY:		DRILLING METHOD:				
 WL (Stabilized):		Not Enc.		Mobile B-53		SAA5		Hollow Stem Auger (0'-10')				
GEOTECHNICAL BOREHOLE LOG												

CLIENT: InSite Development Services, LLC				PROJECT NO.: 18:6600		BORING NO.: B-07		SHEET: 1 OF 1			
PROJECT NAME: Proposed Childcare Development				DRILLER/CONTRACTOR: New England Boring Contractors							
SITE LOCATION: 914 Central Avenue, Dover, New Hampshire, 03103									LOSS OF CIRCULATION		
LATITUDE: 43.220077			LONGITUDE: -70.886546		STATION:		SURFACE ELEVATION: 188		BOTTOM OF CASING		
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT-N VALUE)*	RQD% 0 20 40 60 80 100 REC% 0 20 40 60 80 100 TCP 0 10 20 30 40 50 ModCal 0 20 40 60 80 100 SPT 0 20 40 60 80 100 PL 0 20 40 60 80 100 MC 0 20 40 60 80 100 LL 0 20 40 60 80 100	
5	S-1	SS	24	18	Asphalt [3.00"] (SP) POORLY GRADED SAND - trace gravel, orangish brown, moist, medium dense.			185	7-7-7-7 (14)	14	
	S-2	SS	24	20					9-11-11-13 (22)	22	
	S-3	SS	24	24					9-9-9-17 (18)	18	
	S-4	SS	24	20					8-9-9-10 (18)	18	
	S-5	SS	24	22					11-11-12-13 (23)	23	
					END OF BORING AT 10ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				Not Enc.		BORING STARTED: 05/08/2025				CAVE IN DEPTH: 6ft	
 WL (Completion):				Not Enc.		BORING COMPLETED: 05/08/2025				HAMMER TYPE: Automatic	
 WL (Seasonal High Water):				Not Enc.		EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):				Not Enc.		Mobile B-53		SAA5		Hollow Stem Auger (0'-10')	
GEOTECHNICAL BOREHOLE LOG											

Appendix C – Laboratory Testing

Laboratory Testing Summary

Plasticity Chart(s)

Grain Size Analysis/Analyses

Textural Triangle USDA Test(s)

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-01	S-1	1.0-3.0	4.4										
B-01	S-3	5.0-7.0	3.5										
B-01	S-4	7.0-9.0	7.4										
B-01	S-5	9.0-11.0	8.7										
B-01	S-6	13.0-15.0	8.4										
B-01	S-7	18.0-20.0	4.7										
B-01	S-8	23.0-25.0	2.6										
B-02	S-1	0.0-2.0	10.5										
B-02	S-2	2.0-4.0	3.0	SP	NP	NP	NP	2.4					
B-02	S-3	4.0-6.0	16.1										

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Proposed Childcare Development
Client: InSite Development Services, LLC

Project No.: 18:6600
Date Reported: 5/22/2025



Office / Lab

Address

Office Number / Fax

ECS Mid-Atlantic LLC - York

52-6 Grumbacher Road
York, PA 17406

(717)767-4788
(717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agolihow	5/14/2025

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-02	S-4	6.0-8.0	9.5										
B-02	S-5	8.0-10.0	1.9										
B-02	S-6	13.0-15.0	1.0										
B-02	S-7	18.0-20.0	9.9										
B-03	S-2	2.0-4.0	14.0	ML	NP	NP	NP	60.7					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Proposed Childcare Development
Client: InSite Development Services, LLC

Project No.: 18:6600
Date Reported: 5/22/2025



Office / Lab

Address

Office Number / Fax

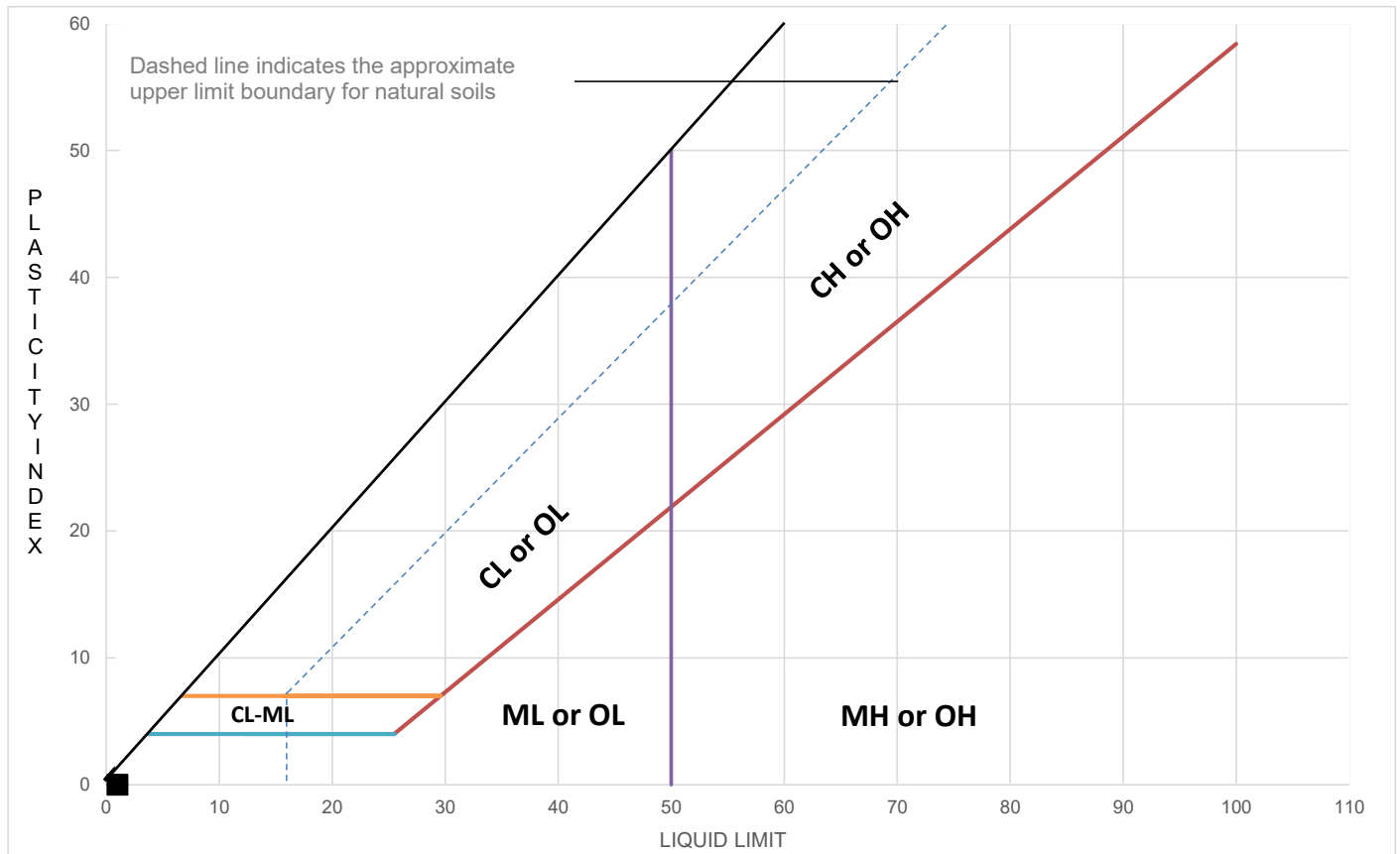
ECS Mid-Atlantic LLC - York

52-6 Grumbacher Road
York, PA 17406

(717)767-4788
(717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agoliheW	5/14/2025

LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	B-02	S-2	2.00-4.00	NP	NP	NP	49.4	2.4	A-1	SP	Poorly Graded Sand
◆	B-03	S-2	2.00-4.00	NP	NP	NP	90.0	60.7	A-4	ML	Sandy Silt

Project: Proposed Childcare Development
Client: InSite Development Services, LLC

Project No.: 18:6600
Date Reported: 5/22/2025



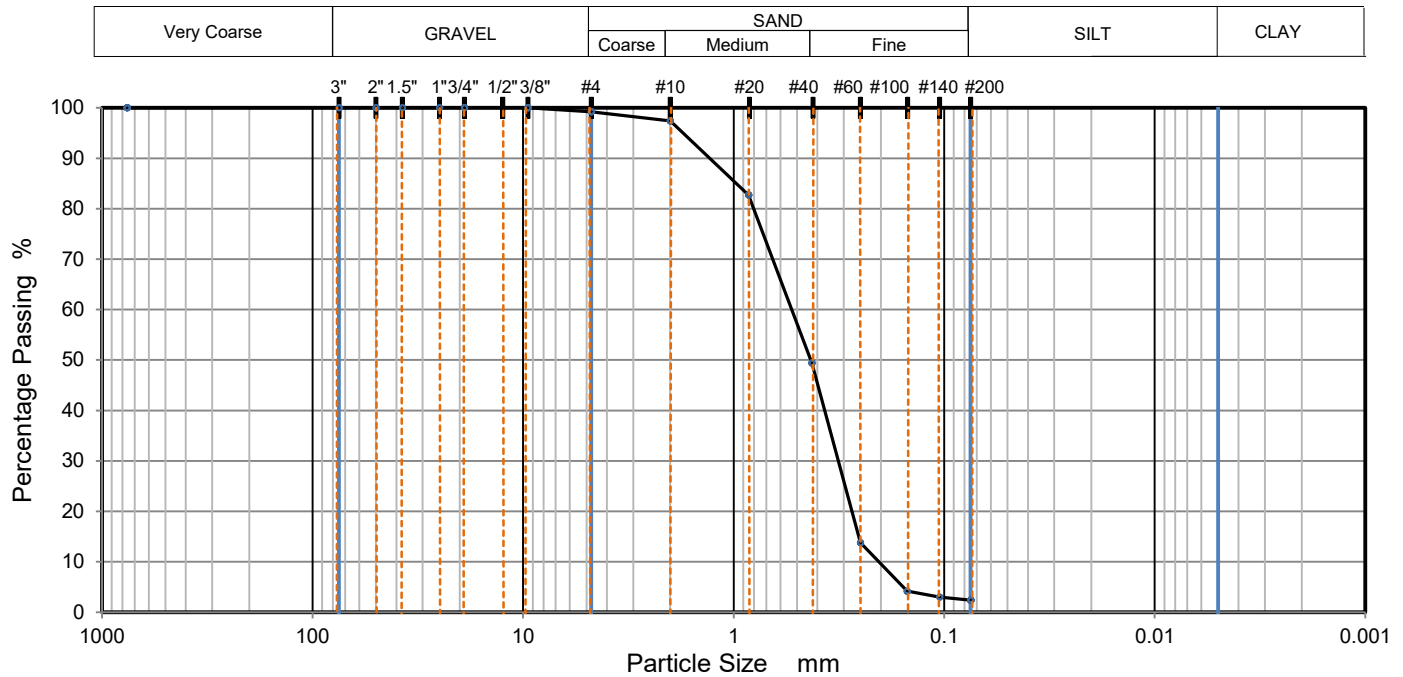
Office / Lab
ECS Mid-Atlantic LLC - York

Address
52-6 Grumbacher Road
York, PA 17406

Office Number / Fax
(717)767-4788
(717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agolihew	5/14/2025

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	99		
#10	97		
#20	83		
#40	49		
#60	14		
#100	4		
#140	3		
#200	2		

Dry Mass of sample, g

145.8

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	1
Coarse Sand, #4 to #10 sieve	2
Medium Sand, #10 to #40	48
Fine Sand, #40 to #200	47
Fines <#200	2

USCS	SP	Liquid Limit	NP	D90	1.300	D50	0.430	D10	0.204
AASHTO	A-1	Plastic Limit	NP	D85	0.972	D30	0.318	Cu	2.595
USCS Group Name	Poorly graded sand	Plasticity Index	NP	D60	0.530	D15	0.255	Cc	0.936

Project: Proposed Childcare Development
 Client: InSite Development Services, LLC
 Sample Description: Poorly Graded Sand
 Sample Source: B-02

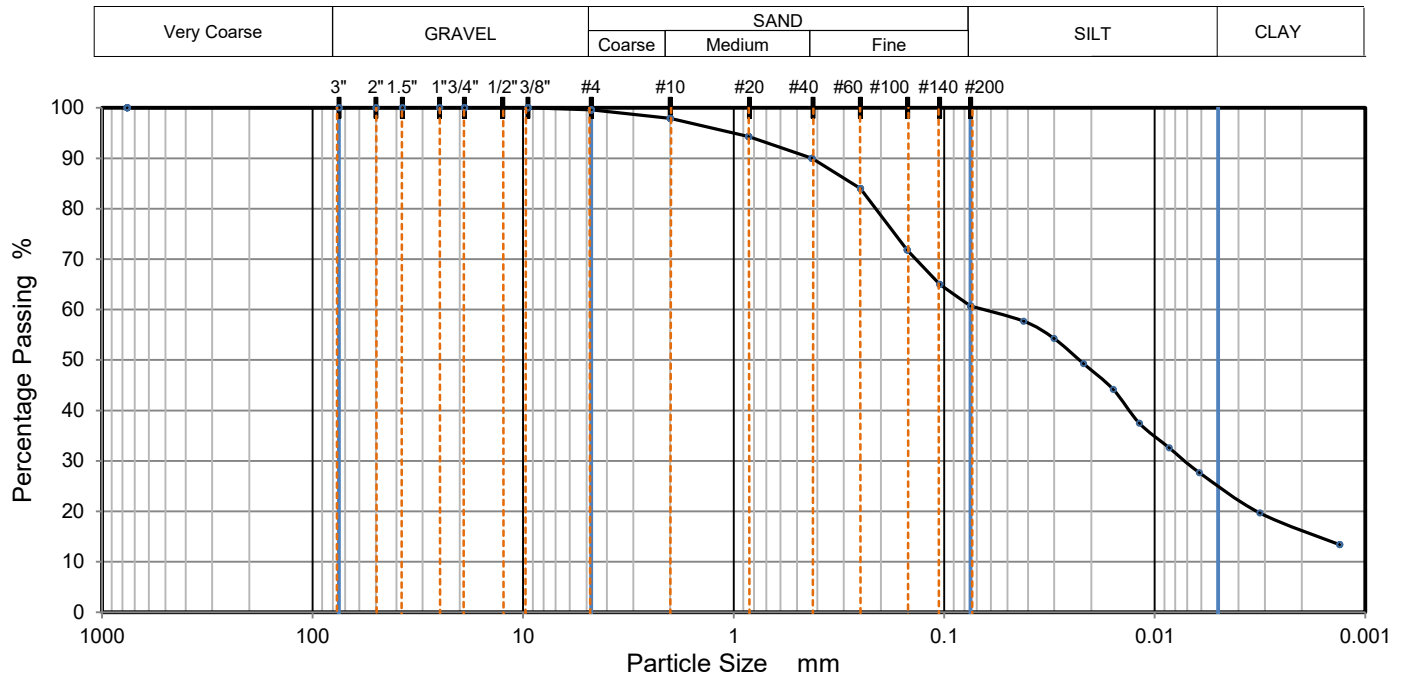
Project No.: 18:6600
 Depth (ft): 2.0 - 4.0
 Sample No. S-2
 Date Reported: 5/22/2025



Office / Lab	Address	Office Number / Fax
ECS Mid-Atlantic LLC - York	52-6 Grumbacher Road York, PA 17406	(717)767-4788 (717)767-5658

Tested by	Checked by	Approved by	Date Received	Remarks
JGates		agoliwew	5/14/2025	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100	0.0420	58
2"	100	0.0302	54
1 1/2"	100	0.0218	49
1"	100	0.0158	44
3/4"	100	0.0118	38
3/8"	100	0.0085	33
#4	100	0.0061	28
#10	98	0.0032	20
#20	94	0.0013	13
#40	90	Specific Gravity (Historical) 2.65	
#60	84		
#100	72		
#140	65		
#200	61		

Dry Mass of sample, g

104.5

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to #4 sieve	0
Coarse Sand, #4 to #10 sieve	2
Medium Sand, #10 to #40	8
Fine Sand, #40 to #200	29
Silt, 75µm to 5 µm	36
Clay < 5µm	25

USCS	ML	Liquid Limit	NP	D90	0.425	D50	0.023	D10	
AASHTO	A-4	Plastic Limit	NP	D85	0.273	D30	0.007	Cu	
USCS Group Name	Sandy silt	Plasticity Index	NP	D60	0.066	D15	0.002	Cc	

Project: Proposed Childcare Development
 Client: InSite Development Services, LLC
 Sample Description: Sandy Silt
 Sample Source: B-03

Project No.: 18:6600
 Depth (ft): 2.0 - 4.0
 Sample No.: S-2
 Date Reported: 5/22/2025



Office / Lab	Address	Office Number / Fax
ECS Mid-Atlantic LLC - York	52-6 Grumbacher Road York, PA 17406	(717)767-4788 (717)767-5658

Tested by	Checked by	Approved by	Date Received	Remarks
JGates		agolihe	5/14/2025	

USDA Classification

TEST RESULTS (ASTM D6913M-17-METHOD A)

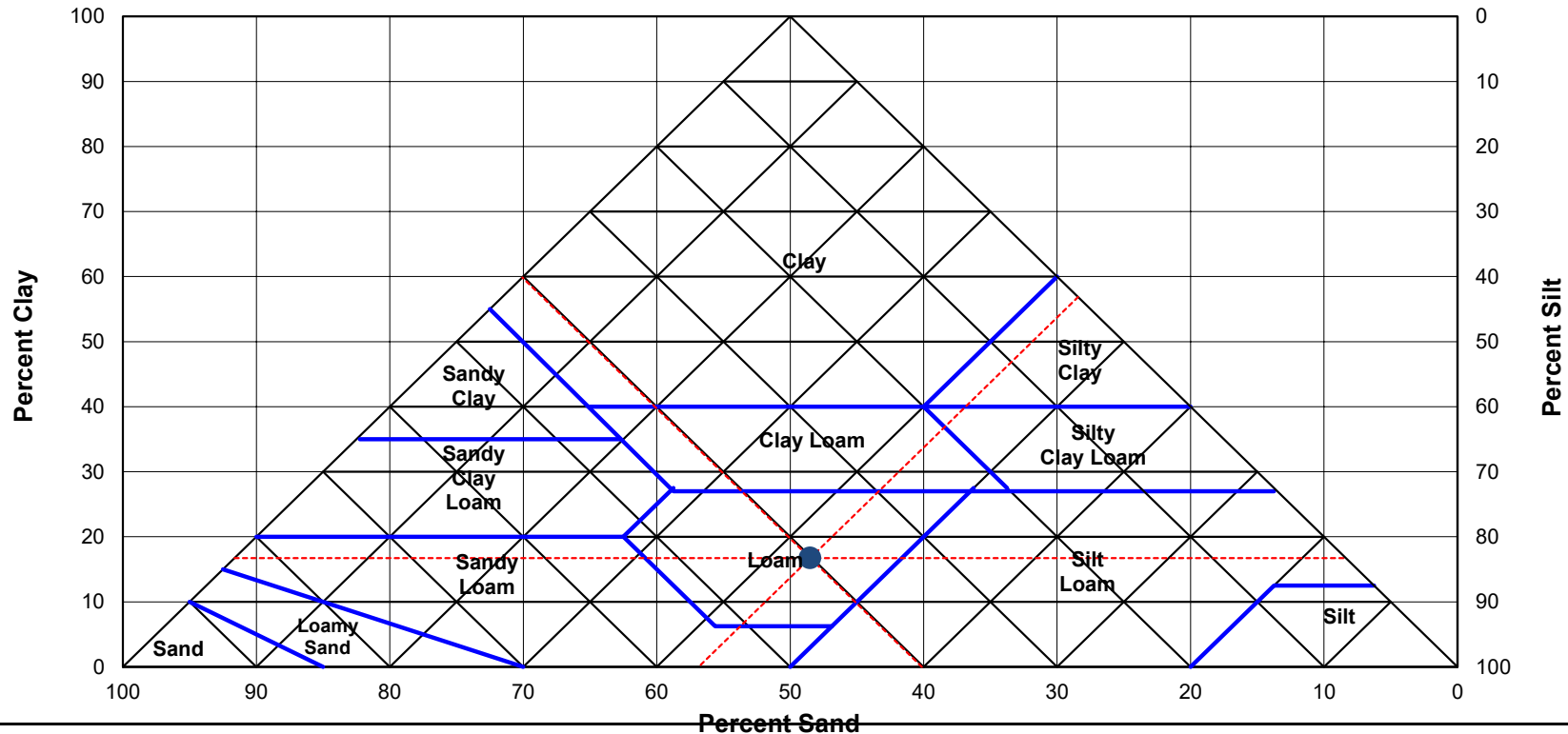
USDA Classification:

Loam

USDA Soil Percentages
(Corrected for Gravel):

%Sand	%Silt	%Clay
40.1	43.1	16.7

Textural Triangle USDA



Project: Proposed Childcare Development
Client: InSite Development Services, LLC
Sample Description: Sandy Silt
Sample Source: B-03

Project No.: 18:6600
Depth (ft): 2 - 4
Sample No.: S-2
Date Reported: 5/22/2025



Office / Lab

Address

Office Number / Fax

ECS Mid-Atlantic LLC - York

52-6 Grumbacher Road
York, PA 17406

(717)767-4788

(717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agolihew	5/14/2025

Project Name: Proposed Childcare Development
 Project Number: 6600
 Sample ID: B-03, S-2
 Depth: 2' - 4'
 Date: 6/6/2025



USDA Soil Percentages

(corrected for gravel)

%Sand	%Silt	%Clay
40.1	43.1	16.7

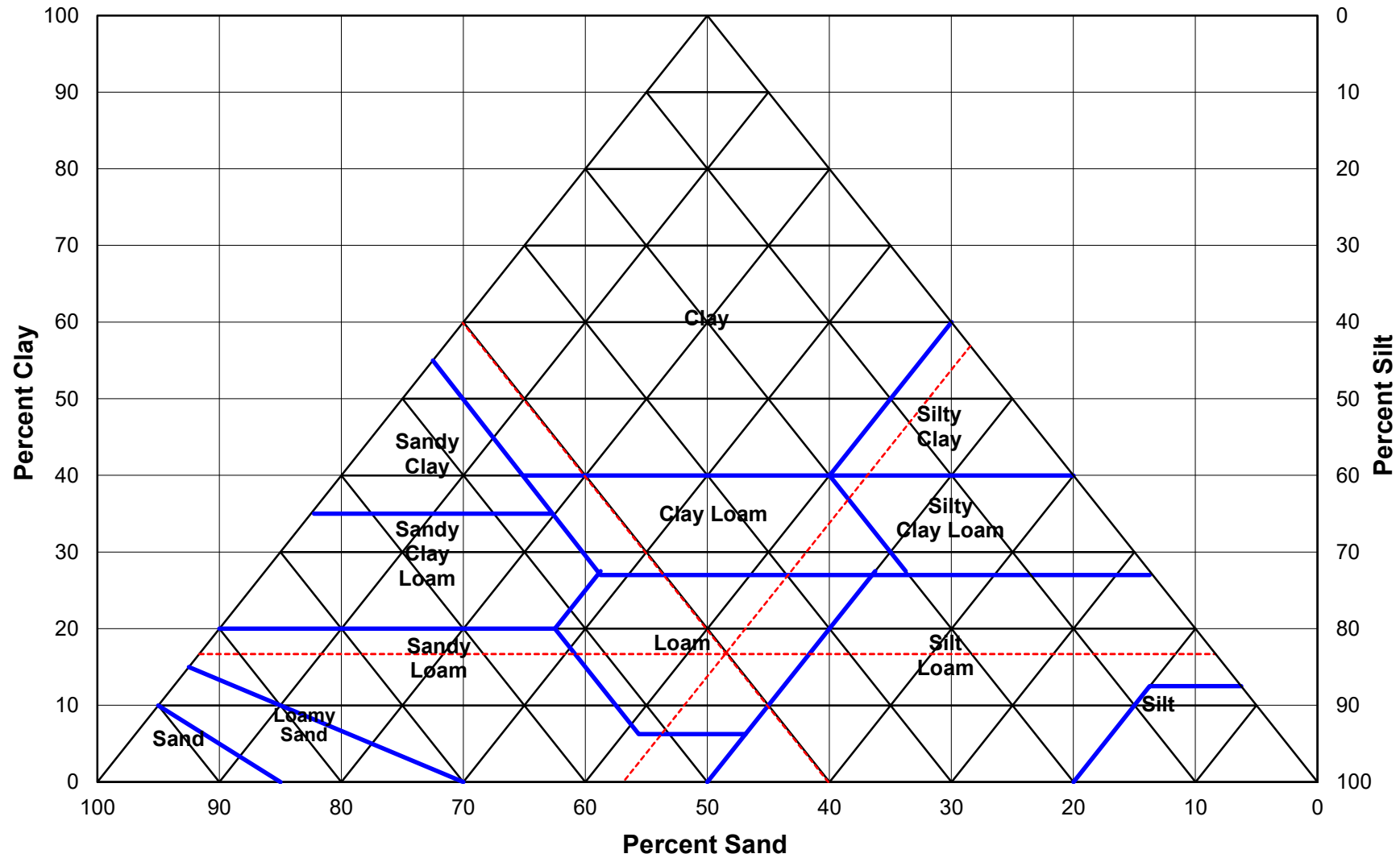
USDA Class.

Loam ▼

Minimum Infiltration Rate (iph)

0.52

Textural Triangle USDA



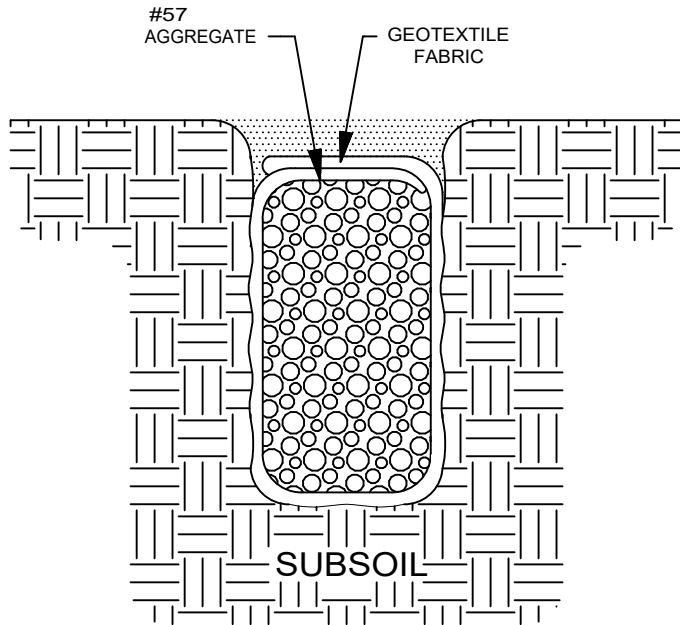
File: S:\06-428\94-'00 Project\00 Projects\6600

Theoretical infiltration rates as designated by Rawls, Brakensiek, and Saxton (1982)

Appendix D – Supplemental Documents

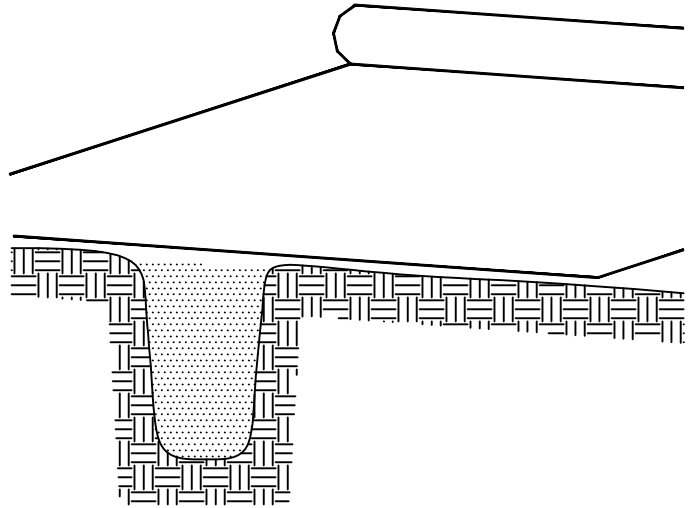
Drawings/Details

FINAL CONFIGURATION



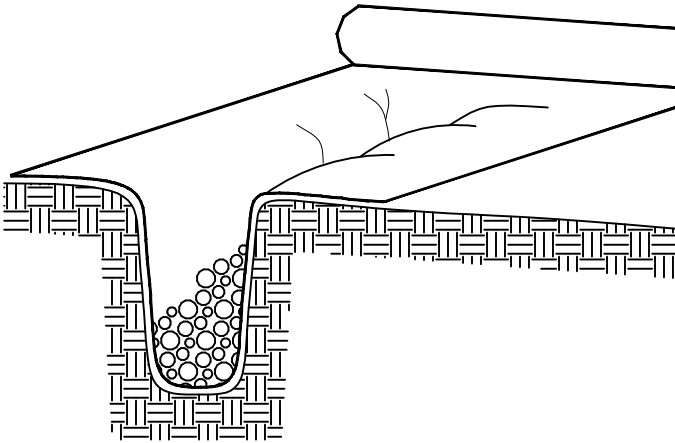
SUBDRAIN USING FILTER FABRIC

STEP 1



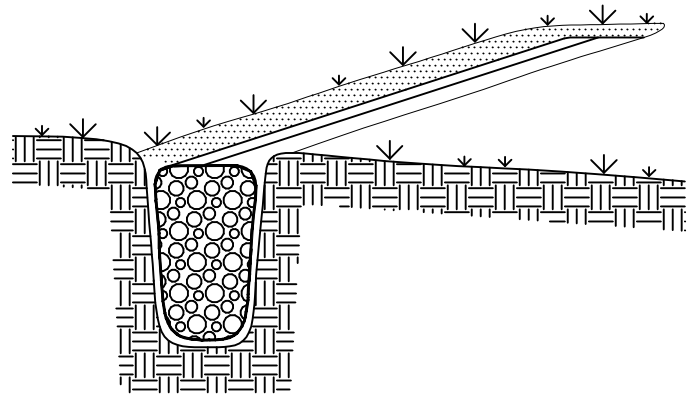
FABRIC IS UNROLLED DIRECTLY OVER TRENCH

STEP 2



THE TRENCH IS FILLED WITH AGGREGATE

STEP 3



THE FABRIC IS LAPPED CLOSED AND COVERED WITH BASE STONE



ECS MID-ATLANTIC, LLC
52-6 GRUMBACHER ROAD
YORK, PA 17406
(717)-767-4788

FRENCH DRAIN TYPICAL DETAIL

INSTALLATION PROCEDURE

NOT TO SCALE

DRAINAGE ANALYSIS

**PROPOSED CHILDCARE DEVELOPMENT
914 CENTRAL AVENUE
TAX MAP 38, LOT 20
DOVER, NH**

September 2025

Prepared For:

**InSite Development Services, LLC
1400 16th St.
Suite 300
Oak Brook, IL 60523**

Prepared By:

**Civilworks New England
PO Box 1166
181 Watson Road
Dover, NH 03821**



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- 2.0 DRAINAGE ANALYSIS
- 2.1 DRAINAGE DESIGN PARAMETERS
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 - 2.1.2 Soils
 - 2.1.3 Rainfall Data
 - 2.1.4 Runoff Curve Numbers
- 2.2 EXISTING CONDITIONS
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- 2.3 DEVELOPED CONDITIONS
 - 2.3.1 Table B – Developed Conditions Hydrology
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 - Node Listing – 10-yr
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1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel located at 914 Central Avenue, Dover, NH. The 1.28± acre lot is identified as Tax Map 38, Lot 20. The site is currently developed in the commercial district with an existing building, parking lot, and drainage structures. The ground cover primarily consists of woods, lawn, and pavement. The property is bounded north by Central Avenue and abutting properties to the west, south, and east.

The existing building and parking lot will be removed prior to construction activities. The project proposes the construction of a Childcare Development Facility which includes a 10,075-sf building, site access, grading, drainage, and utilities. The proposed drainage system incorporates two (2) infiltration basins and permeable pavement in the parking areas. The proposed stormwater system collects and infiltrates all runoff from impervious surfaces on site. The proposed project will only increase the total impervious area of the site by 1% and will now include treatment practices. The stormwater drainage structures will be maintained by the project proponent as outlined within the Stormwater Management System Inspection & Maintenance Manual (Stormwater I&M Manual) in Appendix C.

To effectively analyze the pre-development subject parcel, the site was analyzed as four (4) separate watersheds. Watersheds C and D currently discharge off site to the abutting property to the east. Watershed A infiltrates into the soil at the back of the property. Watershed B discharges into an existing catch basin located next to Central Avenue on the south-east corner of the site. Soil characteristics were obtained utilizing web soil survey and is entirely made up of HSG A soils. Topography information was obtained from an on-site survey.

The post-development is further divided into eleven (11) subcatchments that are routed to the same discharge points as defined in the pre-development model. This provides a direct comparison between pre- and post-development models. The stormwater management utilizes the ksat infiltration rate of the Hinkley HSG A soils to infiltrate the majority of runoff on site. WSS indicated an infiltration rate of 14 in/hr, because of this, 24" below the infiltration basins the soil will be amended to an 8 to 10 in/hr soil per NHDES AoT. After a factor of safety of 2, 5 in/hr was utilized on site. This analysis indicates that the proposed stormwater measures and stormwater management plan will treat, mitigate, and infiltrate stormwater runoff in general accordance with 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 were delineated using on site topographic and existing condition survey data field located by McEneaney Survey Associates of New England.

2.1.2 Soils

Soil types were determined utilizing the NRCS Web Soil Survey (WSS) mapping tool at <http://websoilsurvey.nrcs.usda.gov>. The soil survey area is Strafford County, NH, the soil survey data is Version 24, dated Aug 22nd, 2023 and the aerial images are dated June 19th to September 20th, 2020.

Hydrologic Drainage Class A:

Map Unit Symbol	Slopes	Map Unit Name
HaB	3 to 8 %	Hinckley Loamy Sand
HaC	8 to 15 %	Hinckley Loamy Sand
HbE	15 to 60 %	Hinckley Loamy Sand

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center were utilized in this analysis. The analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 3.15", 4.74", 5.98", and 7.14" rainfall depths respectively.

2.1.4 Runoff Curve Numbers

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

2.2 EXISTING CONDITIONS

For the purposes of this analysis, the subject parcel was split into four (4) watersheds, two of which discharge to abutting property on the east in the predevelopment condition. Watershed A infiltrates into the ground in the rear of the property. Watershed B discharges into an existing catch basin near Central Avenue.

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

Watershed	Pre-Development Volume (af)	Pre Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.010	0.0	0.3	0.6	0.9
B	0.052	0.7	1.2	1.6	2.0
C	0.000	0.0	0.0	0.0	0.0
D	0.007	0.1	0.2	0.3	0.4

2.3 DEVELOPED CONDITIONS

The post development model analyzes runoff to the post development discharge points are maintained from the predevelopment condition. In post development design most of the runoff infiltrates and no longer reaches the discharge points.

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

Watershed	Post-Development Volume (af)	Post Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.000	0.0	0.0	0.0	0.0
B	0.000	0.0	0.0	0.0	0.0
C	0.000	0.0	0.0	0.0	0.0
D	0.000	0.0	0.0	0.0	0.0

2.4 HYDROLOGIC COMPARISON

The analysis indicates that the proposed project will have a positive impact on the watersheds.

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

Watershed	Pre/Post-Development Volume (af)	Pre/Post Development Peak Flows (cfs)			
Discharge Point	<u>2-yr</u>	<u>2-yr</u>	<u>10-yr</u>	<u>25-yr</u>	<u>50-yr</u>
A	0.010/ 0.000	0.0/ 0.0	0.3/ 0.0	0.6/ 0.0	0.9/ 0.0
B	0.052/ 0.000	0.7/ 0.0	1.2/ 0.0	1.6/ 0.0	2.0/ 0.0
C	0.000/ 0.000	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
D	0.007/ 0.000	0.1/ 0.0	0.2/ 0.0	0.3/ 0.0	0.4/ 0.0

2.5 STORMWATER DESIGN

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

2.5.1 Stormwater Best Management Practices

This project incorporates two (2) Infiltration Basins and Permeable Pavement in parking areas for stormwater treatment. See Appendix B-1 for Best Management Practice Design forms.

2.5.2 Infiltration Rate

The design infiltration rate was calculated according to Env-Wq 1504.14. Hinckley is the natural soil on site at both proposed infiltration basin locations based on NRCS Web Soil Survey (WSS) mapping. Following Env-Wq 1504.14(c)(1) ***SSSNNE Special Publication No. 5, Ksat Values for New Hampshire Soils, September 2009*** was used to determine the Ksat low – B infiltration rate for Hinckley as 100 micrometers per second or 14 in/hr. A factor of safety of 2 is applied to the recorded Ksat value according to Env-Wq 1504.14(c)(3) and the design infiltration rate was calculated to be 5.0 in/hr. See Appendix A for Ksat Values for New Hampshire Soils.

2.5.3 Pollutant Removal

The development proposes 0.562 acres of impervious area including 0.231 acres of commercial roof and 0.331 acres of commercial/residential parking. The project proposes the treatment of all the new impervious cover through permeable pavement and infiltration basins. The proposed project will only increase the total impervious area of the site by 1% and will now include treatment practices. The proposed stormwater mitigation system provides the required pollutant removal per City of Dover standards.

The stormwater management system utilized Permeable Pavement & Infiltration Basins to achieve 90% TSS, 60% TN, & 65% TP pollutant removal. Below are the NHDES published pollutant removal efficiencies. See Appendix B-3 for additional information.

	TSS	TN	TP
Infiltration Basin:	90%	60%	65%
Permeable Pavement:	90%	60%	65%

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

Locate by Address ?

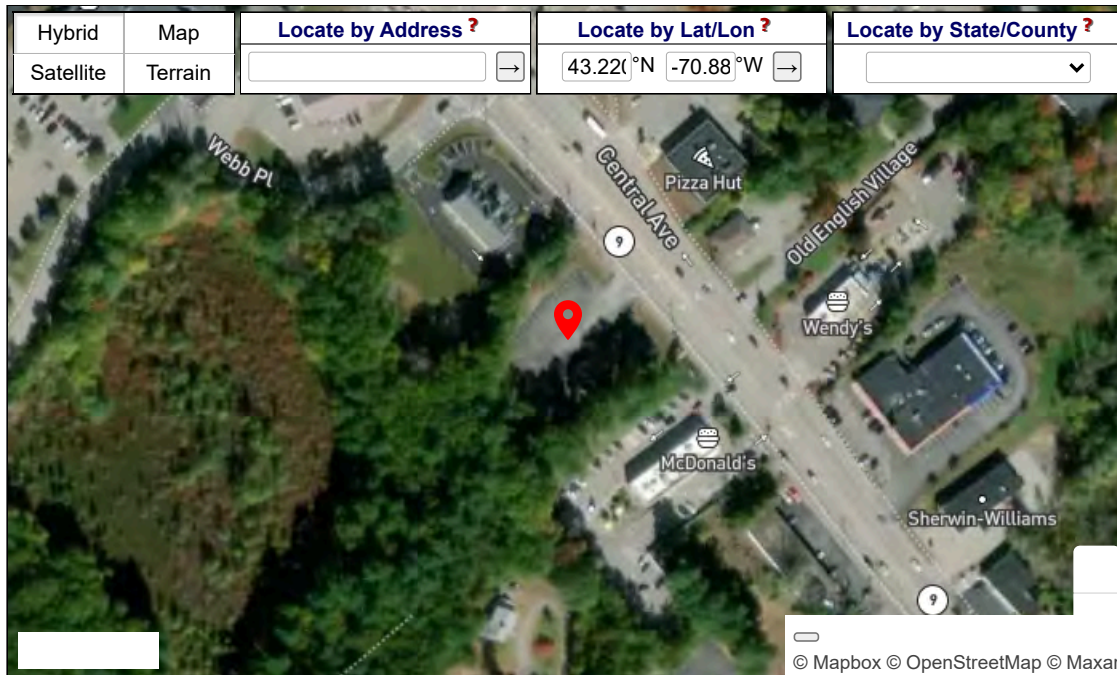
Satellite

Terrain

Locate by Lat/Lon ?

43.226°N -70.88°W

Locate by State/County ?



Select Options ?

Smoothing ?

Yes ▾

Delivery ?

Popup ▾

Submit ?

Version 2.0

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This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC)

Natural Resources Conservation Service (NRCS)



Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point	
Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.220 degrees North
Longitude	70.886 degrees West
Elevation	50 feet
Date/Time	Thu Sep 04 2025 12:18:00 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	1yr	0.70	0.98	1.20	1.54	1.99	2.60	2.87	1yr	2.30	2.76	3.16	3.89	4.45	1yr
2yr	0.32	0.49	0.61	0.81	1.01	1.29	2yr	0.87	1.17	1.50	1.91	2.45	3.15	3.51	2yr	2.79	3.38	3.87	4.60	5.24	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.58	5yr	1.06	1.44	1.85	2.38	3.07	3.97	4.49	5yr	3.52	4.32	4.95	5.81	6.56	5yr
10yr	0.40	0.64	0.80	1.09	1.42	1.85	10yr	1.23	1.69	2.18	2.82	3.65	4.74	5.42	10yr	4.19	5.21	5.96	6.93	7.79	10yr
25yr	0.46	0.74	0.94	1.30	1.73	2.27	25yr	1.49	2.09	2.70	3.53	4.60	5.98	6.95	25yr	5.29	6.68	7.63	8.75	9.77	25yr
50yr	0.52	0.83	1.07	1.49	2.01	2.67	50yr	1.73	2.46	3.19	4.19	5.48	7.14	8.39	50yr	6.32	8.07	9.21	10.45	11.60	50yr
100yr	0.58	0.94	1.21	1.72	2.33	3.13	100yr	2.01	2.89	3.75	4.96	6.51	8.53	10.14	100yr	7.55	9.75	11.11	12.48	13.77	100yr
200yr	0.65	1.05	1.37	1.96	2.71	3.69	200yr	2.34	3.40	4.44	5.89	7.77	10.19	12.25	200yr	9.02	11.78	13.41	14.91	16.37	200yr
500yr	0.76	1.25	1.63	2.37	3.32	4.56	500yr	2.87	4.22	5.51	7.37	9.78	12.90	15.73	500yr	11.41	15.13	17.20	18.88	20.58	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	1yr	0.64	0.88	0.92	1.25	1.55	2.11	2.45	1yr	1.87	2.35	2.91	3.41	4.08	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	3.75	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	3.70	4.12	5yr	3.28	3.97	4.61	5.40	6.10	5yr
10yr	0.38	0.59	0.73	1.02	1.32	1.60	10yr	1.14	1.56	1.81	2.44	3.12	4.25	4.78	10yr	3.76	4.59	5.32	6.22	6.99	10yr
25yr	0.44	0.66	0.83	1.18	1.55	1.91	25yr	1.34	1.87	2.11	2.83	3.64	5.01	5.77	25yr	4.43	5.55	6.48	7.51	8.36	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.19	50yr	1.52	2.14	2.35	3.19	4.08	5.73	6.64	50yr	5.07	6.39	7.52	8.64	9.57	50yr
100yr	0.54	0.81	1.02	1.47	2.02	2.51	100yr	1.74	2.46	2.64	3.57	4.55	6.54	7.65	100yr	5.79	7.35	8.73	9.95	10.93	100yr
200yr	0.60	0.90	1.14	1.65	2.29	2.88	200yr	1.98	2.81	2.94	4.00	5.07	7.46	8.80	200yr	6.60	8.46	10.11	11.45	12.50	200yr
500yr	0.70	1.03	1.33	1.93	2.75	3.47	500yr	2.37	3.39	3.41	4.63	5.87	8.85	10.57	500yr	7.83	10.17	12.29	13.82	14.88	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	2.85	3.09	1yr	2.52	2.98	3.42	4.21	4.78	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	3.27	3.63	2yr	2.90	3.49	4.01	4.76	5.43	2yr
5yr	0.39	0.60	0.75	1.03	1.31	1.58	5yr	1.13	1.55	1.85	2.49	3.19	4.24	4.87	5yr	3.75	4.68	5.30	6.24	7.00	5yr
10yr	0.46	0.70	0.87	1.22	1.57	1.92	10yr	1.36	1.87	2.23	3.04	3.85	5.20	6.08	10yr	4.60	5.85	6.70	7.66	8.53	10yr
25yr	0.56	0.85	1.05	1.50	1.98	2.47	25yr	1.71	2.42	2.87	3.95	4.95	6.94	8.17	25yr	6.14	7.86	8.98	10.09	11.11	25yr
50yr	0.64	0.98	1.22	1.75	2.36	2.98	50yr	2.04	2.92	3.49	4.81	6.01	8.55	10.24	50yr	7.56	9.85	11.24	12.40	13.58	50yr
100yr	0.75	1.13	1.42	2.05	2.81	3.61	100yr	2.43	3.52	4.23	5.89	7.31	10.53	12.84	100yr	9.32	12.35	14.06	15.28	16.61	100yr
200yr	0.87	1.31	1.66	2.40	3.35	4.37	200yr	2.89	4.27	5.14	7.20	8.88	13.01	16.12	200yr	11.51	15.50	17.61	18.81	20.34	200yr
500yr	1.07	1.59	2.04	2.96	4.22	5.61	500yr	3.64	5.48	6.64	9.41	11.51	17.23	21.78	500yr	15.25	20.94	23.72	24.80	26.62	500yr

Hydrologic Soil Group—Strafford County, New Hampshire



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

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

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

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: [Web Soil Survey](#)

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 25, Sep 3, 2024

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
HaB	Hinckley loamy sand, 3 to 8 percent slopes	A	0.4	27.0%
HaC	Hinckley loamy sand, 8 to 15 percent slopes	A	0.4	25.6%
HbE	Hinckley loamy sand, 15 to 60 percent slopes	A	0.7	47.4%
Totals for Area of Interest			1.4	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

Saturated Hydraulic Conductivity (Ksat)—Strafford County, New Hampshire



MAP LEGEND

- Area of Interest (AOI)**

 Area of Interest (AOI)
- Soils**

Soil Rating Polygons

 = 100.0000

 Not rated or not available

Soil Rating Lines

 = 100.0000

 Not rated or not available
- Soil Rating Points**

 = 100.0000

 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 25, Sep 3, 2024

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.

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
HaB	Hinckley loamy sand, 3 to 8 percent slopes	100.0000	0.4	27.0%
HaC	Hinckley loamy sand, 8 to 15 percent slopes	100.0000	0.4	25.6%
HbE	Hinckley loamy sand, 15 to 60 percent slopes	100.0000	0.7	47.4%
Totals for Area of Interest			1.4	100.0%

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

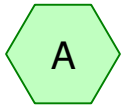
Tie-break Rule: Fastest

Interpret Nulls as Zero: No

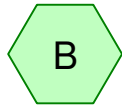
Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

A – 1

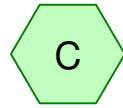
EXISTING WATERSHEDS



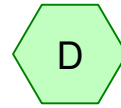
WS-A



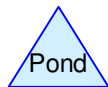
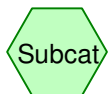
WS-B



WS-C



WS-D



Routing Diagram for 25044 -PRE

Prepared by CIVILWORKS NEW ENGLAND

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25044 -PRE

Prepared by CIVILWORKS NEW ENGLAND

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
14,105	39	>75% Grass cover, Good, HSG A (A, B, C, D)
20,667	98	Paved parking, HSG A (A, B, D)
3,674	98	Roofs, HSG A (A, B, D)
185	98	Unconnected pavement, HSG A (A, B, D)
16,992	30	Woods, Good, HSG A (A, B, C, D)
55,623	62	TOTAL AREA

25044 -PRE

Prepared by CIVILWORKS NEW ENGLAND

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Page 3

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
55,623	HSG A	A, B, C, D
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
55,623		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: WS-A

Runoff Area=25,425 sf 31.96% Impervious Runoff Depth=0.21"
Flow Length=230' Tc=9.1 min CN=54 Runoff=0.0 cfs 445 cf

Subcatchment B: WS-B

Runoff Area=19,873 sf 69.35% Impervious Runoff Depth=1.36"
Flow Length=181' Tc=5.6 min CN=80 Runoff=0.7 cfs 2,258 cf

Subcatchment C: WS-C

Runoff Area=5,025 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=97' Tc=12.5 min CN=31 Runoff=0.0 cfs 0 cf

Subcatchment D: WS-D

Runoff Area=5,300 sf 49.43% Impervious Runoff Depth=0.71"
Flow Length=88' Tc=6.6 min CN=68 Runoff=0.1 cfs 312 cf

Total Runoff Area = 55,623 sf Runoff Volume = 3,015 cf Average Runoff Depth = 0.65"
55.91% Pervious = 31,097 sf 44.09% Impervious = 24,526 sf

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: WS-A

Runoff Area=25,425 sf 31.96% Impervious Runoff Depth=0.80"
Flow Length=230' Tc=9.1 min CN=54 Runoff=0.3 cfs 1,690 cf

Subcatchment B: WS-B

Runoff Area=19,873 sf 69.35% Impervious Runoff Depth=2.67"
Flow Length=181' Tc=5.6 min CN=80 Runoff=1.2 cfs 4,417 cf

Subcatchment C: WS-C

Runoff Area=5,025 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=97' Tc=12.5 min CN=31 Runoff=0.0 cfs 2 cf

Subcatchment D: WS-D

Runoff Area=5,300 sf 49.43% Impervious Runoff Depth=1.70"
Flow Length=88' Tc=6.6 min CN=68 Runoff=0.2 cfs 749 cf

Total Runoff Area = 55,623 sf Runoff Volume = 6,859 cf Average Runoff Depth = 1.48"
55.91% Pervious = 31,097 sf 44.09% Impervious = 24,526 sf

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: WS-A

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 1,690 cf, Depth= 0.80"

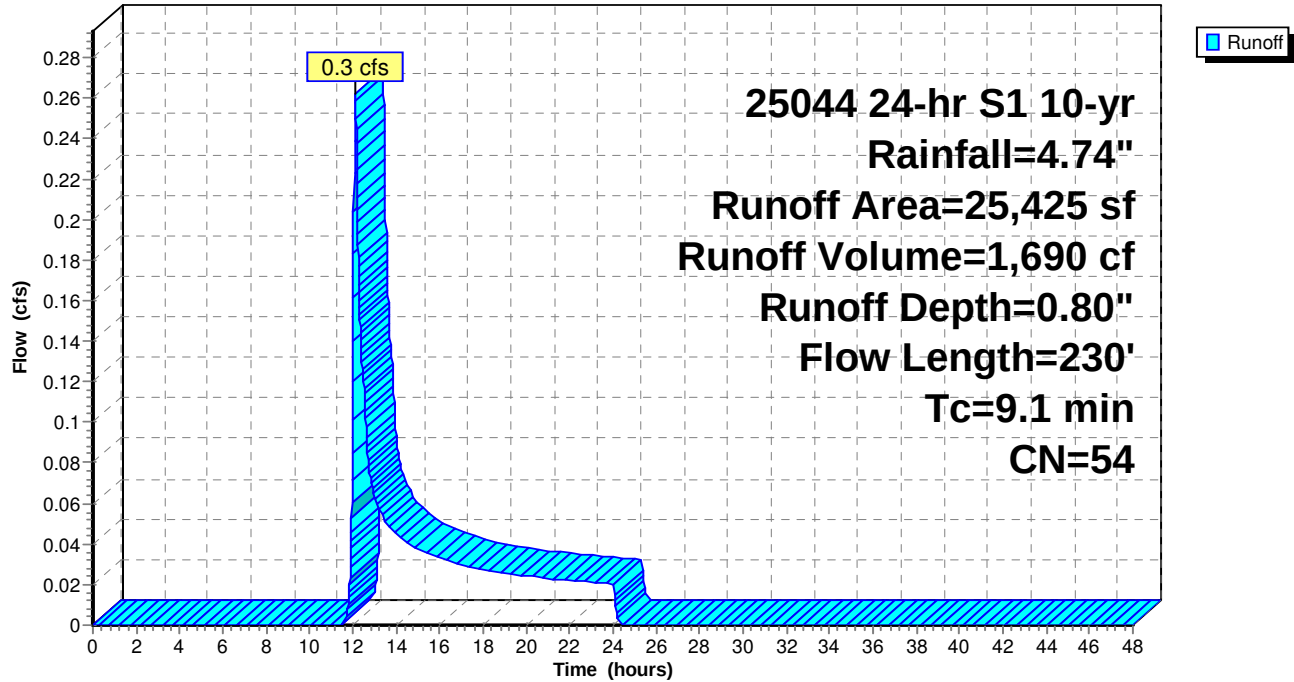
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
11,424	30	Woods, Good, HSG A
5,876	39	>75% Grass cover, Good, HSG A
59	98	Unconnected pavement, HSG A
7,705	98	Paved parking, HSG A
361	98	Roofs, HSG A
25,425	54	Weighted Average
17,300		68.04% Pervious Area
8,125		31.96% Impervious Area
59		0.73% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0520	0.15		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"
0.9	82	0.0060	1.57		Shallow Concentrated Flow, 2
					Paved Kv= 20.3 fps
1.2	35	0.0051	0.50		Shallow Concentrated Flow, 3
					Short Grass Pasture Kv= 7.0 fps
1.4	63	0.0211	0.73		Shallow Concentrated Flow, 4
					Woodland Kv= 5.0 fps
9.1	230	Total			

Subcatchment A: WS-A

Hydrograph



Summary for Subcatchment B: WS-B

Runoff = 1.2 cfs @ 12.03 hrs, Volume= 4,417 cf, Depth= 2.67"

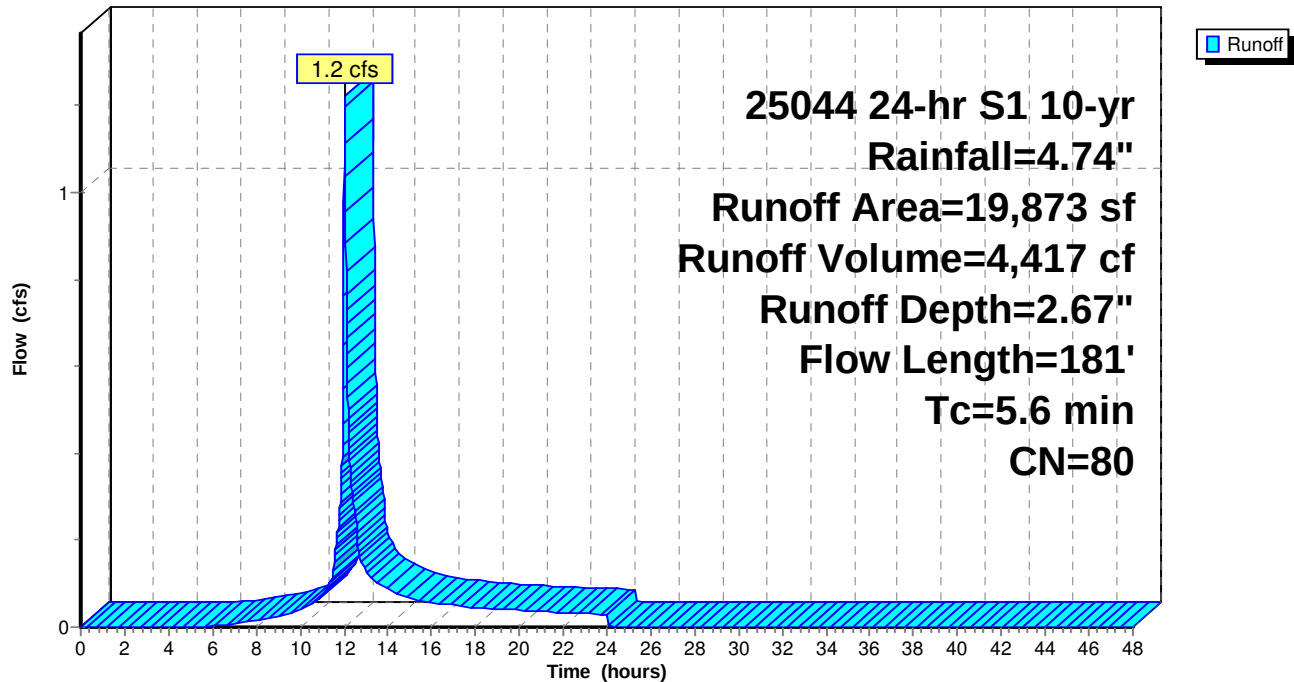
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
843	30	Woods, Good, HSG A
5,249	39	>75% Grass cover, Good, HSG A
84	98	Unconnected pavement, HSG A
12,093	98	Paved parking, HSG A
1,604	98	Roofs, HSG A
19,873	80	Weighted Average
6,092		30.65% Pervious Area
13,781		69.35% Impervious Area
84		0.61% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0850	0.18		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"
0.7	108	0.0155	2.53		Shallow Concentrated Flow, 2
					Paved Kv= 20.3 fps
0.3	23	0.0322	1.26		Shallow Concentrated Flow, 3
					Short Grass Pasture Kv= 7.0 fps
5.6	181	Total			

Subcatchment B: WS-B

Hydrograph



Summary for Subcatchment C: WS-C

Runoff = 0.0 cfs @ 24.03 hrs, Volume= 2 cf, Depth= 0.00"

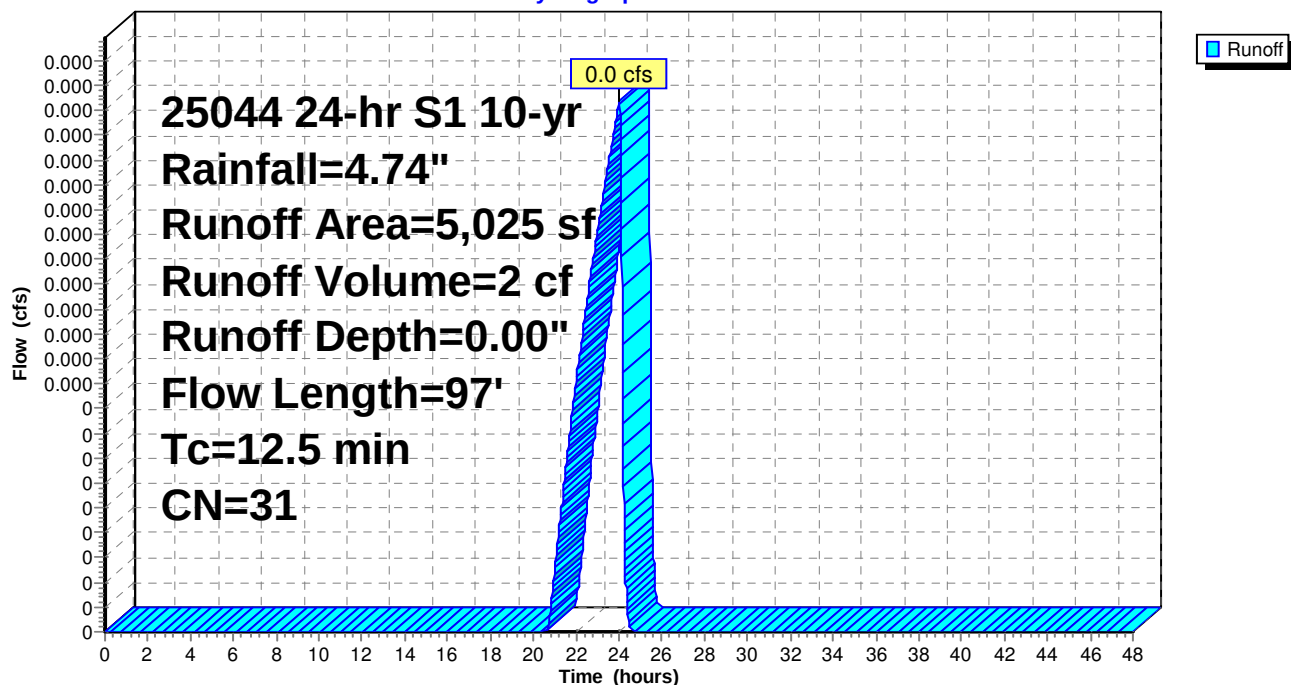
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
4,685	30	Woods, Good, HSG A
340	39	>75% Grass cover, Good, HSG A
5,025	31	Weighted Average
5,025		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0220	0.07		Sheet Flow, 1
					Woods: Light underbrush n= 0.400 P2= 3.15"
0.3	29	0.0828	1.44		Shallow Concentrated Flow, 2
					Woodland Kv= 5.0 fps
0.2	18	0.1417	1.88		Shallow Concentrated Flow, 3
					Woodland Kv= 5.0 fps
12.5	97	Total			

Subcatchment C: WS-C

Hydrograph



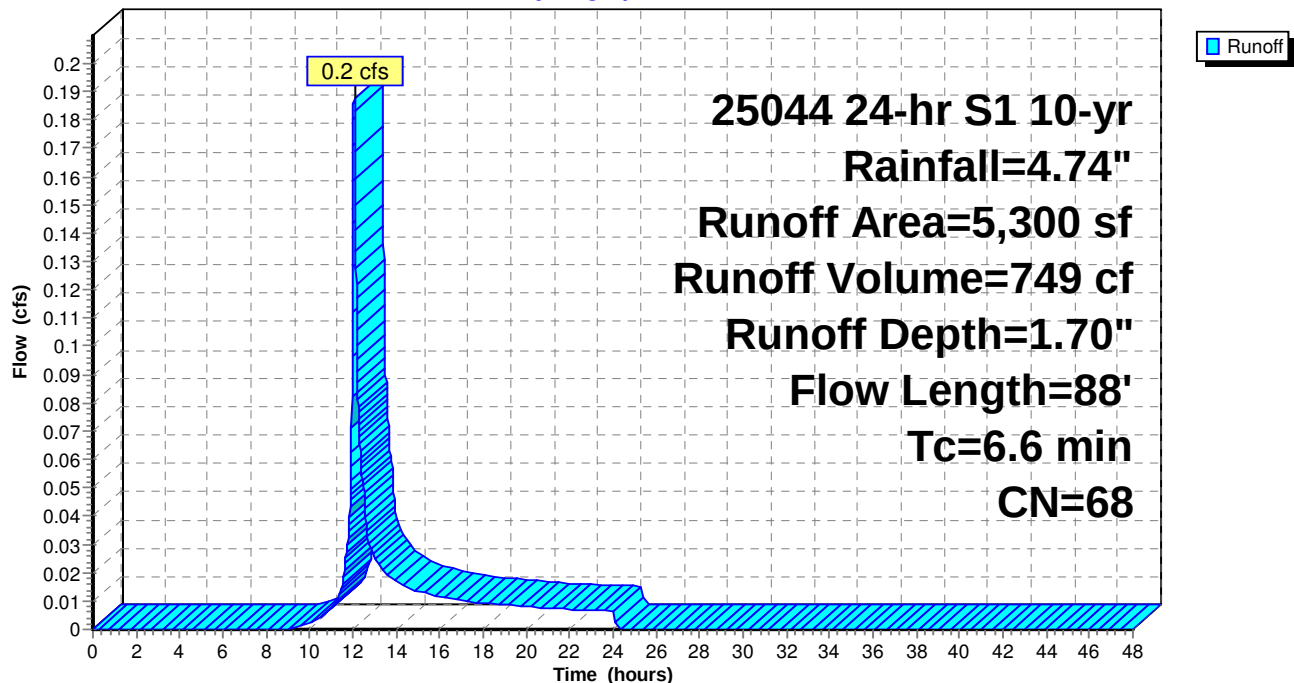
Summary for Subcatchment D: WS-D

Runoff = 0.2 cfs @ 12.05 hrs, Volume= 749 cf, Depth= 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
40	30	Woods, Good, HSG A
2,640	39	>75% Grass cover, Good, HSG A
42	98	Unconnected pavement, HSG A
869	98	Paved parking, HSG A
1,709	98	Roofs, HSG A
5,300	68	Weighted Average
2,680		50.57% Pervious Area
2,620		49.43% Impervious Area
42		1.60% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.0450	0.14		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"
0.6	38	0.0437	1.05		Shallow Concentrated Flow, 2
					Woodland Kv= 5.0 fps
6.6	88	Total			

Subcatchment D: WS-D**Hydrograph**

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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: WS-A

Runoff Area=25,425 sf 31.96% Impervious Runoff Depth=1.43"
Flow Length=230' Tc=9.1 min CN=54 Runoff=0.6 cfs 3,028 cf

Subcatchment B: WS-B

Runoff Area=19,873 sf 69.35% Impervious Runoff Depth=3.76"
Flow Length=181' Tc=5.6 min CN=80 Runoff=1.6 cfs 6,232 cf

Subcatchment C: WS-C

Runoff Area=5,025 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=97' Tc=12.5 min CN=31 Runoff=0.0 cfs 41 cf

Subcatchment D: WS-D

Runoff Area=5,300 sf 49.43% Impervious Runoff Depth=2.61"
Flow Length=88' Tc=6.6 min CN=68 Runoff=0.3 cfs 1,151 cf

Total Runoff Area = 55,623 sf Runoff Volume = 10,452 cf Average Runoff Depth = 2.25"
55.91% Pervious = 31,097 sf 44.09% Impervious = 24,526 sf

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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: WS-A

Runoff Area=25,425 sf 31.96% Impervious Runoff Depth=2.12"
Flow Length=230' Tc=9.1 min CN=54 Runoff=0.9 cfs 4,487 cf

Subcatchment B: WS-B

Runoff Area=19,873 sf 69.35% Impervious Runoff Depth=4.82"
Flow Length=181' Tc=5.6 min CN=80 Runoff=2.0 cfs 7,989 cf

Subcatchment C: WS-C

Runoff Area=5,025 sf 0.00% Impervious Runoff Depth=0.29"
Flow Length=97' Tc=12.5 min CN=31 Runoff=0.0 cfs 121 cf

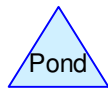
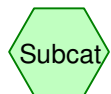
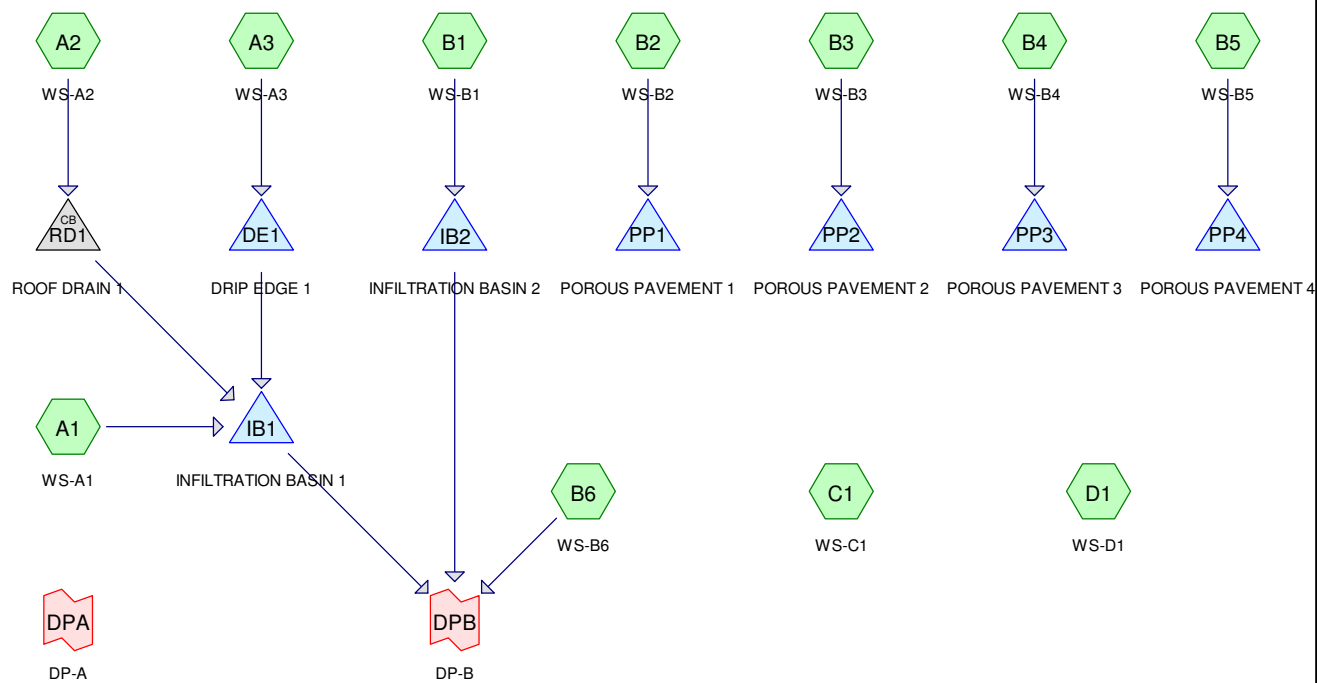
Subcatchment D: WS-D

Runoff Area=5,300 sf 49.43% Impervious Runoff Depth=3.52"
Flow Length=88' Tc=6.6 min CN=68 Runoff=0.4 cfs 1,556 cf

Total Runoff Area = 55,623 sf Runoff Volume = 14,153 cf Average Runoff Depth = 3.05"
55.91% Pervious = 31,097 sf 44.09% Impervious = 24,526 sf

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DEVELOPED WATERSHEDS



Routing Diagram for 25044 -POST
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25044 -POST

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
19,244	39	>75% Grass cover, Good, HSG A (A1, A3, B1, B2, B3, B4, B6, C1, D1)
180	68	DRIP EDGE (A3)
14,541	98	Paved parking, HSG A (A1, A3, B1, B2, B3, B4, B5)
10,076	98	Roofs, HSG A (A2)
79	98	Unconnected pavement, HSG A (A1, B2)
11,503	30	Woods, Good, HSG A (A1, B1, B2, C1, D1)
55,623	63	TOTAL AREA

25044 -POST

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
55,443	HSG A	A1, A2, A3, B1, B2, B3, B4, B5, B6, C1, D1
0	HSG B	
0	HSG C	
0	HSG D	
180	Other	A3
55,623		TOTAL AREA

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NODE LISTING – 2-YR

25044 -POST**25044 24-hr S1 2-yr Rainfall=3.15"**

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Page 1

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

Subcatchment A1: WS-A1	Runoff Area=15,876 sf 7.09% Impervious Runoff Depth=0.00" Flow Length=56' Tc=12.0 min CN=40 Runoff=0.0 cfs 2 cf
Subcatchment A2: WS-A2	Runoff Area=10,076 sf 100.00% Impervious Runoff Depth=2.92" Tc=5.0 min CN=98 Runoff=0.7 cfs 2,450 cf
Subcatchment A3: WS-A3	Runoff Area=1,313 sf 47.22% Impervious Runoff Depth=0.85" Flow Length=8' Slope=0.1338 '/' Tc=0.9 min CN=71 Runoff=0.0 cfs 93 cf
Subcatchment B1: WS-B1	Runoff Area=3,929 sf 11.73% Impervious Runoff Depth=0.01" Flow Length=29' Tc=2.0 min CN=42 Runoff=0.0 cfs 3 cf
Subcatchment B2: WS-B2	Runoff Area=7,834 sf 86.89% Impervious Runoff Depth=2.12" Flow Length=79' Tc=5.8 min CN=90 Runoff=0.4 cfs 1,386 cf
Subcatchment B3: WS-B3	Runoff Area=3,946 sf 46.27% Impervious Runoff Depth=0.62" Flow Length=28' Slope=0.2361 '/' Tc=1.9 min CN=66 Runoff=0.1 cfs 203 cf
Subcatchment B4: WS-B4	Runoff Area=1,420 sf 82.89% Impervious Runoff Depth=1.95" Tc=5.0 min CN=88 Runoff=0.1 cfs 231 cf
Subcatchment B5: WS-B5	Runoff Area=2,604 sf 100.00% Impervious Runoff Depth=2.92" Flow Length=34' Slope=0.0215 '/' Tc=0.5 min CN=98 Runoff=0.2 cfs 633 cf
Subcatchment B6: WS-B6	Runoff Area=1,711 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=63' Tc=5.8 min CN=39 Runoff=0.0 cfs 0 cf
Subcatchment C1: WS-C1	Runoff Area=4,655 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=97' Tc=12.5 min CN=30 Runoff=0.0 cfs 0 cf
Subcatchment D1: WS-D1	Runoff Area=2,259 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=50' Slope=0.0520 '/' Tc=5.6 min CN=39 Runoff=0.0 cfs 0 cf
Pond DE1: DRIP EDGE 1	Peak Elev=187.47' Storage=10 cf Inflow=0.0 cfs 93 cf Outflow=0.0 cfs 93 cf
Pond IB1: INFILTRATION BASIN 1	Peak Elev=187.47' Storage=452 cf Inflow=0.8 cfs 2,545 cf Discarded=0.1 cfs 2,545 cf Primary=0.0 cfs 0 cf Outflow=0.1 cfs 2,545 cf
Pond IB2: INFILTRATION BASIN 2	Peak Elev=188.00' Storage=0 cf Inflow=0.0 cfs 3 cf Discarded=0.0 cfs 3 cf Primary=0.0 cfs 0 cf Outflow=0.0 cfs 3 cf
Pond PP1: POROUS PAVEMENT 1	Peak Elev=186.08' Storage=120 cf Inflow=0.4 cfs 1,386 cf Outflow=0.2 cfs 1,386 cf
Pond PP2: POROUS PAVEMENT 2	Peak Elev=186.00' Storage=2 cf Inflow=0.1 cfs 203 cf Outflow=0.1 cfs 203 cf

25044 -POST**25044 24-hr S1 2-yr Rainfall=3.15"**

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Pond PP3: POROUS PAVEMENT 3Peak Elev=186.26' Storage=2 cf Inflow=0.1 cfs 231 cf
Outflow=0.1 cfs 231 cf**Pond PP4: POROUS PAVEMENT 4**Peak Elev=185.21' Storage=28 cf Inflow=0.2 cfs 633 cf
Outflow=0.1 cfs 633 cf**Pond RD1: ROOF DRAIN 1**Peak Elev=187.92' Inflow=0.7 cfs 2,450 cf
8.0" Round Culvert n=0.013 L=56.0' S=0.0050 '/ Outflow=0.7 cfs 2,450 cf**Link DPA: DP-A**

Primary=0.0 cfs 0 cf

Link DPB: DP-BInflow=0.0 cfs 0 cf
Primary=0.0 cfs 0 cf**Total Runoff Area = 55,623 sf Runoff Volume = 5,001 cf Average Runoff Depth = 1.08"**
55.60% Pervious = 30,927 sf 44.40% Impervious = 24,696 sf

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NODE LISTING – 10-YR

25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Page 1

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

Subcatchment A1: WS-A1	Runoff Area=15,876 sf 7.09% Impervious Runoff Depth=0.18" Flow Length=56' Tc=12.0 min CN=40 Runoff=0.0 cfs 239 cf
Subcatchment A2: WS-A2	Runoff Area=10,076 sf 100.00% Impervious Runoff Depth=4.50" Tc=5.0 min CN=98 Runoff=1.0 cfs 3,782 cf
Subcatchment A3: WS-A3	Runoff Area=1,313 sf 47.22% Impervious Runoff Depth=1.92" Flow Length=8' Slope=0.1338 '/' Tc=0.9 min CN=71 Runoff=0.1 cfs 210 cf
Subcatchment B1: WS-B1	Runoff Area=3,929 sf 11.73% Impervious Runoff Depth=0.25" Flow Length=29' Tc=2.0 min CN=42 Runoff=0.0 cfs 81 cf
Subcatchment B2: WS-B2	Runoff Area=7,834 sf 86.89% Impervious Runoff Depth=3.63" Flow Length=79' Tc=5.8 min CN=90 Runoff=0.6 cfs 2,367 cf
Subcatchment B3: WS-B3	Runoff Area=3,946 sf 46.27% Impervious Runoff Depth=1.55" Flow Length=28' Slope=0.2361 '/' Tc=1.9 min CN=66 Runoff=0.2 cfs 511 cf
Subcatchment B4: WS-B4	Runoff Area=1,420 sf 82.89% Impervious Runoff Depth=3.42" Tc=5.0 min CN=88 Runoff=0.1 cfs 405 cf
Subcatchment B5: WS-B5	Runoff Area=2,604 sf 100.00% Impervious Runoff Depth=4.50" Flow Length=34' Slope=0.0215 '/' Tc=0.5 min CN=98 Runoff=0.3 cfs 977 cf
Subcatchment B6: WS-B6	Runoff Area=1,711 sf 0.00% Impervious Runoff Depth=0.15" Flow Length=63' Tc=5.8 min CN=39 Runoff=0.0 cfs 21 cf
Subcatchment C1: WS-C1	Runoff Area=4,655 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=97' Tc=12.5 min CN=30 Runoff=0.0 cfs 0 cf
Subcatchment D1: WS-D1	Runoff Area=2,259 sf 0.00% Impervious Runoff Depth=0.15" Flow Length=50' Slope=0.0520 '/' Tc=5.6 min CN=39 Runoff=0.0 cfs 28 cf
Pond DE1: DRIP EDGE 1	Peak Elev=187.71' Storage=28 cf Inflow=0.1 cfs 210 cf Outflow=0.0 cfs 210 cf
Pond IB1: INFILTRATION BASIN 1	Peak Elev=187.71' Storage=778 cf Inflow=1.0 cfs 4,231 cf Discarded=0.2 cfs 4,231 cf Primary=0.0 cfs 0 cf Outflow=0.2 cfs 4,231 cf
Pond IB2: INFILTRATION BASIN 2	Peak Elev=188.00' Storage=0 cf Inflow=0.0 cfs 81 cf Discarded=0.0 cfs 81 cf Primary=0.0 cfs 0 cf Outflow=0.0 cfs 81 cf
Pond PP1: POROUS PAVEMENT 1	Peak Elev=186.41' Storage=276 cf Inflow=0.6 cfs 2,367 cf Outflow=0.2 cfs 2,367 cf
Pond PP2: POROUS PAVEMENT 2	Peak Elev=186.02' Storage=7 cf Inflow=0.2 cfs 511 cf Outflow=0.1 cfs 511 cf

25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Pond PP3: POROUS PAVEMENT 3Peak Elev=186.27' Storage=6 cf Inflow=0.1 cfs 405 cf
Outflow=0.1 cfs 405 cf**Pond PP4: POROUS PAVEMENT 4**Peak Elev=185.27' Storage=51 cf Inflow=0.3 cfs 977 cf
Outflow=0.1 cfs 977 cf**Pond RD1: ROOF DRAIN 1**Peak Elev=188.11' Inflow=1.0 cfs 3,782 cf
8.0" Round Culvert n=0.013 L=56.0' S=0.0050 '/ Outflow=1.0 cfs 3,782 cf**Link DPA: DP-A**

Primary=0.0 cfs 0 cf

Link DPB: DP-BInflow=0.0 cfs 21 cf
Primary=0.0 cfs 21 cf**Total Runoff Area = 55,623 sf Runoff Volume = 8,622 cf Average Runoff Depth = 1.86"**
55.60% Pervious = 30,927 sf 44.40% Impervious = 24,696 sf

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10-YR STORM SUMMARY

Summary for Subcatchment A1: WS-A1

Runoff = 0.0 cfs @ 15.48 hrs, Volume= 239 cf, Depth= 0.18"

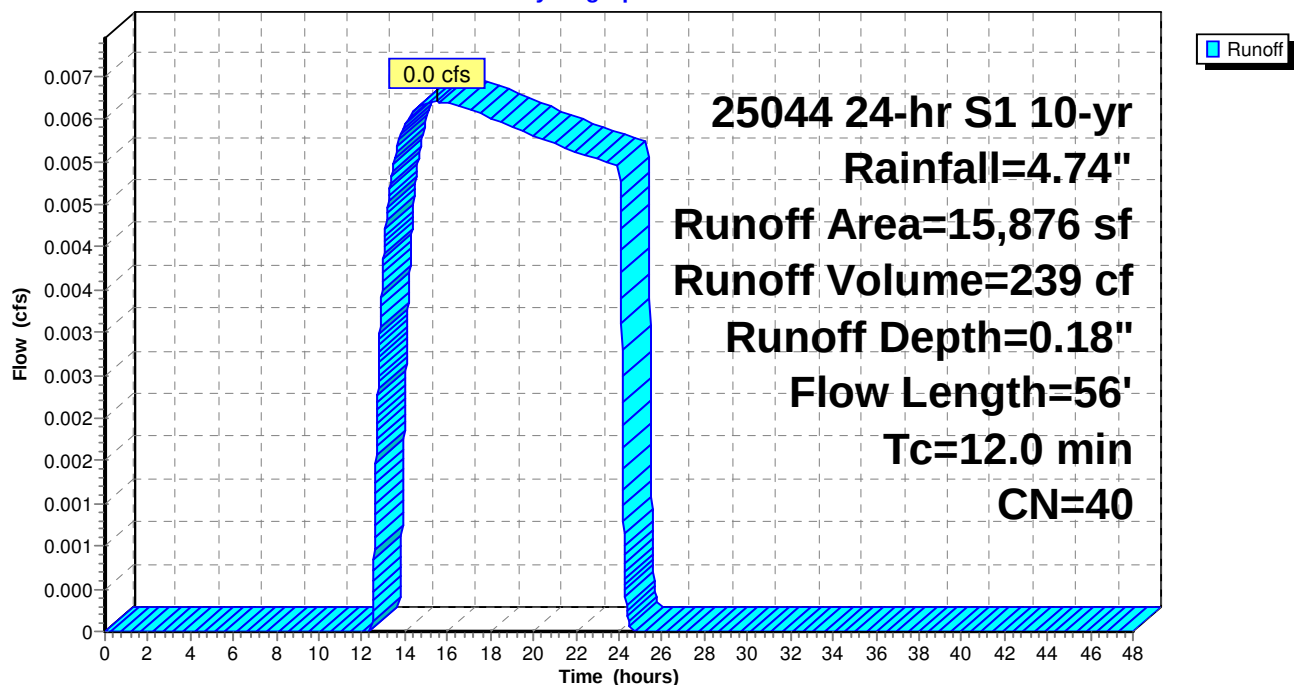
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
4,984	30	Woods, Good, HSG A
9,767	39	>75% Grass cover, Good, HSG A
57	98	Unconnected pavement, HSG A
1,068	98	Paved parking, HSG A
15,876	40	Weighted Average
14,751		92.91% Pervious Area
1,125		7.09% Impervious Area
57		5.07% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0078	0.07		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"
0.0	6	0.0945	2.15		Shallow Concentrated Flow, 2
					Short Grass Pasture Kv= 7.0 fps
12.0	56	Total			

Subcatchment A1: WS-A1

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment A2: WS-A2

Runoff = 1.0 cfs @ 12.03 hrs, Volume= 3,782 cf, Depth= 4.50"

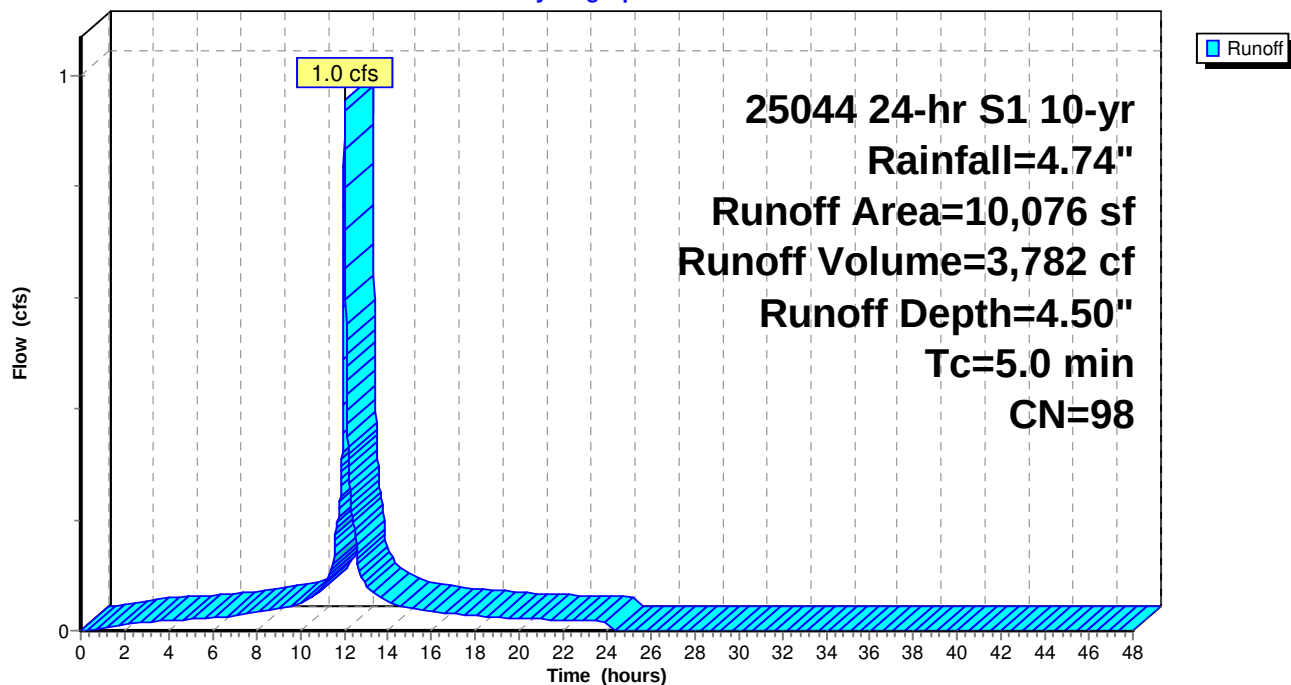
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
10,076	98	Roofs, HSG A
10,076		100.00% Impervious Area

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

Subcatchment A2: WS-A2

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment A3: WS-A3

Runoff = 0.1 cfs @ 12.00 hrs, Volume= 210 cf, Depth= 1.92"

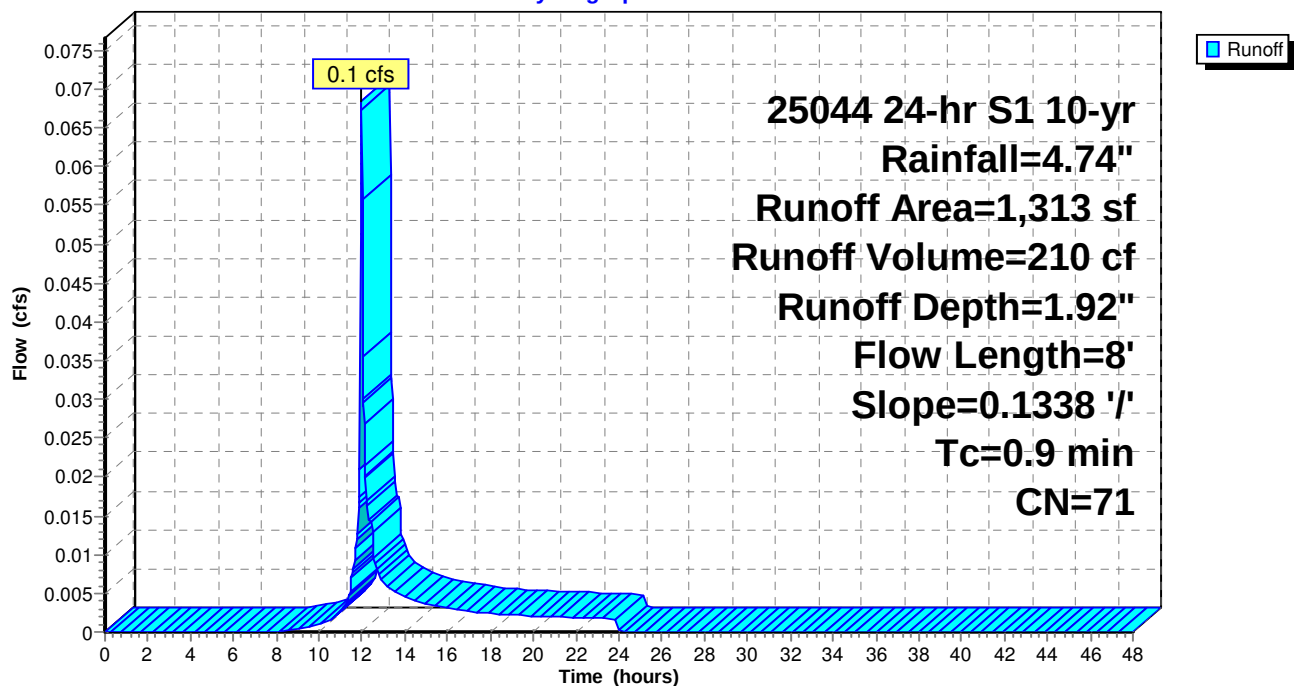
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
513	39	>75% Grass cover, Good, HSG A
* 180	68	DRIP EDGE
620	98	Paved parking, HSG A
1,313	71	Weighted Average
693		52.78% Pervious Area
620		47.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	8	0.1338	0.15		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"

Subcatchment A3: WS-A3

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment B1: WS-B1

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 81 cf, Depth= 0.25"

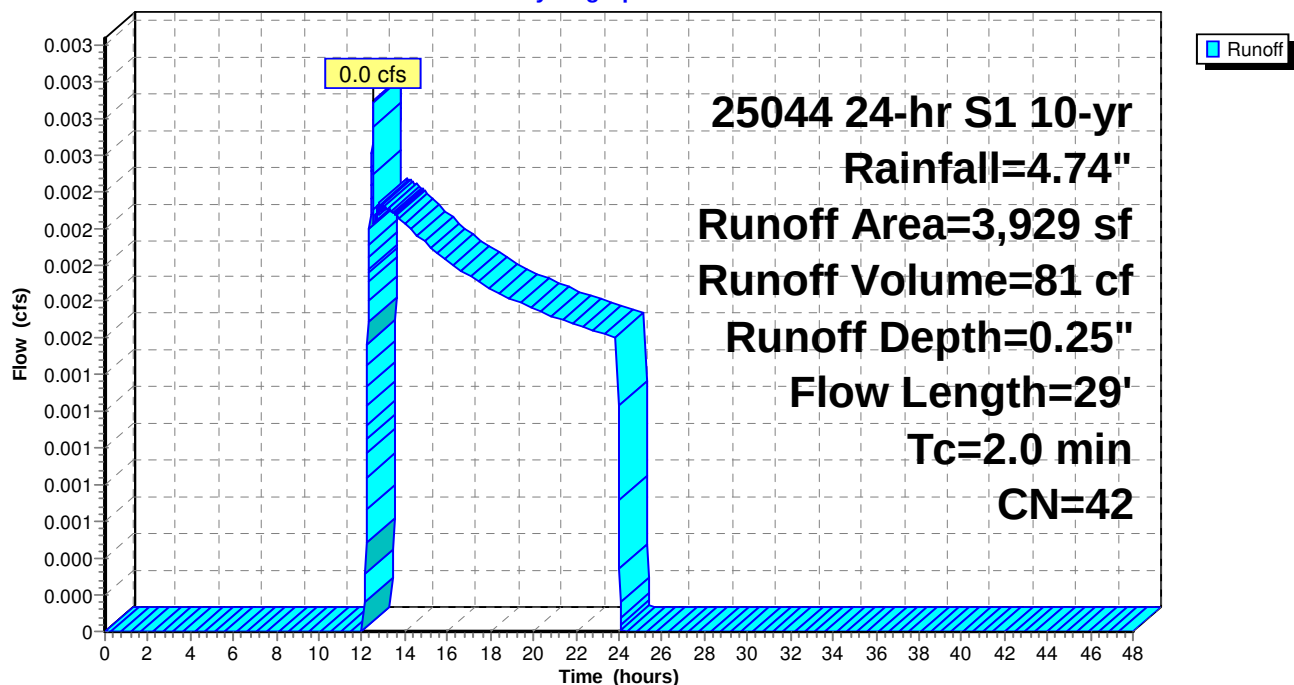
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
1,796	30	Woods, Good, HSG A
1,672	39	>75% Grass cover, Good, HSG A
461	98	Paved parking, HSG A
3,929	42	Weighted Average
3,468		88.27% Pervious Area
461		11.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	10	0.0830	0.09		Sheet Flow, 1
					Woods: Light underbrush n= 0.400 P2= 3.15"
0.1	16	0.5625	3.75		Shallow Concentrated Flow, 2
					Woodland Kv= 5.0 fps
0.0	3	0.3330	4.04		Shallow Concentrated Flow, 3
					Short Grass Pasture Kv= 7.0 fps
2.0	29	Total			

Subcatchment B1: WS-B1

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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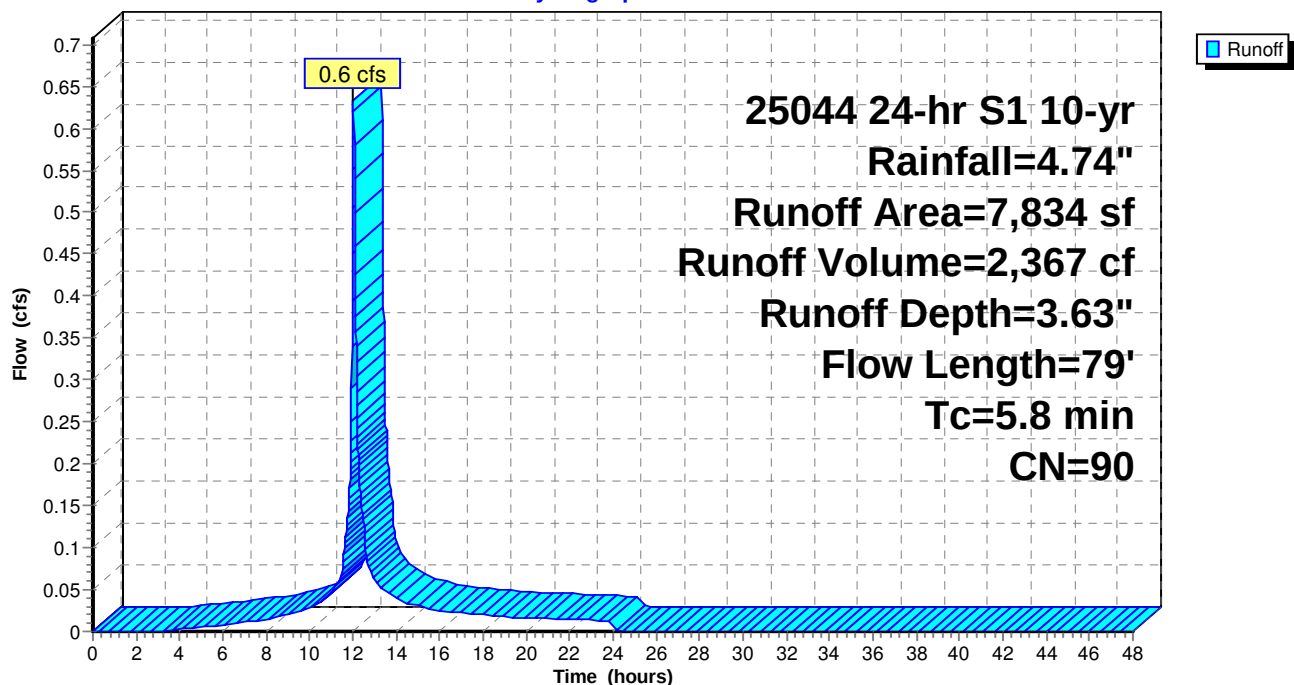
Summary for Subcatchment B2: WS-B2

Runoff = 0.6 cfs @ 12.03 hrs, Volume= 2,367 cf, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
59	30	Woods, Good, HSG A
968	39	>75% Grass cover, Good, HSG A
22	98	Unconnected pavement, HSG A
6,785	98	Paved parking, HSG A
7,834	90	Weighted Average
1,027		13.11% Pervious Area
6,807		86.89% Impervious Area
22		0.32% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	45	0.0467	0.14		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"
0.4	34	0.0044	1.35		Shallow Concentrated Flow, 2
					Paved Kv= 20.3 fps
5.8	79	Total			

Subcatchment B2: WS-B2**Hydrograph**

25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment B3: WS-B3

Runoff = 0.2 cfs @ 12.00 hrs, Volume= 511 cf, Depth= 1.55"

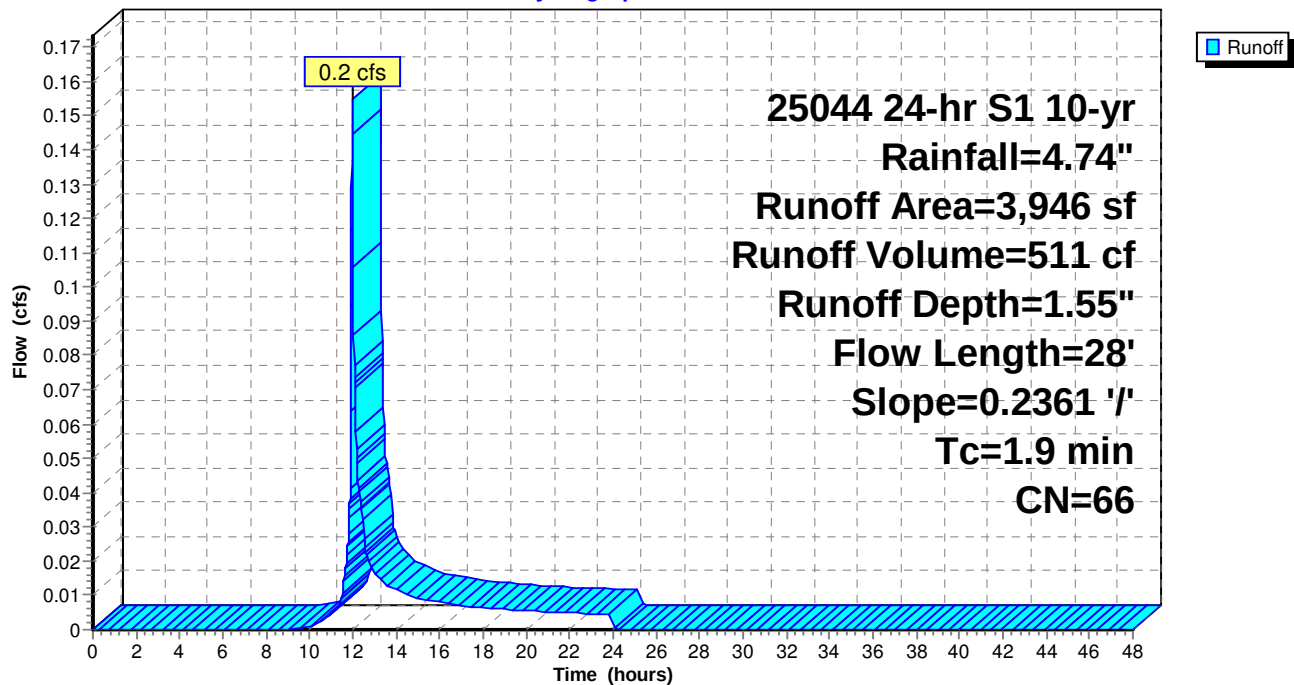
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
2,120	39	>75% Grass cover, Good, HSG A
1,826	98	Paved parking, HSG A
3,946	66	Weighted Average
2,120		53.73% Pervious Area
1,826		46.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	28	0.2361	0.24		Sheet Flow, 1 Grass: Dense n= 0.240 P2= 3.15"

Subcatchment B3: WS-B3

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment B4: WS-B4

Runoff = 0.1 cfs @ 12.03 hrs, Volume= 405 cf, Depth= 3.42"

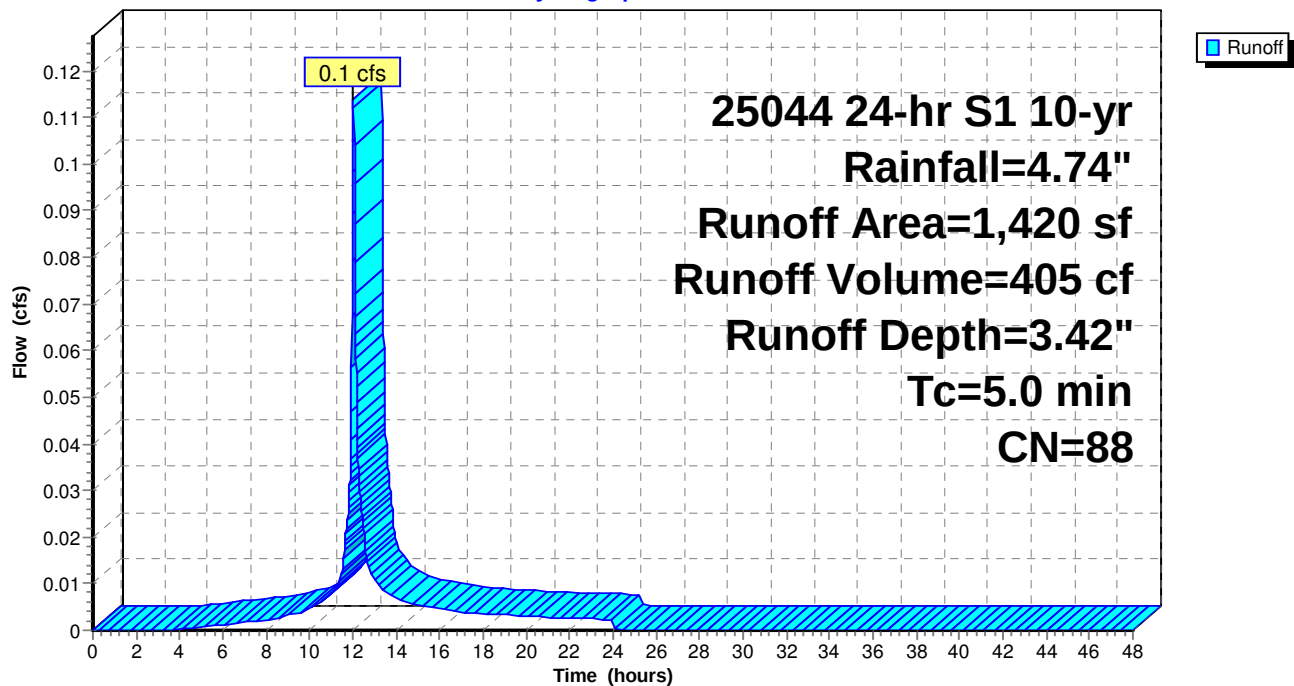
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
243	39	>75% Grass cover, Good, HSG A
1,177	98	Paved parking, HSG A
1,420	88	Weighted Average
243		17.11% Pervious Area
1,177		82.89% Impervious Area

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

Subcatchment B4: WS-B4

Hydrograph



Summary for Subcatchment B5: WS-B5

Runoff = 0.3 cfs @ 11.99 hrs, Volume= 977 cf, Depth= 4.50"

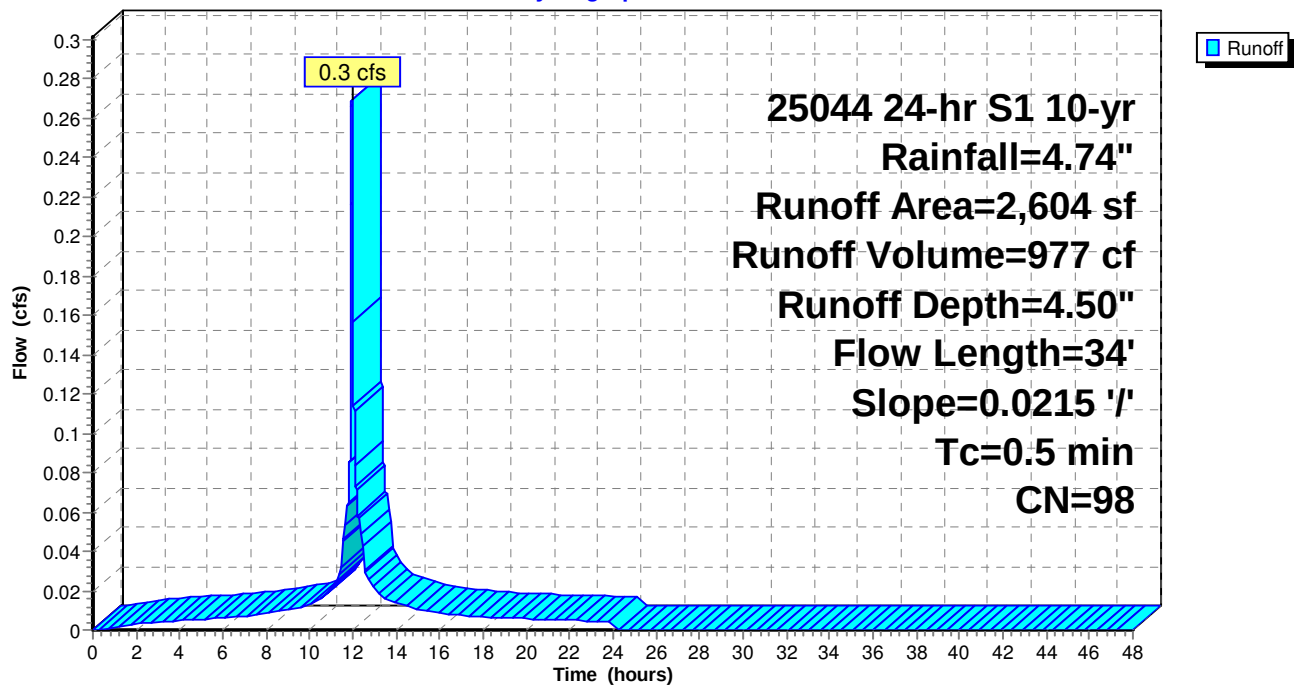
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
2,604	98	Paved parking, HSG A
2,604		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	34	0.0215	1.13		Sheet Flow, 1 Smooth surfaces n= 0.011 P2= 3.15"

Subcatchment B5: WS-B5

Hydrograph



25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Summary for Subcatchment B6: WS-B6

Runoff = 0.0 cfs @ 17.24 hrs, Volume= 21 cf, Depth= 0.15"

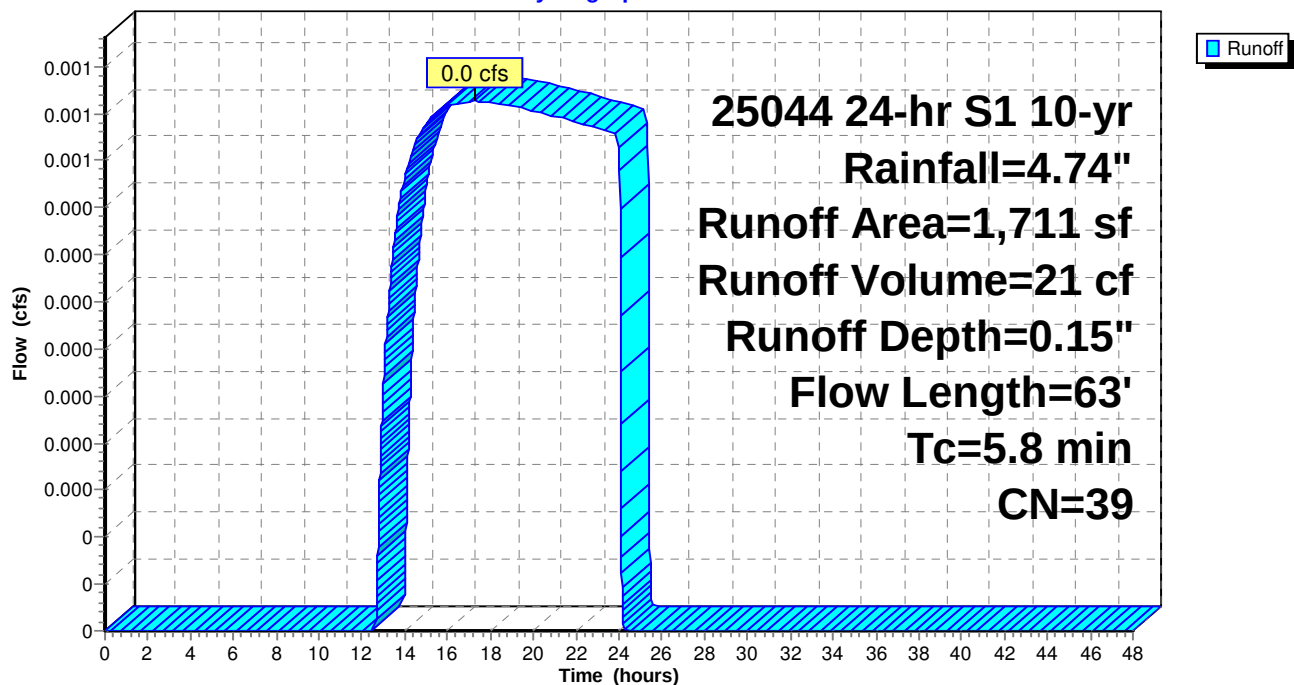
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
1,711	39	>75% Grass cover, Good, HSG A
1,711		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0534	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.15"
0.2	13	0.0377	1.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	63	Total			

Subcatchment B6: WS-B6

Hydrograph



Summary for Subcatchment C1: WS-C1

Runoff = 0.0 cfs @ 24.05 hrs, Volume= 0 cf, Depth= 0.00"

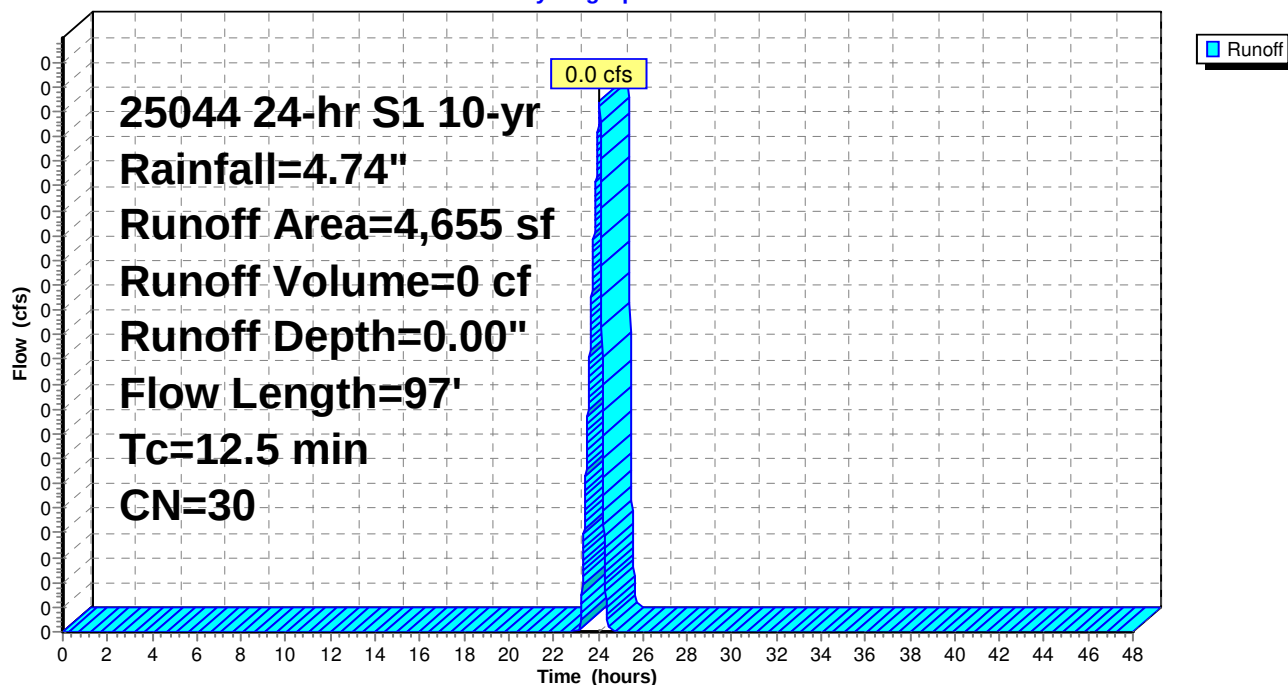
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
4,624	30	Woods, Good, HSG A
31	39	>75% Grass cover, Good, HSG A
4,655	30	Weighted Average
4,655		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0220	0.07		Sheet Flow, 1
					Woods: Light underbrush n= 0.400 P2= 3.15"
0.3	29	0.0828	1.44		Shallow Concentrated Flow, 2
					Woodland Kv= 5.0 fps
0.2	18	0.1417	1.88		Shallow Concentrated Flow, 3
					Woodland Kv= 5.0 fps
12.5	97	Total			

Subcatchment C1: WS-C1

Hydrograph



Summary for Subcatchment D1: WS-D1

Runoff = 0.0 cfs @ 17.24 hrs, Volume= 28 cf, Depth= 0.15"

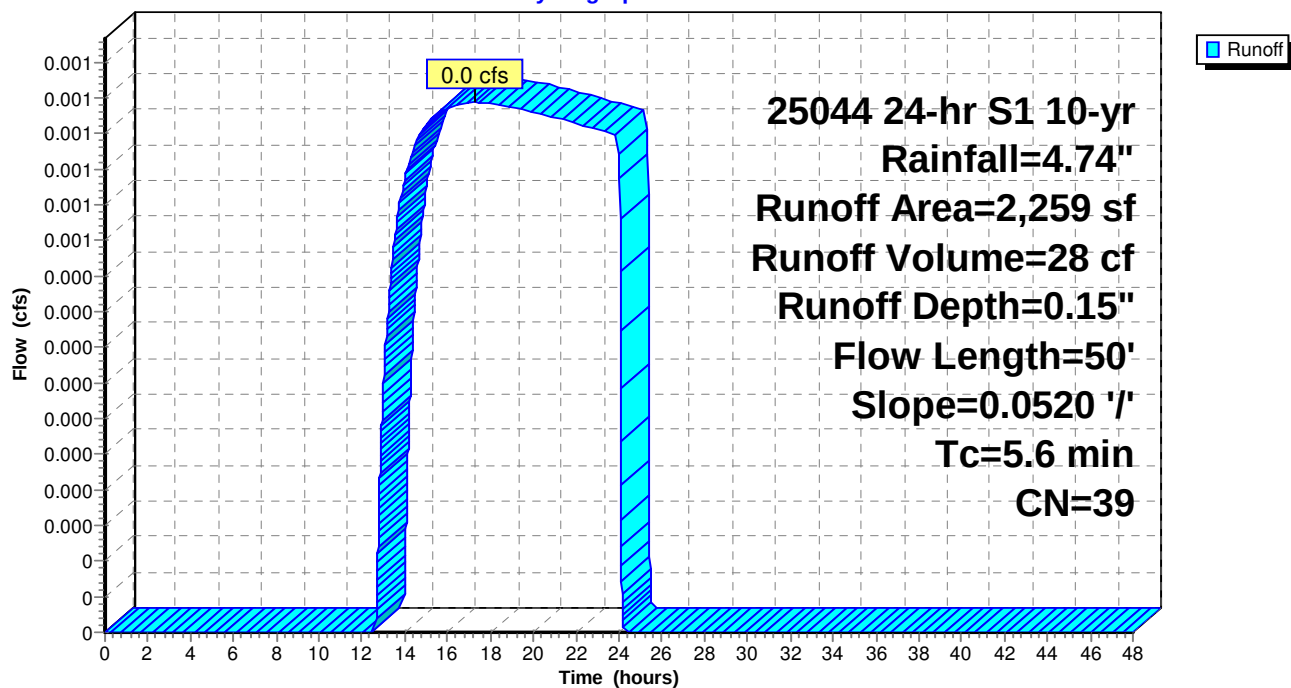
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
25044 24-hr S1 10-yr Rainfall=4.74"

Area (sf)	CN	Description
40	30	Woods, Good, HSG A
2,219	39	>75% Grass cover, Good, HSG A
2,259	39	Weighted Average
2,259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0520	0.15		Sheet Flow, 1
					Grass: Dense n= 0.240 P2= 3.15"

Subcatchment D1: WS-D1

Hydrograph



Summary for Pond DE1: DRIP EDGE 1

Inflow Area = 1,313 sf, 47.22% Impervious, Inflow Depth = 1.92" for 10-yr event
 Inflow = 0.1 cfs @ 12.00 hrs, Volume= 210 cf
 Outflow = 0.0 cfs @ 11.94 hrs, Volume= 210 cf, Atten= 69%, Lag= 0.0 min
 Primary = 0.0 cfs @ 11.94 hrs, Volume= 210 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 187.71' @ 12.56 hrs Surf.Area= 181 sf Storage= 28 cf

Plug-Flow detention time= 24.4 min calculated for 210 cf (100% of inflow)
 Center-of-Mass det. time= 24.2 min (907.9 - 883.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	187.33'	168 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.33	181	0.0	0	0
188.33	181	40.0	72	72
189.58	181	20.0	45	118
189.83	181	40.0	18	136
190.00	200	100.0	32	168

Device	Routing	Invert	Outlet Devices
#1	Primary	187.33'	6.0" Round Culvert L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 187.33' / 187.00' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	187.33'	5.000 in/hr Exfiltration over Surface area

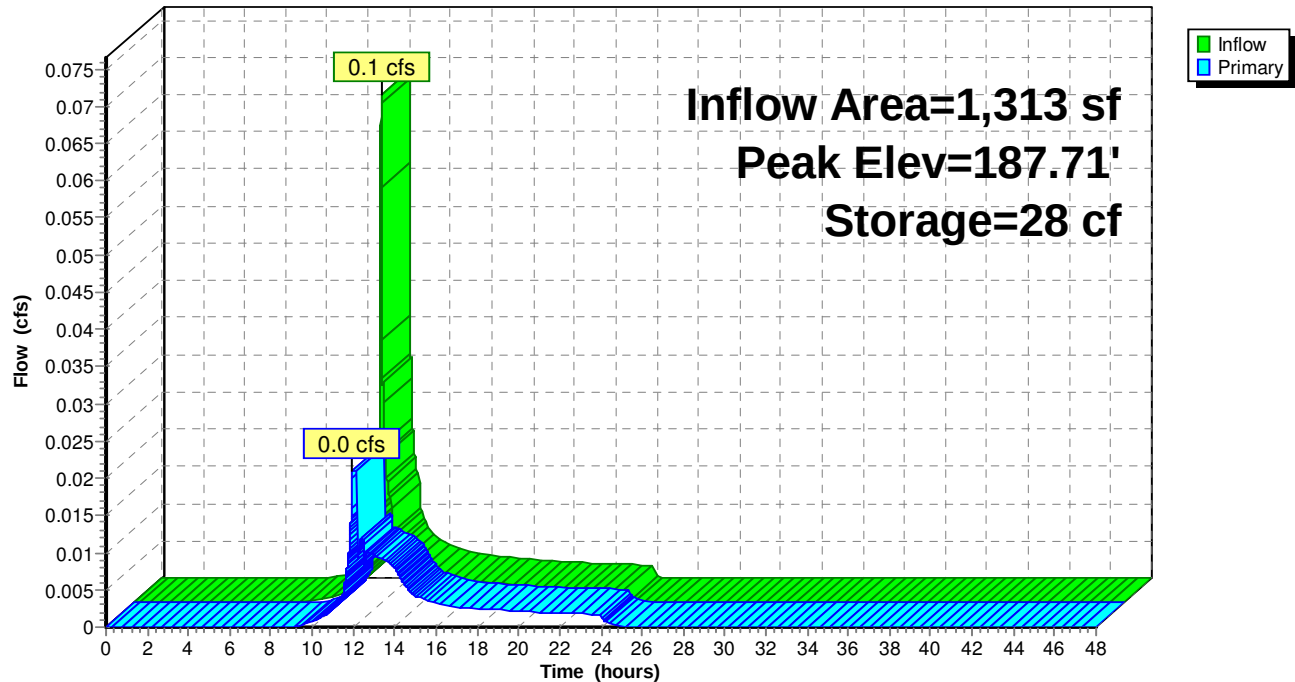
Primary OutFlow Max=0.0 cfs @ 11.94 hrs HW=187.48' TW=187.25' (Dynamic Tailwater)

↑ **1=Culvert** (Passes 0.0 cfs of 0.0 cfs potential flow)

↑ **2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Pond DE1: DRIP EDGE 1

Hydrograph



Summary for Pond IB1: INFILTRATION BASIN 1

Inflow Area = 27,265 sf, 43.36% Impervious, Inflow Depth = 1.86" for 10-yr event
 Inflow = 1.0 cfs @ 12.03 hrs, Volume= 4,231 cf
 Outflow = 0.2 cfs @ 12.55 hrs, Volume= 4,231 cf, Atten= 83%, Lag= 31.5 min
 Discarded = 0.2 cfs @ 12.55 hrs, Volume= 4,231 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

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

Peak Elev= 187.71' @ 12.55 hrs Surf.Area= 1,440 sf Storage= 778 cf

Flood Elev= 189.52' Surf.Area= 4,627 sf Storage= 4,690 cf

Plug-Flow detention time= 26.1 min calculated for 4,231 cf (100% of inflow)

Center-of-Mass det. time= 26.1 min (804.2 - 778.1)

Volume	Invert	Avail.Storage	Storage Description
#1	187.00'	1,469 cf	SEDIMENT FOREBAY (Prismatic) Listed below (Recalc)
#2	187.00'	3,221 cf	INFILTRATION BASIN (Prismatic) Listed below (Recalc)
		4,690 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.00	213	0	0
189.00	1,256	1,469	1,469

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.00	529	0	0
189.00	1,441	1,970	1,970
189.52	3,371	1,251	3,221

Device	Routing	Invert	Outlet Devices
#1	Device 2	188.75'	48.0" W x 48.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	182.93'	12.0" Round Culvert L= 247.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 182.93' / 180.36' S= 0.0104 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Discarded	187.00'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

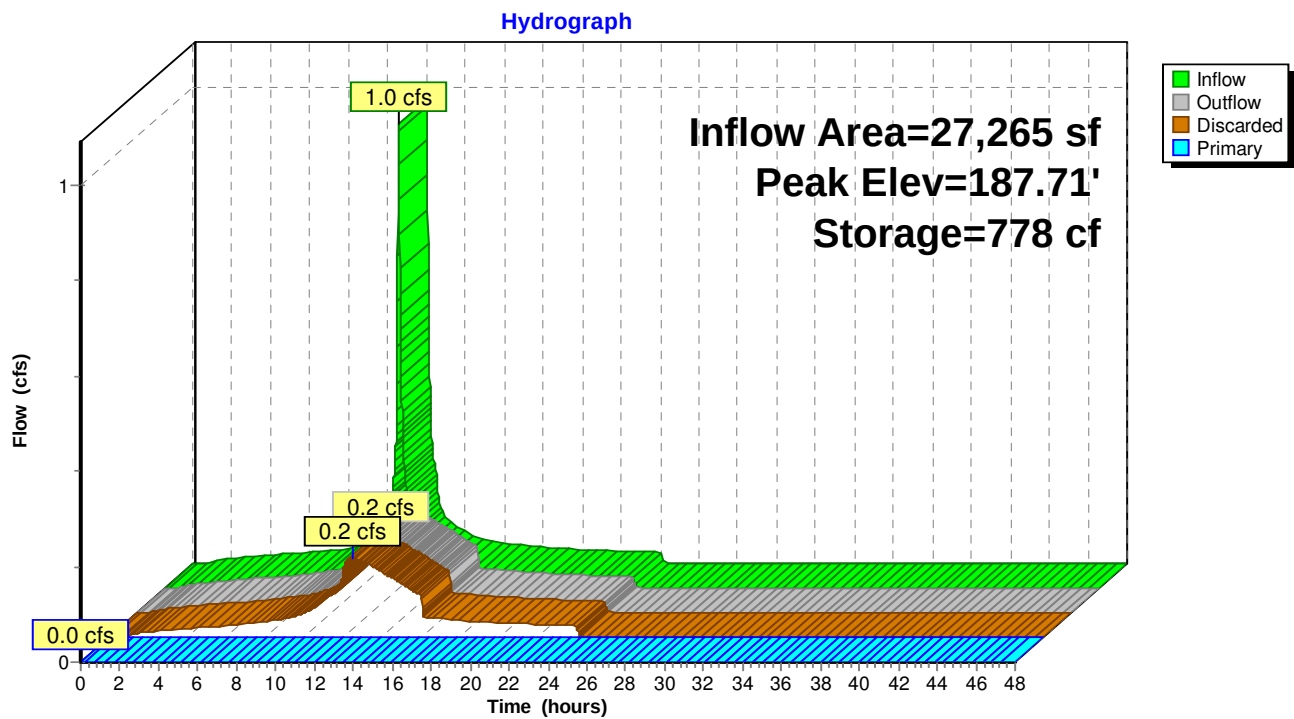
Discarded OutFlow Max=0.2 cfs @ 12.55 hrs HW=187.71' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.2 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=187.00' TW=0.00' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.0 cfs of 4.9 cfs potential flow)

↑ **1=Orifice/Grate** (Controls 0.0 cfs)

Pond IB1: INFILTRATION BASIN 1

Summary for Pond IB2: INFILTRATION BASIN 2

Inflow Area = 3,929 sf, 11.73% Impervious, Inflow Depth = 0.25" for 10-yr event
 Inflow = 0.0 cfs @ 12.51 hrs, Volume= 81 cf
 Outflow = 0.0 cfs @ 12.52 hrs, Volume= 81 cf, Atten= 4%, Lag= 0.6 min
 Discarded = 0.0 cfs @ 12.52 hrs, Volume= 81 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

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

Peak Elev= 188.00' @ 12.52 hrs Surf.Area= 207 sf Storage= 0 cf

Flood Elev= 189.94' Surf.Area= 582 sf Storage= 395 cf

Plug-Flow detention time= 1.4 min calculated for 81 cf (100% of inflow)

Center-of-Mass det. time= 1.4 min (1,065.5 - 1,064.0)

Volume	Invert	Avail.Storage	Storage Description
#1	188.00'	395 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
188.00	207	0	0
189.00	582	395	395

Device	Routing	Invert	Outlet Devices
#1	Device 2	188.75'	24.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	182.26'	12.0" Round Culvert L= 190.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 182.26' / 180.36' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Discarded	188.00'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

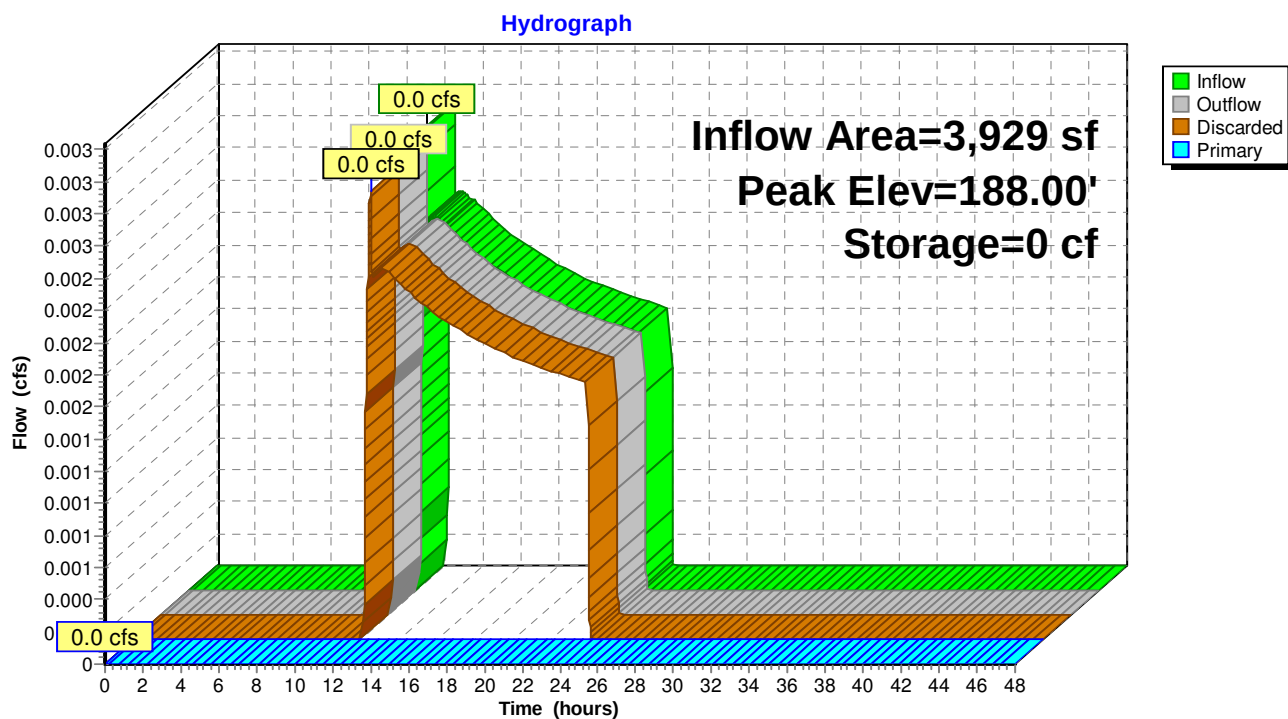
Discarded OutFlow Max=0.0 cfs @ 12.52 hrs HW=188.00' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=188.00' TW=0.00' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.0 cfs of 5.9 cfs potential flow)

↑ **1=Orifice/Grate** (Controls 0.0 cfs)

Pond IB2: INFILTRATION BASIN 2

Summary for Pond PP1: POROUS PAVEMENT 1

Inflow Area = 7,834 sf, 86.89% Impervious, Inflow Depth = 3.63" for 10-yr event
 Inflow = 0.6 cfs @ 12.03 hrs, Volume= 2,367 cf
 Outflow = 0.2 cfs @ 11.94 hrs, Volume= 2,367 cf, Atten= 73%, Lag= 0.0 min
 Discarded = 0.2 cfs @ 11.94 hrs, Volume= 2,367 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 186.41' @ 12.32 hrs Surf.Area= 1,458 sf Storage= 276 cf
 Flood Elev= 188.42' Surf.Area= 1,458 sf Storage= 643 cf

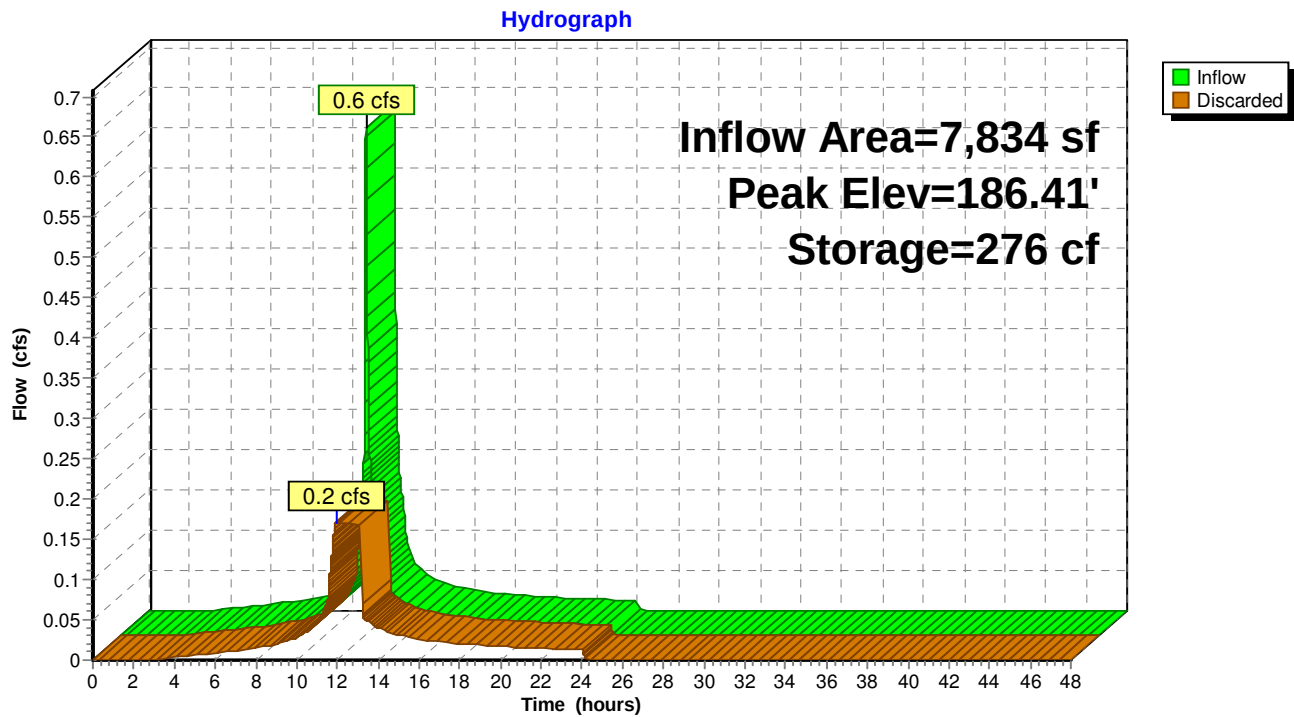
Plug-Flow detention time= 6.2 min calculated for 2,367 cf (100% of inflow)
 Center-of-Mass det. time= 6.2 min (815.1 - 809.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	185.84'	787 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
185.84	1,458	0.0	0	0
186.34	1,458	35.0	255	255
186.59	1,458	20.0	73	328
188.09	1,458	10.0	219	547
188.42	1,458	20.0	96	643
188.75	1,458	30.0	144	787

Device	Routing	Invert	Outlet Devices	
#1	Discarded	185.84'	5.000 in/hr Exfiltration over Surface area	Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 11.94 hrs HW=185.87' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.2 cfs)

Pond PP1: POROUS PAVEMENT 1

Summary for Pond PP2: POROUS PAVEMENT 2

Inflow Area = 3,946 sf, 46.27% Impervious, Inflow Depth = 1.55" for 10-yr event
 Inflow = 0.2 cfs @ 12.00 hrs, Volume= 511 cf
 Outflow = 0.1 cfs @ 11.97 hrs, Volume= 511 cf, Atten= 15%, Lag= 0.0 min
 Discarded = 0.1 cfs @ 11.97 hrs, Volume= 511 cf

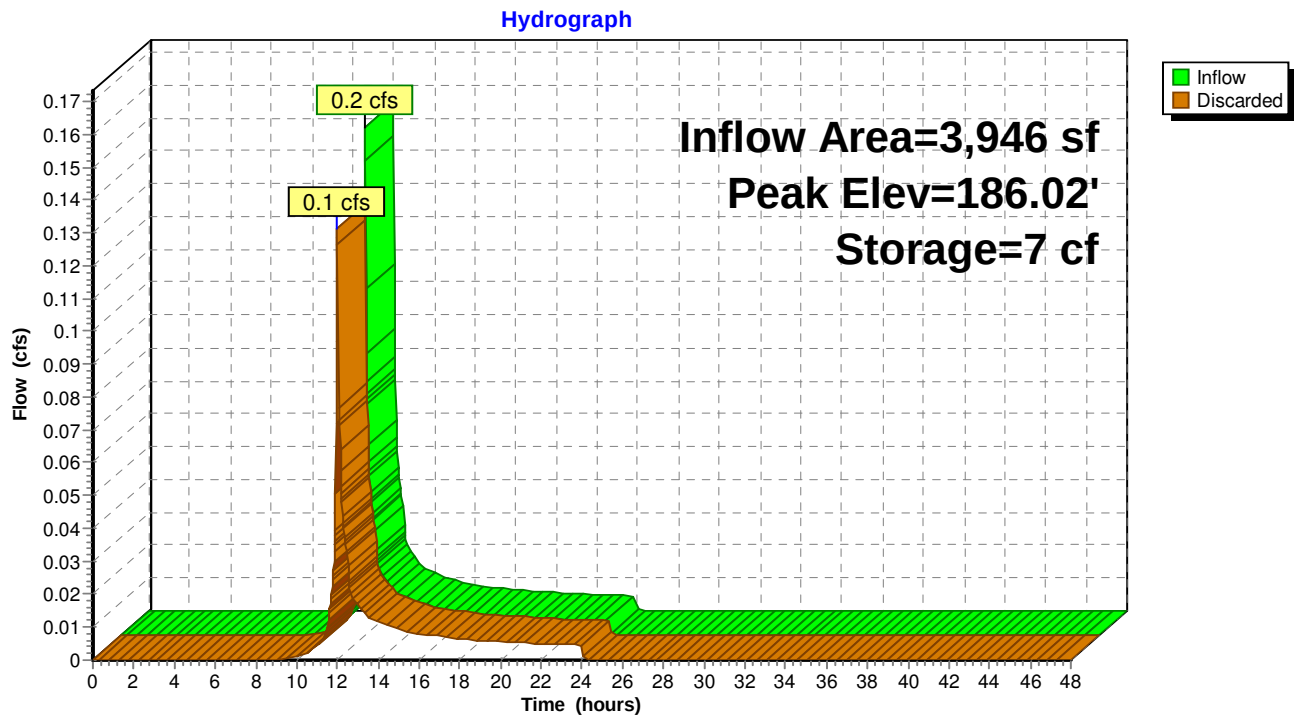
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 186.02' @ 12.02 hrs Surf.Area= 1,134 sf Storage= 7 cf
 Flood Elev= 188.42' Surf.Area= 1,134 sf Storage= 437 cf

Plug-Flow detention time= 0.5 min calculated for 511 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (903.9 - 903.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	186.00'	549 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
186.00	1,134	0.0	0	0
186.34	1,134	35.0	135	135
186.59	1,134	20.0	57	192
188.09	1,134	10.0	170	362
188.42	1,134	20.0	75	437
188.75	1,134	30.0	112	549

Device	Routing	Invert	Outlet Devices	
#1	Discarded	186.00'	5.000 in/hr Exfiltration over Surface area	Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.97 hrs HW=186.01' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.1 cfs)

Pond PP2: POROUS PAVEMENT 2

Summary for Pond PP3: POROUS PAVEMENT 3

Inflow Area = 1,420 sf, 82.89% Impervious, Inflow Depth = 3.42" for 10-yr event
 Inflow = 0.1 cfs @ 12.03 hrs, Volume= 405 cf
 Outflow = 0.1 cfs @ 12.09 hrs, Volume= 405 cf, Atten= 18%, Lag= 3.8 min
 Discarded = 0.1 cfs @ 12.09 hrs, Volume= 405 cf

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

Peak Elev= 186.27' @ 12.06 hrs Surf.Area= 810 sf Storage= 6 cf

Flood Elev= 188.42' Surf.Area= 810 sf Storage= 271 cf

Plug-Flow detention time= 0.5 min calculated for 405 cf (100% of inflow)

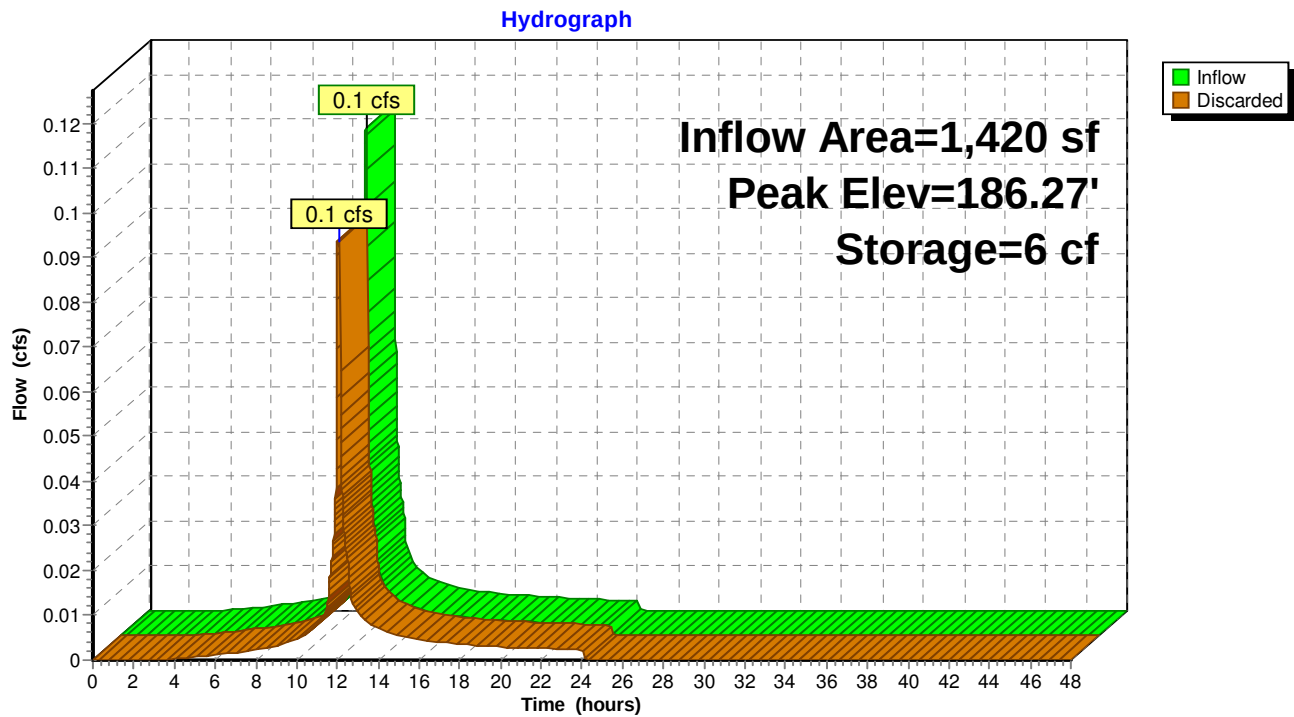
Center-of-Mass det. time= 0.5 min (819.1 - 818.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	186.25'	392 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
186.25	810	0.0	0	0
186.59	810	35.0	96	96
186.84	810	20.0	41	137
188.34	810	10.0	122	258
188.67	810	20.0	53	312
189.00	810	30.0	80	392

Device	Routing	Invert	Outlet Devices	
#1	Discarded	186.25'	5.000 in/hr Exfiltration over Surface area	Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 12.09 hrs HW=186.27' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.1 cfs)

Pond PP3: POROUS PAVEMENT 3

Summary for Pond PP4: POROUS PAVEMENT 4

Inflow Area = 2,604 sf, 100.00% Impervious, Inflow Depth = 4.50" for 10-yr event
 Inflow = 0.3 cfs @ 11.99 hrs, Volume= 977 cf
 Outflow = 0.1 cfs @ 11.93 hrs, Volume= 977 cf, Atten= 51%, Lag= 0.0 min
 Discarded = 0.1 cfs @ 11.93 hrs, Volume= 977 cf

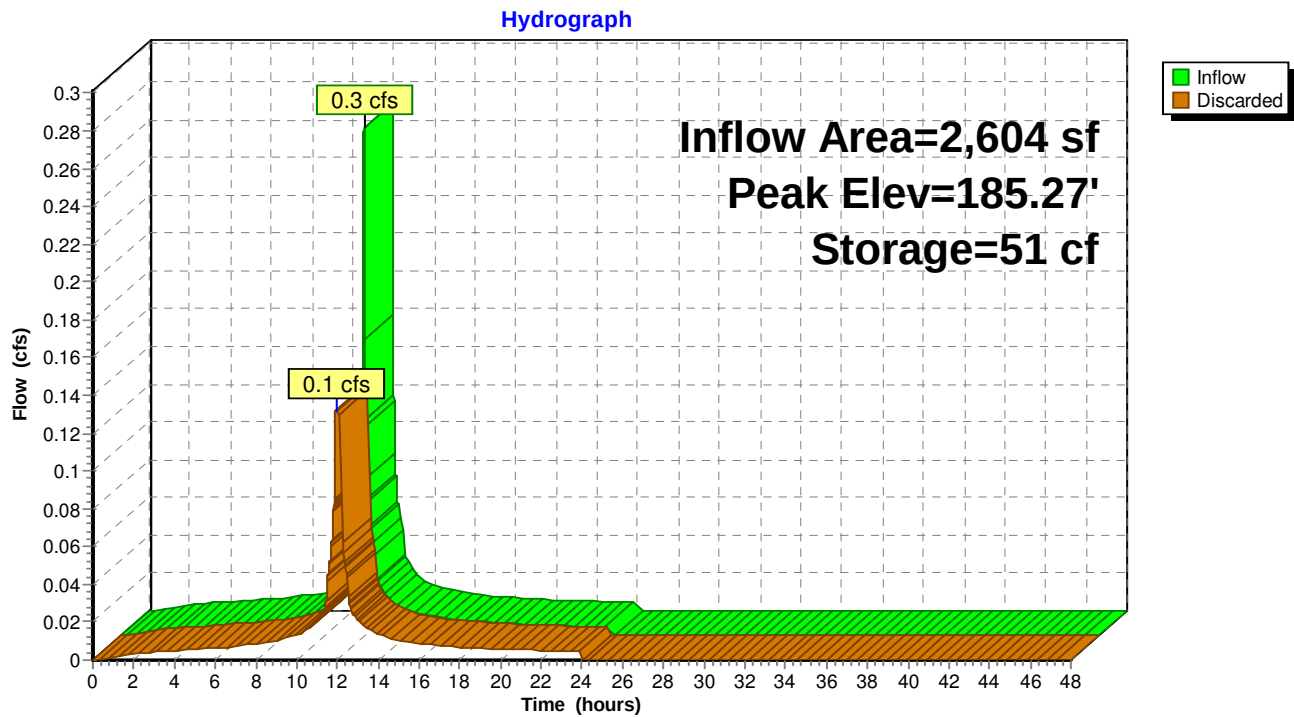
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 185.27' @ 12.02 hrs Surf.Area= 1,134 sf Storage= 51 cf
 Flood Elev= 188.42' Surf.Area= 1,134 sf Storage= 545 cf

Plug-Flow detention time= 1.1 min calculated for 977 cf (100% of inflow)
 Center-of-Mass det. time= 1.1 min (747.2 - 746.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	185.14'	545 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
185.14	1,134	0.0	0	0
185.47	1,134	35.0	131	131
185.72	1,134	20.0	57	188
187.22	1,134	10.0	170	358
187.55	1,134	20.0	75	433
187.88	1,134	30.0	112	545

Device	Routing	Invert	Outlet Devices	
#1	Discarded	185.14'	5.000 in/hr Exfiltration over Surface area	Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.93 hrs HW=185.17' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.1 cfs)

Pond PP4: POROUS PAVEMENT 4

Summary for Pond RD1: ROOF DRAIN 1

Inflow Area = 10,076 sf, 100.00% Impervious, Inflow Depth = 4.50" for 10-yr event
 Inflow = 1.0 cfs @ 12.03 hrs, Volume= 3,782 cf
 Outflow = 1.0 cfs @ 12.03 hrs, Volume= 3,782 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.0 cfs @ 12.03 hrs, Volume= 3,782 cf

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

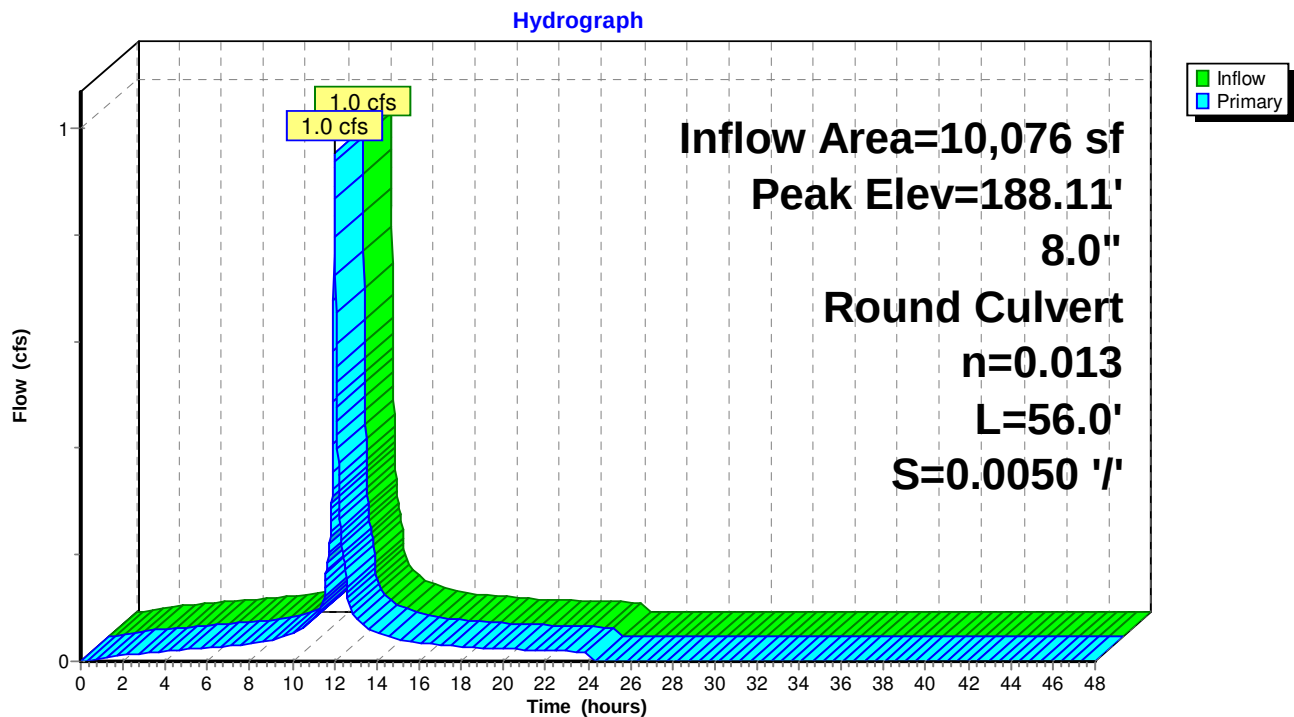
Peak Elev= 188.11' @ 12.03 hrs

Flood Elev= 189.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	187.28'	8.0" Round Culvert L= 56.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 187.28' / 187.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.0 cfs @ 12.03 hrs HW=188.10' TW=187.44' (Dynamic Tailwater)

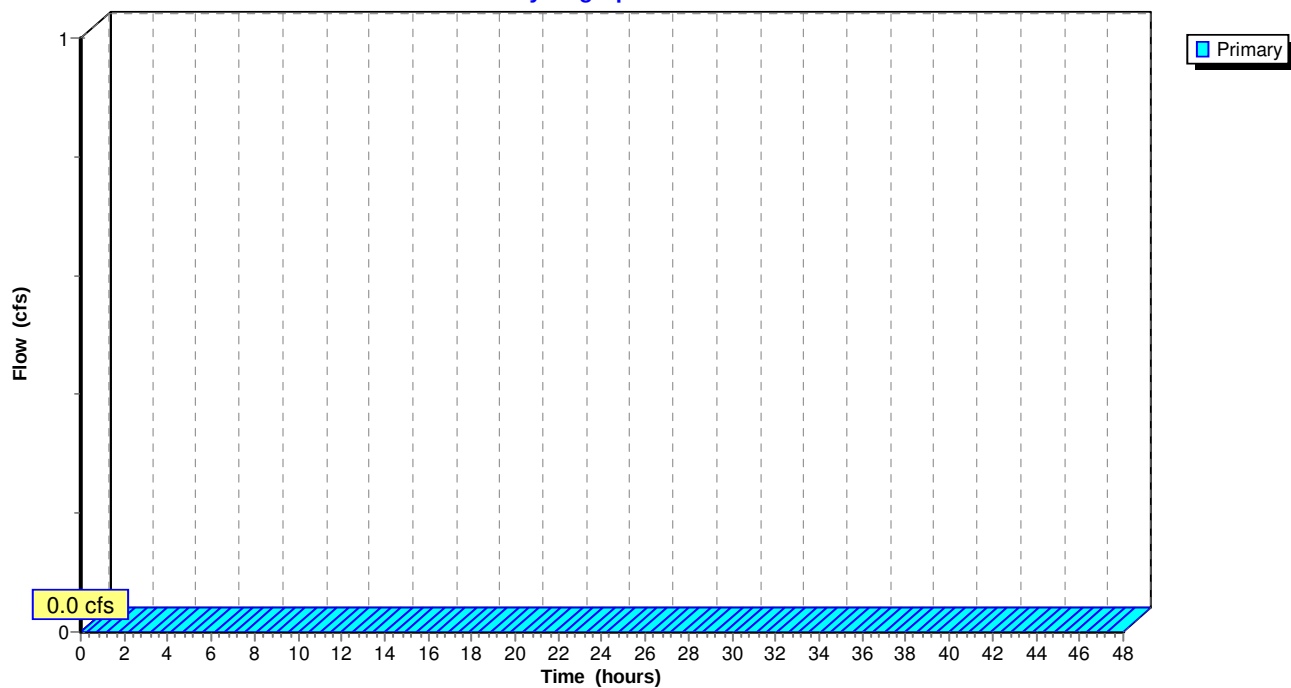
↑**1=Culvert** (Barrel Controls 1.0 cfs @ 2.82 fps)

Pond RD1: ROOF DRAIN 1

Summary for Link DPA: DP-A

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

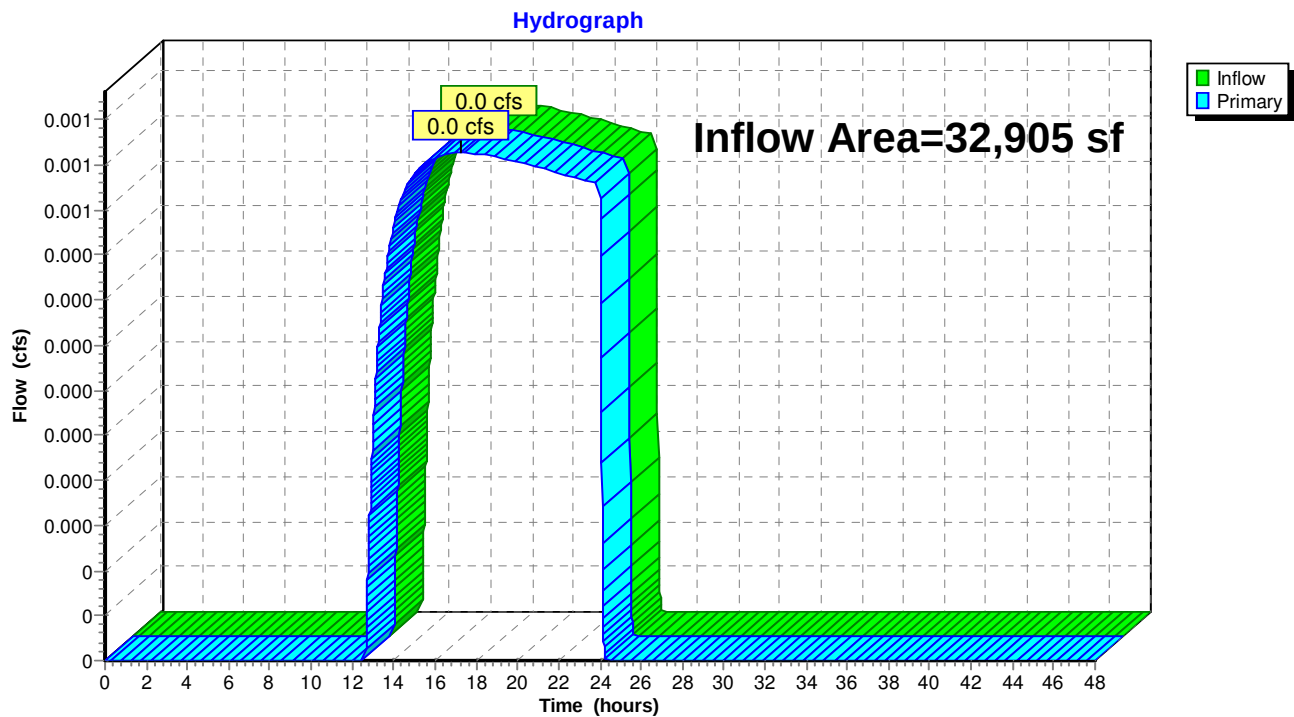
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link DPA: DP-A**Hydrograph**

Summary for Link DPB: DP-B

Inflow Area = 32,905 sf, 37.33% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 17.24 hrs, Volume= 21 cf
Primary = 0.0 cfs @ 17.24 hrs, Volume= 21 cf, Atten= 0%, Lag= 0.0 min

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

Link DPB: DP-B

A – 2

NODE LISTING – 25-YR

25044 -POST**25044 24-hr S1 25-yr Rainfall=5.98"**

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Page 1

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

Subcatchment A1: WS-A1	Runoff Area=15,876 sf 7.09% Impervious Runoff Depth=0.49" Flow Length=56' Tc=12.0 min CN=40 Runoff=0.0 cfs 653 cf
Subcatchment A2: WS-A2	Runoff Area=10,076 sf 100.00% Impervious Runoff Depth=5.74" Tc=5.0 min CN=98 Runoff=1.1 cfs 4,821 cf
Subcatchment A3: WS-A3	Runoff Area=1,313 sf 47.22% Impervious Runoff Depth=2.88" Flow Length=8' Slope=0.1338 '/' Tc=0.9 min CN=71 Runoff=0.1 cfs 315 cf
Subcatchment B1: WS-B1	Runoff Area=3,929 sf 11.73% Impervious Runoff Depth=0.61" Flow Length=29' Tc=2.0 min CN=42 Runoff=0.0 cfs 199 cf
Subcatchment B2: WS-B2	Runoff Area=7,834 sf 86.89% Impervious Runoff Depth=4.83" Flow Length=79' Tc=5.8 min CN=90 Runoff=0.8 cfs 3,151 cf
Subcatchment B3: WS-B3	Runoff Area=3,946 sf 46.27% Impervious Runoff Depth=2.43" Flow Length=28' Slope=0.2361 '/' Tc=1.9 min CN=66 Runoff=0.2 cfs 798 cf
Subcatchment B4: WS-B4	Runoff Area=1,420 sf 82.89% Impervious Runoff Depth=4.61" Tc=5.0 min CN=88 Runoff=0.1 cfs 545 cf
Subcatchment B5: WS-B5	Runoff Area=2,604 sf 100.00% Impervious Runoff Depth=5.74" Flow Length=34' Slope=0.0215 '/' Tc=0.5 min CN=98 Runoff=0.3 cfs 1,246 cf
Subcatchment B6: WS-B6	Runoff Area=1,711 sf 0.00% Impervious Runoff Depth=0.44" Flow Length=63' Tc=5.8 min CN=39 Runoff=0.0 cfs 63 cf
Subcatchment C1: WS-C1	Runoff Area=4,655 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=97' Tc=12.5 min CN=30 Runoff=0.0 cfs 27 cf
Subcatchment D1: WS-D1	Runoff Area=2,259 sf 0.00% Impervious Runoff Depth=0.44" Flow Length=50' Slope=0.0520 '/' Tc=5.6 min CN=39 Runoff=0.0 cfs 83 cf
Pond DE1: DRIP EDGE 1	Peak Elev=187.98' Storage=47 cf Inflow=0.1 cfs 315 cf Outflow=0.0 cfs 315 cf
Pond IB1: INFILTRATION BASIN 1	Peak Elev=187.93' Storage=1,111 cf Inflow=1.1 cfs 5,790 cf Discarded=0.2 cfs 5,790 cf Primary=0.0 cfs 0 cf Outflow=0.2 cfs 5,790 cf
Pond IB2: INFILTRATION BASIN 2	Peak Elev=188.01' Storage=1 cf Inflow=0.0 cfs 199 cf Discarded=0.0 cfs 199 cf Primary=0.0 cfs 0 cf Outflow=0.0 cfs 199 cf
Pond PP1: POROUS PAVEMENT 1	Peak Elev=187.34' Storage=438 cf Inflow=0.8 cfs 3,151 cf Outflow=0.2 cfs 3,151 cf
Pond PP2: POROUS PAVEMENT 2	Peak Elev=186.08' Storage=32 cf Inflow=0.2 cfs 798 cf Outflow=0.1 cfs 798 cf

25044 -POST**25044 24-hr S1 25-yr Rainfall=5.98"**

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Pond PP3: POROUS PAVEMENT 3Peak Elev=186.30' Storage=15 cf Inflow=0.1 cfs 545 cf
Outflow=0.1 cfs 545 cf**Pond PP4: POROUS PAVEMENT 4**Peak Elev=185.32' Storage=71 cf Inflow=0.3 cfs 1,246 cf
Outflow=0.1 cfs 1,246 cf**Pond RD1: ROOF DRAIN 1**Peak Elev=188.40' Inflow=1.1 cfs 4,821 cf
8.0" Round Culvert n=0.013 L=56.0' S=0.0050 '/ Outflow=1.1 cfs 4,821 cf**Link DPA: DP-A**

Primary=0.0 cfs 0 cf

Link DPB: DP-BInflow=0.0 cfs 63 cf
Primary=0.0 cfs 63 cf**Total Runoff Area = 55,623 sf Runoff Volume = 11,901 cf Average Runoff Depth = 2.57"**
55.60% Pervious = 30,927 sf 44.40% Impervious = 24,696 sf

A – 2

NODE LISTING – 50-YR

25044 -POST**25044 24-hr S1 50-yr Rainfall=7.14"**

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

Subcatchment A1: WS-A1	Runoff Area=15,876 sf 7.09% Impervious Runoff Depth=0.90" Flow Length=56' Tc=12.0 min CN=40 Runoff=0.1 cfs 1,185 cf
Subcatchment A2: WS-A2	Runoff Area=10,076 sf 100.00% Impervious Runoff Depth=6.90" Tc=5.0 min CN=98 Runoff=1.3 cfs 5,794 cf
Subcatchment A3: WS-A3	Runoff Area=1,313 sf 47.22% Impervious Runoff Depth=3.84" Flow Length=8' Slope=0.1338 '/' Tc=0.9 min CN=71 Runoff=0.1 cfs 420 cf
Subcatchment B1: WS-B1	Runoff Area=3,929 sf 11.73% Impervious Runoff Depth=1.05" Flow Length=29' Tc=2.0 min CN=42 Runoff=0.1 cfs 345 cf
Subcatchment B2: WS-B2	Runoff Area=7,834 sf 86.89% Impervious Runoff Depth=5.96" Flow Length=79' Tc=5.8 min CN=90 Runoff=0.9 cfs 3,891 cf
Subcatchment B3: WS-B3	Runoff Area=3,946 sf 46.27% Impervious Runoff Depth=3.31" Flow Length=28' Slope=0.2361 '/' Tc=1.9 min CN=66 Runoff=0.3 cfs 1,090 cf
Subcatchment B4: WS-B4	Runoff Area=1,420 sf 82.89% Impervious Runoff Depth=5.73" Tc=5.0 min CN=88 Runoff=0.2 cfs 678 cf
Subcatchment B5: WS-B5	Runoff Area=2,604 sf 100.00% Impervious Runoff Depth=6.90" Flow Length=34' Slope=0.0215 '/' Tc=0.5 min CN=98 Runoff=0.4 cfs 1,497 cf
Subcatchment B6: WS-B6	Runoff Area=1,711 sf 0.00% Impervious Runoff Depth=0.82" Flow Length=63' Tc=5.8 min CN=39 Runoff=0.0 cfs 117 cf
Subcatchment C1: WS-C1	Runoff Area=4,655 sf 0.00% Impervious Runoff Depth=0.24" Flow Length=97' Tc=12.5 min CN=30 Runoff=0.0 cfs 92 cf
Subcatchment D1: WS-D1	Runoff Area=2,259 sf 0.00% Impervious Runoff Depth=0.82" Flow Length=50' Slope=0.0520 '/' Tc=5.6 min CN=39 Runoff=0.0 cfs 154 cf
Pond DE1: DRIP EDGE 1	Peak Elev=188.38' Storage=74 cf Inflow=0.1 cfs 420 cf Outflow=0.0 cfs 420 cf
Pond IB1: INFILTRATION BASIN 1	Peak Elev=188.16' Storage=1,513 cf Inflow=1.3 cfs 7,399 cf Discarded=0.2 cfs 7,399 cf Primary=0.0 cfs 0 cf Outflow=0.2 cfs 7,399 cf
Pond IB2: INFILTRATION BASIN 2	Peak Elev=188.07' Storage=15 cf Inflow=0.1 cfs 345 cf Discarded=0.0 cfs 345 cf Primary=0.0 cfs 0 cf Outflow=0.0 cfs 345 cf
Pond PP1: POROUS PAVEMENT 1	Peak Elev=188.34' Storage=618 cf Inflow=0.9 cfs 3,891 cf Outflow=0.2 cfs 3,891 cf
Pond PP2: POROUS PAVEMENT 2	Peak Elev=186.16' Storage=65 cf Inflow=0.3 cfs 1,090 cf Outflow=0.1 cfs 1,090 cf

25044 -POST**25044 24-hr S1 50-yr Rainfall=7.14"**

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Pond PP3: POROUS PAVEMENT 3Peak Elev=186.34' Storage=26 cf Inflow=0.2 cfs 678 cf
Outflow=0.1 cfs 678 cf**Pond PP4: POROUS PAVEMENT 4**Peak Elev=185.38' Storage=96 cf Inflow=0.4 cfs 1,497 cf
Outflow=0.1 cfs 1,497 cf**Pond RD1: ROOF DRAIN 1**Peak Elev=188.64' Inflow=1.3 cfs 5,794 cf
8.0" Round Culvert n=0.013 L=56.0' S=0.0050 '/ Outflow=1.3 cfs 5,794 cf**Link DPA: DP-A**

Primary=0.0 cfs 0 cf

Link DPB: DP-BInflow=0.0 cfs 117 cf
Primary=0.0 cfs 117 cf**Total Runoff Area = 55,623 sf Runoff Volume = 15,264 cf Average Runoff Depth = 3.29"**
55.60% Pervious = 30,927 sf 44.40% Impervious = 24,696 sf

APPENDIX B

DESIGN

B – 1

**STORMWATER BEST MANAGEMENT
PRACTICES**



INFILTRATION PRACTICE CRITERIA (Env-Wq 1508.06)

Type/Node Name: **Infiltration Basin 1 (IB1)**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes	Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
0.62 ac	A = Area draining to the practice	
0.27 ac	A _I = Impervious area draining to the practice	
0.44 decimal	I = Percent impervious area draining to the practice, in decimal form	
0.44 unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.27 ac-in	WQV = 1" x R _v x A	
995 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
249 cf	25% x WQV (check calc for sediment forebay volume)	
Sediment Forebay		
	Method of pretreatment? (not required for clean or roof runoff)	
1,469 cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
2,800 cf	V = Volume ¹ (attach a stage-storage table)	≥ WQV
529 sf	A _{SA} = Surface area of the bottom of the pond	
5.00 iph	K _{sat} _{DESIGN} = Design infiltration rate ²	
4.5 hours	I _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
187.00 feet	E _{BTM} = Elevation of the bottom of the basin	
181.00 feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
181.00 feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
6.00 feet	D _{SHWT} = Separation from SHWT	≥ *³
6.0 feet	D _{ROCK} = Separation from bedrock	≥ *³
2.0 ft	D _{amend} = Depth of amended soil, if applicable due high infiltration rate	≥ 24"
ft	D _T = Depth of trench, if trench proposed	4 - 10 ft
Yes/No	If a trench or underground system is proposed, has observation well been provided?	← yes
	If a trench is proposed, does material meet Env-Wq 1508.06(k)(2) requirements. ⁴	← yes
yes Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0 :1	If a basin is proposed, pond side slopes.	≥ 3:1
187.71 ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
188.16 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
189.52 ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES	10 peak elevation ≤ Elevation of the top of the trench? ⁵	← yes
YES	If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. K_{sat}_{DESIGN} includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes: _____

Summary for Pond IB1: INFILTRATION BASIN 1

Inflow Area = 27,265 sf, 43.36% Impervious, Inflow Depth = 3.26" for 50-yr event
 Inflow = 1.3 cfs @ 12.03 hrs, Volume= 7,399 cf
 Outflow = 0.2 cfs @ 12.81 hrs, Volume= 7,399 cf, Atten= 84%, Lag= 46.8 min
 Discarded = 0.2 cfs @ 12.81 hrs, Volume= 7,399 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

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

Peak Elev= 188.16' @ 12.81 hrs Surf.Area= 1,873 sf Storage= 1,513 cf

Flood Elev= 189.52' Surf.Area= 4,627 sf Storage= 4,690 cf

Plug-Flow detention time= 50.6 min calculated for 7,398 cf (100% of inflow)

Center-of-Mass det. time= 50.6 min (843.5 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	187.00'	1,469 cf	SEDIMENT FOREBAY (Prismatic) Listed below (Recalc)
#2	187.00'	3,221 cf	INFILTRATION BASIN (Prismatic) Listed below (Recalc)
		4,690 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.00	213	0	0
189.00	1,256	1,469	1,469

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.00	529	0	0
189.00	1,441	1,970	1,970
189.52	3,371	1,251	3,221

Device	Routing	Invert	Outlet Devices
#1	Device 2	188.75'	48.0" W x 48.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	182.93'	12.0" Round Culvert L= 247.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 182.93' / 180.36' S= 0.0104 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Discarded	187.00'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 12.81 hrs HW=188.16' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.2 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=187.00' TW=0.00' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.0 cfs of 4.9 cfs potential flow)

↑ **1=Orifice/Grate** (Controls 0.0 cfs)

25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Stage-Area-Storage for Pond IB1: INFILTRATION BASIN 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
187.00	742	0	192.40	4,627	4,690
187.10	840	79	192.50	4,627	4,690
187.20	937	168	192.60	4,627	4,690
187.30	1,035	267	192.70	4,627	4,690
187.40	1,133	375			
187.50	1,231	493			
187.60	1,328	621			
187.70	1,426	759			
187.80	1,524	906			
187.90	1,622	1,064			
188.00	1,720	1,231			
188.10	1,817	1,408			
188.20	1,915	1,594			
188.30	2,013	1,791			
188.40	2,111	1,997			
188.50	2,208	2,213			
188.60	2,306	2,438			
188.70	2,404	2,674			
188.80	2,502	2,919			
188.90	2,599	3,174			
189.00	2,697	3,439			
189.10	3,068	3,602			
189.20	3,439	3,801			
189.30	3,810	4,038			
189.40	4,182	4,312			
189.50	4,553	4,623			
189.60	4,627	4,690			
189.70	4,627	4,690			
189.80	4,627	4,690			
189.90	4,627	4,690			
190.00	4,627	4,690			
190.10	4,627	4,690			
190.20	4,627	4,690			
190.30	4,627	4,690			
190.40	4,627	4,690			
190.50	4,627	4,690			
190.60	4,627	4,690			
190.70	4,627	4,690			
190.80	4,627	4,690			
190.90	4,627	4,690			
191.00	4,627	4,690			
191.10	4,627	4,690			
191.20	4,627	4,690			
191.30	4,627	4,690			
191.40	4,627	4,690			
191.50	4,627	4,690			
191.60	4,627	4,690			
191.70	4,627	4,690			
191.80	4,627	4,690			
191.90	4,627	4,690			
192.00	4,627	4,690			
192.10	4,627	4,690			
192.20	4,627	4,690			
192.30	4,627	4,690			



INFILTRATION PRACTICE CRITERIA (Env-Wq 1508.06)

Type/Node Name: **Infiltration Basin 2**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
0.09	ac	A = Area draining to the practice	
0.01	ac	A _I = Impervious area draining to the practice	
0.11	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.15	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
0.01	ac-in	WQV = 1" x R _v x A	
49	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
12	cf	25% x WQV (check calc for sediment forebay volume)	
NA		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
262	cf	V = Volume ¹ (attach a stage-storage table)	≥ WQV
207	sf	A _{SA} = Surface area of the bottom of the pond	
5.00	iph	K _{sat} _{DESIGN} = Design infiltration rate ²	
0.6	hours	I _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
188.00	feet	E _{BTM} = Elevation of the bottom of the basin	
180.00	feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
180.00	feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
8.00	feet	D _{SHWT} = Separation from SHWT	≥ *³
8.0	feet	D _{ROCK} = Separation from bedrock	≥ *³
2.0	ft	D _{amend} = Depth of amended soil, if applicable due high infiltration rate	≥ 24"
	ft	D _T = Depth of trench, if trench proposed	4 - 10 ft
	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←yes
		If a trench is proposed, does material meet Env-Wq 1508.06(k)(2) requirements. ⁴	← yes
yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0	:1	If a basin is proposed, pond side slopes.	≥3:1
188.00	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
188.07	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
189.94	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench? ⁵	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. K_{sat}_{DESIGN} includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes: _____

Summary for Pond IB2: INFILTRATION BASIN 2

Inflow Area = 3,929 sf, 11.73% Impervious, Inflow Depth = 1.05" for 50-yr event
 Inflow = 0.1 cfs @ 12.01 hrs, Volume= 345 cf
 Outflow = 0.0 cfs @ 12.22 hrs, Volume= 345 cf, Atten= 58%, Lag= 12.8 min
 Discarded = 0.0 cfs @ 12.22 hrs, Volume= 345 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

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

Peak Elev= 188.07' @ 12.22 hrs Surf.Area= 232 sf Storage= 15 cf

Flood Elev= 189.94' Surf.Area= 582 sf Storage= 395 cf

Plug-Flow detention time= 2.6 min calculated for 345 cf (100% of inflow)

Center-of-Mass det. time= 2.6 min (979.1 - 976.6)

Volume	Invert	Avail.Storage	Storage Description
#1	188.00'	395 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
188.00	207	0	0
189.00	582	395	395

Device	Routing	Invert	Outlet Devices
#1	Device 2	188.75'	24.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	182.26'	12.0" Round Culvert L= 190.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 182.26' / 180.36' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior Flow Area= 0.79 sf
#3	Discarded	188.00'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.0 cfs @ 12.22 hrs HW=188.07' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=188.00' TW=0.00' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.0 cfs of 5.9 cfs potential flow)

↑ **1=Orifice/Grate** (Controls 0.0 cfs)

25044 -POST**25044 24-hr S1 10-yr Rainfall=4.74"**

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Stage-Area-Storage for Pond IB2: INFILTRATION BASIN 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
188.00	207	0	190.70	582	395
188.05	226	11	190.75	582	395
188.10	244	23			
188.15	263	35			
188.20	282	49			
188.25	301	63			
188.30	320	79			
188.35	338	95			
188.40	357	113			
188.45	376	131			
188.50	395	150			
188.55	413	171			
188.60	432	192			
188.65	451	214			
188.70	469	237			
188.75	488	261			
188.80	507	286			
188.85	526	311			
188.90	545	338			
188.95	563	366			
189.00	582	395			
189.05	582	395			
189.10	582	395			
189.15	582	395			
189.20	582	395			
189.25	582	395			
189.30	582	395			
189.35	582	395			
189.40	582	395			
189.45	582	395			
189.50	582	395			
189.55	582	395			
189.60	582	395			
189.65	582	395			
189.70	582	395			
189.75	582	395			
189.80	582	395			
189.85	582	395			
189.90	582	395			
189.95	582	395			
190.00	582	395			
190.05	582	395			
190.10	582	395			
190.15	582	395			
190.20	582	395			
190.25	582	395			
190.30	582	395			
190.35	582	395			
190.40	582	395			
190.45	582	395			
190.50	582	395			
190.55	582	395			
190.60	582	395			
190.65	582	395			



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

Porous Pavement 1 (PP1)

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

☐ Yes	Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).		
0.18 ac	A = Area draining to the practice		
0.16 ac	A_i = Impervious area draining to the practice		
0.89 decimal	I = Percent impervious area draining to the practice, in decimal form		
0.85 unitless	R_v = Runoff coefficient = $0.05 + (0.9 \times I)$		
0.15 ac-in	WQV = 1" x R_v x A		
555 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")		
139 cf	25% x WQV (check calc for sediment forebay volume)		
417 cf	75% x WQV (check calc for surface sand filter volume)		
NA	Method of Pretreatment? (not required for clean or roof runoff)		
cf	V_{SED} = Sediment forebay volume, if used for pretreatment		$\geq 25\%WQV$
Calculate time to drain if system IS NOT underdrained:			
1,458 sf	A_{SA} = Surface area of the practice		
5.00 iph	K_{sat_DESIGN} = Design infiltration rate ¹		
no Yes/No	If K_{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)		
0.9 hours	T_{DRAIN} = Drain time = $V / (A_{SA} * I_{DESIGN})$		$\leq 72\text{-hrs}$
Calculate time to drain if system IS underdrained:			
ft	E_{WQV} = Elevation of WQV (attach stage-storage table)		
cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)		
- hours	T_{DRAIN} = Drain time = $2WQV/Q_{WQV}$		$\leq 72\text{-hrs}$
186.59 feet	E_{FC} = Elevation of the bottom of the filter course material ²		
- feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable		
178.00 feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)		
178.00 feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)		
186.59 feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course		$\geq 1'$
8.59 feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course		$\geq 1'$
8.59 feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course		$\geq 1'$
188.34 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)		
188.75 ft	Elevation of the top of the practice		
YES	50 peak elevation $\leq$ Elevation of the top of the practice		$\leftarrow$ yes
If a surface sand filter or underground sand filter is proposed:			
YES ac	Drainage Area check.		< 10 ac
cf	V = Volume of storage ³ (attach a stage-storage table)		$\geq 75\%WQV$
inches	D_{FC} = Filter course thickness		18", or 24" if within GPA
Sheet	Note what sheet in the plan set contains the filter course specification.		
Yes/No	Access grate provided?		$\leftarrow$ yes

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	≥ 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
	Asphalt	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	0.0 acres	A _{SA} = Surface area of the pervious pavement	
5.0	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	18.0 inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet	15	Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

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

Designer's Notes:

Summary for Pond PP1: POROUS PAVEMENT 1

Inflow Area = 7,834 sf, 86.89% Impervious, Inflow Depth = 5.96" for 50-yr event
 Inflow = 0.9 cfs @ 12.03 hrs, Volume= 3,891 cf
 Outflow = 0.2 cfs @ 11.74 hrs, Volume= 3,891 cf, Atten= 81%, Lag= 0.0 min
 Discarded = 0.2 cfs @ 11.74 hrs, Volume= 3,891 cf

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

Peak Elev= 188.34' @ 12.57 hrs Surf.Area= 1,458 sf Storage= 618 cf

Flood Elev= 188.42' Surf.Area= 1,458 sf Storage= 643 cf

Plug-Flow detention time= 15.7 min calculated for 3,891 cf (100% of inflow)

Center-of-Mass det. time= 15.7 min (807.5 - 791.8)

Volume	Invert	Avail.Storage	Storage Description
#1	185.84'	787 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
185.84	1,458	0.0	0	0
186.34	1,458	35.0	255	255
186.59	1,458	20.0	73	328
188.09	1,458	10.0	219	547
188.42	1,458	20.0	96	643
188.75	1,458	30.0	144	787

Device	Routing	Invert	Outlet Devices
#1	Discarded	185.84'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 11.74 hrs HW=185.87' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.2 cfs)



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

Porous Pavement 2 (PP2)

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

☐ Yes	Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.09 ac	A = Area draining to the practice	
0.04 ac	A _I = Impervious area draining to the practice	
0.44 decimal	I = Percent impervious area draining to the practice, in decimal form	
0.45 unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.04 ac-in	WQV = 1" x Rv x A	
147 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
37 cf	25% x WQV (check calc for sediment forebay volume)	
110 cf	75% x WQV (check calc for surface sand filter volume)	
NA	Method of Pretreatment? (not required for clean or roof runoff)	
cf	V _{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:		
1,134 sf	A _{SA} = Surface area of the practice	
5.00 iph	Ksat _{DESIGN} = Design infiltration rate ¹	
No Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
0.3 hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:		
ft	E _{WQV} = Elevation of WQV (attach stage-storage table)	
cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)	
- hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}	≤ 72-hrs
186.59 feet	E _{FC} = Elevation of the bottom of the filter course material ²	
- feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable	
178.00 feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
178.00 feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
186.59 feet	D _{FC to UD} = Depth to UD from the bottom of the filter course	≥ 1'
8.59 feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course	≥ 1'
8.59 feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course	≥ 1'
186.16 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
188.75 ft	Elevation of the top of the practice	
YES	50 peak elevation ≤ Elevation of the top of the practice	← yes
If a surface sand filter or underground sand filter is proposed:		
YES ac	Drainage Area check.	< 10 ac
cf	V = Volume of storage ³ (attach a stage-storage table)	≥ 75%WQV
inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet	Note what sheet in the plan set contains the filter course specification.	
Yes/No	Access grate provided?	← yes

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	≥ 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
	Asphalt	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	0.0 acres	A _{SA} = Surface area of the pervious pavement	
3.5	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	18.0 inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet	15	Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

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

Designer's Notes:

Summary for Pond PP2: POROUS PAVEMENT 2

Inflow Area = 3,946 sf, 46.27% Impervious, Inflow Depth = 3.31" for 50-yr event
 Inflow = 0.3 cfs @ 12.00 hrs, Volume= 1,090 cf
 Outflow = 0.1 cfs @ 11.95 hrs, Volume= 1,090 cf, Atten= 57%, Lag= 0.0 min
 Discarded = 0.1 cfs @ 11.95 hrs, Volume= 1,090 cf

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

Peak Elev= 186.16' @ 12.12 hrs Surf.Area= 1,134 sf Storage= 65 cf

Flood Elev= 188.42' Surf.Area= 1,134 sf Storage= 437 cf

Plug-Flow detention time= 1.6 min calculated for 1,090 cf (100% of inflow)

Center-of-Mass det. time= 1.6 min (877.8 - 876.2)

Volume	Invert	Avail.Storage	Storage Description
#1	186.00'	549 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
186.00	1,134	0.0	0	0
186.34	1,134	35.0	135	135
186.59	1,134	20.0	57	192
188.09	1,134	10.0	170	362
188.42	1,134	20.0	75	437
188.75	1,134	30.0	112	549

Device	Routing	Invert	Outlet Devices
#1	Discarded	186.00'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.95 hrs HW=186.03' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.1 cfs)



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: _____

Porous Pavement 3 (PP3)

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

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

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	≥ 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
	Asphalt	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	0.0 acres	A _{SA} = Surface area of the pervious pavement	
1.7	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	18.0 inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet	15	Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

- Designer's Notes:

Summary for Pond PP3: POROUS PAVEMENT 3

Inflow Area = 1,420 sf, 82.89% Impervious, Inflow Depth = 5.73" for 50-yr event
 Inflow = 0.2 cfs @ 12.03 hrs, Volume= 678 cf
 Outflow = 0.1 cfs @ 12.00 hrs, Volume= 678 cf, Atten= 44%, Lag= 0.0 min
 Discarded = 0.1 cfs @ 12.00 hrs, Volume= 678 cf

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

Peak Elev= 186.34' @ 12.11 hrs Surf.Area= 810 sf Storage= 26 cf

Flood Elev= 188.42' Surf.Area= 810 sf Storage= 271 cf

Plug-Flow detention time= 0.9 min calculated for 678 cf (100% of inflow)

Center-of-Mass det. time= 0.9 min (801.2 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1	186.25'	392 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
186.25	810	0.0	0	0
186.59	810	35.0	96	96
186.84	810	20.0	41	137
188.34	810	10.0	122	258
188.67	810	20.0	53	312
189.00	810	30.0	80	392

Device	Routing	Invert	Outlet Devices
#1	Discarded	186.25'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 12.00 hrs HW=186.28' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.1 cfs)



FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

Porous Pavement 4 (PP4)

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

☐ Yes	Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).		
0.06 ac	A = Area draining to the practice		
0.06 ac	A _I = Impervious area draining to the practice		
1.00 decimal	I = Percent impervious area draining to the practice, in decimal form		
0.95 unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)		
0.06 ac-in	WQV = 1" x R _v x A		
207 cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")		
52 cf	25% x WQV (check calc for sediment forebay volume)		
155 cf	75% x WQV (check calc for surface sand filter volume)		
NA	Method of Pretreatment? (not required for clean or roof runoff)		
cf	V _{SED} = Sediment forebay volume, if used for pretreatment		≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
1,134 sf	A _{SA} = Surface area of the practice		
5.00 iph	K _{sat} _{DESIGN} = Design infiltration rate ¹		
NO Yes/No	If K _{sat} (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)		
0.4 hours	T _{DRAIN} = Drain time = V / (A _{SA} * I _{DESIGN})		≤ 72-hrs
Calculate time to drain if system IS underdrained:			
ft	E _{WQV} = Elevation of WQV (attach stage-storage table)		
cfs	Q _{WQV} = Discharge at the E _{WQV} (attach stage-discharge table)		
- hours	T _{DRAIN} = Drain time = 2WQV/Q _{WQV}		≤ 72-hrs
185.72 feet	E _{FC} = Elevation of the bottom of the filter course material ²		
- feet	E _{UD} = Invert elevation of the underdrain (UD), if applicable		
178.00 feet	E _{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)		
178.00 feet	E _{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)		
185.72 feet	D _{FC to UD} = Depth to UD from the bottom of the filter course		≥ 1'
7.72 feet	D _{FC to ROCK} = Depth to bedrock from the bottom of the filter course		≥ 1'
7.72 feet	D _{FC to SHWT} = Depth to SHWT from the bottom of the filter course		≥ 1'
185.38 ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)		
187.88 ft	Elevation of the top of the practice		
YES	50 peak elevation ≤ Elevation of the top of the practice		← yes
If a surface sand filter or underground sand filter is proposed:			
YES ac	Drainage Area check.		< 10 ac
cf	V = Volume of storage ³ (attach a stage-storage table)		≥ 75%WQV
inches	D _{FC} = Filter course thickness		18", or 24" if within GPA
Sheet	Note what sheet in the plan set contains the filter course specification.		
Yes/No	Access grate provided?		← yes

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = Volume of storage ³ (attach a stage-storage table)	≥ WQV
	inches	D _{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	≥ 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
	Asphalt	Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	0.0 acres	A _{SA} = Surface area of the pervious pavement	
2.3	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	18.0 inches	D _{FC} = Filter course thickness	12", or 18" if within GPA
Sheet	15	Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

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

Designer's Notes:

Summary for Pond PP4: POROUS PAVEMENT 4

Inflow Area = 2,604 sf, 100.00% Impervious, Inflow Depth = 6.90" for 50-yr event
 Inflow = 0.4 cfs @ 11.99 hrs, Volume= 1,497 cf
 Outflow = 0.1 cfs @ 11.92 hrs, Volume= 1,497 cf, Atten= 64%, Lag= 0.0 min
 Discarded = 0.1 cfs @ 11.92 hrs, Volume= 1,497 cf

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

Peak Elev= 185.38' @ 12.11 hrs Surf.Area= 1,134 sf Storage= 96 cf

Flood Elev= 188.42' Surf.Area= 1,134 sf Storage= 545 cf

Plug-Flow detention time= 2.1 min calculated for 1,497 cf (100% of inflow)

Center-of-Mass det. time= 2.1 min (740.8 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	185.14'	545 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
185.14	1,134	0.0	0	0
185.47	1,134	35.0	131	131
185.72	1,134	20.0	57	188
187.22	1,134	10.0	170	358
187.55	1,134	20.0	75	433
187.88	1,134	30.0	112	545

Device	Routing	Invert	Outlet Devices
#1	Discarded	185.14'	5.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.92 hrs HW=185.17' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.1 cfs)

B – 2

POLLUTANT REMOVAL

CIVILWORKS NEW ENGLAND

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

Objective: In accordance with Chapter 153-14.A.3.b.1 runoff from impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus using appropriate treatment measures as specified in the NH Stormwater Manual, Volumes 1 and 2, December 2008, as amended.

Narrative: The subject parcel is 1.28 acres and located at 914 Central Avenue in Dover, NH. The site is currently developed in the commercial district with an existing building, parking lot, and drainage structures. The ground cover primarily consists of woods, lawn, and pavement. The project proposes the construction of a Childcare Development business which includes a 10,000-sf building, site access, grading, drainage, and utilities. The development proposes 0.562 acres of new impervious area including 0.231 acres of commercial roof and 0.331 acres of commercial/residential parking. The project proposes the treatment of all the new impervious cover through permeable pavement and infiltration basins. The proposed project will only increase the total impervious area of the site by 1% and will now include treatment practices. The proposed stormwater mitigation system provides the required pollutant removal per City of Dover standards.

Pollutant Loads: Pollutant loads were calculated in accordance with NH Stormwater Manual, Volume 1, December 2008 utilizing the Simple Method.

Polutant Load Equations		
Annual Load - Simple Method Equation:	$L = 0.226 * R * C * A$	
	L	Annual Load (lbs/yr)
	0.226	Unit Conversion Constant
	R	Annual Runoff (in)
	C	Pollutant Concentration (mg/l)
	A	Area (ac)
Annual Runoff (R) Equation:	$R = P * P_j * R_v$	
	R	Annual Runoff (in)
	P	Annual Rainfall (in)
	P _j	Rainfall Runoff Fraction (0.9)
	R _v	Runoff Coefficient
Runoff Coefficient (R _v) Equation:	$R_v = 0.05 + 0.9I_a$	
	R _v	Runoff Coefficient
	I _a	% Impervious Area (decimal form)

CIVILWORKS NEW ENGLAND

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

Runoff Coefficient (Rv): Dover requires the treatment of all impervious surfaces therefore the % Impervious Area (Ia) in decimal form is 1.

$$R_v = 0.05 + 0.9(1) = 0.95$$

Annual Runoff (R): U.S. Climate Data (<https://www.usclimatedata.com/climate/madbury/new-hampshire/united-states/usnh0285>) provides an average annual precipitation for Madbury, NH of 47.31 inches.

$$R = 47.31 \text{ in} * 0.9 * 0.95 = 40.45 \text{ in}$$

Annual Load (L): Utilizing the sites impervious areas of 0.231 ac of commercial roof, 0.331 ac of commercial/residential parking and the Event Mean Concentrations identified in Appendix D of the NH Stormwater Manual, Volume 1, December 2008 for Commercial Roof (9 mg/L TSS, 2.1 mg/L TN, and 0.14 mg/L TP) and Commercial/Residential Parking (27 mg/L TSS, 1.9 mg/L TN, and 0.15 mg/L TP) provides the following pollutant loads for the impervious development of the parcel.

Commercial Roof:

$$L_{TSS} = 0.226 * 40.45 \text{ in} * 9 \text{ mg/L} * 0.231 \text{ ac} = 19.03 \text{ lb/yr}$$

$$L_{TN} = 0.226 * 40.45 \text{ in} * 2.1 \text{ mg/L} * 0.231 \text{ ac} = 4.44 \text{ lb/yr}$$

$$L_{TP} = 0.226 * 40.45 \text{ in} * 0.14 \text{ mg/L} * 0.231 \text{ ac} = 0.30 \text{ lb/yr}$$

Commercial/Residential Parking:

$$L_{TSS} = 0.226 * 40.45 \text{ in} * 27 \text{ mg/L} * 0.331 \text{ ac} = 81.60 \text{ lb/yr}$$

$$L_{TN} = 0.226 * 40.45 \text{ in} * 1.9 \text{ mg/L} * 0.331 \text{ ac} = 5.74 \text{ lb/yr}$$

$$L_{TP} = 0.226 * 40.45 \text{ in} * 0.15 \text{ mg/L} * 0.331 \text{ ac} = 0.45 \text{ lb/yr}$$

Pollutant Removal Required: In accordance with City of Dover's Site Plan regulations, at a minimum, the following pollutant removal is required.

Pollutant Removal Required					
Pollutant	Commercial Roof	Commercial/ Residential Parking	Annual Load (lbs/yr)	% Removal	Removal Required (lbs/yr)
TSS	19.03	81.60	100.63	80%	80.51
TN	4.44	5.74	10.18	50%	5.09
TP	0.30	0.45	0.75	50%	0.37

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PHONE: 603.749.0443

Pollutant Removal Provided: The project proposes the treatment of 0.231 ac of roof and 0.331 ac of parking through permeable pavement, a stone drip edge, and two (2) Infiltration Basins. BMP Pollutant Removal Efficiency rates are provided in Appendix B of the NH Stormwater Manual, Volume 2, December 2008. Infiltration Basins provide 90% TSS, 60% TN, and 65% TP removal and Permeable Pavement (>75 ft from surface water) provide 90% TSS, 60% TN, and 65% TP removal.

Permeable Pavement (PP):

Permeable pavement captures and treats 0.280 acres of parking.

Permeable Pavement (PP)				
Pollutant	Commercial/ Residential Parking	Annual Load (lbs/yr)	% Removal	Removal Provided (lbs/yr)
TSS	69.10	69.10	90%	62.19
TN	4.86	4.86	60%	2.92
TP	0.38	0.38	65%	0.25

Infiltration Basin 1 (IB1):

IB1 captures and treats 0.040 acres of parking and 0.231 acres of roof.

Infiltration Basin 1 (IB1)					
Pollutant	Commercial Roof	Commercial/ Residential Parking	Annual Load (lbs/yr)	% Removal	Removal Provided (lbs/yr)
TSS	19.03	9.89	28.92	90%	26.03
TN	4.44	0.70	5.14	60%	3.08
TP	0.30	0.05	0.35	65%	0.23

Infiltration Basin (IB2):

Infiltration Basin 2 captures and treats 0.011 acres of parking.

Infiltration Basin 2 (IB2)				
Pollutant	Commercial/ Residential Parking	Annual Load (lbs/yr)	% Removal	Removal Provided (lbs/yr)
TSS	2.62	2.62	90%	2.36
TN	0.18	0.18	60%	0.11
TP	0.01	0.01	65%	0.01

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Total Pollutant Removal Rate Provided:

Pollutant Removal Provided					
Pollutant	PP	IB1	IB2	Removal Provided (lbs/yr)	Effective Removal Rate %
TSS	62.19	26.03	2.36	90.58	90%
TN	2.92	3.08	0.11	6.11	60%
TP	0.25	0.23	0.01	0.49	65%

Conclusion: The proposed mitigation measures implemented on site meet the minimum treatment rates for TSS, TN, and TP required by the City's regulations.

Typical Pollutant EMCs Found in Stormwater Runoff by Source Area*			
Source Area Unit	TSS mg/L	TP mg/L	TN mg/L ³
RESIDENTIAL (general) ⁴	100	0.40	2.2
Med. Density Residential ⁵	85	0.52	5.15
Residential roof	19 ¹	0.11 ²	1.5
Residential street	172 ¹	0.55 ²	1.4
Driveway	173 ¹	0.56 ²	2.1
COMMERCIAL (general) ⁵	77	0.33	2.97
Commercial roof	9 ¹	0.14 ²	2.1
Commercial street	468 ¹		
Commercial/ Residential parking	27 ¹	0.15 ²	1.9
INDUSTRIAL (general) ⁵	149	0.32	3.97
Industrial roof	17 ¹		
Industrial parking	228 ¹		
Heavy industrial	124 ¹		
HIGHWAY (general) ⁵	141	0.43	2.65
Urban highway	142 ¹	0.32 ²	3
Rural highway	51 ¹		22
Lawns	80 ¹	2.1 ²	9.1
Landscaping	37 ¹		
Urban open ⁵	51	0.11	1.74
Rural open/forest ⁵	51	0.11	1.78
Ag/pasture ⁵	145	0.37	5.98
Water/wetland ⁵	6	0.08	1.38
Sources: 1: Claytor and Schueler (1996) 2: Average of Steuer et al. (1997), Bannerman (1993) and Waschbusch (2000) 3: Steuer et al. (1997) 4: Caraco (2001), default values averaged from several individual assessments 5: Camp, Dresser, and McKee, <i>Merrimack River Watershed Assessment Study, Draft Screening Level Model</i> , January 2004.			

*To address the concerns associated with the application of chlorides and other deicing materials, NHDES requests the development of a Road Salt and Deicing Minimization Plan when a development will create one acre or more of pavement, including parking lots and roadways. The plan should address 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.

New Hampshire does not yet have salt reduction guidance, but recommends following the guidelines available in the Minnesota Snow and Ice Control handbook, available at: <http://www.mnltap.umn.edu/pdf/snowicecontrolhandbook.pdf>. Deicing application rate guidelines and a form for tracking salt and other deicer usage are included in Appendix C.

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

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

APPENDIX C

INSPECTION AND MAINTENANCE

C – 1

**STORMWATER MANAGEMENT SYSTEM
INSPECTION & MAINTENANCE PLAN**

Stormwater Management System Inspection & Maintenance Plan

Prepared for:

**PROPOSED CHILDCARE DEVELOPMENT
Tax Map 38, Lot 20**

**914 Central Avenue
Dover, New Hampshire
Strafford County**

September 2025

Prepared for:

**INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523**

Prepared By:

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



Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for INSITE DEVELOPMENT SERVICES, LLC. The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

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

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

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

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

Applicant:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523

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

Contact / Responsible Party:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523
Phone: (603) 592-3202

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

Management Company:

INSITE DEVELOPMENT SERVICES, LLC
1400 16th Street, Suite 300
Oak Brook, IL 60523

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

Inspection Schedule / Record Retention

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

I, the responsible party, understands and will fulfil the requirements of this report.

Applicant: _____

Stormwater Management System Components

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

- Pipes/Culverts
- Infiltration Basin
- Sediment Forebay
- Outlet Structure
- Catch Basins
- Stone Drip Edge
- Porous Pavement
- Pavement
- Litter / Trash Removal

Design elements are identified in the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

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

Inspection and Maintenance Plan

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

PIPES/CULVERTS:

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

INFILTRATION BASIN:

- Inspect and remove any debris from inlet and outlet structures.
- Remove any accumulated sediment.
- Inspect and repair outlet structures and appurtenances.
- Inspection of infiltration components at least twice annually and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Periodic mowing of basin and embankments.
- Removal of woody vegetation from basin and embankments.
- Inspection and repair of embankments and spillways.
- If an infiltration system does not drain within 72 hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including not limited to removal of accumulated sediments or reconstruction of the infiltration bottom.

SEDIMENT FOREBAY:

- Vegetation shall be removed.
- Inspect at least once per year.
- Inspect for sediment accumulation.
- Remove all debris immediately.

OUTLET STRUCTURE(S):

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

CATCH BASIN(S):

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6 ".
- 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.

STONE DRIP EDGE:

- Inspect twice annually and following any rainfall event exceeding 2.5 inches in a 24 hour period.
- If system does not drain within 72-hours following a rainfall event, a qualified engineer should inspect the system and determine measures required to restore the condition of the facility.
- Follow the University of New Hampshire's "Methods for Disposing Non-Native Invasive Plants" for disposing of invasive species (Attached).

POROUS PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Monitor periodically, at least twice annually, within 30 minutes of a precipitation event, to ensure that the pavement surface drains effectively after storms.
- Inspect for salt accumulation, sediment, organic debris, etc. and periodically clean (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.
- Deep cleaning/unclogging of pavement may be necessary if routine and periodic maintenance is not performed and is insufficient to maintain design infiltration rates.
- Inspect adjacent non-permeable pavement sections (1-2 times per year) and ensure they are free of debris/sediment to prevent tracking.
- Inspect adjacent vegetated areas (1-2 times per year) to ensure there are no signs of erosion and sediment/organic debris run-on to the porous pavement areas.
- Inspect areas (as needed) to ensure stock piling of snow, sand/salt, mulch, soil, yard waste, etc. is not occurring.
- Inspect pavement for damaged areas (as needed) and repair as they are identified. Repair in accordance with "UNHSC Design Specifications for Porous Asphalt Pavement and Infiltration Beds". (attached)
- Seal coating and repaving with impervious materials is prohibited.

PAVEMENT:

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

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS:

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

ANTI-ICING AND SALT MINIMIZATION:

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

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	- Check for clogging - Check for sediment accumulation	Remove when noticed Clean when necessary
Infiltration Basin	Bi-Annually	- Check for sediment accumulation - Check for debris - Inspect for woody vegetation - Maintain healthy stand of veg., 4" minimum - Inspect for invasive species - Check for water draining	Remove any accumulated Sediment Remove from inlet/outlet structures Remove Immediately Mow twice per year Remove/Dispose of accordingly 72 hours after a 2.5 inch storm event in a 24 hour period
Sediment Forebay	Annually	- Check for sediment accumulation - Check for woody vegetation growth - Check for debris - Remove vegetation	Remove/ Dispose of accordingly Remove vegetation
Outlet Structure	Annually	- Inspected 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	Annually	- Check for sediment accumulation - Check for floatable contaminants	≥ 1 ft. sediment depth Remove all floatables
Stone Drip Edge	Bi-Annually	- Check for sediment accumulation, debris, and invasive species. - Check for water draining	Remove any accumulated Sediment, debris, and invasive species and dispose of accordingly. 72 hours after a 2.5 inch storm event in a 24 hour period
Porous Pavement (PP) - Sanding - Salt Applications - Accumulated Salt - Sediment/Organic debris - Adj. Vegetated Areas - Underdrain Outlet - Trash/Debris - Pavement Condition - Stockpiles - Standing Water in Pavement	Limit use As Req. Winter/Spring 1-2 x's / yr 1-2 x's / yr Annually Periodically Annually Regularly 1-2 x's / yr Rain Event	Minimize use to prevent tracking issues RECORD APPLICATION RATES Inspect surface for salt accumulation Inspect surface for sediment/organics Inspect for erosion and prevent run-on to PP Inspect outlet for blockages Inspect for trash/debris Inspect for deteriorated pavement sections Inspect for stockpiled materials Inspect for standing water within 30 min of rain event	Vacuum to prevent issues Minimize as Req. Vacuum immediately Vacuum immediately Stabilize areas Remove blockage Remove when noticed Repair as identified Remove stockpiles Power wash or compressed air blower at 30 degrees or less
Pavement: - Sanding - Salt Applications - Sweep/Vacuum - Trash/Debris	Limit use As required 1 - 2 x's Year Periodically	- Minimize use to prevent tracking issues - RECORD APPLICATION RATES - Sweep or vacuum to prevent tracking issues - Check for trash/debris	Sweep to prevent issues Minimize (as required) Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

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

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance _____ Inspector: _____

[illegible]

Deicing Salt Quantity Use Log

[illegible]

Methods for Disposing Non-Native Invasive Plants

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



Tatarian honeysuckle

Lonicera tatarica

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

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

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

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

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

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

New Hampshire Regulations

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

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

How and When to Dispose of Invasives?

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

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

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

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

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

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

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

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



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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

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

January 2010

CHECKLIST FOR INSPECTION OF PERMEABLE PAVEMENT

Location:

Inspector:

Date:

Time:

Site Conditions:

Date Since Last Rain Event:

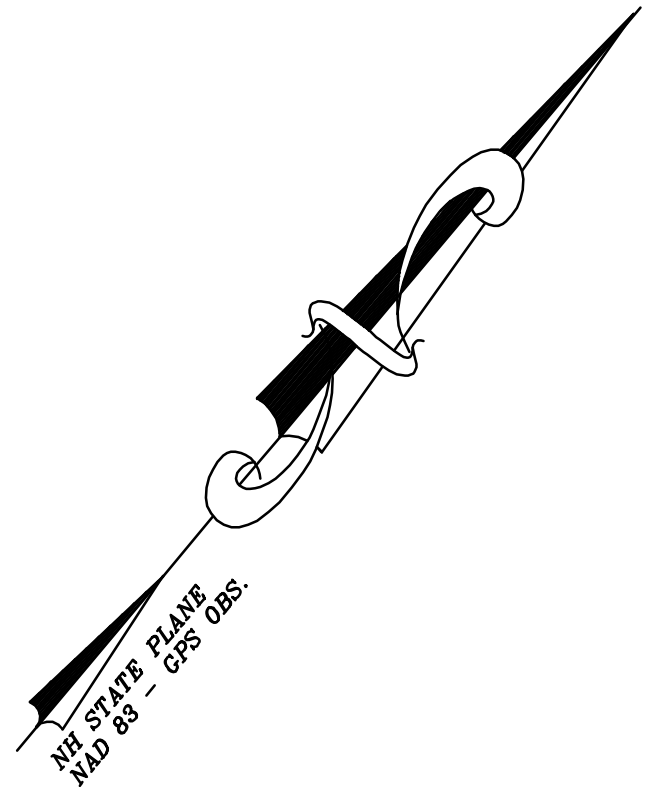
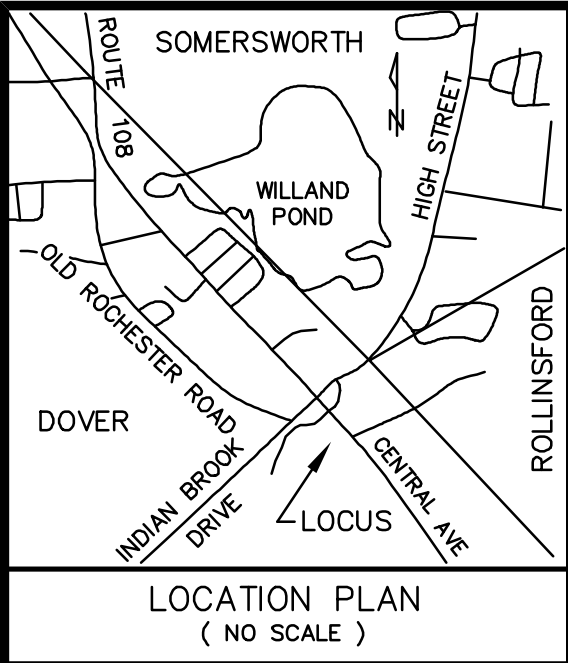
Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
1. Salt / Deicing (Winter/Spring)		
Use salt only for ice management	S U	
Accumulated salt removed in spring	S U	
2. Debris Cleanup (1-2 times per year minimum, Spring/Fall)		
Remove sediment and organic debris using vacuum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

APPENDIX D

WATERSHED PLANS

D – 1

PRE-DEVELOPMENT CONDITIONS



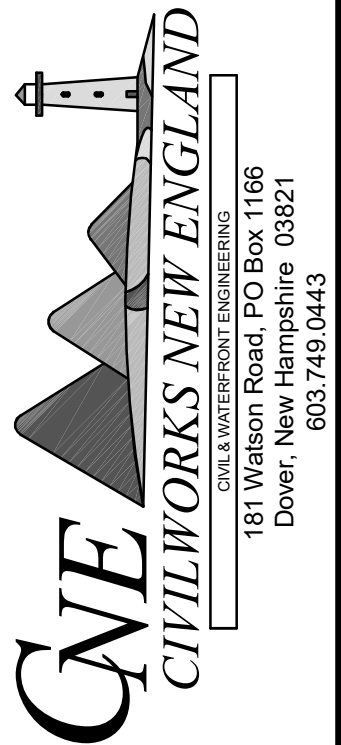
PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.58	230	9.1
B	0.46	181	5.6
C	0.12	97	12.5
D	0.12	88	6.6

LEGEND:

- EX 1' CONTOUR
- EX 10' CONTOUR
- PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- EXISTING TREELINE
- SUBCATCHMENT DESIGNATION

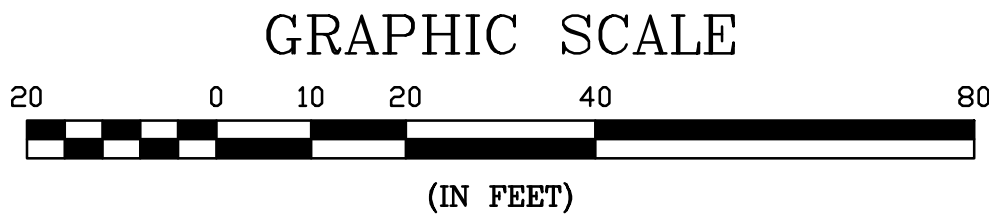
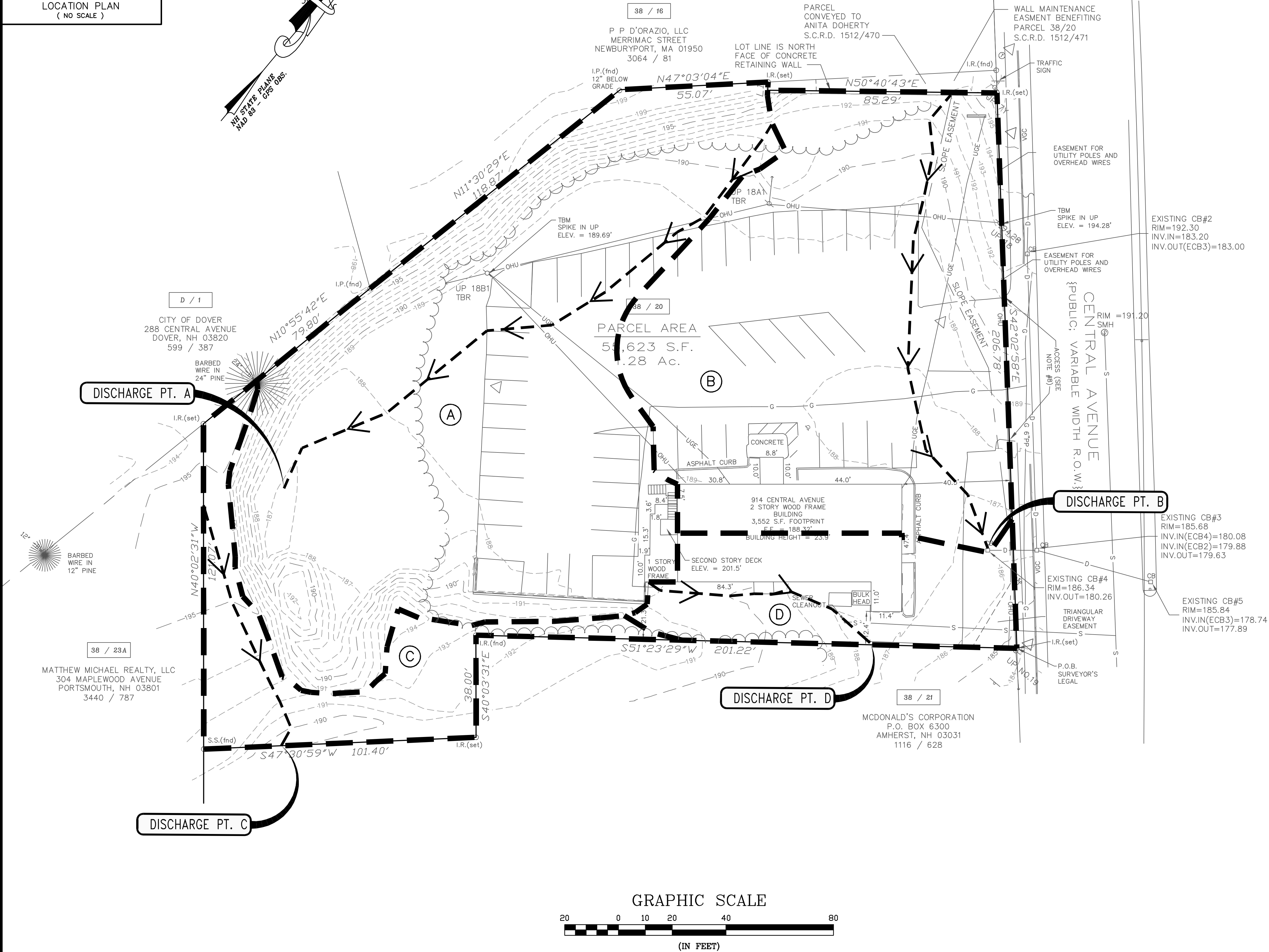
NOT FOR CONSTRUCTION FOR PERMIT USE ONLY



181 Watson Road, PO Box 1186
Dover, New Hampshire 03821
603.749.0443

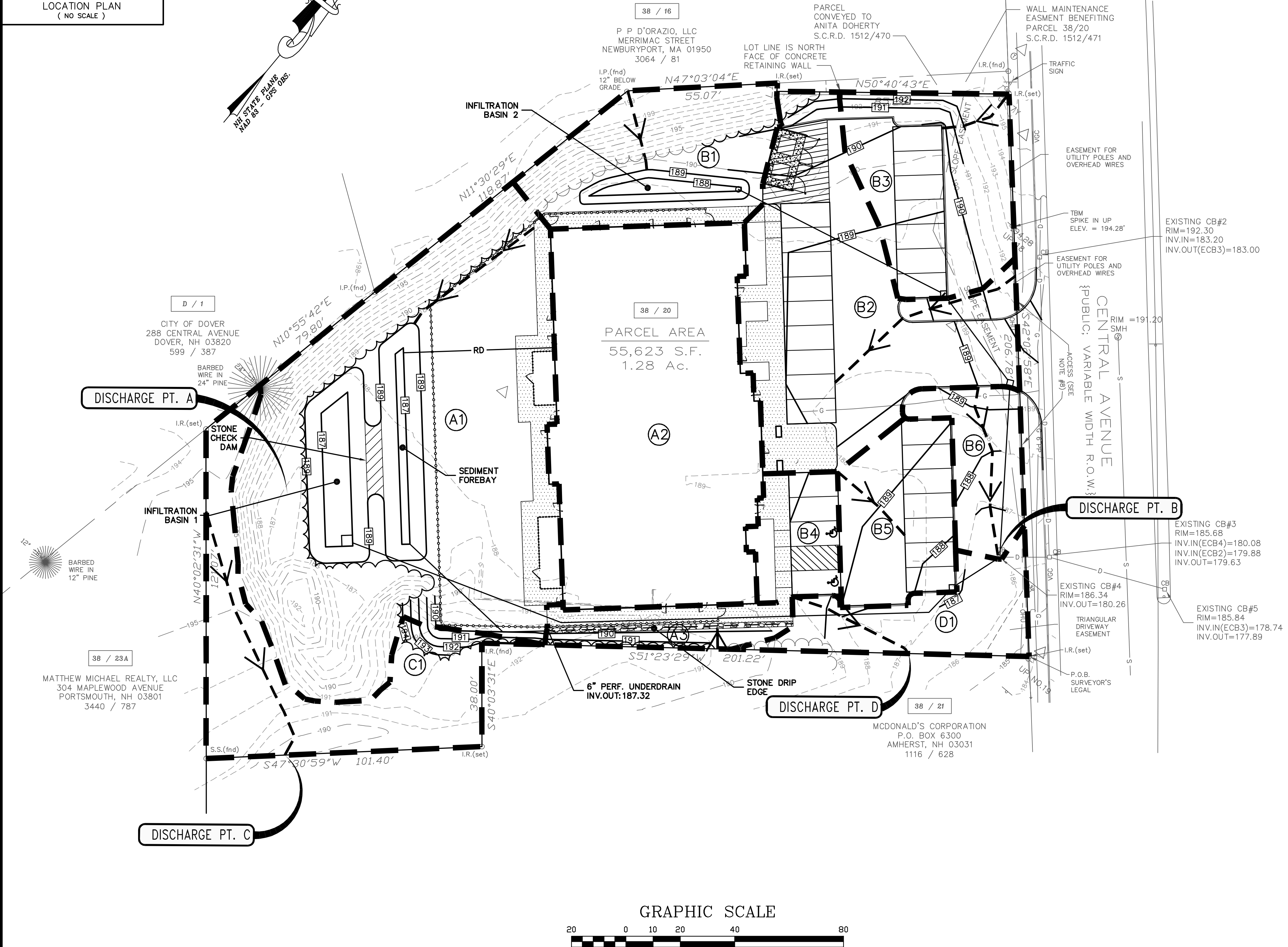
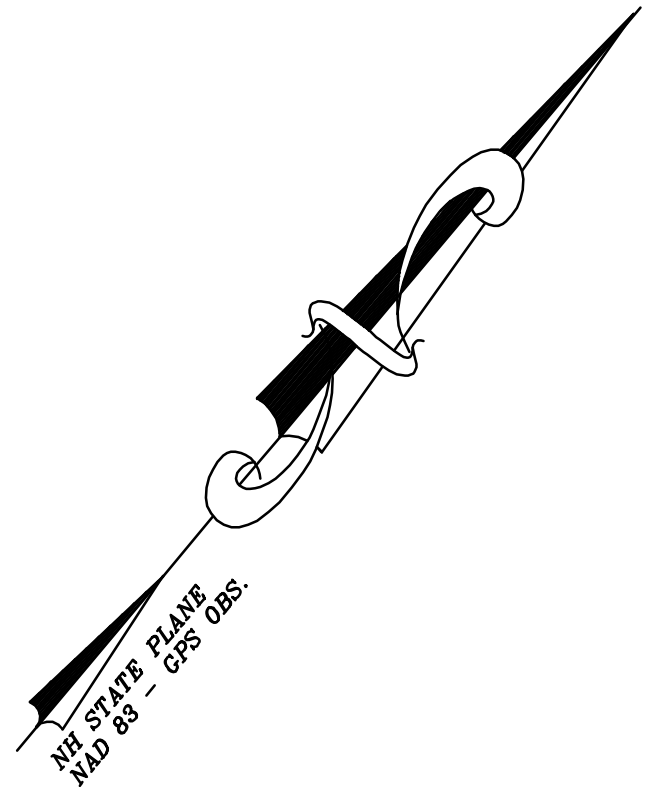
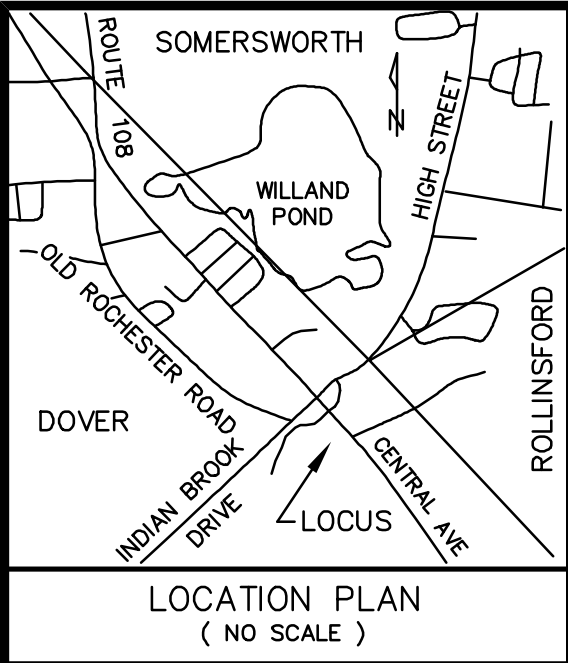
DATE	SCALE	DRAWN BY	APPROVED BY	PROJECT NO.	FILE/DRAINAGE	NO.	REVISION	APPD	DATE
9-18-25	1"=20'	MJM	MJM	25044					

PRE-DEVELOPMENT WATERSHED PLAN	CHILDCARE DEVELOPMENT FACILITY INSITE DEVELOPMENT SERVICES, LLC. 914 CENTRAL AVE DOVER, NH 03820	914 CENTRAL AVENUE, LLC. 199 NEW ZEALAND ROAD SEABROOK, NH 03874
WS-1		



D – 2

POST-DEVELOPMENT CONDITIONS

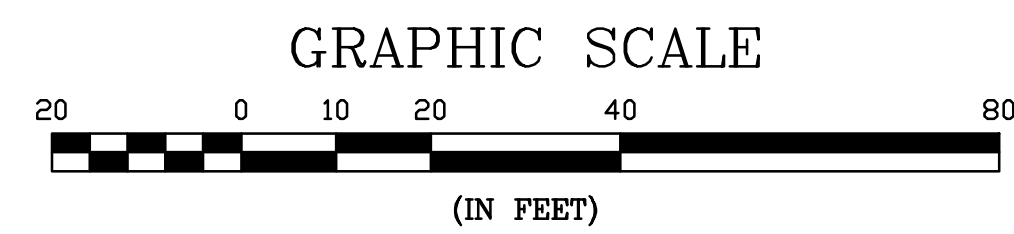


POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A1	0.36	56	12.0
A2	0.23	DIRECT	5.0
A3	0.03	8	0.9
B1	0.09	29	2.0
B2	0.18	79	5.8
B3	0.09	28	1.9
B4	0.03	DIRECT	5.0
B5	0.06	34	0.5
B6	0.04	63	5.8
C1	0.11	97	12.5
D1	0.05	50	5.6

LEGEND:

- EX 1' CONTOUR
- EX 10' CONTOUR
- PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED EDGE OF CURB
- PROPOSED GRADE
- PROPOSED FENCE
- PROPOSED BUILDING
- PROPOSED PARKING
- PROPOSED DRAINAGE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- A1 SUBCATCHMENT DESIGNATION



CNE
CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1186
Dover, New Hampshire 03821
603.749.0443

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE/DRAINAGE	NO.	REVISION	APPD	DATE
9-18-25	1"=20'	MJM	MJM	BYSJH	25044					

POST-DEVELOPMENT WATERSHED PLAN

CHILDCARE DEVELOPMENT FACILITY
INSITE DEVELOPMENT SERVICES, LLC
914 CENTRAL AVE
DOVER, NH 03820

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

WS-2

SITE DEVELOPMENT DESIGN CRITERIA NARRATIVE

§153-14

STORMWATER MANAGEMENT

for
InSite Development Services, LLC
914 Central Avenue
Tax Map 38, Lot 20

A. Stormwater management, erosion control and flood hazards.

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

(a) Managing stormwater runoff to protect water quality and quantity. **The proposed childcare development facility has been designed in accordance with NH DES AoT permitting requirements to include the treatment and mitigation of stormwater runoff from the site. This is being managed by two (2) Infiltration basins, porous pavement and overland flows, and catch basins for conveyance.**

(b) Minimizing the contribution of a pollutant for which a water body is impaired to the maximum extent practicable (MEP). **The proposed development has been designed in accordance with NH DES AoT permitting requirements to include the treatment of stormwater runoff from all impervious areas of the site to minimize pollutant runoff.**

(c) Causing no discharge of runoff to an adjacent property in excess of runoff discharge in the existing developed or undeveloped condition. **The proposed development does not propose an increase in the peak rate of runoff from the project site.**

(d) Encouraging the use of low-impact development (LID) strategies. **The project proposes the use of infiltration basins and porous pavement for stormwater treatment.**

(2) Applicability of the stormwater standards.

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

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

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

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

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

(3) Design standards.

(a) Minimum protections and management standards.

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

[2] Existing surface waters, including ponds, rivers, perennial and intermittent streams (natural or channelized), and wetlands (including vernal pools), shall be protected by the minimum buffer setback as specified in Chapter 170, Zoning, § 170-27.1. Stormwater and erosion and sediment control best management practices (BMPs) shall be located outside the specified buffer zone unless otherwise approved by the Planning Board. **The proposed project does not result in the impact of wetlands or buffers. Erosion control will be implemented on site at time of construction.**

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

[4] All proposed stormwater practices and measures shall be installed and maintained in accordance with manufacturers' specifications and performance specifications outlined in the New Hampshire Stormwater Management Manual Volume 2 (December 2008 or current revision) a copy of which can be found on The NHDES website. **The project incorporates stormwater BMP designed in accordance with NH DES AoT permitting requirements. Details provided for construction are aligned with the NH Stormwater Manual and the engineer of design will be required to review material submittals and witness the installation of the practices. A Stormwater Inspection and Maintenance Manual will be provided for the site that will outline BMP maintenance; the owner will be responsible for this in perpetuity.**

[5] All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials shall meet the regulations of the NHDES, including but not

limited to those involving underground storage tanks, aboveground storage tanks, hazardous waste, and best management practices for groundwater protection (Part Env Wq 401). **The project does not propose the storage of the referenced materials onsite.**

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

[7] The use of sodium-chloride-based materials for winter maintenance shall be the minimum necessary for safety. The use of sodium-chloride-based materials is discouraged within the groundwater protection districts. **The site will practice salt minimization. Also, the site will minimize sanding and salting on porous pavement areas.**

[8] Impervious surfaces for parking areas and roads shall be minimized to the extent possible. **The project design incorporated the minimization of impervious areas to the maximum extent possible. Porous Pavement is being utilized on site to minimize the impervious areas on site and to provide treatment prior to infiltration.**

[9] Stormwater runoff from new impervious surfaces shall be directed to a best management practice for flow mitigation, treatment and/or infiltration. **The proposed design includes the treatment of stormwater runoff from all impervious areas of the proposed site.**

(b) Stormwater management for new development.

[1] Runoff of impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus. Removal rates shall be determined using approved manufacturer's pollutant removal efficiency analysis or the pollutant removal efficiencies outlined in the New Hampshire Stormwater Management Manual Volume 1, Appendix E (December 2008 or current revision), a copy of which is available from the NHDES website. **The project utilizes infiltration basins and porous pavement for treatment of all impervious areas. This system provides 90% removal of TSS, 60% removal of total nitrogen, 65% removal of phosphorous per the NH Stormwater Manual.**

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

[3] Measures shall be taken to control the post-development peak rate runoff so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events. **The proposed design mitigates post-development peak rate runoff to the pre-developed conditions.**

[4] Measures shall be taken to control the post-development surface water runoff volume so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events. For sites where infiltration/recharge is limited or not practicable, the owner/applicant must demonstrate that the project will not cause or contribute to flooding or functional impairments to streets, adjacent properties, and

downstream properties. **Majority of the stormwater runoff on site will be infiltrated, utilizing the infiltration basin and porous pavement.**

[5] Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14. **The infiltration rates utilized on site were from NHDES Ksat values; this resulted in 100 micrometers/second which resulted in an infiltration rate of 14 in/hr. Because of this the soil will be amended down to 24" below the practice, to a 10 in/hr soil. After a factor of safety of 2, the infiltration rate utilized for the analysis is 5 in/hr.**

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

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

[8] The design of the stormwater management systems shall consider upstream and upgradient runoff that flows onto, over, or through the site to be developed or redeveloped and provide for this contribution of runoff. **The project has been designed to accommodate on-site and off-site drainage.**

[9] Seasonal high-water table elevations must be accounted for in all BMP design criteria. **Geotechnical Engineering Report by ECS Mid-Atlantic, LLC was utilized in determining the SHWT associated with the BMPs design.**

[10] Access for maintenance of stormwater facilities must be included as part of the design, where necessary. Access easements may be required. **A gate at the back of the fenced play area will provide access to infiltration basin 1.**

[11] Plantings in treatment areas shall be native grasses, shrubs and/or other native plants in sufficient numbers and density to prevent soil erosion and to achieve water-quality treatment. **N/A**

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

[1] For sites meeting the definition of a redevelopment project and having less than 40% existing impervious surface coverage, the stormwater management requirements will be the same as new development projects, with the important distinction that the applicant

can meet those requirements either on site or at an approved off-site location (i.e., off-site mitigation). The applicant must satisfactorily demonstrate that impervious area reduction, LID strategies and BMPs have been implemented on site to the MEP. **N/A**

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

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

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

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

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

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

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

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

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

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

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

[2] When a project requires a stormwater permit from the EPA Construction General Permit (CGP) Program, copies of the stormwater pollution prevention plan (SWPPP) inspections shall be provided to the Community Services Department. **If required, a SWPPP will be provided prior to construction.**

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

[4] The area of land disturbance shall be kept to a minimum and be limited to an area only large enough to accommodate construction activities for a particular construction phase. **The Erosion Control Notes in the provided plan set indicate that the smallest practical area shall be disturbed during construction and that in no case shall greater than 5 acres be disturbed at any time.**

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

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

[7] Perimeter site controls shall not be placed within wetland areas, stream channels or wetland buffers. **There are no wetlands or wetland buffers on site.**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[b] Description of the on-site and adjacent wetlands, streams and other water resources, including methods used to identify these resources, and a description of any buffer setbacks that may apply, steep slopes, critical habitat, existing vegetation, areas with a 1% chance of being inundated by water in any given year, and whether any downstream water bodies are listed as impaired according to NHDES's most recent 303(d) list. **The SWMP documents include the proposed information when applicable, more specifically in the existing conditions plan.**

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

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

include the proposed information when applicable, more specifically in the drainage report.

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

[f] Description of proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns. **The SWMP documents include the proposed information when applicable, more specifically in the drainage report, and Grading, Drainage, & Erosion Plan.**

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

[h] Methods and assumptions used to calculate the pollutant load removal. **The SWMP documents include the proposed information when applicable, more specifically in the drainage report.**

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

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

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

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

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

[n] Descriptions, details, and design criteria and calculations for all structural, nonstructural, permanent, and temporary erosion and sedimentation control measures and BMPs. This information should include seeding mixtures and rates, types of sod, methods of seedbed preparation, expected seeding dates (or limitations on seeding time frames), type and rate of lime and fertilizer application, and type and quantity of mulching for temporary and permanent control facilities. **The SWMP documents include the proposed information when applicable, more specifically in the erosion control note sheet and landscape O&M.**

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

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

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

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

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

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

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

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

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

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

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

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

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

[e] A site plan clearly identifying the locations of all stormwater practices to be inspected and maintained. **The approved Grading and Drainage Plan, where BMPs are highlighted in a BMP Location Plan, accompanies the I&M Manual.**

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

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

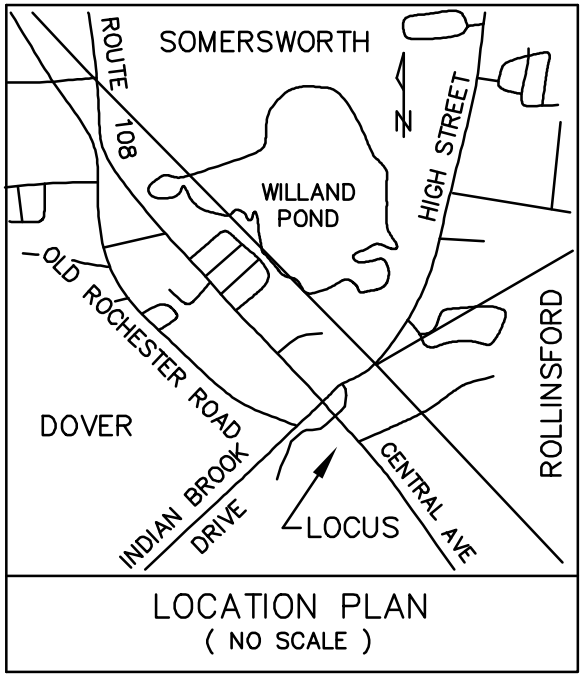
SITE PLAN
FOR
CHILDCARE
DEVELOPMENT FACILITY

TAX MAP 38, LOT No. 20

914 CENTRAL AVE

DOVER, NH

SEPTEMBER 2025



OWNER

914 CENTRAL AVENUE LLC.
199 NEW ZEALAND RD
SEABROOK, NH 03874

DATE

APPLICANT

INSITE DEVELOPMENT SERVICES, LLC.
1400 16TH ST
SUITE 300
OAK BROOK, IL 60523

DATE

SITE CIVIL ENGINEER



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

LAND SURVEYOR

LANDSCAPE ARCHITECT

ROMY N. MAURER, PLA, ASLA
TERRAIN PLANNING & DESIGN LLC.
311 KAST HILL ROAD
HOPKINTON, NH 03229
(603) 746-3512

PERMIT SUMMARY/ WAIVER SUMMARY:

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

N/A
- 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.

SITE PLAN: SITE-2025-XXXX PENDING

CONDITIONAL USE PERMIT: COND-2025-XXXX PENDING
- WAIVERS APPROVED: THE PLANNING BOARD HAS FOUND THE CRITERIA OF CHAPTER 153-21 HAVE BEEN MET AND HAVE BEEN APPROVED THE FOLLOWING WAIVERS, DATE: PENDING:

* A WAIVER REQUEST FROM 153-13K (1)(b) TO ALLOW PARKING IN FRONT OF BUILDING.

NOTE:
LANDSCAPING BOND OR OTHER FORM OF SECURITY ACCEPTABLE TO THE CITY FOR A PERIOD OF 3 YEARS AFTER CERTIFICATION OF OCCUPANCY IS ISSUED TO ENSURE LANDSCAPING IS MAINTAINED OR REPLACED IF NEEDED.

SHEET INDEX	
COVER SHEET	
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	
NEIGHBORHOOD PLAN	
NOTE SHEET	
DEMOLITION PLAN	
SITE PLAN	
GRADING, DRAINAGE & EROSION CONTROL PLAN	
UTILITY PLAN	
LIGHTING PLAN	
LIGHTING DETAILS	
EROSION CONTROL NOTES	
EROSION CONTROL DETAILS	
DETAILS	
TRUCK MOVEMENT PLAN	
LANDSCAPE PLANS (BY TERRAIN PLANNING & DESIGN)	
LANDSCAPE PLAN	
LANDSCAPE DETAILS	
ARCHITECTURAL PLANS (BY ADA ARCHITECTS)	
FLOOR PLAN	
ATTIC PLAN	
ROOF PLAN	
EXTERIOR ELEVATIONS	
BUILDING SECTIONS	
STREET SCAPE PLAN	

SHEET

1
2
3
4
5
6
7
8
9
10
11
12
13 - 16
17

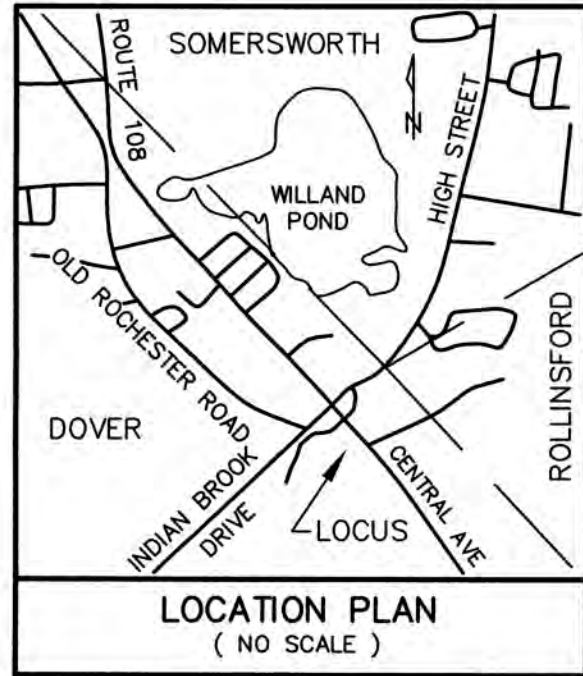
SHEET

L-1
L-2

SHEET

A-1.0
A-2.1
A-3.0
A-4.0
A-5.0
RE-1.0

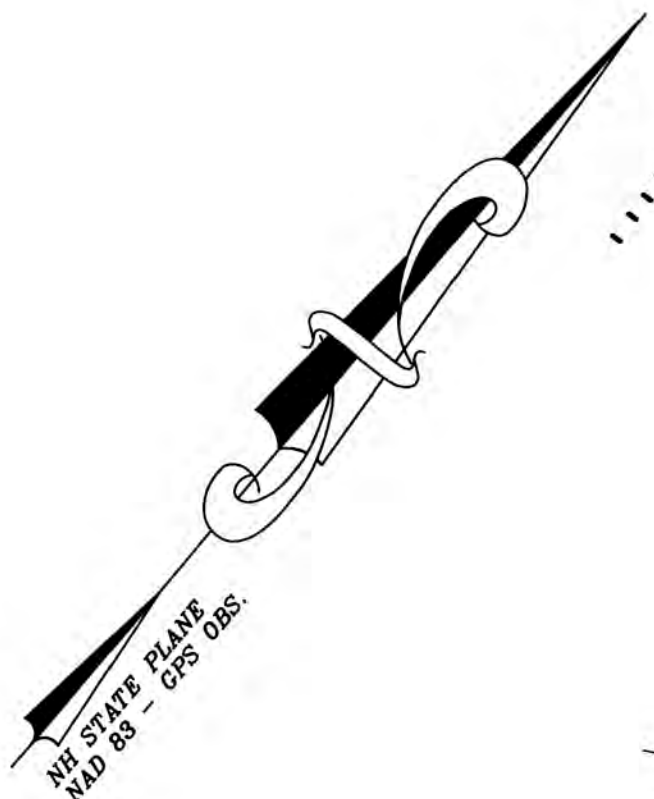
PLANNING FILE NO.: SITE - 2025 - XXXX



No.	Bearing	Distance
L1	S36°56'38"E	3.03'

REFERENCE PLANS:

- 1.) PLAN OF LAND, NESTOR J. BELLETETE, DOVER, NEW HAMPSHIRE;
SCALE: 1" = 40'; DATED NOVEMBER 1955; BY G.L. DAVIS &
ASSOCIATES; RECORDED S.C.R.D. PLAN 28, POCKET 2, FOLDER 21.
- 2.) PLAN OF PROPERTIES IN DOVER, NH, No. 912 CENTRAL AVENUE,
STRAFFORD COUNTY, PREPARED FOR: McDONALD'S CORPORATION,
LOCATION 28-022; SCALE: 1" = 20'; DATED: DECEMBER 3, 1994, REV.
MARCH 29, 1995; BY: GOLDEN LAND SURVEY, INC.; RECORDED S.C.R.D.
PLAN 45-81.
- 3.) NHDOT HIGHWAY PLAN, FEDERAL PROJECT No. STP-X-027-1(35),
STATE PROJECT No. 10023-E; BY: CARON ENGINEERING; DATED:
FEBRUARY 1993; RECORDED S.C.R.D. PLAN BOOK 56, PAGES 68 & 82.



MATTHEW MICHAEL REALTY, LLC
304 MAPLEWOOD AVENUE
PORTSMOUTH, NH 03801
3440 / 787

CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
599 / 387

BARBED WIRE IN
24" PINE

I.R.(set)
N = 263339.63
E = 1192114.76

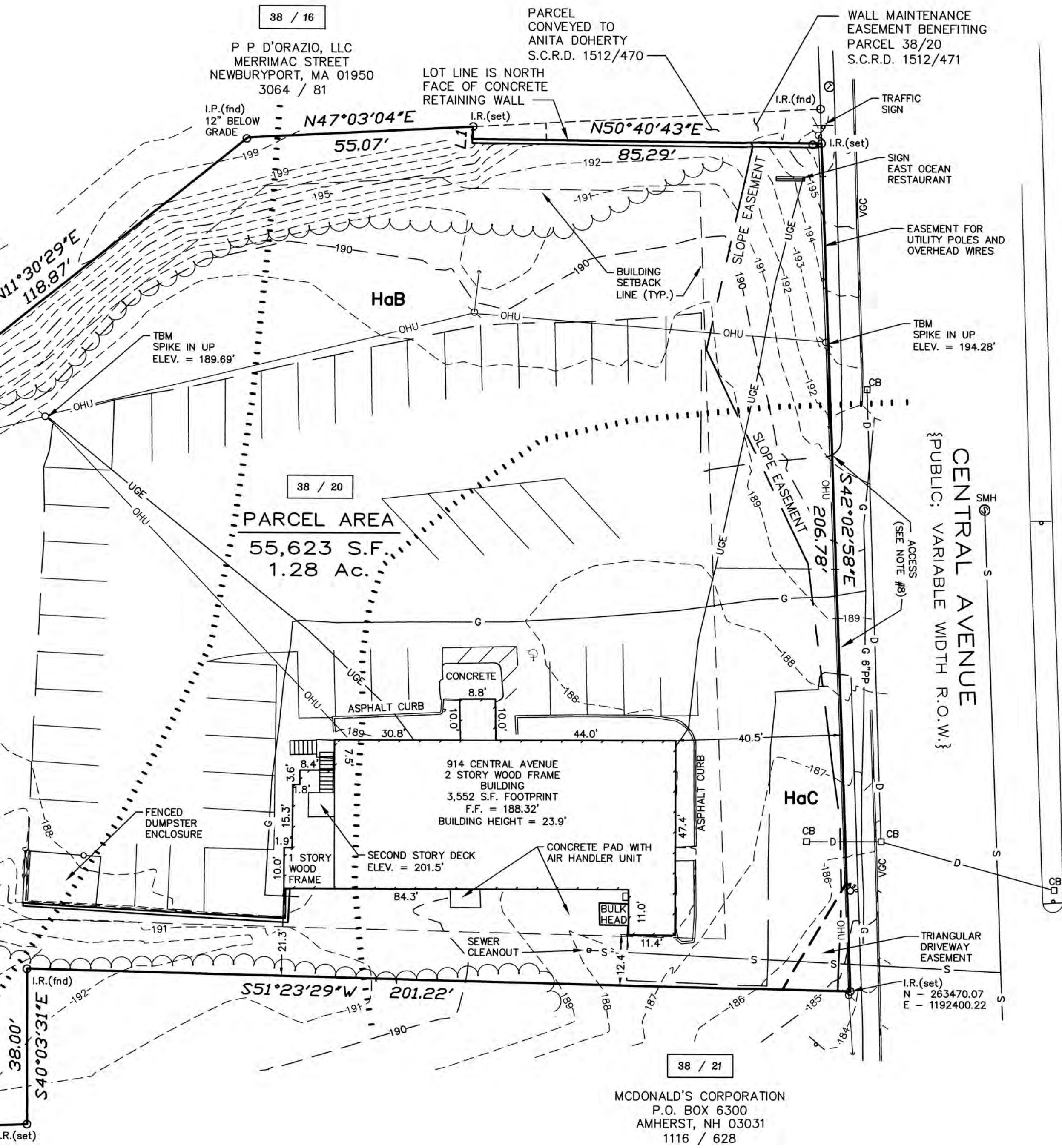
38 / 23A

LEGEND

S.S.(fnd) - STEEL STAKE FOUND
I.R.(fnd) - IRON ROD FOUND
I.R.(set) - IRON ROD SET
I.P.(fnd) - IRON PIPE FOUND
S.C.R.D. - STRAFFORD COUNTY
REGISTRY OF DEEDS
xxx / xxx - BOOK No. / PAGE No.
S.F. - SQUARE FEET
Ac. - ACRES
F.F. - FINISHED FLOOR ELEVATION
UP - UTILITY POLE
OHU - OVERHEAD UTILITY WIRES
UGE - UNDERGROUND ELECTRIC
G - GAS LINE
PP - PLASTIC PIPE
D - DRAINAGE LINE
S - SEWER LINE

190 - CONTOUR LINE (2' INTERVAL)
TBM - TEMPORARY BENCH MARK
P.O.B. - POINT OF BEGINNING
CB - CATCH BASIN
SMH - SEWER MANHOLE
S - WATER SHUTOFF
S - SIGN
- EXISTING TREE LINE
T - TELECOMMUNICATIONS MANHOLE
VGC - VERTICAL GRANITE CURB
H - HANDICAP PARKING SPACE DESIGNATION
- SOIL LINE
HaB - SOIL TYPE DELINEATION

NO.	DATE	DESCRIPTION	BY	CHK
REVISIONS				
25044	EXIST. COND.	25-03	47-53	
PROJECT NO	TYPE	FIELDBOOK & PAGES		

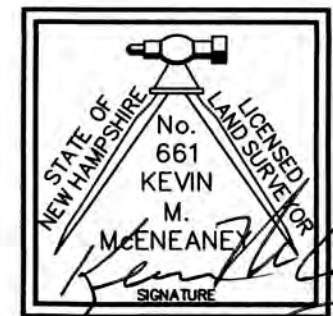
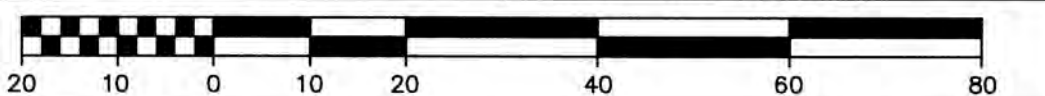


NOTES:

- 1.) OWNER OF RECORD:
914 CENTRAL AVENUE, LLC
199 NEW ZEALAND ROAD
SEABROOK, NH 03874
S.C.R.D. VOLUME 5108, PAGE 1037
- 2.) 38 / 20 - DENOTES TAX MAP AND PARCEL NUMBER.
- 3.) PARCEL AREA = 55,623 S.F. / 1.28 Ac.
- 4.) THE INTENT OF THIS PLAN IS TO DEPICT THE PARCEL BOUNDARY
AND EXISTING SITE CONDITIONS AS OF MAY 8, 2025.
- 5.) ZONING DISTRICT: COMMERCIAL DISTRICT (C)
DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = 20,000 S.F.
MAXIMUM LOT COVERAGE = 50 PERCENT
MINIMUM FRONTAGE = 125 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT SETBACK = 30 FEET
SIDE SETBACK = 12 FEET
REAR SETBACK = 15 FEET
MAXIMUM BUILDING HEIGHT = 40 FEET
- 6.) THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD
HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP
33017C0310E, EFFECTIVE DATE 9/30/2015.
- 7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL
DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED APRIL 30,
2025.
- 8.) ACCESS NOTE: THE PARCEL IS ACCESSED FROM CENTRAL AVENUE IN
ONE (1) LOCATION AS SHOWN.
- 9.) THE SUBJECT PARCEL IS SERVED BY MUNICIPAL SEWER AND WATER
SUPPLY.
- 10.) 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.
- 11.) PARKING SPACES PROVIDED = 47 STRIPED SPACES, INCLUDING ONE
ACCESSIBLE SPACE.
- 12.) THE SOIL TYPES ON THE SITE ARE:
HaB HINCKLEY LOAMY SAND, 3 TO 8 PERCENT SLOPES
HaC HINCKLEY LOAMY SAND, 8 TO 15 PERCENT SLOPES
HbE HINCKLEY LOAMY SAND, 15 TO 60 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL
SURVEY <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

EXISTING CONDITIONS PLAN
PREPARED FOR
914 CENTRAL AVENUE, LLC
TAX MAP 38, LOT No. 20
914 CENTRAL AVENUE
CITY OF DOVER
COUNTY OF STRAFFORD
STATE OF NEW HAMPSHIRE

DRAWN BY: KJF FILE: P\25044\SD\25044 EC
SCALE: 1" = 20' DATE: MAY 12, 2025



McEaney
Survey
Associates
of NEW ENGLAND

P.O. Box 1166 - 181 WATSON ROAD
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

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

DOVER NOTES:

1. THE OWNERS OF RECORD:
914 CENTRAL AVENUE, LLC
199 NEW ZEALAND ROAD
SEABROOK, NEW HAMPSHIRE 03874
S.C.R.D. VOL. 5108, PAGE 1037
2.

38 / 20

 - DENOTES TAX MAP AND PARCEL NUMBER.
3. PLAN INTENT: IS TO SHOW SITE IMPROVEMENTS FOR A 10,075 S.F. CHILDCARE DEVELOPMENT FACILITY WITH THE ASSOCIATED WATER, STORMWATER, AND UTILITY IMPROVEMENTS.
4. PARCEL AREA = 55,623 S.F. / 1.28 Ac.
5. ZONING DISTRICT: COMMERCIAL DISTRICT (C):

	REQUIRED	PROPOSED
MINIMUM LOT SIZE	= 20,000 S.F.	55,623
LOT COVERAGE	= 50 PERCENT	±44%
MINIMUM FRONTAGE	= 125 FEET	207 FEET
FRONT SETBACK	= 30 FEET	95.35 FEET
SIDE SETBACK	= 12 FEET MIN.	12.93 FEET
REAR SETBACK	= 15 FEET MIN.	126 FEET
BUILDING HEIGHT	= 40 FEET MAX.	±27'1"
6. THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0310E, EFFECTIVE DATE 9/30/2015.
7. BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED APRIL 30, 2021.
8. ACCESS NOTE: THE PARCEL IS ACCESSED FROM CENTRAL AVENUE IN ONE (1) LOCATION AS SHOWN.
9. 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.
- 10.PARKING SPACE PROVIDED: 27 STRIPED SPACES, INCLUDING TWO ACCESSIBLE SPACES.
- 11.THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS.
- 12.LIST ANY VARIANCE 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. (SEE PERMIT SUMMARY/WAIVER SUMMARY)
- 13.AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT.
- 14.THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
- 15.THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
- 16.ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- 17.EROSION CONTROL NOTES INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
- 18.THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
- 19.ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
- 20.A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
- 21.A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
- 22.SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM AND SATURDAYS AND SUNDAYS 7AM-4PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR. WORK PRECLUDED ON SUNDAYS AND FEDERAL HOLIDAYS.
- 23.BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS, IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
- 24.THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: (SEE PERMIT SUMMARY/WAIVER SUMMARY)
- 25.COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
- 26.ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
- 27.ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
- 28.APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
HTTPS://PTAPP.UNH.EDU/
- 29.IF APPLICABLE, 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.
- 30.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.
- 31.THE MAXIMUM PARKING SPACE CALCULATION IS 15, INCLUDING 1 ACCESSIBLE SPACES, WHILE 15, INCLUDING 1 ACCESSIBLE SPACES, ARE PROVIDED.

DOVER NOTES CONTINUED:

32. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
33. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATE, JANUARY 2021.
34. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.
35. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER. (AS APPLICABLE)
36. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
37. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
38. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
39. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
40. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.
41. DESIGN ENGINEER SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
42. ALL MANHOLE COVERS SHALL BE LIFTMATE R-1743-LM OR APPROVED EQUAL WITH 90 DEGREE HINGE.
43. REQUIRED BLASTING AND EXCAVATION - DOVER FIRE DEPARTMENT SHALL BE NOTIFIED PRIOR TO ANY BLASTING ACTIVITIES AND A BLASTING PERMIT FROM THE DOVER FIRE DEPARTMENT MUST BE OBTAINED.
44. THE WATER MAIN SHALL BE POLY WRAPPED IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS.
45. ALL SEWER MAINS AND MANHOLES SHALL BE TESTED IN ACCORDANCE WITH NHDES ENV-WQ 700 REQUIREMENTS. COPIES OF TEST RESULTS SHALL BE PROVIDED TO THECITY OF DOVER ENGINEERING DEPARTMENT.
46. WETLAND PLACARDS SHOULD IDENTIFY THE NO CUT WETLAND BUFFER AND SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION AND AFTER.
47. ALL FITTINGS MUST BE CLASS 140 WATER FITTINGS.
48. ALL GATE VALVES MUST BE MANUFACTURED BY MUELLER OR CLOW.

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.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. STONES FROM REMOVED STONEWALLS SHALL REMAIN ON-SITE. STONES SHALL BE REPURPOSED ON-SITE AND SHALL NOT BE USED AS FILL.
9. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
10. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.

SITE NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
3. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
4. SEE DETAILS FOR SIGN LEGENDS.
5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND 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.
7. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
9. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
10. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR AND WILL BE VIA DUMPSTER ON-SITE.
11. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
12. ALL EXTERIOR DOORS ARE MANUAL AND OPENED FROM THE INTERIOR BY PANIC HARDWARE. ALL EXTERIOR DOORS SHALL COMPLY WITH ADA AND ALL LOCAL BUILDING CODE REQUIREMENTS.

GRADING NOTES:

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING.
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HOPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA, SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
10. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF THE FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
11. 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 OF REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
12. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
13. CONTRACTOR SHALL NOTIFY THE CITY OF DOVER AND THE DESIGN ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF PERMANENT STORMWATER BMP'S TO PROVIDE THE CITY AND THE ENGINEER THE OPPORTUNITY TO WITNESS THE CONSTRUCTION AND MATERIALS. THE DESIGN ENGINEER MUST CERTIFY THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
14. 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.	

UTILITY NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
6. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
7. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.
8. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED AND CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER SEWER DEPARTMENT STANDARDS.
9. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
10. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
11. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
12. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
13. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
15. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY.
16. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
17. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
18. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
19. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
20. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
21. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
23. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
24. THE PROPOSED STRUCTURE SHALL COMPLY WITH CHAPTER 81, ARTICLE IV, SECTION 81-27 AND THE STATE BUILDING CODES OF THE CODE OF THE CITY OF DOVER.
25. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION AS APPROPRIATE.
26. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
27. SEWAGE LOADING
CHILDCARE DEVELOPMENT FACILITY
ESTIMATED # STUDENTS = 113
ESTIMATED # STAFF = 20
PER NHDES ENV-WQ1008.03 TABLE 1008-1:
DAY CARE CENTERS = 10 GPD/PERSON
DESIGN FLOW
DAY CARE = $\frac{133 \text{ PERSONS} \times 10 \text{ GPD/PERSON}}{1} = 1330 \text{ GPD}$
28. AN EASEMENT WILL BE GRANTED TO THE CITY ALONG THE WATER LINES TO ALLOW ACCESS FOR OPERATION OF THE WATER INFRASTRUCTURE TO MAINTAIN WATER QUALITY.
29. ALL VALVES SHALL OPEN COUNTER CLOCKWISE.

UTILITY CONTACTS

- NATURAL GAS: -
CONTACT:

UNITIL CORPORATION
JOSH WILK
325 WEST ROAD
PORTSMOUTH, NH 03801
TEL: (603)-227-4628
EMAIL: WILKJ@UNITIL.COM
- WATER & SEWER: -
CONTACT:

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

EVERSOURCE
TREVOR EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-7515
EMAIL: TREVOR.EMMONS@EVERSOURCE.COM

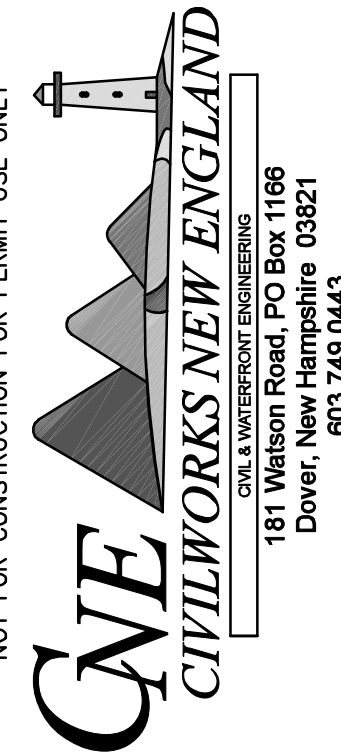
PLANNING FILE NO.: SITE-2025-XXXX

NOTE SHEET

CHILDCARE DEVELOPMENT FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

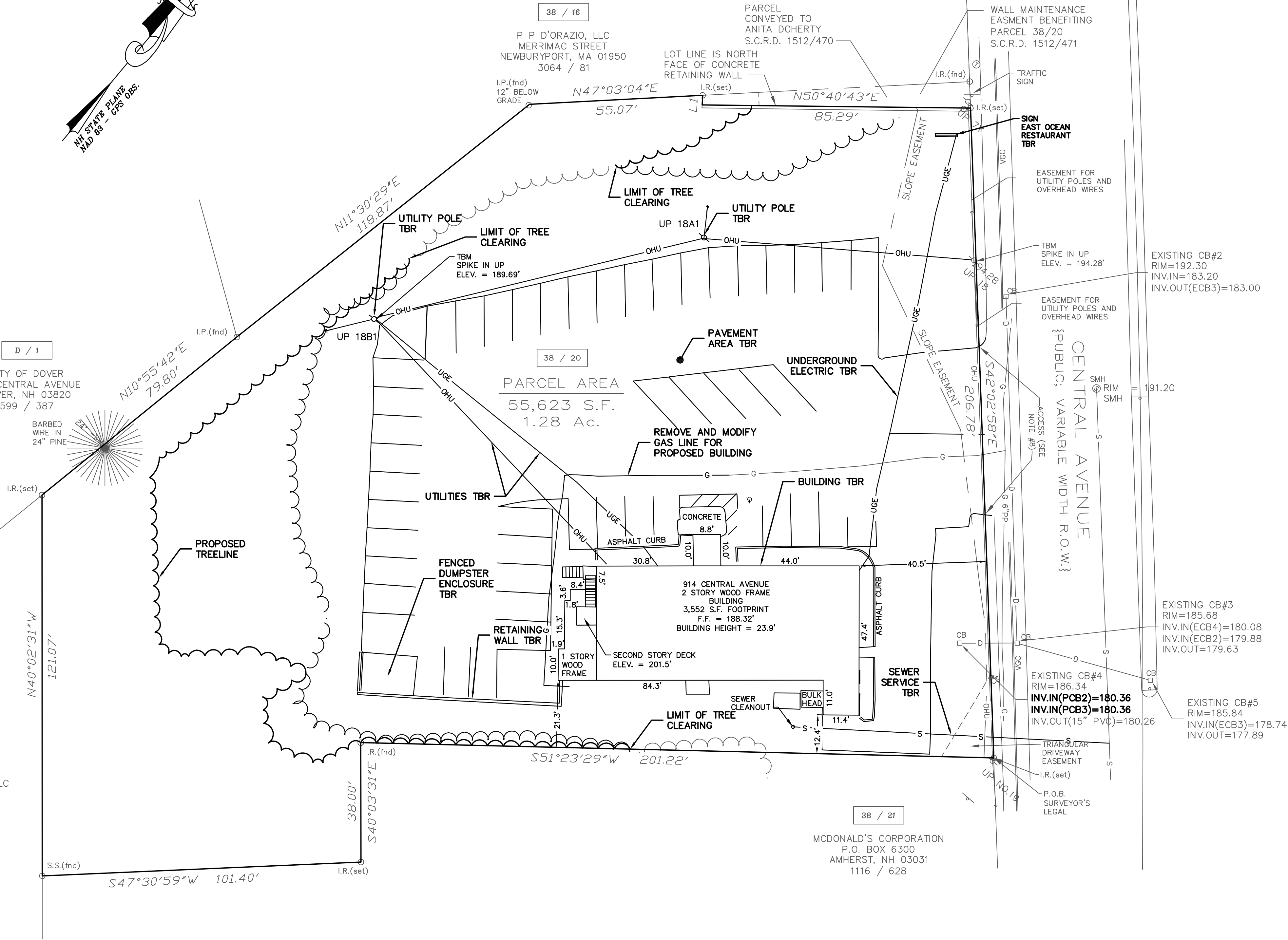
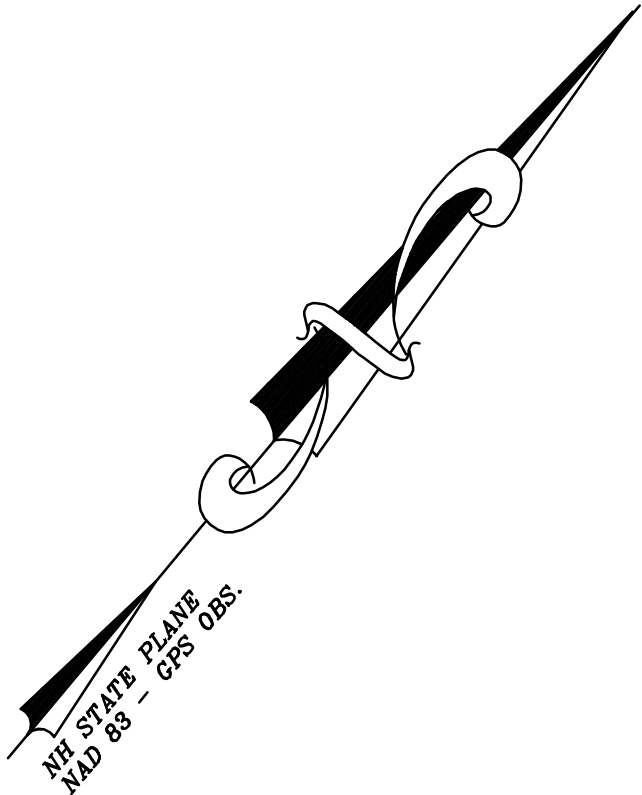
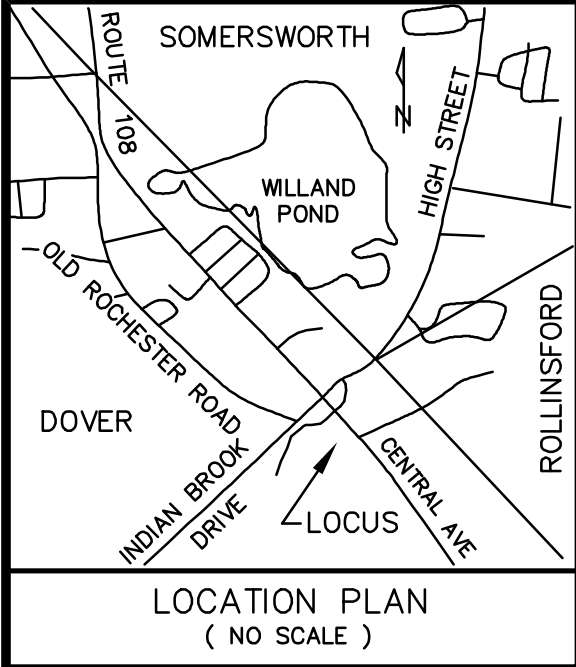
4

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874



NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	REVISION	APPD	DATE
9-18-25	1"=20'	MJM	MJM	BSK	2504	25044-SITE			



- LEGEND
- S.F. - SQUARE FEET
 - Ac. - ACRE
 - (TYP.) - TYPICAL
 - ± - MORE OR LESS
 - Ø - DIAMETER
 - S.C.R.D. - STRAFFORD COUNTY
REGISTRY OF DEEDS
 - UP - UTILITY POLE
 - TBR - TO BE REMOVED
 - SMH - SEWER MANHOLE
 - WATER SHUT-OFF
 - WATER GATE VALVE
 - FIRE HYDRANT
 - CONTOUR LINE - 2' INTERVAL
 - EDGE OF WETLAND
 - WETLAND
 - WETLAND BUFFER

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

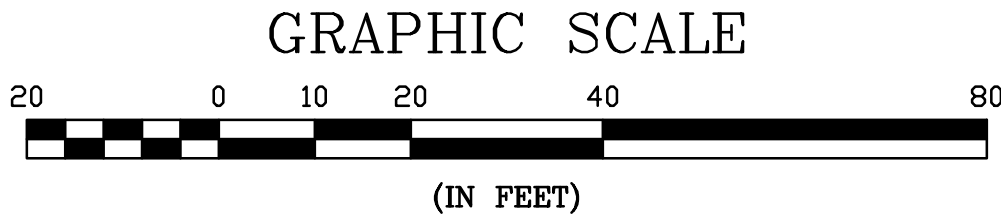
CNE CIVILWORKS NEW ENGLAND
Civil & Waterfront Engineering
181 Watson Road, PO Box 1166
Dover, 03043-0443

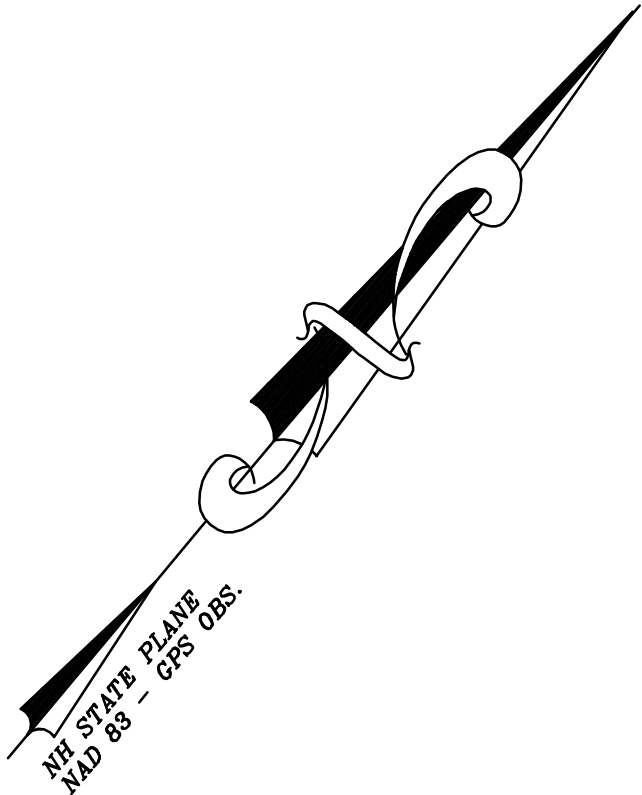
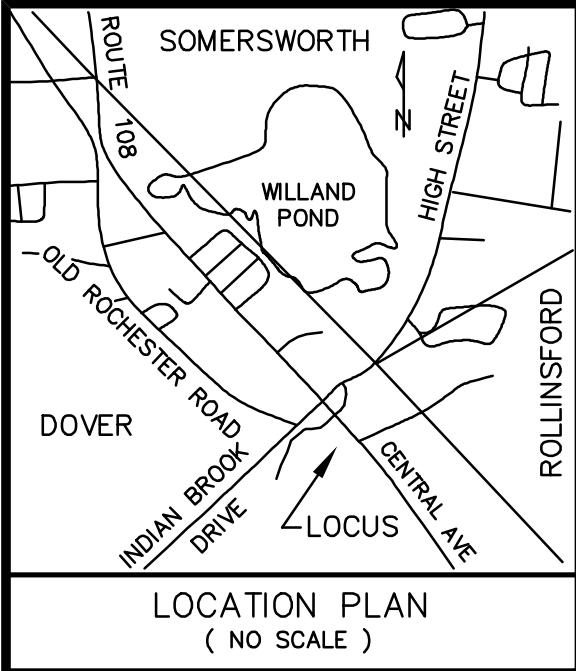
DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	NO.	REVISION	APP'D	DATE
9-18-25	1"=20'	MJM	MJM		25044	25044-SITE				

DEMOLITION PLAN

**CHILDCARE DEVELOPMENT
FACILITY**
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

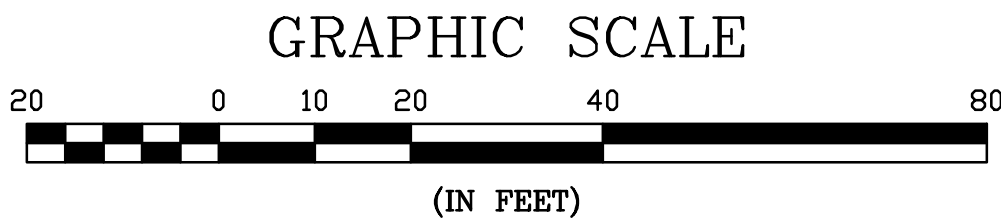
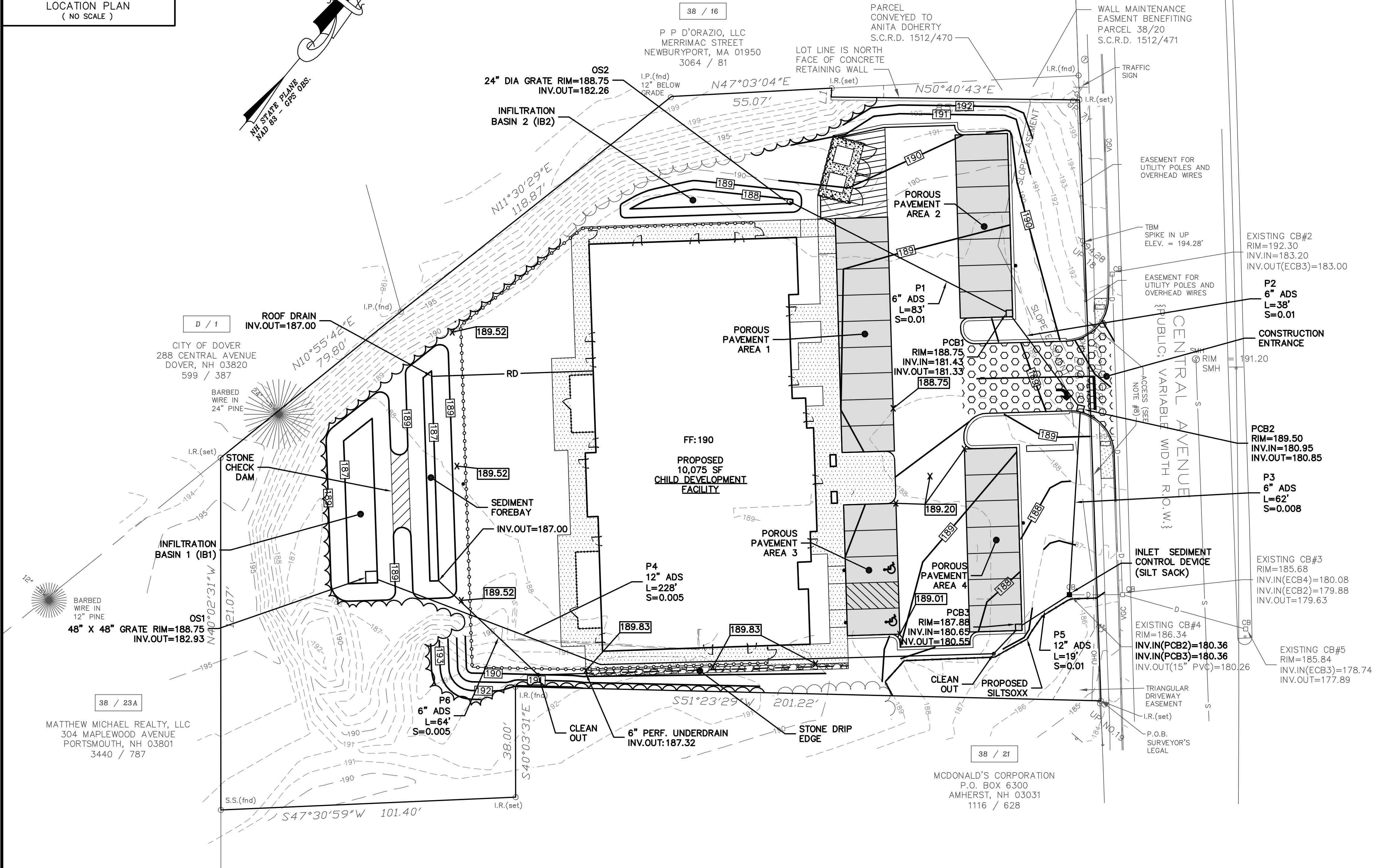
914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874





- LEGEND**
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 - WATER GATE VALVE
 - FIRE HYDRANT
 - CONTOUR LINE - 1' INTERVAL
 - EDGE OF WETLAND
 - WETLAND
 - WETLAND BUFFER
 - PROPOSED FINISH GRADE
 - PROPOSED SPOT ELEVATIONS
 - PROPOSED DRAIN LINE

CONDITIONAL USE PERMIT
SECONDARY GROUNDWATER
PROTECTION DISTRICT
IMPACT AREA
PRE-IMP 24,526 S.F.
POST-IMP 24,696 S.F.
DIFFERENCE +170 S.F.



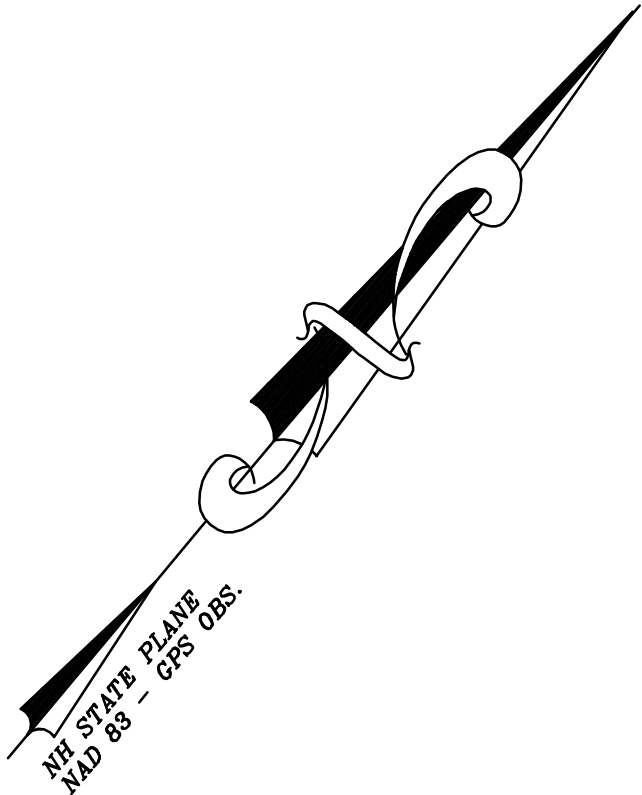
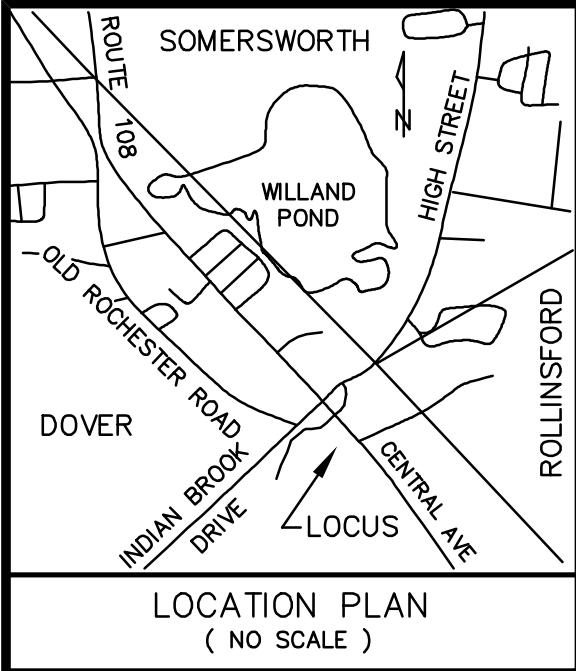
GRADING, DRAINAGE & EROSION CONTROL PLAN

CHILDCARE DEVELOPMENT
FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

DATE:	SCALE:	DRAWN BY:	DESIGN BY:	APPROVED BY:	PROJECT NO.:	FILE NO.:
9-18-25	1"=20'	MJM	MJM	BY: JH	25044	25044-SITE

NO.	REVISION	APP'D	DATE



D / 1

CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
599 / 387

BARBED WIRE IN
24" PINE

I.R.(set)

INFILTRATION BASIN 1
AREA

38 / 16

P P D'ORAZIO, LLC
MERRIMAC STREET
NEWBURYPORT, MA 01950
3064 / 81

PARCEL
CONVEYED TO
ANITA DOHERTY
S.C.R.D. 1512/470

LOT LINE IS NORTH
FACE OF CONCRETE
RETAINING WALL

I.R.(set)

38 / 20
PARCEL AREA
55,623 S.F.
1.28 Ac.

PROPOSED
10,075 SF
CHILD DEVELOPMENT
FACILITY

RD

I.R.(fnd)

I.R.(set)

S.S.(fnd)

38 / 23A

MATTHEW MICHAEL REALTY, LLC
304 MAPLEWOOD AVENUE
PORTSMOUTH, NH 03801
3440 / 787

REPLACE AND MODIFY
EXISTING SEWER SERVICE

38 / 21

MCDONALD'S CORPORATION
P.O. BOX 6300
AMHERST, NH 03031
1116 / 628

WALL MAINTENANCE
EASEMENT BENEFITING
PARCEL 38/20
S.C.R.D. 1512/471

SLOPE EASEMENT

SLOPE EASEMENT

CENTRAL AVENUE
{PUBLIC; VARIABLE WIDTH R.O.W.}

ACCESS (SEE
NOTE #8)

TRIANGULAR
DRIVEWAY
EASEMENT

P.O.B.
SURVEYOR'S
LEGAL

UP NO.19

I.R.(set)

EXISTING CB#4
RIM=186.34
INV.IN(PCB2)=180.36
INV.IN(PCB3)=180.36
INV.OUT(15" PVC)=180.26

EXISTING CB#3
RIM=185.68
INV.IN(ECB4)=180.08
INV.IN(ECB2)=179.88
INV.OUT=179.63

EXISTING CB#5
RIM=185.84
INV.IN(ECB3)=178.74
INV.OUT=177.89

EXISTING CB#2
RIM=192.30
INV.IN=183.20
INV.OUT(ECB3)=183.00

EXISTING CB#1
RIM=192.30
INV.IN=183.20
INV.OUT(ECB3)=183.00

EXISTING CB#1
RIM=192.30
INV.IN=183.20
INV.OUT(ECB3)=183.00

EXISTING CB#1
RIM=192.30
INV.IN=183.20
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INV.OUT(ECB3)=183.00

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EXISTING CB#1
RIM=192.30
INV.IN=183.20
INV.OUT(ECB3)=183.00

EXISTING CB#1
RIM=192.30
INV.IN=183.20
INV.OUT(ECB3)=183.00

LEGEND

- S.F. - SQUARE FEET
- Ac. - ACRE
- (TYP.) - TYPICAL
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- S.C.R.D. - STRAFFORD COUNTY
REGISTRY OF DEEDS
- UP - UTILITY POLE
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- W - WATER SHUT-OFF
- W - WATER GATE VALVE
- F - FIRE HYDRANT
- EDGE OF WETLAND
- WETLAND
- WETLAND BUFFER
- PD - PROPOSED DRAIN LINE
- RD - PROPOSED ROOF DRAIN
- PW - PROPOSED WATER
- PUGE-C - PROPOSED UTILITY LINES
- PS - PROPOSED SEWER LINE
- PG - PROPOSED GAS LINE

PROPOSED UNDERGROUND
ELECTRICAL AND
COMMUNICATION SERVICE

TBM
SPIKE IN UP
ELEV. = 194.28'

EASEMENT FOR
UTILITY POLES AND
OVERHEAD WIRES

CONNECT PROPOSED
GAS SERVICE TO
EXISTING SERVICE. V.I.F.

EV READY
ELECTRICAL
SERVICE

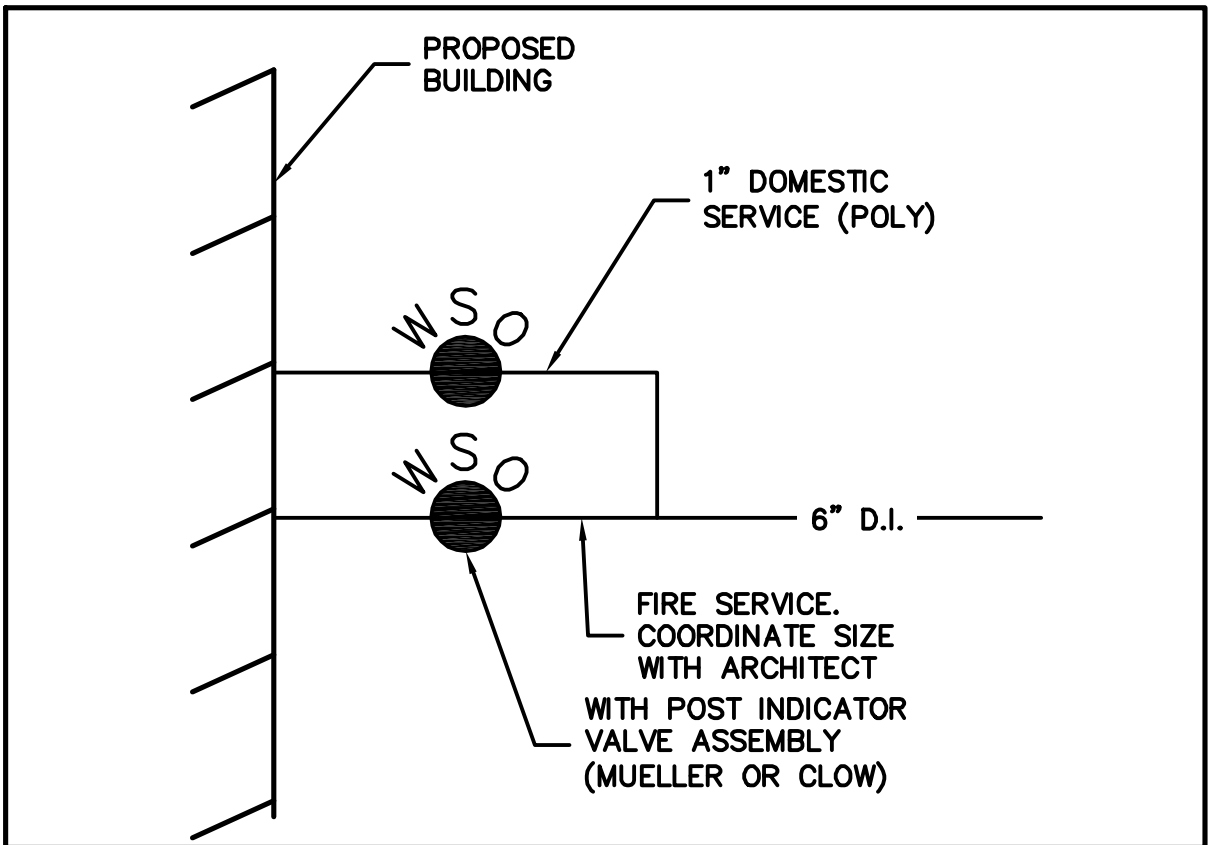
PROPOSED HYDRANT
WITH GATE VALVE

PW

EXISTING WATER
SHUTOFF

38 / 21

MCDONALD'S CORPORATION
P.O. BOX 6300
AMHERST, NH 03031
1116 / 628



TYPICAL FIRE AND DOMESTIC
WATER SERVICE CONNECTION DETAIL

SCALE: NOT TO SCALE

UTILITY PLAN

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

CHILDCARE DEVELOPMENT
FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	NO.	REVISION	APP'D	DATE
9-18-25	1"=20'	MJM	MJM	MJM	25044	25044				

CNE
CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, NH 03820
603.748.0443

Project: _____
Fixture Type: _____
Location: _____
Contact: _____

Z-1090 LED

Wall Mounted • Wet Location Listed **PROGRESS LED** 

Description:

An elongated frame and clean, crisp lines are the hallmarks of this striking light fixture. A modern take on an open-cage design is manifested by a rect- angular silhouette with an open bottom and sides through which a stunning glow can shine. At the fixture's crown, a solid square attaches to the simple backplate for a final punctuated dash of formal elegance. A bold, black finish completes the stately design sure to elevate your home décor style.

Specifications:

- A modern take on an open-cage design is manifested by a rectangular silhouette with an open bottom and sides through which a stunning glow can shine.
- A bold, black finish completes the stately design sure to elevate your home décor style.
- At the fixture's crown, a solid square attaches to the simple backplate for a final punctuated dash of formal elegance.
- Ideal for any bedroom, foyer, entryway, porch, or patio.
- Perfect for transitional, modern, and contemporary settings.
- Measures 4-1/2-inch width by 16-inch height.
- Uses one LED module (9w).
- Compatible with many Triac/ELV dimmers (see dimming controls)
- Includes installation instructions and mounting hardware.
- Progress Lighting products are designed for exceptional quality, reliability, and functionality
- Dimmable to 10% brightness (See Dimming Notes)
- Canopy covers a standard 4" recessed outlet box: 4.5 in W, 5 in ht., 0.812 in depth
- Mounting backplate for outlet box included
- 6 in of wire supplied

Performance:

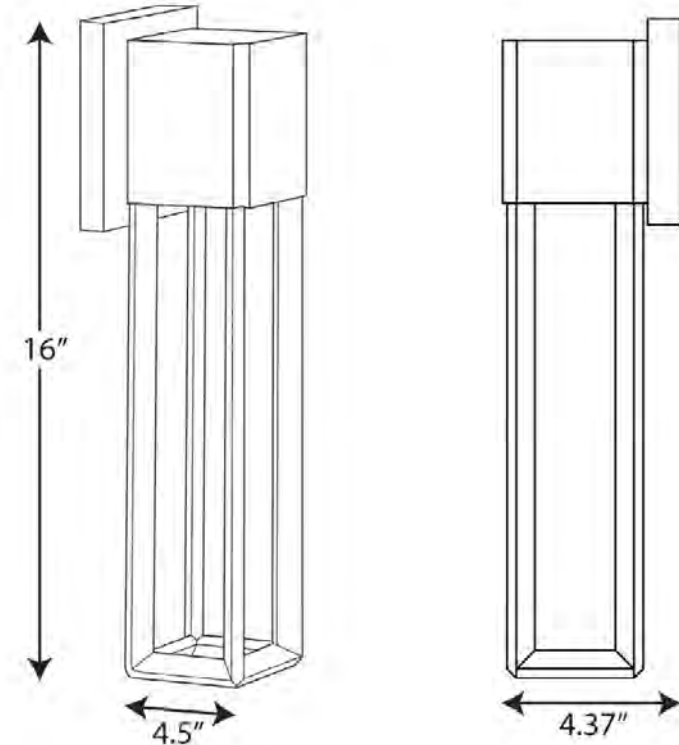
Input Power	9 W
Input Voltage	120 V
Input Frequency	60 Hz
Lumens/LPW (Source)	624/66 (LM 82)
CCT	3000 K
CRI	90 CRI
Life (hours)	60000 (L70/TM 21)
EMI/RFI	FCC Title 47, Part 15, Class B
Warranty	5-year Limited Warranty
Labels	cCSAus Wet Location Listed ENERGY STAR® qualified Meets California Title 24 JA8-2016

P560137-031-30



Dimensions:

Width: 4-1/2 in
Height: 16 in
Depth: 4-3/8 in
H/CTR: 2-1/2 in



Catalog # _____ Project: _____ Type: _____
Prepared By: _____ Date: _____

V-Locity Small (VALS)
Outdoor LED Area Light



OVERVIEW	
Lumen Package	6,000 - 27,000
Wattage Range	36 - 178
Efficacy Range (LPW)	142 - 171
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

[Ordering Guide](#) [Performance](#) [Photometrics](#) [Dimensions](#)

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical units. Cast aluminum wiring access door located underneath.
- Self-contained optic, board and heat sink assembly can be rotated or replaced in the field.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: TBD lbs in carton.

Optical System

- State-of-the-Art acrylic optics delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary refractor optics provide exceptional coverage and uniformity in distribution types 2, 3M, 3W, 4M, 4W, 4F, FTM, 50N, 50M, 5Q, 5QW, AM, WF and LC/RC.
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377 as well as phosphor converted amber.
- Minimum CRI of 80 (optional 70 CRI for 5000K and 4000K).
- Factory or field installable integral shielding available for enhanced spill light control.
- Zero Uplight (excludes adjustable arms).

Electrical

- High-performance driver features over-voltage, under voltage, short-circuit and over temperature protection.
- 0-10 volt dimming (10% - 100%) standard, must specify EXT option for dimming leads to be extended to fixture exterior.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: >90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.



Catalog # _____ Project: _____
Prepared By: _____ Date: _____

Steel Poles
Square Straight



QUICK LINKS

[Ordering Guide](#) [Configurations](#) [Dimensions](#) [EPA](#)

FEATURES & SPECIFICATIONS

Pole Shaft

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2- 3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor Bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 PSI.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing Ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip Protection System and a 5-year limited warranty.
- When the top-of-the line DuraGrip Plus Protection System is selected, in addition to the DuraGrip Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information.
- Select bracket configuration if required
- Determine EPA value from luminaire/ bracket EPA chart
- Select Pole Height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets.

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant



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SPEC.1070.B.0622

DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS FOR A 10,075 S.F. CHILDCARE DEVELOPMENT FACILITY WITH THE ASSOCIATED WATER, STORMWATER, AND UTILITY IMPROVEMENTS.

PROJECT NAME AND LOCATION

DOVER, NH (914 CENTRAL), LLC.
914 CENTRAL AVE
DOVER, NEW HAMPSHIRE 03820

LATITUDE N43° 13' 13.4"
LONGITUDE W70° 53' 10.8"

DISTURBED AREA

±39,520 S.F.

NOTES:

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

SEQUENCE OF MAJOR ACTIVITIES

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

DEFINITIONS

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED.

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

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

A. SILT BARRIER

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

B. MULCHING

1. TIMING
a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF THE VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THIS SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FEET.
b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 150–200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECESSARY.
c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
d. EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING

1. SEEDED 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 LIME/STONE 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 LIME/STONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING

1. BEDDING – STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
LOW PHOSPHATE (N–P205–K2O) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
RATE:
TYPE LBS. PER ACRE LBS. PER 1,000 S.F.
TALL FESCUE 20 0.45
CREEPING RED 20 0.45
FESCUE
BIRDSFOOT TREFOL 8 0.20
TOTAL 48 1.10
4. SEEDING
a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
a. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
b. SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
c. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION

1. SPECIFICATIONS
a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
b. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND–DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
b. PROTECT ALL INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMP'S.
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 LINED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

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

CATCH BASINS & STORMWATER TREATMENT STRUCTURES

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

SPILL PREVENTION

- A. MATERIAL MANAGEMENT PRACTICES
THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
a. THE FOLLOWING PRODUCTS WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
B. PRODUCT SPECIFICATION PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
1. PETROLEUM PRODUCTS:
a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. FERTILIZERS:
a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
3. PAINTS:
a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL 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 REOCCURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY–TO–DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

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

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

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

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

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

WINTER CONSTRUCTION NOTES

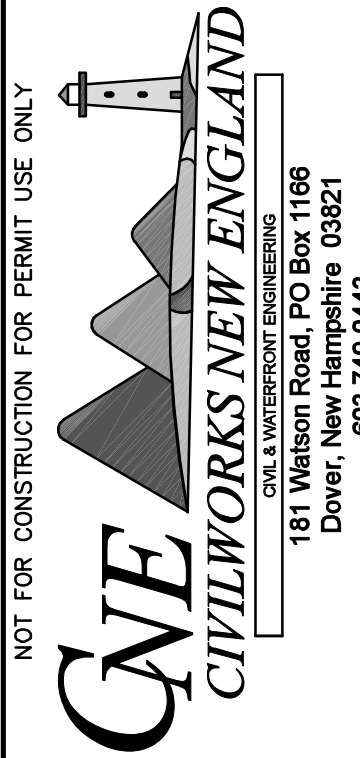
1. ALL PROPOSED POST–DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE. SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT.
2. ALL DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3–INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

PLANNING FILE NO.: SITE–2025–XXXX

EROSION CONTROL NOTES

CHILDCARE DEVELOPMENT FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

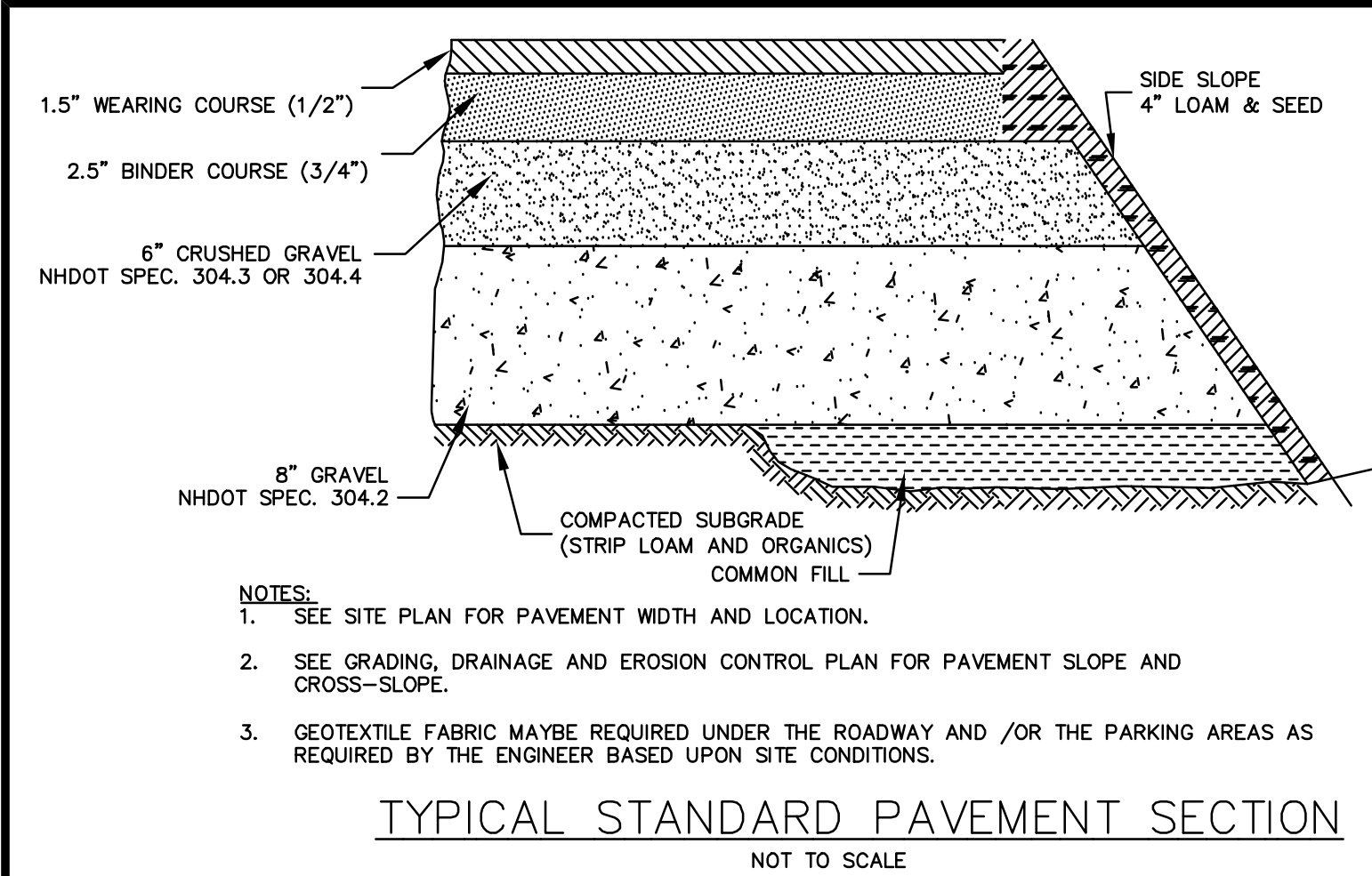
914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874



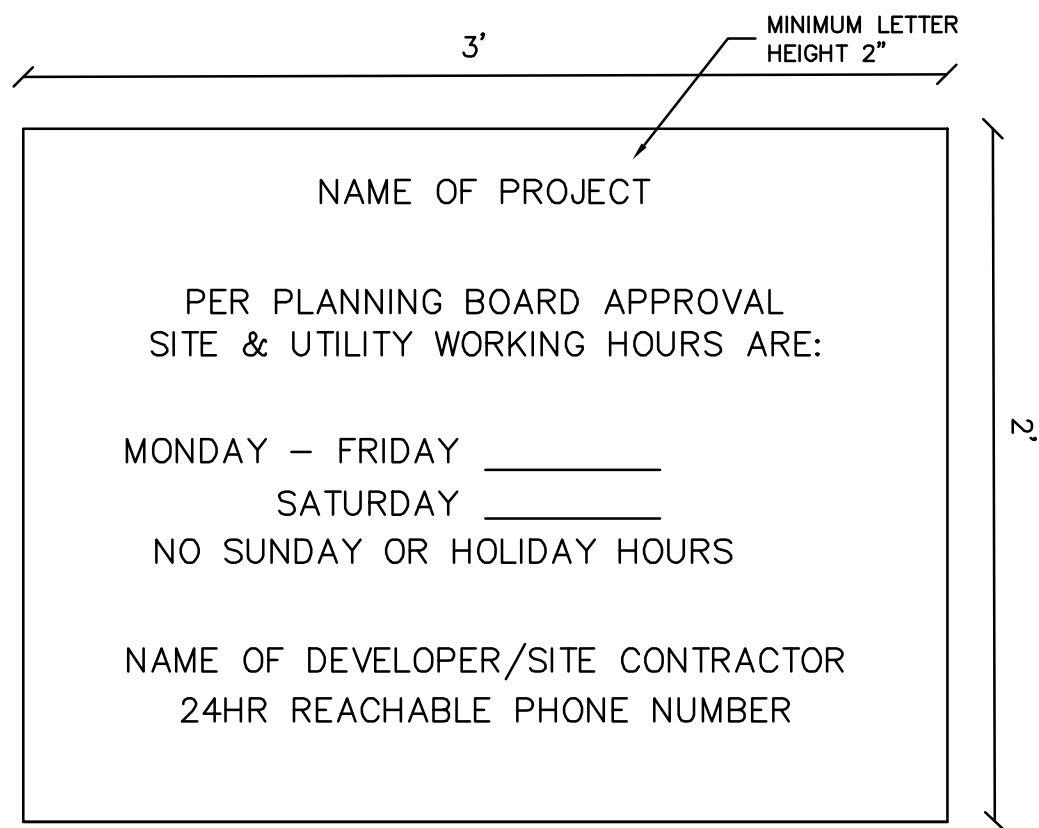
181 Watson Road, PO Box 1166
Dover, NH 03821
603.749.0443

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	REVISION	APP'D	DATE
9-18-25	1"=20'	MJM	MJM	BYSLH	25044	25044-SITE			



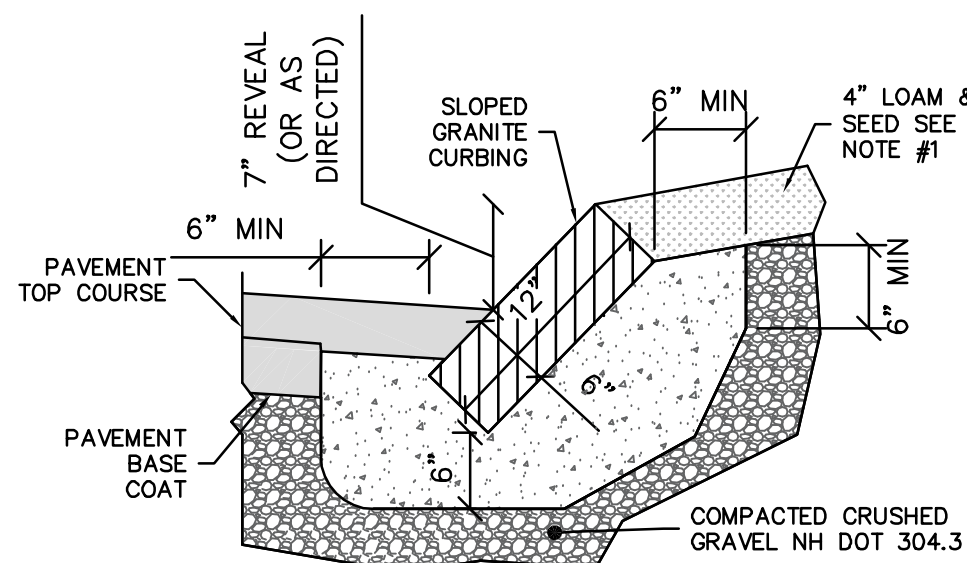
TYPICAL STANDARD PAVEMENT SECTION
NOT TO SCALE



- NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
 2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
 3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL

CITY OF DOVER D-2
CONSTRUCTION SIGN

NOT TO SCALE

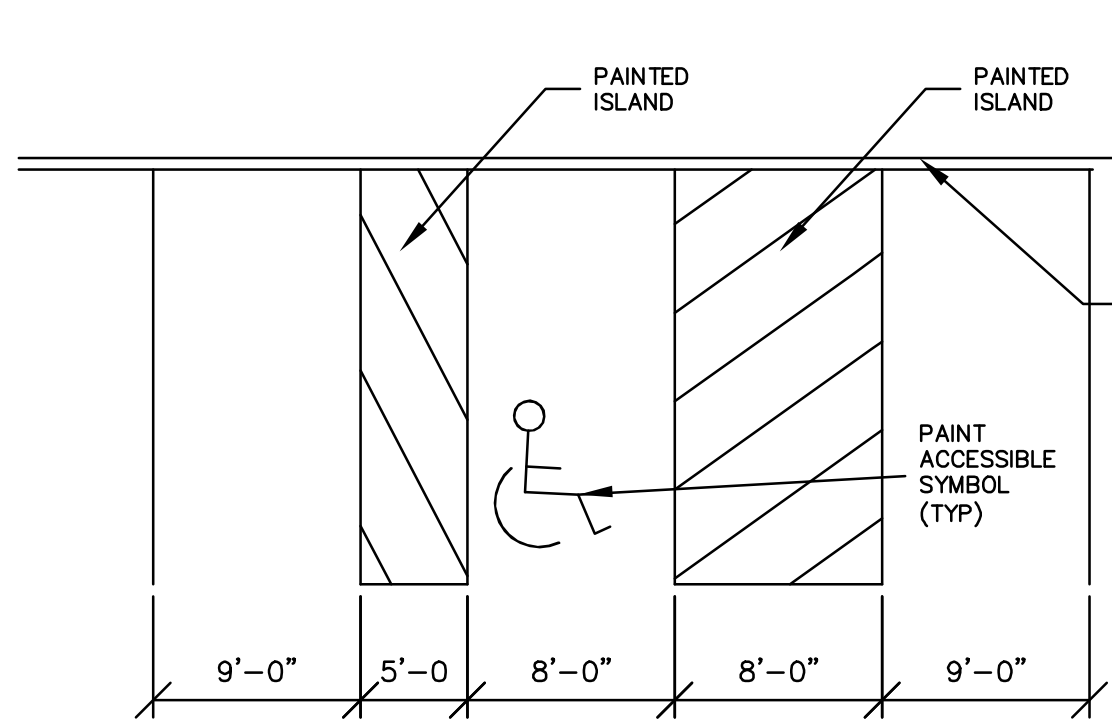


RADIUS	MAX LENGTH
< 21'	3'
12' - 28'	4'
22' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

- 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.

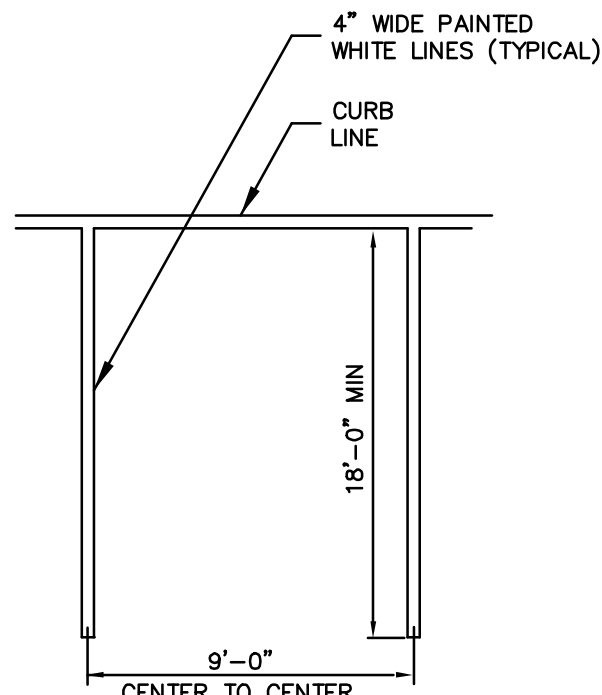
CITY OF DOVER D-8 GRANITE CURB DETAIL

NOT TO SCALE



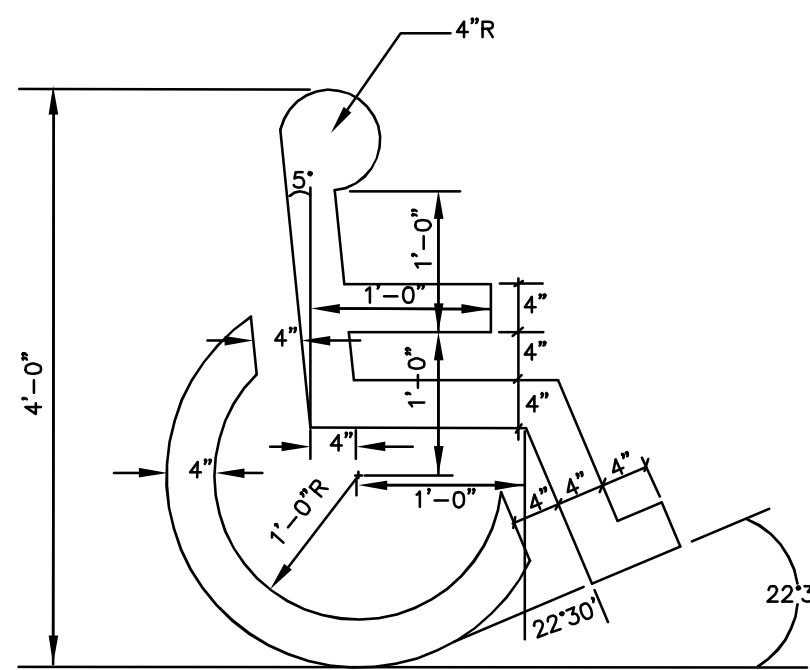
ACCESSIBLE PARKING LAYOUT

NOT TO SCALE



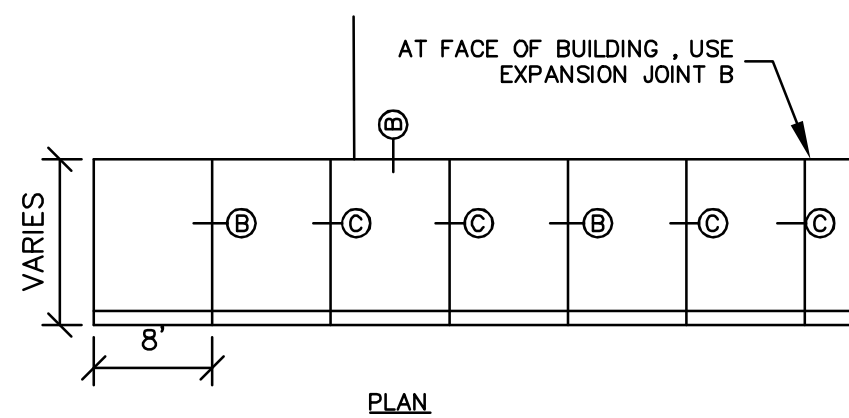
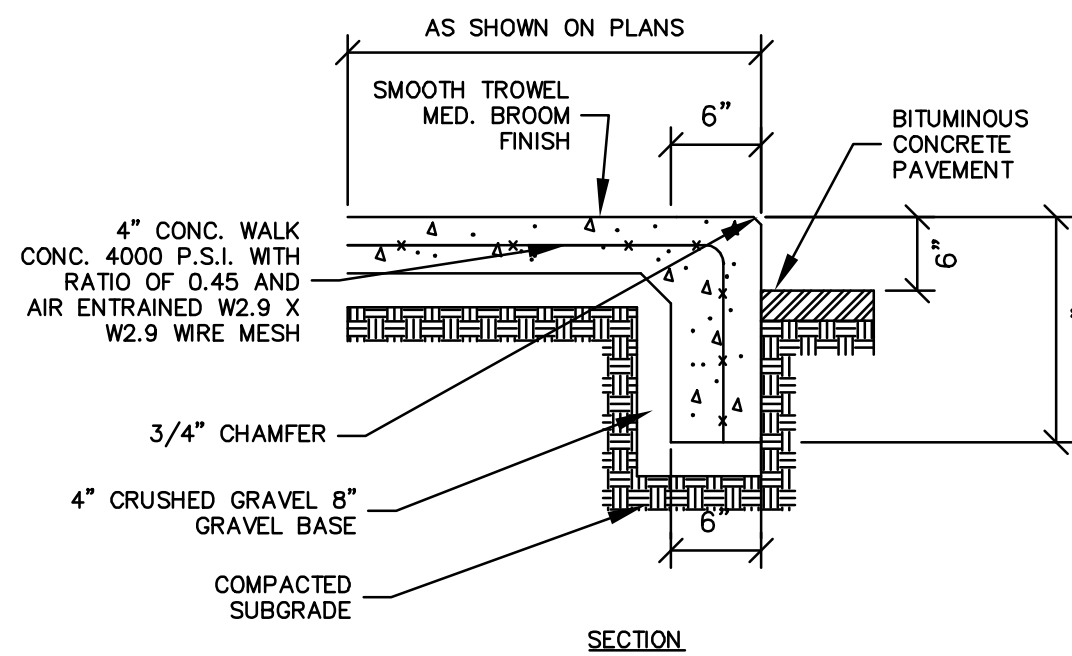
STANDARD
PARKING STALL

NOT TO SCALE



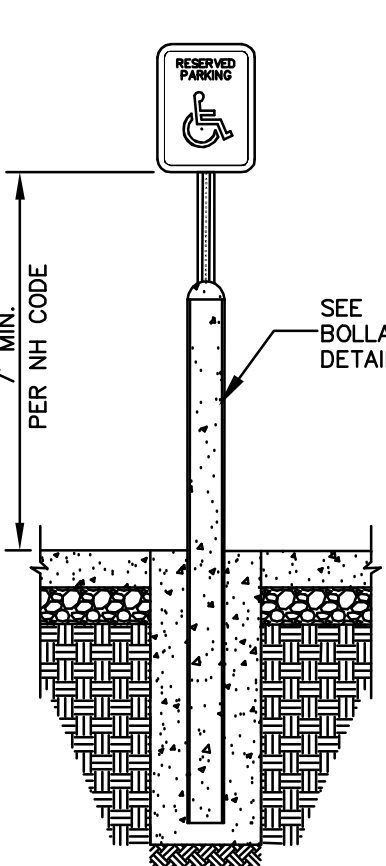
PAINTED
ACCESSIBLE PARKING SYMBOL

NOT TO SCALE



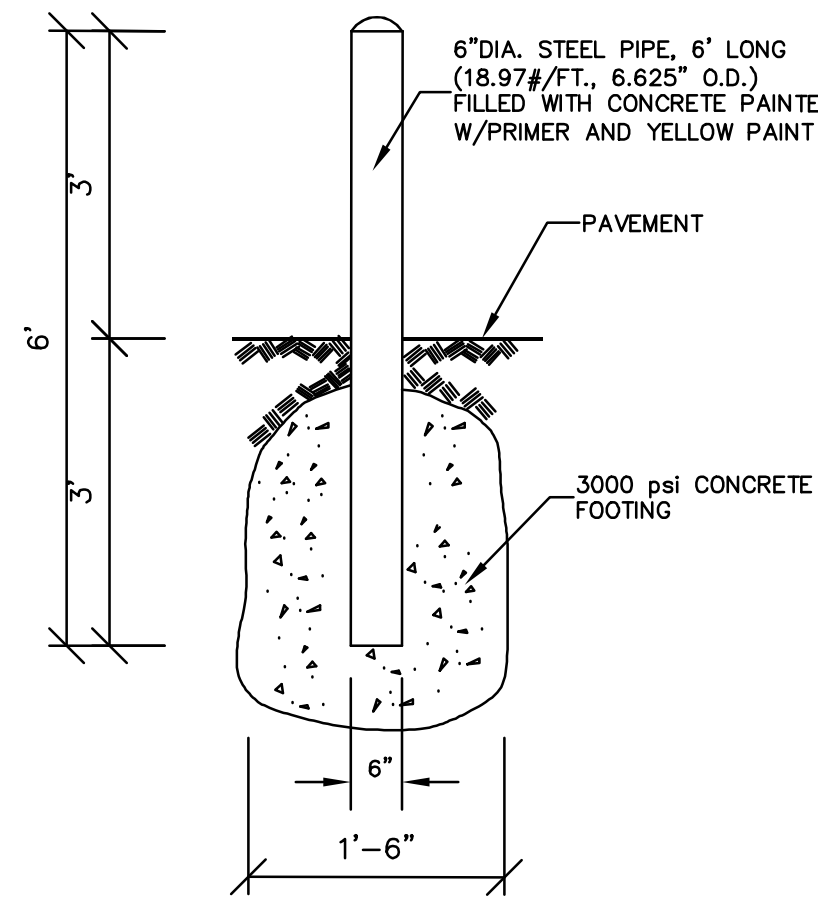
CONCRETE WALKWAY WITH MONOLITHIC CONCRETE CURB

NOT TO SCALE



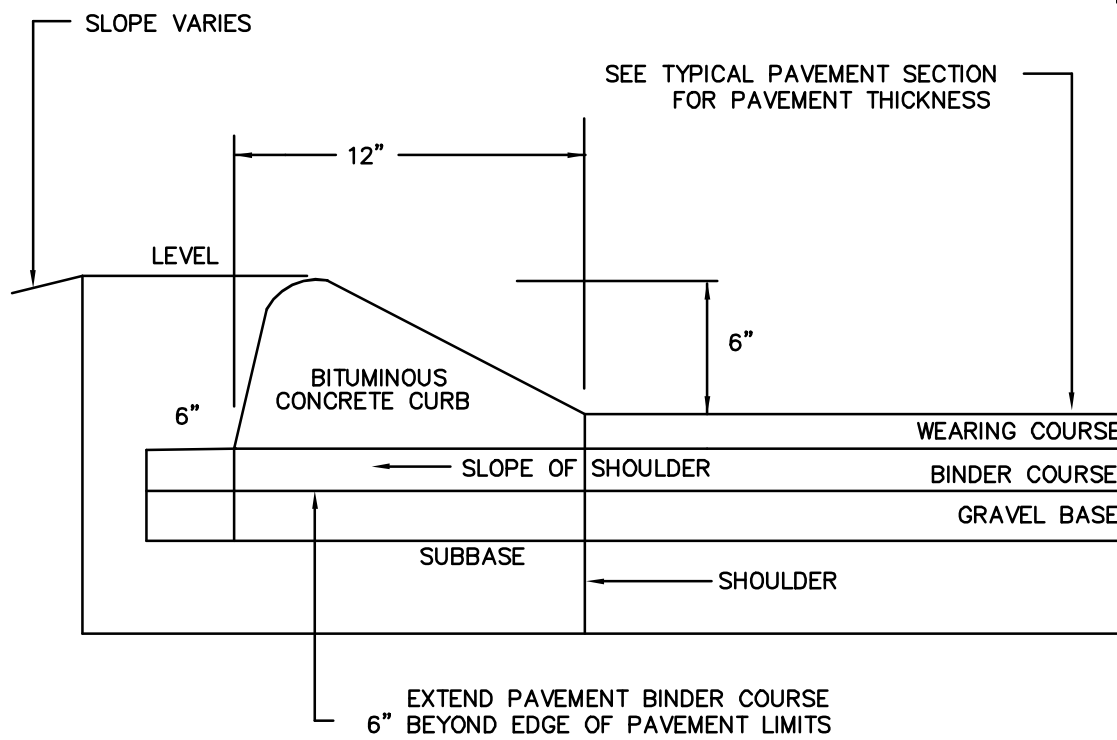
SIGN IN BOLLARD

NOT TO SCALE



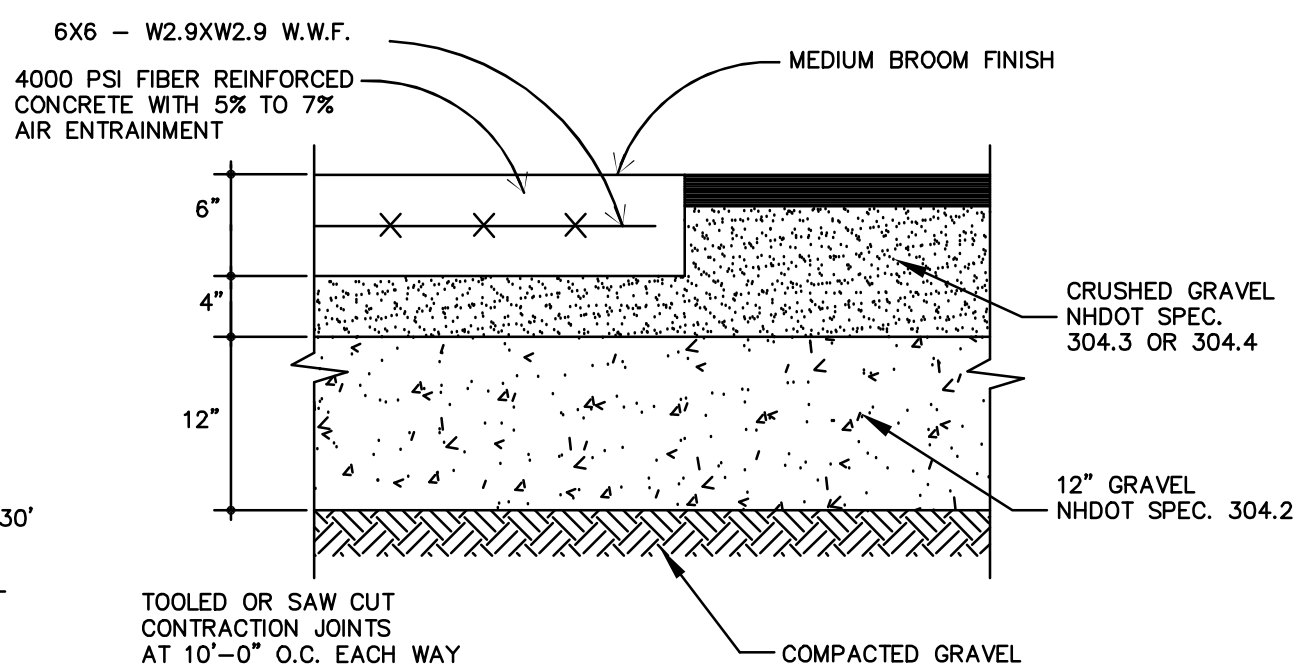
BOLLARD DETAIL

NOT TO SCALE



BITUMINOUS CONCRETE CURB

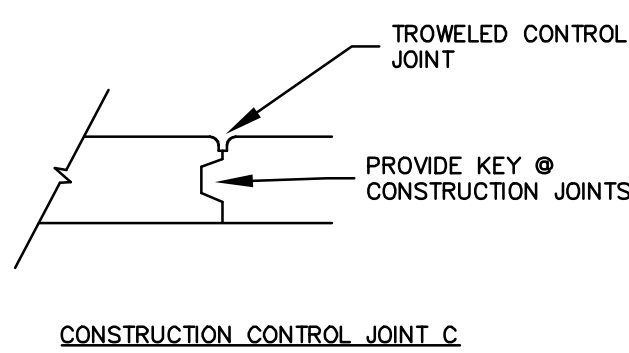
NOT TO SCALE



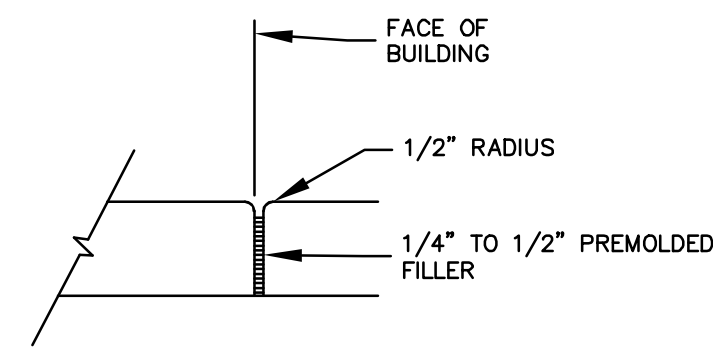
NOTE: PITCH CONCRETE PAD GRADING TO CENTER

DUMPSTER PAD DETAIL

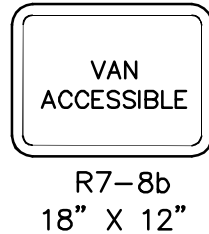
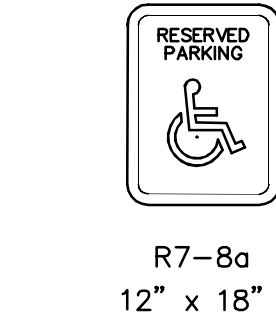
NOT TO SCALE



CONSTRUCTION CONTROL JOINT C



EXPANSION JOINT B

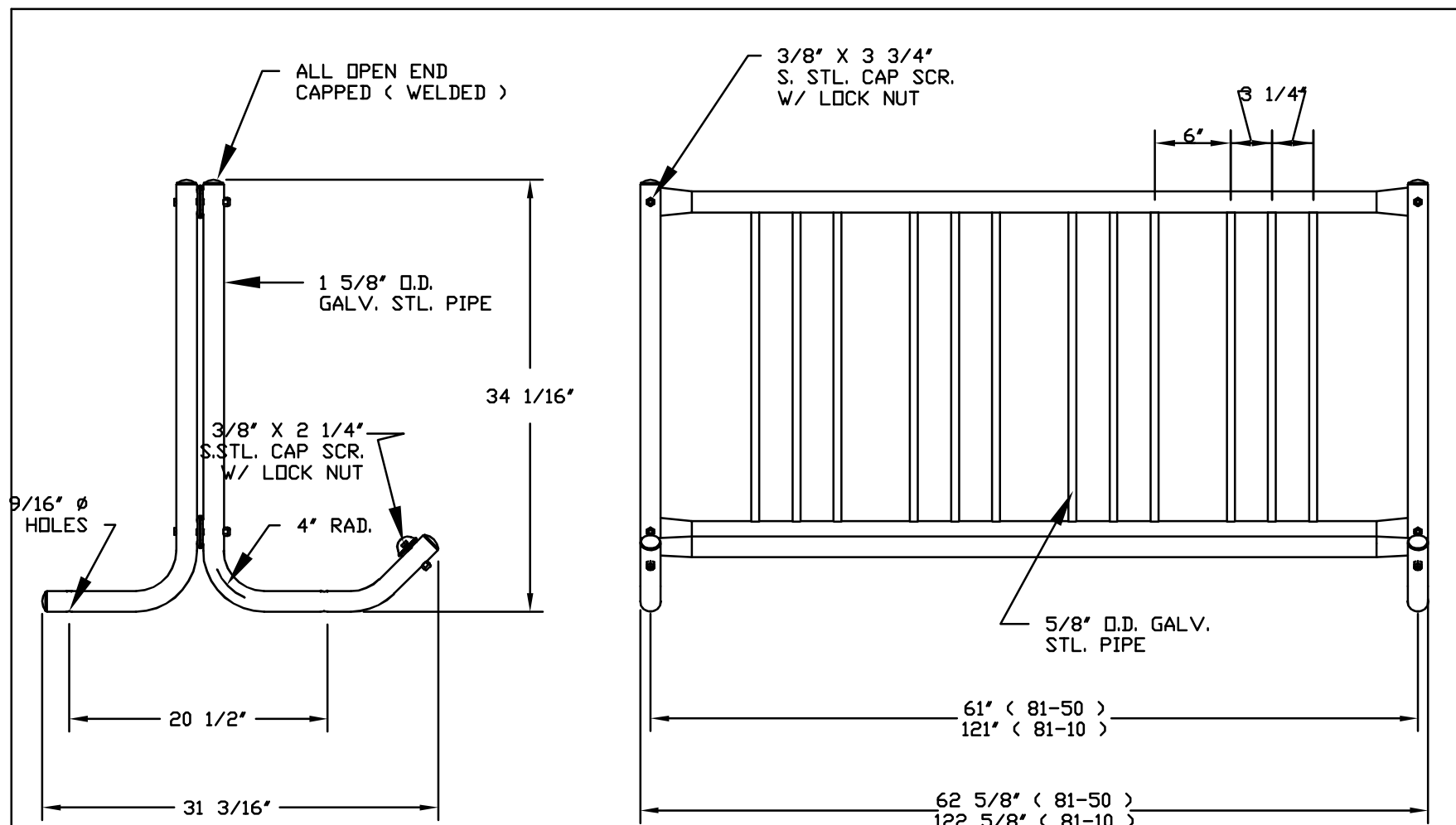
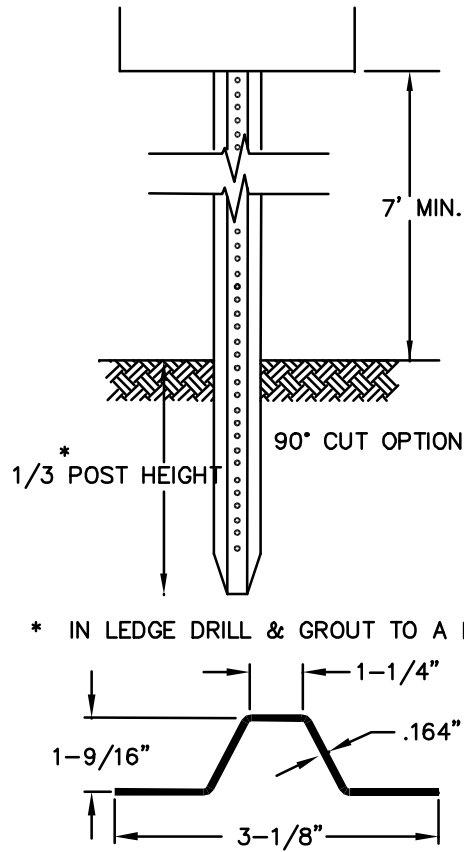


NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

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) ALL STL. MEMBERS GALVANIZED. WELDS COATED WITH ZINC-RICH FINISH.
 - 2) 1/2" X 5 1/2" EXPANSION ANCHOR BOLTS PROVIDED.

LENGTH OPTIONS
☐ 5' RACK
☐ 10' RACK

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE: NONE
DATE DRAWN: 3/22/94
DRAWN BY: CDC
DATE REV.: 7/9/02
REV. BY: CDC

TITLE: SINGLE-SIDE ENTRY BIKE RACK
REV. C
DRAWING NUMBER 81 SERIES

SHEET 1 OF 2

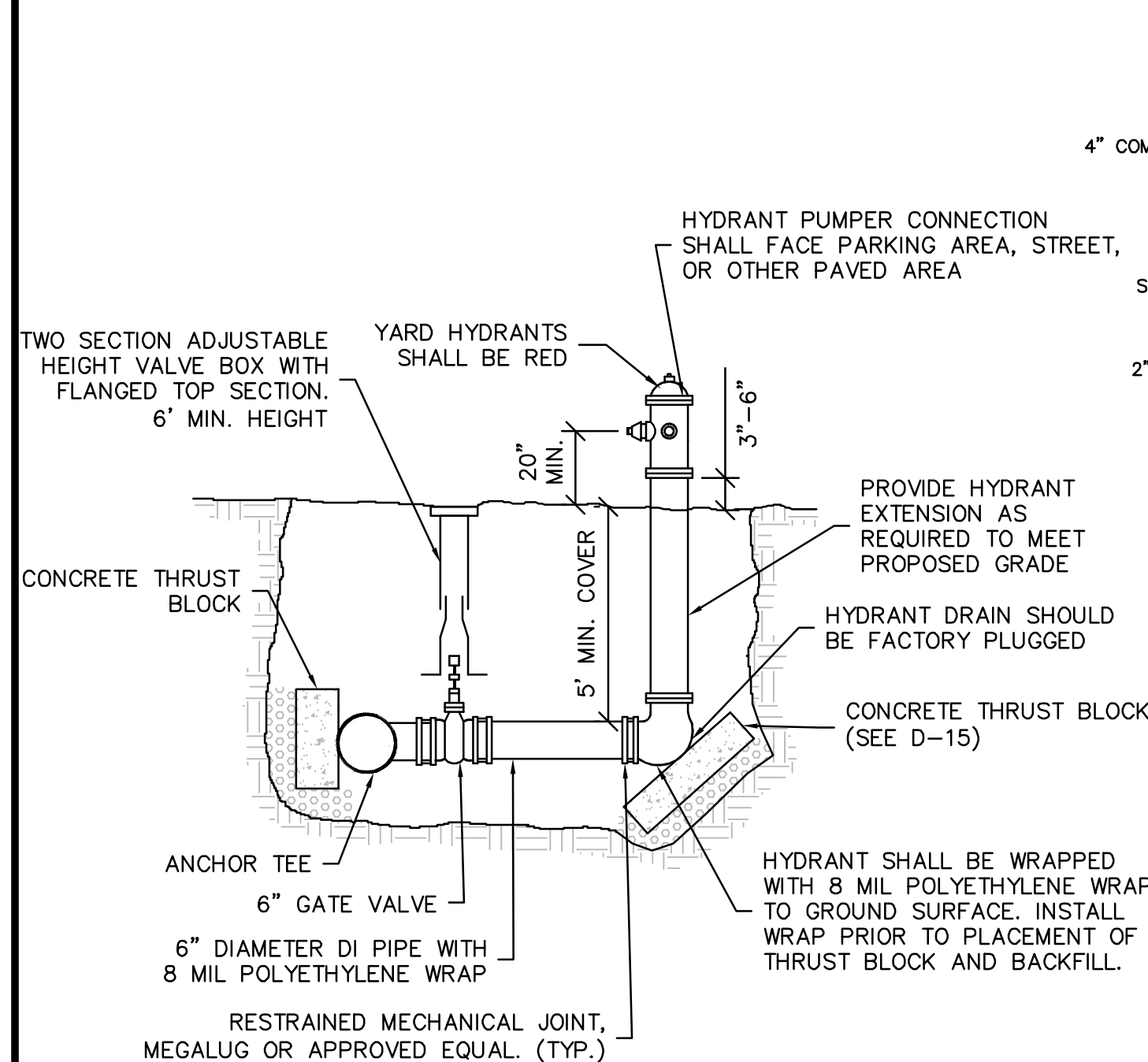
BIKE RACK DETAIL
NOT TO SCALE

PLANNING FILE NO.: SITE-2025-XXXX

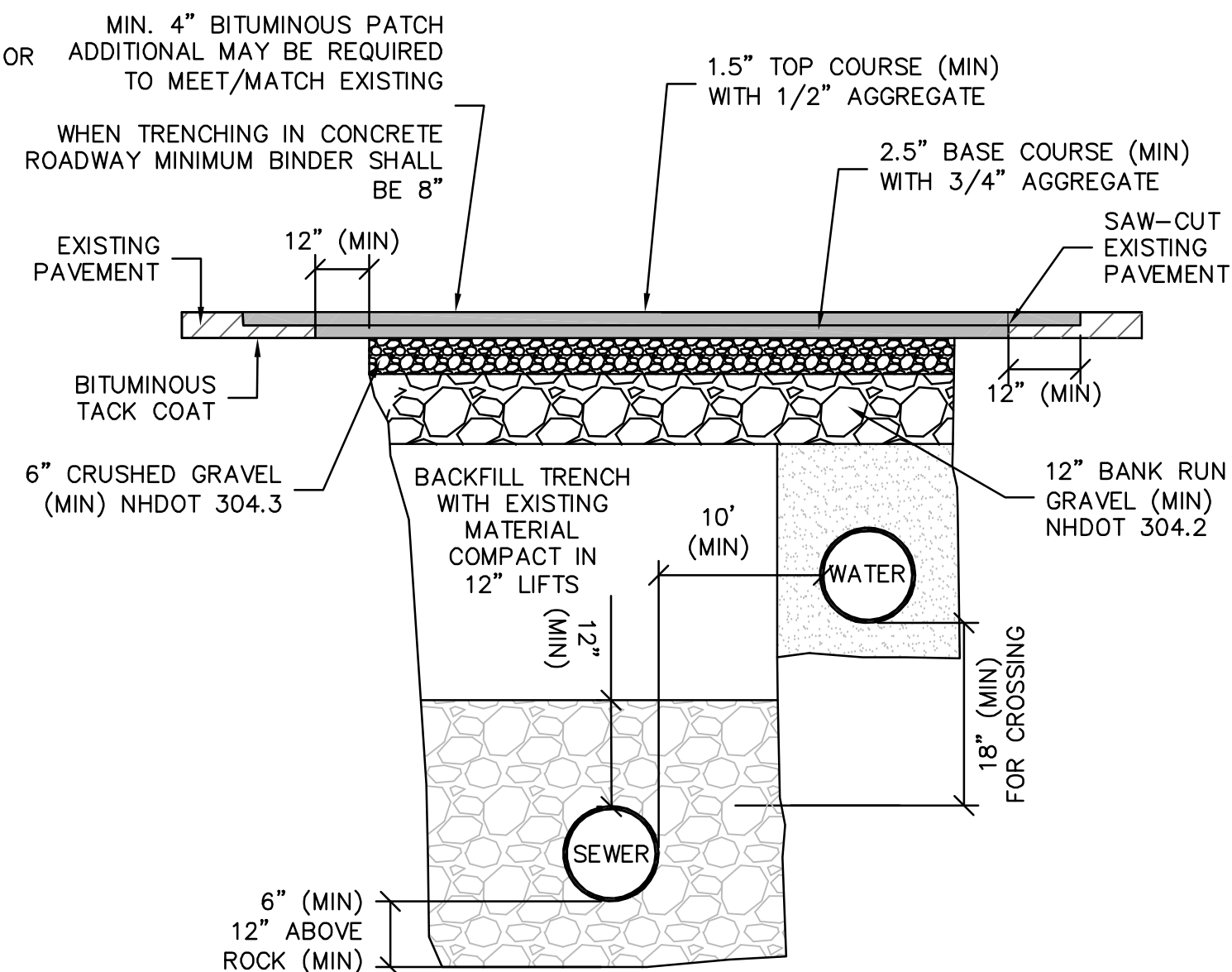
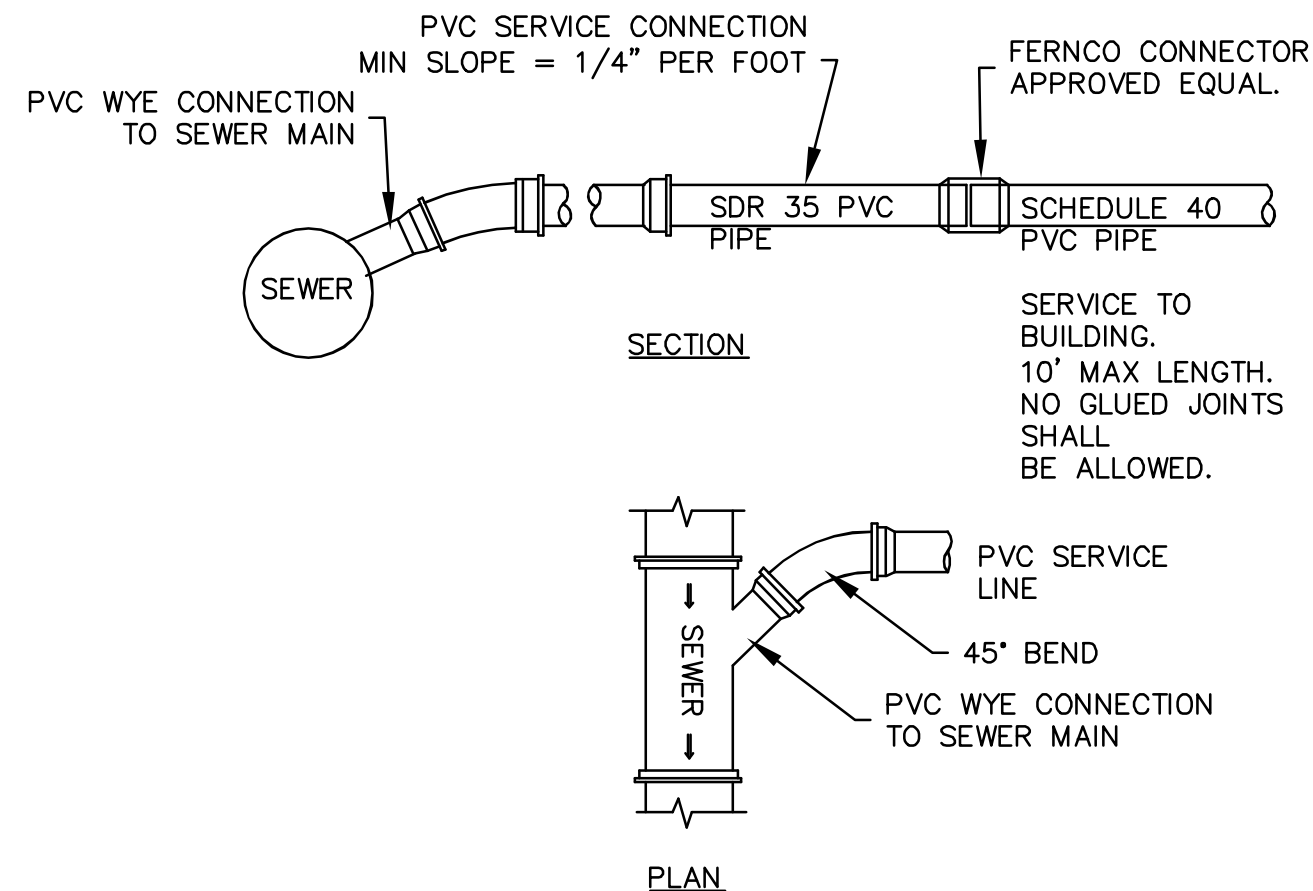
DETAIL SHEET

CHILDCARE DEVELOPMENT FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874



- NOTES:**
1. FIRE HYDRANTS SHALL BE EDDY MODEL F-2641 FACTORY PLUGGED.
 2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
 3. HYDRANT SHALL OPEN LEFT.

[illegible]

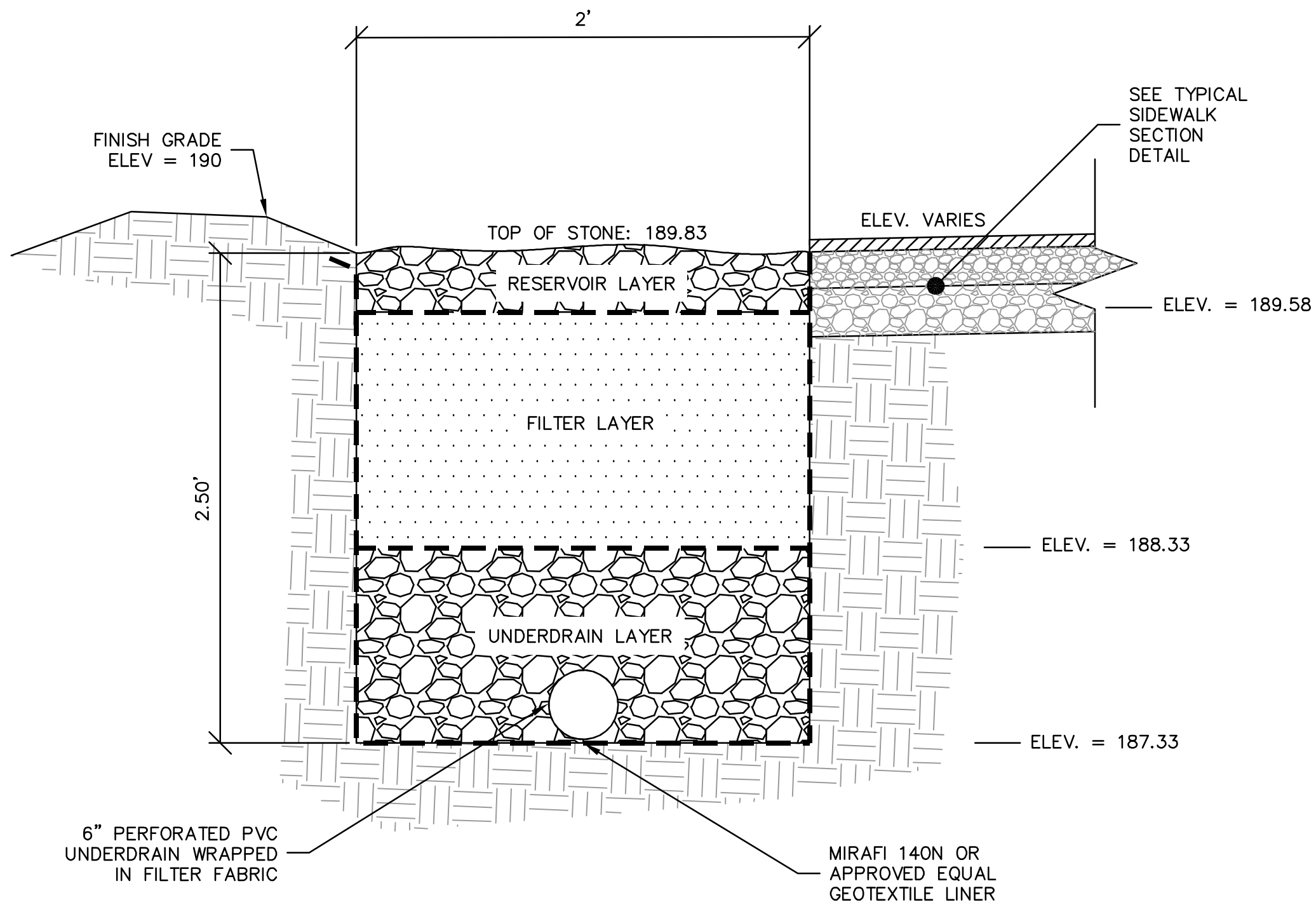
DETAIL SHEET

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

**FACILITY
DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820**

14

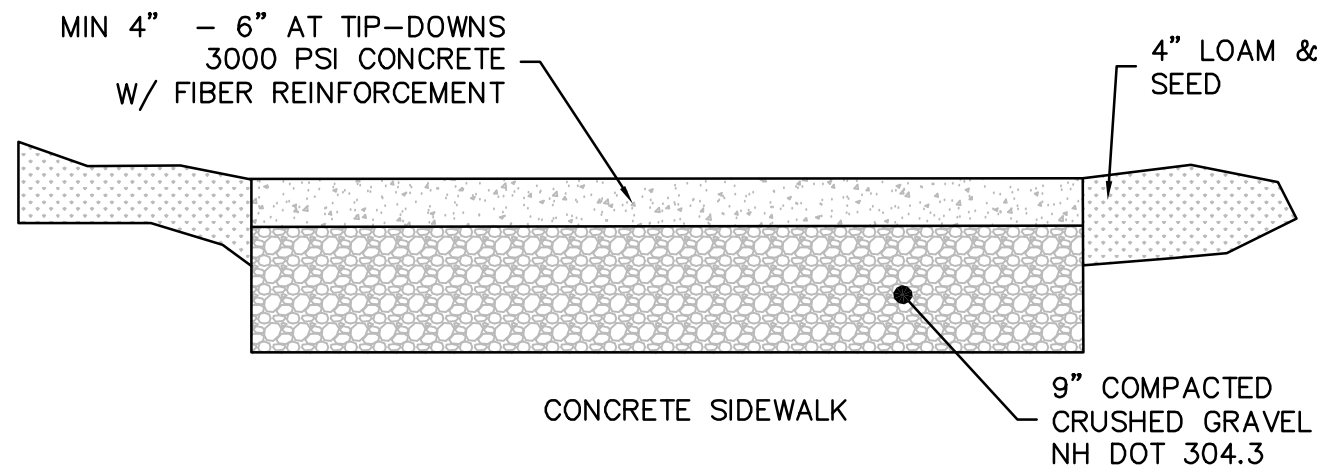
PLANNING FILE NO.: SITE-2025-XXXX



- NOTES:
1. RESERVOIR LAYER SHALL CONSIST OF WASHED 1-1/2" CRUSHED STONE.
 2. FILTER LAYER SHALL BE ASTM C-33 SAND.
 3. UNDERDRAIN LAYER SHALL CONSIST OF WASHED 1-1/2" CRUSHED STONE.

GRAVEL TRENCH DETAIL

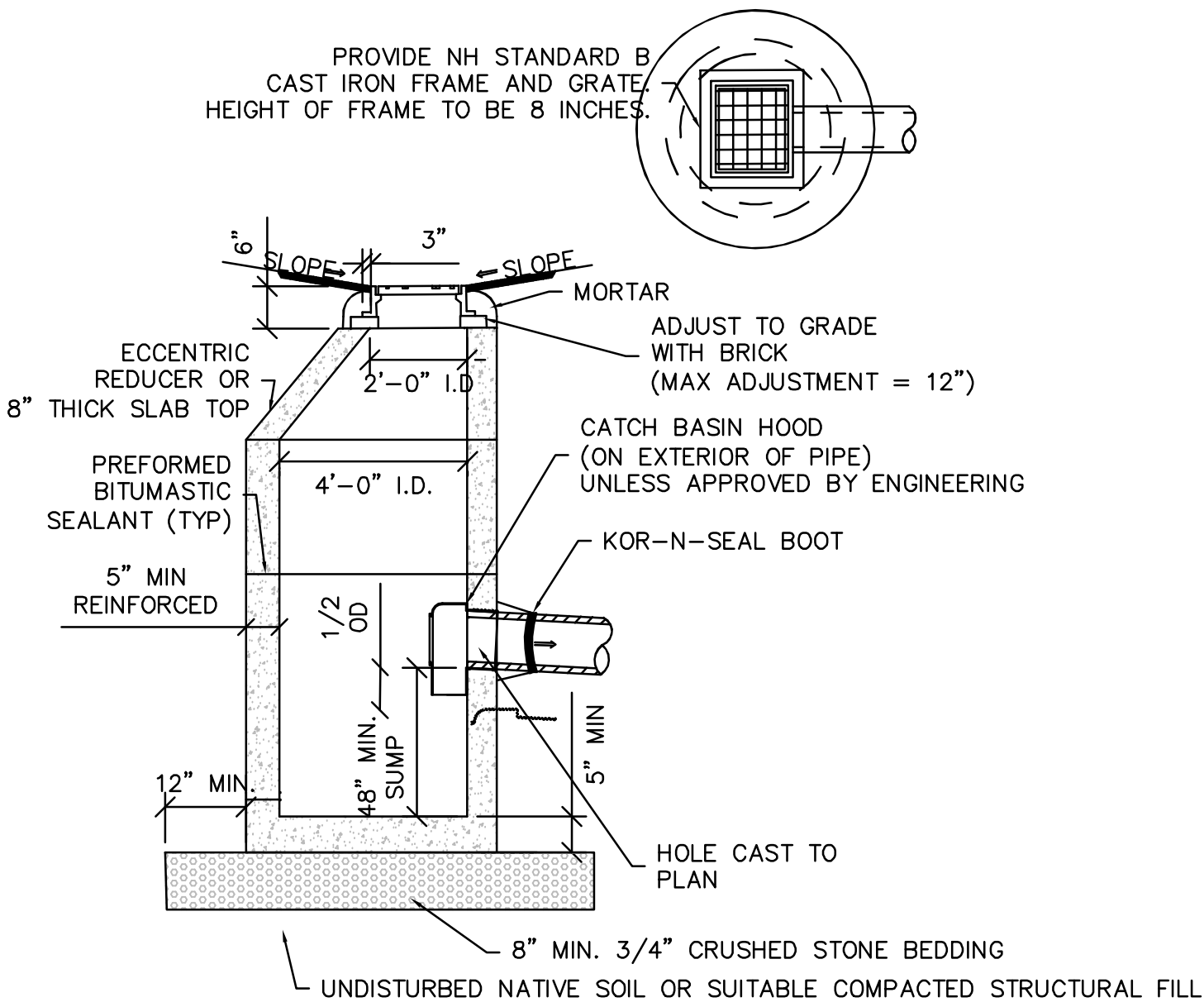
NOT TO SCALE



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

CITY OF DOVER D-6
CONCRETE SIDEWALK DETAIL

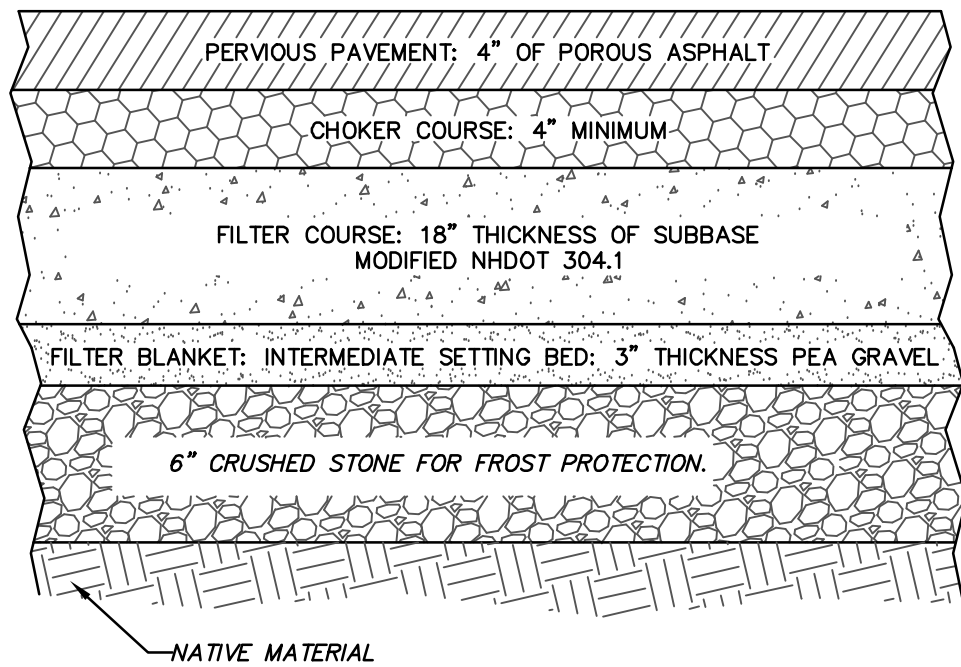
NOT TO SCALE



- NOTE:
1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.

CITY OF DOVER D-19
CATCH BASIN DETAIL

NOT TO SCALE



(UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS)

- NOTE:
1. SEE SITE PLAN FOR LOCATION OF POROUS PAVEMENT, PAVEMENT WIDTH AND LOCATION.
 2. CONSTRUCTION MATERIALS SHALL NOT BE STORED ON THE POROUS PAVEMENT OR BASE MATERIALS.
 3. A PROFESSIONAL ENGINEER SHALL PERFORM ON-SITE INSPECTIONS DURING THE CONSTRUCTION AND INSTALLATION OF POROUS PAVEMENT AND PROVIDE A STATEMENT UPON COMPLETION OF WORK IDENTIFYING THAT THE PAVEMENT WAS PRODUCED AND INSTALLED AS PER THE REFERENCED SPECIFICATION. NOTIFY THE CITY ENGINEER OF THE INSTALLATION SCHEDULE AND IN ADVANCED OF INSTALLATION.
 4. CRUSHED STONE, BANK RUN GRAVEL & CRUSHED GRAVEL MATERIALS SHALL CONFORM WITH NHDOT STD. SPECIFICATIONS.
 5. THE POROUS PAVEMENT AREAS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS IN "UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS, FEBRUARY 2014, REVISED SEPTEMBER 2016" (OR LATEST EDITION), PUBLISHED BY UNIVERSITY OF NEW HAMPSHIRE STORMWATER CENTER.
 6. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
 7. QUALITY CONTROL AND QUALITY ASSURANCE SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.
 8. POROUS ASPHALT SHALL BE INSTALLED AS THE LAST CONSTRUCTION ACTIVITY ONCE THE GRADING ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS BEEN STABILIZED.

- MAINTENANCE REQUIREMENTS:
1. MINIMIZING SANDING
 2. MINIMIZE APPLICATION OF SALT FOR ICE CONTROL
 3. MONITOR PERIODICALLY, AT LEAST TWICE ANNUALLY, WITHING 30 MINUTES OF A PRECIPITATION EVENT, TO ENSURE THAT THE PAVEMENT SURFACE DRAINS EFFECTIVELY AFTER STORMS.
 4. SEE ATTACHED CHECKLIST FOR INSPECTION REQUIREMENTS (SEE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN)
 5. INSPECT FOR SALT ACCUMULATION, SEDIMENT, ORGANIC DEBRIS, ETC. AND PERIODICALLY CLEAN (1-2 TIMES PER YEAR) USING SWEEPER OR VACUUM SWEEPER. VACUUM SWEEPING IS THE PREFERRED METHOD.
 6. INSPECT ADJACENT NON-PERMEABLE PAVEMENT SECTIONS (1-2 TIMES PER YEAR) AND ENSURE THEY ARE FREE OF DEBRIS/ SEDIMENT TO PREVENT TRACKING.
 7. INSPECT ADJACENT VEGETATION AREAS (1-2 TIMES PER YEAR) TO ENSURE THERE ARE NO SIGNS OF EROSION AND SEDIMENT/ ORGANIC DEBRIS RUN-ON TO THE POROUS PAVEMENT AREAS.
 8. INSPECT AREAS (AS NEEDED) TO ENSURE STOCK PILING OF SNOW, SAND/ SALT, MULCH, SOIL, YARD WASTE, ETC. IS NOT OCCURRING.
 9. INSPECT PAVEMENT FOR DAMAGED AREAS (AS NEEDED) AND REPAIR AS THEY ARE IDENTIFIED.

(SEE SITE PLAN FOR LOCATION)

POROUS PAVEMENT SECTION

NOT TO SCALE

CATCH BASIN SPECIFICATIONS:

1. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION"; HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS".
2. STORM DRAINS SHALL BE ADS N12 OR APPROVED EQUAL, AND SHALL BE JOINTED WITH NEOPRENE "O" RINGS.
3. CATCH BASINS AND MANHOLES SHALL BE PRE-CAST REINFORCED CONCRETE DESIGNED BY AN ENGINEER REGISTERED IN NEW HAMPSHIRE, AND ABLE TO WITHSTAND LOADINGS OF 8 TONS (H2O LOADING).
4. MANHOLES SHALL HAVE CAST IRON FRAMES AND COVERS WITH 30" INSIDE DIAMETER OPENINGS. A 3-INCH (MINIMUM) LETTER "D" FOR DRAIN SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
5. CATCH BASINS AND MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK. MAXIMUM ADJUSTMENT TO GRADE SHALL BE 12 INCHES. FRAMES SHALL BE SET ON A FULL BED OF MORTAR, TRUE TO GRADE AND CONCENTRIC WITH THE MASONRY. ALL VOIDS BETWEEN THE TOP OF THE STRUCTURE AND THE BOTTOM FLANGE OF THE FRAME SHALL BE COMPLETELY FILLED TO MAKE A WATERTIGHT FIT. A RING OF MORTAR AT LEAST ONE INCH THICK AND PITCHED TO SHED WATER AWAY FROM THE FRAME, SHALL BE PLACED OVER AND AROUND THE OUTSIDE OF THE BOTTOM FLANGE. THE MORTAR SHALL EXTEND TO THE OUTER EDGE OF THE MASONRY ALL AROUND ITS CIRCUMFERENCE AND SHALL BE FINISHED SMOOTH. NO VISIBLE LEAKAGE WILL BE PERMITTED.
6. INVERT CHANNELS OF SEWER MANHOLES SHALL BE FORMED SMOOTHLY TO THE LARGEST PIPE RADIUS. CHANGES IN GRADE SHALL BE FORMED SMOOTHLY AND EVENLY. THE FLOOR OF THE STRUCTURE OUTSIDE THE CHANNELS SHALL BE SLOPED TOWARDS THE CHANNELS AT APPROXIMATELY 1/2 INCH PER FOOT. THE FLOOR AT THE CHANNEL SHALL MATCH THE CROWN OF THE LARGEST PIPE.
7. TRENCH CONSTRUCTION WILL CONFORM WITH SECTION 603.3.1 OF THE STANDARD SPECIFICATIONS (1974).
8. WOOD SHEETING OR A SUITABLE TRENCH BOX SHALL BE USED TO SUPPORT THE TRENCH AS NECESSARY. IF WOOD SHEETING IS USED, IT SHALL BE DRIVEN AT A DISTANCE OF 1 FOOT FROM THE OUTSIDE DIAMETER OF THE PIPE TO A DEPTH 6 INCHES BELOW THE INVERT OF THE PIPE. WOOD SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE, BUT NOT GREATER THAN 3 FEET BELOW THE FINISHED GRADE.
9. BEDDING SHALL CONFORM WITH SECTION 603.3.2 OF THE STANDARD SPECIFICATIONS (1974).
10. BACKFILL MATERIAL WILL CONFORM WITH SECTION 603.3.5 OF THE STANDARD SPECIFICATIONS (1974) AND, IN ADDITION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, FROZEN MATERIAL, ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. BACKFILL SHALL NOT BE PLACED ON FROZEN OR PREVIOUSLY FROZEN MATERIAL.
11. ALL BACKFILL AND BEDDING COMPACTION SHALL MEET THE REQUIREMENTS OF AASHO T 99 METHOD C. DENSITY SHALL BE 95 PERCENT. COMPACTION SHALL BE 6 INCH LIFTS FOR BEDDING AND BACKFILL TO A PLANE 1 FOOT ABOVE THE PIPE AND IN 12 INCH LIFTS THEREAFTER BY AN APPROVED MECHANICAL COMPACTOR.
12. SHOULD FROZEN MATERIAL BE ENCOUNTERED, IT SHALL NOT BE PLACED IN THE BACKFILL NOR SHALL BACKFILL BE PLACED UPON FROZEN MATERIAL. PREVIOUSLY FROZEN MATERIAL SHALL BE REMOVED AS REQUIRED BEFORE NEW BACKFILL IS PLACED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FRAMES AND GRATES DURING AND FROM THE TIME OF REMOVAL FROM THE EXISTING STRUCTURE TO AND DURING THE TIME OF RESETTING, AND SHALL REPLACE IN KIND ANY DAMAGED FRAMES OR GRATES AT NO ADDITIONAL COMPENSATION.
14. ALL TRENCHES WILL BE COVERED AND DEBRIS, INCLUDING ANY REJECTED MATERIALS, SHALL BE REMOVED DAILY. STRICT SAFETY PRECAUTIONS SHALL BE MAINTAINED AT ALL TIMES.
15. LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE.
 - A) THE CONTRACTOR SHALL, 48 HOURS PRIOR TO CONSTRUCTION, NOTIFY THE UTILITY COMPANIES AND HAVE ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION MARKED IN THE FIELD.
 - B) AFTER THE UTILITIES HAVE BEEN LOCATED AND PRIOR TO CONSTRUCTION, THE CONTRACTOR WITH THE ENGINEER, SHALL LAYOUT THE PROPOSED DRAINAGE SYSTEM IN THE FIELD AND RECTIFY ANY UTILITY CONFLICTS WHICH MAY BE FOUND.
 - C) ANY CONFLICTS WITH UTILITIES FOUND DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE UTILITY COMPANY AND PROPERLY RECTIFIED.
 - D) THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIR FOR ANY UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY TO REPAIR ANY DAMAGES, HOWEVER, THE CONTRACTOR MAY MAKE APPROPRIATE REPAIRS WITH THE UTILITY COMPANY'S PERMISSION.
16. COMPLETE SHOP DRAWINGS FOR PIPE, MANHOLES, CATCH BASINS, FRAMES, GRATES AND COVERS SHALL BE SUBMITTED IN TRIPLICATE FOR APPROVAL BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. EACH SHOP DRAWING SHALL BE CHECKED AND INITIALIZED BY THE CONTRACTOR TO INDICATE APPROVAL BEFORE IT IS SUBMITTED TO THE ENGINEER.
17. SHOP DRAWINGS FOR FLAT CONCRETE COVERS SHALL BE STAMPED PRIOR TO SUBMISSION FOR APPROVAL BY A NEW HAMPSHIRE REGISTERED PROFESSIONAL ENGINEER.
18. BRICK MASONRY FOR SETTING FRAMES AND BRICK AND MORTAR PLUGS SHALL CONFORM TO THE STANDARD SPECIFICATION SECTION 604.2.4.

PLANNING FILE NO.: SITE-2025-XXXX

DETAIL SHEET

CHILDCARE DEVELOPMENT
FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

15

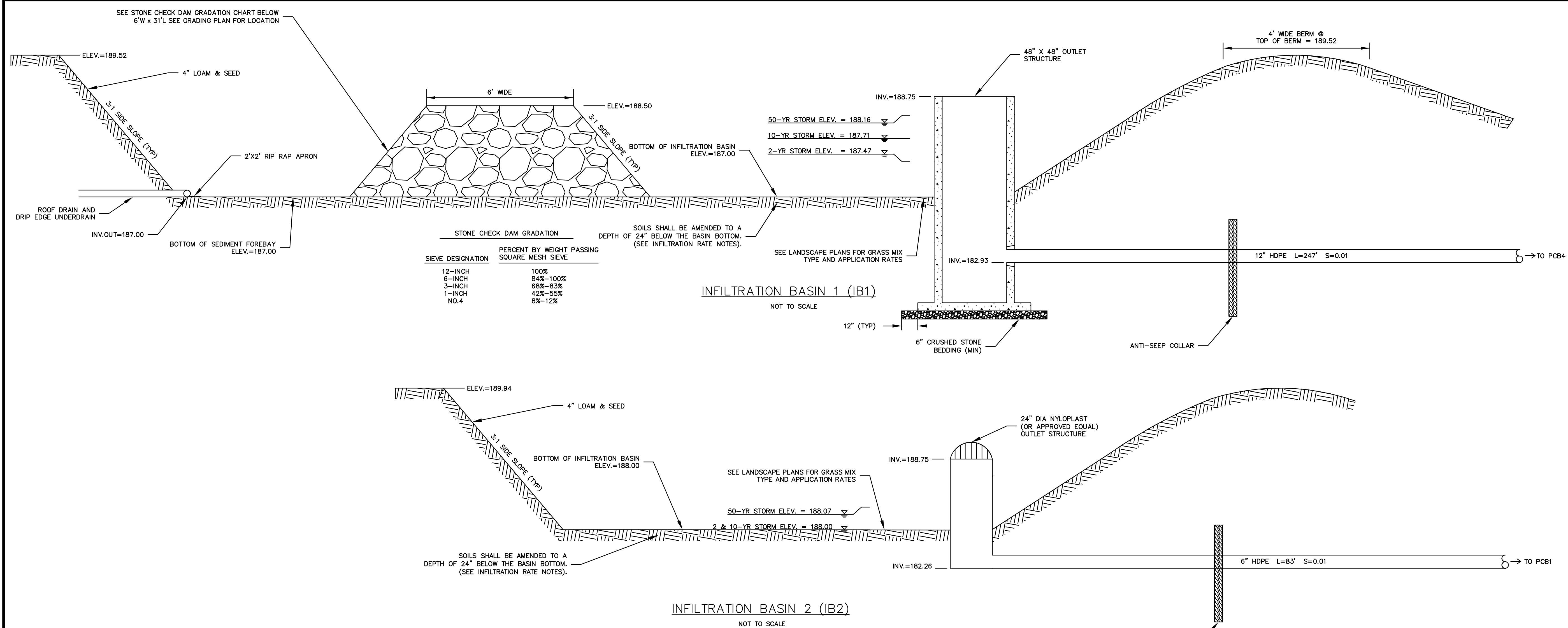
914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

DATE: 9-18-25	SCALE: 1"=20'	DRAWN BY: MJM	DESIGN BY: MJM	APPROVED BY: SJH	PROJECT NO: 25044	FILE: 25044-SITE	NO.
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DATE	APP'D	REVISION

CIVILWORKS NEW ENGLAND
181 Watson Road, PO Box 1166
Dover, NH 03820
603.749.0443

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INFILTRATION BASIN CONSTRUCTION NOTES

INFILTRATION AREA EARTH EMBANKMENT:

- TOP BERM WIDTH SHALL BE A MINIMUM OF 6 FEET.
- SIDE SLOPES - THREE HORIZONTAL TO ONE VERTICAL (3:1) OR UNLESS OTHERWISE NOTED.
- GRAVEL FILL MATERIALS SHALL BE HARD DURABLE GRANULAR STOCK AND 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.
- FILL MATERIALS SHALL BE A MIXTURE OF STONES (NOT EXCEEDING 6" IN DIAMETER) AND A FINE SANDY SILT MATERIAL.
- THE SOIL USED FOR THE BERM SHALL HAVE A MINIMUM PERCOLATION RATE OF 10 MINUTES AN INCH.
- SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES AND PIPE CONDUITS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

DETENTION AREA BERM BASE PREPARATION:

- 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.
- 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:

- GRAVEL FILL SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
- GRAVEL FILLS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
- ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
- 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.

GENERAL NOTES:

- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.
- DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.
- AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
- VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
- DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

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, PIPES CONDUITS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEAN OF HAND TAMPING OR MANUALLY POWER TAMPER OR PLATE VIBRATORS.

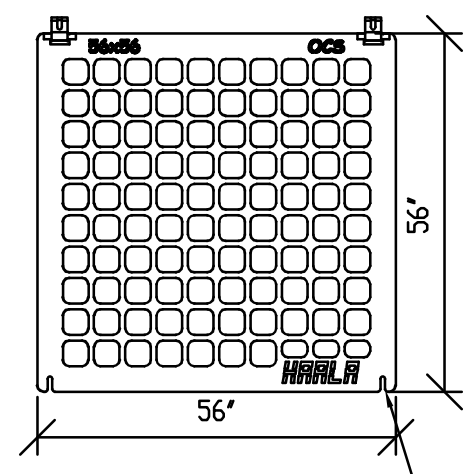
MAINTENANCE

MAINTENANCE IS NECESSARY TO ENSURE THAT THE INFILTRATION BASIN WILL CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. THE OWNER IS RESPONSIBLE FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA.

- 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.
- VEGETATION** - THE VEGETATED AREAS OF THE SYSTEM 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.
- INLETS AND OUTLETS** - SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED.
- SEDIMENT** - SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE FOREBAY. WHEN SEDIMENT ACCUMULATIONS REACH 3 INCHES THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

INFILTRATION RATE NOTES

- AMEND EXISTING SOILS ALONG THE BOTTOM OF THE BASINS WITH A FINE SANDY SILT MATERIAL TO A DEPTH OF 24" PER NHDES ENV-WQ 1508.06(b).
- THE AMENDED SOILS SHALL EXHIBIT AN INFILTRATION RATE OF BETWEEN 8 AND 10 INCHES/HR.
- IN SITU INFILTRATION TESTING MUST BE PERFORMED IN ACCORDANCE WITH NHDES ENV-WQ 1504.14(e) TO CONFIRM THE INFILTRATION RATE OF 8 TO 10 INCHES/HR. TESTING SHALL BE PERFORMED BY A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL, A CERTIFIED SOIL SCIENTIST, PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER.
- PERFORM TWO TESTS LOCATED WITHIN THE FOOTPRINT OF EACH INFILTRATION BASIN. THE LOCATIONS SHALL BE SUFFICIENTLY SPACED TO BE REPRESENTATIVE OF THE OVERALL CONDITIONS. CONDUCT THE TESTS AT THE BASE ELEVATION OF THE PROPOSED PRACTICE.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE DESIGN ENGINEER.
- SOIL TESTING SHALL BE COORDINATED WITH THE DESIGN ENGINEER.

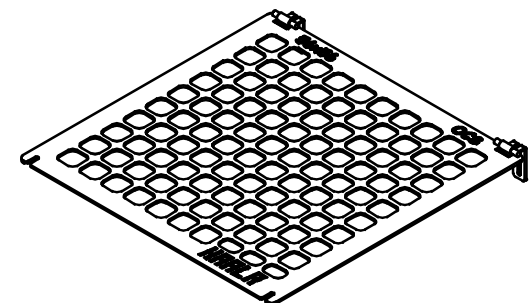


NOTES:

- UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

HAALA MC56X56

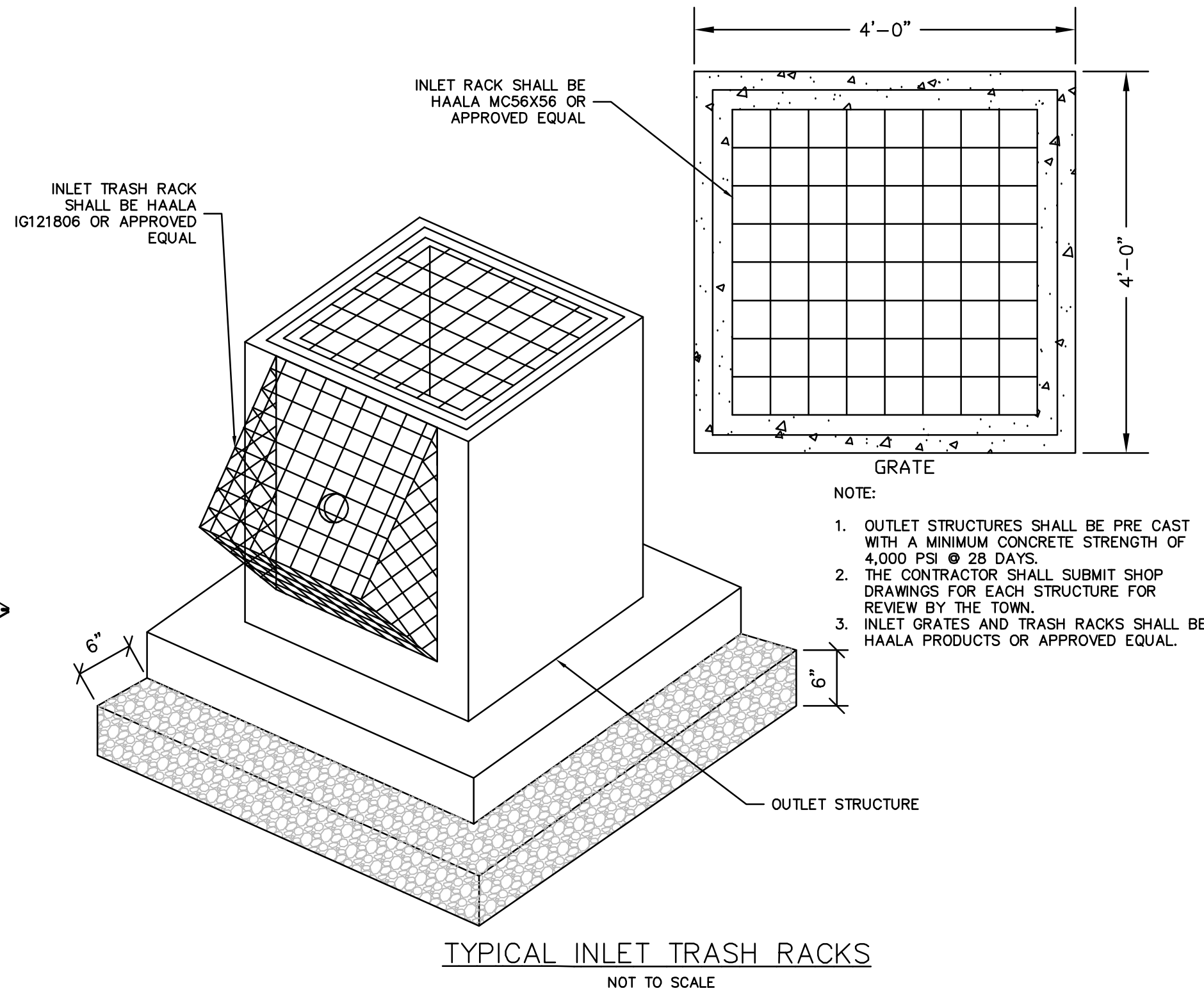
NOT TO SCALE



- UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

HAALA IG121806

NOT TO SCALE



TYPICAL INLET TRASH RACKS

NOT TO SCALE

PLANNING FILE NO.: SITE-2025-XXXX

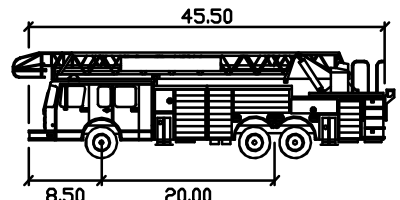
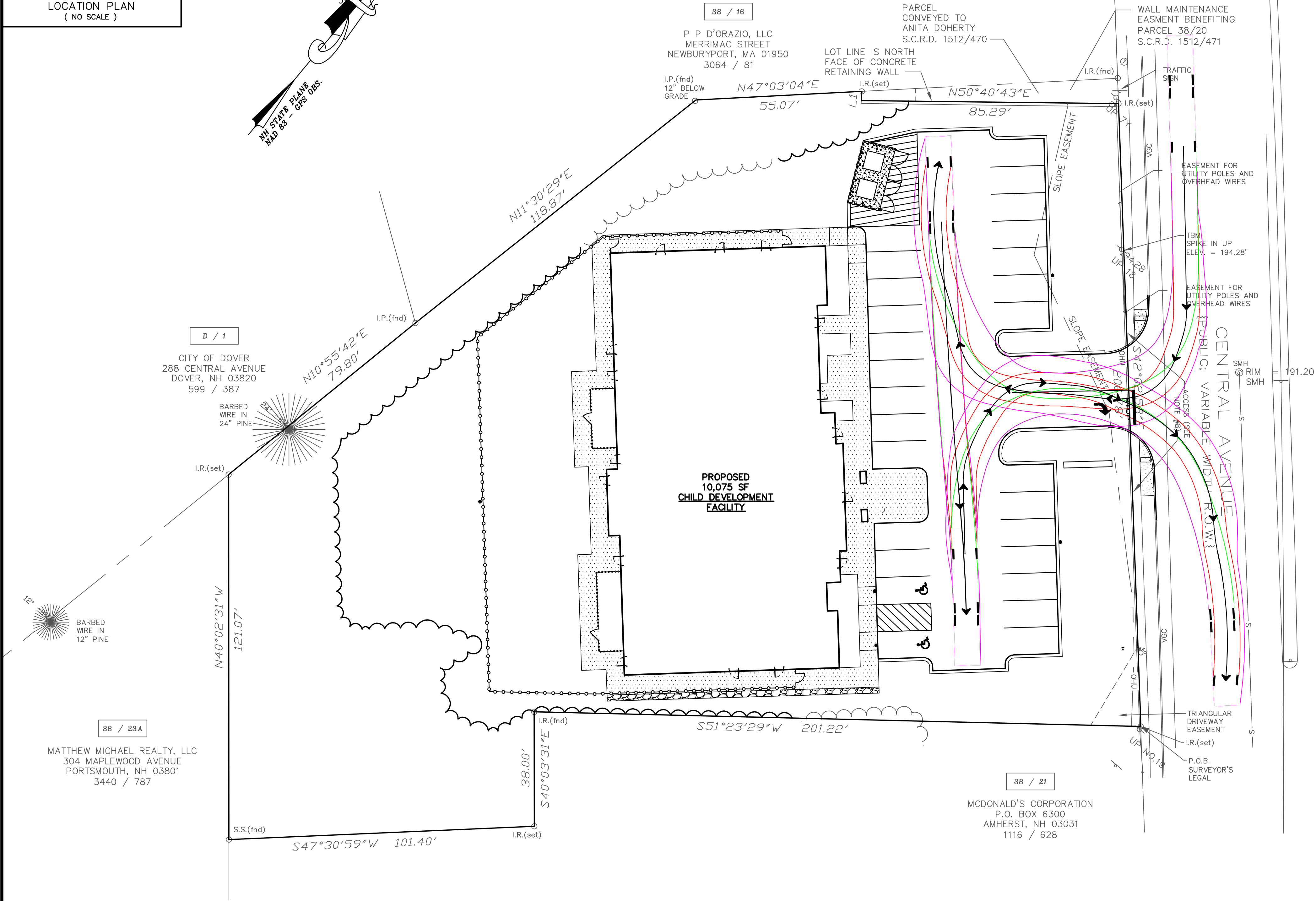
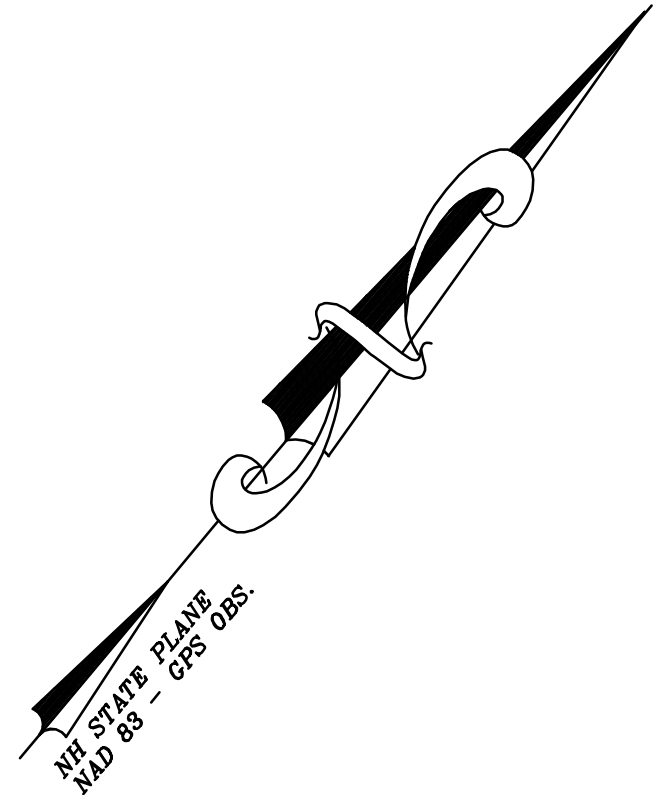
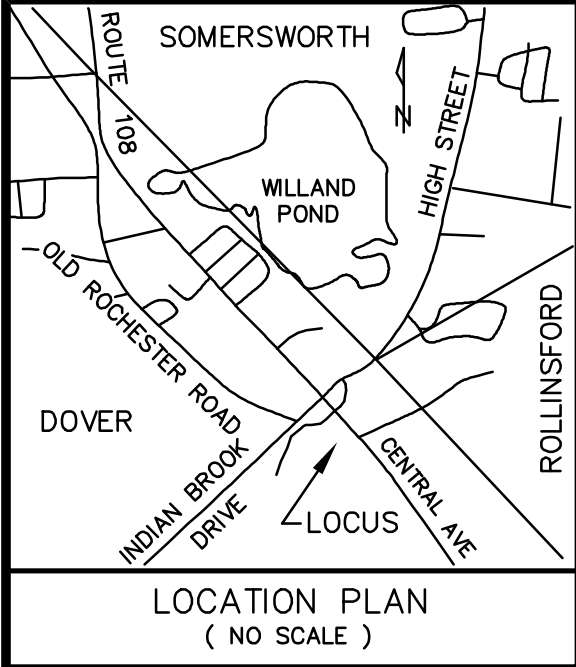
DETAIL SHEET

914 CENTRAL AVENUE, LLC.
199 NEW ZEALAND ROAD
SEABROOK, NH 03874

CHILDCARE DEVELOPMENT
FACILITY
INSITE DEVELOPMENT SERVICES, LLC.
914 CENTRAL AVE
DOVER, NH 03820

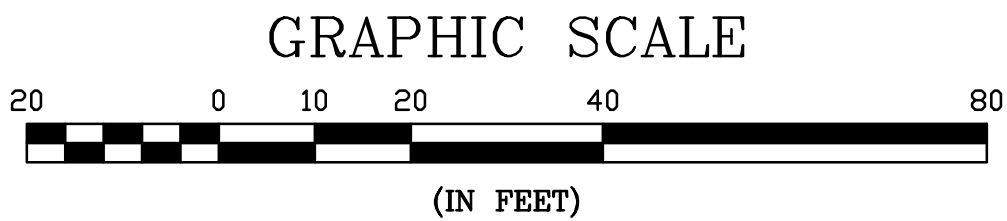
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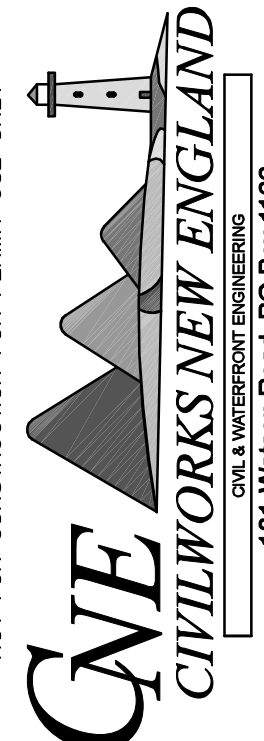
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9-18-25	1"=20'	MJM	MJM	MJM	2504	25044				



Width: 8.50
Track: 8.50
Lock to Lock Time: 6.0
Steering Angle: 44.0

TRUCK BODY
FRONT AXEL
CENTER OF REAR AXLES



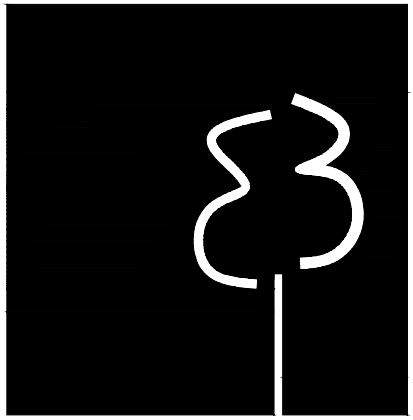
NOT FOR CONSTRUCTION FOR PERMIT USE ONLY		 CIVILWORKS NEW ENGLAND 181 Watson Road, PO Box 1166 Dover, 603.749.0443	
TRUCK MOVEMENT PLAN		DATE: 9-18-25	NO.
CHILDRE DEVELOPMENT FACILITY		SCALE: 1"=20'	REVISION
INSITE DEVELOPMENT SERVICES, LLC.		DRAWN BY: MJM	APP'D
914 CENTRAL AVE		DESIGN BY: MJM	DATE
DOVER, NH 03820		APPROVED BY: SJH	
		PROJECT NO: 25044	
		FILE: 25044-SITE	
914 CENTRAL AVENUE, LLC.			
199 NEW ZEALAND ROAD			
SEABROOK, NH 03874			

PLANTING & MAINTENANCE NOTES

1. CONTRACTOR SHALL OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO PURCHASING AND/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
2. CONSTRUCTION ACCESS WILL BE AS DIRECTED BY LANDSCAPE ARCHITECT. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ACCESS ROUTE AND ALL AREAS DISTURBED BY PLANTING OPERATIONS UPON COMPLETION OF CONSTRUCTION OPERATIONS, AT NO ADDITIONAL COST TO THE OWNER.
3. LAYOUT OF ALL PLANTING BEDS AND LOCATION OF PLANTS TO BE APPROVED BY LANDSCAPE ARCHITECT ON SITE PRIOR TO CONSTRUCTION AND INSTALLATION.
4. CONTRACTOR TO REMOVE ALL DEBRIS GENERATED BY PLANT INSTALLATION. DEBRIS TO BE DISPOSED OF IN A LEGAL MANNER.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED TO BE IN GOOD, HEALTHY AND FLOURISHING CONDITION FOR ONE YEAR FROM THE DATE OF FINAL INSTALLATION APPROVAL BY LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE, WITHOUT COST TO OWNER, AND AS SOON AS WEATHER CONDITIONS PERMIT, ALL DEAD AND NON-FLOURISHING PLANTS AS DETERMINED BY THE LANDSCAPE ARCHITECT. REPLACEMENT PLANTS SHALL BE BE GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY LANDSCAPE ARCHITECT.
6. ALL BEDS TO BE MULCHED WITH 4" DEPTH SHREDDED BARK MULCH UNLESS NOTED OTHERWISE.
7. CONTRACTOR TO PROVIDE NECESSARY TEMPORARY IRRIGATION IF NEEDED BASED ON TIME OF YEAR THE PROJECT IS IMPLEMENTED.
8. ALL LANDSCAPED AREAS SHALL RECEIVE REGULAR MAINTENANCE AND UPKEEP. SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH).
9. BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS SHALL BE IMPLEMENTED, SUCH AS THE USE OF LOW PHOSPHOROUS FERTILIZER AND SLOW RELEASE NITROGEN.
10. IF OWNERSHIP OF THE SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.

LANDSCAPE CALCULATIONS

- 153-14(G)(2) INTERIOR LANDSCAPING: PROPOSED PARKING LOT PROVIDES (27) SPACES, SO 5% OF THE INTERIOR AREA IS REQUIRED TO BE LANDSCAPED.
PARKING LOT AREA: 10,330 SQUARE FEET (5F)
 $10,330 \times 0.05 = 517$ SF REQUIRED
AMOUNT PROVIDED: 539 SF (TOTAL OF FIVE PLANTED ISLANDS WITHIN LOT)
- 153-14(G)(3) PERIMETER LANDSCAPING: DECIDUOUS AND/OR EVERGREEN SHADE TREES SHALL BE PLANTED AT 35 FEET ON CENTER WITHIN THE BUFFER AREA.
EASTERLY SIDE OF PARKING LOT (ALONG CENTRAL STREET): 180 LINEAR FEET (LF)
 $180 / 35 = 5.14$ TREES REQUIRED
(6) TREES PROVIDED
- NORTHERLY SIDE OF PARKING LOT (ALONG 38-16-0-0): 64 LF
 $64 / 35 = 1.82$ TREES REQUIRED
(3) TREES PROVIDED
- SOUTHERLY SIDE OF PARKING LOT (ALONG 38-21-0-0): 61 LF
 $61 / 35 = 1.74$ TREES REQUIRED
(2) TREES PROVIDED



terrain
planning & design llc

311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com

Central Avenue
Day Care

Site Location:
914 Central Avenue
Dover, NH 03820
Map Block No. 38-20-0-0

Prepared For:
Civilworks New England
181 Watson Road
PO Box 1166
Dover, NH 03821

LANDSCAPE PLAN

DATE: 09-15-2025

SCALE: 1" = 20'

PROJECT #: 25069

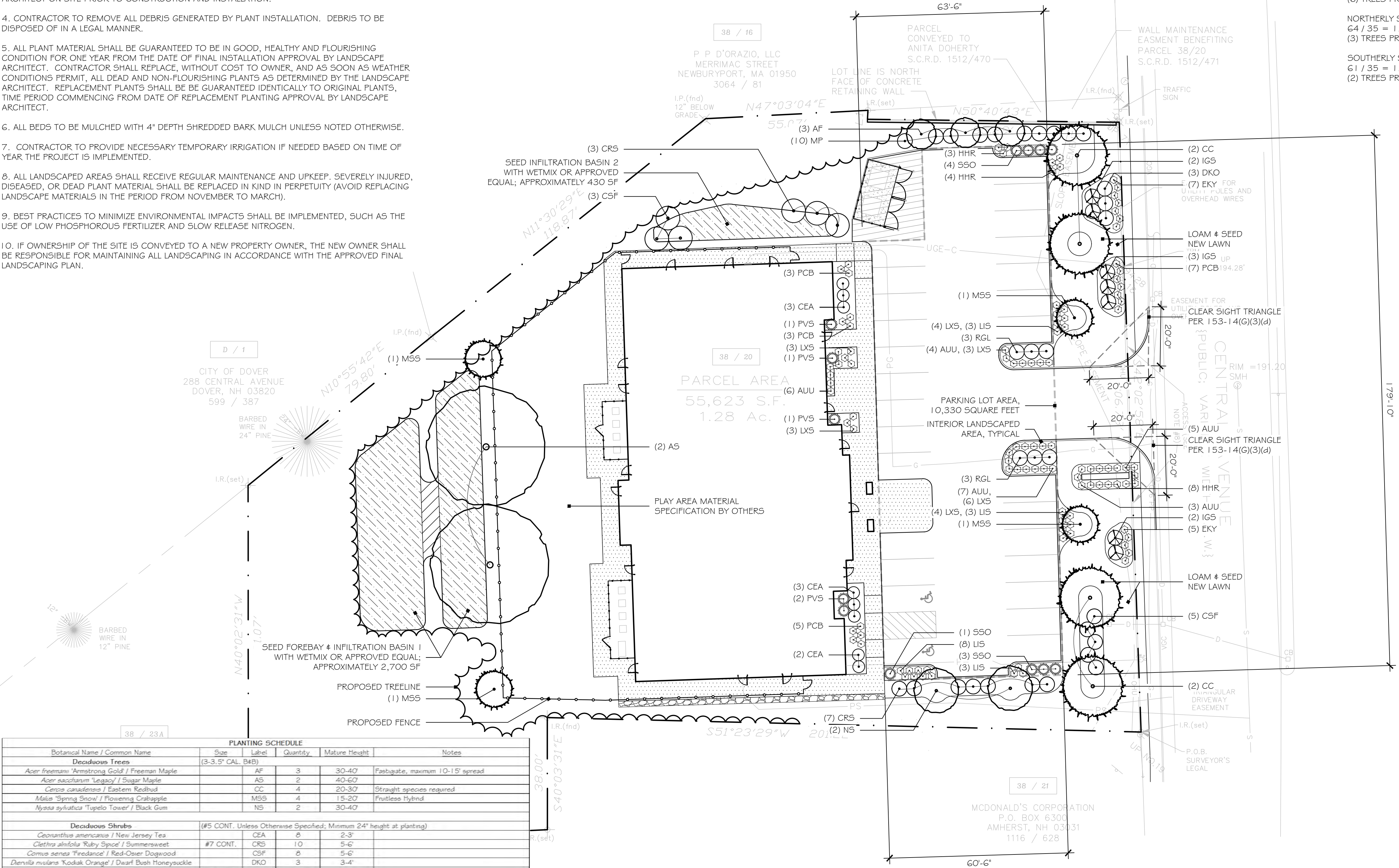
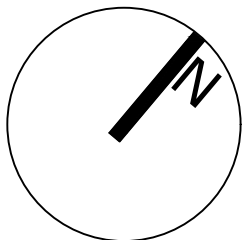
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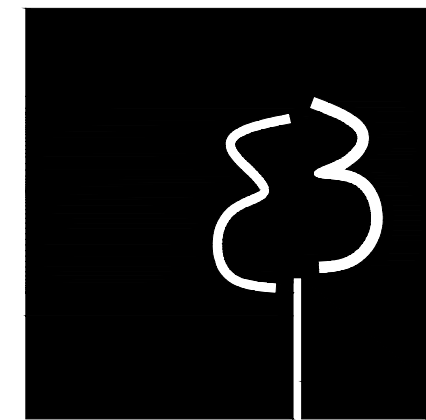
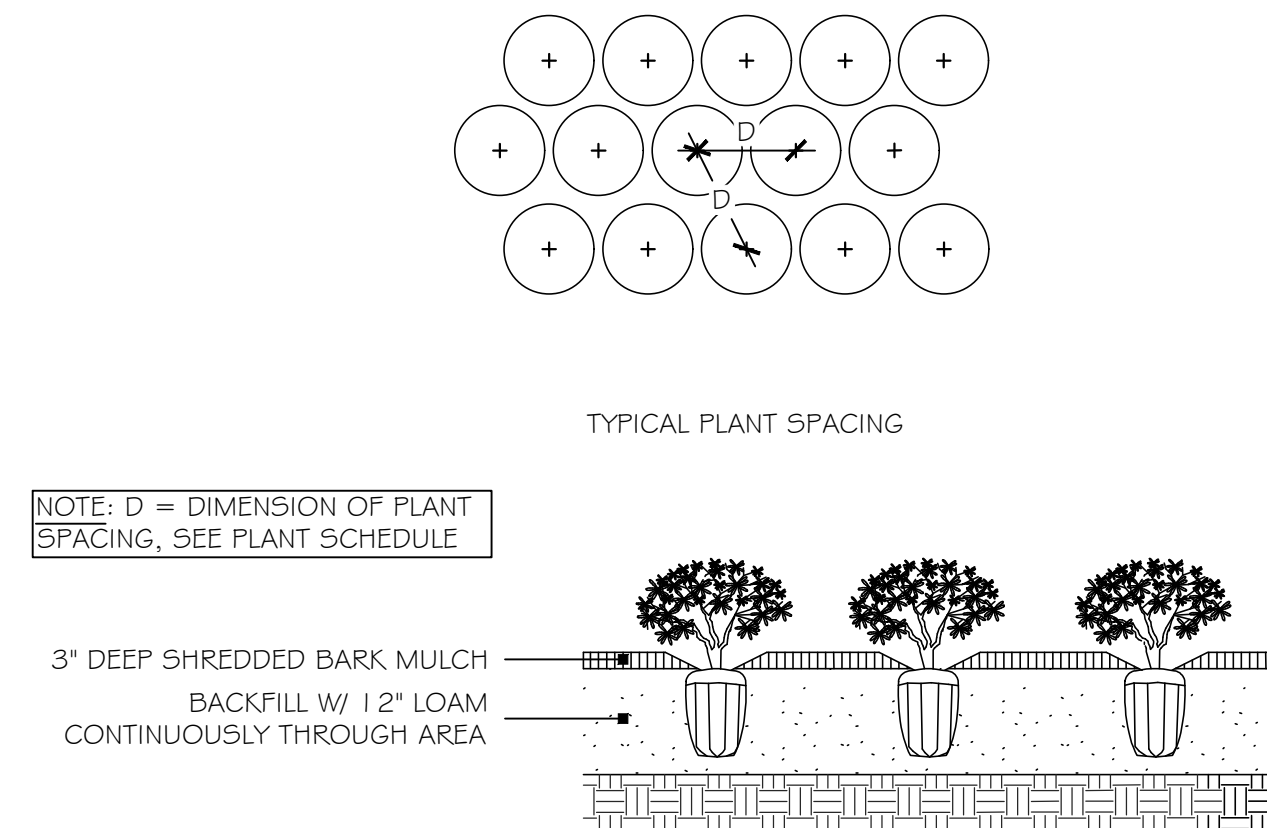
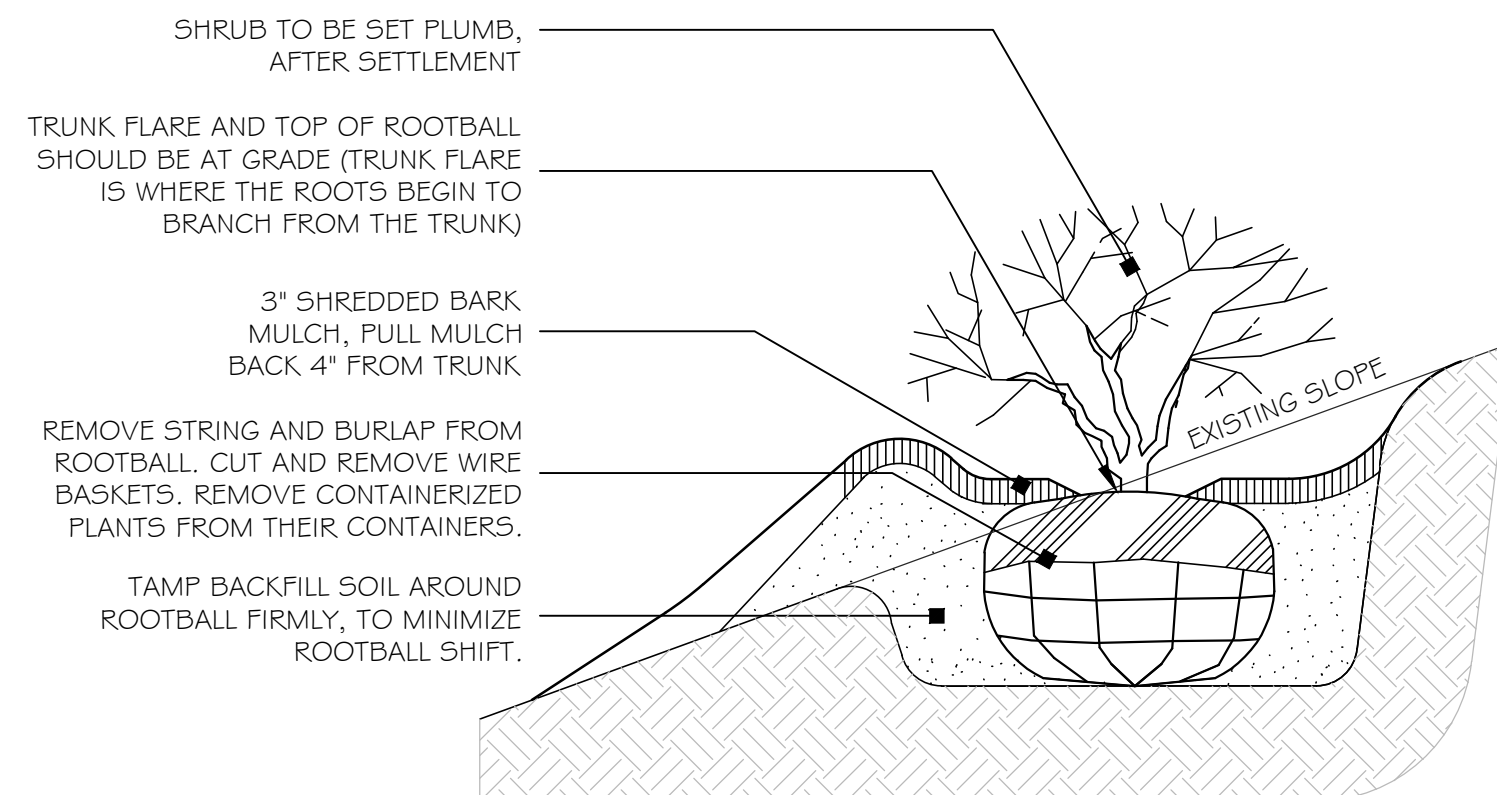
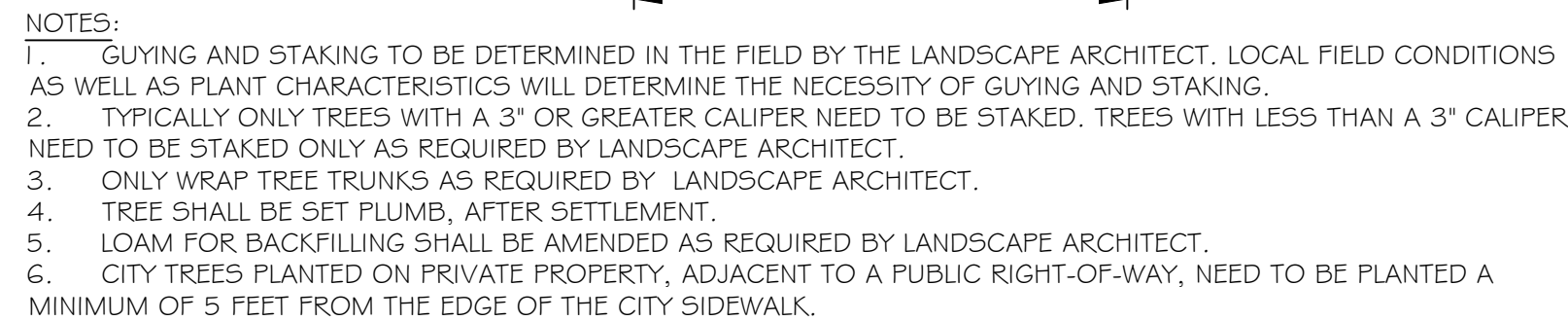
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L-1





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Site Location:
914 Central Avenue
Dover, NH 03820
Map Block No. 38-20-0-0

Prepared For:
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181 Watson Road
PO Box 1166
Dover, NH 03821

DATE: 09-15-2025

SCALE: NTS

PROJECT #: 25069

Drawn By: BDW

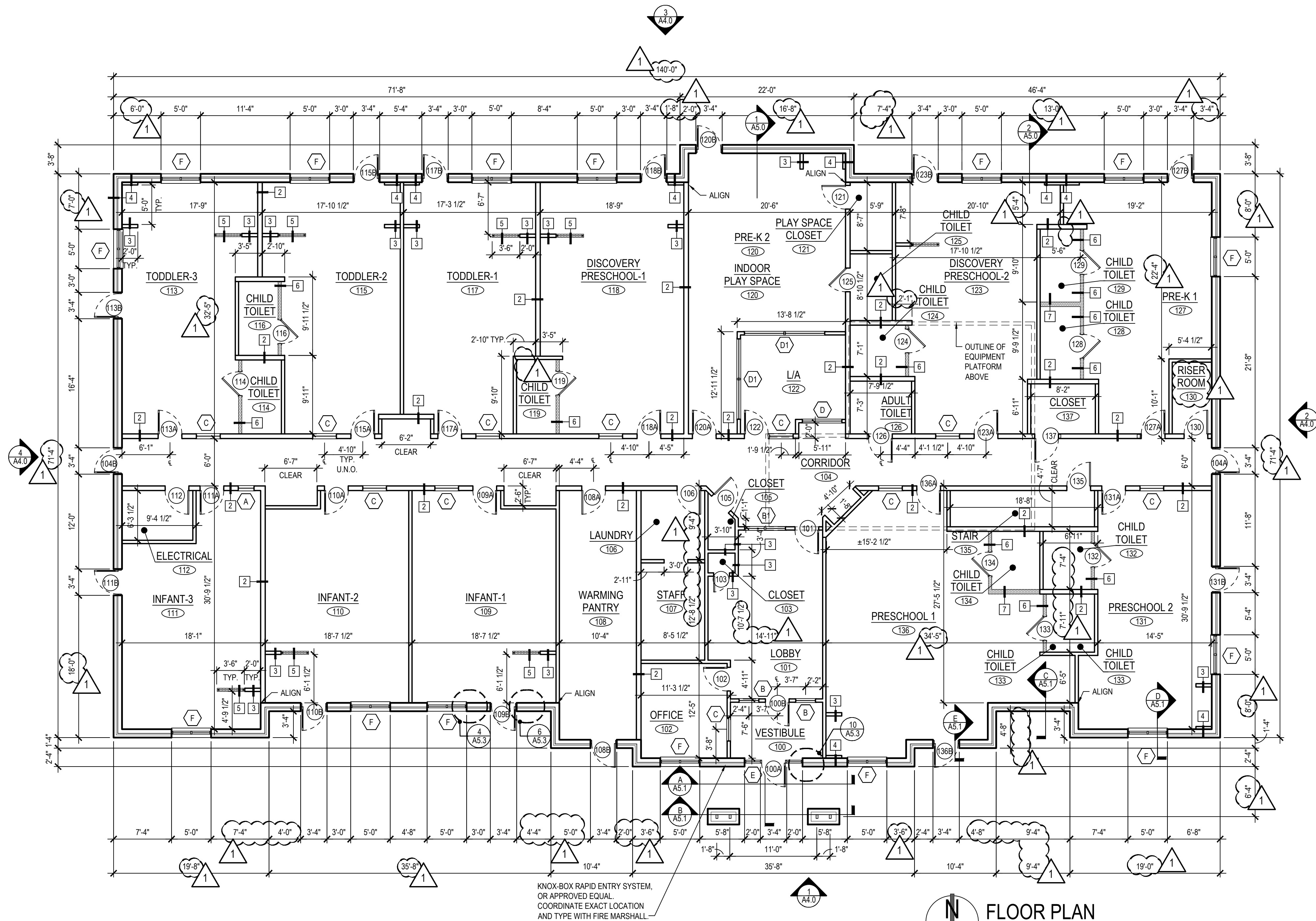
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L-2





KNOX-BOX RAPID ENTRY SYSTEM,
OR APPROVED EQUAL.
COORDINATE EXACT LOCATION
AND TYPE WITH FIRE MARSHALL.

FLOOR PLAN
SCALE 1/8" = 1'-0"

WALL TYPES		
TAG	PLAN VIEW	DESCRIPTION
1		5/8" GYP. BD. ON EA. SIDE OF 2x4 WOOD STUDS @ 16" O.C. MAX. WITH SOUND ATTENUATION BATT INSULATION.
2		5/8" GYP. BD. ON EA. SIDE OF 2x6 WOOD STUDS @ 16" O.C. MAX. WITH SOUND ATTENUATION BATT INSULATION.
3		5/8" GYP. BD. ON EA. SIDE OF 2x4 WOOD STUDS @ 16" O.C. MAX.
4		FURRING: 5/8" GYP. BD. ON EXPOSED SIDE OF 2x4 WOOD STUDS @ 16" O.C. MAX.
5		LOW WALL: 5/8" GYP. BD. ON EA. SIDE OF 2x4 WOOD STUDS @ 16" O.C. MAX. TOP OF WALL @ 42" A.F.F. - PROVIDE STEEL POST AT UN-BRACED END OF WALL. SEE DETAIL 3A/A6.0, 16/A6.0, 16A/A6.0 & 3/A7.0.
6		LOW WALL: TILE ON DENSARMOR PLUS BACKER BOARD ON EA. SIDE OF 2x4 WOOD STUDS @ 16" O.C. MAX. TOP OF WALL @ 48" A.F.F. REFER TO DETAIL 3 & 4/A-6.0.
7		LOW WALL: TILE ON DENSARMOR PLUS BACKER BOARD ON EA. SIDE OF 2x6 WOOD STUDS @ 16" O.C. MAX. TOP OF WALL @ 48" A.F.F. REFER TO DETAIL 3 & 4/A-6.0.
8		INTERIOR EQUIPMENT ENCLOSURE WALL: (1) ONE LAYER OF TYPE 'X' 5/8" GYPSUM BOARD ON ONE SIDE OF 2x4 WOOD STUDS @ 16" O.C. EXTENDED UP TO CEILING WITH R-21 BATT INSULATION AND 3" FOIL FACE RIGID INSULATION TOTAL MIN. R-VALUE OF R-38. SEE ATTIC PLAN, SHEET A-2.1.
9		DRAFTSTOPPING WALL: 3/8" PLYWOOD ON ONE SIDE OF PRE-ENGINEERED ROOF TRUSS. RUN UP TO UNDER SIDE OF ROOF SHEATHING. SEE ATTIC PLAN, SHEET A-2.1.

- GENERAL NOTES**
- ALL WALLS ARE TYPE **1** UNLESS NOTED OTHERWISE.
 - ALL INTERIOR DIMENSIONS ARE TO FACE OF WALL OR CENTERLINE OF DOOR/ WINDOW UNLESS NOTED OTHERWISE.
 - THE HINGE SIDE OF ALL NEW DOORS SHALL BE 6" OFF WALL, UNLESS NOTED OTHERWISE.
 - ANY EQUIPMENT SUPPLIED BY TENANT TO BE INSTALLED, ROUGHED-IN AND CONNECTED TO UTILITIES BY CONTRACTOR.
 - AUTOMATIC FIRE ALARM & DETECTION PLANS SHALL BE SUBMITTED TO LOCAL FIRE JURISDICTION FOR APPROVAL.
 - CONTRACTOR SHALL INSTALL 2x4 WOOD BLOCKING FOR ALL RAILS, SINKS, GRAB BARS, DRINKING FOUNTAINS, AND CASEWORK AS NEEDED.
 - CONTRACTOR SHALL INSTALL PLYWOOD BACKERBOARD BEHIND ALL CLASSROOM VANITIES IN LIEU OF GEORGIA PACIFIC DENSARMOR BACKER BOARD.
 - CARPENTER TO PROVIDE A STORY STICK FOR ALL SEPARATE CONDITIONS INDICATING HEIGHTS OF BLOCKING WITHIN WALLS. STORY STICK TO REMAIN ON SITE UNTIL COMPLETION OF JOB, FOR INSTALLERS REFERENCE.
 - PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS AND ABOVE TILE IN CHILD RESTROOMS.
 - GENERAL CONTRACTOR TO COORDINATE EXACT LOCATIONS OF PLUMBING ROUGH IN, PLUMBING FIXTURES, AND MILLWORK WITH FIXTURE PLAN, INTERIOR ELEVATIONS, AND PLUMBING PLANS. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES WITHIN PLANS.
 - REFER TO SHEET A-8.0 FOR DOOR SCHEDULE AND WINDOW TYPES.
 - ALL WOODEN CORNERS AND EDGES TO BE SANDED AND EASED PRIOR TO PAINTING, TO ELIMINATE ALL SHARP EDGES.
 - SOUTH AND WEST FACING WINDOWS SHALL RECEIVE UV PROTECTIVE AND SOLAR HEAT GAIN RESISTIVE GLAZING.
 - ALL WALL PENETRATIONS TO BE CAULKED & SEALED.
 - PROVIDE GEORGIA PACIFIC DENSARMOR BACKER BOARD AT ALL CERAMIC WALL TILE LOCATIONS PER SPECIFICATIONS.
 - ALL GYPSUM BOARD WALLS TO HAVE LEVEL 4 FINISH (EXCEPT LOBBY WALLS TO RECEIVE LEVEL 5 FINISH) REFER TO SPECIFICATION.
 - INSULATION IN CONCEALED AND EXPOSED SPACES MUST HAVE A FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED INDEX 450 OR LESS PER CODE.
 - ALL WOOD BASED PRODUCTS WITHIN 8" OF GRADE AND IN CONTACT WITH CONCRETE OR MASONRY MUST BE PRESSURE TREATED AS REQUIRED PER CODE.
 - PROVIDE 2x10 BLOCKING IN WALLS AT BOTTOM AND AT 40" A.F.F. AT ENTIRE PERIMETER OF GYM. REFER TO DETAIL 10/A6.0.
 - SEE SHEET A0.1 FOR LOCATION OF FIRE EXTINGUISHERS AND RECESSED FIRE EXTINGUISHERS CABINETS.

SYMBOL LEGEND	
	DOOR IDENTIFICATION
	WALL TYPE
	WINDOW IDENTIFICATION

PRELIMINARY -
NOT FOR
CONSTRUCTION

17710 Detroit Avenue
Lakewood, Ohio 44107
Phone (216) 321-9134
Fax (216) 321-4624
www.adaarchitects.com

KINDERCARE LEARNING CENTER
PROTOTYPE 10K

ANYWHERE, USA

PROTOTYPE 10K

REVISIONS

#	DATE	TYPE
1	06/12/2024	2024 PROTOTYPE 02
	10/21/2024	2024 PROTOTYPE 03

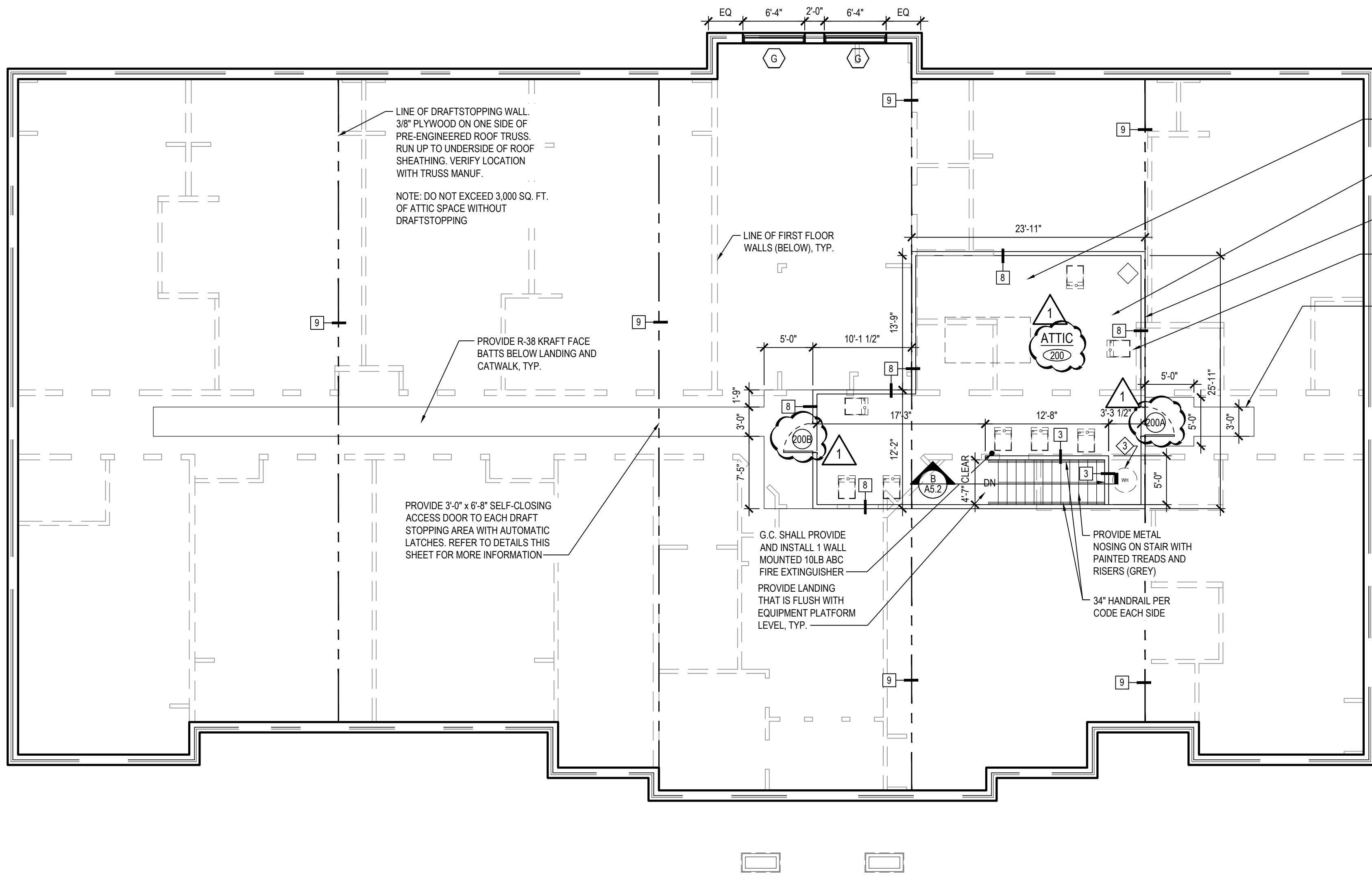
FLOOR PLAN

DATE 06/12/2024

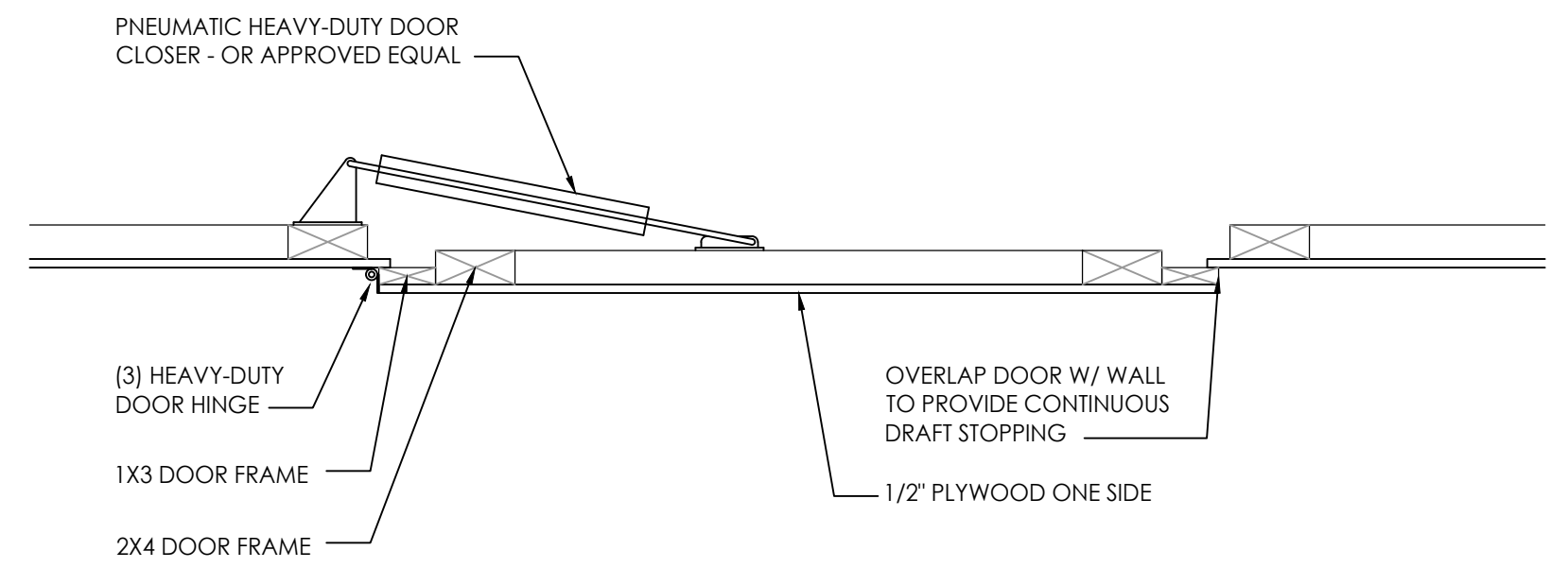
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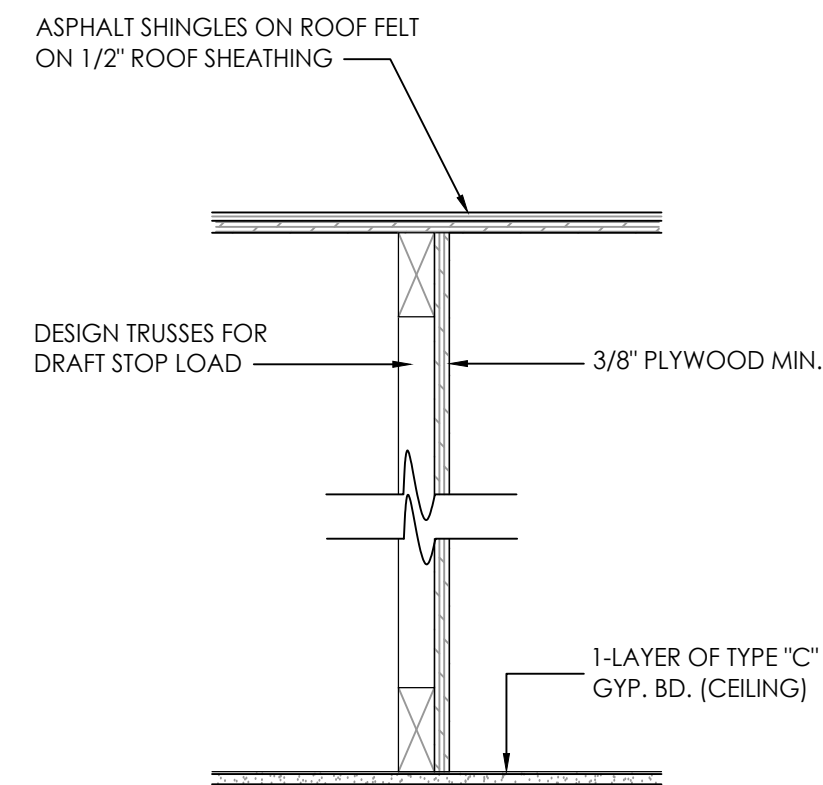
SHEET NO.



ATTIC PLAN
SCALE 1/8" = 1'-0"



1
A-2.1
PLAN DETAIL
TYP. DRAFT STOP ACCESS
SCALE: 1 1/2"=1'-0"



2
A-2.1
SECTION DETAIL
TYP. DRAFT STOP
SCALE: 1 1/2"=1'-0"

GENERAL NOTES	
1.	SEE MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
2.	REFER TO SHEET A-1.0 FOR WALL TYPES.
SYMBOL LEGEND	
102	DOOR IDENTIFICATION
A	WINDOW IDENTIFICATION

PRELIMINARY -
NOT FOR
CONSTRUCTION



KINDERCARE LEARNING CENTER
PROTOTYPE 10K

ANYWHERE, USA

PROTOTYPE 10K

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REVISIONS

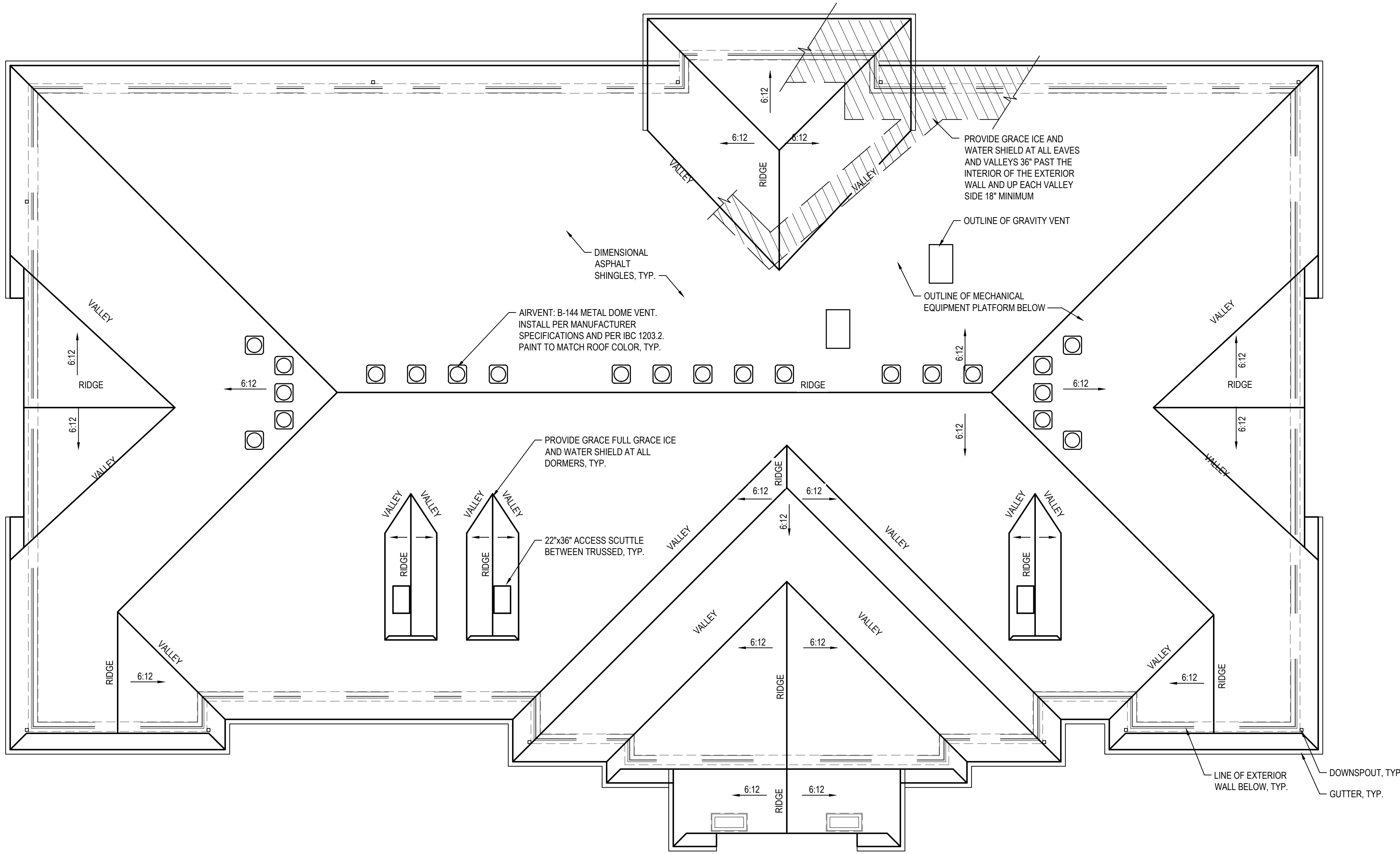
#	DATE	TYPE
1	06/12/2024	2024 PROTOTYPE Q2
	10/21/2024	2024 PROTOTYPE Q3

ATTIC PLAN

DATE 06/12/2024

JOB NO. 24200

A-2.1
SHEET NO.



IF ROOF ABOVE GYM IS NOT OPEN TO MAIN ROOF STRUCTURE PROVIDE RIDGE VENT. OTHERWISE ALLOW VENTILATION TO PASS THROUGH TO MAIN ROOF. ATTIC AND OUT THROUGH EXHAUST VENTS

- GENERAL NOTES
1. DO NOT SCALE DRAWING

2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO CROSS-CHECK THE M.E.P. DRAWINGS WITH THE ARCHITECTURAL DRAWING PRIOR TO THE ORDERING / INSTALLATION OF MECHANICAL, ELECTRICAL AND PLUMBING WORK. ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND M.E.P. DRAWINGS SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION FOR IMMEDIATE CLARIFICATION.

3. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE STATE, CITY AND LOCAL CODES AND ORDINANCES IN THE LOCATION OF THE PROJECT.

4. SEE CONSTRUCTION SPECIFICATIONS FOR FLASHING NOTES.

5. FLASH ALL ROOF PENETRATIONS AS REQUIRED AND PER CODE.

6. LOCATE ALL PLUMBING STACKS AT REAR ROOF PLANE. VERIFY THAT NO VENTS ARE VISIBLE FROM THE STREET.

7. PROVIDE PRE-FINISHED METAL DRIP EDGE AT ALL ROOF EAVES AND RAKES.

8. PROVIDE PRE-FINISHED 6" ALUMINUM GUTTERS AND DOWNSPOUTS (MECHANICALLY FASTENED), COORDINATE DOWNSPOUT LOCATIONS WITH OWNER AND CIVIL ENGINEER IN FIELD.

N

ROOF PLAN

SCALE 1/8" = 1'-0"

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ROOF PLAN

DATE 06/12/2024

JOB NO. 24200

A-3.0
SHEET NO.



ASPHALT SHINGLES
GAS ROOFING
TIMBERLINE HD - LIFETIME SHINGLES
WEATHEREDWOOD



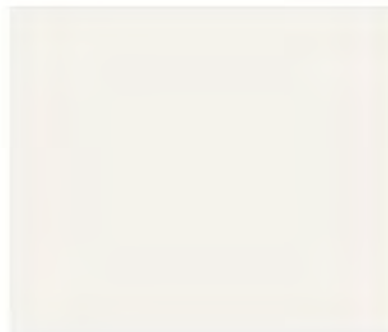
METAL TRIM
QUALITY EDGE
TRULINE EMBOSSED TRIM COIL
807 (CLAY)



EFIS
MNF: STO SYSTEMS; STO THERM CI
FINISH: FINE FINISH (OR EQUAL)



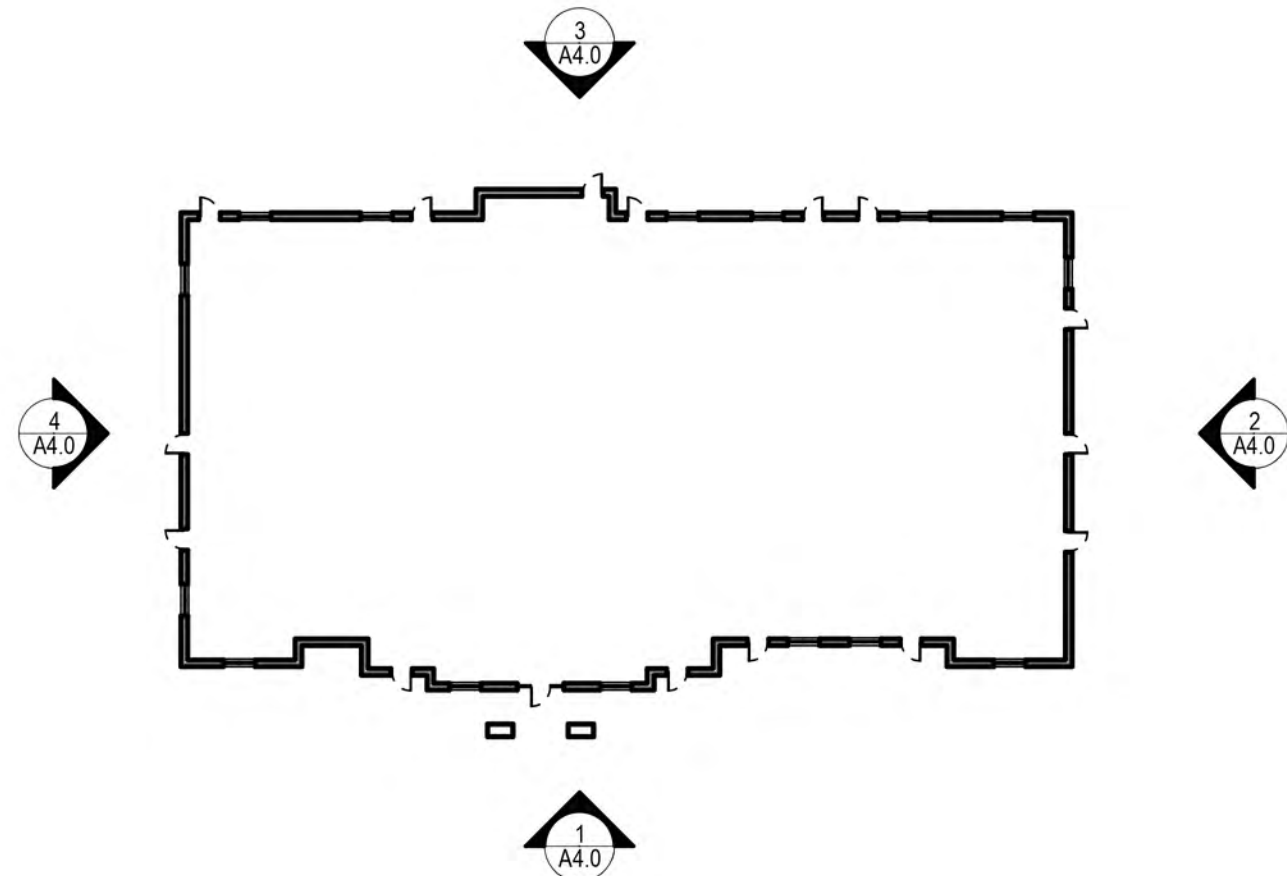
PRE-FINISHED ALUMINUM GUTTER AND DOWNSPOUTS
MASTIC HOME EXTERIORS
6" GUTTER COIL - 27 GAUGE
DESERT SAND



STILL AND WATER TABLE AND CLOUMNS
CULTURE STONE
VELLUM



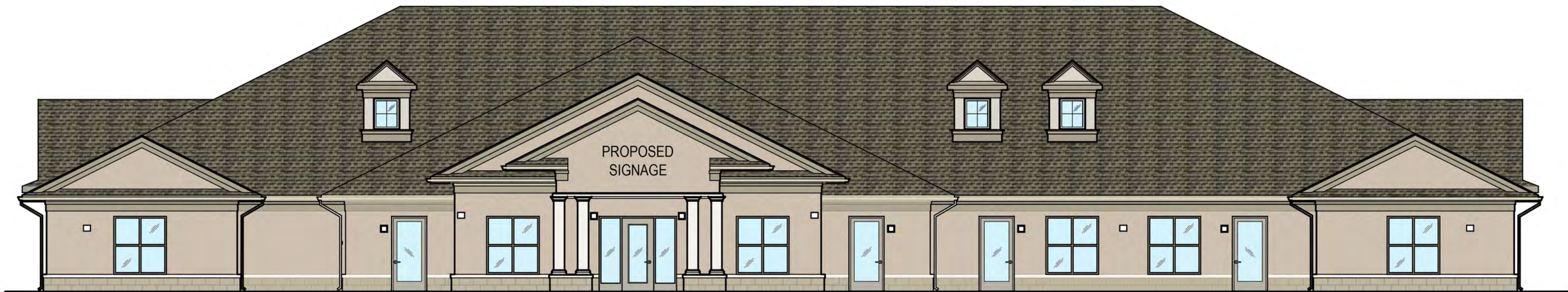
SPLITFACE C.M.U.
MICHIGAN CERTIFIED CONCRETE
SPLIT FACED
VAOLS



ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"

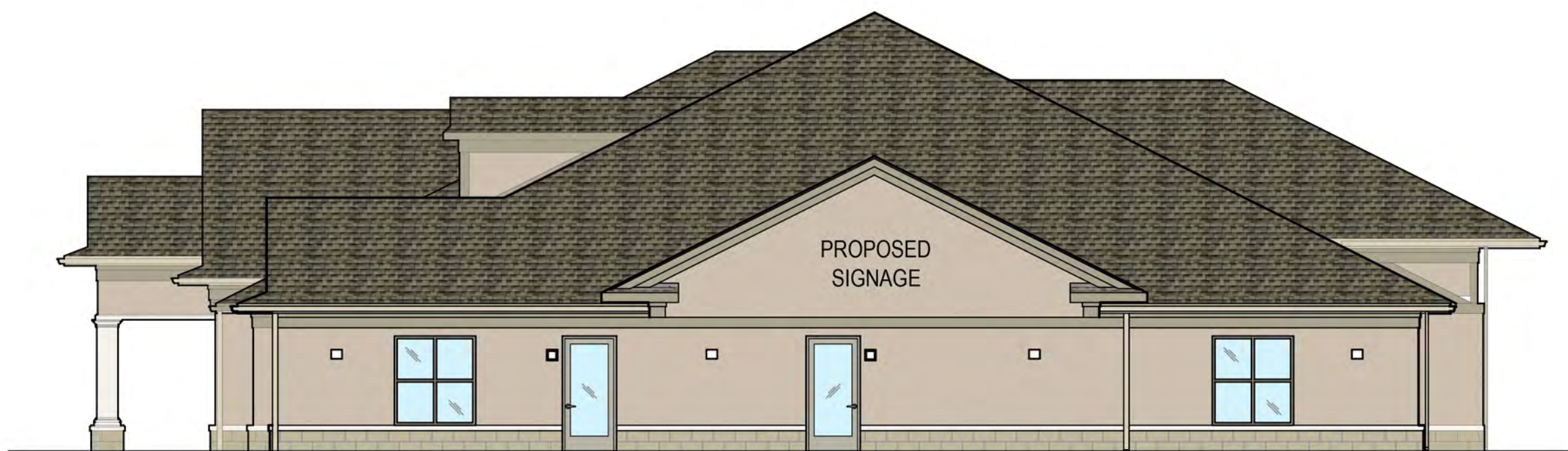


1
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"



2
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"



3
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"



4
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

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www.adaarchitects.com

DOVER, NH 03820

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EXTERIOR
ELEVATIONS

DATE 09/17/2025

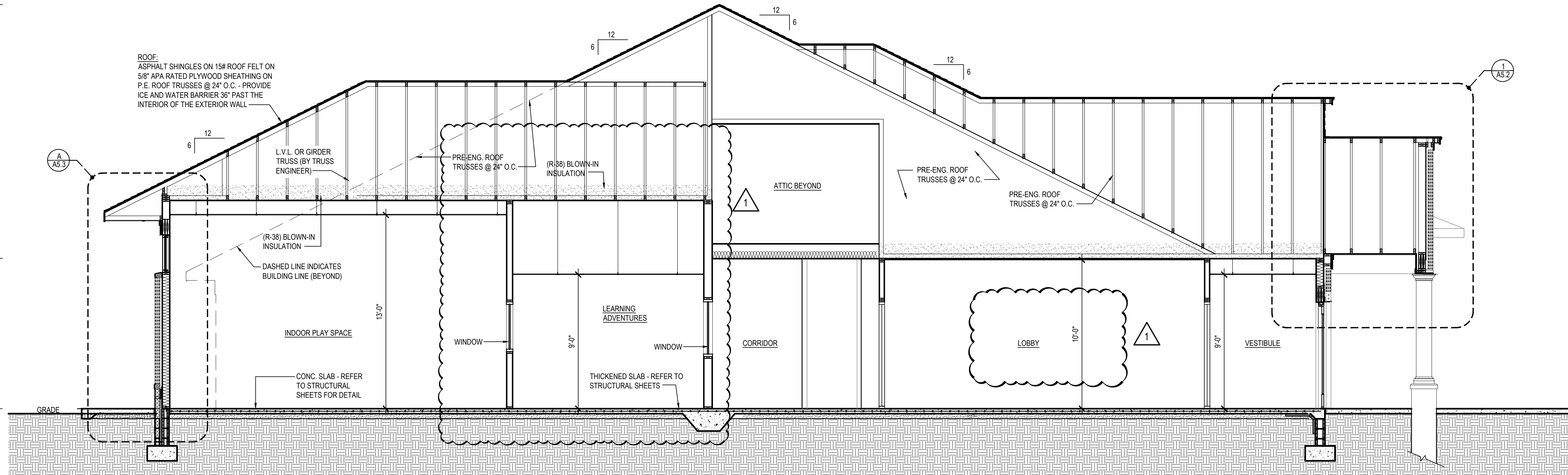
JOB NO. 25029

A-4.0
SHEET NO.

ROOF RIDGE
ELEV: 27'- $\frac{1}{2}$ "

TRUSS BEARING
ELEV: 10'-1 $\frac{1}{8}$ "

FIN FLR.
ELEV: 0'-0"

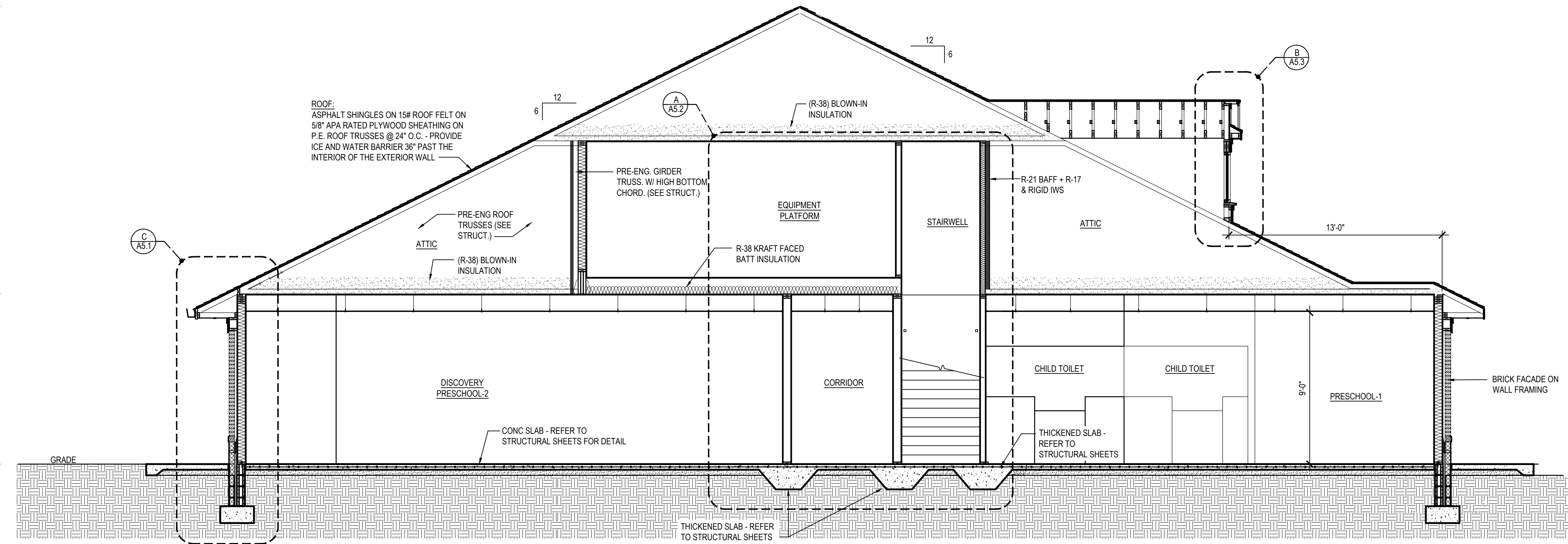


1
A-5.0
BUILDING SECTION
SCALE: 1/4"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 $\frac{1}{8}$ "

FIN FLR.
ELEV: 0'-0"



2
A-5.0
BUILDING SECTION
SCALE: 1/4"=1'-0"

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#	DATE	TYPE
1	06/12/2024	2024 PROTOTYPE Q2
	10/21/2024	2024 PROTOTYPE Q3

BUILDING
SECTIONS

DATE 06/12/2024

JOB NO. 24200

A-5.0

SHEET NO.



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EXTERIOR
RENDERING

DATE 09/17/2025

JOB NO. 25029

RE-1.0
SHEET NO.



ASPHALT SHINGLES
GAS ROOFING
TIMBERLINE HD - LIFETIME SHINGLES
WEATHEREDWOOD



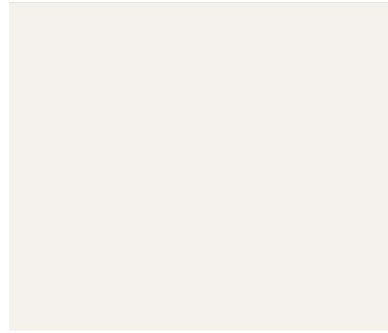
METAL TRIM
QUALITY EDGE
TRULINE EMBOSSED TRIM COIL
807 (CLAY)



EFIS
MNF: STO SYSTEMS; STO THERM CI
FINISH: FINE FINISH (OR EQUAL)



PRE-FINISHED ALUMINUM GUTTER AND DOWNSPOUTS
MASTIC HOME EXTERIORS
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DESERT SAND



STILL AND WATER TABLE AND CLOUMNS
CULTURE STONE
VELLUM

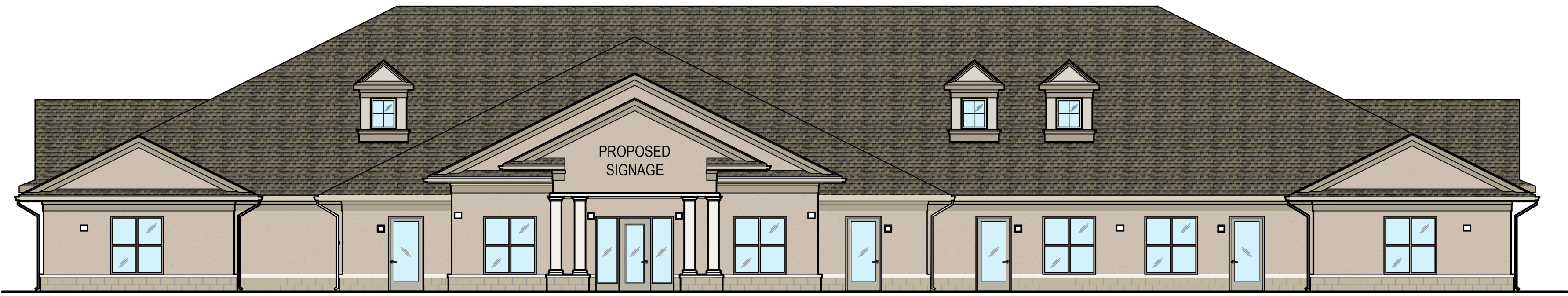


SPLITFACE C.M.U.
MICHIGAN CERTIFIED CONCRETE
SPLIT FACED
VAOLS

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"

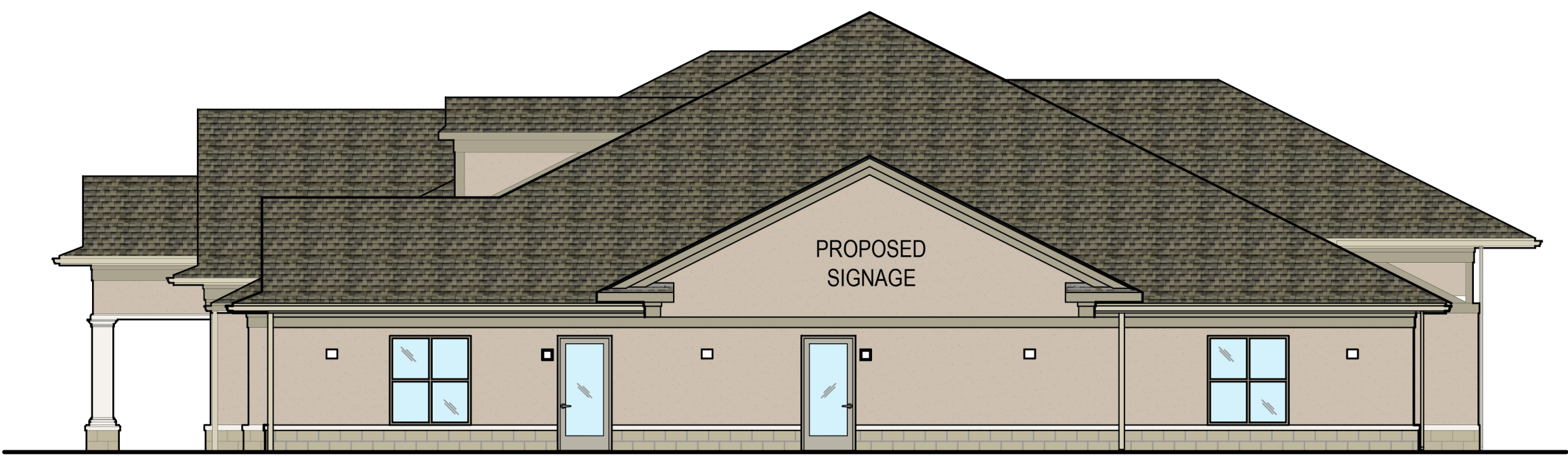


1
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"



2
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"

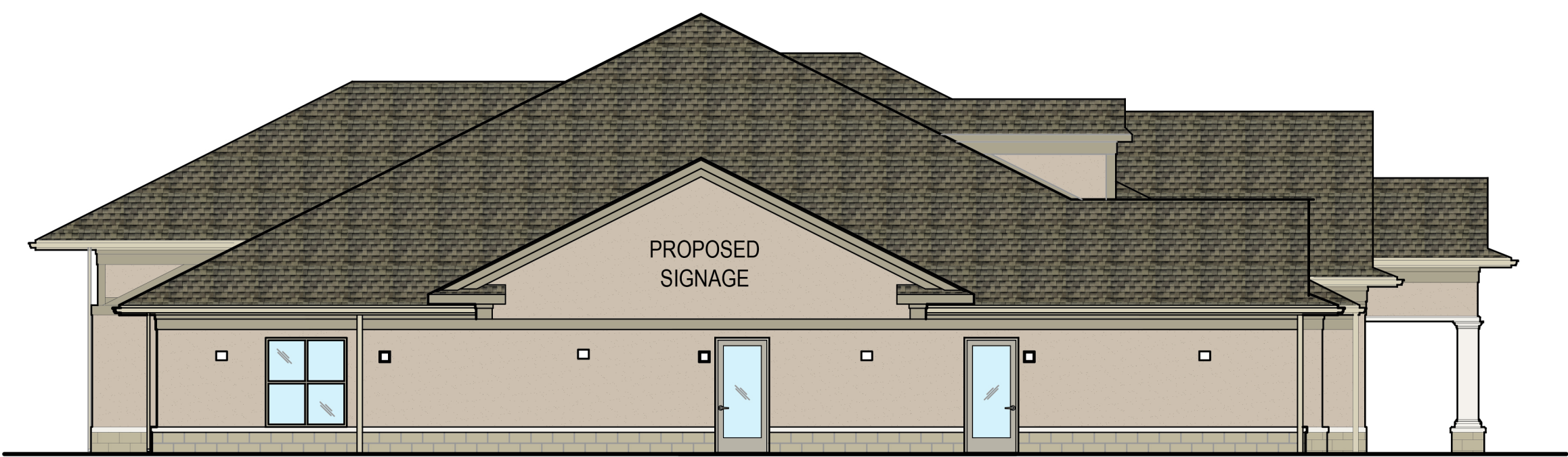


3
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"

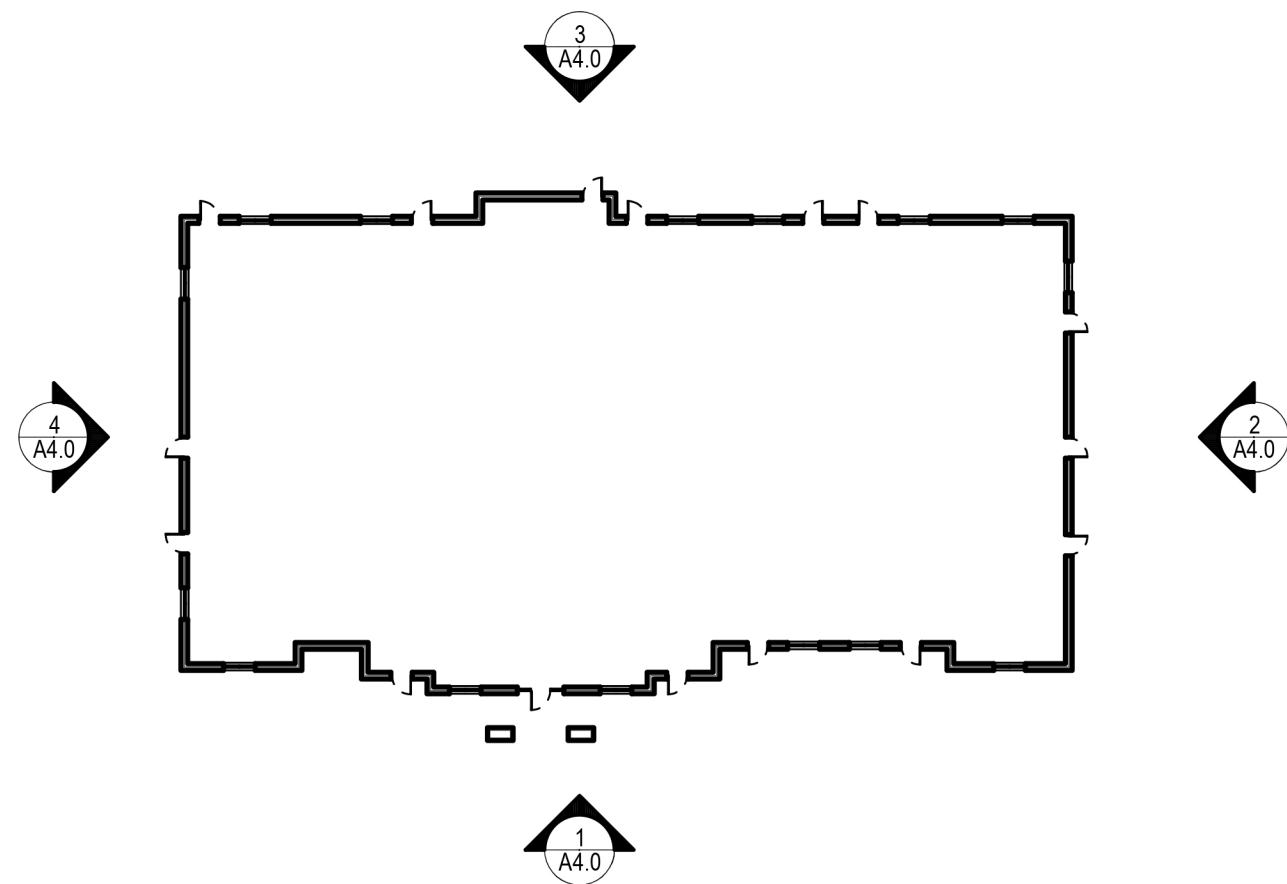
ROOF RIDGE
ELEV: ± 27'-1"

TRUSS BEARING
ELEV: 10'-1 1/8"

FIN FLR
ELEV: 0'-0"



4
A-4.0
ELEVATION
SCALE: 1/8"=1'-0"



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ELEVATIONS

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RE-1.0
SHEET NO.