CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

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

1. 10:30 AM – 11:00 AM: Site Review for Our Place, Inc., Assessor's Map H, Lot 6-4, zoned R-20, located at 105 Durham Road. (Proposal is to provide a 9-unit group housing facility for adults with Intellectual Developmental Disabilities (IDD) with associated parking, drainage and landscaping.) (SITE-2024-0004)

PLAN SNAPSHOT REPORT SITE-2024-0004
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	05/06/2024
Work Class:	New Construction	**District:**	None	**Exp Date:**	07/10/2024
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: The Applicant, Our Place, Inc. is proposing to provide a 9-unit group housing facility for adults with Intellectual Developmental Disabilities (IDD). Zoning relief was granted for the nine-unit multi-family building on December 21, 2023. Accordingly, the Planning Board granted the Transfer of Development Rights (TDR) for the additional units on January 23, 2024.

Parcel:	H0006-004000 Main	**Address:**	105 Durham Rd Main Dover, NH	**Zone:**	R-20(Residential - Low Density)

Surveyor
Northam Survey LLC
239 LONG HILL RD
DOVER, 03820
Business: (603) 953-3164
Mobile: (603) 819-1092

Applicant
Anna Boudreau
Business: (603) 697-1011

Applicant
Cory Belden
133 Court St.
Portsmouth, NH, NH 03801
Business: (603) 433-2335

Architect
Jay Mason
Home: (978) 459-2004

Plan Custom Fields

Total	0	Total2	0	Total3	0
Total4	0	Total5	0	Total6	0
Total7	0	Total8	0	Total9	0
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	15	Water Service	Municipal
Recording Number	P-90-68	Sewer Service	Municipal	Total Acres (GIS)	2.18
Deed Book	5100	Total SQFT	94960.8	Deed Page	273
Deed Date	03/22/2023	Proposed Property Use	Residential multi-unit group housing for adults with Intellectual Developmental Disabilities (IDD).	Area of Parcel to be Developed (SQFT)	25000
Number of Parking Spaces Existing	30	Number of Parking Spaces Proposed	15	Number of Employees Total	6
Number of Employees in Max Shift	3	Distance to City Water	0	Distance to City Sewer	0
Type of Building to be Built	Conventional wood frame single story construction.	Estimated Construction Value	1000000.00	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	TotalImpactFeeADUTOD	0.00	TotalImpactFeeAONRTOD	0.00
TotalImpactFeeAR55TOD	0.00	TotalImpactFeeAR62TOD	0.00	Sub Total Residential	0.00
TotalImpactFeeRIRCTOD	0.00	TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00
TotalImpactFeeNHALTOD	0.00	TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00
Sub Total Non-Residential	0.00	Total of Impact Fees to be Assessed	0.00		

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Cory_Belden_5/6/2024.jpg	05/06/2024 15:01	Belden, Cory		Uploaded via CSS

PLAN SNAPSHOT REPORT (SITE-2024-0004)

Invoice No.	Fee		Fee Amount	Amount Paid
INV-00007792	Planning General Application Fee		$200.00	$200.00
		Total for Invoice INV-00007792	$200.00	$200.00
		Grand Total for Plan	**$200.00**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	05/30/2024	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	05/07/2024	06/04/2024		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	In Review	05/07/2024	06/04/2024	
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	In Review	05/07/2024	06/04/2024	
IS Building Official	Fire / Inspection Services	Maxfield, Jim	In Review	05/07/2024	06/04/2024	
Planning	Planning	Bassegio, Erin	In Review	05/07/2024	06/04/2024	
Zoning Administrator	Planning	Crouser, Paul	In Review	05/07/2024	06/04/2024	
Traffic Bureau	Police	Speidel, Marn	In Review	05/07/2024	06/04/2024	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		05/07/2024 12:13	
Confirm application complete v.1	Generic Action		05/07/2024 12:14
Technical Review Committee Meeting Agenda v.1	Task	05/07/2024 12:13	05/07/2024 12:14
Land Use Plan Technical Review v.1	Receive Submittal	05/07/2024 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	05/07/2024 12:14	
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

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

May 6, 2024

City of Dover
Planning Board / Conservation Commission
288 Central Ave
Dover, NH 03820

Re: Application for Site Plan Review and Conditional Use Permits
Our Place – Adult Group Living Facility
105 Durham Road, Dover
Tax Map H, Lot 6-4
P5496

Dear Board and Commission Members,

On behalf of Our Place, Inc., Altus Engineering, LLC (Altus) is pleased to submit the attached Application for Site Plan Review to construct the proposed adult group living facility at 105 Durham Road. The new building will provide a building addition of approximately 3,140 square feet and renovate the existing day care center to provide nine units, eight for adults with Intellectual Developmental Disabilities (IDD) and one for an on-site staff member. An existing gravel parking lot is located within the existing wetlands buffer limits. The gravel lot will be removed and the majority of the area returned to lawn. Construction will impact approximately 7,800 square feet within the wetlands buffer, however, the impervious area within the buffer will be reduced by approximately 4,000 square feet. There will be no direct wetland impacts. Zoning relief and transfer of development Right were granted in December and January, respectively, for the proposed development and density.

The application has been submitted through City of Dover online Permits service for the **SITE PLAN APPLICATION** and **WETLANDS CONDITIONAL USE PERMIT APPLICATION.** The following has been provided for each application with the associated hard copies for the Conservation Commission and Technical Review Committee.

Wetlands Conditional Use Permit Application (2 hard copies for Conservation Commission)

1. Wetlands Conditional Use Permit Application and
2. CUP Narrative
3. Site Photographs
4. Drainage Report
    a. Stormwater Inspection and Maintenance Manual
    b. NRCS Web Soils Survey
5. Project Partial Plans (2 half size)

Site Plan Application (4 copies for TRC)

1. Site Review Application and Checklists
2. Wetlands Conditional Use Permit Application
3. Letter of Authorization
4. Waiver Requests
5. Traffic Memorandum
6. Site Photographs
6. Drainage Report
    a. Stormwater Inspection and Maintenance Manual
    b. NRCS Web Soils Survey
7. Project Plans (2 half size)
    a. Fire Engine Turning Exhibit (Sheet T-1)
    b. Architectural Plans and Renderings

We respectfully request to be placed on the next available agenda for both the Conservation Commission and Technical Review Committee and to discuss this project. Please contact me directly if you have any questions or require any additional information.

Sincerely,

ALTUS ENGINEERING, INC.

Cory D. Belden, PE

ECopy:

Enclosure
Altus Prj: 5496

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: Our Place, Inc. Telephone #603.697.1011

Address of Applicant: PO Box 65, Dover, New Hampshire 03821

E-Mail Address: aboudreau@ourplacenh.org

Name of Property Owner (*if different from applicant*): Paul Seaver Telephone #603.673.9712

Address of Property Owner: 105 Durham Road, Dover, NH 03821

PROPERTY INFORMATION

Address of Property: 105 Durham Road Dover, New Hampshire

Assessor's Map # H Lot(s) # 6-4

Zoning District(s) R-20 Overlay District(s) Wetlands Overlay District

Size of Parcel: 94,960 +/- sq. ft. 2.18+/- ac. Property Deed: Book 5100 Page: 273

Existing Use of Property: Office - former Child Day Care

SITE PLAN INFORMATION

Describe Proposed Use: Adult Group Living Facility

Area of Parcel to be Developed: 25,000 SQ FT (0.6 ACRES) sq. ft.

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

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

Number of Parking Spaces: Existing 32 Proposed 15

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

Number of Employees Total: 6 In Maximum Shift: 3

Disposition of Parcel:

Building Footprint 6,930 sq. ft.

Total Building Area 7,530 sq. ft.

Paved Area 20,030 sq. ft.

Building Setbacks:

Front Yard 450'+ ft.

Rear Yard 55.8' ft.

Side Yard: Right 86.6 ft. Left 41.4 ft.

City Water? X Yes ___ No How far is city water from the property? 0' - AT BUILDING

City Sewer? X Yes ___ No How far is city sewer from the property? 0' - AT BUILDING

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:
Transfer of Development Rights approved January 18, 2024.

_ BUILDING INFORMATION

Type of Building to be Built: Adult group living building

Height of Building: 1.5 Stories Finished Floor Elevation: 99.30 First Floor

Number of Seats (where applicable) _____

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

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: Section 153-14(A.3.f) - Stormwater management
Section 153-14 (D.1.c.2) Bicycle Racks
Section 153-14 (A.12) - Landscape Plan

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Eric Salovitch, Northam Survey, PLLC

Address 686 Central Ave, Ste 100, Dover, NH 03820 Telephone #: 603.953.3164

Professional License #: NH License #1052 E-mail address: eric@northamsurvey.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Cory Belden - Altus Engineering

Address 133 Court St, Portsmouth, NH 03801 Telephone #: 603-433-2335

Professional License #: NH License #14239 E-mail address: cbelden@altus-eng.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) Jay Mason, ACS, LLC

Address 415 Pawtucket St, Ste #1, Lowell, MA 01854 Telephone #: 978-459-2004

Professional License #: _____ E-mail address: jay@acslowell.com

LANDSCAPE ARCHITECT INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

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: Our Place, Inc. File Number: 24-

PROJECT TITLE: Our Place - Adult Group Living Facility

PROPERTY LOCATION: 105 Durham Road Tax Map: H Lot: 6-4

	Where/How Provided	Reviewed
1. Completed and signed Application form	Application complete and signed	
2. Plan Review Fees are provided	Confirmed receipt by City	
3. Electronic copy of the engineered/surveyed plan layout	CAD file to be provided upon approval	
4. Electronic copy of supplementary materials and application	Electronic Copy of full application	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Traffic Memo Provided	
6. Waiver requests to the Site Plan Review Regulations, with written justification	Waivers Request provided	
7. Conditional Use Permit applications	Wetlands CUP Application	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	Colored renderings of Building provided	
9. A colored architectural plan showing all sides of buildings	Color elevations provided	
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	Cover sheet	
Proposed Project name and title and Planning File #	Cover sheet / title block	
Date, north arrow and scale	Site Plans	
Names of all abutting property owners	Existing Conditions Plan	
Name and address of owners and/or applicants	Cover Sht / Title Block	
Signature & stamp of NH licensed land surveyor and/or engineer	Existing Conditions Plan	
Zoning District boundaries, including any special or overlay districts	Neighborhood Plan	
Location of Conservation District areas	Existing Conditions / CUP Plan	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	Site Plan	
Location and widths of existing & proposed easements & right of ways	No proposed easemetns or RW	
Location and width of existing and proposed access/egress ways	Site Plan	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	Site Plan	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Existing Conditions Plan	
Existing and proposed topographic information at two foot intervals	Existing Conditions Plan/Grading Plan	
Existing and proposed buildings and structure locations	Site Plan	
Minimum building setbacks or build to lines on all lots	General Notes / Site Plan	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	All existing utilities to remain	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	Existing water to remain	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	Existing sewer to remain	
Existing and proposed stormwater lines and facilities	Grading and Drainage Plan	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	No Exterior Lighting provided	
Location of Flood Hazard Zone	Existing Conditions Plan / Site Plan	
Location of all bodies of water and watercourses	Site Plan / Existing Conditions	
Location of wetlands and buffers	Site Plan / CUP Plan	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Neighborhood Plan	
Existing natural features and/or significant vegetation on property	Existing Conditions Plan	
Depict existing contours up to 100 ft. beyond project limits	Existing Conditions Plan	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Landscape Plan (L-1)	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Site Plan / General Notes (GN-1)	
Location, material and size of existing and proposed pavement area	Site Plan	
Location of proposed fire lanes	Site Plan / Fire Truck Turning Plan	
Specify finished floor elevations of buildings	Grading and Drainage Plan	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	Site Plan	
Depict all service, storage, loading bays and utility areas	Site Plan	
All applicable Dover Common Site Plan notes	General Notes (GN-1)	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Grading and Drainage Plan / Drainage Report	
Stormwater Management System Operation and Maintenance Plan	Stormwater I & M Manual	
Letter to Serve from Public and Private Utilities	Existing site is served	
Erosion and Sedimentation Control Plan	Plan Sheet C-3	
Landscape Operation and Maintenance Plan	Waiver requested	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	General Notes (GN-1)	
If wetland buffer, indicate placards locations, as applicable	CUP Plan	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Web Soils survey used for soils	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	See Attachments	

REVIEWED BY: _____ DATE_____ TRC DATE_____

dotloop signature verification: dtlp.us/gJSu-ZvJz-Yeid'ni

EXHIBIT A

AUTHORIZATION OF PROPERTY OWNER

Paul J. Seaver, as the owner of a certain parcel of property located at 105 Durham Road, Dover, New Hampshire 03820, being Parcel H0006-004000 in the City of Dover's records (the "Property"), hereby authorizes Our Place, Inc. ("Our Place") and its officers, directors, board members, agents, attorneys, surveyors, engineers, and assigns, to apply (and sign applications) for and receive any and all zoning, planning and other federal, state and local permits, variances, and approvals necessary or desirable in connection with Our Place's proposed use of the Property as a residential facility for persons with developmental disabilities.

OWNER:

6/24/23
Date

Paul J. Seaver
dotloop verified
06/24/23 11:49 AM EDT
ZUJA-JL8C-D3KF-QWVC

Paul J. Seaver

4891-2971-1722, v. 6

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

WAIVER REQUESTS

Our Place, Inc – Adult Group Living Facility
105 Durham Road, Dover, NH
Tax Map H, Lot 6-4

May 6, 2024

Section 153-14(A.3.f.) - Stormwater management plan new development

The proposed project is within an already developed site and the existing soils have been disturbed from the native conditions. Therefore a waiver is requested for the requirement of a certified soils scientist to delineated the soils types. The Natural Resources Conservation Services (NRCS) soils were used for the site as allowed for contributing flows. The NRCS soil series for Saugatuck (HSG C) has been used for the drainage analysis and an infiltration rate of 2.0 in/hr, below the Ksat low C value of 6.0 in/hr.

Section 153-14(D.1.c.2) – Bicycle Racks

The proposed project will serve adults with Intellectual Development Disabilities (IDD). It is not anticipated that this group will utilize bicycle racks on site. Additionally, the site is a residential setting and additional space is available for bicycle storage if needed. A waiver is requested from the requirement for bicycle parking.

Section 153-14(A.12) – Landscape Plan

The proposed project is within an already developed site. The entry to the site at Durham Road is not proposed to be altered and has existing trees along the frontage. Arborvitaes exist along the southeastern portion of the site as a buffer to the abutting property. The proposed redevelopment area will restore the disturbed areas with lawn. No new trees are proposed for the site.

GARRISON CITY
early childhood
CENTER
BUILDING
A
3
ENTER

early childhood

Parking Is For
GCECC
Staff & Patrons
Only.
All Others Will
Be Towed At
Owners
Expense.

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

May 6, 2024

City of Dover
Planning Board / Conservation Commission
288 Central Ave
Dover, NH 03820

Re: Application for Site Plan Review and Conditional Use Permits
Our Place – Adult Group Living Facility
105 Durham Road, Dover
Tax Map H, Lot 6-4
P5496

Dear Board and Commission Members,

On behalf of Our Place, Inc., Altus Engineering, LLC (Altus) is pleased to submit the attached Application for Site Plan Review to construct the proposed adult group living facility at 105 Durham Road. The new building will provide a building addition of approximately 3,140 square feet and renovate the existing day care center to provide nine units, eight for adults with Intellectual Developmental Disabilities (IDD) and one for an on-site staff member. An existing gravel parking lot is located within the existing wetlands buffer limits. The gravel lot will be removed and the majority of the area returned to lawn. Construction will impact approximately 7,800 square feet within the wetlands buffer, however, the impervious area within the buffer will be reduced by approximately 4,000 square feet. There will be no direct wetland impacts. Zoning relief and transfer of development Right were granted in December and January, respectively, for the proposed development and density.

The application has been submitted through City of Dover online Permits service for the **SITE PLAN APPLICATION** and **WETLANDS CONDITIONAL USE PERMIT APPLICATION.** The following has been provided for each application with the associated hard copies for the Conservation Commission and Technical Review Committee.

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We respectfully request to be placed on the next available agenda for both the Conservation Commission and Technical Review Committee and to discuss this project. Please contact me directly if you have any questions or require any additional information.

Sincerely,

ALTUS ENGINEERING, INC.

Cory D. Belden, PE

ECopy:

Enclosure
Altus Prj: 5496

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: Our Place, Inc. Telephone # (603) 697-1011

Address of Applicant: P.O. Box 65 Dover, NH 03821

E-Mail Address: aboudreau@ourplacenh.org

Name of Property Owner (if different from applicant): Paul Seaver Telephone # (603) 673-9712

Address of Property Owner: 105 Durham Road, Dover, NH 03821

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 6-4

Address of Property: 105 Durham Road, Dover, NH 03821

Zoning District(s) R-20 Overlay District(s) Wetlands Overlay District

Existing Use of Property: Office - Former Child Day Care

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:

An existing gravel parking lot is located in the existing wetlands buffer limits. The gravel lot will be removed and the majority of the area returned to lawn. Construction will impact approximately 7,800 square feet within the buffer. The impervious area within the buffer will be reduced by approximately 4,000 square feet. There will be no direct wetland impacts.

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

No State Permits are required

Name of Professional That Prepared Plans: Cory D. Belden (Altus Engineering)

Address 133 Court Street, Portsmouth, NH 03801 Telephone #: 603-433-2335

Professional License #: NH license #14239 E-mail address: cbelden@altus-eng.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: _____

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: _____

ALTUS ENGINEERING, INC.

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

Conditional Use Permit: Section 170-27.1 Wetlands Protection District

Our Place, Inc – Adult Group Living Facility
105 Durham Road, Dover, NH
Tax Map H, Lot 6-4

From: Cory Belden, PE, Altus Engineering, Inc.
Date: May 6, 2024

The applicant requests a conditional use permit from Section 170-27.1 (Wetlands Protection District) of the Dover Zoning regulations. The proposed site is located adjacent to an existing wetland. The wetlands were delineation by Mark West, certified Wetlands Scientist #010, and the flagging was surveyed by Northam Survey during the field survey. An existing gravel parking lot is located in the existing wetlands buffer limits. The gravel lot will be removed and the majority of the area returned to lawn. Construction will impact approximately 7,800 square feet within the buffer. The impervious area within the buffer will be reduced by approximately 4,000 square feet. There will be no direct wetland impacts.

WETLAND IMPACT TABLE

Lot H–6–4	DIRECT IMPACTS	BUFFER IMPACTS
Area	0	7,800 SF

The Applicant, Our Place, Inc. is proposing to construct an adult group living facility at 105 Durham Road in Dover, NH. The proposed site development will provide an approximate 3,140 square foot addition to the existing building on site, that was the former home of Garrison City Early Childhood Center, which had a 107 child capacity. The existing lot is approximately 2.18 acres in size and abuts the Dover High School to the north. The existing site was developed prior to current stormwater regulations and does not provide treatment for the approximately 33,425 square feet of impervious area on the parcel. The proposed site has been designed with a raingarden and vegetated swale to provide stormwater treatment and will reduce the overall site impervious by 4,200 square feet.

The proposed development for Our Place at 105 Durham Road in Dover, NH will not have an adverse effect on abutting properties and infrastructure as a result of stormwater runoff. The project will provide treatment to over 10,000 square feet of impervious area and reduce the total impervious area on the site by over 4,200 square feet. The post-construction peak rates of runoff from the site will be managed for the 2, 10, 25, and 50 year storms and prove reductions for all of the storms.

Attachments:

1. Partial Plan Set - Conditional Use Permit Plan (CUP-1)
2. Drainage Summary

GARRISON CITY
early childhood
CENTER
125 DURHAM ROAD
343-1214
BUILDING
A
3
ENTER

early childhood

Parking Is For
GCECC
Staff & Patrons
Only.
All Others Will
Be Towed At
Owners
Expense.

DRAINAGE STUDY

OUR PLACE, INC.

ADULT GROUP HOUSING FACILITY

105 Durham Road

Dover, NH

Tax Map H, Lot 6-4

Prepared May 3, 2024

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

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105 Durham Road
Dover, NH
Tax Map H, Lot 6-4

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4) BMP Worksheets
5) Drainage Analysis
   - Extreme Precipitation Tables
   - Pre-Development Analysis
   - Post Development Analysis
6) Inspection and Maintenance Manual

Appendix:

Plans: Pre-Development Watershed Plan
Post-Development Watershed Plan

PROJECT NARRATIVE

OUR PLACE
ADULT GROUP LIVING FACILITY

105 Durham Road, Dover, NH
Tax Map H, Lot 6-4

Site Overview

The Applicant, Our Place, Inc. is proposing to construct an adult group living facility at 105 Durham Road in Dover, NH located on Tax Map H, Lot 6-4. The proposed site development will provide an approximate 3,140 square foot addition to the existing building on site, that was the former home of Garrison City Early Childhood Center, which had a 107 child capacity. The proposed development will provide nine residential units, eight of which will be for adults with Intellectual Developmental Disabilities (IDD) and a single unit for the on-site resident staff. The existing lot is approximately 2.18 acres in size and abuts the Dover High School to the north. The existing site was developed prior to current stormwater regulations and does not provide treatment for the approximately 33,425 square feet of impervious area on the parcel. The proposed site has been designed with a raingarden and vegetated swale to provide stormwater treatment and will reduce the overall site impervious by 4,200 square feet.

Drainage Summary

The following table compares pre- and post-development peak rates of runoff for all analyzed storm events at the two Points of Analysis for the project:

Stormwater Modeling Summary
Peak Q (cfs) for Type III 24-Hour Storm Events

	2-Yr Storm (3.62 inch)	10-Yr Storm (5.46inch)	25-Yr Storm (6.91 inch)	50-Yr Storm (8.27 inch)
POA #1				
Pre	2.23	4.38	6.21	7.91
Post	1.97	4.18	5.85	7.45
Net Change POA #1	**-0.26**	**-0.20**	**-0.36**	**-0.46**
POA #2				
Pre	0.24	0.43	0.58	0.73
Post	0.05	0.08	0.11	0.13
Net Change POA #2	**-0.19**	**-0.35**	**-0.47**	**-0.60**

Note: Includes 15% increase for NH Seacoast communities, per NHDES guidelines.

Pre-Development (Existing Conditions)

The pre-development site conditions reflect the current conditions of the site, as depicted on the Existing Conditions Plan prepared by Northam Survey, PLLC. The existing site is primarily a developed lot and discharges to the wetlands to the north by surface runoff. The study area for this drainage analysis is primarily the 1.4 acre area where the current day care and parking areas are located. The existing driveway to the site is not included and is not proposed to change from the current conditions. The existing watershed reflects the existing site conditions. The majority of the surface water discharges to the wetlands located to the north. A small portion of the site drains easterly towards Durham Road along the driveway. Therefore two Points of Analysis (POA) wer used for comparison of pre to post development conditions.

The Pre-Development analysis models the existing conditions from the site. The soil data from the Site Specific Soil Survey Technical Letter Report (by BAG Land Services) was used to the determine the hydrologic soil conditions for the site. The existing conditions survey and soil conditions were used to develop a model of the existing conditions to compare to the post-development conditions.

Site topography, existing features, proposed site improvements, proposed grading, drainage and erosion control measures are shown on the accompanying plans. Recommended erosion control measures are based upon the December 2008 edition of the "New Hampshire Stormwater Manual Volumes I through 3" prepared by NHDES and Comprehensive Environmental, Inc. as amended.

Post-Development (Proposed Site Design)

The proposed project will construct a new three story medical office building, approximately 14,480 gross square feet. The new paved surfaces (roadways and parking) will be constructed to provide 210 surface parking stalls, driveway aisles, and a new roadway connection to Back River Road. The stormwater management system proposed for the site includes deep sump catch basins, two new raingardens, and a sub-surface chamber system.

The Drainage Summary Table on Page 1 illustrates that the peak flows are managed for the 2-yr-24 hr storm event per Env-Wq 1507.05. Per NHDES Env-Wq 1507.06, this project is exempt from the reduction of the peak flows for the 10 and 50 year 24-hour storm events because it is draining to a waterbody (the Bellamy River) and does not increase the peak flow of the on-site and off-site flows directly downstream of the site.

The "Post-Development Watershed Plan" illustrates the proposed stormwater management system. The original sub-catchment has been divided into numerous smaller areas to emulate the proposed grading and stormwater management system proposed for construction. The post-development conditions were analyzed at the same primary discharge point examined in the pre-development modeling.

Site Soils

Because the site is a developed site, a Site Specific Soils Survey was not performed for the project. A Web Soils Survey was completed through the Natural Resource Conservation Service to determine the soils conditions. The primary soil was identified as Saugatuck loamy sand. Therefore a Hydrologic Soil Group C was used for the site analysis.

Pollutant Removal

Based on the New Hampshire Stormwater Manual – Appendix E, the following pollutant removal rates would be expected from the implementation of the infiltration practices:

Pollutant	Bioretention Raingarden Removal %
Total Suspended Solids (TSS)	90%
Total Nitrogen (TN)	65%
Total Phosphorus (TP)	65%

CONCLUSION

The proposed development for Our Place at 105 Durham Road in Dover, NH will not have an adverse effect on abutting properties and infrastructure as a result of stormwater runoff. The project will provide treatment to over 10,000 square feet of impervious are and reduce the total impervious area on the site by over 4,200 square feet. The post-construction peak rates of runoff from the site will be managed for the 2, 10, 25, and 50 year storms and prove reductions for all of the storms. Additionally, appropriate steps will be taken to properly mitigate erosion and sedimentation through construction with the use of temporary and permanent Best Management Practices for sediment and erosion control.

CALCULATION METHODS

The drainage study was completed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. Reservoir routing was performed with the Dynamic Storage Indication method which automates the calculation of Tailwater conditions. A Type III 24-hour rainfall distribution was utilized in analyzing the data for the 2, 10, 25, and 50 yr 24-hour storm events using rainfall data obtained from the Northeast Regional Climate Center (NRCC) Extreme Precipitation Tables.

Disclaimer

Altus Engineering, Inc. notes that stormwater modeling is limited in its capacity to precisely predict peak rates of runoff and flood elevations. Results should not be considered to represent actual storm events due to the number of variables and assumptions involved in the modeling effort. Surface roughness coefficients (n), entrance loss coefficients (ke), velocity factors (kv) and times of concentration (Tc) are based on subjective field observations and engineering judgment using available data. For design purposes, curve numbers (Cn) describe the average conditions. However, curve numbers will. vary from storm to storm depending on the antecedent runoff conditions (ARC) including saturation and frozen ground. Also, higher water elevations than predicted by modeling could occur if drainage channels, closed drain systems or culverts are not maintained and/or become blocked by debris before and/or during a storm event as this will impact flow capacity of the structures. Structures should be re-evaluated if future changes occur within relevant drainage areas in order to assess any required design modifications.

SECTION 2

Web Soils Survey Map & Ksat Value

Soil Map—Strafford County, New Hampshire
(Our Place)

Map Scale: 1:1,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 24, Aug 22, 2023

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	0.1	5.2%
Sb	Saugatuck loamy sand	2.5	89.6%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.1	5.2%
Totals for Area of Interest		**2.8**	**100.0%**

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Poocham	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Ricker	674	2.0	6.0	2.00	6.0	A	4	rganic over bedrock (up to 4" of minera	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Salmon	656	0.6	2.0	0.00	2.0	D	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand

SECTION 3

Aerial Photographs

Our Place NH

Property Information

Property ID	H0006-004000
Location	105 DURHAM RD
Owner	SEAVER PAUL J
Land Use	140
Zoning Code	R-20

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 7/10/2023
Data updated Daily

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

SECTION 4

BMP Worksheets

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Bioretention (Raingarden) HydroCAD Node RG1**

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

yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.34	ac	A = Area draining to the practice	
0.23	ac	A_I = Impervious area draining to the practice	
0.68	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.66	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.22	ac-in	WQV= 1" x Rv x A	
809	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
202	cf	25% x WQV (check calc for sediment forebay volume)	
607	cf	75% x WQV (check calc for surface sand filter volume)	
forebay		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:			
300	sf	A_{SA} = Surface area of the practice	
-	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
yes	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
94.32	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.15	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
3.00	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
92.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
na	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
85.00	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
85.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
#VALUE!	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
7.50	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
7.50	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
94.71	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
95.00	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**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
1,186	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
3.0	: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:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. 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 stucture, 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:

Stage-Area-Storage for Pond RG1: RG1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
89.75	300	0
89.85	300	12
89.95	300	24
90.05	300	36
90.15	300	48
90.25	300	60
90.35	300	72
90.45	300	84
90.55	300	96
90.65	300	108
90.75	300	120
90.85	300	132
90.95	300	144
91.05	300	156
91.15	300	168
91.25	300	180
91.35	300	190
91.45	300	200
91.55	300	206
91.65	300	209
91.75	300	212
91.85	300	215
91.95	300	218
92.05	300	221
92.15	300	224
92.25	300	227
92.35	300	230
92.45	300	233
92.55	300	236
92.65	300	239
92.75	300	242
92.85	300	245
92.95	300	248
93.05	307	268
93.15	323	306
93.25	338	343
93.35	352	380
93.45	368	417
93.55	382	455
93.65	398	492
93.75	413	529
93.85	427	566
93.95	443	604
94.05	465	652
94.15	495	711
94.25	525	771
94.35	555	830
94.45	585	889
94.55	615	949
94.65	645	1,008
94.75	675	1,067
94.85	705	1,127
94.95	**735**	**1,186**

Stage-Discharge for Pond RG1: RG1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
89.75	0.00	91.87	0.01	93.99	0.02
89.79	0.01	91.91	0.01	94.03	0.02
89.83	0.01	91.95	0.01	94.07	0.02
89.87	0.01	91.99	0.01	94.11	0.02
89.91	0.01	92.03	0.01	94.15	0.02
89.95	0.01	92.07	0.01	94.19	0.02
89.99	0.01	92.11	0.01	94.23	0.02
90.03	0.01	92.15	0.01	94.27	0.05
90.07	0.01	92.19	0.01	94.31	0.13
90.11	0.01	92.23	0.01	94.35	0.26
90.15	0.01	92.27	0.01	94.39	0.41
90.19	0.01	92.31	0.01	94.43	0.59
90.23	0.01	92.35	0.01	94.47	0.79
90.27	0.01	92.39	0.01	94.51	1.02
90.31	0.01	92.43	0.01	94.55	1.27
90.35	0.01	92.47	0.01	94.59	1.54
90.39	0.01	92.51	0.01	94.63	1.83
90.43	0.01	92.55	0.01	94.67	2.15
90.47	0.01	92.59	0.01	94.71	2.47
90.51	0.01	92.63	0.01	94.75	2.82
90.55	0.01	92.67	0.01	94.79	3.19
90.59	0.01	92.71	0.01	94.83	3.57
90.63	0.01	92.75	0.01	94.87	3.96
90.67	0.01	92.79	0.01	94.91	4.34
90.71	0.01	92.83	0.01	94.95	4.73
90.75	0.01	92.87	0.01	94.99	**5.14**
90.79	0.01	92.91	0.01		
90.83	0.01	92.95	0.01		
90.87	0.01	92.99	0.01		
90.91	0.01	93.03	0.01		
90.95	0.01	93.07	0.01		
90.99	0.01	93.11	0.01		
91.03	0.01	93.15	0.01		
91.07	0.01	93.19	0.02		
91.11	0.01	93.23	0.02		
91.15	0.01	93.27	0.02		
91.19	0.01	93.31	0.02		
91.23	0.01	93.35	0.02		
91.27	0.01	93.39	0.02		
91.31	0.01	93.43	0.02		
91.35	0.01	93.47	0.02		
91.39	0.01	93.51	0.02		
91.43	0.01	93.55	0.02		
91.47	0.01	93.59	0.02		
91.51	0.01	93.63	0.02		
91.55	0.01	93.67	0.02		
91.59	0.01	93.71	0.02		
91.63	0.01	93.75	0.02		
91.67	0.01	93.79	0.02		
91.71	0.01	93.83	0.02		
91.75	0.01	93.87	0.02		
91.79	0.01	93.91	0.02		
91.83	0.01	93.95	0.02		

SECTION 5

Drainage Analysis

- Extreme Precipitation Tables
- Pre-Development
  - Diagram
  - Area and Soils Listings
  - Modelling Results (2, 10, 25, & 50 Year Storms)
- Post Development
  - Diagram
  - Area and Soils Listings
  - Modelling Results (2, 10, 25, & 50 Year Storms)

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	
Location	
Latitude	43.174 degrees North
Longitude	70.886 degrees West
Elevation	20 feet
Date/Time	Thu Apr 18 2024 22:56:23 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	1.55	2.00	2.61	2.86	**1yr**	2.31	2.75	3.15	3.87	4.45	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.91	2.45	3.15	3.49	**2yr**	2.78	3.36	3.86	4.59	5.22	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.08	3.98	4.48	**5yr**	3.52	4.31	4.92	5.80	6.56	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.82	3.66	4.75	5.40	**10yr**	4.20	5.20	5.93	6.93	7.80	**10yr**
25yr	0.46	0.74	0.94	1.29	1.72	2.27	**25yr**	1.48	2.09	2.69	3.53	4.61	6.01	6.93	**25yr**	5.32	6.67	7.58	8.77	9.80	**25yr**
50yr	0.51	0.83	1.06	1.48	2.00	2.66	**50yr**	1.72	2.46	3.18	4.18	5.49	7.19	8.38	**50yr**	6.36	8.06	9.13	10.48	11.66	**50yr**
100yr	0.58	0.94	1.20	1.70	2.32	3.12	**100yr**	2.00	2.89	3.74	4.96	6.54	8.60	10.12	**100yr**	7.61	9.74	11.00	12.53	13.88	**100yr**
200yr	0.64	1.04	1.36	1.95	2.69	3.66	**200yr**	2.32	3.40	4.42	5.89	7.80	10.29	12.24	**200yr**	9.11	11.77	13.26	15.00	16.53	**200yr**
500yr	0.75	1.24	1.62	2.35	3.29	4.52	**500yr**	2.84	4.21	5.49	7.37	9.83	13.05	15.73	**500yr**	11.55	15.13	16.99	19.02	20.84	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.91	1.26	1.58	2.10	2.47	**1yr**	1.86	2.38	2.89	3.32	4.01	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.36	3.04	3.39	**2yr**	2.69	3.26	3.74	4.46	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.71	4.12	**5yr**	3.29	3.96	4.60	5.41	6.12	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.82	2.44	3.13	4.28	4.79	**10yr**	3.78	4.60	5.32	6.25	7.03	**10yr**
25yr	0.44	0.66	0.82	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.84	3.65	4.95	5.80	**25yr**	4.38	5.58	6.49	7.58	8.45	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.18	**50yr**	1.52	2.14	2.35	3.20	4.10	5.66	6.70	**50yr**	5.01	6.44	7.54	8.76	9.71	**50yr**
100yr	0.54	0.81	1.01	1.46	2.01	2.50	**100yr**	1.73	2.45	2.63	3.58	4.58	6.45	7.73	**100yr**	5.71	7.43	8.76	10.12	11.14	**100yr**
200yr	0.59	0.89	1.13	1.64	2.28	2.86	**200yr**	1.97	2.80	2.94	4.01	5.11	7.34	8.92	**200yr**	6.50	8.58	10.17	11.70	12.80	**200yr**
500yr	0.69	1.03	1.32	1.92	2.74	3.44	**500yr**	2.36	3.36	3.40	4.64	5.93	8.70	10.77	**500yr**	7.70	10.36	12.40	14.20	15.32	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.24	1.74	2.22	2.87	3.07	**1yr**	2.54	2.95	3.42	4.21	4.81	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.47	1.96	2.51	3.28	3.61	**2yr**	2.91	3.47	3.98	4.73	5.43	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.55	1.86	2.50	3.20	4.24	4.83	**5yr**	3.75	4.64	5.26	6.21	6.98	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.92	**10yr**	1.35	1.88	2.23	3.05	3.86	5.21	6.02	**10yr**	4.61	5.79	6.60	7.62	8.51	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.48	**25yr**	1.70	2.42	2.88	3.97	4.96	7.08	8.08	**25yr**	6.27	7.77	8.82	10.03	11.09	**25yr**
50yr	0.64	0.97	1.21	1.74	2.35	2.99	**50yr**	2.03	2.93	3.49	4.84	6.03	8.76	10.12	**50yr**	7.75	9.73	10.99	12.33	13.56	**50yr**
100yr	0.75	1.13	1.41	2.04	2.80	3.62	**100yr**	2.41	3.54	4.24	5.93	7.33	10.84	12.67	**100yr**	9.59	12.19	13.69	15.19	16.59	**100yr**
200yr	0.86	1.30	1.65	2.38	3.33	4.39	**200yr**	2.87	4.29	5.16	7.25	8.90	13.44	15.89	**200yr**	11.90	15.28	17.07	18.69	20.33	**200yr**
500yr	1.06	1.57	2.02	2.94	4.18	5.64	**500yr**	3.60	5.51	6.66	9.50	11.53	17.90	21.42	**500yr**	15.84	20.59	22.87	24.63	26.61	**500yr**

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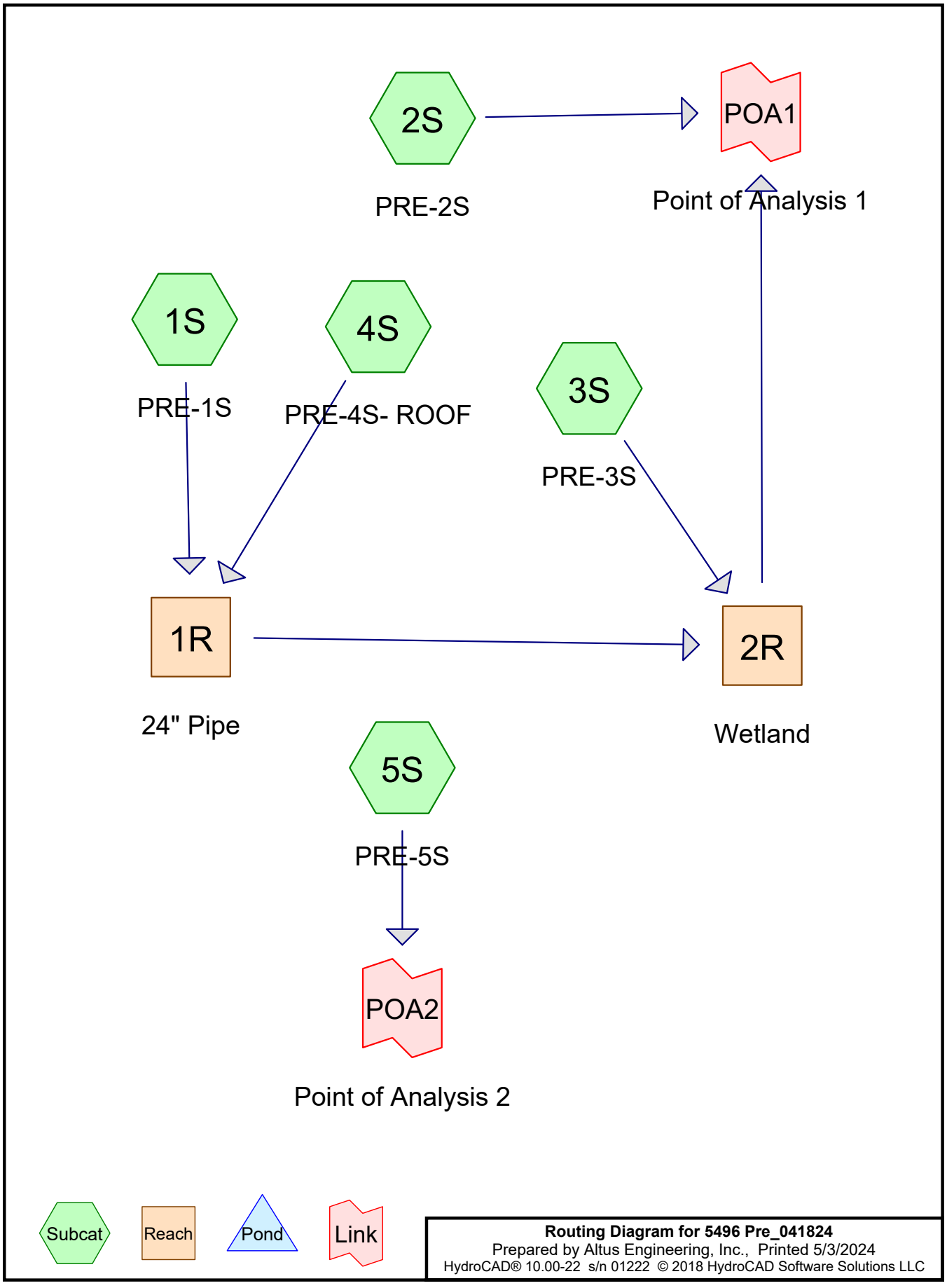

Routing Diagram for 5496 Pre_041824
Prepared by Altus Engineering, Inc., Printed 5/3/2024
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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.476	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 5S)
0.234	96	Gravel surface, HSG C (2S, 3S)
0.111	98	Paved parking, HSG C (3S, 5S)
0.095	98	Roofs, HSG C (3S, 4S)
0.048	98	Unconnected pavement, HSG C (1S, 2S, 3S)
0.461	70	Woods, Good, HSG C (1S, 2S, 3S)
1.425	**81**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.425	HSG C	1S, 2S, 3S, 4S, 5S
0.000	HSG D	
0.000	Other	
1.425		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.476	0.000	0.000	0.476	>75% Grass cover, Good	1S, 2S, 3S, 5S
0.000	0.000	0.234	0.000	0.000	0.234	Gravel surface	2S, 3S
0.000	0.000	0.111	0.000	0.000	0.111	Paved parking	3S, 5S
0.000	0.000	0.095	0.000	0.000	0.095	Roofs	3S, 4S
0.000	0.000	0.048	0.000	0.000	0.048	Unconnected pavement	1S, 2S, 3S
0.000	0.000	0.461	0.000	0.000	0.461	Woods, Good	1S, 2S, 3S
0.000	**0.000**	**1.425**	**0.000**	**0.000**	**1.425**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Reach 1R: 24" Pipe Avg. Flow Depth=0.20' Max Vel=3.96 fps Inflow=0.66 cfs 0.050 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=0.66 cfs 0.050 af

Subcatchment 1S: PRE-1S Runoff Area=11,127 sf 6.74% Impervious Runoff Depth>1.21"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=74 Runoff=0.36 cfs 0.026 af

Reach 2R: Wetland Avg. Flow Depth=0.07' Max Vel=0.69 fps Inflow=1.13 cfs 0.083 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=0.95 cfs 0.083 af

Subcatchment 2S: PRE-2S Runoff Area=34,387 sf 3.34% Impervious Runoff Depth>1.47"
Flow Length=225' Tc=6.7 min UI Adjusted CN=78 Runoff=1.40 cfs 0.097 af

Subcatchment 3S: PRE-3S Runoff Area=7,987 sf 43.13% Impervious Runoff Depth>2.15"
Tc=6.0 min CN=87 Runoff=0.48 cfs 0.033 af

Subcatchment 4S: PRE-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>3.16"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.024 af

Subcatchment 5S: PRE-5S Runoff Area=4,567 sf 37.49% Impervious Runoff Depth>1.83"
Flow Length=130' Tc=6.0 min CN=83 Runoff=0.24 cfs 0.016 af

Link POA1: Point of Analysis 1 Inflow=2.23 cfs 0.179 af
Primary=2.23 cfs 0.179 af

Link POA2: Point of Analysis 2 Inflow=0.24 cfs 0.016 af
Primary=0.24 cfs 0.016 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.195 af Average Runoff Depth = 1.65"
82.17% Pervious = 1.171 ac 17.83% Impervious = 0.254 ac

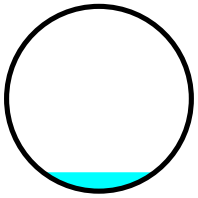
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.348 ac, 31.47% Impervious, Inflow Depth > 1.73" for 2-yr event
Inflow = 0.66 cfs @ 12.10 hrs, Volume= 0.050 af
Outflow = 0.66 cfs @ 12.11 hrs, Volume= 0.050 af, Atten= 1%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.96 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.47 fps, Avg. Travel Time= 2.5 min

Peak Storage= 37 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: PRE-1S

Runoff = 0.36 cfs @ 12.12 hrs, Volume= 0.026 af, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
8,230	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,127	75	74	Weighted Average, UI Adjusted
10,377			93.26% Pervious Area
750			6.74% Impervious Area
750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.531 ac, 35.50% Impervious, Inflow Depth > 1.87" for 2-yr event
Inflow = 1.13 cfs @ 12.10 hrs, Volume= 0.083 af
Outflow = 0.95 cfs @ 12.17 hrs, Volume= 0.083 af, Atten= 16%, Lag= 3.8 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.69 fps, Min. Travel Time= 6.5 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 8.5 min

Peak Storage= 369 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: PRE-2S

Runoff = 1.40 cfs @ 12.10 hrs, Volume= 0.097 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
1,148	98		Unconnected pavement, HSG C
9,014	96		Gravel surface, HSG C
6,990	74		>75% Grass cover, Good, HSG C
17,235	70		Woods, Good, HSG C
34,387	79	78	Weighted Average, UI Adjusted
33,239			96.66% Pervious Area
1,148			3.34% Impervious Area
1,148			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0200	0.72		**Sheet Flow, Gravel** n= 0.025 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.7	225	Total			

Summary for Subcatchment 3S: PRE-3S

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.033 af, Depth> 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
140	98	Roofs, HSG C
3,105	98	Paved parking, HSG C
200	98	Unconnected pavement, HSG C
1,182	96	Gravel surface, HSG C
2,665	74	>75% Grass cover, Good, HSG C
695	70	Woods, Good, HSG C
7,987	87	Weighted Average
4,542		56.87% Pervious Area
3,445		43.13% Impervious Area
200		5.81% Unconnected

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

Summary for Subcatchment 4S: PRE-4S- ROOF

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: PRE-5S

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
1,712	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
2,855	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,567	83	Weighted Average
2,855		62.51% Pervious Area
1,712		37.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
0.2	30	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.0	130	Total			

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.320 ac, 16.27% Impervious, Inflow Depth > 1.63" for 2-yr event
Inflow = 2.23 cfs @ 12.12 hrs, Volume= 0.179 af
Primary = 2.23 cfs @ 12.12 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.105 ac, 37.49% Impervious, Inflow Depth > 1.83" for 2-yr event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.016 af
Primary = 0.24 cfs @ 12.09 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Reach 1R: 24" Pipe Avg. Flow Depth=0.27' Max Vel=4.78 fps Inflow=1.23 cfs 0.091 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=1.22 cfs 0.091 af

Subcatchment 1S: PRE-1S Runoff Area=11,127 sf 6.74% Impervious Runoff Depth>2.54"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=74 Runoff=0.76 cfs 0.054 af

Reach 2R: Wetland Avg. Flow Depth=0.10' Max Vel=0.85 fps Inflow=2.03 cfs 0.149 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=1.77 cfs 0.148 af

Subcatchment 2S: PRE-2S Runoff Area=34,387 sf 3.34% Impervious Runoff Depth>2.90"
Flow Length=225' Tc=6.7 min UI Adjusted CN=78 Runoff=2.77 cfs 0.191 af

Subcatchment 3S: PRE-3S Runoff Area=7,987 sf 43.13% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=87 Runoff=0.82 cfs 0.058 af

Subcatchment 4S: PRE-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>4.84"
Tc=6.0 min CN=98 Runoff=0.48 cfs 0.037 af

Subcatchment 5S: PRE-5S Runoff Area=4,567 sf 37.49% Impervious Runoff Depth>3.37"
Flow Length=130' Tc=6.0 min CN=83 Runoff=0.43 cfs 0.029 af

Link POA1: Point of Analysis 1 Inflow=4.38 cfs 0.339 af
Primary=4.38 cfs 0.339 af

Link POA2: Point of Analysis 2 Inflow=0.43 cfs 0.029 af
Primary=0.43 cfs 0.029 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.369 af Average Runoff Depth = 3.11"
82.17% Pervious = 1.171 ac 17.83% Impervious = 0.254 ac

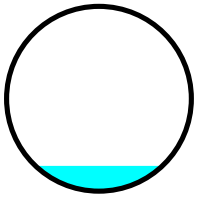
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.348 ac, 31.47% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 1.23 cfs @ 12.10 hrs, Volume= 0.091 af
Outflow = 1.22 cfs @ 12.11 hrs, Volume= 0.091 af, Atten= 1%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.78 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 2.1 min

Peak Storage= 57 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: PRE-1S

Runoff = 0.76 cfs @ 12.11 hrs, Volume= 0.054 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
8,230	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,127	75	74	Weighted Average, UI Adjusted
10,377			93.26% Pervious Area
750			6.74% Impervious Area
750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.531 ac, 35.50% Impervious, Inflow Depth > 3.36" for 10-yr event
Inflow = 2.03 cfs @ 12.10 hrs, Volume= 0.149 af
Outflow = 1.77 cfs @ 12.16 hrs, Volume= 0.148 af, Atten= 13%, Lag= 3.2 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.85 fps, Min. Travel Time= 5.3 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 8.4 min

Peak Storage= 559 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: PRE-2S

Runoff = 2.77 cfs @ 12.10 hrs, Volume= 0.191 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
1,148	98		Unconnected pavement, HSG C
9,014	96		Gravel surface, HSG C
6,990	74		>75% Grass cover, Good, HSG C
17,235	70		Woods, Good, HSG C
34,387	79	78	Weighted Average, UI Adjusted
33,239			96.66% Pervious Area
1,148			3.34% Impervious Area
1,148			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0200	0.72		**Sheet Flow, Gravel** n= 0.025 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.7	225	Total			

Summary for Subcatchment 3S: PRE-3S

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
140	98	Roofs, HSG C
3,105	98	Paved parking, HSG C
200	98	Unconnected pavement, HSG C
1,182	96	Gravel surface, HSG C
2,665	74	>75% Grass cover, Good, HSG C
695	70	Woods, Good, HSG C
7,987	87	Weighted Average
4,542		56.87% Pervious Area
3,445		43.13% Impervious Area
200		5.81% Unconnected

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

Summary for Subcatchment 4S: PRE-4S- ROOF

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: PRE-5S

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
1,712	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
2,855	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,567	83	Weighted Average
2,855		62.51% Pervious Area
1,712		37.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
0.2	30	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.0	130	Total			

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.320 ac, 16.27% Impervious, Inflow Depth > 3.08" for 10-yr event
Inflow = 4.38 cfs @ 12.12 hrs, Volume= 0.339 af
Primary = 4.38 cfs @ 12.12 hrs, Volume= 0.339 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.105 ac, 37.49% Impervious, Inflow Depth > 3.37" for 10-yr event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 0.029 af
Primary = 0.43 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Reach 1R: 24" Pipe Avg. Flow Depth=0.32' Max Vel=5.26 fps Inflow=1.70 cfs 0.126 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=1.69 cfs 0.126 af

Subcatchment 1S: PRE-1S Runoff Area=11,127 sf 6.74% Impervious Runoff Depth>3.70"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=74 Runoff=1.11 cfs 0.079 af

Reach 2R: Wetland Avg. Flow Depth=0.12' Max Vel=0.99 fps Inflow=2.77 cfs 0.204 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=2.49 cfs 0.203 af

Subcatchment 2S: PRE-2S Runoff Area=34,387 sf 3.34% Impervious Runoff Depth>4.12"
Flow Length=225' Tc=6.7 min UI Adjusted CN=78 Runoff=3.89 cfs 0.271 af

Subcatchment 3S: PRE-3S Runoff Area=7,987 sf 43.13% Impervious Runoff Depth>5.10"
Tc=6.0 min CN=87 Runoff=1.09 cfs 0.078 af

Subcatchment 4S: PRE-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>6.16"
Tc=6.0 min CN=98 Runoff=0.61 cfs 0.047 af

Subcatchment 5S: PRE-5S Runoff Area=4,567 sf 37.49% Impervious Runoff Depth>4.66"
Flow Length=130' Tc=6.0 min CN=83 Runoff=0.58 cfs 0.041 af

Link POA1: Point of Analysis 1 Inflow=6.21 cfs 0.474 af
Primary=6.21 cfs 0.474 af

Link POA2: Point of Analysis 2 Inflow=0.58 cfs 0.041 af
Primary=0.58 cfs 0.041 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.516 af Average Runoff Depth = 4.34"
82.17% Pervious = 1.171 ac 17.83% Impervious = 0.254 ac

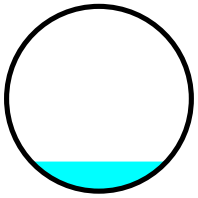
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.348 ac, 31.47% Impervious, Inflow Depth > 4.35" for 25-yr event
Inflow = 1.70 cfs @ 12.10 hrs, Volume= 0.126 af
Outflow = 1.69 cfs @ 12.11 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.26 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.92 fps, Avg. Travel Time= 1.9 min

Peak Storage= 72 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: PRE-1S

Runoff = 1.11 cfs @ 12.11 hrs, Volume= 0.079 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
8,230	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,127	75	74	Weighted Average, UI Adjusted
10,377			93.26% Pervious Area
750			6.74% Impervious Area
750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.531 ac, 35.50% Impervious, Inflow Depth > 4.61" for 25-yr event
Inflow = 2.77 cfs @ 12.10 hrs, Volume= 0.204 af
Outflow = 2.49 cfs @ 12.15 hrs, Volume= 0.203 af, Atten= 10%, Lag= 2.8 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.99 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 8.3 min

Peak Storage= 681 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: PRE-2S

Runoff = 3.89 cfs @ 12.10 hrs, Volume= 0.271 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
1,148	98		Unconnected pavement, HSG C
9,014	96		Gravel surface, HSG C
6,990	74		>75% Grass cover, Good, HSG C
17,235	70		Woods, Good, HSG C
34,387	79	78	Weighted Average, UI Adjusted
33,239			96.66% Pervious Area
1,148			3.34% Impervious Area
1,148			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0200	0.72		**Sheet Flow, Gravel** n= 0.025 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.7	225	Total			

Summary for Subcatchment 3S: PRE-3S

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 0.078 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
140	98	Roofs, HSG C
3,105	98	Paved parking, HSG C
200	98	Unconnected pavement, HSG C
1,182	96	Gravel surface, HSG C
2,665	74	>75% Grass cover, Good, HSG C
695	70	Woods, Good, HSG C
7,987	87	Weighted Average
4,542		56.87% Pervious Area
3,445		43.13% Impervious Area
200		5.81% Unconnected

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

Summary for Subcatchment 4S: PRE-4S- ROOF

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.047 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: PRE-5S

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
1,712	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
2,855	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,567	83	Weighted Average
2,855		62.51% Pervious Area
1,712		37.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
0.2	30	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.0	130	Total			

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.320 ac, 16.27% Impervious, Inflow Depth > 4.31" for 25-yr event
Inflow = 6.21 cfs @ 12.11 hrs, Volume= 0.474 af
Primary = 6.21 cfs @ 12.11 hrs, Volume= 0.474 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.105 ac, 37.49% Impervious, Inflow Depth > 4.66" for 25-yr event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Primary = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Reach 1R: 24" Pipe Avg. Flow Depth=0.36' Max Vel=5.65 fps Inflow=2.15 cfs 0.160 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=2.14 cfs 0.160 af

Subcatchment 1S: PRE-1S Runoff Area=11,127 sf 6.74% Impervious Runoff Depth>4.84"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=74 Runoff=1.44 cfs 0.103 af

Reach 2R: Wetland Avg. Flow Depth=0.14' Max Vel=1.07 fps Inflow=3.46 cfs 0.257 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=3.14 cfs 0.256 af

Subcatchment 2S: PRE-2S Runoff Area=34,387 sf 3.34% Impervious Runoff Depth>5.30"
Flow Length=225' Tc=6.7 min UI Adjusted CN=78 Runoff=4.96 cfs 0.349 af

Subcatchment 3S: PRE-3S Runoff Area=7,987 sf 43.13% Impervious Runoff Depth>6.34"
Tc=6.0 min CN=87 Runoff=1.34 cfs 0.097 af

Subcatchment 4S: PRE-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>7.39"
Tc=6.0 min CN=98 Runoff=0.73 cfs 0.057 af

Subcatchment 5S: PRE-5S Runoff Area=4,567 sf 37.49% Impervious Runoff Depth>5.89"
Flow Length=130' Tc=6.0 min CN=83 Runoff=0.73 cfs 0.051 af

Link POA1: Point of Analysis 1 Inflow=7.91 cfs 0.605 af
Primary=7.91 cfs 0.605 af

Link POA2: Point of Analysis 2 Inflow=0.73 cfs 0.051 af
Primary=0.73 cfs 0.051 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.657 af Average Runoff Depth = 5.53"
82.17% Pervious = 1.171 ac 17.83% Impervious = 0.254 ac

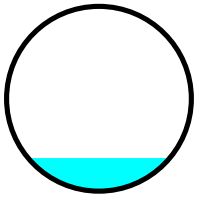
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.348 ac, 31.47% Impervious, Inflow Depth > 5.52" for 50-yr event
Inflow = 2.15 cfs @ 12.10 hrs, Volume= 0.160 af
Outflow = 2.14 cfs @ 12.11 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.65 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.06 fps, Avg. Travel Time= 1.8 min

Peak Storage= 85 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: PRE-1S

Runoff = 1.44 cfs @ 12.11 hrs, Volume= 0.103 af, Depth> 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
8,230	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,127	75	74	Weighted Average, UI Adjusted
10,377			93.26% Pervious Area
750			6.74% Impervious Area
750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.531 ac, 35.50% Impervious, Inflow Depth > 5.80" for 50-yr event
Inflow = 3.46 cfs @ 12.10 hrs, Volume= 0.257 af
Outflow = 3.14 cfs @ 12.15 hrs, Volume= 0.256 af, Atten= 9%, Lag= 2.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.07 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.55 fps, Avg. Travel Time= 8.2 min

Peak Storage= 790 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: PRE-2S

Runoff = 4.96 cfs @ 12.10 hrs, Volume= 0.349 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
0	98		Paved parking, HSG C
1,148	98		Unconnected pavement, HSG C
9,014	96		Gravel surface, HSG C
6,990	74		>75% Grass cover, Good, HSG C
17,235	70		Woods, Good, HSG C
34,387	79	78	Weighted Average, UI Adjusted
33,239			96.66% Pervious Area
1,148			3.34% Impervious Area
1,148			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0200	0.72		**Sheet Flow, Gravel** n= 0.025 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.7	225	Total			

Summary for Subcatchment 3S: PRE-3S

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.097 af, Depth> 6.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
140	98	Roofs, HSG C
3,105	98	Paved parking, HSG C
200	98	Unconnected pavement, HSG C
1,182	96	Gravel surface, HSG C
2,665	74	>75% Grass cover, Good, HSG C
695	70	Woods, Good, HSG C
7,987	87	Weighted Average
4,542		56.87% Pervious Area
3,445		43.13% Impervious Area
200		5.81% Unconnected

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

Summary for Subcatchment 4S: PRE-4S- ROOF

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af, Depth> 7.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: PRE-5S

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.051 af, Depth> 5.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
1,712	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
2,855	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,567	83	Weighted Average
2,855		62.51% Pervious Area
1,712		37.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
0.2	30	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.0	130	Total			

Summary for Link POA1: Point of Analysis 1

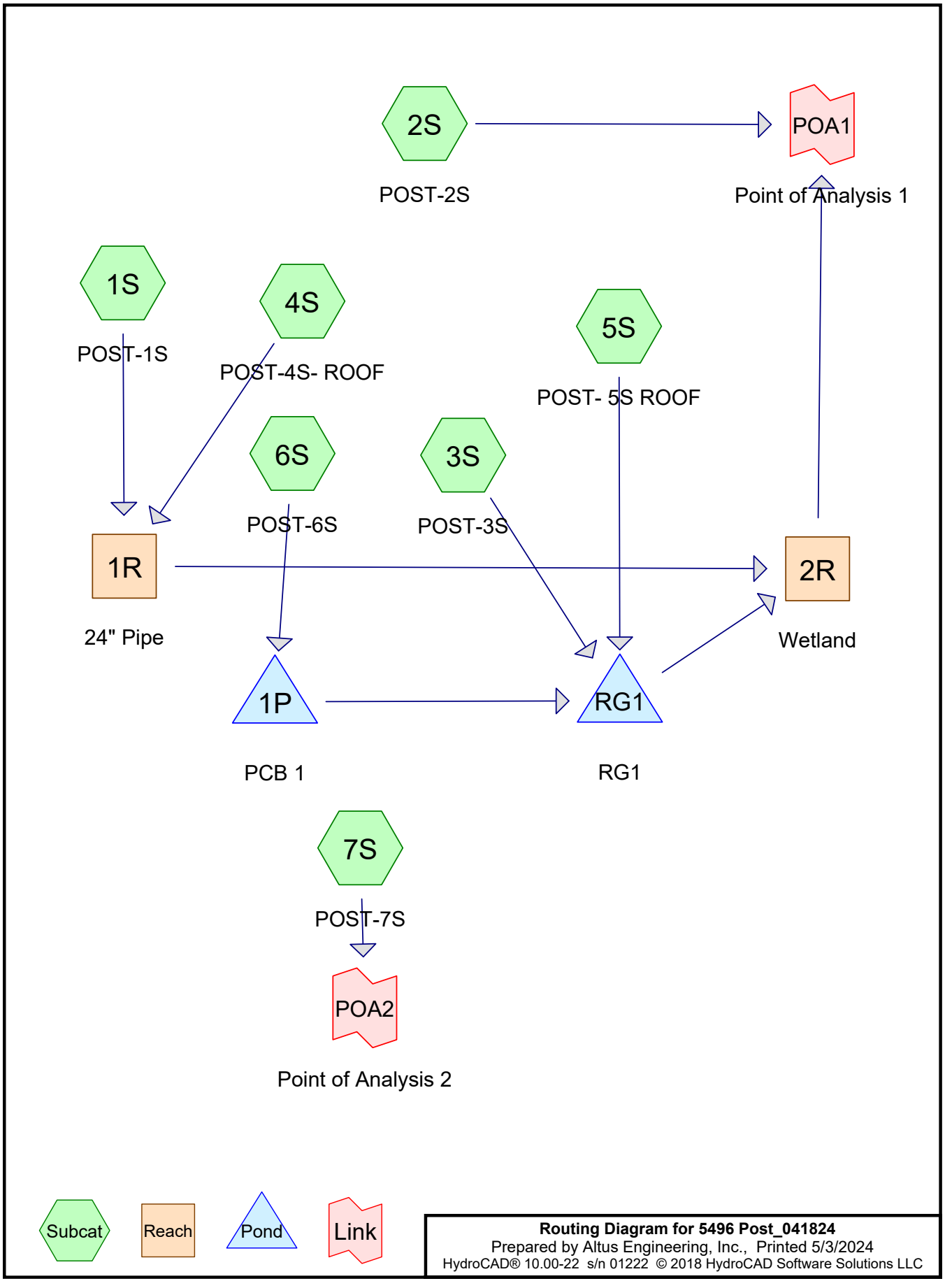
Inflow Area = 1.320 ac, 16.27% Impervious, Inflow Depth > 5.50" for 50-yr event
Inflow = 7.91 cfs @ 12.11 hrs, Volume= 0.605 af
Primary = 7.91 cfs @ 12.11 hrs, Volume= 0.605 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.105 ac, 37.49% Impervious, Inflow Depth > 5.89" for 50-yr event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.051 af
Primary = 0.73 cfs @ 12.09 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for 5496 Post_041824
Prepared by Altus Engineering, Inc., Printed 5/3/2024
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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.589	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 6S, 7S)
0.194	98	Paved parking, HSG C (1S, 2S, 3S, 6S, 7S)
0.164	98	Roofs, HSG C (4S, 5S)
0.034	98	Unconnected pavement, HSG C (1S, 2S)
0.445	70	Woods, Good, HSG C (1S, 2S)
1.425	**79**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.425	HSG C	1S, 2S, 3S, 4S, 5S, 6S, 7S
0.000	HSG D	
0.000	Other	
1.425		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.589	0.000	0.000	0.589	>75% Grass cover, Good	1S, 2S, 3S, 6S, 7S
0.000	0.000	0.194	0.000	0.000	0.194	Paved parking	1S, 2S, 3S, 6S, 7S
0.000	0.000	0.164	0.000	0.000	0.164	Roofs	4S, 5S
0.000	0.000	0.034	0.000	0.000	0.034	Unconnected pavement	1S, 2S
0.000	0.000	0.445	0.000	0.000	0.445	Woods, Good	1S, 2S
0.000	**0.000**	**1.425**	**0.000**	**0.000**	**1.425**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Pond 1P: PCB 1 Peak Elev=94.48' Storage=0.000 af Inflow=0.32 cfs 0.022 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0063 '/' Outflow=0.31 cfs 0.022 af

Reach 1R: 24" Pipe Avg. Flow Depth=0.21' Max Vel=4.01 fps Inflow=0.69 cfs 0.052 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=0.68 cfs 0.052 af

Subcatchment 1S: POST-1S Runoff Area=11,242 sf 10.27% Impervious Runoff Depth>1.27"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=75 Runoff=0.38 cfs 0.027 af

Reach 2R: Wetland Avg. Flow Depth=0.08' Max Vel=0.75 fps Inflow=1.48 cfs 0.104 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=1.19 cfs 0.104 af

Subcatchment 2S: POST-2S Runoff Area=31,388 sf 4.21% Impervious Runoff Depth>1.15"
Flow Length=200' Tc=14.2 min CN=73 Runoff=0.78 cfs 0.069 af

Subcatchment 3S: POST-3S Runoff Area=6,730 sf 52.82% Impervious Runoff Depth>2.15"
Tc=6.0 min CN=87 Runoff=0.40 cfs 0.028 af

Subcatchment 4S: POST-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>3.16"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.024 af

Subcatchment 5S: POST- 5S ROOF Runoff Area=3,140 sf 100.00% Impervious Runoff Depth>3.16"
Tc=6.0 min CN=98 Runoff=0.25 cfs 0.019 af

Subcatchment 6S: POST-6S Runoff Area=4,840 sf 67.56% Impervious Runoff Depth>2.41"
Tc=6.0 min CN=90 Runoff=0.32 cfs 0.022 af

Subcatchment 7S: POST-7S Runoff Area=725 sf 82.76% Impervious Runoff Depth>2.79"
Tc=6.0 min CN=94 Runoff=0.05 cfs 0.004 af

Link POA1: Point of Analysis 1 Inflow=1.97 cfs 0.173 af
Primary=1.97 cfs 0.173 af

Link POA2: Point of Analysis 2 Inflow=0.05 cfs 0.004 af
Primary=0.05 cfs 0.004 af

Pond RG1: RG1 Peak Elev=94.48' Storage=907 cf Inflow=0.96 cfs 0.069 af
Outflow=0.84 cfs 0.052 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.194 af Average Runoff Depth = 1.63"
72.52% Pervious = 1.034 ac 27.48% Impervious = 0.392 ac

Summary for Pond 1P: PCB 1

Inflow Area = 0.111 ac, 67.56% Impervious, Inflow Depth > 2.41" for 2-yr event
Inflow = 0.32 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 5%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.48' @ 12.20 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= 4.9 min calculated for 0.022 af (99% of inflow)
Center-of-Mass det. time= 1.0 min (771.5 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1	93.50'	0.001 af	**4.00'D x 2.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	**12.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.50' / 93.25' S= 0.0063 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=94.26' TW=94.42' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

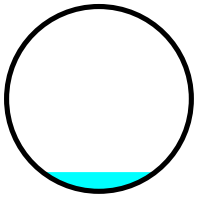
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.350 ac, 33.89% Impervious, Inflow Depth > 1.77" for 2-yr event
Inflow = 0.69 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.68 cfs @ 12.11 hrs, Volume= 0.052 af, Atten= 1%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.01 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.48 fps, Avg. Travel Time= 2.5 min

Peak Storage= 38 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: POST-1S

Runoff = 0.38 cfs @ 12.12 hrs, Volume= 0.027 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
405	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
7,940	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,242	76	75	Weighted Average, UI Adjusted
10,087			89.73% Pervious Area
1,155			10.27% Impervious Area
750			64.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.688 ac, 50.51% Impervious, Inflow Depth > 1.81" for 2-yr event
Inflow = 1.48 cfs @ 12.14 hrs, Volume= 0.104 af
Outflow = 1.19 cfs @ 12.21 hrs, Volume= 0.104 af, Atten= 20%, Lag= 4.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.75 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 8.4 min

Peak Storage= 427 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: POST-2S

Runoff = 0.78 cfs @ 12.21 hrs, Volume= 0.069 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
610	98	Paved parking, HSG C
713	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
12,830	74	>75% Grass cover, Good, HSG C
17,235	70	Woods, Good, HSG C
31,388	73	Weighted Average
30,065		95.79% Pervious Area
1,323		4.21% Impervious Area
713		53.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0050	0.09		**Sheet Flow, lawn** Grass: Short n= 0.150 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	200	Total			

Summary for Subcatchment 3S: POST-3S

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,555	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
3,175	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,730	87	Weighted Average
3,175		47.18% Pervious Area
3,555		52.82% Impervious Area

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

Summary for Subcatchment 4S: POST-4S- ROOF

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: POST- 5S ROOF

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
3,140	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,140	98	Weighted Average
3,140		100.00% Impervious Area

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

Summary for Subcatchment 6S: POST-6S

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.022 af, Depth> 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,270	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
1,570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,840	90	Weighted Average
1,570		32.44% Pervious Area
3,270		67.56% Impervious Area

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

Summary for Subcatchment 7S: POST-7S

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.62", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
600	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
125	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
725	94	Weighted Average
125		17.24% Pervious Area
600		82.76% Impervious Area

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

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.409 ac, 26.83% Impervious, Inflow Depth > 1.47" for 2-yr event
Inflow = 1.97 cfs @ 12.21 hrs, Volume= 0.173 af
Primary = 1.97 cfs @ 12.21 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.017 ac, 82.76% Impervious, Inflow Depth > 2.79" for 2-yr event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
Primary = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond RG1: RG1

Inflow Area = 0.338 ac, 67.74% Impervious, Inflow Depth > 2.44" for 2-yr event
Inflow = 0.96 cfs @ 12.09 hrs, Volume= 0.069 af
Outflow = 0.84 cfs @ 12.15 hrs, Volume= 0.052 af, Atten= 12%, Lag= 3.7 min
Primary = 0.84 cfs @ 12.15 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.48' @ 12.15 hrs Surf.Area= 594 sf Storage= 907 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 38.1 min (803.8 - 765.7)

Volume	Invert	Avail.Storage	Storage Description
#1	89.75'	1,216 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
89.75	300	0.0	0	0	300
91.25	300	40.0	180	180	392
91.50	300	33.0	25	205	407
93.00	300	10.0	45	250	500
94.00	450	100.0	372	622	664
95.00	750	100.0	594	1,216	976

Device	Routing	Invert	Outlet Devices
#1	Primary	94.25'	**3.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	89.75'	**2.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.84 cfs @ 12.15 hrs HW=94.48' TW=87.37' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 0.81 cfs @ 1.18 fps)
2=Exfiltration (Exfiltration Controls 0.03 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Pond 1P: PCB 1 Peak Elev=94.60' Storage=0.000 af Inflow=0.53 cfs 0.038 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0063 '/' Outflow=0.52 cfs 0.038 af

Reach 1R: 24" Pipe Avg. Flow Depth=0.28' Max Vel=4.82 fps Inflow=1.27 cfs 0.094 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=1.26 cfs 0.094 af

Subcatchment 1S: POST-1S Runoff Area=11,242 sf 10.27% Impervious Runoff Depth>2.63"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=75 Runoff=0.80 cfs 0.057 af

Reach 2R: Wetland Avg. Flow Depth=0.13' Max Vel=0.99 fps Inflow=2.79 cfs 0.191 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=2.53 cfs 0.191 af

Subcatchment 2S: POST-2S Runoff Area=31,388 sf 4.21% Impervious Runoff Depth>2.45"
Flow Length=200' Tc=14.2 min CN=73 Runoff=1.71 cfs 0.147 af

Subcatchment 3S: POST-3S Runoff Area=6,730 sf 52.82% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=87 Runoff=0.69 cfs 0.049 af

Subcatchment 4S: POST-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>4.84"
Tc=6.0 min CN=98 Runoff=0.48 cfs 0.037 af

Subcatchment 5S: POST- 5S ROOF Runoff Area=3,140 sf 100.00% Impervious Runoff Depth>4.84"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.029 af

Subcatchment 6S: POST-6S Runoff Area=4,840 sf 67.56% Impervious Runoff Depth>4.08"
Tc=6.0 min CN=90 Runoff=0.53 cfs 0.038 af

Subcatchment 7S: POST-7S Runoff Area=725 sf 82.76% Impervious Runoff Depth>4.49"
Tc=6.0 min CN=94 Runoff=0.08 cfs 0.006 af

Link POA1: Point of Analysis 1 Inflow=4.18 cfs 0.338 af
Primary=4.18 cfs 0.338 af

Link POA2: Point of Analysis 2 Inflow=0.08 cfs 0.006 af
Primary=0.08 cfs 0.006 af

Pond RG1: RG1 Peak Elev=94.59' Storage=972 cf Inflow=1.59 cfs 0.115 af
Outflow=1.54 cfs 0.098 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.362 af Average Runoff Depth = 3.05"
72.52% Pervious = 1.034 ac 27.48% Impervious = 0.392 ac

Summary for Pond 1P: PCB 1

Inflow Area = 0.111 ac, 67.56% Impervious, Inflow Depth > 4.08" for 10-yr event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.52 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 1%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.09 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.60' @ 12.16 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= 3.3 min calculated for 0.038 af (99% of inflow)
Center-of-Mass det. time= 0.8 min (759.3 - 758.5)

Volume	Invert	Avail.Storage	Storage Description
#1	93.50'	0.001 af	**4.00'D x 2.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	**12.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.50' / 93.25' S= 0.0063 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=94.55' TW=94.58' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

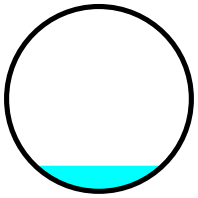
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.350 ac, 33.89% Impervious, Inflow Depth > 3.21" for 10-yr event
Inflow = 1.27 cfs @ 12.10 hrs, Volume= 0.094 af
Outflow = 1.26 cfs @ 12.11 hrs, Volume= 0.094 af, Atten= 1%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.82 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.76 fps, Avg. Travel Time= 2.1 min

Peak Storage= 58 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: POST-1S

Runoff = 0.80 cfs @ 12.11 hrs, Volume= 0.057 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
405	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
7,940	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,242	76	75	Weighted Average, UI Adjusted
10,087			89.73% Pervious Area
1,155			10.27% Impervious Area
750			64.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

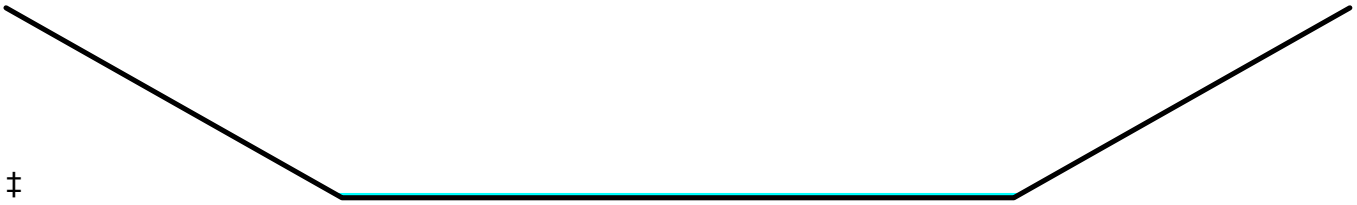
Summary for Reach 2R: Wetland

Inflow Area = 0.688 ac, 50.51% Impervious, Inflow Depth > 3.33" for 10-yr event
Inflow = 2.79 cfs @ 12.11 hrs, Volume= 0.191 af
Outflow = 2.53 cfs @ 12.16 hrs, Volume= 0.191 af, Atten= 10%, Lag= 2.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.99 fps, Min. Travel Time= 4.5 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 8.3 min

Peak Storage= 687 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'



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Summary for Subcatchment 2S: POST-2S

Runoff = 1.71 cfs @ 12.20 hrs, Volume= 0.147 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
610	98	Paved parking, HSG C
713	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
12,830	74	>75% Grass cover, Good, HSG C
17,235	70	Woods, Good, HSG C
31,388	73	Weighted Average
30,065		95.79% Pervious Area
1,323		4.21% Impervious Area
713		53.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0050	0.09		**Sheet Flow, lawn** Grass: Short n= 0.150 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	200	Total			

Summary for Subcatchment 3S: POST-3S

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.049 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,555	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
3,175	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,730	87	Weighted Average
3,175		47.18% Pervious Area
3,555		52.82% Impervious Area

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

Summary for Subcatchment 4S: POST-4S- ROOF

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: POST- 5S ROOF

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
3,140	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,140	98	Weighted Average
3,140		100.00% Impervious Area

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

Summary for Subcatchment 6S: POST-6S

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,270	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
1,570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,840	90	Weighted Average
1,570		32.44% Pervious Area
3,270		67.56% Impervious Area

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

Summary for Subcatchment 7S: POST-7S

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.46", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
600	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
125	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
725	94	Weighted Average
125		17.24% Pervious Area
600		82.76% Impervious Area

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

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.409 ac, 26.83% Impervious, Inflow Depth > 2.88" for 10-yr event
Inflow = 4.18 cfs @ 12.17 hrs, Volume= 0.338 af
Primary = 4.18 cfs @ 12.17 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.017 ac, 82.76% Impervious, Inflow Depth > 4.49" for 10-yr event
Inflow = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af
Primary = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond RG1: RG1

Inflow Area = 0.338 ac, 67.74% Impervious, Inflow Depth > 4.10" for 10-yr event
Inflow = 1.59 cfs @ 12.09 hrs, Volume= 0.115 af
Outflow = 1.54 cfs @ 12.11 hrs, Volume= 0.098 af, Atten= 4%, Lag= 1.4 min
Primary = 1.54 cfs @ 12.11 hrs, Volume= 0.098 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.59' @ 12.11 hrs Surf.Area= 627 sf Storage= 972 cf

Plug-Flow detention time= 71.0 min calculated for 0.098 af (85% of inflow)
Center-of-Mass det. time= 25.5 min (781.8 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	89.75'	1,216 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
89.75	300	0.0	0	0	300
91.25	300	40.0	180	180	392
91.50	300	33.0	25	205	407
93.00	300	10.0	45	250	500
94.00	450	100.0	372	622	664
95.00	750	100.0	594	1,216	976

Device	Routing	Invert	Outlet Devices
#1	Primary	94.25'	**3.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	89.75'	**2.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=1.50 cfs @ 12.11 hrs HW=94.58' TW=87.42' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 1.47 cfs @ 1.47 fps)
2=Exfiltration (Exfiltration Controls 0.03 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Pond 1P: PCB 1 Peak Elev=94.67' Storage=0.000 af Inflow=0.69 cfs 0.050 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0063 '/' Outflow=0.68 cfs 0.050 af

Reach 1R: 24" Pipe Avg. Flow Depth=0.32' Max Vel=5.30 fps Inflow=1.74 cfs 0.129 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=1.73 cfs 0.129 af

Subcatchment 1S: POST-1S Runoff Area=11,242 sf 10.27% Impervious Runoff Depth>3.80"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=75 Runoff=1.15 cfs 0.082 af

Reach 2R: Wetland Avg. Flow Depth=0.15' Max Vel=1.11 fps Inflow=3.76 cfs 0.264 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=3.43 cfs 0.263 af

Subcatchment 2S: POST-2S Runoff Area=31,388 sf 4.21% Impervious Runoff Depth>3.59"
Flow Length=200' Tc=14.2 min CN=73 Runoff=2.50 cfs 0.215 af

Subcatchment 3S: POST-3S Runoff Area=6,730 sf 52.82% Impervious Runoff Depth>5.10"
Tc=6.0 min CN=87 Runoff=0.92 cfs 0.066 af

Subcatchment 4S: POST-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>6.16"
Tc=6.0 min CN=98 Runoff=0.61 cfs 0.047 af

Subcatchment 5S: POST- 5S ROOF Runoff Area=3,140 sf 100.00% Impervious Runoff Depth>6.16"
Tc=6.0 min CN=98 Runoff=0.48 cfs 0.037 af

Subcatchment 6S: POST-6S Runoff Area=4,840 sf 67.56% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=90 Runoff=0.69 cfs 0.050 af

Subcatchment 7S: POST-7S Runoff Area=725 sf 82.76% Impervious Runoff Depth>5.83"
Tc=6.0 min CN=94 Runoff=0.11 cfs 0.008 af

Link POA1: Point of Analysis 1 Inflow=5.85 cfs 0.478 af
Primary=5.85 cfs 0.478 af

Link POA2: Point of Analysis 2 Inflow=0.11 cfs 0.008 af
Primary=0.11 cfs 0.008 af

Pond RG1: RG1 Peak Elev=94.65' Storage=1,011 cf Inflow=2.08 cfs 0.153 af
Outflow=2.02 cfs 0.135 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.505 af Average Runoff Depth = 4.26"
72.52% Pervious = 1.034 ac 27.48% Impervious = 0.392 ac

Summary for Pond 1P: PCB 1

Inflow Area = 0.111 ac, 67.56% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.69 cfs @ 12.09 hrs, Volume= 0.050 af
Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.050 af, Atten= 1%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.67' @ 12.15 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= 2.7 min calculated for 0.050 af (99% of inflow)
Center-of-Mass det. time= 0.8 min (753.6 - 752.9)

Volume	Invert	Avail.Storage	Storage Description
#1	93.50'	0.001 af	**4.00'D x 2.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	**12.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.50' / 93.25' S= 0.0063 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=94.62' TW=94.64' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

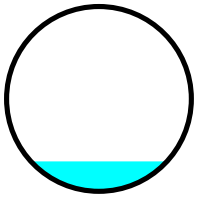
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.350 ac, 33.89% Impervious, Inflow Depth > 4.42" for 25-yr event
Inflow = 1.74 cfs @ 12.10 hrs, Volume= 0.129 af
Outflow = 1.73 cfs @ 12.11 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.30 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.93 fps, Avg. Travel Time= 1.9 min

Peak Storage= 73 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: POST-1S

Runoff = 1.15 cfs @ 12.11 hrs, Volume= 0.082 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
405	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
7,940	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,242	76	75	Weighted Average, UI Adjusted
10,087			89.73% Pervious Area
1,155			10.27% Impervious Area
750			64.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.688 ac, 50.51% Impervious, Inflow Depth > 4.60" for 25-yr event
Inflow = 3.76 cfs @ 12.11 hrs, Volume= 0.264 af
Outflow = 3.43 cfs @ 12.15 hrs, Volume= 0.263 af, Atten= 9%, Lag= 2.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.11 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.55 fps, Avg. Travel Time= 8.2 min

Peak Storage= 836 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: POST-2S

Runoff = 2.50 cfs @ 12.20 hrs, Volume= 0.215 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
610	98	Paved parking, HSG C
713	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
12,830	74	>75% Grass cover, Good, HSG C
17,235	70	Woods, Good, HSG C
31,388	73	Weighted Average
30,065		95.79% Pervious Area
1,323		4.21% Impervious Area
713		53.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0050	0.09		**Sheet Flow, lawn** Grass: Short n= 0.150 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	200	Total			

Summary for Subcatchment 3S: POST-3S

Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,555	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
3,175	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,730	87	Weighted Average
3,175		47.18% Pervious Area
3,555		52.82% Impervious Area

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

Summary for Subcatchment 4S: POST-4S- ROOF

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.047 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: POST- 5S ROOF

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
3,140	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,140	98	Weighted Average
3,140		100.00% Impervious Area

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

Summary for Subcatchment 6S: POST-6S

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,270	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
1,570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,840	90	Weighted Average
1,570		32.44% Pervious Area
3,270		67.56% Impervious Area

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

Summary for Subcatchment 7S: POST-7S

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 5.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.91", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
600	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
125	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
725	94	Weighted Average
125		17.24% Pervious Area
600		82.76% Impervious Area

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

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.409 ac, 26.83% Impervious, Inflow Depth > 4.08" for 25-yr event
Inflow = 5.85 cfs @ 12.17 hrs, Volume= 0.478 af
Primary = 5.85 cfs @ 12.17 hrs, Volume= 0.478 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.017 ac, 82.76% Impervious, Inflow Depth > 5.83" for 25-yr event
Inflow = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af
Primary = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond RG1: RG1

Inflow Area = 0.338 ac, 67.74% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 2.08 cfs @ 12.09 hrs, Volume= 0.153 af
Outflow = 2.02 cfs @ 12.11 hrs, Volume= 0.135 af, Atten= 3%, Lag= 1.3 min
Primary = 2.02 cfs @ 12.11 hrs, Volume= 0.135 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.65' @ 12.11 hrs Surf.Area= 646 sf Storage= 1,011 cf

Plug-Flow detention time= 62.4 min calculated for 0.135 af (88% of inflow)
Center-of-Mass det. time= 24.7 min (776.2 - 751.5)

Volume	Invert	Avail.Storage	Storage Description
#1	89.75'	1,216 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
89.75	300	0.0	0	0	300
91.25	300	40.0	180	180	392
91.50	300	33.0	25	205	407
93.00	300	10.0	45	250	500
94.00	450	100.0	372	622	664
95.00	750	100.0	594	1,216	976

Device	Routing	Invert	Outlet Devices
#1	Primary	94.25'	**3.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	89.75'	**2.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=1.98 cfs @ 12.11 hrs HW=94.65' TW=87.44' (Dynamic Tailwater)
↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.95 cfs @ 1.63 fps)
└ **2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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

Pond 1P: PCB 1 Peak Elev=94.74' Storage=0.000 af Inflow=0.84 cfs 0.062 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0063 '/' Outflow=0.83 cfs 0.062 af

Reach 1R: 24" Pipe Avg. Flow Depth=0.36' Max Vel=5.68 fps Inflow=2.20 cfs 0.163 af
24.0" Round Pipe n=0.011 L=224.0' S=0.0134 '/' Capacity=30.94 cfs Outflow=2.19 cfs 0.163 af

Subcatchment 1S: POST-1S Runoff Area=11,242 sf 10.27% Impervious Runoff Depth>4.96"
Flow Length=150' Slope=0.0200 '/' Tc=7.7 min UI Adjusted CN=75 Runoff=1.48 cfs 0.107 af

Reach 2R: Wetland Avg. Flow Depth=0.17' Max Vel=1.22 fps Inflow=4.67 cfs 0.333 af
n=0.035 L=270.0' S=0.0085 '/' Capacity=1,365.56 cfs Outflow=4.32 cfs 0.332 af

Subcatchment 2S: POST-2S Runoff Area=31,388 sf 4.21% Impervious Runoff Depth>4.72"
Flow Length=200' Tc=14.2 min CN=73 Runoff=3.27 cfs 0.283 af

Subcatchment 3S: POST-3S Runoff Area=6,730 sf 52.82% Impervious Runoff Depth>6.34"
Tc=6.0 min CN=87 Runoff=1.13 cfs 0.082 af

Subcatchment 4S: POST-4S- ROOF Runoff Area=4,016 sf 100.00% Impervious Runoff Depth>7.39"
Tc=6.0 min CN=98 Runoff=0.73 cfs 0.057 af

Subcatchment 5S: POST- 5S ROOF Runoff Area=3,140 sf 100.00% Impervious Runoff Depth>7.39"
Tc=6.0 min CN=98 Runoff=0.57 cfs 0.044 af

Subcatchment 6S: POST-6S Runoff Area=4,840 sf 67.56% Impervious Runoff Depth>6.67"
Tc=6.0 min CN=90 Runoff=0.84 cfs 0.062 af

Subcatchment 7S: POST-7S Runoff Area=725 sf 82.76% Impervious Runoff Depth>7.08"
Tc=6.0 min CN=94 Runoff=0.13 cfs 0.010 af

Link POA1: Point of Analysis 1 Inflow=7.47 cfs 0.615 af
Primary=7.47 cfs 0.615 af

Link POA2: Point of Analysis 2 Inflow=0.13 cfs 0.010 af
Primary=0.13 cfs 0.010 af

Pond RG1: RG1 Peak Elev=94.71' Storage=1,044 cf Inflow=2.53 cfs 0.188 af
Outflow=2.48 cfs 0.170 af

Total Runoff Area = 1.425 ac Runoff Volume = 0.644 af Average Runoff Depth = 5.42"
72.52% Pervious = 1.034 ac 27.48% Impervious = 0.392 ac

Summary for Pond 1P: PCB 1

Inflow Area = 0.111 ac, 67.56% Impervious, Inflow Depth > 6.67" for 50-yr event
Inflow = 0.84 cfs @ 12.09 hrs, Volume= 0.062 af
Outflow = 0.83 cfs @ 12.09 hrs, Volume= 0.062 af, Atten= 1%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.09 hrs, Volume= 0.062 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.74' @ 12.15 hrs Surf.Area= 0.000 ac Storage= 0.000 af

Plug-Flow detention time= 2.4 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (749.9 - 749.2)

Volume	Invert	Avail.Storage	Storage Description
#1	93.50'	0.001 af	**4.00'D x 2.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	93.50'	**12.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.50' / 93.25' S= 0.0063 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=94.68' TW=94.70' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

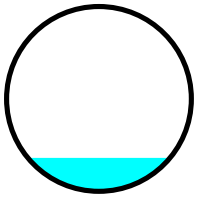
Summary for Reach 1R: 24" Pipe

Inflow Area = 0.350 ac, 33.89% Impervious, Inflow Depth > 5.60" for 50-yr event
Inflow = 2.20 cfs @ 12.10 hrs, Volume= 0.163 af
Outflow = 2.19 cfs @ 12.11 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.68 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.08 fps, Avg. Travel Time= 1.8 min

Peak Storage= 86 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 30.94 cfs

24.0" Round Pipe
n= 0.011
Length= 224.0' Slope= 0.0134 '/'
Inlet Invert= 90.30', Outlet Invert= 87.30'



Summary for Subcatchment 1S: POST-1S

Runoff = 1.48 cfs @ 12.11 hrs, Volume= 0.107 af, Depth> 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Adj	Description
0	98		Roofs, HSG C
405	98		Paved parking, HSG C
750	98		Unconnected pavement, HSG C
0	89		Gravel roads, HSG C
7,940	74		>75% Grass cover, Good, HSG C
2,147	70		Woods, Good, HSG C
11,242	76	75	Weighted Average, UI Adjusted
10,087			89.73% Pervious Area
1,155			10.27% Impervious Area
750			64.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0200	0.16		**Sheet Flow, sheet** Grass: Short n= 0.150 P2= 3.62"
2.4	100	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.7	150	Total			

Summary for Reach 2R: Wetland

Inflow Area = 0.688 ac, 50.51% Impervious, Inflow Depth > 5.81" for 50-yr event
Inflow = 4.67 cfs @ 12.11 hrs, Volume= 0.333 af
Outflow = 4.32 cfs @ 12.15 hrs, Volume= 0.332 af, Atten= 7%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.22 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 0.55 fps, Avg. Travel Time= 8.1 min

Peak Storage= 958 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 5.00' Flow Area= 150.0 sf, Capacity= 1,365.56 cfs

20.00' x 5.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 40.00'
Length= 270.0' Slope= 0.0085 '/'
Inlet Invert= 87.30', Outlet Invert= 85.00'

‡

Summary for Subcatchment 2S: POST-2S

Runoff = 3.27 cfs @ 12.20 hrs, Volume= 0.283 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
610	98	Paved parking, HSG C
713	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
12,830	74	>75% Grass cover, Good, HSG C
17,235	70	Woods, Good, HSG C
31,388	73	Weighted Average
30,065		95.79% Pervious Area
1,323		4.21% Impervious Area
713		53.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0050	0.09		**Sheet Flow, lawn** Grass: Short n= 0.150 P2= 3.62"
5.0	150	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	200	Total			

Summary for Subcatchment 3S: POST-3S

Runoff = 1.13 cfs @ 12.09 hrs, Volume= 0.082 af, Depth> 6.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,555	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
3,175	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,730	87	Weighted Average
3,175		47.18% Pervious Area
3,555		52.82% Impervious Area

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

Summary for Subcatchment 4S: POST-4S- ROOF

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af, Depth> 7.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
4,016	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,016	98	Weighted Average
4,016		100.00% Impervious Area

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

Summary for Subcatchment 5S: POST- 5S ROOF

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 7.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
3,140	98	Roofs, HSG C
0	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
0	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,140	98	Weighted Average
3,140		100.00% Impervious Area

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

Summary for Subcatchment 6S: POST-6S

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 0.062 af, Depth> 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
3,270	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
1,570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,840	90	Weighted Average
1,570		32.44% Pervious Area
3,270		67.56% Impervious Area

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

Summary for Subcatchment 7S: POST-7S

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 7.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.27", Smoothing=Off

Area (sf)	CN	Description
0	98	Roofs, HSG C
600	98	Paved parking, HSG C
0	98	Unconnected pavement, HSG C
0	89	Gravel roads, HSG C
125	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
725	94	Weighted Average
125		17.24% Pervious Area
600		82.76% Impervious Area

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

Summary for Link POA1: Point of Analysis 1

Inflow Area = 1.409 ac, 26.83% Impervious, Inflow Depth > 5.24" for 50-yr event
Inflow = 7.47 cfs @ 12.16 hrs, Volume= 0.615 af
Primary = 7.47 cfs @ 12.16 hrs, Volume= 0.615 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA2: Point of Analysis 2

Inflow Area = 0.017 ac, 82.76% Impervious, Inflow Depth > 7.08" for 50-yr event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af
Primary = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond RG1: RG1

Inflow Area = 0.338 ac, 67.74% Impervious, Inflow Depth > 6.67" for 50-yr event
Inflow = 2.53 cfs @ 12.09 hrs, Volume= 0.188 af
Outflow = 2.48 cfs @ 12.11 hrs, Volume= 0.170 af, Atten= 2%, Lag= 1.2 min
Primary = 2.48 cfs @ 12.11 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 94.71' @ 12.11 hrs Surf.Area= 663 sf Storage= 1,044 cf

Plug-Flow detention time= 56.6 min calculated for 0.170 af (90% of inflow)
Center-of-Mass det. time= 24.1 min (772.4 - 748.4)

Volume	Invert	Avail.Storage	Storage Description
#1	89.75'	1,216 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
89.75	300	0.0	0	0	300
91.25	300	40.0	180	180	392
91.50	300	33.0	25	205	407
93.00	300	10.0	45	250	500
94.00	450	100.0	372	622	664
95.00	750	100.0	594	1,216	976

Device	Routing	Invert	Outlet Devices
#1	Primary	94.25'	**3.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	89.75'	**2.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=2.43 cfs @ 12.11 hrs HW=94.70' TW=87.46' (Dynamic Tailwater)
↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.40 cfs @ 1.76 fps)
└ **2=Exfiltration** (Exfiltration Controls 0.03 cfs)

SECTION 6

Stormwater Inspection and Maintenance Manual

STORMWATER MANAGEMENT
INSPECTION AND MAINTENANCE MANUAL
FOR

OUR PLACE
ADULT GROUP HOUSING FACILITY

105 Durham Road

Dover, NH

Tax Map H, Lot 6-4

Proper inspection, maintenance, and repair are key elements in maintaining a successful stormwater management program on a developed property. Routine inspections ensure permit compliance and reduce the potential for deterioration of infrastructure or reduced water quality. The following responsible parties shall be in charge of managing the stormwater facilities:

RESPONSIBLE PARTIES:

Owner/Applicant: *Paul Seaver / Our Place, Inc.* _____
Name *Company* *Phone*

Inspection and Maintenance : *TBD* _____
Name *Phone*

NOTE: Inspection and maintenance responsibilities transfer to future property owners.

Included in this Inspection and Maintenance Manual are the following components:

- Drainage Features and Site BMP Functions and Maintenance Descriptions
- Guidelines for Control of Invasive Species
- Regular Inspection and Maintenance Guidance for Bioretention Systems
- Checklists for Inspection of Bioretention Systems
- Inspection and Maintenance Checklist
- Stormwater System Operations and Maintenance Report Form
- Site Drainage Plan

RAINGARDENS AND FILTRATION BASINS

Function – Raingardens and filtration ponds provide treatment to runoff prior to directing it to stormwater systems by filtering sediment and suspended solids, trapping them in the bottom of the garden and in the filter media itself. Additional treatment is provided by the native water-tolerant vegetation which removes nutrients and other pollutants through bio-uptake. Stormwater detention and infiltration can also be provided as the filtering process slows runoff, decreases the peak rate of discharge and promotes groundwater recharge.

Detention ponds temporarily store runoff and allow for its controlled release during and after a storm event, decreasing peak rates of runoff and minimizing flooding.

Raingardens, infiltration ponds, and detention ponds shall be managed (Per AGR 3800 and RSA 430:53) to: prevent and control the spread of invasive plant, insect, and fungal species; minimize the adverse environmental and economic effects invasive species cause to agriculture, forests, wetlands, wildlife, and other natural resources of the state; and protect the public from potential health problems attributed to certain invasive species.

Maintenance

- Inspect annually and after significant rainfall event.
- If a raingarden does not completely 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 its filtration and/or infiltration function(s), including but not limited to removal of accumulated sediments and/or replacement or reconstruction of the filter media.
- Replace any riprap dislodged from spillways, inlets and outlets.
- Remove any obstructions, litter and accumulated sediment or debris as warranted but no less than once a year.
- Mowing of any grassed area in or adjacent to a raingarden shall be performed on a monthly basis (when areas are not inundated) to keep the vegetation in vigorous condition. The cut grass shall be removed to prevent the decaying organic litter from clogging the filter media or choking other vegetation.
- Select vegetation should be maintained in healthy condition. This may include pruning, removal and replacement of dead or diseased vegetation.
- Remove any invasive species, Per AGR 3800 and RSA 430:53.
  (See Control of Invasive Plants)

CULVERTS AND DRAINAGE PIPES

Function – Culverts and drainage pipes convey stormwater away from buildings, walkways, and parking areas and to surface waters or closed drainage systems.

Maintenance

- Culverts and drainage pipes shall be inspected semi-annually, or more often as needed, for accumulation of debris and structural integrity. Leaves and other debris shall be removed from the inlet and outlet to insure the functionality of drainage structures. Debris shall be disposed of on site where it will not concentrate back at the drainage structures or at a solid waste disposal facility.

- Riprap Areas - Culvert outlets and inlets shall be inspected during annual maintenance and operations for erosion and scour. If scour or creek erosion is identified, the outlet owner shall take appropriate means to prevent further erosion. Increased lengths of riprap may require a NHDES Wetlands Permit modification.

DRAINAGE STRUCTURES

Function – Catch basins, manholes, yard drains, and other stormwater structures collect stormwater, primarily from paved surfaces and roofs. Stormwater from paved areas often contains sediment and contaminants. Catch basin sumps serve to trap sediment, trace metals, nutrients and debris. Hooded catch basins trap hydrocarbons and floating debris.

Maintenance

- Remove leaves and debris from structure grates on an as-needed basis.

- Sumps shall be inspected and cleaned (as needed) on an annual basis to protect water quality and infiltration capacity. Catch basin debris shall be disposed of at a solid waste disposal facility.

DE-ICING CHEMICAL USE AND STORAGE

Function – Sand and salt are used for de-icing of drives.

Salt use shall be minimized for de-icing activities.

The responsible party shall employ a New Hampshire Certified Salt Applicator for winter snow and ice management activities.

Maintenance

- **Salt use shall be minimized.** Sand shall be used for de-icing activities when possible. Salt is highly water-soluble. Contamination of fresh water wetlands and other sensitive areas can occur when salt is stored in open areas. Owner shall not store salt piles on site.

VEGETATIVE SWALES

Function – Vegetative swales filter sediment from stormwater, promote infiltration, and the uptake of contaminates. They are designed to treat runoff and dispose of it safely into the natural drainage system.

Maintenance

- Timely maintenance is important to keep a swale in good working condition. Mowing of grassed swales shall be monthly to keep the vegetation in vigorous condition. The cut vegetation shall be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale.
- Fertilizing shall be bi-annual or as recommended from soil testing.
- Inspect swales following significant rainfall events.
- Woody vegetation shall not be allowed to become established in the swales or rock riprap outlet protection and if present shall be removed.
- Accumulated debris disrupts flow and leads to clogging and erosion. Remove debris and litter as necessary.
- Inspect for eroded areas. Determine cause of erosion and correct deficiency as required. Monitor repaired areas.

LEVEL SPREADERS AND PLUNGE POOLS

Function – Level spreaders and plunge pools covert concentrated stormwater flows into less-erosive sheet flow, minimizing erosion and maximizing the treatment capabilities of associated buffers. Vegetated buffers, either forested or meadow, slow runoff which promotes and reduced peak rates of runoff. The reduced velocities and the presence of vegetation encourage the filtration of sediment and the limited bio-uptake of nutrients.

Maintenance

- Inspect level spreaders and buffers at least annually for signs of erosion, sediment buildup, or vegetation loss.
- If a meadow buffer, provide periodic mowing as needed to maintain a healthy stand of herbaceous vegetation.
- If a forested buffer, then the buffer should be maintained in an undisturbed condition, unless erosion occurs.
- If erosion of the buffer (forested or meadow) occurs, eroded areas should be repaired and replanted with vegetation similar to the remaining buffer. Corrective action should include eliminating the source of the erosion problem and may require retrofit or reconstruction of the level spreader.
- Remove debris and accumulated sediment and dispose of properly.

LANDSCAPED AREAS - FERTILIZER MANAGEMENT

Function – Fertilizer management involves controlling the rate, timing and method of fertilizer application so that the nutrients are taken up by the plants thereby reducing the chance of polluting the surface and ground waters. Fertilizer management can be effective in reducing the amounts of phosphorus and nitrogen in runoff from landscaped areas, particularly lawns.

Maintenance

- Have the soil tested by your landscaper or local Soil Conservation Service for nutrient requirements and follow the recommendations.
- Do not apply fertilizer to frozen ground.
- Clean up any fertilizer spills.
- Do not allow fertilizer to be broadcast into water bodies.
- When fertilizing a lawn, water thoroughly, but do not create a situation where water runs off the surface of the lawn.

LANDSCAPED AREAS - LITTER CONTROL

Function – Landscaped areas tend to filter debris and contaminates that may block drainage systems and pollute the surface and ground waters.

Maintenance

- Litter Control and lawn maintenance involves removing litter such as trash, leaves, lawn clippings, pet wastes, oil and chemicals from streets, parking lots, and lawns before materials are transported into surface waters.
- Litter control shall be implemented as part of the grounds maintenance program.

APPENDIX

A. Drainage Features and Site BMP Functions and Maintenance Descriptions

B. Guidelines for Control of Invasive Species

C. Regular Inspection and Maintenance Guidance for Bioretention Systems

D. Checklists for Inspection of Bioretention Systems

E. Inspection and Maintenance Checklist

F. Stormwater System Operations and Maintenance Report Form

G. Site Drainage Plan

CONTROL OF INVASIVE PLANTS

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

Background:

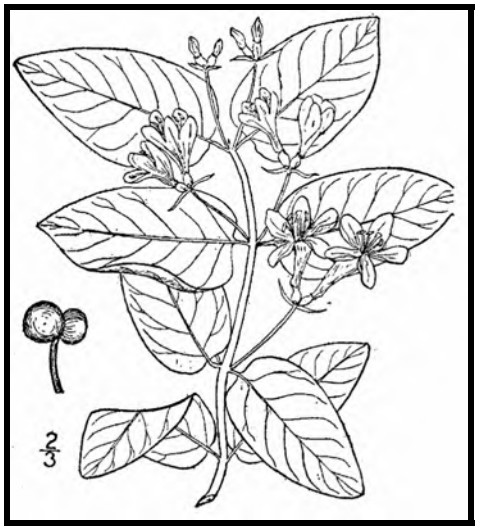
Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants,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

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

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

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



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

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

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

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

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

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

New Hampshire Regulations

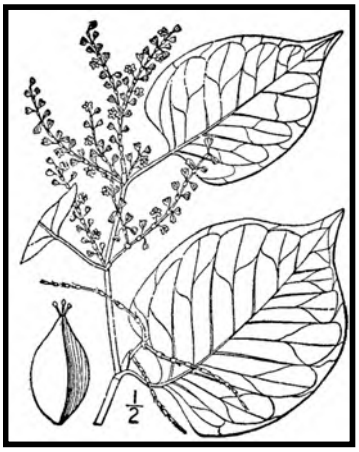
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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

How and When to Dispose of Invasives?

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

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



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

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

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

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

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

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

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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**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 (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**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

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Regular Inspection and Maintenance Guidance for Bioretention Systems / Tree Filters

Maintenance of bioretention systems and tree filters can typically be performed as part of standard landscaping. Regular inspection and maintenance is critical to the effective operation of bioretention systems and tree filters to insure they remain clear of leaves and debris and free draining. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less frequent maintenance needs depending on a variety of factors including but not limited to: the occurrence of large storm events, overly wet or dry periods, regional hydrologic conditions, and the upstream land use.

ACTIVITIES

The most common maintenance activity is the removal of sediment and organic debris from the system and bypass structures. Visual inspections are routine for system maintenance. This includes looking for standing water, accumulated leaves, holes in the soil media, signs of plant distress, and debris and sediment accumulation in the system. Vegetation coverage is integral to the performance of the system, including infiltration rate and nutrient uptake. Vegetation care is important to system productivity and health.

ACTIVITY	FREQUENCY
CLOGGING AND SYSTEM PERFORMANCE	
A record should be kept of the time to drain for the system completely after a storm event. The system should drain completely within 72 hours.	After every major storm in the first few months, then annually at minimum.
Check to insure the filter surface remains well draining after storm events. **Remedy**: If filter bed is clogged, draining poorly, or standing water covers more than 50% of the surface 48 hours after a precipitation event, then remove top few inches of discolored material. Till, or rake remaining material as needed.	
Check inlets and outlets for leaves and debris. **Remedy**: Rake in and around the system to clear it of debris. Also, clear the inlet and overflow if obstructed.	Quarterly initially, annually as a minimum thereafter.
Check for animal burrows and short-circuiting in the system. **Remedy:** Soil erosion from short circuiting or animal boroughs should be repaired when they occur. The holes should be filled and lightly compacted	
Inspect inlets and outlets to ensure good condition and no evidence of deterioration. Check to see if high-flow bypass is functioning. **Remedy:** Repair or replace any damaged structural parts, inlets, outlets, sidewalls.	
VEGETATION	
Check for robust vegetation coverage throughout the system and dead or dying plants. **Remedy:** Vegetation should cover > 75% of the system and should be cared for as needed.	Annually or as needed

CHECKLIST FOR INSPECTION OF BIORETENTION SYSTEM / TREE FILTERS

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

Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
1. Initial Inspection After Planting and Mulching		
Plants are stable, roots not exposed	**S** **U**	
Surface is at design level, no evidence of preferential flow/shoving	**S** **U**	
Inlet and outlet/bypass are functional	**S** **U**	
2. Debris Cleanup (1 time/year minimum, Spring/Fall)		
Litter, leaves, and dead vegetation removed from the system	**S** **U**	
Prune/mow vegetation	**S** **U**	
3. Standing Water (1 time/year and/or after large storm events)		
No evidence of standing water after 24-48 hours since rainfall	**S** **U**	
4. Vegetation Condition and Coverage		
Vegetation condition good with good coverage (typically > 75%)	**S** **U**	
5. Other Issues		
Note any additional issues not previously covered.	**S** **U**	

Corrective Action Needed	Due Date
1.	
2.	
3.	
Inspector Signature	**Date**

Inspection & Maintenance Checklist

BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/ Cleanout Threshold
Paved surfaces:			
Pavement Sweeping	Routinely	N/A	N/A
Litter & Trash Removal	Routinely	N/A	Parcel will be free of litter/trash.
Deicing Agents	N/A	Keep De-Icing Log	**Low Salt**
Closed Drainage System:			
Drainage Pipes	1 time per 2 years	Check for sediment accumulation & clogging.	Less than 2" sediment depth
Catch Basins	Annually	Check for sediment accumulation (Less than 24" sediment), blocked hood, and floating debris.	Clean Sumps. Remove all floating debris.
Drain Manhole	Annually	Check for sediment, debris, and obstructions.	Remove all Obstructions.

BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
BMPs:			
Raingardens or Infiltration Pond	Annually	• Check infiltration rates and filter media. • Check for trash & debris. • Check for sediment buildup. • Check for vegetation stability. • Check for excess woody vegetation growth. • Check for invasive species.	Remove trash & debris, sediment, woody vegetation, and invasive species. Side slopes and berm are to be mowed. Replant vegetation if required.
Vegetated Swale	Annually	Check for sediment buildup, vegetation loss and invasive species, debris, and damage.	Remove sediment, debris and invasive species, repair damage, and mow grass monthly to a depth of 4 inches.
Riprap Outlet Protection	Annually	Check for sediment buildup and structure damage.	Remove excess sediment and repair damage.
Stone Berm Level Spreader	Annually	Check for sediment buildup, debris and signs of erosion.	Remove sediment and debris. Immediately repair.

STORM WATER SYSTEM OPERATION AND MAINTENANCE REPORT

General Information		
Project Name		
Owner		
Inspector's Name(s)		
Inspector's Contact Information		
Date of Inspection	**Start Time:**	**End Time:**
Type of Inspection: ☐ Annual Report ☐ Post-storm event ☐ Due to a discharge of significant amounts of sediment		
Notes:		

General Site Questions and Discharges of Significant Amounts of Sediment			
Subject		**Status**	**Notes**
A discharge of significant amounts of sediment may be indicated by (but is not limited to) observations of the following. Note whether any are observed during this inspection:			*Notes/ Action taken:*
1	Do the current site conditions reflect the attached site plan?	❑Yes ❑No	
2	Is the site permanently stabilized, temporary erosion and sediment controls are removed, and stormwater discharges from construction activity are eliminated?	❑Yes ❑No	
3	Is there evidence of the discharge of significant amounts of sediment to surface waters, or conveyance systems leading to surface waters?	❑Yes ❑No	
4	Is there evidence of concentrated flows of stormwater such as rills or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment?	❑Yes ❑No	
5	Is there evidence of deposits of sediment from the site on any adjacent property or stormwater system.	❑Yes ❑No	
6	Is there evidence of discharges from the site to streams running through or along the site where visual observations indicate significant amounts of sediment present in them.	❑Yes ❑No	
7	Is there evidence of invasive species within the stormwater treatment areas?	❑Yes ❑No	

Permit Coverage and Plans				
#	BMP/Facility	Inspected	Corrective Action Needed and Notes	Date Corrected
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		☐Yes ☐No		
		☐Yes ☐No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		

Appendix

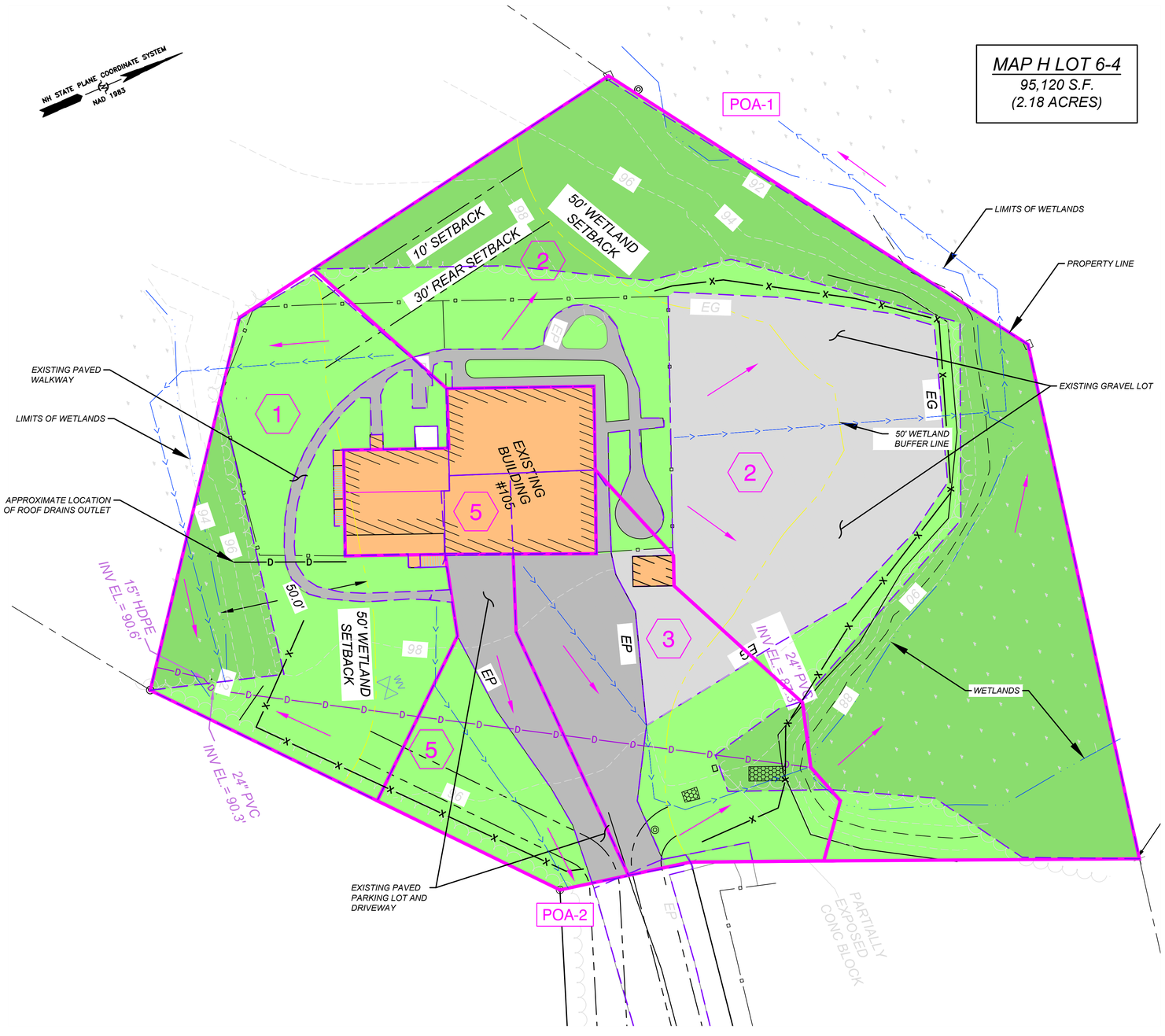
1) Pre-Development Watershed Plan
2) Post-Development Watershed Plan

LEGEND

- PROPERTY LINE
- WETLAND/SOILS BOUNDARY
- 60 — EXISTING CONTOUR
- EXISTING PAVEMENT/CURB
- EXISTING TREELINE
- WATERSHED BOUNDARY
- Tc PATH
- SURFACE FLOW DIRECTION
- 1 1 1 — SUBCATCHMENT/POND/REACH
- POA — POINT OF ANALYSIS

NH STATE PLANE COORDINATE SYSTEM NAD 1983

MAP H LOT 6-4
95,120 S.F.
(2.18 ACRES)



GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE — CORY D. BELDEN No. 14230 LICENSED PROFESSIONAL ENGINEER — 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: DRAINAGE REPORT

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/2024

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
PRE-DEVELOPMENT WATERSHED PLAN

SHEET NUMBER:
WS-1

LEGEND

- PROPERTY LINE
- WETLAND/SOILS BOUNDARY
- 60 EXISTING CONTOUR
- EXISTING PAVEMENT/CURB
- EXISTING TREELINE
- WATERSHED BOUNDARY
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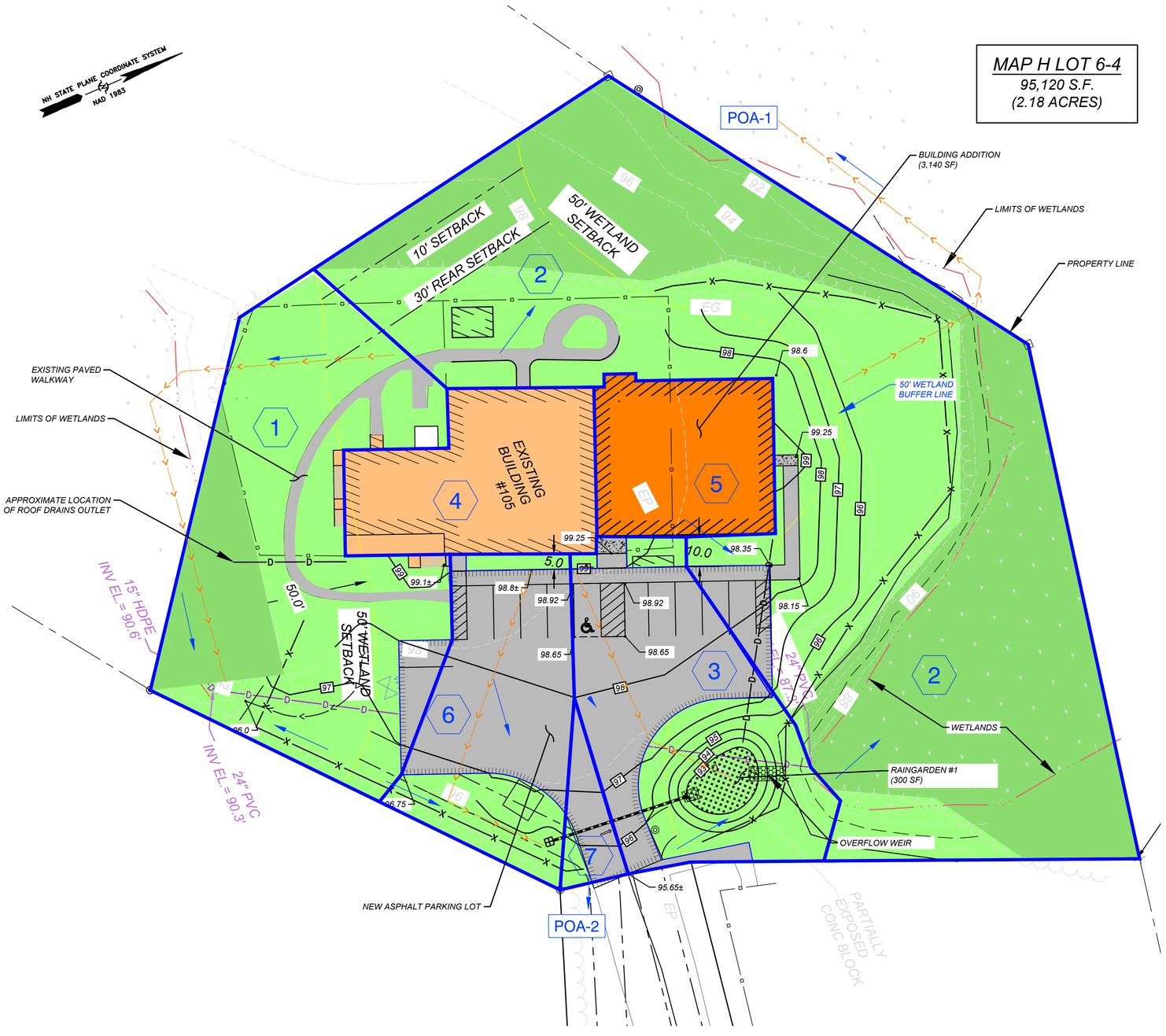
- POA POINT OF ANALYSIS

NH STATE PLANE COORDINATE SYSTEM NAD 1983

MAP H LOT 6-4
95,120 S.F.
(2.18 ACRES)



GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE CORY D. BELDEN No. 14230 LICENSED PROFESSIONAL ENGINEER 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: DRAINAGE REPORT

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/2024

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT

TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
POST-DEVELOPMENT WATERSHED PLAN

SHEET NUMBER:
WS-2

CITY OF DOVER DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
SITE PLAN REVIEW (P24-__) &
CONDITIONAL USE PERMIT (P24-__)

OUR PLACE SITE DEVELOPMENT

(ADULT GROUP LIVING FACILITY)

Tax Map H, Lot 6-4

DOVER, NEW HAMPSHIRE

ISSUED FOR PLANNING BOARD APPROVAL

Plan Issue Date:
May 6, 2024

Applicant:

Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

Owner:

Paul J. Seaver
105 Durham Road
Dover, NH 03820

Civil Engineer:

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

Architect:

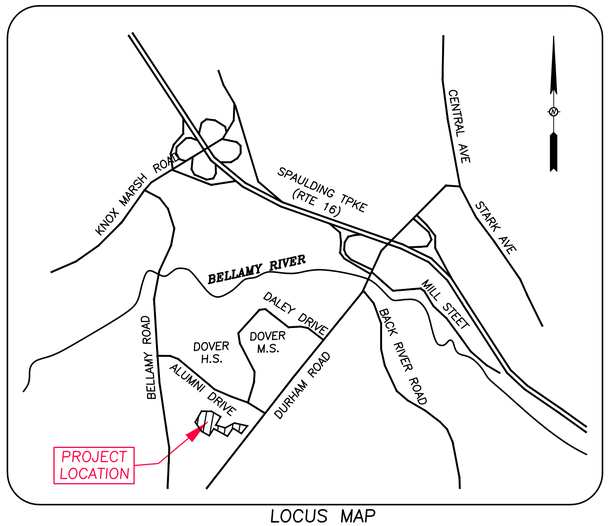
Architectural Consulting Services, Inc.
415 Pawtuck Street, Unit 1
Lowell, MA 01854

Surveyor:

NORTHAM SURVEY LLC
686 Central Ave, Ste 100, Dover, NH 03820 | (603) 953-3164 | www.northamsurvey.com

Wetland/Soil Scientist:

West Environmental
48 Stevens Hill Road
Nottingham, NH 03290
(603) 734-4298



LOCUS MAP
Scale: 1" = 1000'±

Sheet Index Title	*Sheet No.:*		*Rev.*	*Date*
* Cover Sheet	1	1 of 1	0	05/06/24
* Existing Conditions Plan (by Northam Survey)	2	1 of 1	1	04/22/22
* General Notes	3	GN-1	0	05/06/24
Neighborhood Plan	4	N-1	0	11/13/23
* Overall Site Plan	5	C-1	0	05/06/24
* Site Detail Plan	6	C-2	0	05/06/24
* Grading, Drainage and Erosion and Sediment Control Plan	7	C-3	0	05/06/24
* Wetlands Conditional Use Plan	8	CUP-1	0	05/06/24
Truck Turning Layout (Dover T-1)	9	T-1	0	05/06/24
* Details	10	D-1	0	05/06/24
* Details	11	D-2	0	05/06/24
Details	12	D-3	0	05/06/24
* Details	13	D-4	0	05/06/24
Details	14	D-5	0	05/06/24
Architectural Plans (by Market Square Architects)				
First Floor Plan – Dimension Plan	15	A1.1	0	05/06/24
First Floor Plan – Keynote Plan	16	A1.2	0	05/06/24
Exterior Elevations	17	A3.0	0	05/06/24
Exterior Elevations	18	A3.1	0	05/06/24
Building Renderings	19-21	3 Sheets	0	05/06/24

* Included in Partial Plan Set for Wetlands Conditional Use Permit

Permit Summary

Contractor shall be responsible for compliance with all conditions of approvals:

Zoning Board of Adjustment – Granted Variance to allow nine unit building on December 21, 2023.
Planning Board – Granted Transfer of Development Rights (TDR) to allow nine residential units on property on January 18, 2024.
Building Permits – Building Permits to be obtained from the City of Dover

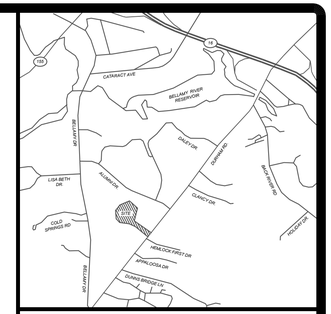
Conditional Use Permits:

P24-__ – Section 170-27.1 – Wetlands Protection District

P5496
SHEET NO. 1

PLAN REFERENCES:

1. "LOT LINE ADJUSTMENT PLAN FOR LANDS OWNED BY PAUL & PENNY SEAVER" PREPARED BY POHOPEK LAND SURVEYORS & SEPTIC SYSTEM DESIGN, LLC. DATED FEBRUARY 1, 2007. RECORDED AT S.C.R.D. AS PLAN P-90-68.
2. "LOT LINE ADJUSTMENTS FOR LOTS 6, 6-3 & 6-4, TAX MAP H DURHAM, DOVER RD. IN DOVER, N.H." PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR BARRINGTON, N.H. DATED DECEMBER 7, 1994. RECORDED AT S.C.R.D. AS PLAN 41A-58.
3. "SUBDIVISION PLAN 'ESTES ESTATES' DURHAM ROAD, DOVER, N.H. PREPARED FOR WAYNE & DIERDRE ESTES." PREPARED BY CIVIL CONSULTANTS ENGINEERING & PLANNING. DATED APRIL 29, 1989. RECORDED AT S.C.R.D. AS PLAN 37-88
4. "PROPERTY LINE ADJUSTMENTS OF LAND OF WAYNE & DIERDRE ESTES, DOVER, N.H." PREPARED BY RICHARD P. TOWLE. LAND SURVEYOR. DATED OCTOBER, 1986. RECORDED AT S.C.R.D. AS PLAN 30-141.



LOCUS

NOTES:

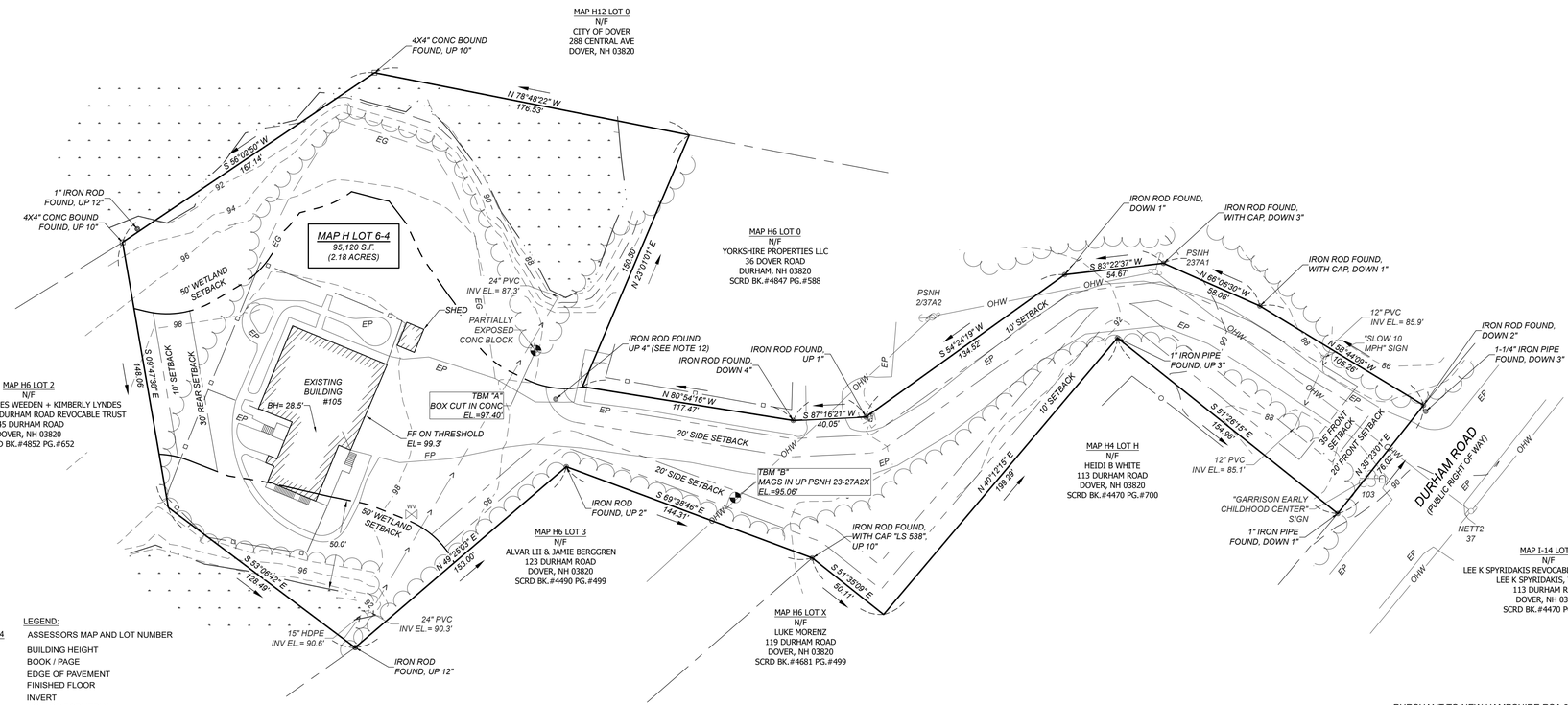
1. SUBJECT PARCEL: TAX MAP H6 LOT 4
   105 DURHAM ROAD
   DOVER, NH 03820
   NS PROJECT #986
2. OWNER OF RECORD: PAUL J & PENNEY L SEAVER
   105 DURHAM ROAD
   DOVER, NH 03820
   S.C.R.D. BOOK 5100, PAGE 273
3. PARCEL AREA: 95,120 S.F. OR 2.18 AC.
4. THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS OF THE SUBJECT PARCEL.
5. DIMENSIONAL REQUIREMENTS: ZONE: R-20

MIN LOT AREA:	20,000 S.F.
MIN LOT FRONTAGE:	125'
MIN FRONT SETBACK:	20'
MIN SIDE SETBACK:	20'
MIN REAR SETBACK:	30'
MAX BUILDING HEIGHT:	35'
MAX LOT COVERAGE:	30%
OUTBUILDING/ACCESSORY:	
FRONT SETBACK:	35'
REAR/SIDE SETBACK:	10'

   OVERLAY DISTRICT: WETLAND PROTECTION DISTRICT

WETLAND SETBACK:	50'

   ZONING INFORMATION SHOWN HEREON IS PER THE TOWN OF DOVER ZONING ORDINANCE DATED SEPTEMBER 9, 2022. ADDITIONAL REGULATIONS APPLY, THE LAND OWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE TOWN, STATE, AND FEDERAL REGULATIONS.
6. FLOOD HAZARD ZONE: "X" WITH FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD HAZARD, PER FIRM MAP #33017C0320E, DATED 9/30/2005.
7. FIELD SURVEY COMPLETED BY NORTHAM SURVEY IN FEBRUARY, 2024 USING A TRIMBLE S5 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR, A TRIMBLE R12 GPS RECEIVER AND A SOKKIA B31 AUTO LEVEL.
8. HORIZONTAL DATUM IS NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATES PER STATIC GPS OBSERVATIONS.
9. THE VERTICAL DATUM IS NAVD88 PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
10. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
11. THE LOCATION OF UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. NORTHAM SURVEY LLC MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
12. LOT CORNER ABANDONED PER REFERENCE PLAN #1.
13. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARK WEST, CWS #10 ON FEBRUARY 12, 2024 THE WETLANDS WERE DELINEATED ACCORDING TO THE FOLLOWING STANDARDS:
    - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY 1987).
    - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (OCTOBER 2012).
    - FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND VERSION 4 (NEHSTC MAY 2017)
    - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE. 2013
    - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).



LEGEND:

MAP H6 LOT 4	ASSESSORS MAP AND LOT NUMBER
BH	BUILDING HEIGHT
BK. PG.	BOOK / PAGE
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
INV.	INVERT
N/F	NOW OR FORMERLY
SCRD	STRAFFORD COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
TBM	TEMPORARY BENCHMARK
	IRON PIPE/ROD FOUND
	BOUND FOUND
	GUY WIRE
	UTILITY POLE
	MAILBOX
WV	WATER GATE VALVE
	SIGN
	TBM
OHW	OVERHEAD WIRE
	CHAINLINK FENCE
	STOCKADE FENCE
	BOUNDARY LINE
	SETBACK LINE
	WETLAND SETBACK
	TREE LINE
	SHRUB LINE
	DRAIN LINE
100	EXISTING CONTOUR
	WOODEN DECK
	WETLANDS

PURSUANT TO NEW HAMPSHIRE RSA 676:18 III

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE. RANDOM TRAVERSE SURVEY BY TOTAL STATION WITH A PRECISION GREATER THAN 1:15,000.

STATE OF NEW HAMPSHIRE — No. 1052 — ERIC J. SALOVITCH — LICENSED LAND SURVEYOR

SIGNATURE

LICENSED LAND SURVEYOR

APRIL 18, 2024
DATE

STATE OF NEW HAMPSHIRE — MARK WEST — 4-19-24 — No. 010 — CERTIFIED WETLAND SCIENTIST

EXISTING CONDITIONS PLAN
FOR
PAUL J & PENNEY L SEAVER
OF
TAX MAP H LOT 6-4
105 DURHAM ROAD
DOVER, NH
COUNTY OF STRAFFORD

SCALE: 1"=40' (22x34) 1"=80' (11x17)

JOB NO.	986	DATE:	2024-03-25
DRAWN BY:	PJN	DRAWING:	986 SURVEY.DWG
CHECKED BY:	EJS	SHEET:	1 OF 1

NO.	DATE	DESCRIPTION	BY

NORTHAM SURVEY LLC
686 Central Ave, Ste 100, Dover, NH 03820 | (603) 953-3164 | www.northamsurvey.com

LEGEND

- PROPERTY LINE
- PROPOSED EASEMENT
- WETLAND BOUNDARY
- BUILDING SETBACK
- 50' LIMITED CUT ZONE
- EXISTING PAVEMENT/CURB
- PROP. PAVEMENT/VERTICAL OR SLOPED GRANITE CURB (VGC / SGC)
- SAWCUT LINE/MATCH EXISTING
- EXISTING/PROPOSED GUARDRAIL
- PROPOSED FENCE
- EXISTING CONTOUR (60)
- PROPOSED CONTOUR (60)
- PROPOSED SPOT GRADE (98.8)
- EXISTING WELL/WATER LINE/CURBSTOP/VALVE/HYDRANT
- EXISTING SEWER/MANHOLE
- EXISTING GAS/VALVE
- EXIST. OVER/UNDERGROUND UTILITIES/POLE
- EXISTING DRAINAGE/CB/DMH
- PROPOSED THRUST BLOCK/WATER/CURB STOP/VALVE/HYDRANT
- PROPOSED SEWER/MANHOLE/CLEANOUT
- PROPOSED SEWER FORCEMAIN
- PROPOSED GAS
- PROPOSED OVERHEAD UTILITIES/UTILITY POLE
- PROPOSED UNDERGROUND ELECTRIC/PHONE/TV
- PROPOSED DRAINAGE (HARD PIPE)/CB/DCB/DMH/FES
- PROPOSED CATCH BASIN INLET PROTECTION
- PROPOSED DRAINAGE (FNDTN. DRAIN/PERF. PIPE)/CLEANOUT
- PROPOSED GROUND SLOPE DIRECTION
- SILTFENCE/SEDIMENT BARRIER/CONST. FENCE/CLEARING LIMITS
- STABILIZED CONSTRUCTION EXIT
- LIMIT OF DISTURBANCE/CLEARING
- EXISTING TREE/DRIP LINE
- PROPOSED TREELINE
- EXISTING/PROPOSED SHRUB LINE
- PROPOSED CONCRETE
- PROPOSED DRIPEDGE
- PROPOSED PAVEMENT REMOVAL
- PROPOSED GRAVEL REMOVAL
- PROPOSED RAINGARDEN w/ 3/4" STONE
- PROPOSED STONE VELOCITY REDUCTION APRON
- PROPOSED 50' CITY WETLAND BUFFER IMPACT

GENERAL SITE NOTES:

1. **THE INTENT OF THIS PLAN SUBMITTAL IS TO PROVIDE THE NECESSARY INFORMATION FOR THE DESIGN AND REVIEW OF A COMMERCIAL DEVELOPMENT SITE ON ASSESSOR'S PARCEL H, LOT 6-4 FOR CITY AND STATE PERMIT APPLICATIONS. THIS PLAN SET PROVIDES DETAILED INFORMATION FOR THE GENERAL LAYOUT, GRADING, AND UTILITY LOCATIONS. ADDITIONAL DETAILED ENGINEERING DESIGN WILL BE REQUIRED TO IMPLEMENT CONSTRUCTION.**

2. *OWNER OF RECORD:* *Paul J. Seaver, 105 Durham Road, Dover, NH 03820*

   _____

   AUTHORIZED SIGNATURE

3. *THE PROJECT PARCEL IS SHOWN AS LOT NO. 6-4, MAP H OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.*

4. *THE PROJECT PARCEL CONTAINS 2.18 ACRES OR 95,120± SQUARE FEET AREA OF LAND.*

5. *TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5100, PAGE NO. 273.*

6. *PROJECT PLAN REFERENCES:*

   1.) "LOT LINE ADJUSTMENT PLAN FOR LANDS OWNED BY PAUL & PENNY SEAVER" PREPARED BY POHOPEK LAND SURVEYORS & SEPTIC SYSTEM DESIGN, LLC. DATED FEBRUARY 1, 2007. RECORDED AT S.C.R.D. AS PLAN P-90-68.

   2.) "LOT LINE ADJUSTMENTS FOR LOTS 6, 6-3 & 6-4, TAX MAP H DURHAM, DOVER RD. IN DOVER, N.H." PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR BARRINGTON, N.H. DATED DECEMBER 7, 1994. RECORDED AT AS PLAN 41A-58.

   3.) "SUBDIVISION PLAN 'ESTES ESTATES' DURHAM ROAD, DOVER, N.H. PREPARED FOR WAYNE & DIERDRE ESTES." PREPARED BY CIVIL CONSULTANTS ENGINEERING & PLANNING. DATED APRIL 29, 1989. RECORDED AT S.C.R.D. AS PLAN 37-88

   4.) "PROPERTY LINE ADJUSTMENTS OF LAND OF WAYNE & DIERDRE ESTES, DOVER, N.H." PREPARED BY RICHARD P. TOWLE. LAND SURVEYOR. DATED OCTOBER, 1986. RECORDED AT S.C.R.D. AS PLAN 30-141.

7. *THE SUBJECT PROPERTY IS ENCUMBERED BY THE FOLLOWING EASEMENTS:*
   NO KNOWN EASEMENTS

8. *ZONING DIMENSIONAL AND DENSITY REQUIREMENTS ARE SHOWN IN TABLE LOCATED ON THE SITE PLAN, SHEET C-1.*

9. *OFF STREET PARKING:*

   EXISTING = 32 SPACES
   PROPOSED = 15 SPACES

   ALLOWED = 17 SPACES (1.4 SPACES PER UNIT + 0.5 VISITOR SPACE/UNIT)

10. *WAIVERS: THE FOLLOWING WAIVERS ARE REQUESTED FOR THE PROJECT:*
    1) *BIKE RACK - NO BIKE RACK PROVIDE FOR THE INTELECTUAL DEVELOPMENTALLY DISABLED*
    2) *SITE SPECIFIC SOILS PLAN - THE EXISTING SITE IS DEVELOPED AND THE MAJORITY OF NEW DEVELOPMENT IS LOCATED OVER EXISTING PAVEMENT AND GRAVEL.*
    3) *LANDSCAPE PLAN - THE EXISTING SITE ENTRANCE IS VEGETATED WITH TREES. THE SITE DEVELOPMENT AREA IS APPROXIMATELY 400 FEET FROM DURHAM ROAD. EXISTING TREE BUFFERS WILL REMAIN.*

11. *VARIANCE OR SPECIAL EXCEPTIONS - THE FOLLOWING RELIEF WAS GRANTED.*

    ZONING VARIANCE - *AT THE DECEMBER 21, 2023 HEARING, THE DOVER ZONING BOARD OF ADJUSTMENT GRANTED A VARIANCE TO ALLOW A NINE (9) UNIT BUILDING ON THE PROPERTY LOCATED IN THE R-20 ZONING DISTRICT.*

    TRANSFER OF DEVELOPMENT RIGHTS (TDR) - *AT THE JANUARY 18, 2024 MEETING, THE DOVER PLANNING BOARD GRANTED, WITH CONDITIONS, THE TDR TO ALLOW NINE (9) RESIDENTIAL UNITS ON THE SITE.*

12. *CONDITIONAL USE PERMI: A CONDITIONAL USE PERMIT FOR IMPACTS WITHIN THE WETLANDS BUFFER IS REQUIRED.*

    THE PROPOSED DEVELOPMENT WILL IMPACT 7,800 SQUARE FEET WITHIN THE WETLANDS BUFFER.
    THE IMPERVIOUS AREA WITHIN THE BUFFER WILL BE REDUCED BY 4,130 SQUARE FEET.

13. *PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY NORTHAM SURVEY , LLC*

    AS REFERENCED IN THE ATTACHED "EXISTING CONDITIONS PLAN", DATED MARCH 25, 2024.

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

15. *SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE.*

16. *TOPOGRAPHIC SURVEY PERFORMED BY BY NORTHAM SURVEY , LLC AS REFERENCED IN THE ATTACHED "EXISTING CONDITIONS PLAN", DATED MARCH 25, 2024.*

17. *ELEVATIONS ARE BASED ON U.S.G.S NVD 1988 DATUM.*

18. *WETLANDS WERE FLAGGED BY MARK WEST , CERTIFIED WETLANDS SCIENTIST #10, ON FEBRUARY 12, 2024 IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE AND SURVEYED BY NORTHAM SURVEY.*

19. *THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.*

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

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

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

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

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

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

26. *ANY PERMANENT TREATMENT SWALES SHALL HAVE SOD BOTTOMS.*

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

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

29. *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.*

30. *HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO:*

    MONDAY-FRIDAY 7 AM-6 PM,
    SATURDAY 9 AM-4 PM.
    SUNDAY - NO WORK ALLOWED WITHOUT APPROVAL FROM CITY
    NO WORK ON FEDERAL HOLIDAYS

31. *BUILDING ADDRESS FOR THE SITE IS 105 DURHAM ROAD AND WILL REMAIN.*

32. *THE PROPOSED USE FOR THE SITE IS AN ADULT GROUP LIVING FACILITY FOR ADULTS WITH INTELLECTUAL DEVELOPMENTAL DISABILITIES (IDD). THERE WILL BE EIGHT UNITS FOR THE IDD ADULTS AND ONE UNIT FOR ON-SITE STAFF.*

33. *NO STATE OR FEDERAL PERMITS ARE REQUIRED FOR THE SUBJECT PROPERTY.*

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

35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES AND SHALL BE STAMPED BY A STRUCTURAL ENGINEER.

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.. https://www.unh.edu/unhsc/ptapp

38. 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 TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.

39. 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.

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

41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.

42. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

43. THE *PROPOSED* STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81-30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.

45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.

46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS, (IE. IBC, ANSI-117-1) AND NH RSA 155-A:5.

47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

48. DESIGN ENGINEER OF RECORD OR SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.

49. THE APPLICANT SHALL PROVIDE THE CITY OF DOVER AN EASEMENT TO ACCESS WATERLINE AND HYDRANTS TO MAINTAIN WATER QUALITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

CONDITIONS OF APPROVAL

PENDING CONDITIONAL APPROVAL BY THE CITY OF DOVER PLANNING BOARD, THE CONDITIONS TO BE MET PRIOR TO CONSTRUCTION, ISSUANCE OF A BUILDING PERMIT, AND FOR OCCUPANCY WILL BE LISTED:

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE — CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER — 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

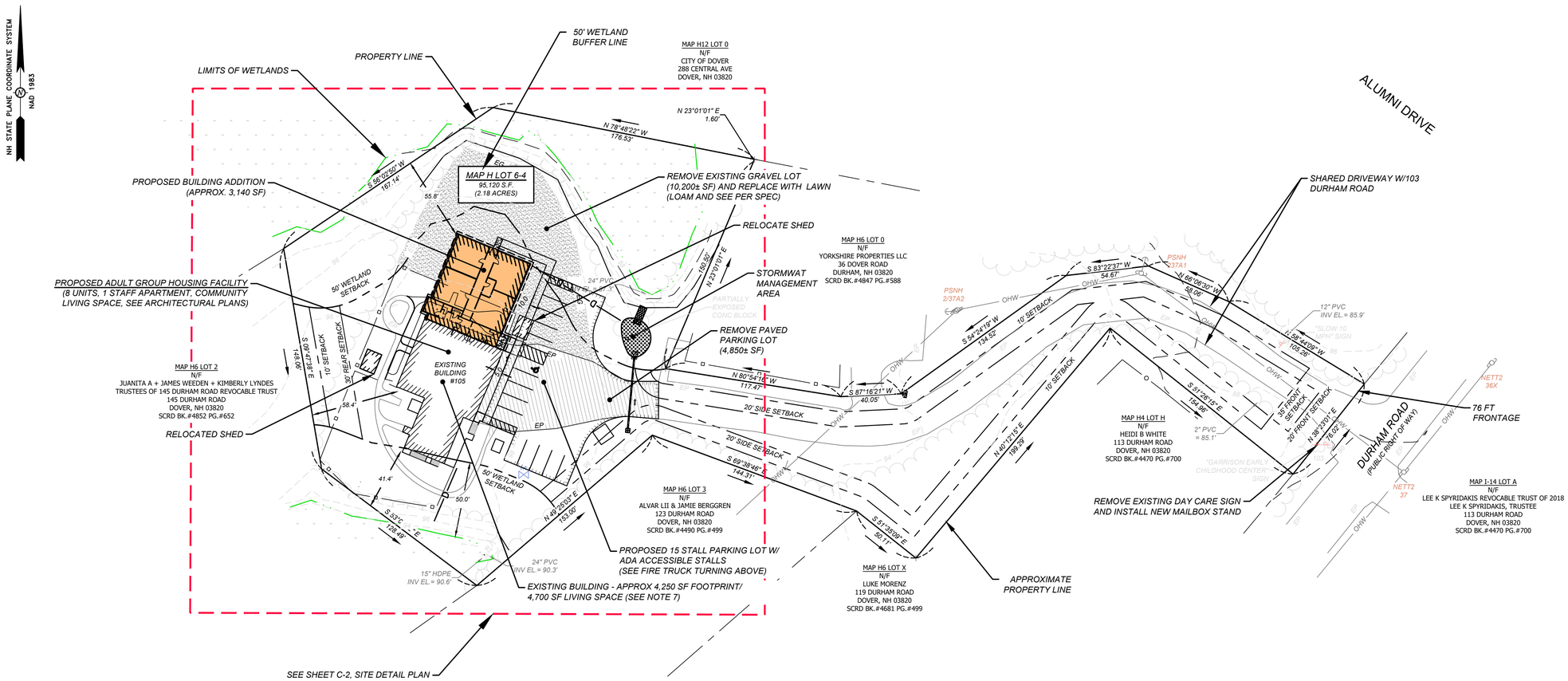
APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
GENERAL NOTES

SHEET NUMBER:
3 / GN-1

P5496



NOTES

1. BASE PLAN IS FROM TOWN GIS AND AERIAL IMAGERY. DIMENSIONS SHOWN ON PLAN MAY VARY BASED ON ACTUAL FIELD SURVEYS.
2. PROJECT PARCEL:
   TAX MAP H, LOT 6–4
   95,120± S.F. (2.18 AC.)
3. ZONE: R–20 (LOW DENSITY RESIDENTIAL)
4. DIMENSIONAL REQUIREMENTS:

	REQUIREMENT	PROVIDED
MINIMUM LOT SIZE	20,000 SF	95,120 SF
MAXIMUM LOT COVERAGE	30%	25%±
MINIMUM FRONTAGE	125 FT	75 FT*
* EXISTING NON–CONFORMING LOT		
BUILDING		
FRONT BUILD TO LINE	20 FT MIN 35 FT MAX	450± FT
SIDE SETBACK	20 FT	41.4 FT
REAR SETBACK	30 FT	55.8 FT
HEIGHT OF BUILDING	35 FT	< 35 FT

5. WETLANDS:
   WETLANDS WERE MAPPED BY MARK WEST, CERTIFIED NH WETLANDS SCIENTIST #010, ON FEBRUARY 12, 2024 AND SURVEYED BY NORTHAM SURVEY.
6. USE:

   CURRENT: CHILD DAY CARE
   PROPOSED: ADULT GROUP HOUSING **

   THE PROPOSED PROJECT WILL CONSTRUCT A BUILDING ADDITION AND CONVERT THE EXISTING DAY CARE AND APARTMENT TO PROVIDE EIGHT (8) DWELLING UNITS IN A GROUP HOUSING FACILITY, WITH COMMUNITY SPACES, AND AN APARTMENT FOR A AN ON–SITE CARE STAFF MEMBER.

   ** VARIANCE APPROVED FOR NINE UNIT ADULT GROUP HOUSING AND TRANSFER OF DEVELOPMENT RIGHTS (TDR) FOR ADDITIONAL UNITS.
8. PARKING

   EXISTING = 32 SPACES
   PROPOSED = 15 SPACES
   ALLOWED = 1.4 SPACES./ UNIT + 0.5 VISITOR SPACES/ UNIT = 17.1 SPACES

* A WAIVER IS REQUESTED FROM THE REQUIREMENT TO PROVIDE BICYCLE PARKING.

GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

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5/6/24

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MAY 6, 2024

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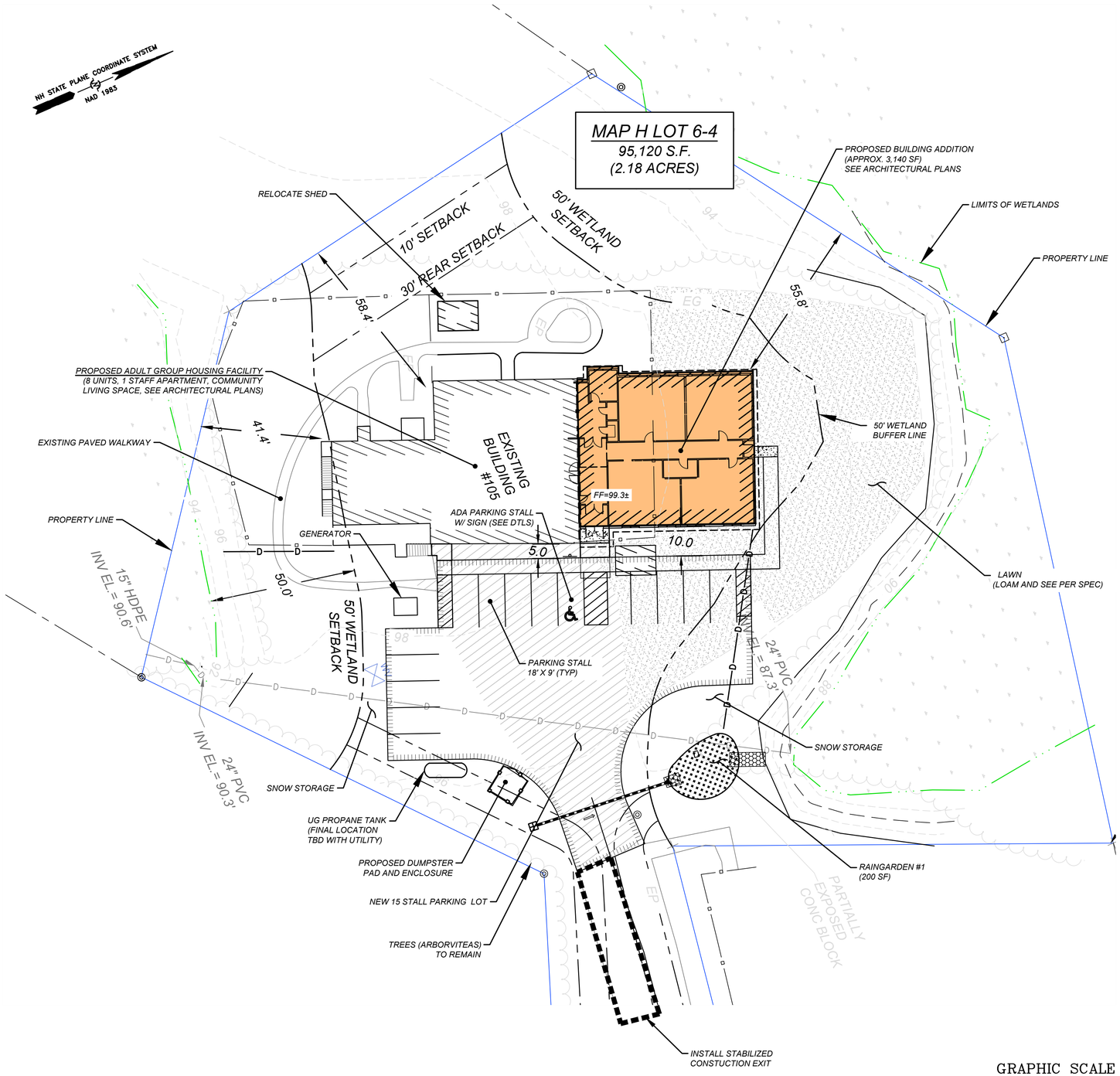
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
5 / C-1

SITE NOTES

1. THE PROPOSED SITE PLAN REQUIRES APPROVAL FROM THE DOVER PLANNING BOARD.
2. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
3. ALL CONDITIONS OF THIS APPROVAL SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
4. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF DOVER & NHDOT'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
5. THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
7. IF THE AREA OF DISTURBANCE IS OVER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT IS REQUIRED. CONTRACTOR TO COMPLY WITH LOCAL REQUIREMENTS FOR STORMWATER MANAGEMENT DURING CONSTRUCTION.
8. IF ADEQUATE ON-SITE SNOW STORAGE IS NOT AVAILABLE, THE SNOW SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
9. SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC DEVICES," "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE AMERICANS WITH DISABILITIES ACT (ADA), LATEST EDITIONS.
10. SITEWORK CONTRACTOR SHALL PREPARE A LICENSED LAND SURVEYOR (LLS) STAMPED AS-BUILT SITE PLAN & PROVIDE A DIGITAL (CAD FORMAT) COPY FOR THE CITY G.I.S. DATA BASE.
11. IF PROJECT DISTURBANCE AREA EXCEEDS ONE (1) ACRE, A STORMWATER POLLUTION PROTECTION PLAN (SWPPP) AND NPDES GENERAL CONSTRUCTION PERMIT ARE REQUIRED. CONTRACTOR SHALL FILE A NOTICE OF INTENT (NOI) WITH THE U.S.E.P.A. UNDER THE NPDES CONSTRUCTION GENERAL PERMIT.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR ANY DAMAGE DONE TO EXISTING UTILITIES AT NO EXTRA COST TO THE OWNER. UTILITY CONFLICTS SHALL BE RESOLVED WITH THE INVOLVEMENT OF THE ENGINEER, OWNER, AND APPROPRIATE UTILITY COMPANIES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE WORK SITE AND SAFELY SECURING THE SITE DURING CONSTRUCTION.
14. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES TO REMAIN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY NOTIFICATION OF ALL PARTIES, CORPORATIONS, COMPANIES, INDIVIDUALS AND STATE AND LOCAL AUTHORITIES OWNING AND/OR HAVING JURISDICTION OVER ANY UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS TO BE DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES WHETHER OR NOT SAID UTILITIES ARE SUBJECT TO DEMOLITION, RELOCATION, MODIFICATION AND/OR CONSTRUCTION.
16. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.



GRAPHIC SCALE

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(IN FEET)

P5496

ALTUS ENGINEERING

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STATE OF NEW HAMPSHIRE
CORY D. BELDEN
No. 14239
LICENSED PROFESSIONAL ENGINEER
5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR:
PLANNING BOARD

ISSUE DATE:
MAY 6, 2024

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APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

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11"x17" 1" = 80'

OWNER:
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105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
SITE DETAIL PLAN

SHEET NUMBER:
6 / C-2

GRADING AND DRAINAGE NOTES

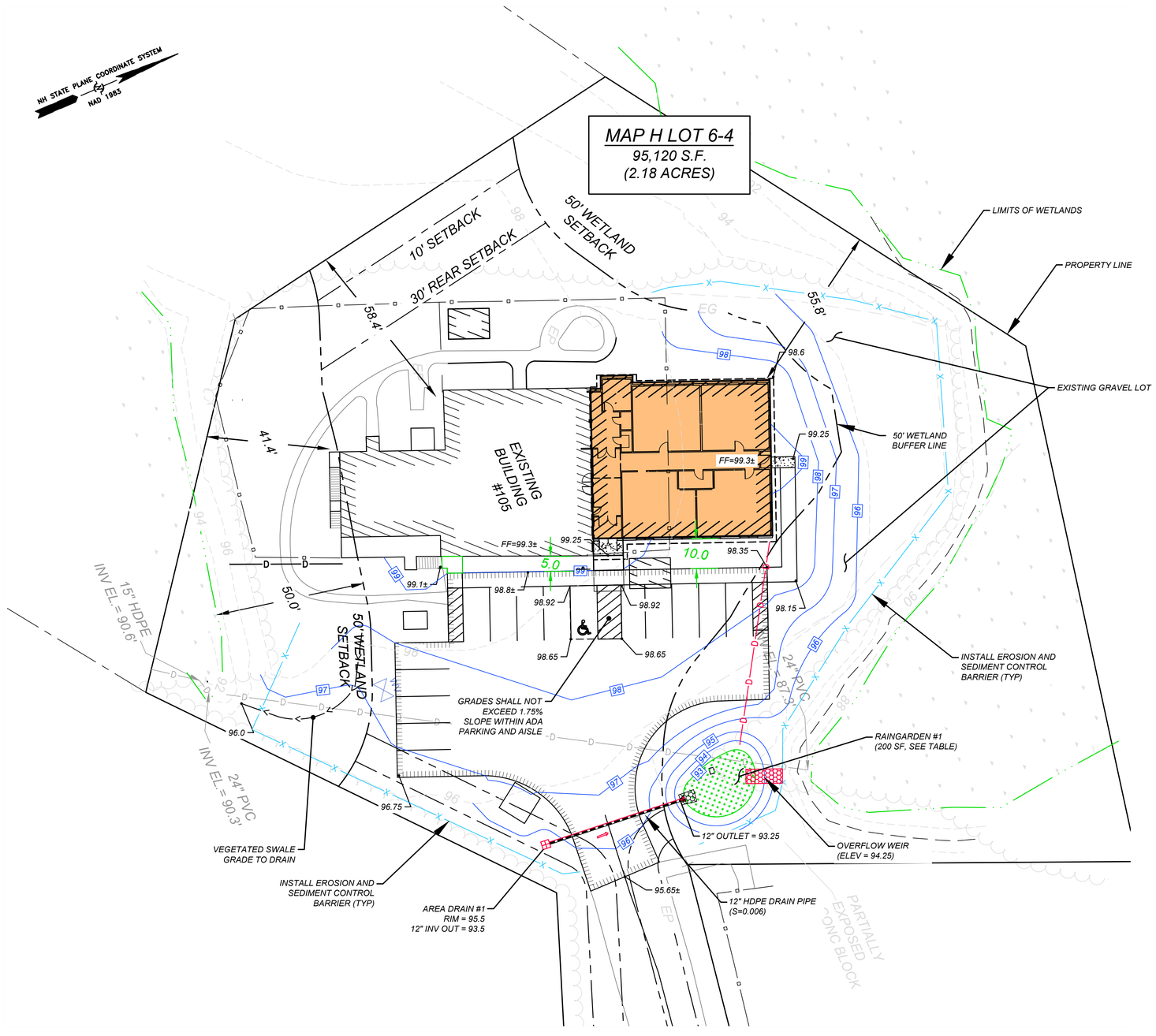
1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
2. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL READ AND FAMILIARIZE THEMSELVES WITH THE ANY AVAILABLE GEOTECHNICAL REPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL THE RECOMMENDATIONS OF A GEOTECHNICAL REPORT.
4. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES AREA SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS DEGREE OF INSULATION AGAINST FREEZING.
5. IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
6. ALL STORM DRAIN PIPE SHALL BE ADS N-12 OR EQUAL AND APPROVED BY THE ENGINEER.
7. ALL CATCH BASIN, GATE VALVE COVERS, AND MANHOLE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISHED GRADE. ANY RIM OR VALVE COVER ABOVE SURROUNDING FINISHED GRADE WILL NOT BE ACCEPTED.
8. ALL SPOT GRADES ARE AT THE FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
9. UNLESS OTHERWISE SPECIFIED, BUILDING PERIMETER DRAINS SHALL BE DIRECTED TO THE NEAREST DRAINAGE STRUCTURE. IF DEEMED APPROPRIATE, CONTRACTOR SHALL PROVIDE ADDITIONAL UNDERDRAINS AT THE DIRECTION OF THE ENGINEER.
10. CONTRACTOR SHALL PROTECT ALL RAINGARDENS FROM CONSTRUCTION STORMWATER RUNOFF. STORMWATER SHALL NOT BE DIRECTED TO THE RAINGARDENS UNTIL THE WATERSHED HAS BEEN STABILIZED.
11. THE APPLICANT SHALL SUBMIT A COPY OF A COMPLETED LAND USE DEVELOPMENT TRACKING FORM USING THE POLLUTANT TRACKING AND ACCOUNTABIITY PROGRAM (PTAP) ONLINE PORTAL CURRENTLY MANAGED BY THE UNH STORMWATER CENTER OR SIMILAR FORM APPROVED BY THE CITY.
12. A STORMWATER INSPECTION AND MAINTENANCE REPORT SHALL BE COMPLETED ANNUALLY AND COPIED TO THE CITY PLANNING AND PUBLIC WORKS DEPARTMENTS.

PROPOSED DRAINAGE STRUCTURES

PAD 1
RIM=95.50
12" INV. OUT= 93.50

PROPOSED STORMWATER TREATMENT PRACTICES

RAINGARDEN #1
BOTTOM AREA = 300 SF
BOTTOM ELEV = 93.0
OVERFLOW WEIR ELEV = 94.25



GRAPHIC SCALE
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(IN FEET)

P5496

ALTUS ENGINEERING
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STATE OF NEW HAMPSHIRE
CORY D. BELDEN
No. 14230
LICENSED PROFESSIONAL ENGINEER
5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR:
PLANNING BOARD

ISSUE DATE:
MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
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DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
GRADING, DRAINAGE AND EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:
7 / C-3

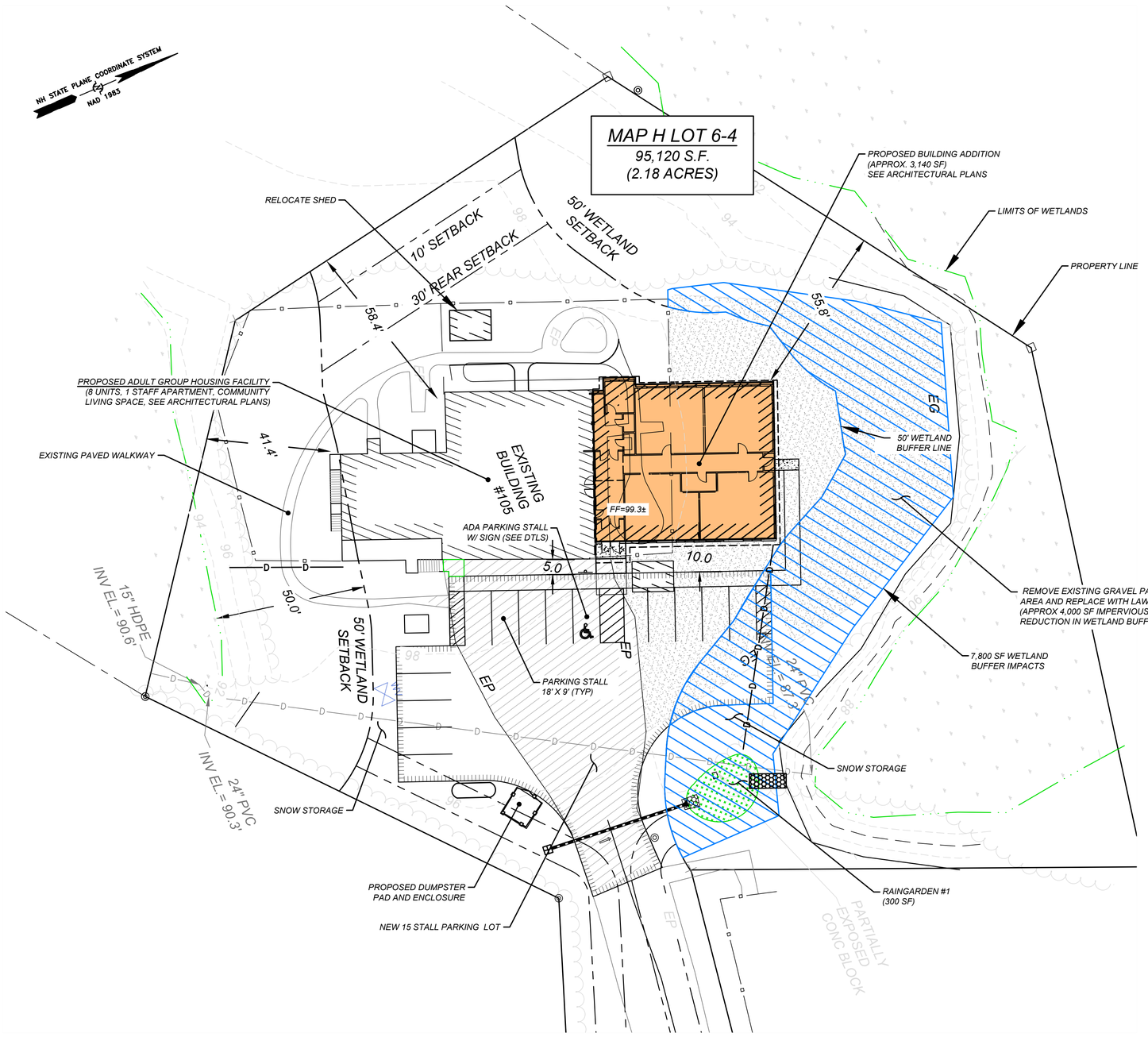
NOTES:

1. NO WORK SHALL BE PERFORMED WITHIN 50 FEET OF THE WETLAND BUFFER WITHOUT AUTHORIZATION THROUGH AN APPROVED CONDITIONAL USE PERMIT.
2. NO WORK OUTSIDE OF THE APPROVED WETLAND BUFFER IMPACTS ARE AUTHORIZED.

WETLAND IMPACT TABLE

Lot H–6–4	DIRECT IMPACTS	BUFFER IMPACTS
Area	0	7,800 SF

WETLAND BUFFER IMPACTS



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PROJECT:
OUR PLACE
SITE DEVELOPMENT

TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
WETLANDS CONDITIONAL USE PLAN

SHEET NUMBER:
8 / CUP-1

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

OUR PLACE – ADULT GROUP HOUSING DEVELOPMENT
105 DURHAM ROAD
DOVER, NEW HAMPSHIRE

LONGITUDE: 70.8797 W
LATITUDE: 43.1790 N
TAX MAP H LOT 11

OWNER:
Paul Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
OUR PLACE INC.
P.O. BOX 65
DOVER, NH 03821–0065

DESCRIPTION

The project consists of constructing a 3,140 square foot addition for the proposed adult group living facility. The existing day care center building will be renovated and the new building will have nine (9) residential units, eight will be for adults with Intellectual Developmental Disabilities (IDD) and one unit will be for support staff. The site will provide associated site improvements including parking, walkways, utilities, stormwater management and landscaping improvements. The project is located on a 2.18 acre lot identified as Assessor's parcel Tax Map H6, Lot 04 in the City of Dover, NH.

DISTURBED AREA

The total area to be disturbed for the site development improvements is approximately ±26,000 SF (±0.6 acres).

NAME OF RECEIVING WATER

The site drains to the Bellamy River.

NPDES CONSTRUCTION GENERAL PERMIT

The project site disturbance is less than 1 acre (43,560 square feet) so the project is not regulated under the EPA Construction General Permit. The Contractor is responsible for complying with all local requirements for stormwater management and reporting during construction. A Stormwater Maintenance manual has been prepared for this project.

SEQUENCE OF MAJOR ACTIVITIES

1. Hold a pre–construction meeting with City & stake holders, as required.
2. Install temporary erosion control measures including organic filter berms, stabilized construction exits, inlet sediment filters, and temporary sediment traps as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
3. DO NOT construct or direct construction flows to proposed raingardens or other stormwater management practices until site is stabilized.
4. Rough grade site including ledge removal. Blasting permit to be obtained by Contractor if required.
5. Prepare building area per geotechnical engineering reccomendations.
6. Construct utility services.
7. Construct drainage structures, culverts, and swales.
8. Construct building foundations, driveways and parking area base course paving & curbing.
9. Construct final grading, loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
10. Complete building construction.
11. When site is fully stabilized, complete construction of raingardens.
12. Install top course paving, pavement markings and signs.
13. When all construction activity is complete and as each phase is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.
14. File a Notice of Termination (N.O.T.) with U.S.E.P.A. (Required)

CONSTRUCTION SEQUENCE / EROSION CONTROL

- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
- PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
- TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
- PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).
- ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE
- ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF–INCH OF RAINFALL.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 55,000 SQUARE FEET AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
  - A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
  - A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED.
  - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through hay bale barriers, stone check dams, and silt fences. All storm drain inlets shall be provided with hay bale filters or stone check dams. Stone rip rap shall be provided at the outlets of drain pipes and culverts where shown on the drawings.

Stabilize all ditches, swales, & level spreaders prior to directing flow to them.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built–up sediment shall be removed from silt fence or other barriers when it has reached one–third the height of the fence or bale, or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. An area shall be considered stable if one of the following has occurred:
   a. Base coarse gravels have been installed in areas to be paved;
   b. A minimum of 85% vegetated growth as been established;
   c. A minimum of 3 inches of non–erosive material such as stone of riprap has been installed; – or –
   d. Erosion control blankets have been properly installed.
9. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
   a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
   b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment 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.

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.
Jute and Fibrous Matting (Erosion Blanket	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1–1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	* The organic matter content is between 80 and 100%, dry weight basis. * Particle size by weight is 100% passing a 6" screen and a minimum of 70 %, maximum of 85%, passing a 0.75" screen. * The organic portion needs to be fibrous and elongated. * Large portions of silts, clays or fine sands are not acceptable in the mix. * Soluble salts content is less than 4.0 mmhos/cm. * The pH should fall between 5.0 and 8.0.

3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. TEMPORARY GRASS COVER

1. Seedbed Preparation –
   Apply fertilizer at the rate of 600 pounds per acre of 10–10–10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.

10. Seeding –
    a. Utilize annual rye grass at a rate of 40 lbs/acre.
    b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
    c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance –
   Temporary seedings shall be periodically inspected. At a minimum, 95% 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 barriers, check dams, etc.).

D. FILTERS

1. Silt Fence
   a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Test	Requirements
Filtering Efficiency	VTM–51	75% minimum
Tensile Strength at 20% Maximum Elongation*	VTM–52	Extra Strength 50 lb/lin in (min) Standard Strength 30 lb/lin in (min)
Flow Rate	VTM–51	0.3 gal/sf/min (min)

   * Requirements reduced by 50 percent after six (6) months of installation.

   Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizer to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120° F.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CON'T)

   b. Posts shall be spaced a maximum of ten (10) feet apart at the barrier location or as recommended by the manufacturer and driven securely into the ground (minimum of 16 inches).
   c. A trench shall be excavated approximately six (6) inches wide and eight (8) inches deep along the line of posts and upslope from the barrier.
   d. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.
   e. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
   f.
   g. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item (g) applying.
   h. The trench shall be backfilled and the soil compacted over the filter fabric.
   i. Silt fences shall be removed when they have served their useful purpose but not before the upslope areas has been permanently stabilized.

2. Sequence of Installation –
   Sediment barriers shall be installed prior to any soil disturbance of the contributing upslope drainage area.

3. Maintenance –
   a. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water, the sediment barriers shall be replaced with a temporary stone check dam.
   b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
   c. Sediment deposits must be removed when deposits reach approximately one–third (1/3) the height of the barrier.
   d. Any sediment deposits remaining in place after the silt fence or other barrier is no longer required shall be removed. The area shall be prepared and seeded.
   e. Additional stone may have to be added to the construction entrance, rock barrier and riprap lined swales, etc., periodically to maintain proper function of the erosion control structure.

E. PERMANENT SEEDING –

1. Bedding – stones larger than 1", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

2. Fertilizer – lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. 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 @ 100 lbs. per 1,000 s.f.
   10–20–20 fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture (recommended):

Type	Lbs. / Acre	Lbs. / 1,000 sf
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

   Seed Mixture (For slope embankments):
   Grass Seed: Provide fresh, clean, new–crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

Type	Min. Purity (%)	Min. Germination (%)	Kg./Hectare (Lbs/Acre)
Creeping Red Fescue (b)	96	85	45 (40)
Perennial Rye Grass (a)	98	90	35 (30)
Redtop	95	80	5 (5)
Alsike Clover	97	90	5 (5)
		Total	90 (80)

   a. Ryegrass shall be a certified fine–textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
   b. Fescue varieties shall include – Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.

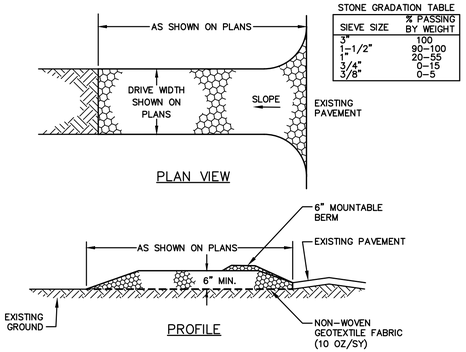
4. Sodding – sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

1. All proposed 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 elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation 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 events;

2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and

3. After October 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

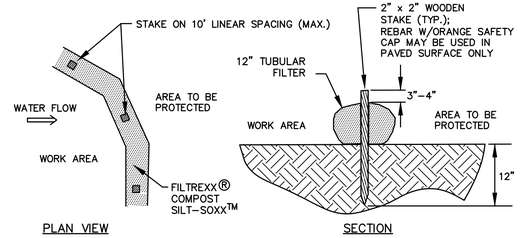


STONE GRADATION TABLE	
SIEVE SIZE	% PASSING BY WEIGHT
3"	100
1–1/2"	90–100
1"	20–55
3/4"	0–15
3/8"	0–5

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – NHDOT STANDARD STONE SIZE #4 – SECTION 703 OF NHDOT STANDARD.
2. LENGTH – DETAILED ON PLANS (50 FOOT MINIMUM).
3. THICKNESS – SIX (6) INCHES (MINIMUM).
4. WIDTH – FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
5. FILTER FABRIC – MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
6. SURFACE WATER CONTROL – ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS–OF–WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE ENGINEER.

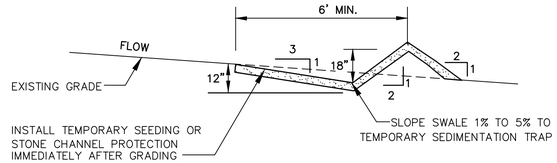
1 D-1 STABILIZED CONSTRUCTION EXIT — NOT TO SCALE



NOTES:
1. *SILTSOXX OR APPROVED EQUAL SHALL BE USED FOR TUBULAR SEDIMENT BARRIERS.*
2. *ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.*
3. *COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.*
4. *ALL SEDIMENT TRAPPED BY BARRIER SHALL BE DISPOSED OF PROPERLY.*

2 D-1 TUBULAR SEDIMENT BARRIER — NOT TO SCALE

SWALE SHALL BE FREE OF IRREGULARITIES WHICH MAY CAUSE PONDING. COMPACT FILLS AS NECESSARY TO STABILIZE MATERIAL.



3 D-1 TEMPORARY DIVERSION SWALE — NOT TO SCALE

P5496

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496–SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

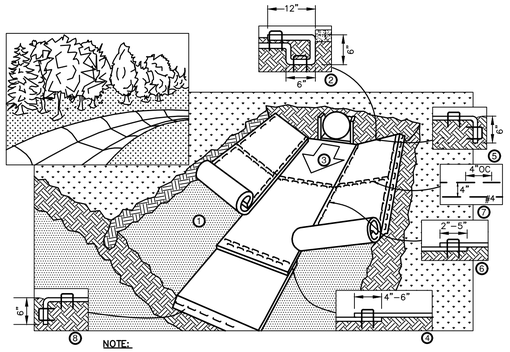
OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
10 / D-1

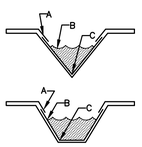


NOTE:

There shall be no plastic, or multi-filament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches material utilized.

NOTES

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED. TO INSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS:

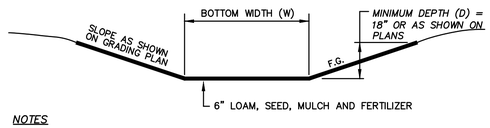
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTES:

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

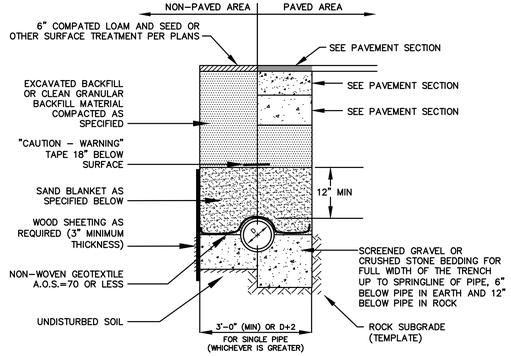
1 D-2 EROSION CONTROL BLANKET - SWALE NOT TO SCALE



NOTES

1. *THE FOUNDATION AREA OF THE SWALE SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.*
2. *THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA AND BE FREE OF IRREGULARITIES.*
3. *EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED SWALE.*
4. *VEGETATION SHALL BE ESTABLISHED IN THE SWALE OR AN EROSION CONTROL MATTING INSTALLED PRIOR TO DIRECTING STORMWATER TO IT.*
5. *MAINTENANCE OF THE VEGETATION IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE SWALE. MOWING SHALL BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHALL NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE SWALE.*
6. *THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER ANY STORM GREATER THAN 0.5" OF RAINFALL IN 24 HOURS TO DETERMINE ITS CONDITION. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.*

2 D-2 VEGETATED SWALE NOT TO SCALE



NOTES

1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
2. INSULATE GRAVITY SEWER AND FORCEMAINS WHERE THERE IS LESS THAN 5'-0" OF COVER WITH 2" THICK CLOSED CELL RIGID BOARD INSULATION, 18" ON EACH SIDE OF PIPE.
3. MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION AND WIDEN TRENCH ACCORDINGLY IF MULTIPLE PIPES ARE IN TRENCH.

SAND BLANKET/BARRIER

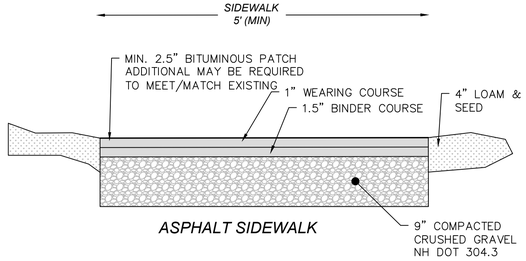
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

SCREENED GRAVEL OR CRUSHED STONE BEDDING*

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 – 100
3/8"	20 – 55
# 4	0 – 10
# 8	0 – 5

* EQUIVALENT TO STANDARD STONE SIZE #67 – SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

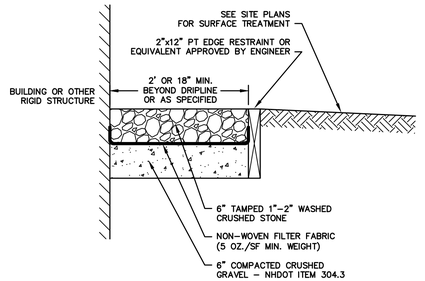
3 D-2 DRAINAGE TRENCH NOT TO SCALE



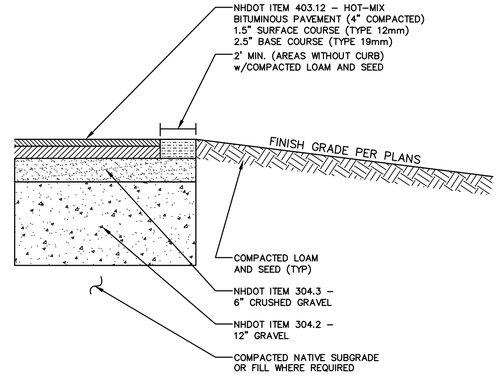
NOTES:

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.

4 D-2 BITUMINOUS SIDEWALK NOT TO SCALE



5 D-2 STONE DRIP EDGE NOT TO SCALE



NOTES

1. PROJECT GEOTECHNICAL REPORT MAY REQUIRE A DIFFERENT PAVEMENT CROSS SECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND FOLLOWING ALL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. IN THE EVENT THAT THE REPORT AND CIVIL PLANS DIFFER, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. ALL EXISTING FILL, BURIED ORGANIC MATTER, CLAY, LOAM, MUCK, AND/OR OTHER QUESTIONABLE MATERIAL SHALL BE REMOVED FROM BELOW ALL PAVEMENT, SHOULDERS AND UNDERGROUND PIPING/UTILITIES TO DEPTHS RECOMMENDED IN GEOTECHNICAL REPORT.
3. SUBGRADE SHALL BE PROOFROLLED A MINIMUM OF 6 PASSES WITH A 10-TON VIBRATORY COMPACTOR OPERATING AT PEAK RATED FREQUENCY OR BY MEANS APPROVED BY THE ENGINEER.
4. FILL BELOW PAVEMENT GRADES SHALL BE GRANULAR BORROW COMPACTED PER DOT REQUIREMENTS.
5. SITEWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS WITH THE CONSTRUCTION MANAGER PRIOR TO PLACING GRAVELS.
6. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT.
7. THE BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 95 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. THE BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557.

6 D-2 SITE PAVEMENT CROSS SECTION NOT TO SCALE

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE – CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER – 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

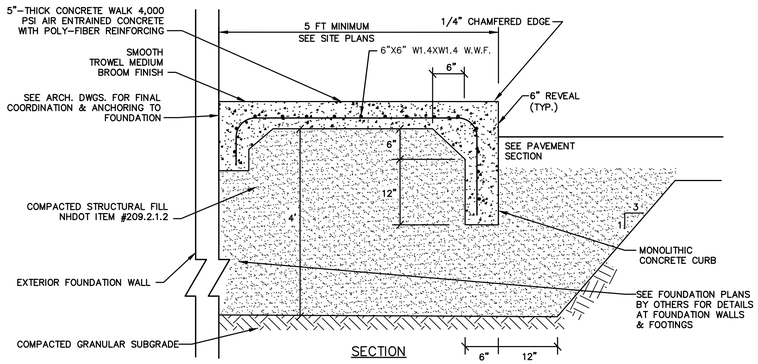
APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

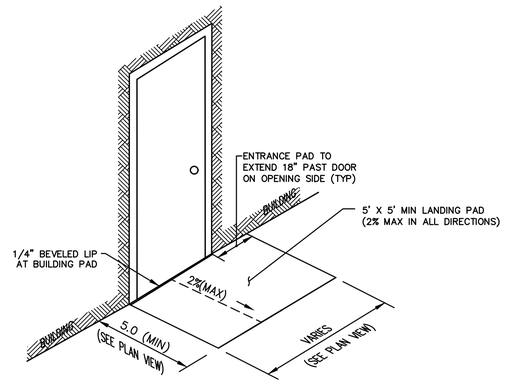
TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
11 / D-2

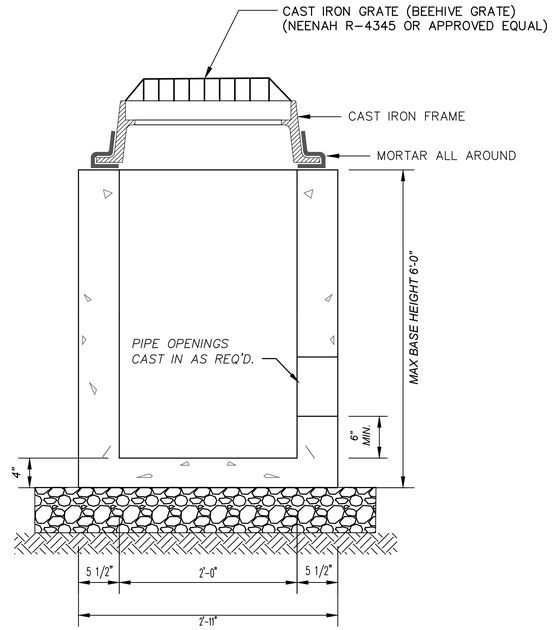
P5496



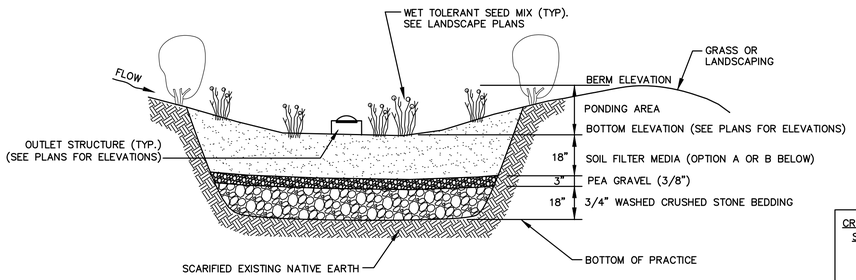
1 D-4 CONCRETE SLAB (SIDEWALKS) DETAILS @ BLDG. ENTRANCE NOT TO SCALE



2 D-4 ADA ACCESSIBLE ENTRANCE PAD NOT TO SCALE



4 D-4 AREA DRAIN NOT TO SCALE



CRUSHED STONE BEDDING *

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 – 100
3/8"	20 – 55
# 4	0 –10
# 8	0 – 5

* EQUIVALENT TO STANDARD STONE SIZE #67 – SECTION 703 OF NHDOT NHDOT STANDARD SPECIFICATIONS

NOTES

1. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL FILTER MEDIA SHALL BE EITHER OPTION A OR OPTION B AT CONTRACTOR'S DISCRETION.
3. DO NOT PLACE THE RAIN GARDEN INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
4. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE RAIN GARDEN AREA DURING ANY STAGE OF CONSTRUCTION.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24–HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.
- PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION 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 FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

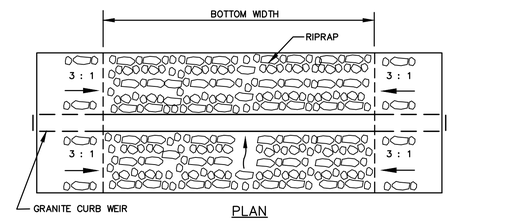
DESIGN REFERENCES

- UNH STORMWATER CENTER
- EPA (1999A)
- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

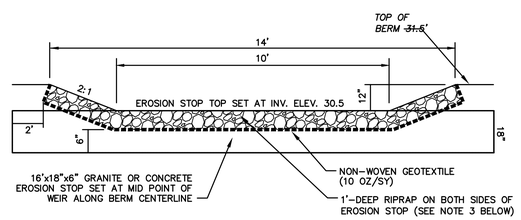
FILTER MEDIA MIXTURES

Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Filter Media Option A			
ASTM C–33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Filter Media Option B			
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Loamy coarse sand	70 to 80	10	85 to 100
		20	70 to 100
		60	15 to 40
		200	8 to 15

3 D-4 TYPICAL RAINGARDEN NOT TO SCALE



PLAN



1. CONSTRUCT EMERGENCY OVERFLOW WEIR TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
2. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO LINES AND GRADES SHOWN ON THE PLANS.
3. UNLESS OTHERWISE SPECIFIED OR DIRECTED, RIPRAP USED FOR THE EMERGENCY OVERFLOW WEIR SHALL MEET THE FOLLOWING GRADATION:

SIZE	PERCENT PASSING BY WEIGHT
4"	90–100
2"	0–15

4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
5. THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

5 D-4 OVERFLOW WEIR NOT TO SCALE

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE – CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER – 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496–SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
13 / D-4

P5496

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

TRAFFIC MEMORANDUM

TO: Donna Benton, Director of Planning and Community Development
City of Dover Planning Department
288 Central Avenue, Dover, NH 03820

FROM: Cory D. Belden, PE, Principal
Altus Engineering, LLC
133 Court Street, Portsmouth, NH 03801

DATE: May 6, 2024

Re: Our Place, LLC - Site Plan Application
105 Durham Road
Tax Map H6, Lot 4

This Traffic Memorandum was performed by Altus Engineering to analyze the potential traffic impacts resultant of the proposed adult group housing facility at 105 Durham Road in Dover, NH. The proposed development will feature nine units, eight of which will be for adults with Intellectual Developmental Disabilities (IDD) and a single unit for the on-site resident staff. The adults in the group housing units do not drive, as staff persons from Our Place transport the tenants to various work, social, and recreational activities. The existing site is the prior location Garrison City Early Childhood Center, which had a 107 child capacity and will be used for comparison of traffic impacts.

The following assessment is based on *Trip Generation Manual,* 11th edition, prepared by the Institute of Transportation Engineers (ITE). We have analyzed the weekday total, and the AM and PM peak hour volumes versus the peak hour of adjacent street traffic to compare the traffic impacts. It is understood that the primary traffic concern in the area is the weekday traffic, due to the adjacent schools.

For the existing conditions, the Day Care Center (Code 565) was used and for the proposed conditions a Congregate Care Facility (Code 253) was used, which best represents the adult group housing facility. The results are rounded to whole numbers to provide estimated traffic flows for entering and exiting vehicle trips. As shown below, the site can be expected to generate the following traffic volumes during a typical weekday:

ITE Land Use Code: 565 (Day Care Center) – 107 child day care facility

Weekday (Entire Day)
Trip ends per Dwelling Unit: 4.09
(107 children) 4.09 = 437.63 trips/day, rounded to 438 (50% entering [219], 50% exiting [219])

Weekday (AM Peak Hour of Generator)
Trip ends per Student: 0.78
(107 children) 0.78 = 83.46 trips/hr, rounded to 84 (50% entering [42], 50% exiting [42])

Weekday (PM Peak Hour of Generator)
Trip ends per Dwelling Unit: 0.79
(107 children) 0.79 = 83.53 trips/hr, rounded to 84 (50% entering [42], 50% exiting [42])

ITE Land Use Code: 253 (Congregate Care Facility) – 9 Dwelling Units

Weekday (Entire Day)
Trip ends per Dwelling Unit: 2.21
(9 Units) 2.21 = 19.89 trips/day, rounded to 20 (50% entering [10], 50% exiting [10])

Weekday (AM Peak Hour of Generator)
Trip ends per Student: 0.08
(9 Units) 0.08 = 0.72 trips/hr, rounded to 2 (50% entering [1], 50% exiting [1])

Weekday (PM Peak Hour of Generator)
Trip ends per Dwelling Unit: 0.18
(9 Units) 0.18 = 1.62 trips/day, rounded to 2 (50% entering [1], 50% exiting [1])

Results:

Based on the anticipated vehicle trip generation from ITE *Trip Generation Manual,* the proposed use will provide a significant reduction in vehicle trips compared to the day care center use. The typical weekday traffic is reduced from 438 vehicle trips to 20 vehicle trips, a reduction of approximately 95% of the total vehicle trips. Based on this information, we conclude that this project will have e beneficial impact on traffic in the vicinity of the site, compared to the previous use.

Please call me if you have any questions or need any additional information.

Sincerely,

ALTUS ENGINEERING

Cory D. Belden, PE

cdb/5496-Traffic memo.docx

Land Use: 565
Day Care Center

Description

A day care center is a facility where care for pre-school age children is provided, normally during daytime hours. A day care facility generally includes classrooms, offices, eating areas, and playgrounds. A center may also provide after-school care for school-age children.

Additional Data

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

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Florida, Georgia, Maryland, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and Wisconsin.

Source Numbers

169, 208, 216, 253, 335, 336, 337, 355, 418, 423, 536, 550, 562, 583, 633, 734, 866, 869, 877, 878, 954, 959, 981

Land Use: 253
Congregate Care Facility

Description

A congregate care facility is an independent living development that provides centralized amenities such as dining, housekeeping, communal transportation, and organized social/recreational activities. Each individual dwelling unit often has a kitchenette. Assistance is typically available for housekeeping or minor household maintenance. Limited medical services (such as nursing and dental) may or may not be provided. The resident may contract additional medical services or personal assistance. Senior adult housing—single-family (Land Use 251), senior adult housing—multifamily (Land Use 252), assisted living (Land Use 254), and continuing care retirement community (Land Use 255) are related uses.

Additional Data

Resident vehicle ownership levels are very low at a congregate care facility. The majority of site-generated trips are made by facility employees, contracted services, and visitors.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Minnesota, Ontario (CAN), and Oregon.

Source Numbers

155, 584, 910, 970, 1049

Day Care Center
(565)

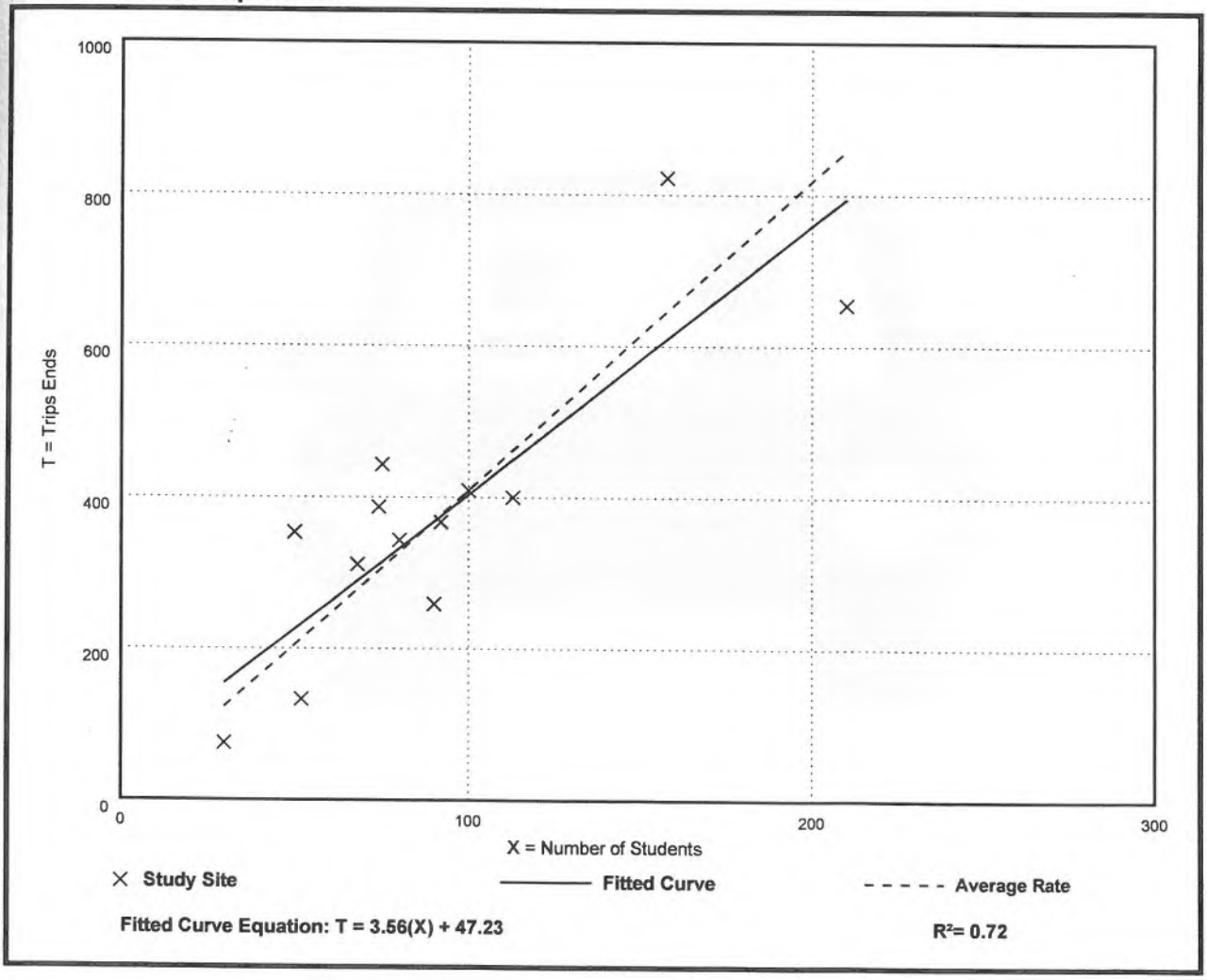
Vehicle Trip Ends vs: Students
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 14
Avg. Num. of Students: 89
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
4.09	2.50 - 7.06	1.21

Data Plot and Equation



Fitted Curve Equation: T = 3.56(X) + 47.23

R^2= 0.72

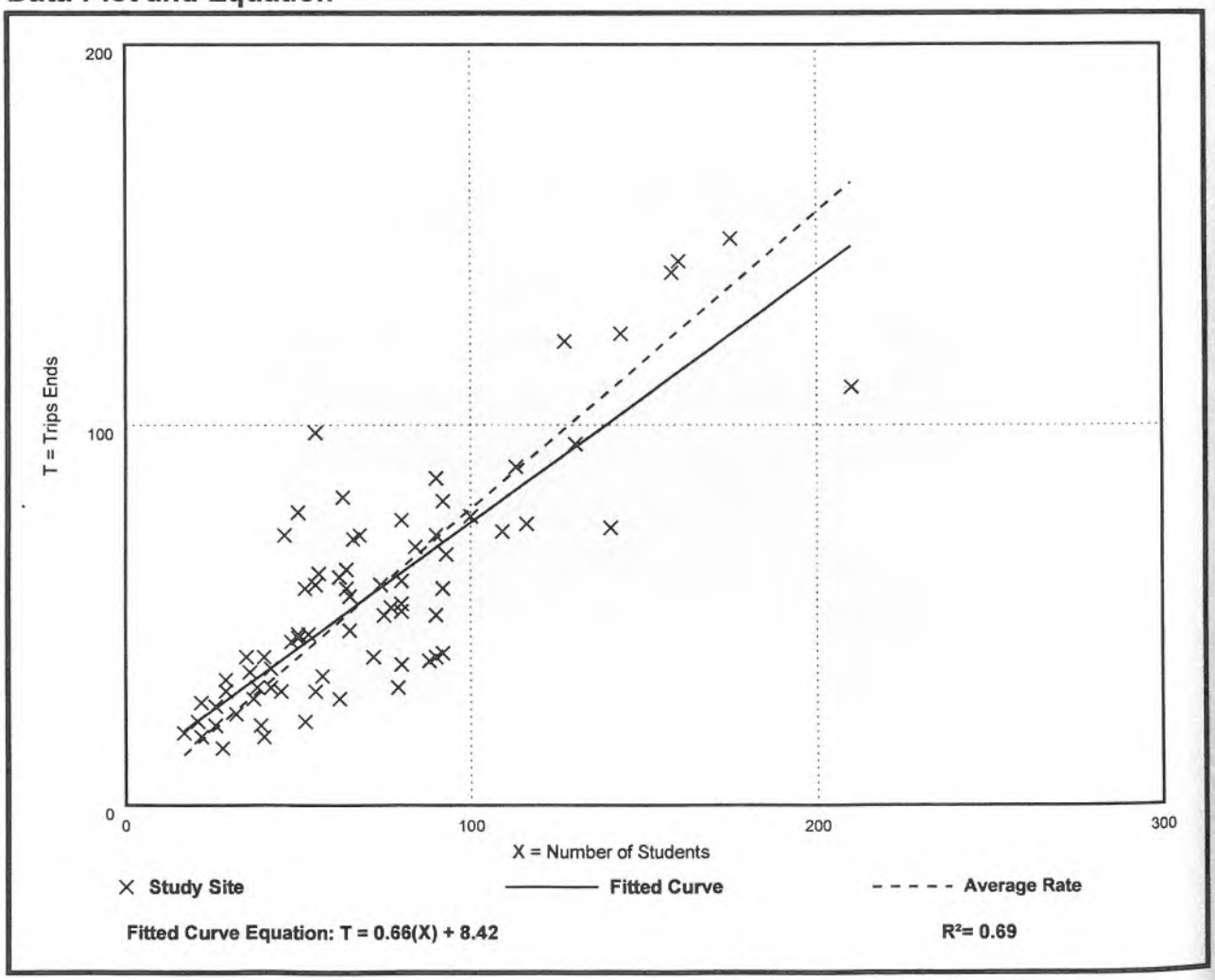
Day Care Center
(565)

Vehicle Trip Ends vs: Students
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 75
Avg. Num. of Students: 71
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.78	0.39 - 1.78	0.25

Data Plot and Equation



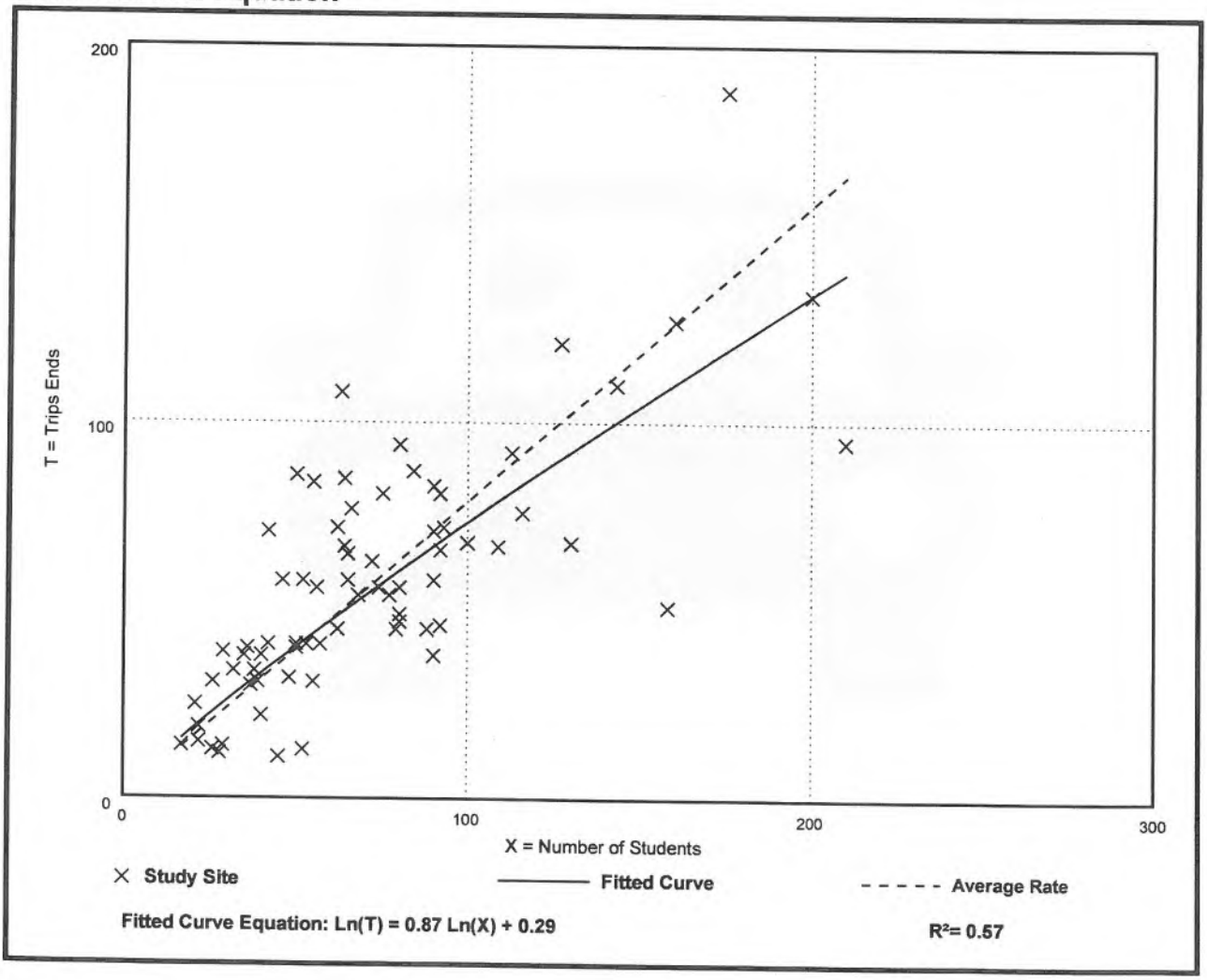
Day Care Center
(565)

Vehicle Trip Ends vs: Students
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 75
Avg. Num. of Students: 72
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.72	0.30

Data Plot and Equation



Congregate Care Facility
(253)

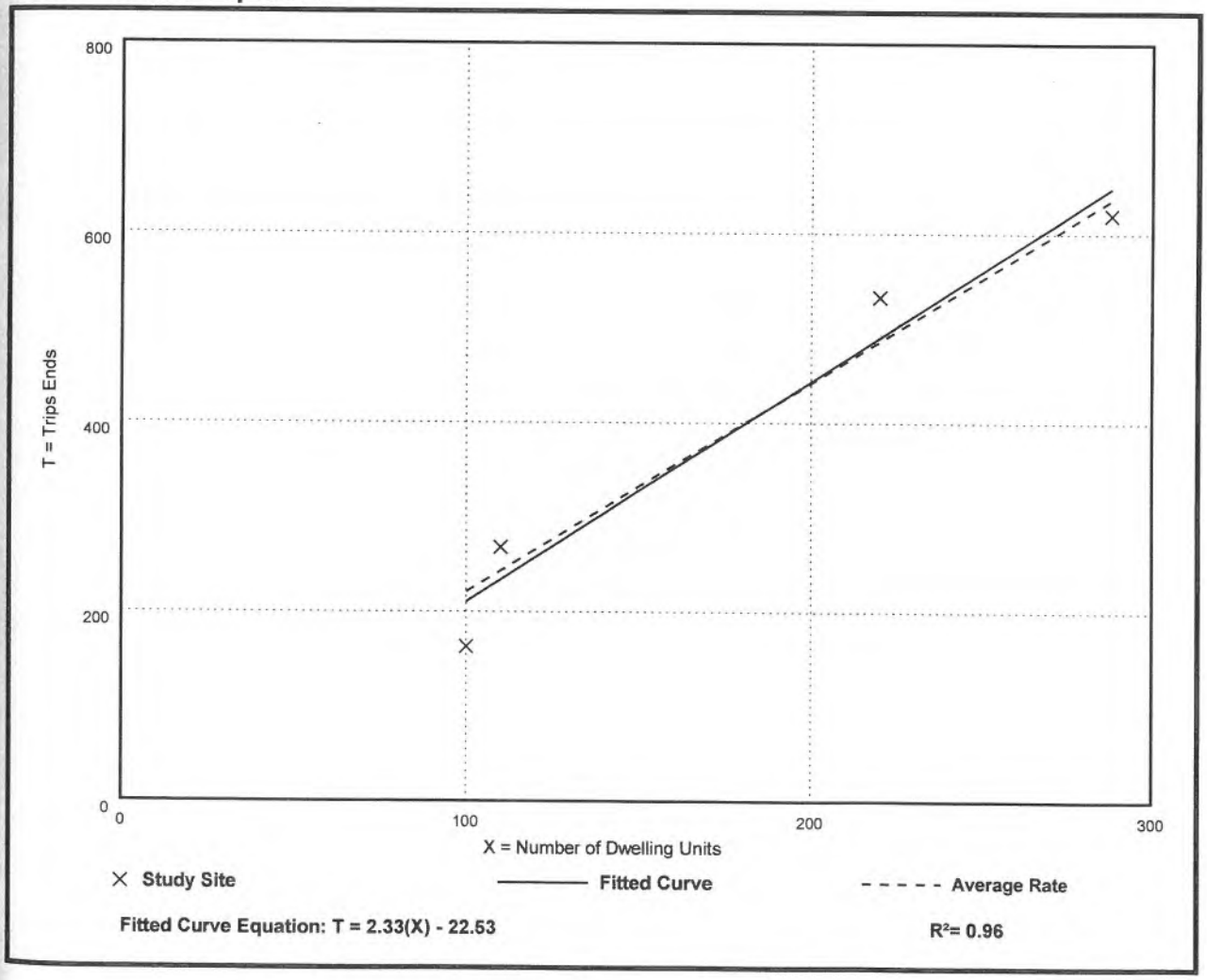
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. Num. of Dwelling Units: 180
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
2.21	1.63 - 2.44	0.31

Data Plot and Equation



Fitted Curve Equation: T = 2.33(X) - 22.53

R^2= 0.96

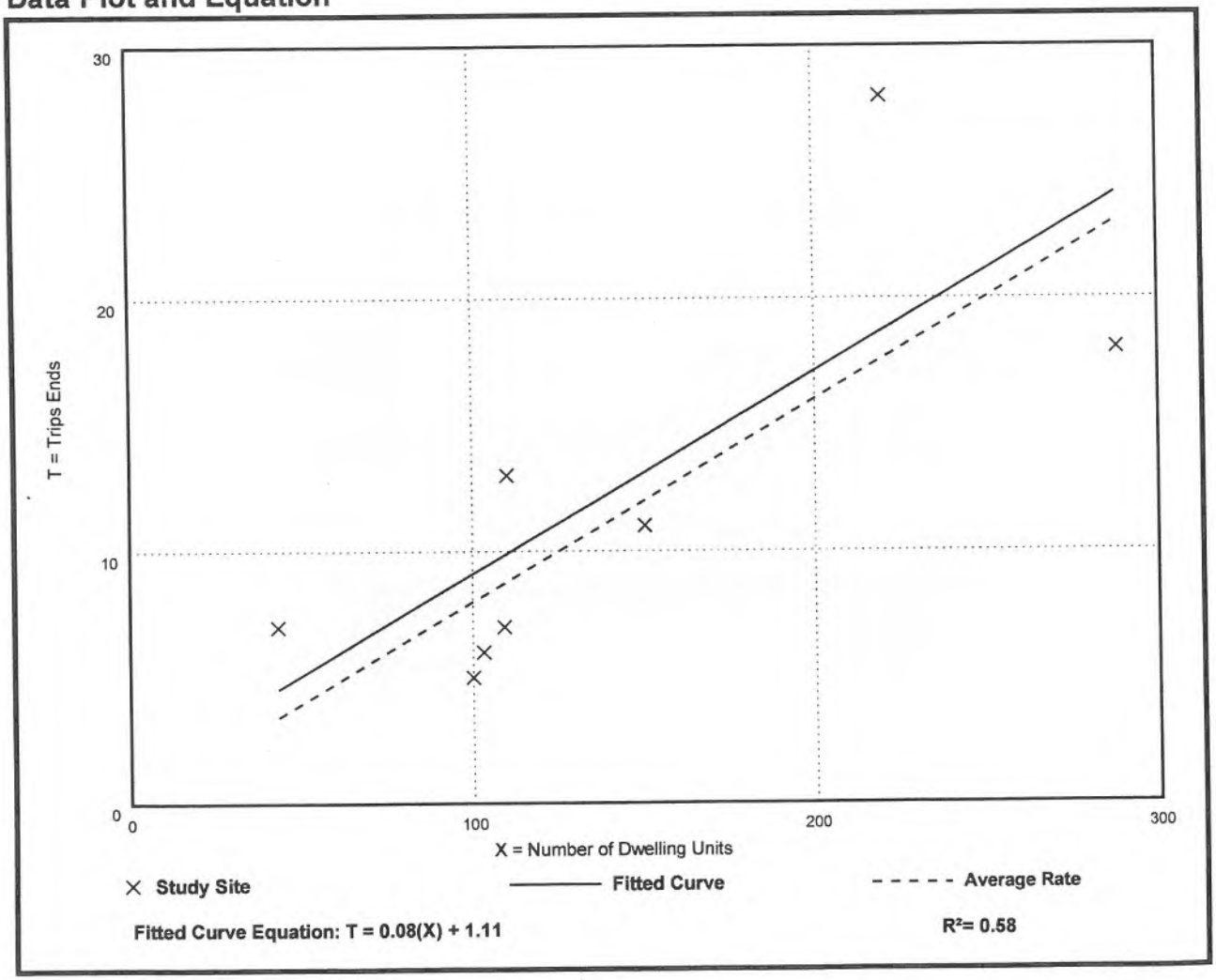
Congregate Care Facility
(253)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Dwelling Units: 140
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.08	0.05 - 0.16	0.03

Data Plot and Equation



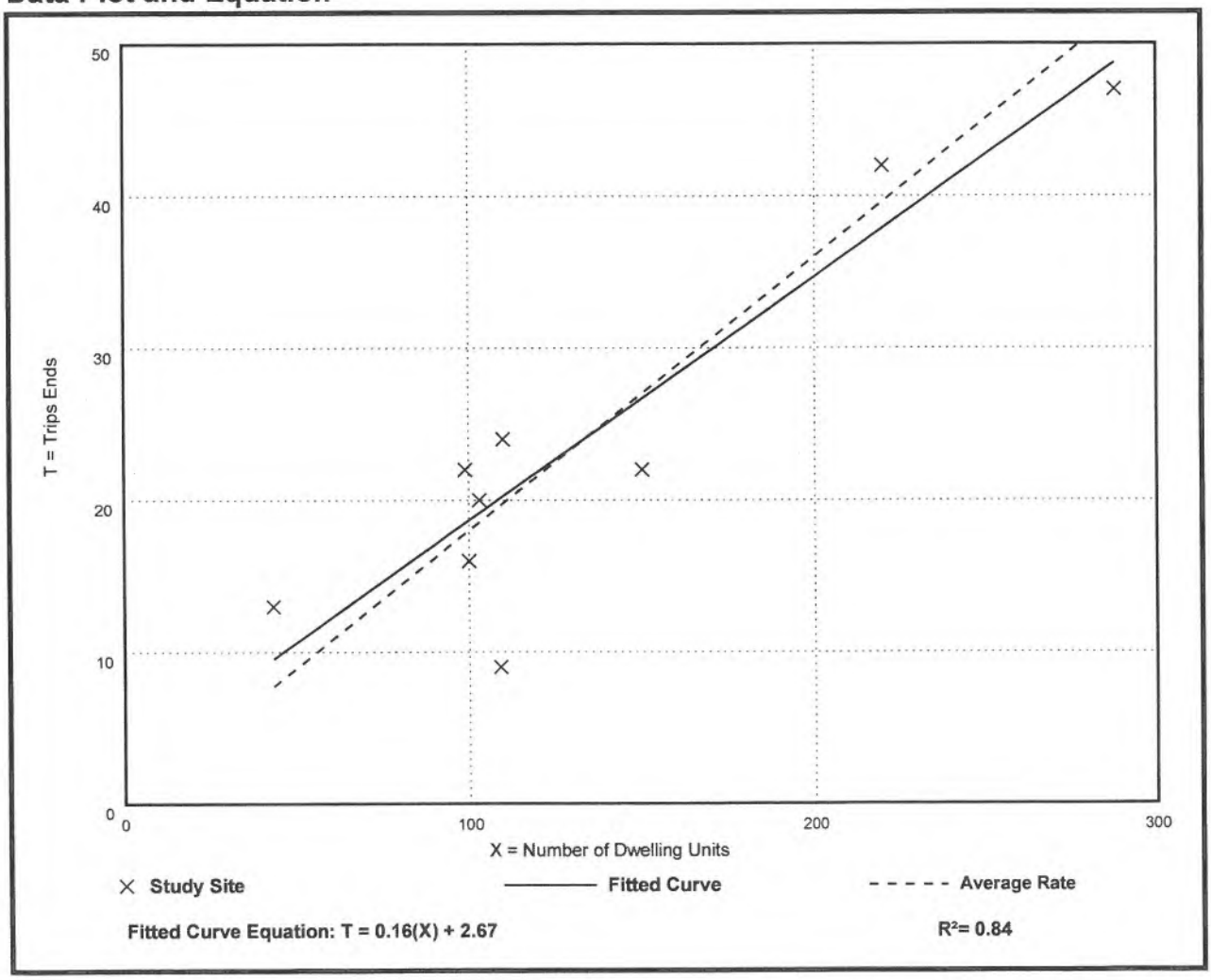
Congregate Care Facility
(253)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 9
Avg. Num. of Dwelling Units: 136
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.30	0.05

Data Plot and Equation



CITY OF DOVER DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
SITE PLAN REVIEW (P24-__) &
CONDITIONAL USE PERMIT (P24-__)

OUR PLACE SITE DEVELOPMENT

(ADULT GROUP LIVING FACILITY)

Tax Map H, Lot 6-4

DOVER, NEW HAMPSHIRE

ISSUED FOR PLANNING BOARD APPROVAL

Plan Issue Date:
May 6, 2024

Applicant:

Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

Owner:

Paul J. Seaver
105 Durham Road
Dover, NH 03820

Civil Engineer:

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

Architect:

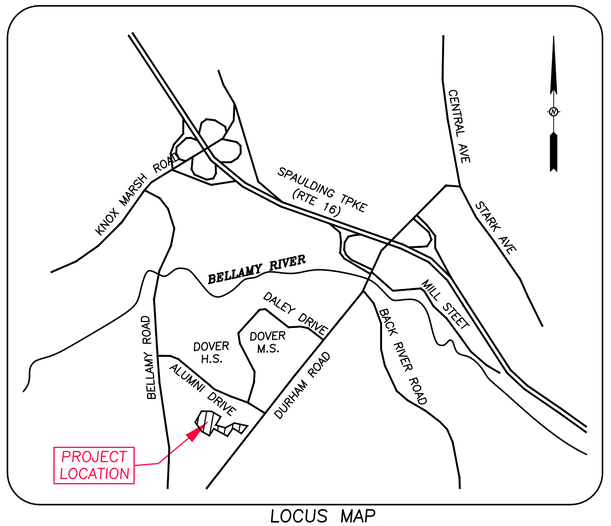
Architectural Consulting Services, Inc.
415 Pawtuck Street, Unit 1
Lowell, MA 01854

Surveyor:

NORTHAM SURVEY LLC
686 Central Ave, Ste 100, Dover, NH 03820 | (603) 953-3164 | www.northamsurvey.com

Wetland/Soil Scientist:

West Environmental
48 Stevens Hill Road
Nottingham, NH 03290
(603) 734-4298



LOCUS MAP
Scale: 1" = 1000'±

Sheet Index Title	*Sheet No.:*		*Rev.*	*Date*
* Cover Sheet	1	1 of 1	0	05/06/24
* Existing Conditions Plan (by Northam Survey)	2	1 of 1	1	04/22/22
* General Notes	3	GN-1	0	05/06/24
Neighborhood Plan	4	N-1	0	11/13/23
* Overall Site Plan	5	C-1	0	05/06/24
* Site Detail Plan	6	C-2	0	05/06/24
* Grading, Drainage and Erosion and Sediment Control Plan	7	C-3	0	05/06/24
* Wetlands Conditional Use Plan	8	CUP-1	0	05/06/24
Truck Turning Layout (Dover T-1)	9	T-1	0	05/06/24
* Details	10	D-1	0	05/06/24
* Details	11	D-2	0	05/06/24
Details	12	D-3	0	05/06/24
* Details	13	D-4	0	05/06/24
Details	14	D-5	0	05/06/24
Architectural Plans (by Market Square Architects)				
First Floor Plan – Dimension Plan	15	A1.1	0	05/06/24
First Floor Plan – Keynote Plan	16	A1.2	0	05/06/24
Exterior Elevations	17	A3.0	0	05/06/24
Exterior Elevations	18	A3.1	0	05/06/24
Building Renderings	19-21	3 Sheets	0	05/06/24

* Included in Partial Plan Set for Wetlands Conditional Use Permit

Permit Summary

Contractor shall be responsible for compliance with all conditions of approvals:

Zoning Board of Adjustment – Granted Variance to allow nine unit building on December 21, 2023.
Planning Board – Granted Transfer of Development Rights (TDR) to allow nine residential units on property on January 18, 2024.
Building Permits – Building Permits to be obtained from the City of Dover

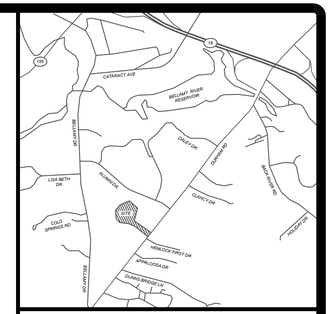
Conditional Use Permits:

P24-__ – Section 170-27.1 – Wetlands Protection District

P5496
SHEET NO. 1

PLAN REFERENCES:

1. "LOT LINE ADJUSTMENT PLAN FOR LANDS OWNED BY PAUL & PENNY SEAVER" PREPARED BY POHOPEK LAND SURVEYORS & SEPTIC SYSTEM DESIGN, LLC. DATED FEBRUARY 1, 2007. RECORDED AT S.C.R.D. AS PLAN P-90-68.
2. "LOT LINE ADJUSTMENTS FOR LOTS 6, 6-3 & 6-4, TAX MAP H DURHAM, DOVER RD. IN DOVER, N.H." PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR BARRINGTON, N.H. DATED DECEMBER 7, 1994. RECORDED AT S.C.R.D. AS PLAN 41A-58.
3. "SUBDIVISION PLAN 'ESTES ESTATES' DURHAM ROAD, DOVER, N.H. PREPARED FOR WAYNE & DIERDRE ESTES." PREPARED BY CIVIL CONSULTANTS ENGINEERING & PLANNING. DATED APRIL 29, 1989. RECORDED AT S.C.R.D. AS PLAN 37-88
4. "PROPERTY LINE ADJUSTMENTS OF LAND OF WAYNE & DIERDRE ESTES, DOVER, N.H." PREPARED BY RICHARD P. TOWLE. LAND SURVEYOR. DATED OCTOBER, 1986. RECORDED AT S.C.R.D. AS PLAN 30-141.



LOCUS

NOTES:

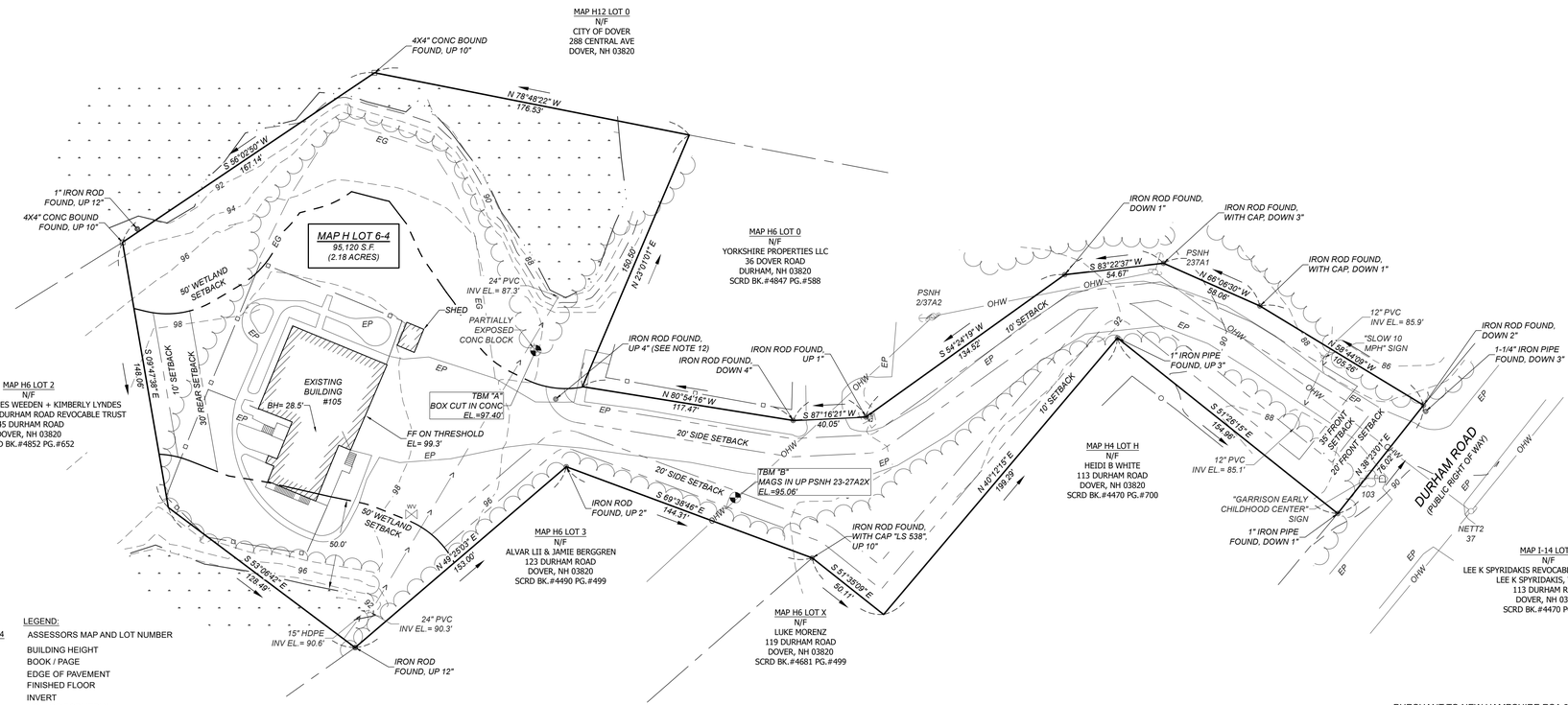
1. SUBJECT PARCEL: TAX MAP H6 LOT 4
   105 DURHAM ROAD
   DOVER, NH 03820
   NS PROJECT #986
2. OWNER OF RECORD: PAUL J & PENNEY L SEAVER
   105 DURHAM ROAD
   DOVER, NH 03820
   S.C.R.D. BOOK 5100, PAGE 273
3. PARCEL AREA: 95,120 S.F. OR 2.18 AC.
4. THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS OF THE SUBJECT PARCEL.
5. DIMENSIONAL REQUIREMENTS: ZONE: R-20

MIN LOT AREA:	20,000 S.F.
MIN LOT FRONTAGE:	125'
MIN FRONT SETBACK:	20'
MIN SIDE SETBACK:	20'
MIN REAR SETBACK:	30'
MAX BUILDING HEIGHT:	35'
MAX LOT COVERAGE:	30%
OUTBUILDING/ACCESSORY:	
FRONT SETBACK:	35'
REAR/SIDE SETBACK:	10'

   OVERLAY DISTRICT: WETLAND PROTECTION DISTRICT

WETLAND SETBACK:	50'

   ZONING INFORMATION SHOWN HEREON IS PER THE TOWN OF DOVER ZONING ORDINANCE DATED SEPTEMBER 9, 2022. ADDITIONAL REGULATIONS APPLY, THE LAND OWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE TOWN, STATE, AND FEDERAL REGULATIONS.
6. FLOOD HAZARD ZONE: "X" WITH FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD HAZARD, PER FIRM MAP #33017C0320E, DATED 9/30/2005.
7. FIELD SURVEY COMPLETED BY NORTHAM SURVEY IN FEBRUARY, 2024 USING A TRIMBLE S5 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR, A TRIMBLE R12 GPS RECEIVER AND A SOKKIA B31 AUTO LEVEL.
8. HORIZONTAL DATUM IS NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATES PER STATIC GPS OBSERVATIONS.
9. THE VERTICAL DATUM IS NAVD88 PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
10. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
11. THE LOCATION OF UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. NORTHAM SURVEY LLC MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
12. LOT CORNER ABANDONED PER REFERENCE PLAN #1.
13. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY MARK WEST, CWS #10 ON FEBRUARY 12, 2024 THE WETLANDS WERE DELINEATED ACCORDING TO THE FOLLOWING STANDARDS:
    - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY 1987).
    - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (OCTOBER 2012).
    - FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND VERSION 4 (NEHSTC MAY 2017)
    - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE. 2013
    - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).



LEGEND:

MAP H6 LOT 4	ASSESSORS MAP AND LOT NUMBER
BH	BUILDING HEIGHT
BK. PG.	BOOK / PAGE
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
INV.	INVERT
N/F	NOW OR FORMERLY
SCRD	STRAFFORD COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
TBM	TEMPORARY BENCHMARK
	IRON PIPE/ROD FOUND
	BOUND FOUND
	GUY WIRE
	UTILITY POLE
	MAILBOX
WV	WATER GATE VALVE
	SIGN
	TBM
OHW	OVERHEAD WIRE
	CHAINLINK FENCE
	STOCKADE FENCE
	BOUNDARY LINE
	SETBACK LINE
	WETLAND SETBACK
	TREE LINE
	SHRUB LINE
	DRAIN LINE
100	EXISTING CONTOUR
	WOODEN DECK
	WETLANDS

PURSUANT TO NEW HAMPSHIRE RSA 676:18 III

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.
I FURTHER CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE. RANDOM TRAVERSE SURVEY BY TOTAL STATION WITH A PRECISION GREATER THAN 1:15,000.

STATE OF NEW HAMPSHIRE — No. 1052 — ERIC J. SALOVITCH — LICENSED LAND SURVEYOR

SIGNATURE

LICENSED LAND SURVEYOR

APRIL 18, 2024
DATE

STATE OF NEW HAMPSHIRE — MARK WEST — 4-19-24 — No. 010 — CERTIFIED WETLAND SCIENTIST

EXISTING CONDITIONS PLAN
FOR
PAUL J & PENNEY L SEAVER
OF
TAX MAP H LOT 6-4
105 DURHAM ROAD
DOVER, NH
COUNTY OF STRAFFORD

SCALE: 1"=40' (22x34) 1"=80' (11x17)

JOB NO.	986	DATE:	2024-03-25
DRAWN BY:	PJN	DRAWING:	986 SURVEY.DWG
CHECKED BY:	EJS	SHEET:	1 OF 1

NO.	DATE	DESCRIPTION	BY

NORTHAM SURVEY LLC
686 Central Ave, Ste 100, Dover, NH 03820 | (603) 953-3164 | www.northamsurvey.com

LEGEND

- PROPERTY LINE
- PROPOSED EASEMENT
- WETLAND BOUNDARY
- BUILDING SETBACK
- 50' LIMITED CUT ZONE
- EXISTING PAVEMENT/CURB
- PROP. PAVEMENT/VERTICAL OR SLOPED GRANITE CURB (VGC / SGC)
- SAWCUT LINE/MATCH EXISTING
- EXISTING/PROPOSED GUARDRAIL
- PROPOSED FENCE
- EXISTING CONTOUR (60)
- PROPOSED CONTOUR (60)
- PROPOSED SPOT GRADE (98.8)
- EXISTING WELL/WATER LINE/CURBSTOP/VALVE/HYDRANT
- EXISTING SEWER/MANHOLE
- EXISTING GAS/VALVE
- EXIST. OVER/UNDERGROUND UTILITIES/POLE
- EXISTING DRAINAGE/CB/DMH
- PROPOSED THRUST BLOCK/WATER/CURB STOP/VALVE/HYDRANT
- PROPOSED SEWER/MANHOLE/CLEANOUT
- PROPOSED SEWER FORCEMAIN
- PROPOSED GAS
- PROPOSED OVERHEAD UTILITIES/UTILITY POLE
- PROPOSED UNDERGROUND ELECTRIC/PHONE/TV
- PROPOSED DRAINAGE (HARD PIPE)/CB/DCB/DMH/FES
- PROPOSED CATCH BASIN INLET PROTECTION
- PROPOSED DRAINAGE (FNDTN. DRAIN/PERF. PIPE)/CLEANOUT
- PROPOSED GROUND SLOPE DIRECTION
- SILTFENCE/SEDIMENT BARRIER/CONST. FENCE/CLEARING LIMITS
- STABILIZED CONSTRUCTION EXIT
- LIMIT OF DISTURBANCE/CLEARING
- EXISTING TREE/DRIP LINE
- PROPOSED TREELINE
- EXISTING/PROPOSED SHRUB LINE
- PROPOSED CONCRETE
- PROPOSED DRIPEDGE
- PROPOSED PAVEMENT REMOVAL
- PROPOSED GRAVEL REMOVAL
- PROPOSED RAINGARDEN w/ 3/4" STONE
- PROPOSED STONE VELOCITY REDUCTION APRON
- PROPOSED 50' CITY WETLAND BUFFER IMPACT

GENERAL SITE NOTES:

1. **THE INTENT OF THIS PLAN SUBMITTAL IS TO PROVIDE THE NECESSARY INFORMATION FOR THE DESIGN AND REVIEW OF A COMMERCIAL DEVELOPMENT SITE ON ASSESSOR'S PARCEL H, LOT 6-4 FOR CITY AND STATE PERMIT APPLICATIONS. THIS PLAN SET PROVIDES DETAILED INFORMATION FOR THE GENERAL LAYOUT, GRADING, AND UTILITY LOCATIONS. ADDITIONAL DETAILED ENGINEERING DESIGN WILL BE REQUIRED TO IMPLEMENT CONSTRUCTION.**

2. *OWNER OF RECORD:* *Paul J. Seaver, 105 Durham Road, Dover, NH 03820*

   _____

   AUTHORIZED SIGNATURE

3. *THE PROJECT PARCEL IS SHOWN AS LOT NO. 6-4, MAP H OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.*

4. *THE PROJECT PARCEL CONTAINS 2.18 ACRES OR 95,120± SQUARE FEET AREA OF LAND.*

5. *TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5100, PAGE NO. 273.*

6. *PROJECT PLAN REFERENCES:*

   1.) "LOT LINE ADJUSTMENT PLAN FOR LANDS OWNED BY PAUL & PENNY SEAVER" PREPARED BY POHOPEK LAND SURVEYORS & SEPTIC SYSTEM DESIGN, LLC. DATED FEBRUARY 1, 2007. RECORDED AT S.C.R.D. AS PLAN P-90-68.

   2.) "LOT LINE ADJUSTMENTS FOR LOTS 6, 6-3 & 6-4, TAX MAP H DURHAM, DOVER RD. IN DOVER, N.H." PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR BARRINGTON, N.H. DATED DECEMBER 7, 1994. RECORDED AT AS PLAN 41A-58.

   3.) "SUBDIVISION PLAN 'ESTES ESTATES' DURHAM ROAD, DOVER, N.H. PREPARED FOR WAYNE & DIERDRE ESTES." PREPARED BY CIVIL CONSULTANTS ENGINEERING & PLANNING. DATED APRIL 29, 1989. RECORDED AT S.C.R.D. AS PLAN 37-88

   4.) "PROPERTY LINE ADJUSTMENTS OF LAND OF WAYNE & DIERDRE ESTES, DOVER, N.H." PREPARED BY RICHARD P. TOWLE. LAND SURVEYOR. DATED OCTOBER, 1986. RECORDED AT S.C.R.D. AS PLAN 30-141.

7. *THE SUBJECT PROPERTY IS ENCUMBERED BY THE FOLLOWING EASEMENTS:*
   NO KNOWN EASEMENTS

8. *ZONING DIMENSIONAL AND DENSITY REQUIREMENTS ARE SHOWN IN TABLE LOCATED ON THE SITE PLAN, SHEET C-1.*

9. *OFF STREET PARKING:*

   EXISTING = 32 SPACES
   PROPOSED = 15 SPACES

   ALLOWED = 17 SPACES (1.4 SPACES PER UNIT + 0.5 VISITOR SPACE/UNIT)

10. *WAIVERS: THE FOLLOWING WAIVERS ARE REQUESTED FOR THE PROJECT:*
    1) *BIKE RACK - NO BIKE RACK PROVIDE FOR THE INTELECTUAL DEVELOPMENTALLY DISABLED*
    2) *SITE SPECIFIC SOILS PLAN - THE EXISTING SITE IS DEVELOPED AND THE MAJORITY OF NEW DEVELOPMENT IS LOCATED OVER EXISTING PAVEMENT AND GRAVEL.*
    3) *LANDSCAPE PLAN - THE EXISTING SITE ENTRANCE IS VEGETATED WITH TREES. THE SITE DEVELOPMENT AREA IS APPROXIMATELY 400 FEET FROM DURHAM ROAD. EXISTING TREE BUFFERS WILL REMAIN.*

11. *VARIANCE OR SPECIAL EXCEPTIONS - THE FOLLOWING RELIEF WAS GRANTED.*

    ZONING VARIANCE - *AT THE DECEMBER 21, 2023 HEARING, THE DOVER ZONING BOARD OF ADJUSTMENT GRANTED A VARIANCE TO ALLOW A NINE (9) UNIT BUILDING ON THE PROPERTY LOCATED IN THE R-20 ZONING DISTRICT.*

    TRANSFER OF DEVELOPMENT RIGHTS (TDR) - *AT THE JANUARY 18, 2024 MEETING, THE DOVER PLANNING BOARD GRANTED, WITH CONDITIONS, THE TDR TO ALLOW NINE (9) RESIDENTIAL UNITS ON THE SITE.*

12. *CONDITIONAL USE PERMI: A CONDITIONAL USE PERMIT FOR IMPACTS WITHIN THE WETLANDS BUFFER IS REQUIRED.*

    THE PROPOSED DEVELOPMENT WILL IMPACT 7,800 SQUARE FEET WITHIN THE WETLANDS BUFFER.
    THE IMPERVIOUS AREA WITHIN THE BUFFER WILL BE REDUCED BY 4,130 SQUARE FEET.

13. *PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY NORTHAM SURVEY , LLC*

    AS REFERENCED IN THE ATTACHED "EXISTING CONDITIONS PLAN", DATED MARCH 25, 2024.

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

15. *SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE.*

16. *TOPOGRAPHIC SURVEY PERFORMED BY BY NORTHAM SURVEY , LLC AS REFERENCED IN THE ATTACHED "EXISTING CONDITIONS PLAN", DATED MARCH 25, 2024.*

17. *ELEVATIONS ARE BASED ON U.S.G.S NVD 1988 DATUM.*

18. *WETLANDS WERE FLAGGED BY MARK WEST , CERTIFIED WETLANDS SCIENTIST #10, ON FEBRUARY 12, 2024 IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE AND SURVEYED BY NORTHAM SURVEY.*

19. *THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.*

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

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

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

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

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

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

26. *ANY PERMANENT TREATMENT SWALES SHALL HAVE SOD BOTTOMS.*

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

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

29. *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.*

30. *HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO:*

    MONDAY-FRIDAY 7 AM-6 PM,
    SATURDAY 9 AM-4 PM.
    SUNDAY - NO WORK ALLOWED WITHOUT APPROVAL FROM CITY
    NO WORK ON FEDERAL HOLIDAYS

31. *BUILDING ADDRESS FOR THE SITE IS 105 DURHAM ROAD AND WILL REMAIN.*

32. *THE PROPOSED USE FOR THE SITE IS AN ADULT GROUP LIVING FACILITY FOR ADULTS WITH INTELLECTUAL DEVELOPMENTAL DISABILITIES (IDD). THERE WILL BE EIGHT UNITS FOR THE IDD ADULTS AND ONE UNIT FOR ON-SITE STAFF.*

33. *NO STATE OR FEDERAL PERMITS ARE REQUIRED FOR THE SUBJECT PROPERTY.*

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

35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES AND SHALL BE STAMPED BY A STRUCTURAL ENGINEER.

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.. https://www.unh.edu/unhsc/ptapp

38. 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 TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.

39. 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.

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

41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.

42. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

43. THE *PROPOSED* STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81-30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.

45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.

46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS, (IE. IBC, ANSI-117-1) AND NH RSA 155-A:5.

47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

48. DESIGN ENGINEER OF RECORD OR SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.

49. THE APPLICANT SHALL PROVIDE THE CITY OF DOVER AN EASEMENT TO ACCESS WATERLINE AND HYDRANTS TO MAINTAIN WATER QUALITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

CONDITIONS OF APPROVAL

PENDING CONDITIONAL APPROVAL BY THE CITY OF DOVER PLANNING BOARD, THE CONDITIONS TO BE MET PRIOR TO CONSTRUCTION, ISSUANCE OF A BUILDING PERMIT, AND FOR OCCUPANCY WILL BE LISTED:

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE — CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER — 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

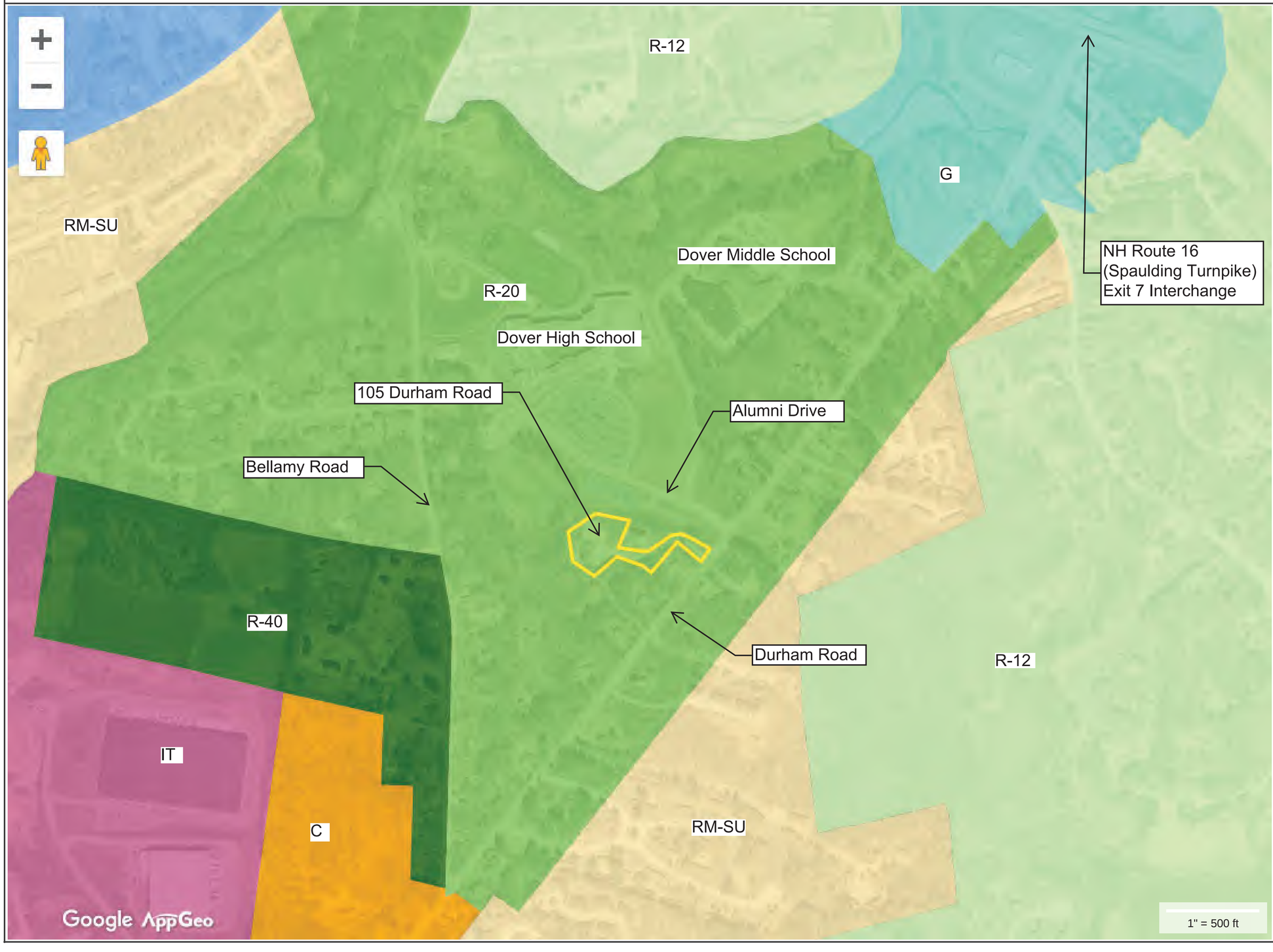
PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
GENERAL NOTES

SHEET NUMBER:
3 / GN-1

P5496

Neighborhood Plan / Zoning Districts



Property Information

Property ID	H0006-004000
Location	105 DURHAM RD
Owner	SEAVER PAUL J
Land Use	140
Zoning Code	R-20

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

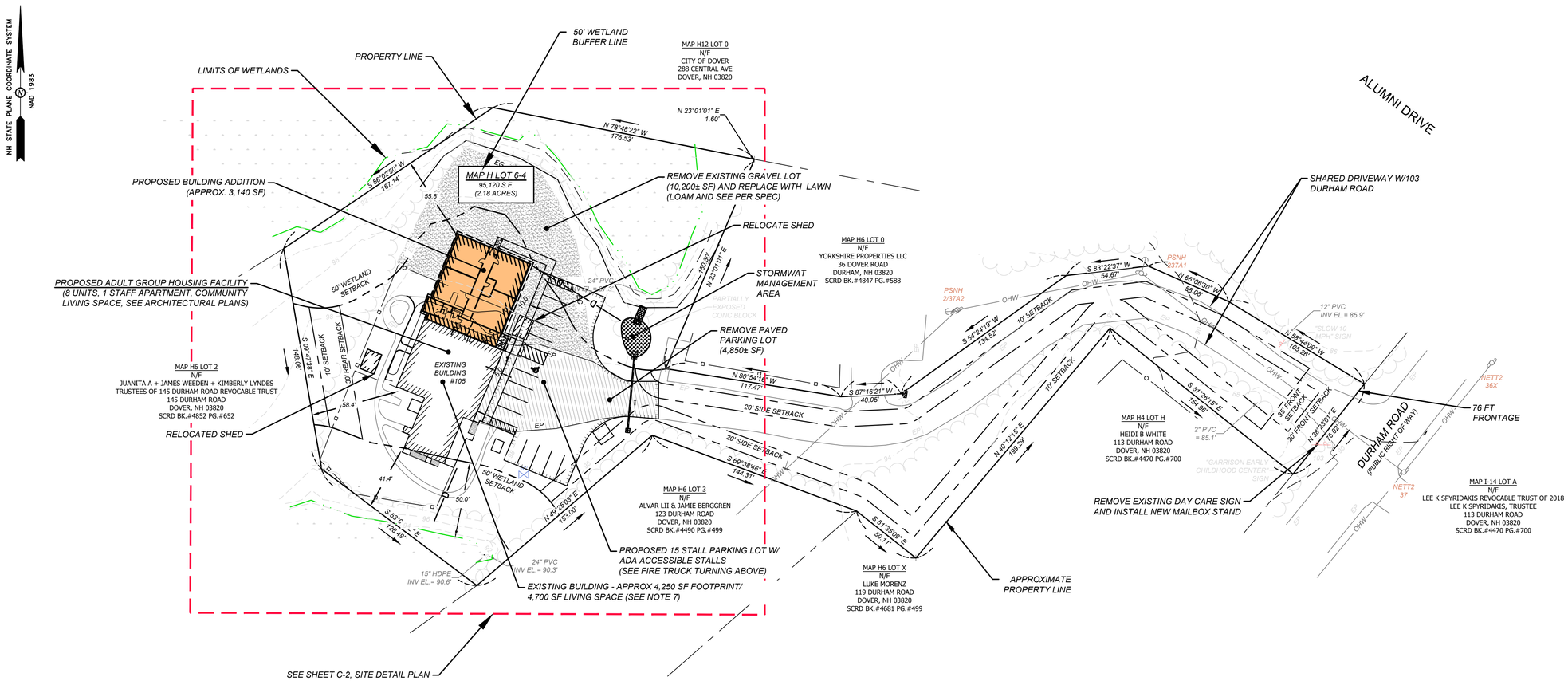
City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

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

Zoning Districts

- R-40 Rural Residential
- R-20 Low-Density Residential
- R-12 Medium-Density Residential
- HR Heritage Residential
- RM-SU Suburban Density Residential
- RM-U Urban Density Residential
- C Commercial
- IT Innovative Technology
- CM Commercial Manufacturing
- CBD Central Business District
- G Gateway



NOTES

1. BASE PLAN IS FROM TOWN GIS AND AERIAL IMAGERY. DIMENSIONS SHOWN ON PLAN MAY VARY BASED ON ACTUAL FIELD SURVEYS.
2. PROJECT PARCEL:
   TAX MAP H, LOT 6–4
   95,120± S.F. (2.18 AC.)
3. ZONE: R–20 (LOW DENSITY RESIDENTIAL)
4. DIMENSIONAL REQUIREMENTS:

	REQUIREMENT	PROVIDED
MINIMUM LOT SIZE	20,000 SF	95,120 SF
MAXIMUM LOT COVERAGE	30%	25%±
MINIMUM FRONTAGE	125 FT	75 FT*
* EXISTING NON–CONFORMING LOT		
BUILDING		
FRONT BUILD TO LINE	20 FT MIN 35 FT MAX	450± FT
SIDE SETBACK	20 FT	41.4 FT
REAR SETBACK	30 FT	55.8 FT
HEIGHT OF BUILDING	35 FT	< 35 FT

5. WETLANDS:
   WETLANDS WERE MAPPED BY MARK WEST, CERTIFIED NH WETLANDS SCIENTIST #010, ON FEBRUARY 12, 2024 AND SURVEYED BY NORTHAM SURVEY.
6. USE:

   CURRENT: CHILD DAY CARE
   PROPOSED: ADULT GROUP HOUSING **

   THE PROPOSED PROJECT WILL CONSTRUCT A BUILDING ADDITION AND CONVERT THE EXISTING DAY CARE AND APARTMENT TO PROVIDE EIGHT (8) DWELLING UNITS IN A GROUP HOUSING FACILITY, WITH COMMUNITY SPACES, AND AN APARTMENT FOR A AN ON–SITE CARE STAFF MEMBER.

   ** VARIANCE APPROVED FOR NINE UNIT ADULT GROUP HOUSING AND TRANSFER OF DEVELOPMENT RIGHTS (TDR) FOR ADDITIONAL UNITS.
8. PARKING

   EXISTING = 32 SPACES
   PROPOSED = 15 SPACES
   ALLOWED = 1.4 SPACES./ UNIT + 0.5 VISITOR SPACES/ UNIT = 17.1 SPACES

* A WAIVER IS REQUESTED FROM THE REQUIREMENT TO PROVIDE BICYCLE PARKING.

GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

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STATE OF NEW HAMPSHIRE
CORY D. BELDEN
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PROFESSIONAL ENGINEER
5/6/24

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ISSUED FOR:
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ISSUE DATE:
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DRAWING FILE: 5496–SITE.DWG

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APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

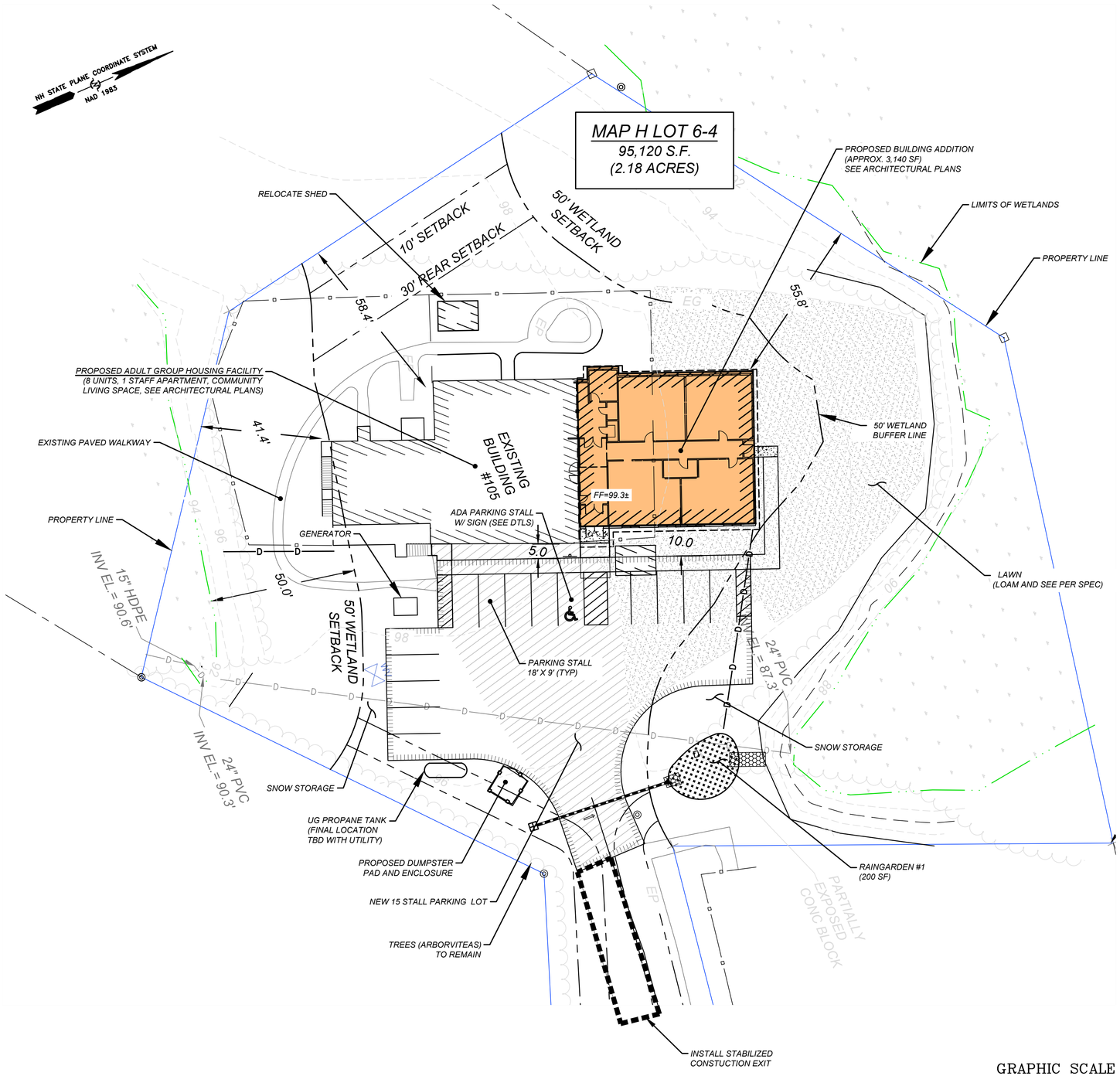
PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
5 / C-1

SITE NOTES

1. THE PROPOSED SITE PLAN REQUIRES APPROVAL FROM THE DOVER PLANNING BOARD.
2. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
3. ALL CONDITIONS OF THIS APPROVAL SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
4. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF DOVER & NHDOT'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
5. THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
7. IF THE AREA OF DISTURBANCE IS OVER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT IS REQUIRED. CONTRACTOR TO COMPLY WITH LOCAL REQUIREMENTS FOR STORMWATER MANAGEMENT DURING CONSTRUCTION.
8. IF ADEQUATE ON-SITE SNOW STORAGE IS NOT AVAILABLE, THE SNOW SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
9. SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC DEVICES," "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE AMERICANS WITH DISABILITIES ACT (ADA), LATEST EDITIONS.
10. SITEWORK CONTRACTOR SHALL PREPARE A LICENSED LAND SURVEYOR (LLS) STAMPED AS-BUILT SITE PLAN & PROVIDE A DIGITAL (CAD FORMAT) COPY FOR THE CITY G.I.S. DATA BASE.
11. IF PROJECT DISTURBANCE AREA EXCEEDS ONE (1) ACRE, A STORMWATER POLLUTION PROTECTION PLAN (SWPPP) AND NPDES GENERAL CONSTRUCTION PERMIT ARE REQUIRED. CONTRACTOR SHALL FILE A NOTICE OF INTENT (NOI) WITH THE U.S.E.P.A. UNDER THE NPDES CONSTRUCTION GENERAL PERMIT.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR ANY DAMAGE DONE TO EXISTING UTILITIES AT NO EXTRA COST TO THE OWNER. UTILITY CONFLICTS SHALL BE RESOLVED WITH THE INVOLVEMENT OF THE ENGINEER, OWNER, AND APPROPRIATE UTILITY COMPANIES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE WORK SITE AND SAFELY SECURING THE SITE DURING CONSTRUCTION.
14. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES TO REMAIN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY NOTIFICATION OF ALL PARTIES, CORPORATIONS, COMPANIES, INDIVIDUALS AND STATE AND LOCAL AUTHORITIES OWNING AND/OR HAVING JURISDICTION OVER ANY UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS TO BE DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES WHETHER OR NOT SAID UTILITIES ARE SUBJECT TO DEMOLITION, RELOCATION, MODIFICATION AND/OR CONSTRUCTION.
16. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.



GRAPHIC SCALE

1 0 .5 1 2 4

(IN FEET)

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SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
SITE DETAIL PLAN

SHEET NUMBER:
6 / C-2

GRADING AND DRAINAGE NOTES

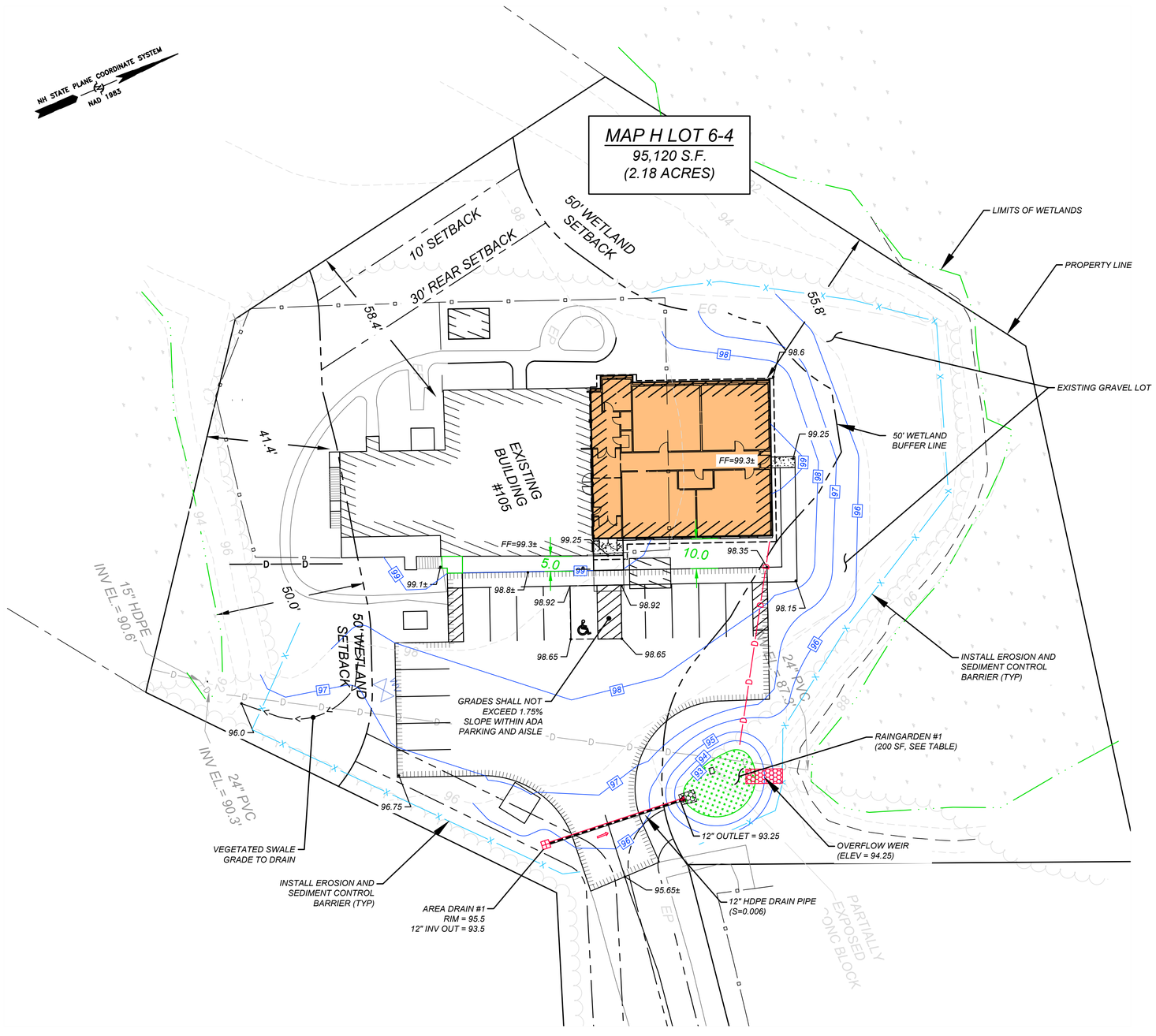
1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
2. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL READ AND FAMILIARIZE THEMSELVES WITH THE ANY AVAILABLE GEOTECHNICAL REPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL THE RECOMMENDATIONS OF A GEOTECHNICAL REPORT.
4. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES AREA SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS DEGREE OF INSULATION AGAINST FREEZING.
5. IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
6. ALL STORM DRAIN PIPE SHALL BE ADS N-12 OR EQUAL AND APPROVED BY THE ENGINEER.
7. ALL CATCH BASIN, GATE VALVE COVERS, AND MANHOLE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISHED GRADE. ANY RIM OR VALVE COVER ABOVE SURROUNDING FINISHED GRADE WILL NOT BE ACCEPTED.
8. ALL SPOT GRADES ARE AT THE FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
9. UNLESS OTHERWISE SPECIFIED, BUILDING PERIMETER DRAINS SHALL BE DIRECTED TO THE NEAREST DRAINAGE STRUCTURE. IF DEEMED APPROPRIATE, CONTRACTOR SHALL PROVIDE ADDITIONAL UNDERDRAINS AT THE DIRECTION OF THE ENGINEER.
10. CONTRACTOR SHALL PROTECT ALL RAINGARDENS FROM CONSTRUCTION STORMWATER RUNOFF. STORMWATER SHALL NOT BE DIRECTED TO THE RAINGARDENS UNTIL THE WATERSHED HAS BEEN STABILIZED.
11. THE APPLICANT SHALL SUBMIT A COPY OF A COMPLETED LAND USE DEVELOPMENT TRACKING FORM USING THE POLLUTANT TRACKING AND ACCOUNTABIITY PROGRAM (PTAP) ONLINE PORTAL CURRENTLY MANAGED BY THE UNH STORMWATER CENTER OR SIMILAR FORM APPROVED BY THE CITY.
12. A STORMWATER INSPECTION AND MAINTENANCE REPORT SHALL BE COMPLETED ANNUALLY AND COPIED TO THE CITY PLANNING AND PUBLIC WORKS DEPARTMENTS.

PROPOSED DRAINAGE STRUCTURES

PAD 1
RIM=95.50
12" INV. OUT= 93.50

PROPOSED STORMWATER TREATMENT PRACTICES

RAINGARDEN #1
BOTTOM AREA = 300 SF
BOTTOM ELEV = 93.0
OVERFLOW WEIR ELEV = 94.25



GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE
CORY D. BELDEN
No. 14230
LICENSED PROFESSIONAL ENGINEER
5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR:
PLANNING BOARD

ISSUE DATE:
MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
GRADING, DRAINAGE AND EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:
7 / C-3

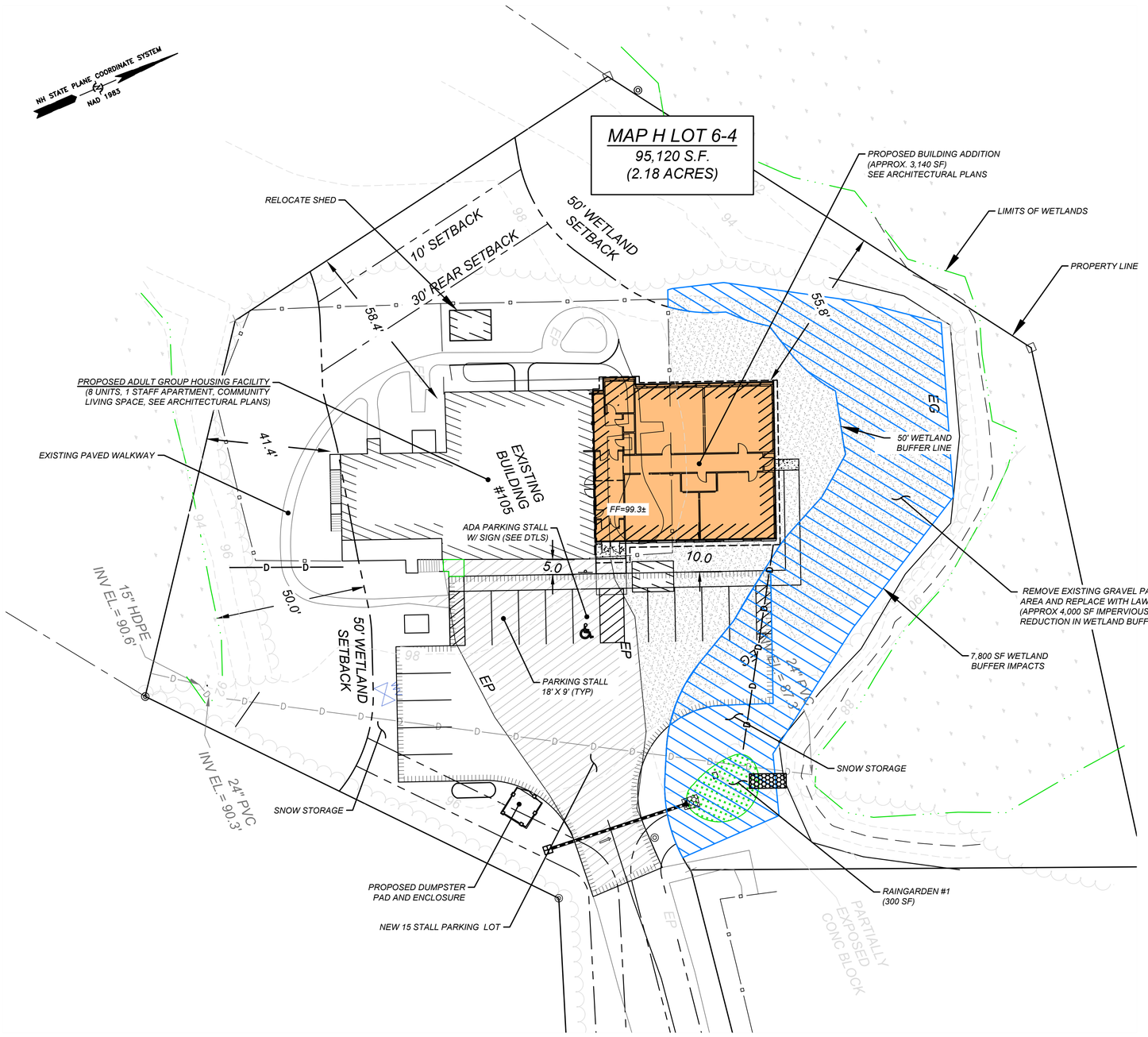
NOTES:

1. NO WORK SHALL BE PERFORMED WITHIN 50 FEET OF THE WETLAND BUFFER WITHOUT AUTHORIZATION THROUGH AN APPROVED CONDITIONAL USE PERMIT.
2. NO WORK OUTSIDE OF THE APPROVED WETLAND BUFFER IMPACTS ARE AUTHORIZED.

WETLAND IMPACT TABLE

Lot H–6–4	DIRECT IMPACTS	BUFFER IMPACTS
Area	0	7,800 SF

WETLAND BUFFER IMPACTS



GRAPHIC SCALE

1 0 .5 1 2 4

(IN FEET)

P5496

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NO.	DESCRIPTION	BY	DATE
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DRAWN BY: CDB
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DRAWING FILE: 5496–SITE.DWG

SCALE:
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11"x17" 1" = 80'

OWNER:
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105 Durham Road
Dover, NH 03820

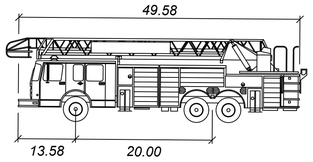
APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT

TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
WETLANDS CONDITIONAL USE PLAN

SHEET NUMBER:
8 / CUP-1



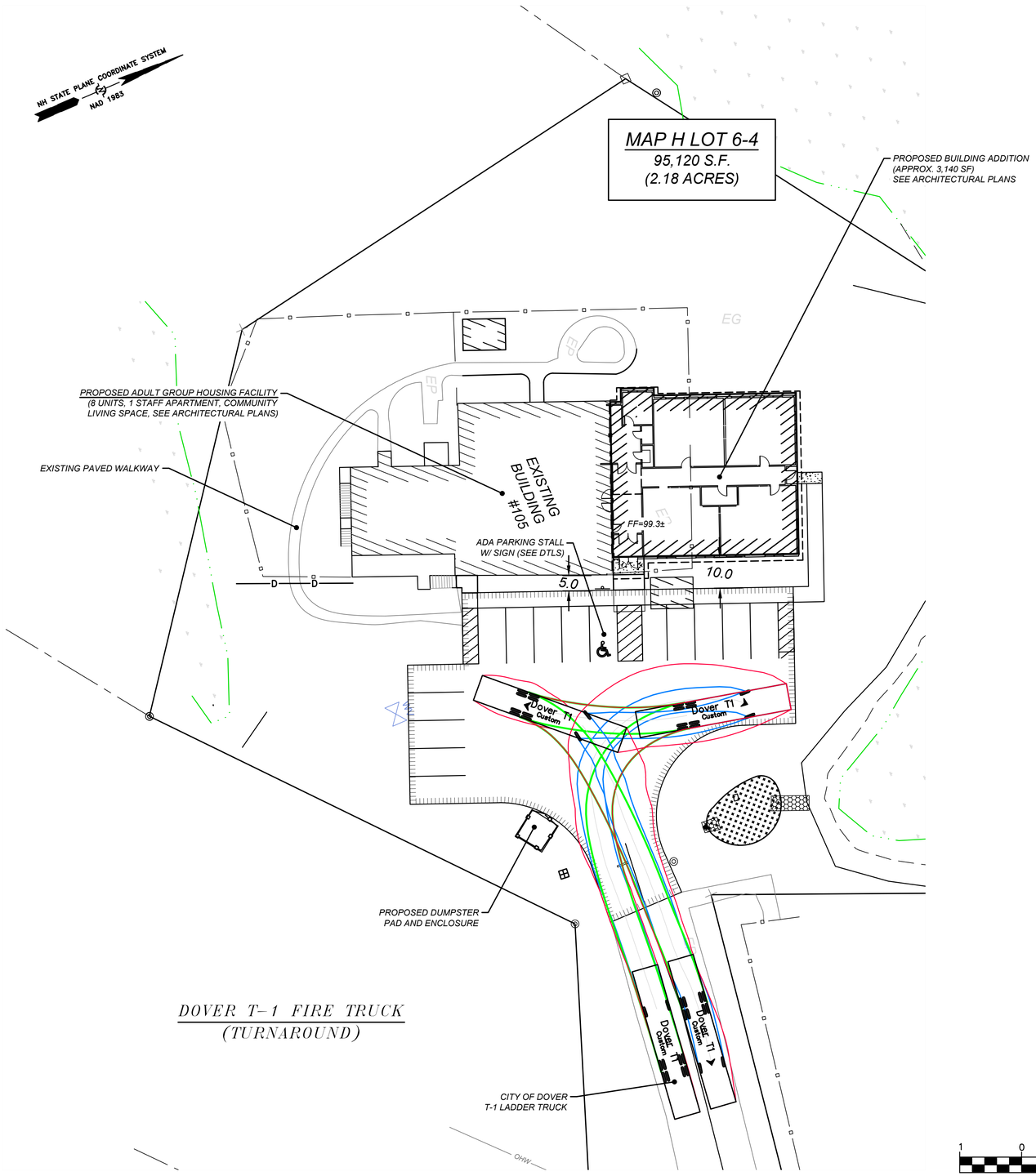
Dover T-1 FIRE

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0

VEHICLE MODELED – DOVER T–1 FIRE TRUCK

LEGEND

FRONT WHEEL PATH
REAR WHEEL PATH
VEHICLE BODY



DOVER T–1 FIRE TRUCK
(TURNAROUND)

GRAPHIC SCALE
1 0 .5 1 2 4
(IN FEET)

P5496

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STATE OF NEW HAMPSHIRE
CORY D. BELDEN
No. 14230
LICENSED PROFESSIONAL ENGINEER
5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR:
PLANNING BOARD

ISSUE DATE:
MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496–SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
TRUCK TURNING LAYOUT (DOVER T-1)

SHEET NUMBER:
9 / T-1

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

OUR PLACE – ADULT GROUP HOUSING DEVELOPMENT
105 DURHAM ROAD
DOVER, NEW HAMPSHIRE

LONGITUDE: 70.8797 W
LATITUDE: 43.1790 N
TAX MAP H LOT 11

OWNER:
Paul Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
OUR PLACE INC.
P.O. BOX 65
DOVER, NH 03821–0065

DESCRIPTION

The project consists of constructing a 3,140 square foot addition for the proposed adult group living facility. The existing day care center building will be renovated and the new building will have nine (9) residential units, eight will be for adults with Intellectual Developmental Disabilities (IDD) and one unit will be for support staff. The site will provide associated site improvements including parking, walkways, utilities, stormwater management and landscaping improvements. The project is located on a 2.18 acre lot identified as Assessor's parcel Tax Map H6, Lot 04 in the City of Dover, NH.

DISTURBED AREA

The total area to be disturbed for the site development improvements is approximately ±26,000 SF (±0.6 acres).

NAME OF RECEIVING WATER

The site drains to the Bellamy River.

NPDES CONSTRUCTION GENERAL PERMIT

The project site disturbance is less than 1 acre (43,560 square feet) so the project is not regulated under the EPA Construction General Permit. The Contractor is responsible for complying with all local requirements for stormwater management and reporting during construction. A Stormwater Maintenance manual has been prepared for this project.

SEQUENCE OF MAJOR ACTIVITIES

1. Hold a pre–construction meeting with City & stake holders, as required.
2. Install temporary erosion control measures including organic filter berms, stabilized construction exits, inlet sediment filters, and temporary sediment traps as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
3. DO NOT construct or direct construction flows to proposed raingardens or other stormwater management practices until site is stabilized.
4. Rough grade site including ledge removal. Blasting permit to be obtained by Contractor if required.
5. Prepare building area per geotechnical engineering reccomendations.
6. Construct utility services.
7. Construct drainage structures, culverts, and swales.
8. Construct building foundations, driveways and parking area base course paving & curbing.
9. Construct final grading, loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
10. Complete building construction.
11. When site is fully stabilized, complete construction of raingardens.
12. Install top course paving, pavement markings and signs.
13. When all construction activity is complete and as each phase is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.
14. File a Notice of Termination (N.O.T.) with U.S.E.P.A. (Required)

CONSTRUCTION SEQUENCE / EROSION CONTROL

- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
- PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
- TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
- PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).
- ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE
- ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF–INCH OF RAINFALL.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 55,000 SQUARE FEET AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
  - A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
  - A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED.
  - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through hay bale barriers, stone check dams, and silt fences. All storm drain inlets shall be provided with hay bale filters or stone check dams. Stone rip rap shall be provided at the outlets of drain pipes and culverts where shown on the drawings.

Stabilize all ditches, swales, & level spreaders prior to directing flow to them.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built–up sediment shall be removed from silt fence or other barriers when it has reached one–third the height of the fence or bale, or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. An area shall be considered stable if one of the following has occurred:
   a. Base coarse gravels have been installed in areas to be paved;
   b. A minimum of 85% vegetated growth as been established;
   c. A minimum of 3 inches of non–erosive material such as stone of riprap has been installed; – or –
   d. Erosion control blankets have been properly installed.
9. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
   a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
   b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment 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.

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.
Jute and Fibrous Matting (Erosion Blanket	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1–1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	* The organic matter content is between 80 and 100%, dry weight basis. * Particle size by weight is 100% passing a 6" screen and a minimum of 70 %, maximum of 85%, passing a 0.75" screen. * The organic portion needs to be fibrous and elongated. * Large portions of silts, clays or fine sands are not acceptable in the mix. * Soluble salts content is less than 4.0 mmhos/cm. * The pH should fall between 5.0 and 8.0.

3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. TEMPORARY GRASS COVER

1. Seedbed Preparation –
   Apply fertilizer at the rate of 600 pounds per acre of 10–10–10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.

10. Seeding –
    a. Utilize annual rye grass at a rate of 40 lbs/acre.
    b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
    c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance –
   Temporary seedings shall be periodically inspected. At a minimum, 95% 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 barriers, check dams, etc.).

D. FILTERS

1. Silt Fence
   a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Test	Requirements
Filtering Efficiency	VTM–51	75% minimum
Tensile Strength at 20% Maximum Elongation*	VTM–52	Extra Strength 50 lb/lin in (min) Standard Strength 30 lb/lin in (min)
Flow Rate	VTM–51	0.3 gal/sf/min (min)

   * Requirements reduced by 50 percent after six (6) months of installation.

   Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizer to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120° F.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CON'T)

   b. Posts shall be spaced a maximum of ten (10) feet apart at the barrier location or as recommended by the manufacturer and driven securely into the ground (minimum of 16 inches).
   c. A trench shall be excavated approximately six (6) inches wide and eight (8) inches deep along the line of posts and upslope from the barrier.
   d. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.
   e. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
   f.
   g. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item (g) applying.
   h. The trench shall be backfilled and the soil compacted over the filter fabric.
   i. Silt fences shall be removed when they have served their useful purpose but not before the upslope areas has been permanently stabilized.

2. Sequence of Installation –
   Sediment barriers shall be installed prior to any soil disturbance of the contributing upslope drainage area.

3. Maintenance –
   a. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water, the sediment barriers shall be replaced with a temporary stone check dam.
   b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
   c. Sediment deposits must be removed when deposits reach approximately one–third (1/3) the height of the barrier.
   d. Any sediment deposits remaining in place after the silt fence or other barrier is no longer required shall be removed. The area shall be prepared and seeded.
   e. Additional stone may have to be added to the construction entrance, rock barrier and riprap lined swales, etc., periodically to maintain proper function of the erosion control structure.

E. PERMANENT SEEDING –

1. Bedding – stones larger than 1", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

2. Fertilizer – lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. 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 @ 100 lbs. per 1,000 s.f.
   10–20–20 fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture (recommended):

Type	Lbs. / Acre	Lbs. / 1,000 sf
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

   Seed Mixture (For slope embankments):
   Grass Seed: Provide fresh, clean, new–crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

Type	Min. Purity (%)	Min. Germination (%)	Kg./Hectare (Lbs/Acre)
Creeping Red Fescue (b)	96	85	45 (40)
Perennial Rye Grass (a)	98	90	35 (30)
Redtop	95	80	5 (5)
Alsike Clover	97	90	5 (5)
		Total	90 (80)

   a. Ryegrass shall be a certified fine–textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
   b. Fescue varieties shall include – Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.

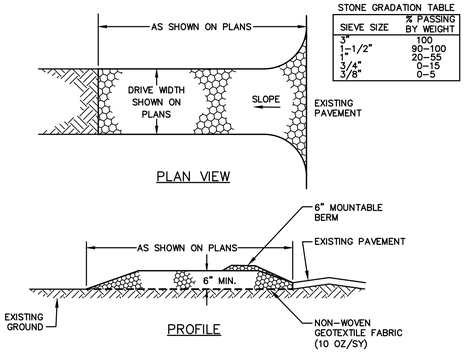
4. Sodding – sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

1. All proposed 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 elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation 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 events;

2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and

3. After October 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

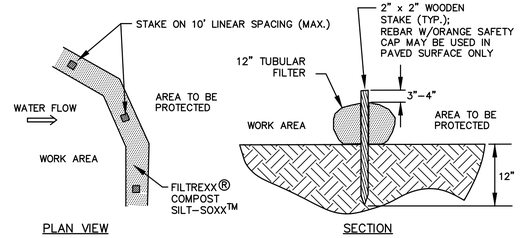


STONE GRADATION TABLE	
SIEVE SIZE	% PASSING BY WEIGHT
3"	100
1–1/2"	90–100
1"	20–55
3/4"	0–15
3/8"	0–5

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – NHDOT STANDARD STONE SIZE #4 – SECTION 703 OF NHDOT STANDARD.
2. LENGTH – DETAILED ON PLANS (50 FOOT MINIMUM).
3. THICKNESS – SIX (6) INCHES (MINIMUM).
4. WIDTH – FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
5. FILTER FABRIC – MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
6. SURFACE WATER CONTROL – ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS–OF–WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE ENGINEER.

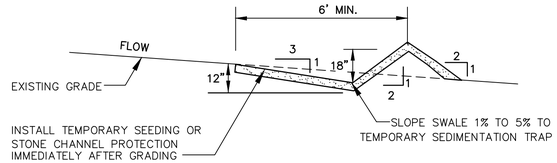
1 D-1 STABILIZED CONSTRUCTION EXIT — NOT TO SCALE



NOTES:
1. *SILTSOXX OR APPROVED EQUAL SHALL BE USED FOR TUBULAR SEDIMENT BARRIERS.*
2. *ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.*
3. *COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.*
4. *ALL SEDIMENT TRAPPED BY BARRIER SHALL BE DISPOSED OF PROPERLY.*

2 D-1 TUBULAR SEDIMENT BARRIER — NOT TO SCALE

SWALE SHALL BE FREE OF IRREGULARITIES WHICH MAY CAUSE PONDING. COMPACT FILLS AS NECESSARY TO STABILIZE MATERIAL.



3 D-1 TEMPORARY DIVERSION SWALE — NOT TO SCALE

P5496

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STATE OF NEW HAMPSHIRE CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496–SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

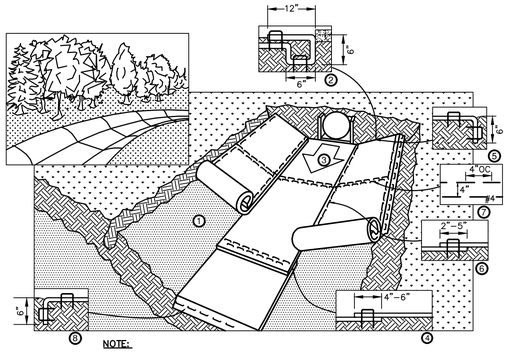
OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
10 / D-1

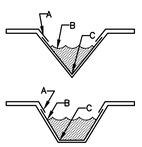


NOTE:

There shall be no plastic, or multi-filament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches material utilized.

NOTES

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED. TO INSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS:

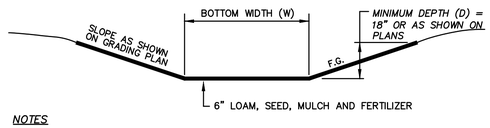
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTES:

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

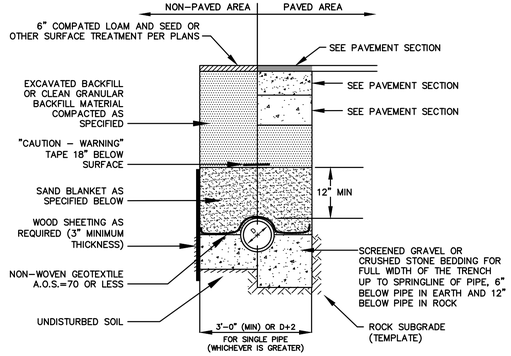
1 D-2 EROSION CONTROL BLANKET - SWALE NOT TO SCALE



NOTES

1. *THE FOUNDATION AREA OF THE SWALE SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.*
2. *THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA AND BE FREE OF IRREGULARITIES.*
3. *EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED SWALE.*
4. *VEGETATION SHALL BE ESTABLISHED IN THE SWALE OR AN EROSION CONTROL MATTING INSTALLED PRIOR TO DIRECTING STORMWATER TO IT.*
5. *MAINTENANCE OF THE VEGETATION IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE SWALE. MOWING SHALL BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHALL NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE SWALE.*
6. *THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER ANY STORM GREATER THAN 0.5" OF RAINFALL IN 24 HOURS TO DETERMINE ITS CONDITION. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.*

2 D-2 VEGETATED SWALE NOT TO SCALE



NOTES

1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
2. INSULATE GRAVITY SEWER AND FORCEMAINS WHERE THERE IS LESS THAN 5'-0" OF COVER WITH 2" THICK CLOSED CELL RIGID BOARD INSULATION, 18" ON EACH SIDE OF PIPE.
3. MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION AND WIDEN TRENCH ACCORDINGLY IF MULTIPLE PIPES ARE IN TRENCH.

SAND BLANKET/BARRIER

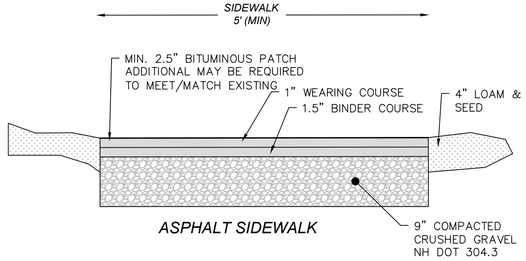
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

SCREENED GRAVEL OR CRUSHED STONE BEDDING*

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 – 100
3/8"	20 – 55
# 4	0 – 10
# 8	0 – 5

* EQUIVALENT TO STANDARD STONE SIZE #67 – SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

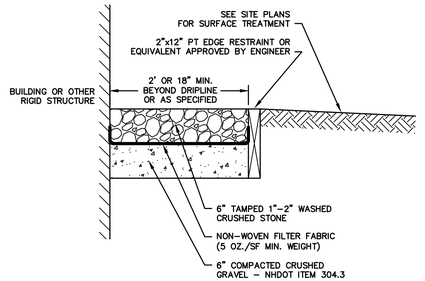
3 D-2 DRAINAGE TRENCH NOT TO SCALE



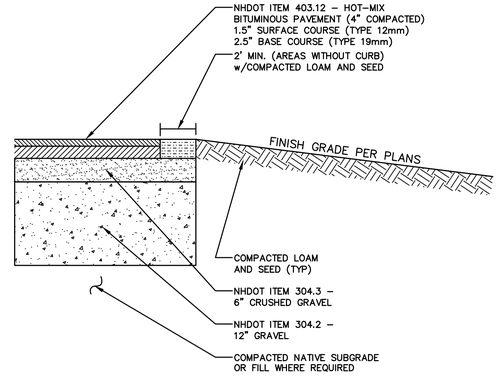
NOTES:

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.

4 D-2 BITUMINOUS SIDEWALK NOT TO SCALE



5 D-2 STONE DRIP EDGE NOT TO SCALE



NOTES

1. PROJECT GEOTECHNICAL REPORT MAY REQUIRE A DIFFERENT PAVEMENT CROSS SECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND FOLLOWING ALL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. IN THE EVENT THAT THE REPORT AND CIVIL PLANS DIFFER, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. ALL EXISTING FILL, BURIED ORGANIC MATTER, CLAY, LOAM, MUCK, AND/OR OTHER QUESTIONABLE MATERIAL SHALL BE REMOVED FROM BELOW ALL PAVEMENT, SHOULDERS AND UNDERGROUND PIPING/UTILITIES TO DEPTHS RECOMMENDED IN GEOTECHNICAL REPORT.
3. SUBGRADE SHALL BE PROOFROLLED A MINIMUM OF 6 PASSES WITH A 10-TON VIBRATORY COMPACTOR OPERATING AT PEAK RATED FREQUENCY OR BY MEANS APPROVED BY THE ENGINEER.
4. FILL BELOW PAVEMENT GRADES SHALL BE GRANULAR BORROW COMPACTED PER DOT REQUIREMENTS.
5. SITEWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS WITH THE CONSTRUCTION MANAGER PRIOR TO PLACING GRAVELS.
6. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT.
7. THE BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 95 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. THE BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557.

6 D-2 SITE PAVEMENT CROSS SECTION NOT TO SCALE

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STATE OF NEW HAMPSHIRE – CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER – 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

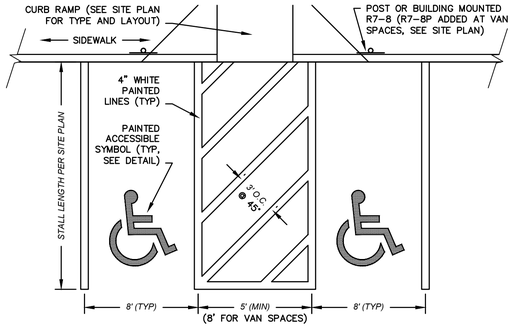
APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

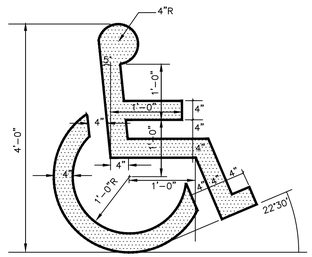
TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
11 / D-2

P5496



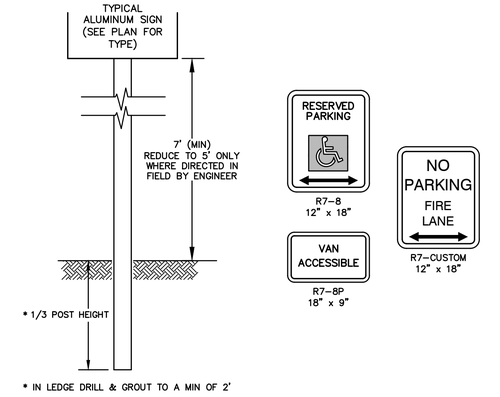
1 D-3 ADA ACCESSIBLE PARKING STALL NOT TO SCALE



NOTES

1. SYMBOL TO BE PAINTED IN ALL HANDICAPPED ACCESSIBLE SPACES IN WHITE PAINT (BLUE-PAINTED SQUARE BACKGROUND AND WHITE BORDER OPTIONAL).

2 D-3 PAINTED HANDICAP SYMBOL NOT TO SCALE



LENGTH: AS REQUIRED

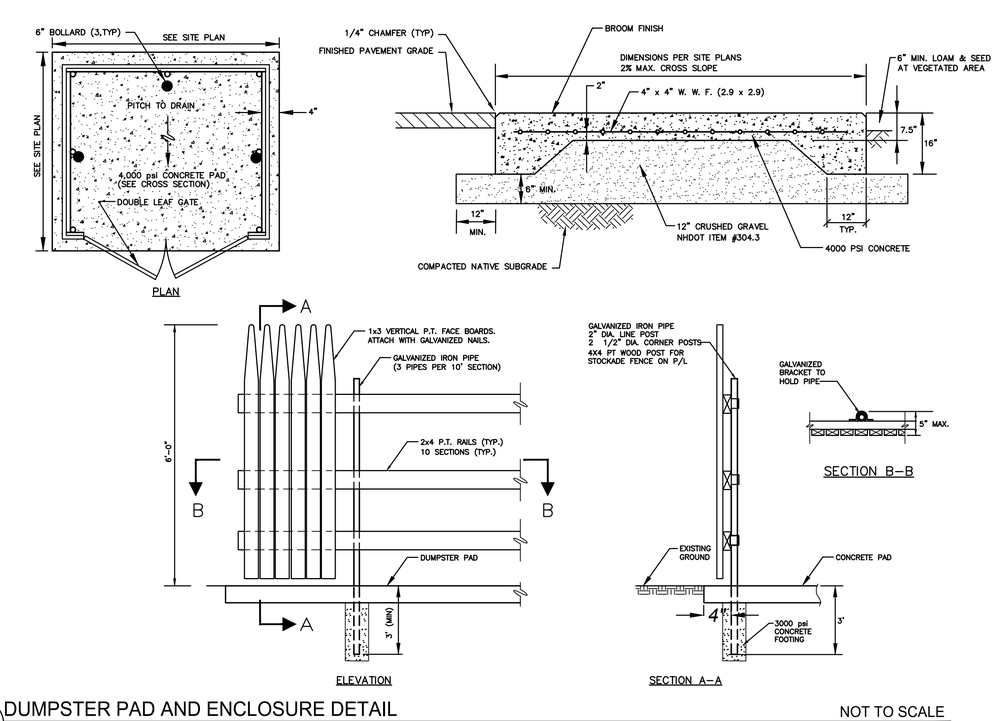
WEIGHT PER LINEAR FOOT: 1.50 LBS (MIN.)

STEEL: 2-3/8" 16 GAUGE RUST-RESISTANT GALVANIZED TUBULAR STEEL, 0.065" MIN. WALL THICKNESS

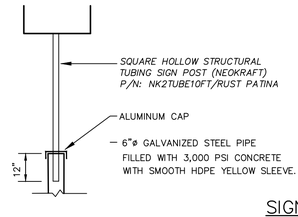
NOTES

1. ALL SIGNS SHALL MEET THE REQUIREMENTS OF AND BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

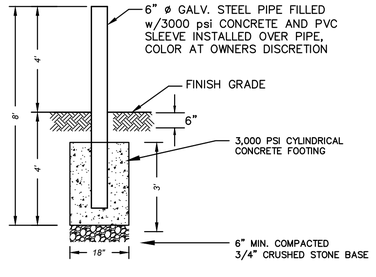
4 D-3 SIGN DETAILS NOT TO SCALE



3 D-3 DUMPSTER PAD AND ENCLOSURE DETAIL NOT TO SCALE



SIGN INSTALLATION



5 D-3 BOLLARD NOT TO SCALE

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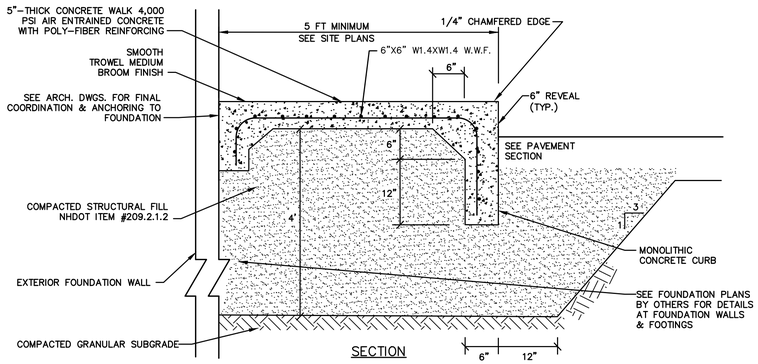
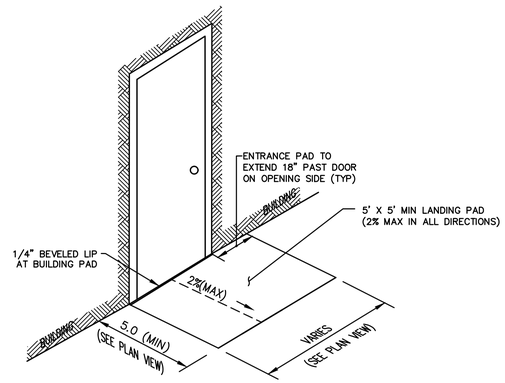
TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
12 / D-3

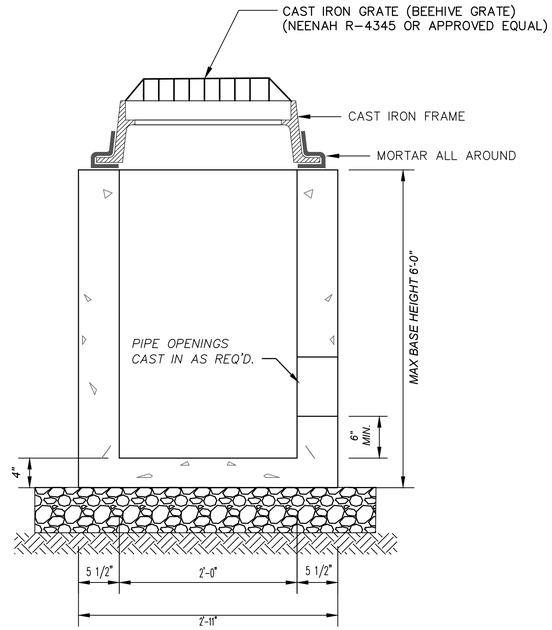
P5496



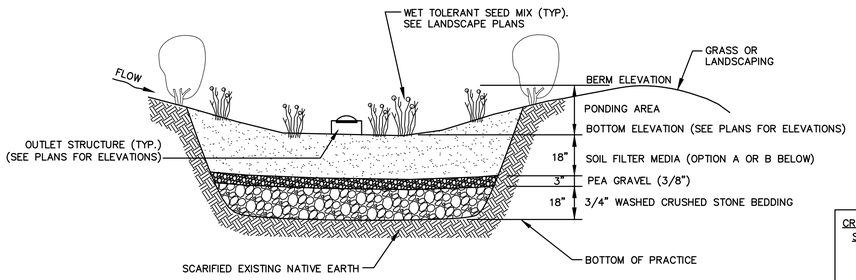
1 D-4 CONCRETE SLAB (SIDEWALKS) DETAILS @ BLDG. ENTRANCE NOT TO SCALE



2 D-4 ADA ACCESSIBLE ENTRANCE PAD NOT TO SCALE



4 D-4 AREA DRAIN NOT TO SCALE



CRUSHED STONE BEDDING *

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 – 100
3/8"	20 – 55
# 4	0 –10
# 8	0 – 5

* EQUIVALENT TO STANDARD STONE SIZE #67 – SECTION 703 OF NHDOT NHDOT STANDARD SPECIFICATIONS

NOTES

1. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL FILTER MEDIA SHALL BE EITHER OPTION A OR OPTION B AT CONTRACTOR'S DISCRETION.
3. DO NOT PLACE THE RAIN GARDEN INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
4. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE RAIN GARDEN AREA DURING ANY STAGE OF CONSTRUCTION.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24–HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.
- PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION 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 FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

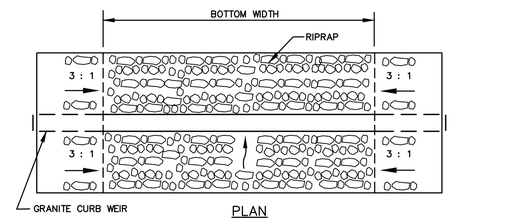
DESIGN REFERENCES

- UNH STORMWATER CENTER
- EPA (1999A)
- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

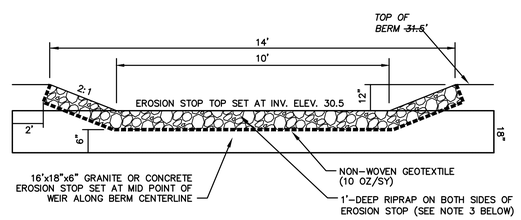
FILTER MEDIA MIXTURES

Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Filter Media Option A			
ASTM C–33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Filter Media Option B			
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Loamy coarse sand	70 to 80	10	85 to 100
		20	70 to 100
		60	15 to 40
		200	8 to 15

3 D-4 TYPICAL RAINGARDEN NOT TO SCALE



PLAN



1. CONSTRUCT EMERGENCY OVERFLOW WEIR TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
2. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO LINES AND GRADES SHOWN ON THE PLANS.
3. UNLESS OTHERWISE SPECIFIED OR DIRECTED, RIPRAP USED FOR THE EMERGENCY OVERFLOW WEIR SHALL MEET THE FOLLOWING GRADATION:

SIZE	PERCENT PASSING BY WEIGHT
4"	90–100
2"	0–15

4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
5. THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

5 D-4 OVERFLOW WEIR NOT TO SCALE

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE – CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER – 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496–SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

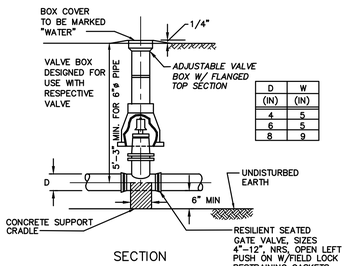
APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821–0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6–4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
13 / D-4

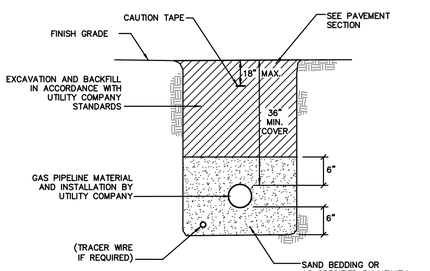
P5496



D (IN)	W (IN)
4	5
6	5
8	9

SECTION

1 D-5 WATER VALVE — NOT TO SCALE



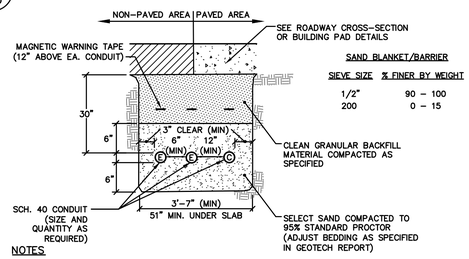
SAND BLANKET/BARRIER

SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

NOTES

1. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY AND PROVIDE ALL EXCAVATION, COMPACTION AND BACKFILL REQUIRED FOR PIPE INSTALLATION.
2. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

4 D-5 GAS TRENCH — NOT TO SCALE



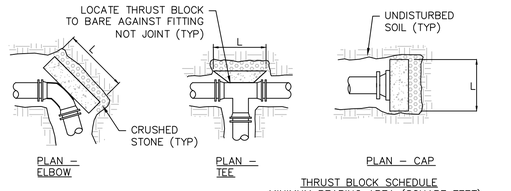
SAND BLANKET/BARRIER

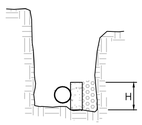
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

NOTES

1. ALL CONDUIT IS TO BE SCHEDULE 40 PVC, ELECTRICAL GRADE, GRAY IN COLOR AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE SERVICE PROVIDER DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING PULLING OF THE CABLE. ALL JOINTS ARE TO BE WATERTIGHT.
2. ALL 90 DEGREE SWEEPS WILL BE MADE WITH RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES.
3. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY SERVICE PROVIDER. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE IN 6-INCH LAYERS AND THOROUGHLY COMPACTED.
4. A SUITABLE PULLING STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE SERVICE PROVIDER IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT. A MINIMUM OF TWENTY-FOUR (24") INCHES OF ROPE SLACK SHALL REMAIN AT THE END OF EACH DUCT. PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT FOR FUTURE PULLS. PULL ROPE SHALL BE NYLON ROPE HAVING A MINIMUM TENSILE STRENGTH OF THREE HUNDRED (300#) LBS.
5. SERVICE PROVIDER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT ALL CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD SERVICE PROVIDER BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
6. TYPICAL CONDUIT SIZES ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY. HOWEVER, SERVICE PROVIDERS MAY REQUIRE DIFFERENT NUMBERS, TYPES AND SIZES OF CONDUIT THAN THOSE SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDUIT SIZES, TYPES AND NUMBERS WITH EACH SERVICE PROVIDER PRIOR TO ORDERING THEM.
7. ROUTING OF CONDUIT, LOCATION OF MANHOLES, TRANSFORMERS, CABINETS, HANDHOLES, ETC., SHALL BE DETERMINED BY SERVICE PROVIDER DESIGN PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH ALL SERVICE PROVIDERS PRIOR TO THE INSTALLATION OF ANY CONDUIT.
8. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE. WHERE REQUIRED BY UTILITY PROVIDER, CONDUIT SHALL BE SUPPORTED IN PLACE USING PIPE STANCHIONS PLACED EVERY FIVE (5') FEET ALONG THE CONDUIT RUN.
9. UNDER A BUILDING SLAB THE CONDUIT SHALL BE ENCASED IN 8" OF CONCRETE ON ALL SIDES.
10. ALL CONDUIT TERMINATIONS SHALL BE CAPPED TO PREVENT DEBRIS FROM ENTERING CONDUIT.

5 D-5 ELECTRIC / COMMUNICATION TRENCH — NOT TO SCALE





SECTION (TYP)

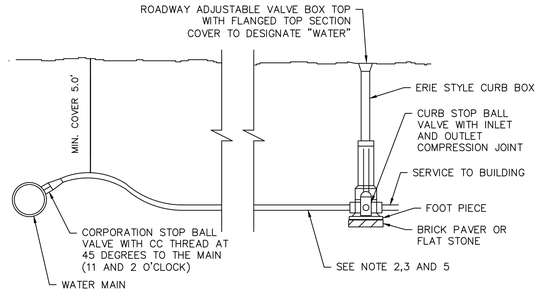
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends*	*	*	*	*	4.46	7.92
11-1/4 Degree Bends*	*	*	*	*	*	*
*SEE NOTE 2	System Pressure: 125 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

NOTES:

1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

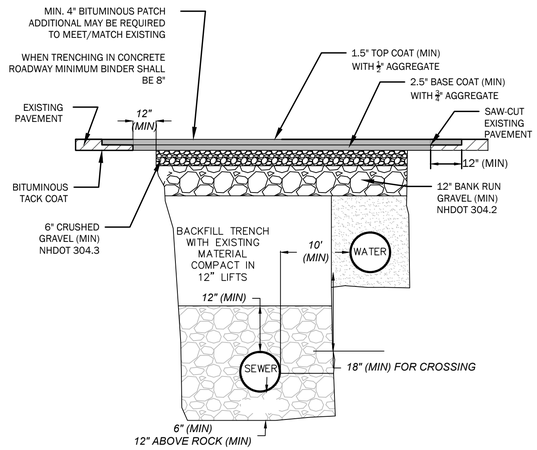
2 D-5 THRUST BLOCKING — NOT TO SCALE



NOTES:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.
4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE
5. ¾"– COPPER, CTS
   1"– COPPER, CTS
   2"– CTS, HDPE, IPS

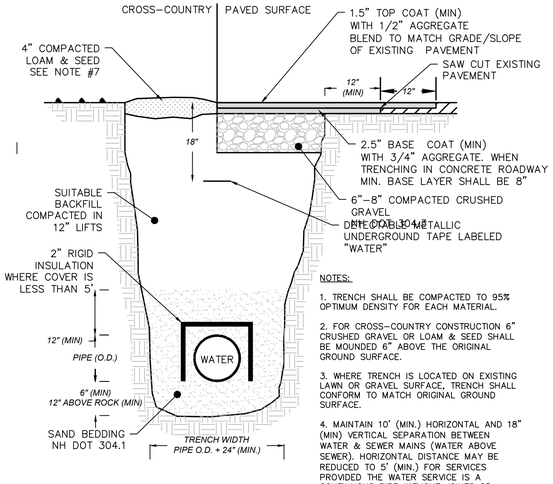
6 D-5 WATER SERVICE CONNECTION — NOT TO SCALE



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

3 D-5 CITY OF DOVER TYPICAL TRENCH — NOT TO SCALE



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

7 D-5 WATER MAIN TRENCH — NOT TO SCALE

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

CORY D. BELDEN No. 14239 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 5/6/24

NOT FOR CONSTRUCTION

ISSUED FOR: PLANNING BOARD

ISSUE DATE: MAY 6, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PB SUBMITTAL	CDB	05/06/24

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 5496-SITE.DWG

SCALE:
22"x34" 1" = 40'
11"x17" 1" = 80'

OWNER:
Paul J. Seaver
105 Durham Road
Dover, NH 03820

APPLICANT:
Our Place, Inc.
P.O. Box 65
Dover, NH 03821-0065

PROJECT:
OUR PLACE
SITE DEVELOPMENT
TAX MAP H, LOT 6-4
105 DURHAM ROAD
DOVER, NH 03820

TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
14 / D-5

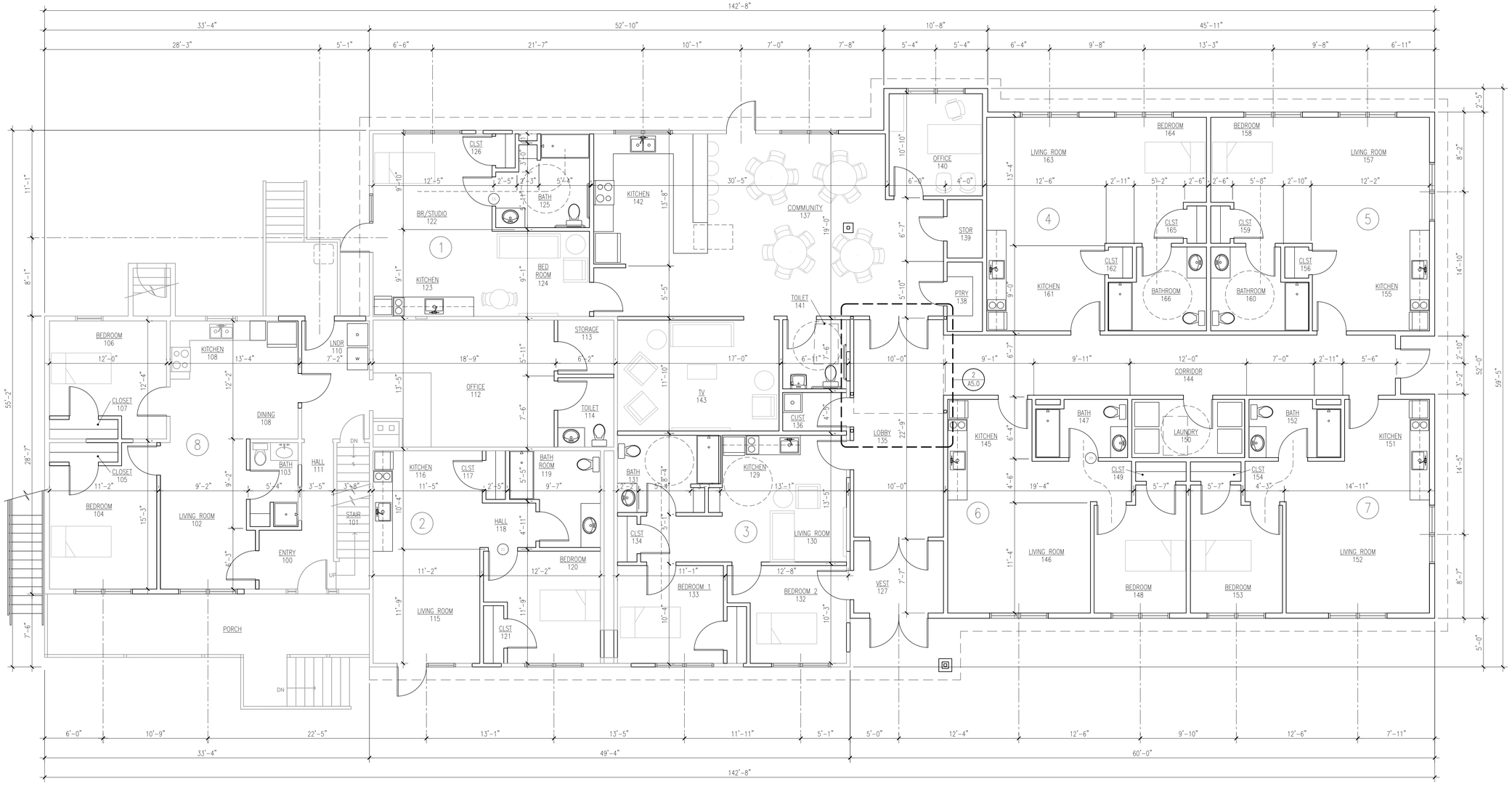
P5496

LEGEND:

EXISTING

EXISTING TO BE REMOVED

NEW WALL



1 FIRST FLOOR DIMENSION PLAN
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

THIS DRAWING SCALE IS BASED ON PRINTING AT 24X36

RESIDENTIAL•COMMERCIAL•INSTITUTIONAL

PROJECT TEAM

ARCHITECT
ARCHITECTURAL CONSULTING SERVICES, LLC
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415 PAWTUCK STREET, UNIT 1
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NAME
CONTACT
STREET
CITY, STATE, ZIP
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EMAIL:

CONTRACTOR
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STAMP

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OWNER

OUR PLACE
ADULT GROUP HOUSING FACILITY
105 DURHAM ROAD
DOVER, NH 03820

MARK	DATE	DESCRIPTION
--	--	--

STATUS: PLANNING BOARD SUBMISSION

PROJECT NO:	2330
CAD DWG FILE:	2330 OUR PLACE CD'S.DWG
DRAWN LAST:	05/06/2024
DRAWN BY:	MK
CHK'D BY:	JM

SHEET TITLE

FIRST FLOOR PLAN
DIMENSION PLAN

A1.1

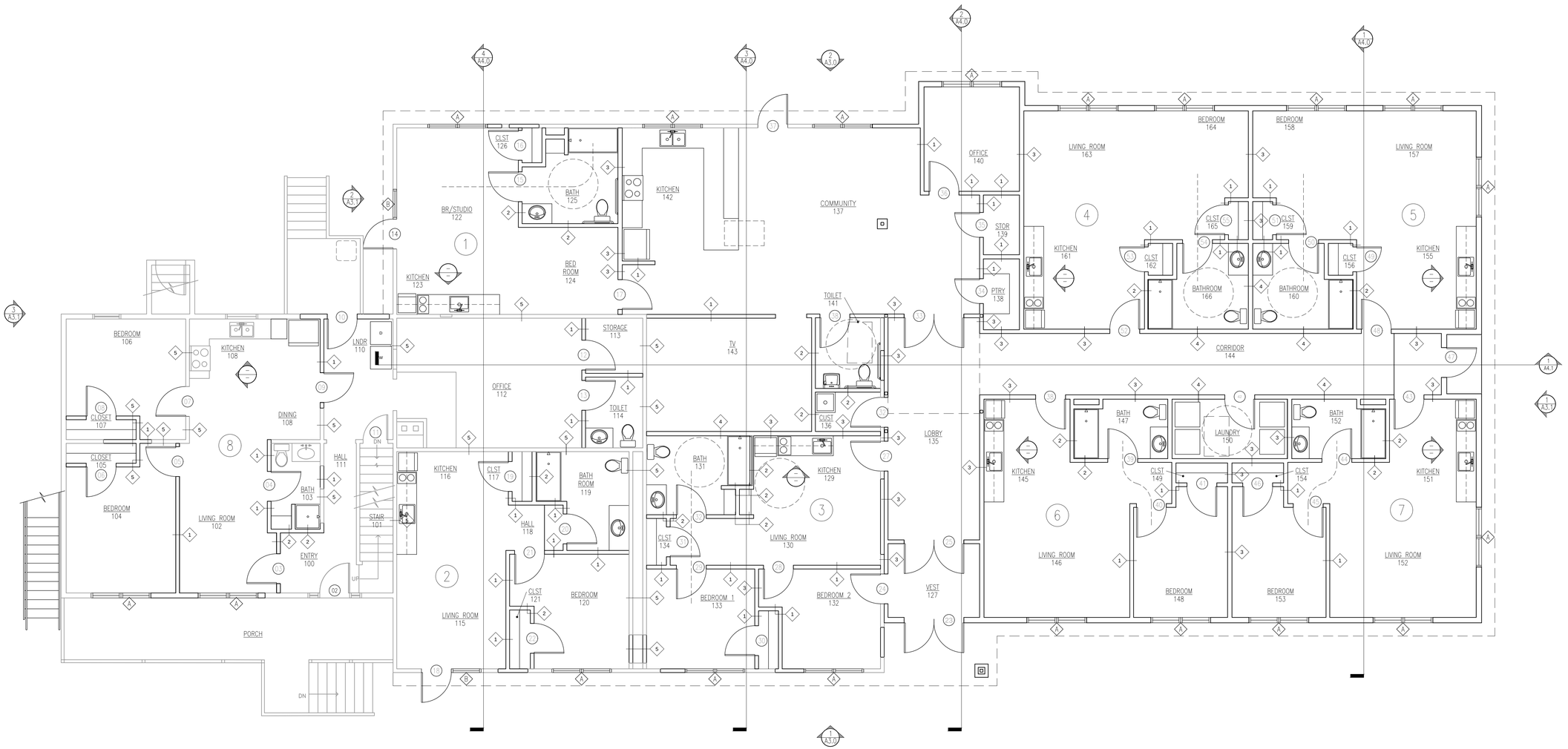
SHEET- 15 OF -

LEGEND:

EXISTING

EXISTING TO BE REMOVED

NEW WALL



1 FIRST FLOOR KEYNOTE PLAN
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

THIS DRAWING SCALE IS BASED ON PRINTING AT 24X36

ACS

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PROJECT TEAM

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OWNER

OUR PLACE
ADULT GROUP HOUSING FACILITY
105 DURHAM ROAD
DOVER, NH 03820

MARK	DATE	DESCRIPTION
--	--	--

STATUS: PLANNING BOARD SUBMISSION

PROJECT NO:	2330
CAD DWG FILE:	2330 OUR PLACE CD'S.DWG
DRAWN LAST:	05/06/2024
DRAWN BY:	MK
CHK'D BY:	JM

SHEET TITLE

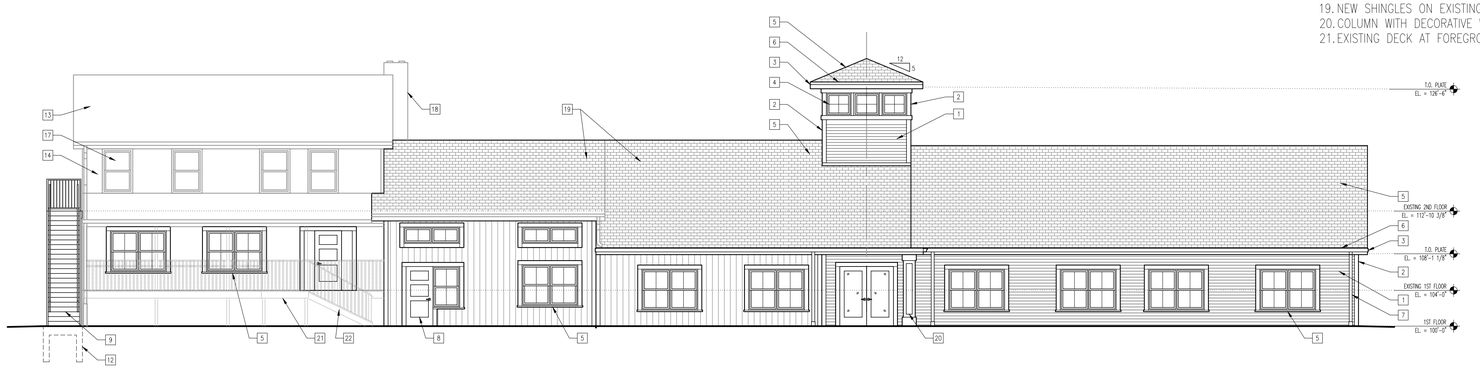
FIRST FLOOR PLAN
KEYNOTE PLAN

A1.2

SHEET - 16 OF -

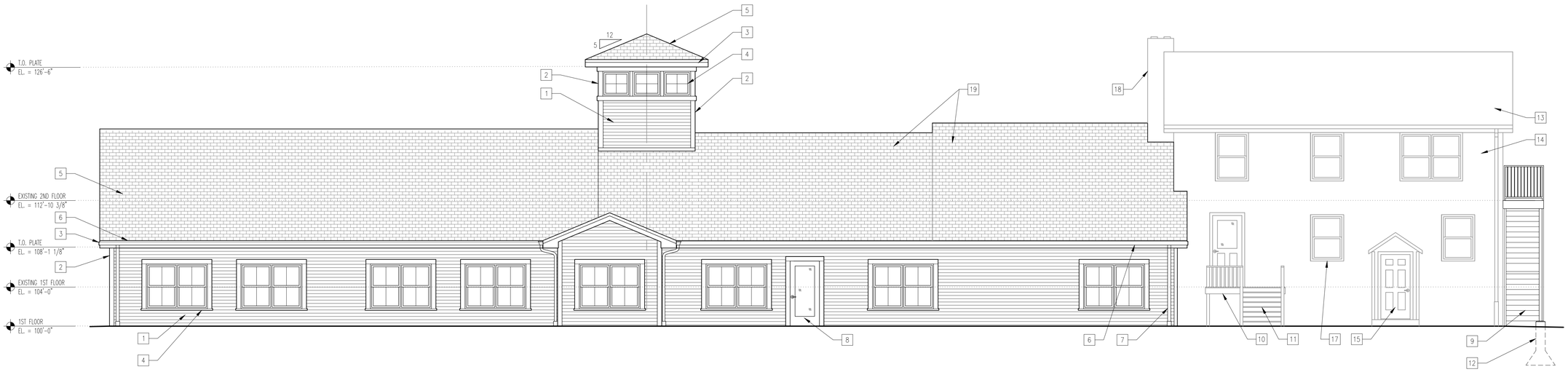
KEYNOTES:

1. FIBER CEMENT SIDING
2. FIBER CEMENT TRIM
3. FIBER CEMENT FASCIA
4. VINYL WINDOW WITH FIBER CEMENT TRIM
5. ASPHALT SHINGLES
6. GUTTER
7. DOWNSPOUT
8. DOOR WITH FIBER CEMENT TRIM
9. METAL STAIR
10. EXISTING DECK
11. EXISTING STAIRS
12. CONCRETE FOUNDATION
13. EXISTING ROOF
14. EXISTING HOUSE
15. EXISTING DOOR
16. EXISTING STRUCTURE BEYOND
17. EXISTING WINDOW
18. EXISTING CHIMNEY
19. NEW SHINGLES ON EXISTING ROOF DECK
20. COLUMN WITH DECORATIVE WRAP
21. EXISTING DECK AT FOREGROUND



1 FRONT ELEVATION
SCALE 1/8" = 1'-0"

0 1' 4' 8' 12' 16'



2 REAR ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

THIS DRAWING SCALE IS BASED ON PRINTING AT 24X36

RESIDENTIAL•COMMERCIAL•INSTITUTIONAL

PROJECT TEAM

ARCHITECT
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OWNER

OUR PLACE
ADULT GROUP HOUSING FACILITY
105 DURHAM ROAD
DOVER, NH 03820

MARK	DATE	DESCRIPTION
--	--	--

STATUS: PLANNING BOARD SUBMISSION

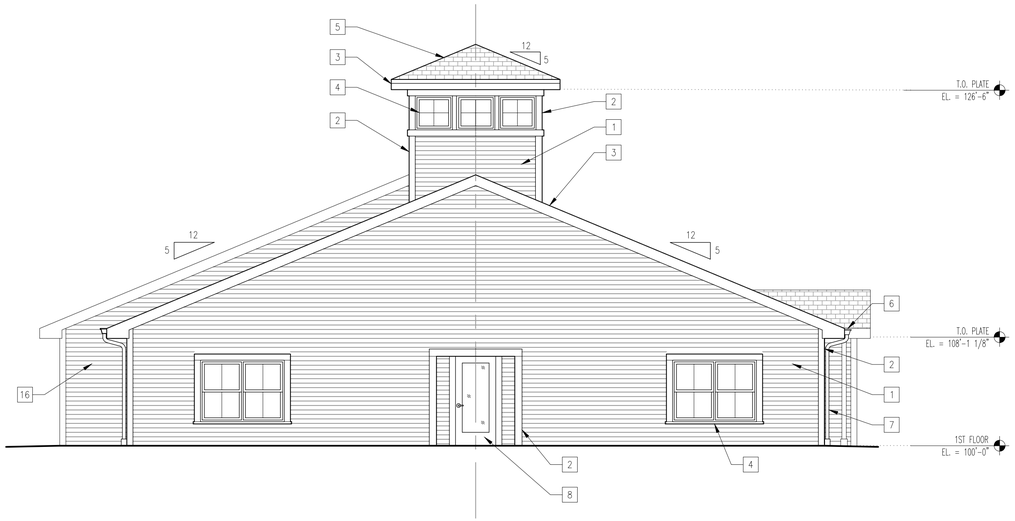
PROJECT NO:	2330
CAD DWG FILE:	2330 OUR PLACE CD'S.DWG
DRAWN LAST:	05/06/2024
DRAWN BY:	MK
CHK'D BY:	JM

SHEET TITLE

EXTERIOR ELEVATIONS

A3.0

SHEET - 17 OF -



1 RIGHT SIDE ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

KEYNOTES:

1. FIBER CEMENT SIDING
2. FIBER CEMENT TRIM
3. FIBER CEMENT FASCIA
4. VINYL WINDOW WITH FIBER CEMENT TRIM
5. ASPHALT SHINGLES
6. GUTTER
7. DOWNSPOUT
8. DOOR WITH FIBER CEMENT TRIM
9. METAL STAIR
10. EXISTING DECK
11. EXISTING STAIRS
12. CONCRETE FOUNDATION
13. EXISTING ROOF
14. EXISTING HOUSE
15. EXISTING DOOR
16. EXISTING STRUCTURE BEYOND
17. EXISTING WINDOW
18. EXISTING CHIMNEY
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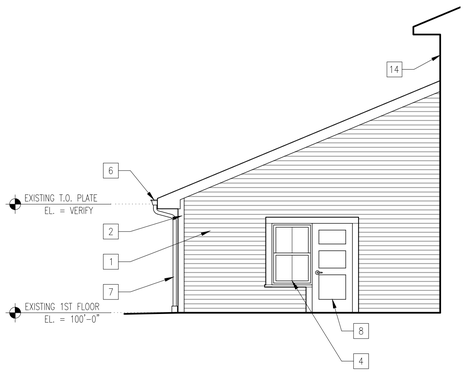
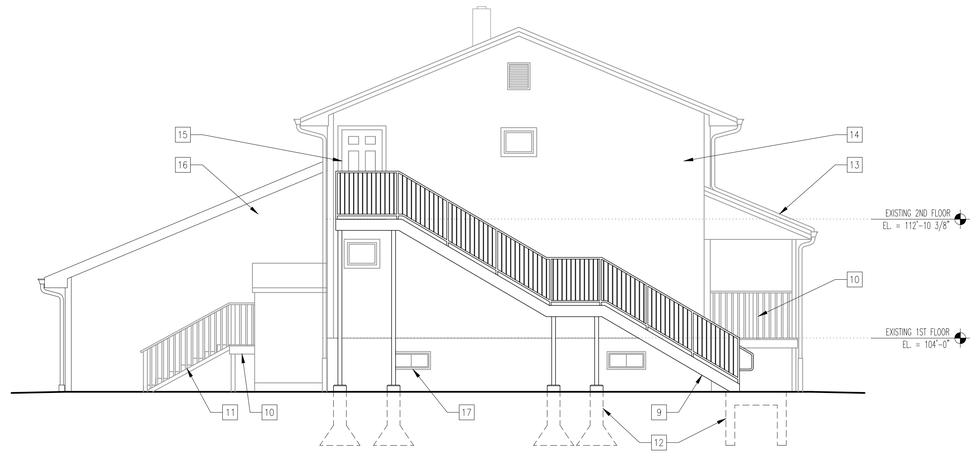
20. COLUMN WITH DECORATIVE WRAP
21. EXISTING DECK AT FOREGROUND
22. EXISTING STAIR AT FOREGROUND



2 LEFT SIDE ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'



3 LEFT SIDE ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

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PROJECT TEAM

ARCHITECT
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OWNER

OUR PLACE
ADULT GROUP HOUSING FACILITY
105 DURHAM ROAD
DOVER, NH 03820

MARK	DATE	DESCRIPTION
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STATUS: PLANNING BOARD SUBMISSION

PROJECT NO:	2330
CAD DWG FILE:	2330 OUR PLACE CD'S.DWG
DRAWN LAST:	05/06/2024
DRAWN BY:	MK
CHK'D BY:	JM

SHEET TITLE

EXTERIOR ELEVATIONS

A3.1

SHEET - 18 OF -

ArchitecturalConsulting Services

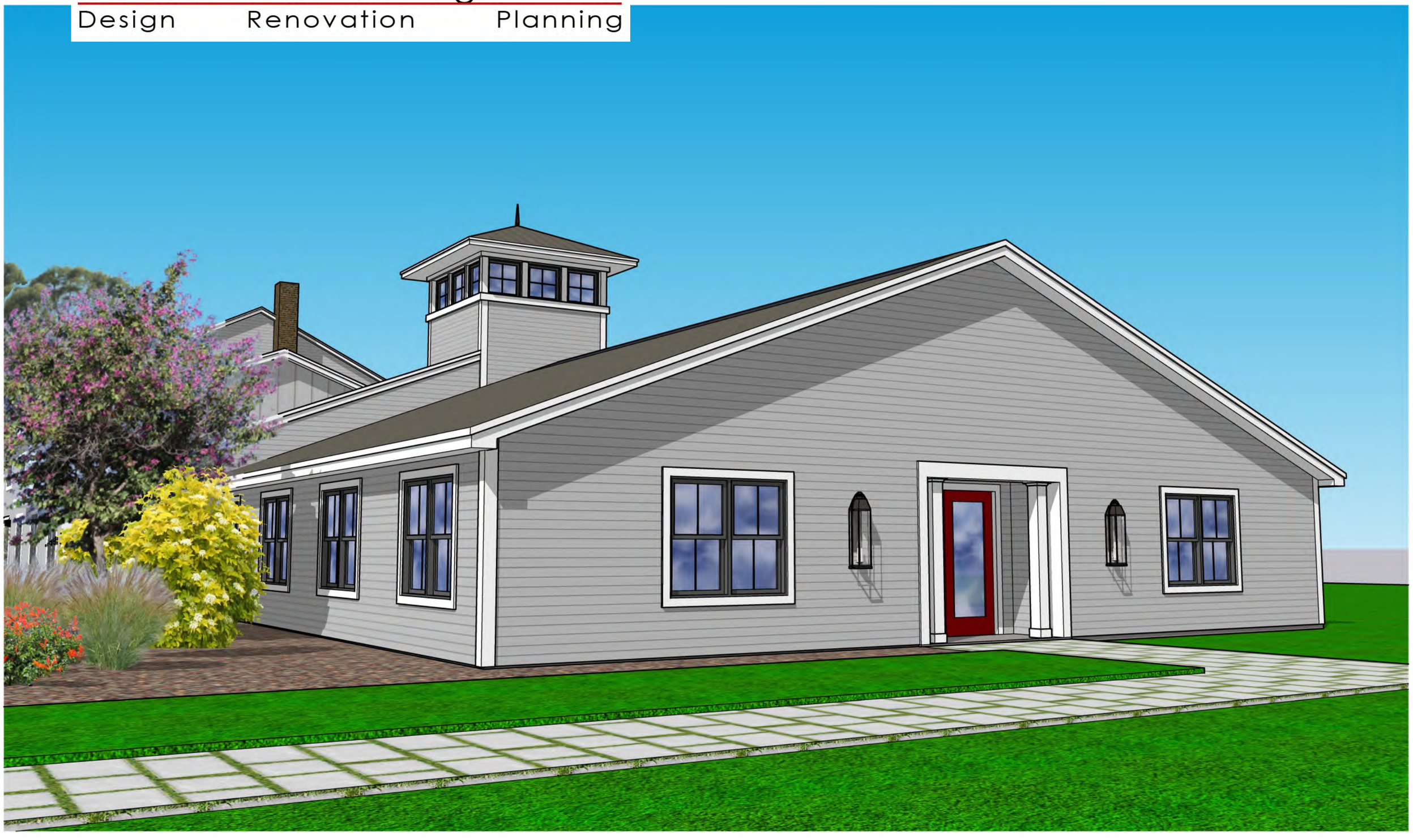
Design Renovation Planning

ArchitecturalConsulting Services

Design Renovation Planning

ArchitecturalConsulting Services

Design Renovation Planning



ArchitecturalConsulting Services

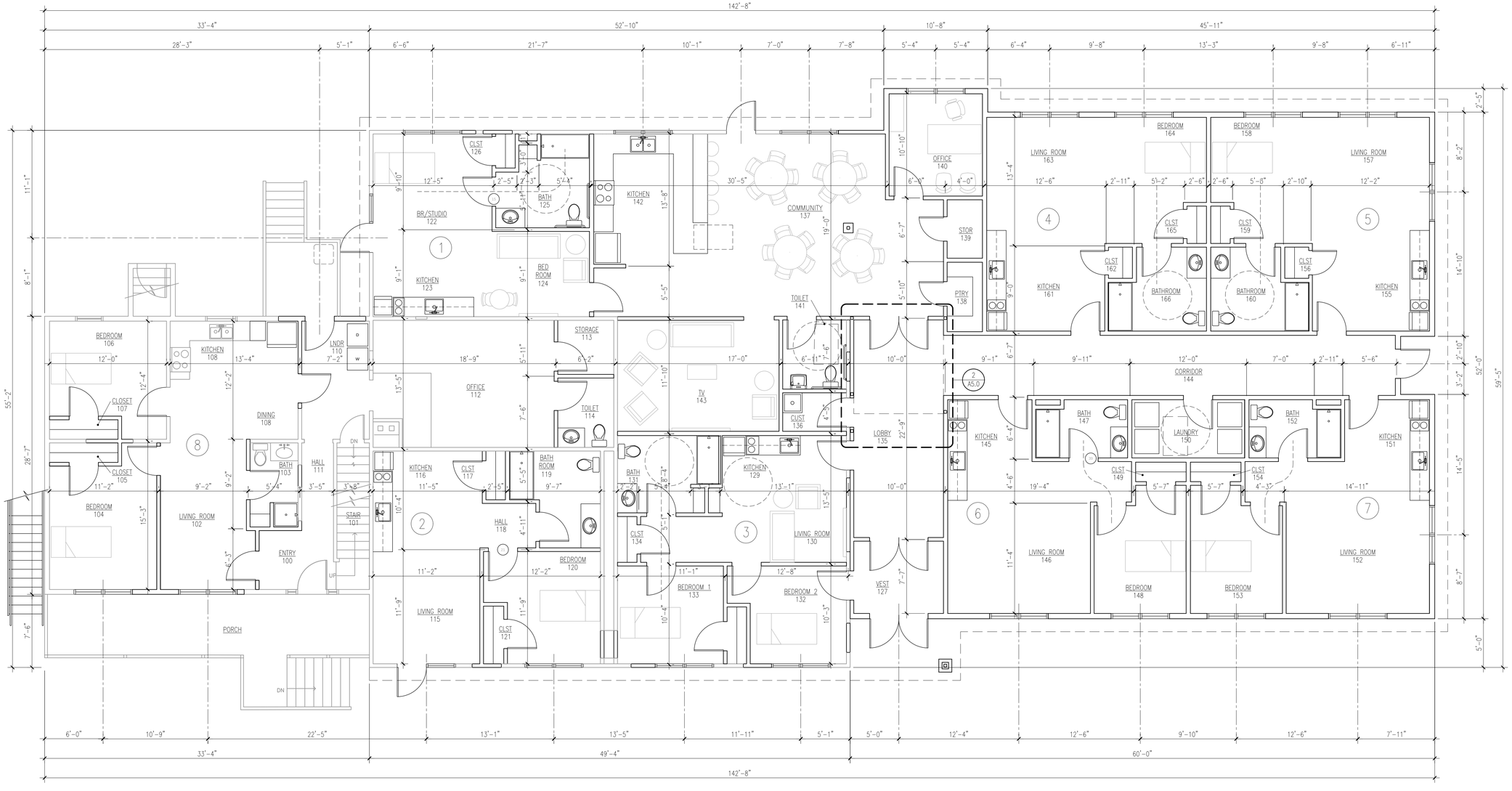
Design Renovation Planning

LEGEND:

EXISTING

EXISTING TO BE REMOVED

NEW WALL



1 FIRST FLOOR DIMENSION PLAN
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

REFER N

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SHEET TITLE

FIRST FLOOR PLAN
DIMENSION PLAN

A1.1

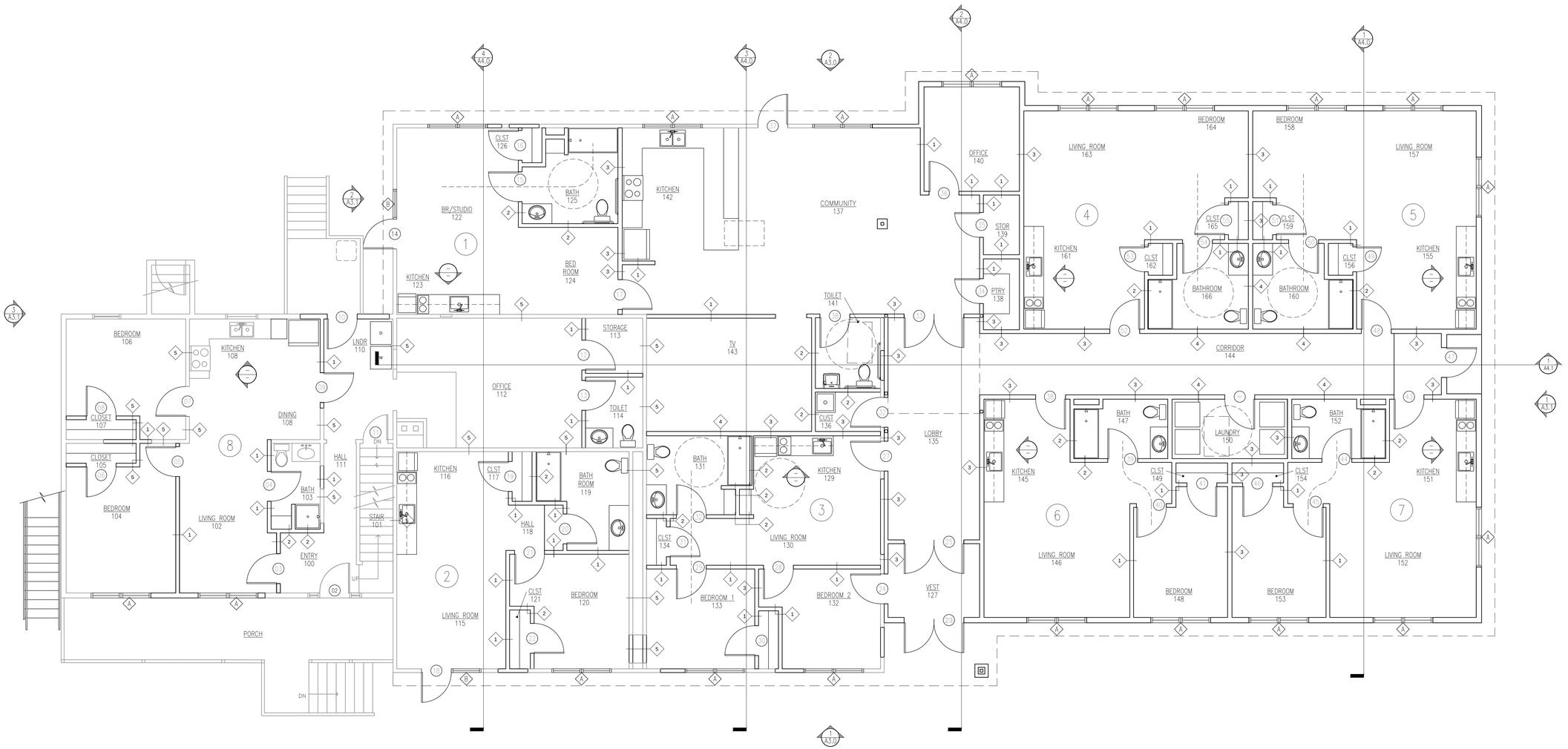
SHEET- 15 OF 19 -

LEGEND:

EXISTING

EXISTING TO BE REMOVED

NEW WALL



1 FIRST FLOOR KEYNOTE PLAN
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

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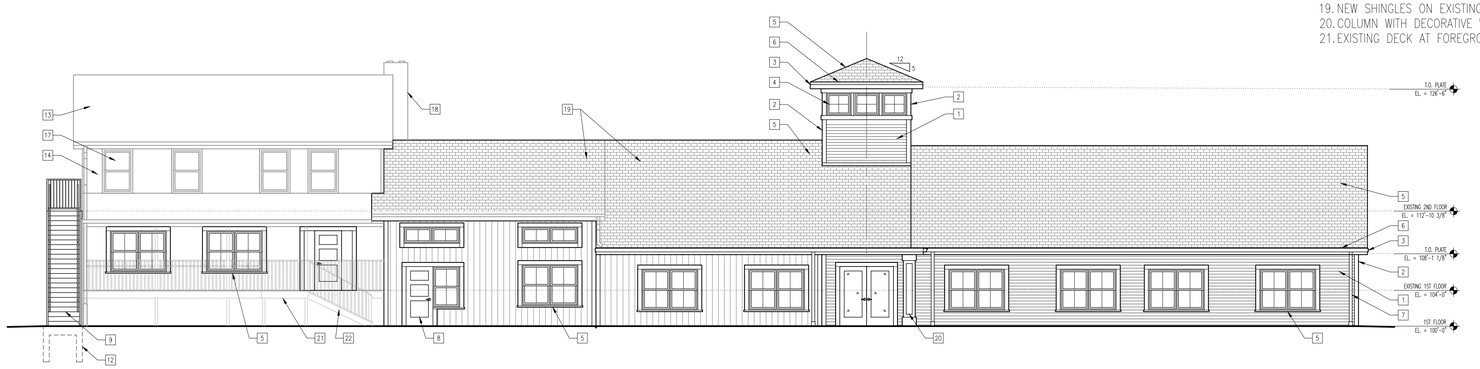
FIRST FLOOR PLAN
KEYNOTE PLAN

A1.2

SHEET - 16 OF 19 -

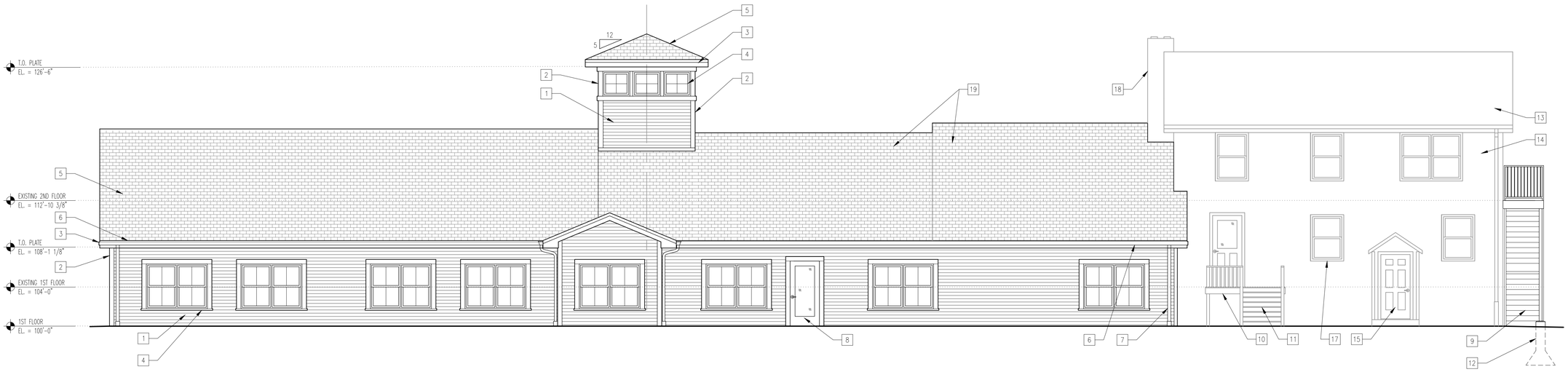
KEYNOTES:

1. FIBER CEMENT SIDING
2. FIBER CEMENT TRIM
3. FIBER CEMENT FASCIA
4. VINYL WINDOW WITH FIBER CEMENT TRIM
5. ASPHALT SHINGLES
6. GUTTER
7. DOWNSPOUT
8. DOOR WITH FIBER CEMENT TRIM
9. METAL STAIR
10. EXISTING DECK
11. EXISTING STAIRS
12. CONCRETE FOUNDATION
13. EXISTING ROOF
14. EXISTING HOUSE
15. EXISTING DOOR
16. EXISTING STRUCTURE BEYOND
17. EXISTING WINDOW
18. EXISTING CHIMNEY
19. NEW SHINGLES ON EXISTING ROOF DECK
20. COLUMN WITH DECORATIVE WRAP
21. EXISTING DECK AT FOREGROUND



1 FRONT ELEVATION
SCALE 1/8" = 1'-0"

0 1' 4' 8' 12' 16'



2 REAR ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

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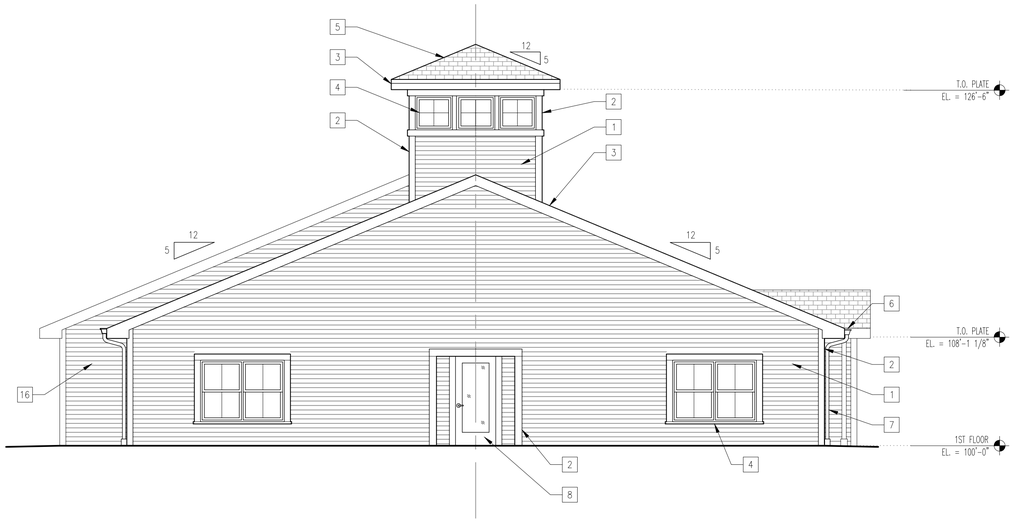
SHEET TITLE

EXTERIOR ELEVATIONS

A3.0

SHEET - 17 OF 19 -



1 RIGHT SIDE ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'

KEYNOTES:

1. FIBER CEMENT SIDING
2. FIBER CEMENT TRIM
3. FIBER CEMENT FASCIA
4. VINYL WINDOW WITH FIBER CEMENT TRIM
5. ASPHALT SHINGLES
6. GUTTER
7. DOWNSPOUT
8. DOOR WITH FIBER CEMENT TRIM
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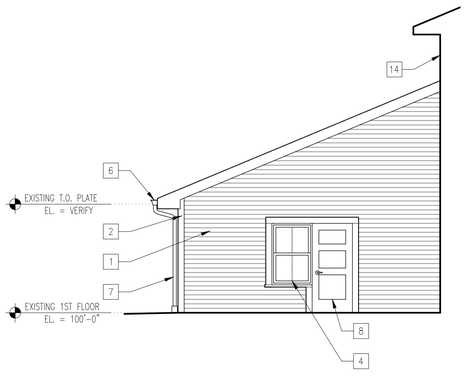
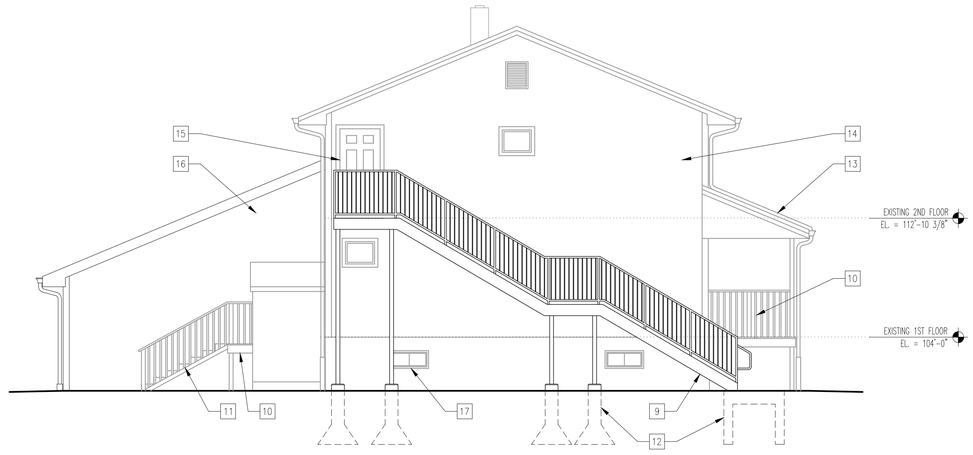
11. EXISTING STAIRS
12. CONCRETE FOUNDATION
13. EXISTING ROOF
14. EXISTING HOUSE
15. EXISTING DOOR
16. EXISTING STRUCTURE BEYOND
17. EXISTING WINDOW
18. EXISTING CHIMNEY
19. NEW SHINGLES ON EXISTING ROOF DECK
20. COLUMN WITH DECORATIVE WRAP
21. EXISTING DECK AT FOREGROUND
22. EXISTING STAIR AT FOREGROUND



2 LEFT SIDE ELEVATION
SCALE 3/16" = 1'-0"

0 1' 4' 8' 12' 16'



3 LEFT SIDE ELEVATION
SCALE 3/16" = 1'-0"

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SHEET - 18 OF 19 -