Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

June 23, 2021

TFM Project No: 47388.11

Juliet T. H. Walker, AICP
Planning Director
Planning Department, City Hall
1 Junkins Avenue
Portsmouth, NH 03801

Re: Site Plan Review for Peverly Hill Road Condominiums, Tax Map 242, Lot 4

Dear: Juliette,

On behalf of our client, Green & Company, we are submitting the following plans and materials for review by the Planning Board. Included with this letter are the following materials:

- Letter of Authorization
- Abutters List
- Site Plan Check List
- Subdivision Check List
- Waiver Request
- Traffic Memorandum (Traffic Evaluation)
- Traffic Memorandum (Traffic Calming)
- Traffic Peer Review
- Sewer Calculations
- Architectural Housing Plans
- Drainage Report
- Set of the "Peverly Hill Road Condominiums", Peverly Hill Road, Portsmouth, NH, Tax Map 242, Lot 4, Dated April 19, 2021.

This proposal is for an Open Space Planned Unit Development Condominium Site Plan, consisting of 56 single-family dwelling units and 2,950-ft of public roadway. Associated improvements include underground utility installation, (2) recreational pocket parks, a public pike path, landscaping, and open space.

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
03801
T(603) 472-4488 www.tfmoran.com

TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH
T(603) 431-2222

This project has had several reviews and/or meeting with City Staff, TAC and the Planning Board. A summary of our meetings to date, in order, is listed below.

- August 20, 2020 - Preliminary meeting with the Planning Board
- September 3, 2020 - Meeting with Mark Newport of Portsmouth Police Department
- September 4, 2020 - Meeting with Patrick Howe of Portsmouth Fire Department
- September 17, 2020 - Preliminary Conceptual Consultation with Planning Board
- October 13, 2020 - TAC Work Session
- October 30, 2020 - Meeting with Planning Department Staff
- December 11, 2020 - Michael Cumo review of Wetland Delineation
- December 21, 2020 - Meeting with Planning Department Staff
- February 9, 2021 - TAC Work Session
- May 4, 2021 - TAC Meeting
- May 12, 2021 - Meeting with Planning Department Staff
- July 6, 2021 – TAC Meeting (Pending)

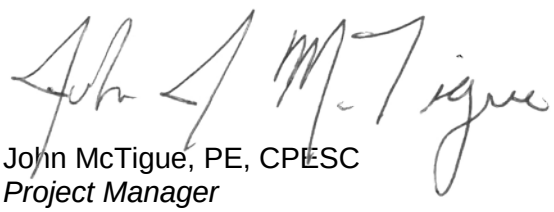
Based comments from the TAC and Planning staff during those meetings we have revised the plans as follows:

- We removed the hammer head drive and limited the development to the smaller area abutting Peverly Drive.
- Reduced paved width of loop road from 26’ to 22.’
- Created an offset intersection at the loop road to prevent a long straight thru roadway.
- Changed 5’ wide asphalt sidewalk to 5 1/2’ wide concrete.
- Increased the 2’ wide grass strip between roadway and sidewalk to 4 ½’.
- Added horizontal curves to the loop road to prevent long straight sections.
- Added a raised crosswalk at the bike path entrance.
- Provided a 10’ wide equipment access (15’ wide easement) to drainage BMP’s.
- Added pavement markings to delineate bike route to bike path.
- Revised street lighting to comply with City preferences.
- Added all utilities to roadway profiles.
- Added underdrain at bottom of slope adjacent to cemetery.

Should we not complete the review process with TAC on the July 6th, 2021 meeting, we intend to postpone this application.

We look forward to discussing this project with you and the rest of the Planning Board at the July 15th, 2021 meeting.

Sincerely,
MSC a division of TFMoran, Inc.



John McTigue, PE, CPESC
Project Manager

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. 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 Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification. STOKEL SB & NA TRUST. STOKEL PHILIP J

Name of Owner/Applicant: Green & Company Building & Development Corp. Date Submitted: 6/23/21

Phone Number: 603-964-7572 E-mail: mgreen@greenandcompany.com

Site Address: 83 Peverly Hill Road Map: 242 Lot: 4

Zoning District: Single Residence A (SRA) & B (SRB) Lot area: 4,604,509 sq. ft.

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
✓	Fully executed and signed Application form. **(2.5.2.3)**	Submitted online and (1) copy to City	N/A
✓	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(2.5.2.8)**	Submitted online	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Statement that lists and describes "green" building components and systems. **(2.5.3.1A)**	N/A	☐
✓	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	Submitted online and (1) copy to City	N/A
✓	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	See sheet S-01	N/A
✓	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	See sheet C-00	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	See sheet S-01	N/A
✔	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	See sheet C-00	N/A
✔	List of reference plans. **(2.5.3.1G)**	See sheet S-01	N/A
✔	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	See sheet C-00/C-01	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	Required on all plan sheets	N/A
✔	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
✔	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	Required on all plan sheets	N/A
✔	Plans shall be drawn to scale. **(2.5.4.1D)**	Required on all plan sheets	N/A
✔	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
✔	Wetlands shall be delineated by a NH certified wetlands scientist. **(2.5.4.1E)**	S-01	N/A
✔	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Required on all plan sheets	N/A
✔	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Required on all plan sheets	N/A
✔	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Source and date of data displayed on the plan. **(2.5.4.2D)**	Required on all plan sheets	N/A
✔	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Required on all plan sheets See sheet C-03	N/A
✔	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	See sheet C-03	N/A
✔	Plan sheets showing landscaping and screening shall also include the following additional notes: a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." **(2.13.4)**	See sheet C-45	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
✔	a. Surveyed plan of site showing existing natural and built features;	S-01	☐
✔	b. Zoning boundaries;	S-01	☐
✔	c. Dimensional Regulations;	S-05	☐
✔	d. Wetland delineation, wetland function and value assessment;	S-01	☐
✔	e. SFHA, 100-year flood elevation line and BFE data.	S-01	☐
	2. Buildings and Structures: (2.5.4.3B)		
✔	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	Attached	☐
✔	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	Attached	☐
✔	c. Total Floor Area;	Attached	☐
✔	d. Number of Usable Floors;	Attached	☐
✔	e. Gross floor area by floor and use.	Attached	☐
	3. Access and Circulation: (2.5.4.3C)		
✔	a. Location/width of access ways within site;	C-04 - C-12	☐
✔	b. Location of curbing, right of ways, edge of pavement and sidewalks;	C-04 - C-11	☐
✔	c. Location, type, size and design of traffic signing (pavement markings);	C-04 - C-11	☐
✔	d. Names/layout of existing abutting streets;	S-01	☐
☐	e. Driveway curb cuts for abutting prop. and public roads;	C-02 & C-04	☐
✔	f. If subdivision; Names of all roads, right of way lines and easements noted;	S-03	☐
☐	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	N/A (Fire truck turning provided)	✔
	4. Parking and Loading: (2.5.4.3D)		
✔	a. Location of off street parking/loading areas, landscaped areas/buffers;	C-04 - C-11	☐
✔	b. Parking Calculations (# required and the # provided).	C-03	☐
	5. Water Infrastructure: (2.5.4.3E)		
✔	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	C-27 - C-33	☐
☐	b. Location of wells and monitoring wells (include protective radii).	N/A	☐
	6. Sewer Infrastructure: (2.5.4.3F)		
✔	a. Size, type and location of sanitary sewage facilities & Engineering data.	C-12 - C-15 & C-27 - C-33	☐
	7. Utilities: (2.5.4.3G)		
✔	a. The size, type and location of all above & below ground utilities;	C-12 - C-15 & C-27 - C-33	☐
✔	b. Size type and location of generator pads, transformers and other fixtures.	C-27 - C-33	☐

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**8. Solid Waste Facilities: (2.5.4.3H)**		
☑	a. The size, type and location of solid waste facilities.	C-12 - C-15 & C-27 - C-33	☐
	9. Storm water Management: (2.5.4.3I)		
☑	a. The location, elevation and layout of all storm-water drainage.	C-17 - C-25	☐
	10. Outdoor Lighting: (2.5.4.3J)		
☑	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.	C-56 - C-63	☐
☑	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	C-56 - C-63	☐
	12. Landscaping: (2.5.4.3K)		
☑	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	C-46 - C-53	☐
☐	**b.** Location of any irrigation system and water source.	TBD	☐
	13. Contours and Elevation: (2.5.4.3L)		
☑	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	C-17 - C-25	☐
	14. Open Space: (2.5.4.3M)		
☑	a. Type, extent and location of all existing/proposed open space.	S-05	☐
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	S-01	☐
☑	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	C-4 - C-11 (Road shoulders)	☐
☐	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**	N/A	☐
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Traffic Impact Study or Trip Generation Report, as required. (*Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application*) **(3.2.1-2)**	Traffic Memo	☐
✔	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Stormwater Management Plan/Report	☐
✔	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	In wellhead protection area. To be provided in final drainage report.	☐
✔	Indicate where measures to minimize impervious surfaces have been implemented. **(7.4.3)**	Narrowed roadways	☐
✔	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	C-03	☐
☐	Stormwater Management and Erosion Control Plan. (*Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application*) **(7.4.4.1)**	C-17 - C-25 & C-35 - C-44. Final report to be provided in Planning Board submittal.	☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**	C-00	☐
✔	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. **(2.5.3.2B)**	a. See Stormwater Report b. See Sewer Report c. N/A d. Traffic Memo e. N/A f. C-17 to C-25 & C-35 to C-43 g. NHB21-0943 h. S-01 i. N/A	☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	Utility Will Serve Letters Submitted as Separate Attachments.	☐
✔	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	C-00	☐

Applicant's Signature: _____ **Date:** 01/23/21

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: STOKEL SB & NA TRUST. STOKEL PHILIP J Date Submitted: 6/23/2021

Applicant: Green & Company Building & Development Corp.

Phone Number: 603-964-7572 E-mail: mgreen@greenandcompany.com

Site Address 1: 83 Peverly Hill Road Map: 242 Lot: 4

Site Address 2: _____ Map: _____ Lot: 4

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
✓	Completed Application form. **(III.C.2-3)**	Submitted online and (1) copy to City	N/A
✓	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(III.C.4)**	Submitted online and (1) copy to City	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	C-00	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	N/A
✓	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	N/A
✓	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	
✓	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	S-01 - S-05	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	S-01 - S05	☑ Preliminary Plat ☑ Final Plat	
	Preliminary Plat Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	C-03 - C-33	☑ Preliminary Plat ☑ Final Plat	
✓	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	C-12 - C-15	☑ Preliminary Plat ☑ Final Plat	
✓	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	S-05, Note 3	☑ Preliminary Plat ☑ Final Plat	
✓	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	S-01 (existing) C-17 - C-25 (proposed)	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	C-00	☐ Preliminary Plat ☑ Final Plat	
	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A (Flood Zone X)	☐ Preliminary Plat ☑ Final Plat	
✓	Location of all permanent monuments. **(Section V.12)**	S-03	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**1. Basic Requirements: (VI.1)**	All sheets	
☑	a. Conformity to Official Plan or Map	N/A	
☐	b. Hazards	S-01	
☑	c. Relation to Topography	S-01	
☑	d. Planned Unit Development		
☐	**2. Lots: (VI.2)**	S-05	
☑	a. Lot Arrangement	S-05	
☑	b. Lot sizes	S-05	
☑	c. Commercial and Industrial Lots		
☐	**3. Streets: (VI.3)**	a. S-05	
☑	a. Relation to adjoining Street System	b. S-05	
☑	b. Street Rights-of-Way	c. S-05	
☑	c. Access	d. S-05	
☐	d. Parallel Service Roads	e. C-12 - C-15	
☐	e. Street Intersection Angles	f. N/A	
☐	f. Merging Streets	g. C-12 - C-15	
☑	g. Street Deflections and Vertical Alignment	h. N/A	
☐	h. Marginal Access Streets	i. N/A	
☐	i. Cul-de-Sacs	j. C-12 - C-15	
☑	j. Rounding Street Corners	k. TBD	
☐	k. Street Name Signs	l. TBD	
☐	l. Street Names	m. N/A	
☐	m. Block Lengths	n. N/A	
☐	n. Block Widths	o. C-12-C-15 & C-17-C-24	
☑	o. Grade of Streets	p. C-04 - C-11	
☑	p. Grass Strips		
☑	**4. Curbing: (VI.4)**	C-04 - C-11	
☑	**5. Driveways: (VI.5)**	C-04 - C-11	
☑	**6. Drainage Improvements: (VI.6)**	C-17 - C-25	
☑	**7. Municipal Water Service: (VI.7)**	C-27 - C-33	
☑	**8. Municipal Sewer Service: (VI.8)**	C-12- C-15 & C-27 - C-33	
☑	**9. Installation of Utilities: (VI.9)**	C-27 - C-33	
☐	a. All Districts		
☐	b. Indicator Tape		
☐	**10. On-Site Water Supply: (VI.10)**	C-12- C-15 & C-27 - C-33	
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**	C-12- C-15 & C-27 - C-33	
☐	**12. Open Space: (VI.12)**	a. S-05	
☑	a. Natural Features	b. C-46 - C-54	
☑	b. Buffer Strips	c. S-05	
☑	c. Parks	d. C-46 - C-54	
☑	d. Tree Planting		
☐	**13. Flood Hazard Areas: (VI.13)**	N/A	
☐	a. Permits		
☐	b. Minimization of Flood Damage		
☐	c. Elevation and Flood-Proofing Records		
☐	d. Alteration of Watercourses		
☑	**14. Erosion and Sedimentation Control (VI.14)**	C-42 - C-51	

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☐ ☑ ☑	**15. Easements (VI.15)** a. Utilities b. Drainage	S-01 - S-05	
☑	**16. Monuments: (VI.16)**	S-01 - S-05	
☑	**17. Benchmarks: (VI.17)**	S-01 - S-05	
☑	**18. House Numbers (VI.18)**	S-05 (Final numbers TBD)	

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☑	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	Yes	
☑	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	Yes	
☑	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards	Yes	
☑	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction	Yes	

Applicant's/Representative's Signature: _____ **Date:** 6/23/2021

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

June 23, 2021

Mr. Dexter Legg, Chair
Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, NH 03801

RE: Waiver Requests for Condominium Development, Parson Woods Condominium LLC, Tax Map 242, Lot 4

Dear Chairman Legg:

On behalf of our client, Green and Company, we respectfully request the following waivers as part of the submittal of the Village at Banfield Woods Condominium Development:

Waiver Request: for Subdivision Rules and Regulations, Residential Street Minimum Standards (page 36), requiring 32' of pavement width.

Explanation: The pavement width of 26' at the entrance of the subdivision and 22' within the inner loop, is provided pursuant to City Staff recommendations. This recommendation is based on "City of Portsmouth Complete Street Design Guidelines," dated June 2017. Page 8 of this document suggests a pavement width of 20' for a neighborhood slow street, which best describes the street for this Planned Unit Development. A width of 26' is provided to meet fire code standards for roads over 750' long. Two (2) access points are provided for the looped section of road, where the width is reduced to 22'.

Waiver Request: For Subdivision Rules and Regulations Section VI(3)(b), "The minimum right-of-way for main thoroughfares shall be as shown on the City's Master Plan or Official Map and shall, when not indicated on such Master Plan or Official Map, be not less than sixty (60) feet; for residential streets, fifty (50) feet."

Explanation: The ROW width of 40' was provided pursuant to City Staff recommendations. This recommendation is based on the narrower road width and by the applicant's desire to avoid impacting the remainder of the property. This is in alignment with a Planned Unit Development.

Waiver Request: For Site Plan Review Regulations Section 2.5.4.3(c), "Use current AASHTO truck turning templates descriptions with the minimum vehicle allowed being a WB-50, unless otherwise approved by the TAC."

Explanation: The proposed development is residential, and the largest vehicle anticipated to travel the roadway is a Portsmouth Fire Truck (H3635). This vehicle template was applied in the truck turning analysis.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Parson Woods Condominium LLC Submittal
83 Peverly Hill Road – Tax Map 242 Lot 4
Project #47388.11

June 23, 2021

We look forward to your review of these waiver requests at the next Planning Board hearing.

Respectfully,
TFMoran, Inc.

Jack McTigue, PE, CPESC
Project Manager

TFM Since 1968

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Abutters List

Green & Company
83 Peverly Hill Rd, Portsmouth, NH
April 19, 2021
47388-11

	Assessors Map		Abutter Name	Mailing Address
	Map	Lot		
1	LOCUS 242	4	S B & N A STOKEL TRUST & PHILIP J. STOKEL	83 PEVERLY HILL ROAD PORTSMOUTH, NH 03801
2	165	14	BOSTON & MAINE CORPORATION	IRON HORSE PARK HIGH STREET NORTH BILLERICA, MA 01862
3	232	87	SUSAN L. DIXON	68 WIBIRD STREET PORTSMOUTH, NH 03801
4	232	88	NATHAN M. & SHERRI M. TARLETON	74 LEAVITT AVENUE PORTSMOUTH, NH 03801
5	232	92	DYANNA L. INNES	78 PEVERLY HILL ROAD PORTSMOUTH, NH 03801
6	232	93	KENNETH T. BLACK	82 PEVERLY HILL ROAD PORTSMOUTH, NH 03801
7	232	95	CITY OF PORTSMOUTH DPW	PO BOX 628 PORTSMOUTH, NH 03802
8	242	1	STATE OF NEW HAMPSHIRE FISH & GAME DEPT	11 HAZEN DRIVE CONCORD, NH 03301
9	242	3	NEW HOPE BAPTIST CHURCH	PO BOX 1473 PORTSMOUTH, NH 03802
10	242	5	ROMAN CATHOLIC BISHOP OF MANCHESTER CHURCH OF IMMAC	153 ASH STREET MANCHESTER, NH 03104
11	243	50	ASRT, LLC	266 MIDDLE STREET PORTSMOUTH, NH 03801
12	243	51	AJEI REAL ESTATE LLC	163 SPINNEY ROAD PORTSMOUTH, NH 03801
13	243	52	CITY OF PORTSMOUTH DPW	PO BOX 628 PORTSMOUTH, NH 03802
14	255	5	THOMAS E. & MARYBETH B. REIS AND JAMES B. & MEEGAN C. REIS	305 PEVERLY HILL ROAD PORTSMOUTH, NH 03801
15	255	8	MERRIMAC VALLEY HOMES, INC.	1794 BRIDGE STREET, UNIT 6 DRACUT, MA 01826
16	256	1	SWIFT WATER GIRL SCOUT COUNCIL	ONE COMMERCE DRIVE BEDFORD, NH 03110
17	265	2	MARK H. ODIORNE	520 BANFIELD ROAD PORTSMOUTH, NH 03801
18	265	2A	DAVID W. ECKER	875 BANFIELD ROAD PORTSMOUTH, NH 03801
19	265	2B	LEE ANN & RICHARD M. RILEY	470 BANFIELD ROAD PORTSMOUTH, NH 03801
20	265	2C	APOSTOLIC CHURCH OF J CHRIST	500 BANFIELD ROAD PORTSMOUTH, NH 03801
21	265	2D	CITY OF PORTSMOUTH DPW	PO BOX 628 PORTSMOUTH, NH 03802
22	265	2E	CITY OF PORTSMOUTH	1 JUNKINS AVENUE PORTSMOUTH, NH 03801

Civil Engineers / Surveyor	TFMoran, Inc.	170 Commerce Way - Suite 102 Portsmouth, NH 03801
Environmental / Wetlands Scientist	Gove Environmental Services, Inc.	8 Continental Drive, Unit H Exeter, NH 03833

DECLARATION OF CONDOMINIUM
OF
PEVERLY WOODS CONDOMINIUM, PORTSMOUTH, NEW HAMPSHIRE

_____, a duly organized New Hampshire limited liability company with an address of 11 Lafayette Road, North Hampton, New Hampshire 03862, and its successors or assigns, ("Declarant"). The covenants and restrictions provided for herein may also be enforced by Green & Co. Building & Development Corp., a Massachusetts corporation with a place of business at 11 Lafayette Road, North Hampton, New Hampshire 03862 ("Green & Company"), who is the builder of the Development.

ARTICLE 1
SUBMISSION OF PROPERTY

The Declarant hereby submits land located in the City of Portsmouth, Rockingham County, New Hampshire, consisting of approximately 107 acres, more or less, situated on Peverly Hill Road, Portsmouth, New Hampshire, and more particularly described in **Exhibit A** hereto ("Land"), together with the buildings and other improvements heretofore or hereafter constructed thereon, and all easements, rights and appurtenances thereto described in said **Exhibit A**, or as shown on plans of said land, all of which are owned by the Declarant, to the provisions of the Condominium Act, in order to create a plan of condominium ownership in such property containing up to fifty six (56) units, as shown on the following plan; See plan of land entitled, "Condominium Site Plan," project for "Peverly Hill Road, Portsmouth, NH 03801" prepared by **TFM Engineering, Inc., dated _____ with revision # _____ dated and recorded in the Rockingham County Registry of Deeds as Plan #D-_____.**

ARTICLE 2
DEFINITIONS

As provided in Section 12, I of the Condominium Act capitalized terms not otherwise defined in this Declaration or in the Bylaws attached hereto as Exhibit B, as amended from time to time, shall have the meanings specified in Section 3 of the Condominium Act. The following terms are expressly defined herein:

(a) "Building" means any building constructed on a Unit or on the Limited Common Area assigned to a Unit as permitted herein, which Buildings shall be owned by the Unit Owner of the Unit.

(b) "Bylaws" mean the Bylaws provided for the self-government of the Condominium attached hereto, as amended from time to time.

(c) "Common Area" means all parts of the Property other than the Units, as more fully set forth in Article 5 of this Declaration and in the Site Plans, and includes the Limited Common Area.

(d) "Condominium" means "Peverly Woods Condominium", the condominium established by this Declaration.

(e) "Condominium Act" means Chapter 356-B of the New Hampshire Revised Statutes Annotated, as amended.

(f) "Condominium Plan" or "Plans" or "Plat" means the plan entitled Condominium Site Plan," project for, "Peverly Woods, Portsmouth, NH 03811," prepared by **TFM Engineering, Inc., dated _____ with revision # _____ dated and recorded in the Rockingham County Registry of Deeds as Plan #D-_____,** and any revisions thereof, recorded in the Registry simultaneously herewith or recorded subsequently pursuant to the Condominium Act, and any updated or amended site or floor plans.

(g) "Limited Common Area" means all those certain portions of the Common Area which are assigned to each Unit, 15 feet on either side of each unit, 30 feet behind each unit and 20 feet in front of each unit, or to the edge of pavement, whichever is less. Such Limited Common Area shall be restricted for use by the owner(s) of each such Unit, as more fully set forth in this Declaration and in the Plans, and additional limited common area as Declarant may determine in the future.

(h) "Majority of the Owners" means the Owners of the Units to which more than fifty one percent (51%) of the votes in the Unit Owners' Association appertain. Any specified percentage of the Owners means the Owners of Units to which the specified percentage of the votes in the Unit Owners' Association appertain.

(i) "Owner" or "Unit Owner" means any Person or Persons who holds or hold fee simple title to a Unit. No mortgagee shall be deemed to be an Owner until such mortgagee has acquired such title pursuant to foreclosure or any procedure in lieu of foreclosure.

(j) "Percentage Interest" or "Undivided Percentage Interest" means the interest of each Unit in the Common Area as set forth in **Exhibit E** of this Declaration and as may be amended hereafter, which may be expressed as a fraction.

(k) “Registry” means the Rockingham County Registry of Deeds, or any then applicable real property recording office.

(l) “Property” means the Land and the buildings and all other improvements heretofore and hereafter constructed thereon, and all easements, rights and appurtenances thereto, and all articles of personal property intended for common use in connection therewith which are submitted to the Condominium by this Declaration, as amended from time to time.

(m) “Rules” means those rules and regulations adopted from time to time by the Association relative to the use of the Condominium, provided they are not in conflict with the condominium Act, the Declaration or the Bylaws, the City of Portsmouth Zoning Ordinance and the conditions on the plat approved by the Planning Board.

(n) "Site Plan" means the plat of the land submitted to the Condominium Act by this Declaration, which plat is being recorded in the Registry simultaneously herewith. Such term shall include, as appropriate, any such plat recorded in the Registry: (i) subsequently pursuant to RSA 356-B: 20, III, and 356-B:21 or any other provisions of the Condominium Act, or (ii) subsequently for the purpose of amending any previously recorded plat, as the case may be.

(o) "Unit" means a unit as defined by the Condominium Act, which is bounded and described (i) as shown on the Condominium Site Plan; (ii) Floor Plan; and (iii) as provided in Article 4, below.

(p) “Unit Owners’ Association” or “Association” means all of the Owners acting as a group in accordance with this Declaration and Bylaws.

ARTICLE 3
STATUTORY REQUIREMENTS

The following information is provided pursuant to the provisions of the Condominium Act:

(a) Name: The name of the Condominium is “Peverly Woods Condominium.”

(b) Location: The Condominium is located on Peverly Hill Road, City of Portsmouth, Rockingham County, New Hampshire.

ARTICLE 4
DIVISION OF PROPERTY

The property, together with all buildings and improvements thereon, is hereby divided into fifty sixty (56) separate freehold condominium units, hereinafter referred to as Units #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #36, #37, #38, #39, #40, #41, #42,

#43, #44, #45, #46, #47, #48, #49, #50, #51, #52, #53, #54, #55, and #56. The layout, numerical designation, dimensions and area of each Unit are shown on the Condominium Site Plan.

A. The boundaries of the Units are defined as follows:

The Units shall be Land Units, the vertical boundaries being coextensive with the area identified as such Unit on the Site Plan and the horizontal boundaries being from the center of the earth to the upper edge of the atmosphere and includes the entirety of any building or addition to buildings or improvements to be constructed on the land and includes all rights above the land and any existing building and improvements or any building or improvements constructed within the Land Unit. For the purposes of RSA 356-B, the Condominium Plan shall serve as the Floor Plan for each Land Unit declared herein. In the event a building is constructed within the Land Unit, upon completion of the foundation, a Floor Plan, certified as required by RSA 356-B:20 shall also be recorded, provided the boundary of the Land Unit shall remain the unit boundary.

ARTICLE 5
DESCRIPTION OF COMMON AREAS

Common Areas are set forth on the Condominium Plan Common Areas include, but are not limited to, the following:

SECTION A. All open space, common utilities, walkways, and paths.

SECTION B. All roadways servicing the Condominium and shown on the Plat shall be public and shall be maintained by the City of Portsmouth.

ARTICLE 6
DESCRIPTION OF LIMITED COMMON AREA

Limited Common Area (herein "LCA") is defined as a portion of the Common Area which has been reserved for the exclusive use of the specific Unit or Units to which the Limited Common Area is assigned.

Limited Common Area shall be assigned as set forth in these Condominium Instruments. The "Condominium Instruments" is a term collectively referring to the Declaration, the By-Laws, and the Condominium Site Plan, and the building envelopes depicted on the Condominium Site Plan and recorded pursuant to the provisions of the Condominium Act. To the extent there is a conflict within the Condominium Instruments regarding the assignment of the Limited Common Area to a specific Unit, the assignment of Limited Common Area as set forth on the Condominium Plan shall control.

Reassignment of the LCA is expressly permitted if the reassignment complies with the Condominium Instruments and RSA 356-B, as amended. However, LCA may not be reassigned without the express written permission of the Unit Owner(s) who possesses the exclusive use of the LCA. Any reassignment of the LCA must be recorded in the Rockingham Registry of Deeds to be effective.

It is the intention of the Declarant that the following portions of the Common Area shall be exclusively assigned as LCA:

1. The land shown on the Condominium Plan and which includes the septic system serving the appurtenant units and the appurtenant driveways.

2. All piping, wiring, cable, facilities, improvements, utilities, propane tanks, septic tank or other portions of the Common Area contained within any Limited Common Area shall be exclusively assigned to such appurtenant Units, except the piping, duct work or other improvements which serve the condominium as a whole.

SECTION A. Subject to the restrictions, easements, covenants, conditions, and terms set forth in these Condominium Instruments, the Condominium Act, the ordinance of the City of Portsmouth, and any documents of record, the Owner of the Unit which possesses the assignment and exclusive use of Limited Common Area shall be permitted to encroach upon, use and possess the Limited Common Area. The Declarant shall provide for lawn mowing and landscape maintenance, operation and maintenance of the septic systems, driveway plowing, and walkway snow shoveling within the Limited Common Areas and Unit (collectively referred to as "Maintenance"). The Board of Directors shall be responsible for the Maintenance when its takes control of the Association.

The exterior of Units shall be kept in good repair by the Unit Owner and maintained to the aesthetic and repair standards set forth in this Declaration and By-Laws. Failure of a Unit owner to maintain its Unit to such standards shall give cause to the Association to enter the Limited Common Area to effectuate such repairs or maintenance and to invoice the Unit Owner for the expense thereof.

SECTION B. The LCA, including any improvements or developments, shall run with and be appurtenant to the Unit to which it is assigned and shall automatically pass with the title to the Unit whether or not the LCA is expressly conveyed.

ARTICLE 7
ALLOCATION OF UNDIVIDED INTERESTS ("COMMON INTERESTS")

There is hereby allocated to each Unit an undivided interest in the Common Areas as set forth on **Exhibit E** attached hereto and made a part hereof, under the column "Common Interest". Said undivided interest appurtenant to each Unit is herein called the "common interest". The interest appurtenant to each Unit are shown on **Exhibit E**. The common interest

appurtenant to each Unit will have a permanent character and shall not be altered without the consent of the owner of each Unit affected thereby. The common interest appurtenant to each Unit will not be separated from said Unit even though not expressly mentioned or described in the conveyance or other instrument. The Common Areas will remain equal and undivided and no right shall exist to partition or divide any part thereof except as may be provided in the New Hampshire Condominium Law.

ARTICLE 8
PARKING

Subject to regulation by the Association of Unit Owners (as set forth in the Condominium By-Laws to be recorded with this Declaration as well as Rules and Regulations to be adopted) the Unit owners shall have the exclusive right to park vehicles in the portion of the Limited Common Area associated with his/her Unit as shown on the Plan.

ARTICLE 9
EASEMENTS

SECTION A. Each Unit shall have appurtenant thereto non-exclusive easements in the Common Areas designed for such purposes for ingress to, egress from, and utility services for such Unit, and in the other Common Areas for their use according to their respective purposes, subject always to the exclusive or limited use of the Limited Common Areas as herein provided. These non-exclusive easement rights include, but are not limited to, the right to for the purposes of maintenance or repair of same and any Common Area. If any Unit or Common Area encroaches on any other Unit or Common Area, a valid easement for such encroachment and the maintenance and use thereof so long as it continues shall exist;

SECTION B. To the extent permitted by New Hampshire Revised Statutes Annotated Section 356-B:42 II, as amended from time to time or any successor statute, the Association of Unit Owners shall have the irrevocable power as attorney in fact on behalf of all of the Unit Owners and their successors in title to grant easements through the Common Areas and accept easements benefiting the condominium or any portion thereof;

SECTION C. Declarant hereby expressly reserves the right to grant easements to the owners of abutting property, as well as to the City of Portsmouth, private utilities, electric utilities or gas line utilities, telephone utilities or cable utilities, and any other utilities over, under and through the common and Limited Common Areas of the Condominium for whatever use may be made thereof.

ARTICLE 10

STATEMENT OF PURPOSES, USE, AND RESTRICTIONS.

The Units, Common Areas, and Limited Common Areas shall be occupied subject to the following rules and restrictions:

SECTION A. The Developer shall have the right to transact any business on the Condominium property necessary to consummate sales of Condominium units; including, but not limited to the right to maintain models, having signs identifying units, maintaining employees in the offices, use of the Common Areas and facilities on the Condominium property, and to show units for sale. All furniture and furnishings and equipment in the model units, signs, and all items pertaining to sales shall not be considered Common Areas and facilities and shall remain the property of the Developer. In the event there are unsold Condominium units, Developer's right as the owner of said unsold units shall be the same as all other unit owners in the Condominium; and the Developer, as the owner of the Condominium units, shall contribute the common expenses in the same manner as other Condominium unit owners once an Occupancy Permit has been issued and the Developer, as the owner of the Condominium units, shall have a vote in the Association for each unsold Condominium unit.

SECTION B. None of the fifty-six (56) residential units shall be used for any purpose except residential purposes.

SECTION C. Nothing shall be done or kept in any unit or in the Common Areas or Limited Common Areas, which will increase the rate of insurance in those areas without the prior written consent of the Owners' Association. No owner shall permit anything to be done or kept in his Unit or in the Common Areas or Limited Common Areas which will result in the cancellation of insurance of any unit or any part of the Common Areas or Limited Common Areas, which would be in violation of any law. No waste will be permitted in the Common Areas or the Limited Common Areas.

SECTION D. Units shall be used solely for residential purposes and for uses accessory thereto as may be permitted from time to time by the zoning ordinances of the City of Portsmouth. Notwithstanding the restrictions of this paragraph, the Declarant and its successors in interest may, until all of the residential Units shall have been sold by the Declarant or such successor(s), use unsold Units as models for purposes of promoting the sale or leasing of Units.

SECTION E. DESIGN AND PLAN APPROVAL.

(1) All buildings and structures shall be architecturally designed in keeping with traditional styles as determined by the Declarant. The Declarant, at Declarant’s sole discretion, subject to federal, state, and/or municipal approvals, if applicable, reserves the right to approve the plans and specifications of all residences and other structures for as long as the Declarant is the owner of any Unit in the condominium. At such time as the Declarant relinquishes its control to the Association, the responsibility and/or authority for any architectural approvals in accordance with the Declaration and By-Laws shall become the responsibility of the Board of Directors of the Association or any subcommittee of the Association appointed to perform that task. The Declarant reserves the right to turn over responsibility for architectural approvals to the Association at any time prior to its conveyance of the last Unit it owns.

(2) No construction of any kind shall be commenced on any Unit nor shall any exterior addition or change or alteration be made to any structure nor shall utility lines be erected or installed until plans for the foregoing have been approved in writing by the Declarant at Declarant's sole discretion, subject to federal, state, and/or municipal approvals, if applicable. A copy of such plans shall be provided to the Association for its records.

(3) The architectural integrity of the buildings and the Units shall be preserved, and to that end, no awnings, antennas, and no exterior change, addition, structure, projection, decoration or other feature which is visible from the exterior of a Unit, shall be erected or placed upon or attached to the buildings or any Unit, or any part of either, unless previously approved by the Declarant, at Declarant's sole discretion, subject to federal, state, and/or municipal approvals, if applicable,. This subparagraph, however, shall not restrict the right of the Owner(s) of each Unit to decorate the interiors of the Unit as said Owner(s) may desire;

SECTION F. ARCHITECTURAL FEATURES

(1) Renovations of the Units must be in keeping with the architectural character of the condominium.

(2) Without limiting the generality of the foregoing, all renovations, including the painting, repairing and replacing of exterior doors, door frames, windows, window frames, roofs, siding, porches, decks, entries and other exterior features of the buildings shall be subject to the review and approval of the Board of Directors or its subcommittee established for this purpose prior to commencement of the work.

SECTION G. No animals, livestock, or poultry of any kind shall be raised, bred, or kept in any unit or in any of the Common Areas or Limited Common Areas without the express written permission of the Board of Directors. Pets shall be allowed only with the written permission of the Board of Directors and such permission may be withdrawn should the pets become a nuisance to other unit owners. Owners shall strictly comply with all rules and regulations concerning pets as may be adopted by the Association. No exotic pets are allowed. Pets shall be kept under control of their owners at all times and shall not be allowed to run loose except in the presence and under the control of their owner. The board of directors may make further provisions in the Rules for the control and regulation of household pets on the property. The owner of a unit where a pet is kept or maintained shall be responsible for the maintenance of said pet, and any costs incurred by the association in enforcing the rules prescribed or to be prescribed by the Board of Directors for the control and regulation of pets and each such owner, by electing to keep a pet, shall be deemed to indemnify and hold the Board harmless against such loss or liability resulting from said pet. Owner shall comply with all town ordinances related to pets and pet laws.

SECTION H. The Declarant has adopted and the Association Board may amend from time to time detailed rules and regulations for the use and enjoyment of the Common Areas, for avoiding noxious or offensive activity which may disturb the occupants of any Unit, and for the occupants of any Unit, and for the general governing of the Condominium, consistent with, and

not in conflict with, this Declaration and the Bylaws. All Owners and their tenants, guests and licensees will strictly comply with said rules and regulations.

SECTION I. Units may be rented. All rental agreements shall be documented by a written lease for a term of not less than six (6) months. The lease shall be subject to the Declaration, Bylaws and Rules and Regulations of the Condominium.

SECTION J. The Declarant shall be responsible for arranging for snow removal and lawn mowing within the Common Areas and Limited Common Areas as a Common Expense, together with the maintenance of all drainage improvements. This includes arranging for the maintenance of the road and gate and snow removal for the emergency access road for the purpose of keeping it accessible for the Fire Department.

SECTION K. Declarant reserves the right to make use of unsold Units as may facilitate the completion, construction or sale of the Condominium, including the right to enter all Units, and Limited Common Areas, upon reasonable notice to the Owner thereof, or Common Areas for construction purposes. Declarant reserves the right to store materials, to maintain a sales office or a rental office in any unsold Units, to show such Units for sale or lease, and to display appropriate signs, at Declarant's sole discretion, in conjunction therewith, on unsold buildings or building envelopes, and has the right to implement any other marketing signage anywhere in the entire development.

SECTION L. SIGNS. No sign of any kind, towels, blankets or laundry of any kind, shall be displayed to the public view on or from any unit without the prior written consent of the Board of Directors. No commercial or advertising signs of any kind shall be erected, placed, permitted or maintained on any common area or limited common area or improvement except such signs as may be approved by the Association for the operation of the condominium or for the sale of Units within the condominium. Declarant shall be permitted, at Declarant's sole discretion, to place signs advertising the sale or lease of units, along with development signage, entrance way signage, directional and temporary signage. Display of the United States Flag shall be regulated by RSA 356-B:47-a and rules and regulations adopted thereunder by the Owners' Association and any applicable Zoning and Planning Regulations of the City of Portsmouth.

SECTION M. MOBILE HOMES AND TEMPORARY STRUCTURES. Mobile homes or structures of any kind or character, whether temporary or otherwise, shall not be permitted on any common area or limited common area. However, Declarant, at Declarant's sole discretion, may maintain a trailer for development purposes.

SECTION N. NO VEHICLE STORAGE. No commercial vehicles, pleasure or commercial boats or vessels of any kind, motor homes, campers, trailers, school buses, all-terrain vehicles, off road vehicles or snow mobiles shall be used in the condominium nor shall they be stored within the common area or limited common area, including, but not limited to parking areas and trails. Golf carts may be allowed on the premises subject to the approval of the Declarant, at Declarant's sole discretion, and subject to the approval of the Association after the Declarant relinquishes control. None of the above referenced vehicles may be kept on the

premises except out of sight of the roadway, behind the structure or properly screened from the roadway and abutters or if the same be kept stored in a garage or outbuilding conforming to these covenants. Unregistered or uninspected automobiles or automobiles being repaired, refinished, restored or otherwise brought onto the premises for a period of more than seven (7) days shall be stored in a garage or other enclosed structure.

SECTION O. TREE REMOVAL. Only the Declarant shall be permitted to cut trees on the property. No unit owner shall be permitted to cut any tree(s) without the express written permission of the Declarant. All clearing shall comply with the City of Portsmouth's land use regulations and ordinances.

SECTION P. No noxious or offensive activities shall be carried on in any unit or in the Common Areas or Limited Common Areas, nor shall anything be done therein which may become an annoyance or nuisance to the other unit owners.

SECTION Q. There shall be no violation of the rules of the use of the units, Common Area, or Limited Common Area as adopted by the Owners' Association and furnished in writing to the owners. The Declarant, until such time as the Owners' Association is formed, and thereafter the Owners' Association are authorized to adopt such rules.

SECTION R. Insofar as may be necessary, the Developer and persons that they may select shall have the right of ingress and egress over, upon, and across the Common Area and Limited Common Area and the right to store materials thereon and to make such other use thereof as may be reasonable, necessary, and incidental to construction and complete development and sale of the project, but the Declarant and the persons to whom he has granted this permission shall not unduly interfere with the unit owners or persons living in the units and their rights to use the Common Area and Limited Common Area and facilities.

SECTION S. No unit owner shall paint or otherwise decorate or change the appearance or the type of exterior siding of any portion of the exterior of his/her unit.

SECTION T. No unit owner shall make any alterations to his/her unit; provided, however, any unit owner shall have the right to make interior decorating improvements or any interior changes which do not affect any facilities, which are shared with the other units.

SECTION U. ADDITIONAL PROVISIONS.

The following are prohibited:

(1) Clotheslines;

(2) Above ground swimming pools;

(3) Antennas or satellite dishes with diameters larger than 24 inches;

(4) Additions or outbuildings or appurtenances unless prior approval has been obtained;

(5) Any basketball hoops, soccer nets or other personal property in the right-of-way;

SECTION V. OPEN SPACE USE LIMITATIONS. The Declarant on behalf of itself and its successors in interest covenants that "Open Space" as depicted on the Condominium Site Plan, is and shall forever be and remain subject to the following restrictions, which covenants and restrictions shall bind the Declarant, its successors in interest, and the Owner of each Unit:

(a) The purpose of the Open Space after completion of the proposed improvements depicted on the Condominium Site Plan is to retain the area forever in its scenic and open space condition and to prevent any use of the Open Space that will significantly impair, or interfere with, its conservation value;

(b) To protect and conserve the natural biological diversity of the region including, Blanding's and spotted turtle, and other rare plants and animals, exemplary natural communities, wetlands and other significant wildlife habitats on the Restricted Property;

(c) It shall be maintained in perpetuity as open space.

(d) There shall be no motorized vehicles permitted upon the Open Space.

(e) No structure of any kind, size or shape shall be constructed, on the Open Space.

(f) Upon completion of the proposed improvements, no filling or excavation of soil or other alteration of topography or cutting or removal of standing trees shall be allowed, except those that present an imminent threat to person or property. In addition, trees may be removed in accordance with accepted silvacultural forest practices as outlined in the publication entitled Good Forestry Practices in the Granite State by the Society for the Protection of NH Forests. No disturbance of other natural features shall be allowed unless such activities are commonly necessary to maintain the existing natural environment of the open space.

(g) There shall be no dumping or depositing of trash, debris, stumps, yard waste, hazardous fluid or materials, vehicle bodies or parts within the Open Space.

(h) No discharge of firearms or shooting with a bow and arrow or trapping of animals shall be permitted upon the Open Space in violation of RSA 207:3-a, as amended.

(i) The "Open Space" comprises a portion of the Common Area of the Condominium. As such, maintenance, if any, in the Open Space will be performed pursuant to the other provisions of this Declaration and the Bylaws. Costs for the maintenance, monitoring and annual reporting of the Open Space will be treated as a Common Expense and paid by the Unit Owners in accordance with the provisions of this Declaration. The term maintenance shall

include monitoring and reporting of the conditions of the open space requirements by the Association or by the City of Portsmouth. The Association will be responsible for annually monitoring the Open Space and reporting any violations to the City of Portsmouth.

(j) Such reasonable rules and regulations as may from time to time be promulgated by the Condominium Association for "open space recreational uses."

(k) Access to the Open Space shall be as depicted on the Plan.

(l) Acceptance of any deed for any Unit within the condominium constitutes acknowledgment by the purchaser of the existence of these restrictions and agreement to be bound by it and that said purchaser will not take any action which might violate any provision hereof.

SECTION W. PERMITTED USES OF OPEN SPACE

(a) The Declarant, its successors or assigns, reserve the right to perform cutting, grading, planting and seeding on the common area or limited common area for construction and to install and maintain drainage structures as needed in the development of the condominium.

(b) The Declarant, its successors or assigns, reserve the right to grant utility easements on the common area or limited common area to install and maintain utilities as needed in the development of the condominium.

(c) Dead, diseased, unsafe or fallen trees, saplings, shrubs and ground cover may be removed by the Declarant, its successors or assigns.

ARTICLE 11
ENFORCEMENT OF RESTRICTIONS

If any person or entity shall violate or attempt to violate any of the rules or restrictions set forth in this Declaration, in the By-Laws or in any rules or regulations adopted by the Association of Unit Owners, the Association may commence legal action against said person or entity or against the owner(s) of any Units within which such violation are occurring, either to prevent or abate such violation, or to recover damages caused by such violation or both. In the event of a successful prosecution, the Association of Unit Owners will be entitled to receive its costs, including reasonable attorney's fees, as part of its judgment against the defendant.

If the Association of Unit Owners shall fail to enforce this or any one or more of the covenants set forth in this Declaration or any rule contained in the By-Laws or any rules of the Association of Unit Owners after receiving written request to do so from any Unit Owner within the condominium, then any such Unit Owner may attempt to enforce said requirements by giving ten (10) days' prior written notice to the person violating them, followed by legal proceedings either to enjoin the violation or to recover damages or other compensation, including reasonable collection costs and attorney's fees if the court deems it appropriate under the circumstances.

Notwithstanding anything in this Declaration or in the By-Laws to the contrary, no Unit Owner shall be liable for any violations except such as occur during his or her Unit ownership.

ARTICLE 12
INSURANCE

1. Insurance Required. Pursuant to Section 43 of the Condominium Act, the Board of Directors shall obtain (i) a master casualty policy affording fire and extended coverage in an amount equal to the full replacement value of the common structures within the Condominium; (ii) a master liability policy covering the Association, the Board, the Manager and agents or employees of the foregoing with respect to the Condominium, and all Owners and other persons entitled to occupy any portion of the Condominium; and (iii) such other policies as specified hereinbelow; which insurance shall be governed by the following provisions to the extent obtainable or possible:

(a) Fire insurance with standard extended coverage endorsement, vandalism and malicious mischief endorsements insuring all the common buildings in the Condominium including without limitation all portions of the interior of such buildings are for insurance purposes normally deemed to constitute part of the building and customarily covered by such insurance, such as heating and air conditioning and other service machinery, interior walls, all finished wall surfaces, ceiling and floor surfaces including any wall to wall floor coverings, bathroom and kitchen cabinets and heating and lighting fixtures, except for improvements which exceed a total value of One Thousand Dollars ($1,000.00) and are not reported to the insurer, such insurance to be in an amount at least equal to the replacement value of the buildings and to be payable to the board as trustee for the Owners and their mortgagees as their respective interests may appear.

(b) Public liability insurance in such amounts as the Board may from time to time determine, but in no event shall the limits of liability be less than One Million Dollars ($1,000,000.00) for bodily injury and property damage per occurrence, insuring the Association and all individuals referred to in Section I (ii) above, against any liability to anyone, and with cross liability coverage with respect to liability claims of anyone insured thereunder against any other insured thereunder. The insurance, however, shall not insure against individual liability for negligence occurring within a Unit or within the Limited Common Area to which a Unit has exclusive use.

c) Workmen's compensation insurance as required by law.

d) Such other insurance as the Board may determine.

2. General Insurance Provisions.

(a) The Board shall deal with the insurer or insurance agent in connection with the adjusting of all claims under insurance policies provided for under Paragraph 1 above and shall review with the insurer or insurance agent, at least annually, the coverage under said policies, said review to include an appraisal of improvements within the Condominium, and shall make

any necessary changes in the policy provided for under Paragraph 1 (a) above (prior to the expiration date set forth in any agreed amount endorsement contained in said policy) in order to meet the coverage requirements of such Paragraph.

(b) The Board shall be required to make every effort to see that all policies of physical damage insurance provide for under Paragraph 1 above : (i) shall contain waivers of subrogation by the insurer as to claims against the Association, its employees and agents, members of the Board, the Manager, Owners and members of the family of any Owner who reside with said Owner, except in cases of arson and fraud; (ii) shall contain a waiver of defense of invalidity or prejudice on account of the conduct of any of the Owners over which the Association has "no control"; (iii) shall contain a waiver of defense of invalidity or prejudice by failure of the insured, or Owners collectively, to comply with any warranty or condition with regard to any portion of the Condominium over which the insured, or Owners collectively, have no control; (iv) shall provide that such policies may not be canceled or substantially modified without at least thirty (30) days written notice to all of the insureds thereunder and all mortgagees of Units in the Condominium; (v) shall provide that in no event shall the insurance under said policies be brought into contribution with insurance purchased individually by Owners or their mortgagees; (vi) shall exclude policies obtained by individual Owners for consideration under any "no other insurance" clause; and (vii) shall provide that until the expiration of thirty (30) days after the insurer gives notice in writing to the mortgagee of any Unit, the mortgagee's insurance coverage will not be affected or jeopardized by any act or conduct of the Owner of such Unit, the other Owners, the Board of Directors, or any of their agents, employees or household members, nor canceled for non-payment of premiums.

3. Individual Policies. All Owners shall obtain, at his own expense, insurance insuring his own unit and all buildings thereon and insurance against loss or damage to personal property used or incidental to the occupancy of the Unit, additional living expense, vandalism or malicious mischief, theft, personal liability and the like.

(a) Each Owner shall obtain additional insurance for his own benefit and at his own expense. No such policy shall be written so as to decrease the coverage under any of the policies obtained by the Board pursuant to paragraph 1(a) above, and each Owner hereby assigns to the Board the proceeds to be applied pursuant to the terms hereof as if produced by such coverage. Copies of all such policies (except policies covering only personal property, owned or supplied by individual Owners) shall be filed with the Association.

(b) Each Owner shall obtain insurance for his own benefit and at his own expense insuring all personal property presently or hereafter located in his Unit or Limited Common Area, any floor coverings, appliances and other personal property not covered in the master policy, and any insurance deductible that the unit may be assessed and all improvements.

(c) Each Owner, prior to commencement of construction of such improvements, shall notify the Board of all improvements to his Unit (except personal property other than fixtures) which exceed a total value of One Thousand Dollars ($1,000.00).

(d) Each Owner shall obtain liability insurance with respect to his ownership and/or use of his Unit.

4. Notice to Unit Owners. When any policy of insurance has been obtained on behalf of the Association, written notice of the obtainment thereof and of any subsequent changes therein or termination thereof shall be promptly furnished to each Unit Owner by the Secretary of the Association. Such notice shall be sent by U.S. Mail, return receipt requested, to all Unit Owners of record at the address of their respective Units and to such other addresses as any of them may have designated to the Secretary; or such notice may be hand delivered by the Secretary or Manager obtains a receipt of acceptance of such notice from the Unit Owner.

ARTICLE 13
CONDEMNATION

If part of the project shall be taken or condemned by any authority having the power of eminent domain such that no Unit or any part thereof is taken, then all compensation and damages for on account of the taking or the common elements, exclusive of compensation for consequential damages to certain affected Units, shall be payable to the President of the Association as Trustee for all Unit Owners and Mortgagees according to the loss or damage to their respective interests in such common elements. The Association shall have the right to act on behalf of the Unit Owners with respect to all issues related to the taking and compensation affecting the common elements. Such proceeds shall, subject to the prior rights of such mortgagees, become a part of the reserve funds of the Association.

If any Unit or a part thereof is taken, the Unit Owners directly affected by such taking and their respective mortgagees shall represent and negotiate for themselves with respect to the damages affecting their respective Units. The awards so made shall, subject to the prior rights of mortgagees, be used and distributed by the Trustee first to restore the Units on the remaining land of the project in the same manner as provided for restoration under Section 13 hereof to the extent possible, attempting to rebuild the building, containing new units of the same number, size and basic plan as the units taken, with any excess award distributed in accordance with the provisions of this section.

ARTICLE 14
REVIEW OF INSURANCE

The Association will review not less frequently than annually the adequacy of its insurance program and will, if requested by Unit Owners report to each Unit Owner in writing the Association's conclusions and actions taken, from time to time. Such review shall include an appraisal of all improvements to the project by a representative of the insurance carrier writing the Master Policy. Also, the Association shall provide each Unit Owner with notices describing each new policy of insurance and all amendments and terminations thereof, as and when occurring, in the same manner as it provides notices of Association meetings as set forth in the By-Laws, all as required by New Hampshire Revised Statutes Annotated, Section 356-B:43 II, or any successor statute.

ARTICLE 15
AMENDMENTS TO THE CONDOMINIUM AND TERMINATION

This Declaration, the By-Laws, the Floor Plan, the Condominium Plan or any other condominium instruments (as defined by New Hampshire Revised Statutes Annotated Chapter 356-B) may be amended from time to time, or this condominium may be terminated, only in strict compliance with New Hampshire Revised Statutes Annotated Section 356-B:34, as amended from time to time, or any successor statute. In no event shall such amendments be made without the consent of at least 2/3 of the Unit Owners.

ARTICLE 16
DEFINITIONS

All terms and expressions used in this Declaration which are defined in New Hampshire Revised Statutes Annotated Chapter 356-B shall have the same meanings here unless the context otherwise requires.

ARTICLE 17
PARTIAL INVALIDITY

The invalidity of any provision of this Declaration shall not impair or affect the validity of the remainder of this Declaration and all valid provisions shall remain enforceable and in effect notwithstanding such invalidity.

ARTICLE 18
MORTGAGES

1. Notice to Board. An Owner who mortgages his Condominium Unit shall notify the Board of the name and address of his mortgagee, and shall file a conformed copy of the mortgage with the Board. The Board shall maintain suitable records pertaining to such mortgages.

2. Notice of Action. Upon written request to the Unit Owners' Association, identifying the name and address of the holder, insurer or guarantor and the Unit number or address, any such Eligible Mortgage Holder or Eligible Insurer or Guarantor will be entitled to timely written notice of:

(a) Any condemnation loss or any casualty loss which affects a material portion of the Condominium or any Unit on which there is a first mortgage held, insured, or guaranteed by such Eligible Mortgage holder or Eligible Insurer or Guarantor, as applicable;

(b) Any delinquency in the payment of assessments or charges owed by an Owner of a Unit subject to a first mortgage held, insured or guaranteed by such Eligible

Mortgage Holder or Eligible Insurer or Guarantor, which remains uncured for a period of 60 days.

(c) Any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Owners' Association;

(d) Any proposed action which the Declaration, these Bylaws or the Condominium Act, requires the consent of a specified percentage of mortgage holders.

3. Notice of Default. The Board shall give written notice to an owner of any default by the Owner in the performance of any obligations under the Act, Declaration or Bylaws and, if such default is not cured within thirty (30) days, shall send a copy of such notice to each holder of a mortgage covering such Unit whose name and address has theretofore been furnished to the Board. No suit or other proceeding may be brought to foreclose the lien for any assessment levied pursuant to the Declaration or these Bylaws except after ten (10) days written notice to the holder of the first mortgage on the Unit which is the subject matter of such suit or proceeding.

4. Notice of Damage. The Board of Directors shall notify (i) the mortgagee of a Unit whenever damage to the Unit covered by the mortgage exceeds One Thousand Dollars ($1,000.00) and the Board is made aware of such damage; and (ii) all the mortgagees whenever damage to the Common Area exceeds Ten Thousand Dollars ($10,000.00).

5. Examination of Books. Each Owner and each mortgagee shall be permitted to examine the books on account of the Condominium at reasonable times, on business days, but, with respect to Owners, not more often than once a month.

DECLARATION OF THE PEVERLY WOODS CONDOMINIUM EXECUTED as of the day and year first above written.

_____ LLC

_____ By: _____
Witness Richard W. Green, Manager
Duly Authorized

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, ss.

This instrument was acknowledged before me on _____, 2021, by Richard W. Green, Manager of _____LLC, a New Hampshire limited liability company.

_____
Notary Public
Printed Name: _____
My Commission Expires: _____

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT B

EXHIBIT C

EXHIBIT D

EXHIBIT E

COMMON INTEREST

Unit No.	Common Interest
1	1/56
2	1/56
3	1/56
4	1/56
5	1/56
6	1/56
7	1/56
8	1/56
9	1/56
10	1/56
11	1/56
12	1/56
13	1/56
14	1/56
15	1/56
16	1/56
17	1/56
18	1/56
19	1/56
20	1/56
21	1/56
22	1/56
23	1/56
24	1/56
25	1/56
26	1/56
27	1/56
28	1/56
29	1/56
30	1/56
31	1/56
32	1/56
33	1/56
34	1/56
35	1/56
36	1/56
37	1/56

38	1/56
39	1/56
40	1/56
41	1/56
42	1/56
43	1/56
44	1/56
45	1/56
46	1/56
47	1/56
48	1/56
49	1/56
50	1/56
51	1/56
52	1/56
53	1/56
54	1/56
55	1/56
56	1/56

BYLAWS
OF
PEVERLY WOODS CONDOMINIUM OWNERS ASSOCIATION

1. PURPOSE AND DEFINITIONS

Purpose. The administration of Peverly Woods Condominium (the "Condominium") shall be governed by these By-Laws which are annexed to the Declaration of Peverly Woods Condominium (the "Declaration") and are made a part thereof.

Definitions. Certain of the terms used in these By-Laws have been defined in the Declaration and, when used herein, shall have the same meaning as set forth in the Declaration, unless the context clearly indicates a different meaning therefor.

Applicability of By-Laws. The provisions of these By-Laws are applicable to all of the property which now constitutes or hereafter may be added to the Condominium, and to the use and occupancy thereof.

2. MEMBERS AND MEETINGS

A. Members and Voting Rights. Each unit owner and the Declarant, until such time as all of the Declarant's development rights have expired or been terminated (each an "Owner" and collectively the "Owners") shall be a member of Peverly Woods Condominium Owner's Association. The membership of the Association shall consist of all of the Owners. The Owner of each Unit shall be entitled to one (1) vote.

B. Transfer of Membership. Membership in the Association may be transferred only as an incident to the transfer of title to a Unit and shall become effective upon recordation of a deed of conveyance to the said Unit.

C. Annual Meeting. The annual meeting of the members shall be held on the second Monday of March, for the purpose of electing officers and for the transaction of such other business as may come before the meeting.

D. Regular Meetings. Regular meetings of the Board of Directors shall be held in accordance with the provisions of RSA 356-B: 37-c at such time and place as shall be determined, from time to time, by a majority of the directors, but at least quarterly meetings shall be held during each twelve-month period after the annual meeting of the Unit Owners' Association. Notice of regular meetings of the Board of Directors shall be posted to the community and given to each director, personally or by mail, e-mail, telephone or telegraph, at least five (5) business days prior to the day named for such meeting, except that no notice shall be required for a regular meeting held immediately after, and at the same place as the annual meeting of the Association. Directors may attend vote and participate at meetings by telephone

or E-Mail pursuant to RSA 356-B:37-b. Pursuant to RSA 356-B:37-c (II) at least once per quarter the Board shall hold open regular meeting to afford owners an opportunity to common on any matter affecting the Association. Notice of the meeting and any materials distributed to the Board shall be available to the owner pursuant to RSA 356-B:37 (c) (III) and (IV).

E. Special Meetings. Special meetings of the Owners may be called at any time for the purpose of considering matters which, by the terms of the Declaration, these By-Laws, or the Condominium Act, (the "Act"), require the approval of the Owners, or for any other reasonable purposes. Special meetings shall be called by the President upon at least three (3) days written notice prior to the date of the meeting.

F. Contents of Notice. Pursuant to RSA 356-B:37 (I) and 356-B:37-a, it shall be the duty of the clerk or secretary, to send to all owners of record, at least twenty-one (21) days in advance of any meeting notice of any meeting. Said Notice shall state the time, place and purpose of the meeting and shall be sent to the unit owners at the addresses on file with the Association. The clerk or secretary shall attest that the notice was sent to the list of owners attached to the affidavit at the addresses on file with the association in the manner conforming with RSA 356-B: 37-a.Any such notice shall be deemed waived by any Owner who expressly waives the same in writing or who is present in person or by proxy at any such meeting.

G. Quorum. The presence in person or by proxy at the commencement of any meeting of the Association of Unit Owners of two thirds of the Unit Owners shall constitute a quorum at all meetings of the Unit Owners. In determining a quorum, the term "all Unit Owners" in this paragraph will not include Units the title of which is held by the Association. Pursuant to RSA 356-B: 38 (III) if a quorum is not met for an annual meeting, the board shall reschedule the meeting within sixty days and provide proper notice and proxies.

H. (1). Number of Directors and Initial Selection of Board. The Board of Directors shall be composed of three (3) persons. Until the election of the Board of Directors takes place at the first annual meeting of the Unit Owners' Association, the Board of Directors shall consist of such persons as shall have been designated by the Declarant. Thereafter, anything in these Bylaws to the contrary notwithstanding, until seven (7) years after the date of recordation of this Declaration, or until ninety percent (90%) of the Units have been conveyed by the Declarant, whichever occurs later, the members of the Board of Directors shall be selected and designated by the Declarant. The Declarant shall have the right in its sole discretion to replace such Directors as may be so selected and designated by it, and to select and designated their successors. The Declarant may relinquish its rights hereunder at any prior time. Directors shall consist only of Owners or spouses of Owners, or, where a Person which is an Owner is not a natural person, any natural person having authority to execute deeds in behalf of such person.

(2). Election and Term of Office. The initial Board of Directors shall be elected to staggered terms of one, two and three years. Thereafter, each Director shall serve a three (3) year term and one Director shall be elected at every annual meeting. At the expiration of the initial term of office of each director, his successor shall serve a term of three (3) years and each director shall hold office until his successor has been appointed or elected as appropriate.

I. Voting and Minutes. At any meeting of the Association, the Owners shall be entitled to cast their votes for each condominium unit owned as provided in the Declaration. The majority vote of all Unit Owners shall be required to adopt decisions at any meeting of the Association. Any Owner may attend and vote at such meeting in person or by proxy. The provisions of the Condominium Act shall govern all votes (including proxy votes and the votes of units owned by more than one person) at meetings of the Association. Pursuant to RSA 356-B: 37 (VI) the Board of Directors shall make copies of the minutes of all meetings available to the unit owners within 60 days of the date of the meeting or 15 days of the date the minutes are approved by the Board whichever occurs first. The association may opt to provide the minutes electronically or post them on the association website in which case the owners shall be informed of the web address.

J. Budget Ratification. Pursuant to RSA 356-B:40-c (I) the board of directors shall annually adopt a budget for the unit owners' association for consideration by the unit owners at a meeting. The board of directors shall, within 30 days of adoption of the proposed budget, provide the owners a summary of the budget, including any reserves and a statement of the basis on which any reserves are calculated and funded. The board of directors shall set a date not less than 10 days or more than 60 days after providing the budget summary to consider the ratification of the budget. Unless at that meeting, 2/3 of all unit owners reject the budget the budget is ratified whether or not a quorum is present. If no budget is proposed or the proposed budget is rejected, the last budget ratified by the owners shall be in effect until a new budget is ratified by the owners. Pursuant to RSA 356-B:40-c (II) the board of directors at any time may propose a special assessment which shall be ratified by the owners. The assessment shall be in accordance with the provisions of RSA 356-B:40-c (III).

3. POWERS

Powers and Duties. The Association shall have all of the powers and responsibilities assigned by the New Hampshire Condominium Act, RSA 356-B, as amended from time to time or any successor statute. Without limiting the generality of the preceding sentence, the Association will have all of the powers and duties necessary for the administration of the affairs of the condominium. Said powers and duties shall include, but not be limited to, the following:

A. Operation, care, upkeep and maintenance of the common areas;

B. The employment, dismissal and replacement of agents and employees to facilitate the operation, care, upkeep and maintenance of the common areas;

C. To make or cause to be made additional improvements on and as part of the common areas (subject to Article VII, Section 2 below);

D. To acquire, hold, manage, convey and encumber title to real property (including but not limited to condominium Units conveyed to or acquired by the Association) in the name of and on behalf of the Association;

E. To grant easements through the common areas and to accept easements benefitting the condominium or any portion thereof;

F. The assessment and collection of the common expenses from the Unit Owners, and the enforcement of liens to secure unpaid assessments, pursuant to RSA Section 356-B:46, as amended from time to time, or any successor statute;

G. The adoption and amendment of rules and regulations covering the details of the operation and use of the condominium, the common areas or any portion thereof;

H. Opening of bank accounts on behalf of the Association and designating the signatories required for such accounts;

I. Obtaining and administering insurance for the condominium as set forth in the Declaration;

J. Repairing, restoring or replacing common areas after damage or destruction, or as a result of eminent domain proceedings, as provided in the By-Laws;

K. Procuring legal and accounting services necessary or proper in the operation of the condominium or the enforcement of these By-Laws;

L. The assessment of costs or damages against any Unit Owner whose actions have proximately caused damages to the common areas;

M. Payment of any amount necessary to discharge any lien or encumbrance levied against the entire condominium or any part thereof which may in the opinion of the Association constitute a lien against the condominium or against the common areas, rather than merely against the interests of particular Unit Owners (where one or more Owners are responsible for the existence of such lien, they shall be jointly and severally liable for the cost of discharging it and the costs incurred by the Association by reason of said lien or liens);

N. All other powers granted by the Declaration or these By-Laws, permitted by law or enjoyed by associations of this kind.

4. OFFICERS

A. Officers. The officers of the Association shall be a president, a treasurer and a secretary, all of whom shall be appointed by the Unit Owners. Such other officers and assistant officers as may be deemed necessary may be appointed by the Association. Any two or more offices may be held by the same person. Pursuant to RSA 356-B:35 (II), the board of directors/officers shall have a fiduciary relationship to members of the unit owners' association.

B. Appointment and Term of Office. The officers of the Association shall be appointed at the annual meeting. If the appointment of officers shall not be made at such

meeting, such appointment shall be made as soon thereafter as conveniently may be. Each officer shall hold office until his successor shall have been duly appointed and shall have qualified or until his death or until he shall resign or shall have been removed in the manner hereinafter provided.

C. Removal. Any officer or agent may be removed by the Association whenever, in its judgment, the best interests of the Association will be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Appointment of an officer or agent shall not in and of itself create contract rights. Removal of officers or directors shall be by a vote held in accordance with RSA 356-B: 40-b.

D. Vacancies. A vacancy in any office because of death, resignation, removal, disqualification, or otherwise may be filled by the Association for the unexpired portion of the term.

E. President. The president shall be the principal executive officer of the Association and shall in general supervise and control all of the business and affairs of the corporation. He shall, when present, preside at all meetings of the unit owners at meetings of the Association. He may sign with the secretary or with any other proper officer of the Association, deeds, mortgages, bonds, contracts, or other instruments which the Association has authorized to be executed, except in cases where the signing and execution thereof shall be expressly delegated by the Association or by these bylaws to some other officer or agent of the Association, or which is required by law to be otherwise signed or executed; and in general shall perform all duties incident to the office of president and such other duties as may be prescribed by the Association from time to time.

F. The Secretary. The secretary shall: (a) keep the minutes of the proceedings of the annual meeting in one or more books provided for that purpose; (b) see that all notices are duly given in accordance with the provisions of these bylaws or as required by law; (c) be custodian of the Unit Owner records of the Association; (d) keep a register of the post office address of each Unit Owner which shall be furnished to the secretary by such Unit Owner; (e) have general charge of the books of the Association; and (f) in general perform all duties incident to the office of secretary and such other duties as from time to time may be assigned to him by the president or by the Association.

G. The Treasurer. The treasurer if any is appointed and, if none, then the president shall: (a) have charge and custody of and be responsible for all funds and securities of the Association; (b) receive and give receipts for monies due and payable to the Association from any source whatsoever and deposit all such monies in the name of the Association in such banks, trust companies, or other depositories as may be authorized by the Association; (c) in general perform all of the duties incident to the office of treasurer and such other duties as from time to time may be assigned to him by the president or by the Association.

H. Execution of Instruments. All checks, drafts, notes, deeds, acceptances, conveyances, contracts or other instruments shall be signed on behalf of the Association by such

person or persons as shall be provided authority by general or special resolution of the Association or, in the absence of any such resolution applicable to such instrument, by the President and by the Treasurer.

5. INTERIM MANAGEMENT BY DECLARANT

From and after the date of the recording of these By-Laws, the Declarant shall exercise all powers and responsibilities assigned by these By-Laws, the Declaration and by the New Hampshire Condominium Act to the Association of Unit Owners, and the Officers until such time as it turns over said powers and responsibilities to the Unit Owners. Said transfer of said powers and responsibilities shall in no event occur later than the first to occur of (1) the time at which the Declarants have completed the passing of title to third party purchasers of Units to which are assigned a total of 90% of the undivided interest in the common areas, or (2) the expiration of seven (7) years from the date of the incorporation of the Association. No contract binding the Association of Unit Owners, or the Unit Owners as a group, which shall have been entered into during the period of Declarant's control as described in this Article shall be binding after the termination of the Declarant's control unless ratified or renewed with the consent or affirmative vote of Unit Owners of a majority of the Units in the Association of Unit Owners.

6. COMMON EXPENSES

A. Common Expenses. The Owner of each Unit shall be liable for and shall pay as and when assessed a share of common expenses in proportion to his or her common interest. Common expenses will include all charges, costs and expenses of every kind incurred by or on behalf of the Association for and in connection with the administration of the condominium, including without limitation all charges for taxes (except real property taxes or other such taxes which are or may hereafter be assessed separately on each Unit and the common interest appurtenant thereto or the personal property or any other interest of a Unit Owner) assessments, insurance, liability for loss or damage arising out of or in connection with the common areas or any fire, accident or nuisance thereon, the cost of repair, reinstatement, rebuilding and replacement of facilities in the common areas, wages, accounting and legal fees, management fees and all other necessary expenses of upkeep, maintenance, management and operation incurred on or for the common areas. The common expenses may also include such amount as the Association may deem proper to make up any deficit in the reserve. Common expenses will also include all common expense assessments against all Units, title to which is held by the Association.

B. Capital Improvements. Whenever in the judgment of the Association the common areas should be improved by new construction, any such new or replacement construction may be made by the Association only after obtaining approval of all Units. If such approval is so obtained, the cost thereof shall constitute a part of the common expenses.

C. Reserves. The Association shall assess as a common expense an amount or amounts on a monthly basis for the purpose of establishing and maintaining a general operating

reserve and general replacement reserve, against anticipated future outlays for operations or for maintenance or replacement of facilities within the common areas or equipment or other property held by the Association in connection with the condominium. The size of any such reserve shall be reviewed at each annual meeting of the Association. The funds will be deposited in a responsible bank and may be intermingled with the Association's general operating account, or segregated in a separate account, in the Association's discretion.

Any such reserve may be used at the discretion of the Association to meet any deficiencies in operating funds from time to time resulting from higher than expected operating expenses and maintenance costs, or any delinquency by any Unit Owner or Owners in the payment of assessment for common expenses. Said reserve shall not operate to exempt any Owner from liability to contribute his or her proportionate share of such expenses or to pay any such assessments thereof and any funds withdrawn from said reserve for the purpose of making up any delinquency shall be reimbursed upon the payment of such delinquent assessments. The proportionate interest of each Owner in said reserve shall not be withdrawn or assigned separately but shall be deemed to be transferred with each Unit even though not mentioned or described expressly in the instrument of transfer.

D. Expenses for Limited Common Areas. Common expenses relating to the limited common areas shall be charged in accordance with Article 6, Section A of the Declaration.

i. Maintenance and Repair. The Board of Directors shall be responsible for the maintenance, repair and replacement (unless necessitated by the negligence, misuse or neglect of an Owner, or of a person gaining access with said Owner's actual or implied consent, in which case such expenses shall be charged to such Owner) of all Limited Common Area, whether located inside or outside of the Units, the costs of which shall be charged to all Owners as a Common Expense except the cost of repairing and replacing Limited Common Area shall be assessed to the units assigned such Limited Common Area.

E. Books. The Association will maintain books of account for common expenses for the common areas, general operating reserves and replacement reserves, in accordance with generally recognized accounting practices, and will have such books of account available for inspection by each Owner or his authorized representative at reasonable business hours. The Association will not less frequently than annually render or cause to be rendered a statement to each Owner of all receipts and disbursements during the preceding year and the balances of the various accounts.

F. Enforcement. The Association of Unit Owners shall have a lien on every Unit for unpaid assessments of common expenses levied against the Unit, which may be applicable to said Unit, in accordance with the provisions of the New Hampshire Condominium Act. Reference is made to RSA Section 356-B:46, as amended from time to time, and any successor statute, describing the enforcement of the Association's lien rights.

G. Delinquent Assessments. In the event an assessment is not paid within thirty (30) days of the date it is due and payable, the Association, through its Board of Directors, may proceed to enforce and collect the said assessment, with interest at the maximum lawful rate of eighteen percent (18%) per annum, whichever is greater, against the unit Owner owing the same in the manner set forth in RSA 356-B:46. Each delinquent unit Owner shall be responsible for attorney's fees, interest and costs incurred by the Association incident to the collection of such delinquent assessments or enforcement of any lien held by the Association for unpaid assessments.

H. Assessments. The Association shall determine the amounts and frequency of assessments for common expenses. In determining the amount, the Association shall in its discretion set a figure for a reasonable prospective period (up to one year) sufficient to accumulate and pay when due the anticipated common expenses for that period. In determining the frequency of the payments, the Association has full discretion to levy the assessments on a quarterly basis or as otherwise determined by the Association. If at the end of any assessment period it is determined that the assessments were estimated too low, the deficiency may be forthwith assessed by the Association and paid by the Unit Owners as a special assessment or assessments.

I. Expense to Unit Owner. No one shall obstruct, commit any waste in or otherwise cause any damage beyond reasonable wear and tear to the Common Area and any one causing such damage shall pay the expense incurred by the Association in repairing same.

8. GENERAL PROVISIONS

A. Violations. In the event of a violation other than non-payment violation of the Declaration, these By-Laws, or the applicable portions of the Act, the Association, by direction of its Board of Directors, may notify the unit owner by written notice of such breach, and if such violation shall continue for a period of thirty (30) days from the date of this notice, the Association, through its Board of Directors, shall have the right to treat such violation as an intentional and inexcusable and material breach of the Declaration, the By-Laws, or the pertinent provisions of the Condominium Act, and the Association may then, at its option, have the following election: (a) an action at law to recover for its damage on behalf of the Association or on behalf of the other unit owners; (b) an action in equity to enforce performance on the part of the unit owner; or (c) an action in equity for such equitable relief as may be necessary under the circumstances, including injunctive relief. Failure on the part of the Association to maintain such an action at law or in equity within ninety (90) days from date of a written request, signed by a unit owner, sent to the Board of Directors, shall authorize any unit Owner to bring an action in equity or suit at law on account of the violation. Any violations which are deemed by the Board of Directors to be a hazard to public health may be corrected immediately as an emergency matter. The Association shall be entitled to collect all legal fees incurred as a result of any such action or any action instituted for collection of any unpaid assessments.

B. Waiver. The failure of the Association of Unit Owners to insist in any one or more instances upon strict performance of or compliance with any of the covenants of the Owner hereunder, or to exercise any right or option herein contained or to serve any notice, or to institute any action or summary proceeding, shall not be construed as a waiver or a relinquishment for the future, of such covenant or option or right, but such covenant or option or right shall continue and remain in full force and effect.

C. Notices. All notices to Unit Owners shall be deemed given if hand delivered or sent by Registered or Certified Mail, Return Receipt Requested, to the Owner, addressed to the Owner's address appearing on the records of the Association. Any notice given or mailed to one co-Owner shall be presumed to have been properly given to any other co-Owner, regardless of whether a separate notice was given or sent to said other co-Owner. When any policy of insurance has been obtained on behalf of the Association, written notice of the obtainment thereof and of any subsequent changes therein or termination thereof shall be promptly furnished to each Unit Owner by the Secretary of the Association. Pursuant to the provisions of RSA 356-B:43 (II) all notices shall be sent in accordance with the provisions of the last sentence of RSA 356-B:37-a.

D. Amendment. Except as otherwise provided in the Condominium Act and this Declaration and Bylaws, this Declaration and Bylaws may only be amended by agreement of at least two thirds (2/3) of the Owners, provided, however, that (i) any such amendment shall be executed by such two thirds (2/3) of the Owners or by the President and Treasurer of the Association accompanied by a certification of vote of the Secretary; (ii) evidence of such amendment shall be duly recorded at the Registry pursuant to Section 34 IV, of the Condominium Act; (iii) no amendment to the Declaration shall be adopted that could interfere with the construction, sale, lease or other disposition or use of such Units; (iv) no such amendment shall be contrary to the provisions of the Condominium Act. Any approval of amendments by Mortgagees shall be subject to the provisions of and limitations of RSA 356-B.

E. Resale by Purchaser. In the event of any resale of a unit or any interest therein by any person (other than the Declarant or its successors in interest) the prospective Unit Owner shall have the right to obtain from the Association, prior to the contract date of the disposition, the following:

i. A statement of any capital expenditures and major maintenance expenditures anticipated by the Association within the current or succeeding two fiscal years;

ii. A statement of the status and amount of any reserve for the major maintenance or replacement fund, and any portion of such fund earmarked for any specified project by the Association;

iii. A copy of the income statement and balance sheet of the Association for the last fiscal year for which such statement is available;

iv. A statement of the status of any pending suits or judgments in which the Association is a defendant;

v. A statement setting forth what insurance coverage is provided for all Unit Owners by the Association and what additional insurance coverage would normally be secured by each individual Unit Owner;

vi. A statement that any improvements or alterations made to the Unit or the limited common area assigned thereto by the prior Unit Owner are not known to be in violation of the Declaration.

The President of the Association or any other Officer of the Association shall furnish such statements upon written request of any prospective Unit Owner within ten (10) days of the receipt of such request.

Said statement once issued shall be binding upon the Association, and every other Unit Owner. The Association may establish a fee to be charged to the Unit Owner in consideration of issuing said statement, which fee shall not exceed $10.00 for each request, unless a higher amount is permitted by law.

F. Notices to or from Mortgagees

i. Notice to Board. A Unit Owner who mortgages his condominium unit shall notify the Board of the name and address of his mortgagee and the principal amount of such mortgage. The Board shall maintain suitable records pertaining to such mortgages.

ii. Reporting. The Board, whenever so requested in writing by a mortgagee of a condominium unit, shall promptly report any then unpaid assessments for common expenses due from, or any other default by, the Owner of the mortgaged condominium unit. The Board shall be entitled to require a fee of Ten Dollars ($10.00) for each report provided a mortgagee.

iii. Default. The Board shall give written notice to an Owner of any default by the Owner in the performance of any obligations under the Condominium Instruments and, if such default is not cured within thirty (30) days, shall send a copy of such notice to each holder of a mortgage covering such unit whose name and address has theretofore been furnished to the Board. No suit or other proceeding may be brought to foreclose the lien for any assessment levied pursuant to the Declaration or these By-Laws except after ten (10) days written notice to the holder of the first mortgage on the unit which is the subject matter of such suit or proceeding.

Dated this ____ day of _____, 2021.

_____, LLC

_____ By: _____
Witness Richard W. Green, Manager
Duly Authorized

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, ss.

This instrument was acknowledged before me on _____, 2018, by Richard W. Green, Manager of _____, LLC, a New Hampshire limited liability company.

_____
Notary Public
Printed Name: _____
My Commission Expires: _____

Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 2047A

To: Michael Green
Green & Company

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Development – Traffic Evaluation
Portsmouth, New Hampshire

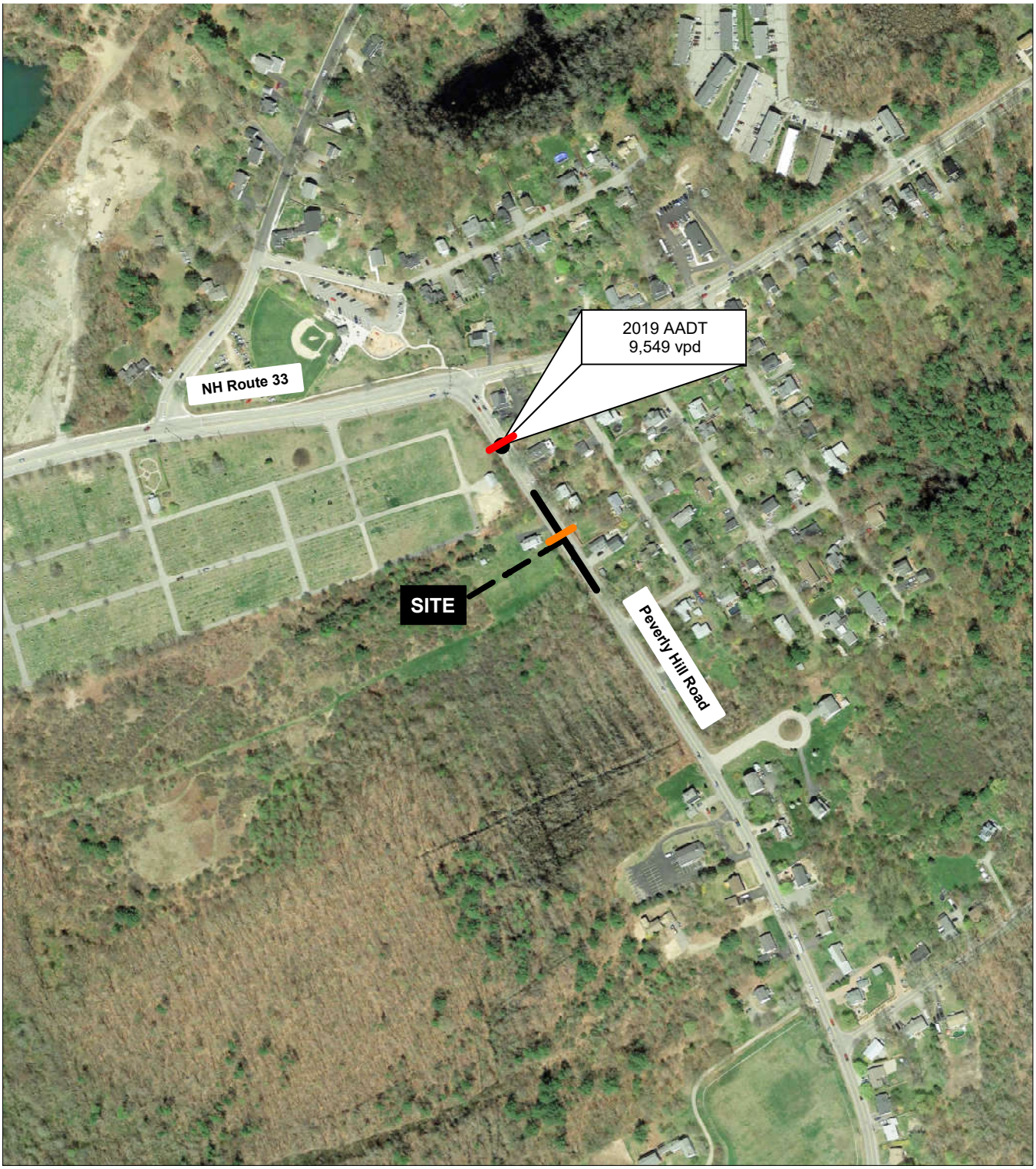
Date: October 6, 2020

As requested, Pernaw & Company, Inc. has conducted this *"Traffic Evaluation"* regarding your proposed residential development project located on the west side of Peverly Hill Road in Portsmouth, New Hampshire. This study evaluates the Peverly Hill Road / Private Road A intersection and in terms of traffic operations, capacity, and safety based on 2032 Build traffic volumes. The purpose of this memorandum is to summarize our research of available traffic count data, our recent traffic counts at the subject site, the trip generation analysis for the proposed development, the post-development traffic projections, and the results of the various technical analyses. This study has determined that this proposed intersection will function safely and adequately as a conventional three-leg T-intersection with one shared general-purpose travel lane on each approach. To summarize:

Proposed Development – The conceptual design plan entitled *"Concept A-PUD Plan,"* prepared by TFM, Inc., Sheet A-02, dated July 28, 2020 shows that the proposed development will create 60 single-family detached residential units along a private roadway system (see Attachment 1). Private Road A is proposed to intersect the west side of Peverly Hill Road approximately 450-feet south of NH33 (Middle Road). The location of the automatic traffic recorders and the subject site with respect to the area roadway system is shown on Figure 1.

Existing Conditions – Peverly Hill Road extends in a general north-south direction along the site frontage and provides access between NH33 and US1. This road provides one travel lane in each direction in the vicinity of the subject site. The pavement width is delineated with a four-inch double yellow centerline and four-inch single white edge lines. Paved, grass and gravel shoulders of variable width are present along both sides of the roadway. The speed limit is posted at 25 mph in each direction in this area.

Existing Traffic Volumes – According to a short-term NHDOT traffic count conducted on Peverly Hill Road (south of NH33) in June 2019, this roadway section carried an estimated Annual Average Daily Traffic (AADT) volume of approximately 9,549 vehicles per day in 2019. The hourly data indicates that weekday volumes typically reached peak levels from 8:00 to 9:00 AM and from 4:00 to 5:00 PM. The diagrams on Page 3 summarize the daily and hourly variations in traffic demand at this location (see Attachments 2 & 3). This information was supplemented by a 24-hour Automatic Traffic Recorder count conducted by our office in September 2020.



= AUTOMATIC TRAFFIC RECORDER LOCATION (NHDOT)

= AUTOMATIC TRAFFIC RECORDER LOCATION (PERNAW & CO., INC.)

NORTH

2047A

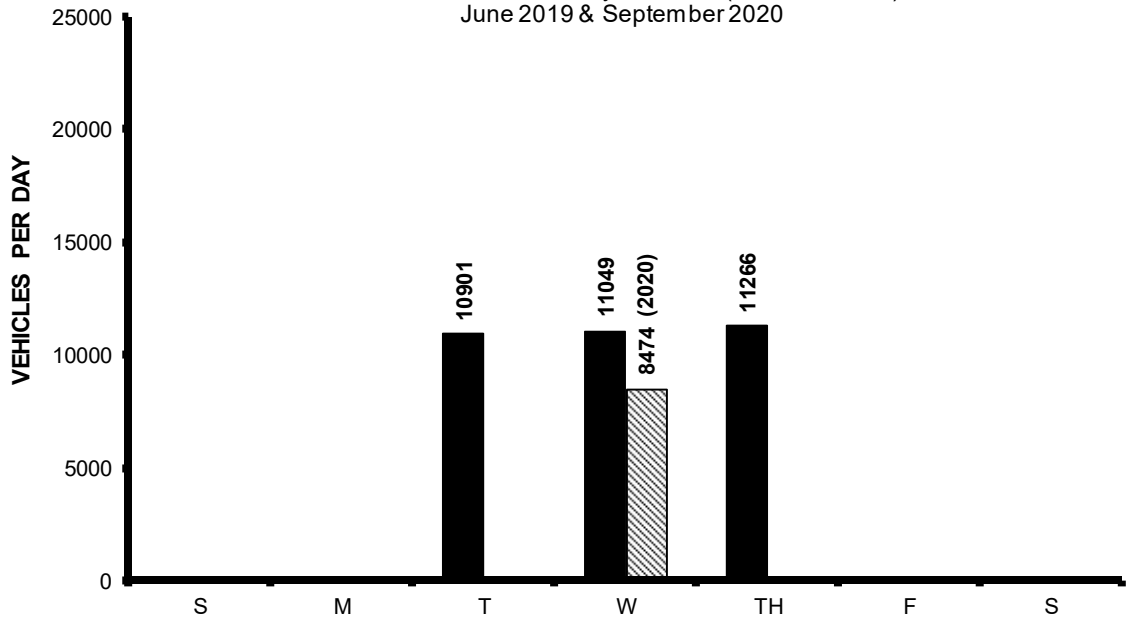
Figure 1

Site Location

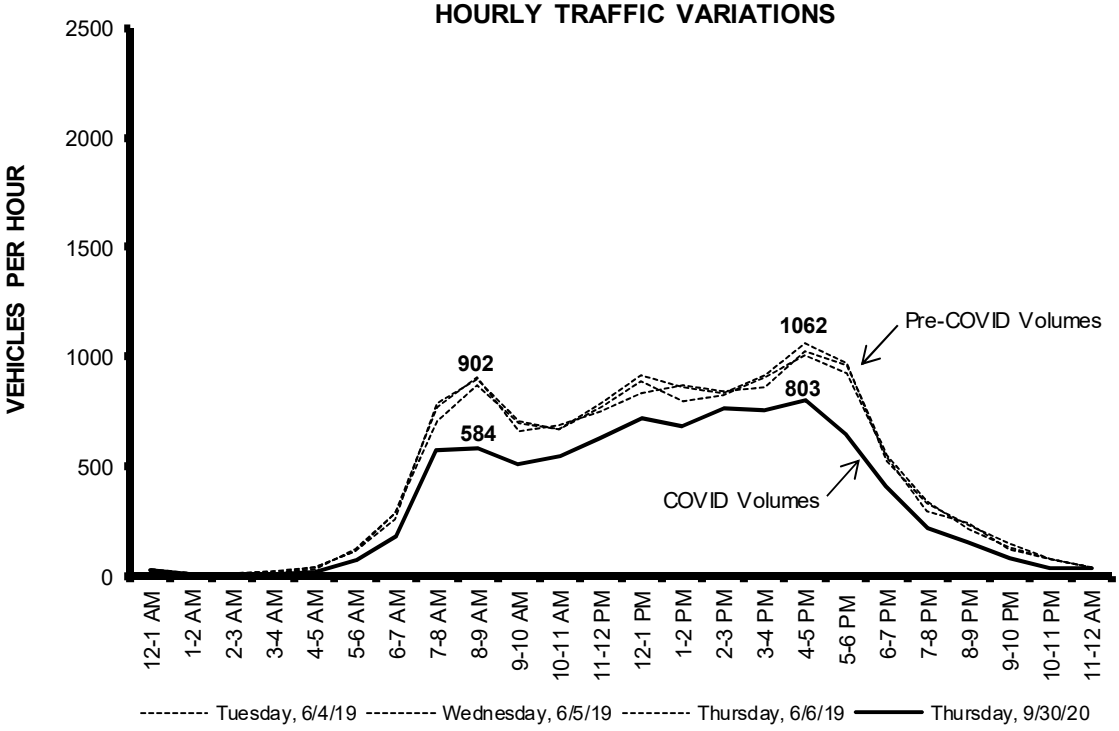
Traffic Evaluation, Proposed Residential Development, Portsmouth, New Hampshire

DAILY TRAFFIC VARIATIONS

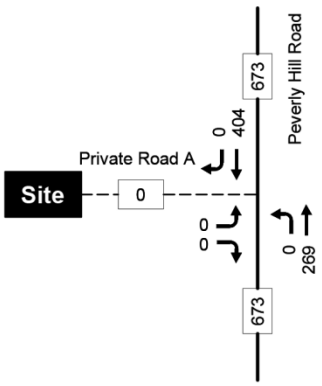
Portsmouth, NH - Peverly Hill Road (South of NH33)
June 2019 & September 2020



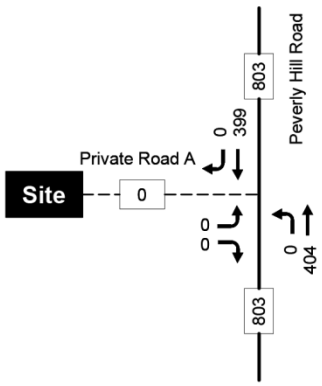
HOURLY TRAFFIC VARIATIONS



The raw 2020 directional traffic volume data on Peverly Hill Road are summarized in the diagrams below. This data shows that travel in the southbound direction is predominant during the morning peak hour, and this reverses to northbound during the evening peak hour. This pattern is indicative of the employment opportunities in the city, and the proximity of Interstate Route 95.



AM PEAK HOUR
Wednesday, September 30, 2020
7:30 to 8:30 AM



PM PEAK HOUR
Wednesday, September 30, 2020
4:00 to 5:00 PM

When compared with the 2019 NHDOT count data, it is obvious that the current traffic levels on Peverly Hill Road have been affected by the COVID-19 pandemic. For this reason, the subsequent post-development traffic volumes contained herein reflect the use of a separate COVID adjustment factor. The raw traffic count data is attached (see Attachment 4).

Trip Generation - To estimate the quantity of vehicle-trips that will be produced by the proposed residential development, the standard trip generation rates and equations published by the Institute of Transportation Engineers[1] (ITE) were considered. Both Land Use Code 210 and 220 are somewhat applicable, for different reasons. LUC 210 applies to single-family detached dwellings; however, the proposed units are condominiums and are much smaller in size than is found in a conventional residential subdivision. LUC 220 applies to condominiums, apartments, and townhouses; however, with multiple units in the same building. Consequently, the trip rates per person for LUC 210 and the trip rates per dwelling unit for LUC 220 were considered; and the higher of the two results were utilized for traffic projection and analysis purposes. According to Green & Company's experience with similar development projects, there are approximately two persons per unit in this type of housing.

[1] Institute of Transportation Engineers, *Trip Generation*, 10th Edition (Washington, D.C., 2017)

Table 1 — Trip Generation Summary

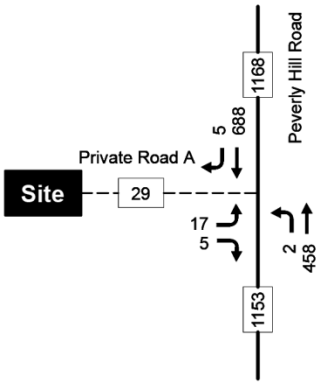
	Estimate A LUC 210 120 Residents [1]	Estimate B LUC 220 60 Units [2]
Weekday AM Peak Hour		
Entering	8 veh	**7 veh**
Exiting	17 veh	**22 veh**
Total	25 trips	**29 trips**
Weekday PM Peak Hour		
Entering	**28 veh**	23 veh
Exiting	**14 veh**	14 veh
Total	**42 trips**	37 trips
Weekday Total (24-hours)		
Entering	198 veh	207 veh
Exiting	198 veh	207 veh
Total	396 trips	414 trips

[1] ITE Land Use Code 210 - Single-Family Detached Housing (Use 2 persons per unit, Trip Equation Method)

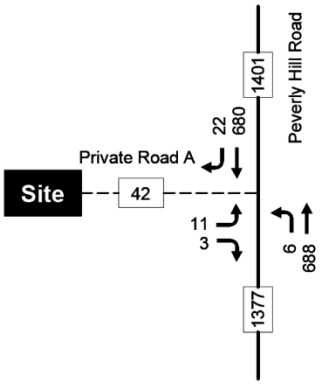
[2] ITE Land Use Code 220 - Multifamily Housing - Low-Rise (60 Dwelling Units, Trip Equation Method)

Based upon ITE Land Use Code 210 (Single-Family Detached Housing) and ITE Land Use Code 220 (Multifamily Housing – Low Rise), the overall development is expected to generate approximately 29 vehicle-trips (7 arrivals, 22 departures) during the AM peak hour, and 42 vehicle-trips (28 arrivals, 14 departures) during the PM peak hour, on an average weekday basis (see Attachment 5).

Future Build Traffic Projections – The diagrams below summarize the Build traffic projections for the 2032 horizon year. These projections are based on the September 2020 traffic count data, a peak-month seasonal adjustment factor of 1.05 (see Attachment 6), a 2.0% background traffic growth rate, compounded annually (see Attachment 7), and a COVID-19 adjustment factor of 1.28 (see Attachment 8). The trip distribution analysis (see Attachment 9) indicates that the majority of site traffic (78%) will travel to/from points north on Peverly Hill Road.



2032 AM Build



2032 PM Build

Intersection Capacity and Level of Service - The long-range (2032) traffic projections form the basis for assessing traffic operations at the Peverly Hill Road / Private Road A intersection from a capacity and delay standpoint. This intersection was analyzed according to the methodologies of the *Highway Capacity Manual 2010*[2] as replicated by the latest edition of the *Synchro Signal Timing Software (Version 10),* which is capable of analyzing unsignalized intersections as well.

Capacity and Level of Service (LOS) calculations pertaining to unsignalized intersections address the quality of service for those vehicles turning into and out of the intersecting side street or driveway. The availability of adequate gaps in the traffic stream on the major street actually controls the potential capacity for vehicle movements to and from the minor approaches, in terms of vehicles per hour.

The results of the analysis for the subject intersection show that all applicable turning movements will operate well below capacity through 2032 with the proposed development fully occupied. Nevertheless, departures from the Private Road A approach to Peverly Hill Road can be expected to encounter moderate delays during the peak hour periods in 2032: Level of Service E during the morning peak hour; Level of Service D during the evening peak hour (see Attachments 10 & 11).

Auxiliary Turn Lane Warrants Analysis

Left-Turn Treatment - The type of treatment needed to accommodate left-turning vehicles from any street or highway to an intersecting side street (or driveway) can range from no treatment, where turning volumes are low; to the provision of a bypass lane for through traffic to travel around left-turning vehicles; to the addition of a formal center turn lane used exclusively by left-turning vehicles for deceleration and storage while waiting to complete their maneuvers.

Analysis of the 2032 traffic volumes using NCHRP 457 guidelines confirmed that no special treatment is needed for left-turn arrivals from Peverly Hill Road. The results of the analysis are summarized on Table 2. This finding means that the northbound through lane on Peverly Hill Road will function safely and adequately as a shared through-left lane (see Attachments 12 & 13).

Right-Turn Treatment - The type of treatment needed to accommodate right-turning vehicles from any street or highway to any intersecting side street (or driveway) can range from a radius only, where turning volumes are low; to the provision of a short 10:1 right-turn taper; to the addition of an exclusive right-turn lane, where turning volumes and through traffic volumes are significant.

Analysis of the 2032 traffic volumes contained herein using NCHRP 457 guidelines confirmed that right-turn treatment is not warranted at the subject intersection. The results of these analyses are summarized on Table 2 and the computations are attached (Attachments 14 & 15).

Minor Road Approach Treatment - The type of treatment needed to accommodate exiting vehicles from the minor-road approach at a stop-controlled intersection can range from a single lane (shared left-right lane) in low-volume conditions, to two exit lanes (exclusive left-turn lane and exclusive right-turn lane) where turning volumes and through traffic volumes are significant,

[2] Transportation Research Board, *Highway Capacity Manual* (Washington, D.C., 2010).

to multiple exit lanes in extreme cases. The analysis is summarized on Table 2 and shows that a single departure lane on the Private Road A approach to Peverly Hill Road is sufficient (see Attachments 16 & 17).

Table 2 — Auxiliary Turn Lane Warrants Analysis Peverly Hill Road / Private Road A

	2032 AM Build Volumes	2032 PM Build Volumes
I. LEFT-TURN LANE WARRANTS ANALYSIS		
Peak Hour Inputs:		
Left-Turn Volume (NB)	2	6
Advancing Volume (NB)	460	694
Opposing Volume (SB)	693	702
Percent Lefts	0.4%	0.9%
Speed (mph)	25	25
Limiting Advancing Volume (veh/h)	>1000	>1000
Left-Turn Treatment Warranted?	**NO**	**NO**
II. RIGHT-TURN LANE WARRANTS ANALYSIS		
Peak Hour Inputs:		
Right-Turn Volume (SB)	5	22
Approach Volume (SB)	693	702
Speed (mph)	25	25
Limiting Right-Turn Volume (veh/h)	225	208
Add Right-Turn Bay?	**NO**	**NO**
III. MINOR-ROAD APPROACH GEOMETRY ANALYSIS		
Peak Hour Inputs:		
Major-Road Volume (NB-SB)	1153	1396
% Right-Turns on Minor (EB)	23	21
Minor-Road Approach Volume	22	14
Limiting Minor-Road Volume (veh/h)	132	95
Consider TWO Approach Lanes?	**NO**	**NO**

Findings & Conclusions

1. The September 2020 traffic count conducted on Peverly Hill Road at the subject site revealed that this section of roadway carried approximately 8,500 vehicles on a typical weekday, with 673 vehicles observed passing the site during the AM peak hour (7:30 to 8:30 AM) and 803 vehicles observed during the PM peak hour (4:00 to 5:00 PM). The predominant travel direction was southbound during the AM, and northbound during the PM.

2. The proposed residential development is expected to generate approximately 29 (AM) and 42 (PM) vehicle-trips during the peak hour periods. The majority (78%) are expected to travel to/from points north on Peverly Hill Road (via NH33).

3. Site traffic is expected to increase the two-way traffic volume on Peverly Hill Road by +2% north of the site, and +1% south of the site by 2032.

4. The intersection capacity and Level of Service analysis indicates that all applicable traffic movements at this intersection will operate well below capacity through 2032 with the development fully occupied. By 2032, departures from the site are expected to operate at Level of Service E during the morning peak hour, and at Level of Service D during the PM peak hour. Left-turn arrivals (from Peverly Hill Road northbound) will operate at Level of Service B, or higher, during all hours of the day through 2032. Vehicle queuing on the Private Road A approach to Peverly Hill Road is expected to be minimal.

5. The 2032 Build traffic volumes do not satisfy the NCHRP guidelines for left-turn treatment or right-turn treatment at the Private Road A intersection on Peverly Hill Road. The subject intersection will function safely and efficiently with one shared travel lane on each approach to the subject intersection.

From a traffic operations and safety standpoint, providing ample sight distances looking left and right from the Proposed Road A approach to Peverly Hill Road is an important safety consideration. This new access road should operate under stop sign control, and be delineated with a 18-inch white stop line and a short section of 4-inch double-yellow centerline to separate inbound and outbound vehicles.

Attachments

A T T A C H M E N T S

PUD SITE DATA

DIMENSIONAL REQUIREMENTS (PROPOSED PUD USE)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
MINIMUM LOT SIZE	10 AC	100± AC
FRONTAGE	100 FT OR (2) @ 50'	865± FT
BASE RESIDENTIAL DENSITY:	74 RESIDENCES	60 RESIDENCES
MINIMUM INTERNAL SETBACKS:		
FRONT	20 FT	20 FT
SIDE	25 FT	TBD
REAR	25 FT	25 FT
BETWEEN BUILDINGS	30 FT	30 FT
MINIMUM OPEN SPACE	25%	TBD
MINIMUM PERIMETER BUFFER:		
FRONT	100 FT	>100 FT
SIDE	50 FT	>50 FT
REAR	50 FT	>50 FT

BASE RESIDENTIAL DENSITY CALCULATIONS

REQUIRED BASE RESIDENTIAL DENSITY:

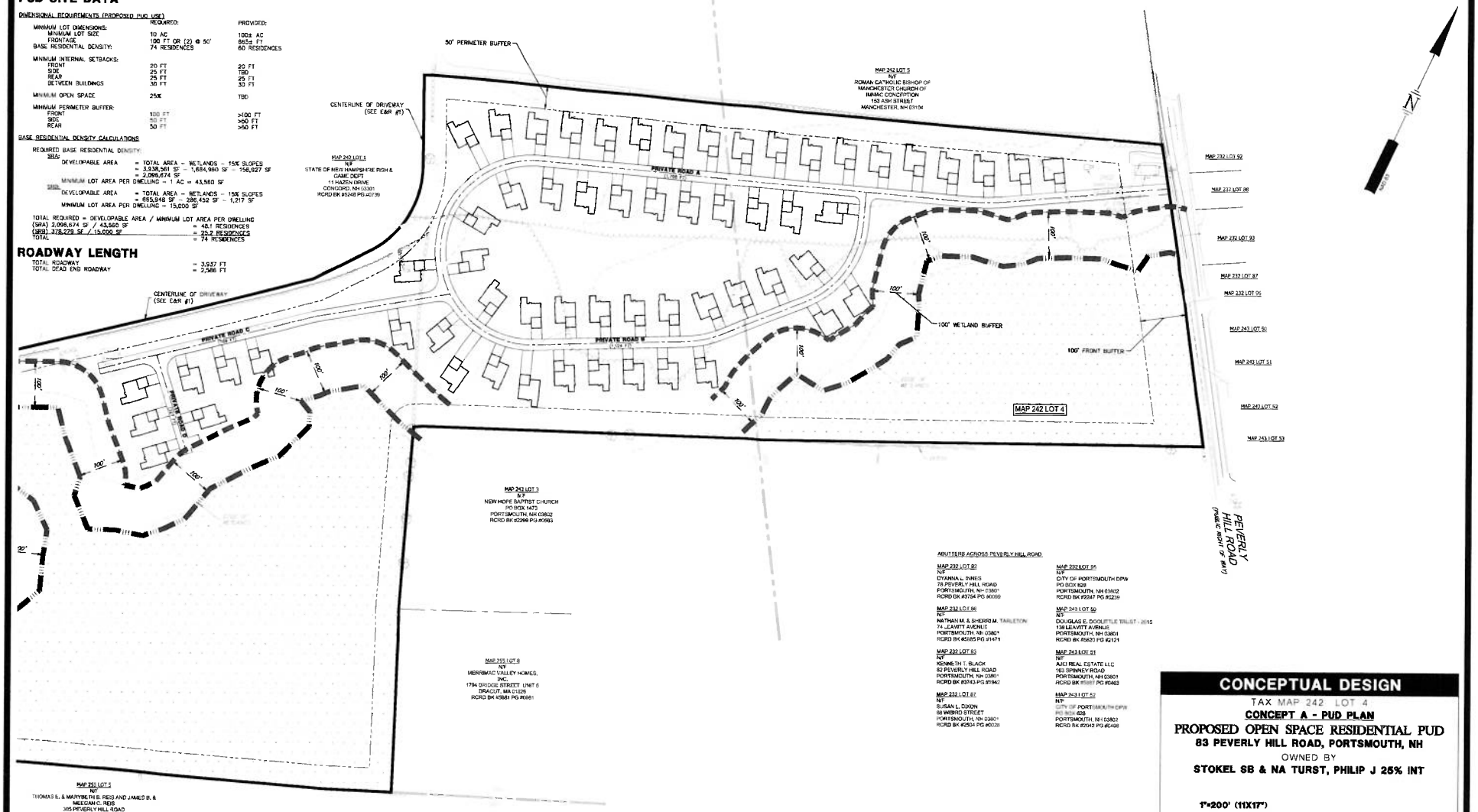
SRA:
DEVELOPABLE AREA = TOTAL AREA − WETLANDS − 15% SLOPES
= 3,938,561 SF − 1,684,960 SF − 156,927 SF
= 2,096,674 SF
MINIMUM LOT AREA PER DWELLING = 1 AC = 43,560 SF

GRA:
DEVELOPABLE AREA = TOTAL AREA − WETLANDS − 15% SLOPES
= 665,948 SF − 286,452 SF − 1,217 SF
MINIMUM LOT AREA PER DWELLING = 15,000 SF

TOTAL REQUIRED = DEVELOPABLE AREA / MINIMUM LOT AREA PER DWELLING
(SRA) 2,096,674 SF / 43,560 SF = 48.1 RESIDENCES
(GRA) 378,279 SF / 15,000 SF = 25.2 RESIDENCES
TOTAL = 74 RESIDENCES

ROADWAY LENGTH

TOTAL ROADWAY = 3,937 FT
TOTAL DEAD END ROADWAY = 2,586 FT



ABUTTERS ACROSS PEVERLY HILL ROAD

MAP 232 LOT 87
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK 45704 PG 00359

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TARLETON
74 JEWETT AVENUE
PORTSMOUTH, NH 03801
RCRD BK 05685 PG 01471

MAP 232 LOT 93
N/F
KENNETH T. BLACK
82 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK 03743 PG 01942

MAP 232 LOT 87
N/F
SUSAN L. DIXON
88 WIBIRD STREET
PORTSMOUTH, NH 03801
RCRD BK 02504 PG 00039

MAP 232 LOT 95
N/F
CITY OF PORTSMOUTH DPW
PO BOX 628
PORTSMOUTH, NH 03802
RCRD BK 02347 PG 02239

MAP 243 LOT 50
N/F
DOUGLAS E. DOUCETTE TRUST - 2015
136 JEWETT AVENUE
PORTSMOUTH, NH 03801
RCRD BK 05630 PG 02121

MAP 243 LOT 51
N/F
AJKI REAL ESTATE LLC
165 SPINNEY ROAD
PORTSMOUTH, NH 03801
RCRD BK 05881 PG 00463

MAP 243 LOT 52
N/F
CITY OF PORTSMOUTH DPW
PO BOX 628
PORTSMOUTH, NH 03802
RCRD BK 02042 PG 00498

CONCEPTUAL DESIGN

TAX MAP 242 LOT 4

CONCEPT A - PUD PLAN

PROPOSED OPEN SPACE RESIDENTIAL PUD

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TURST, PHILIP J 25% INT

1"=200' (11X17")
SCALE: 1"=100' (22"X34")

JULY 28, 2020

THIS PLAN IS A PRELIMINARY CONCEPTUAL DESIGN FOR SITE LOCATION FEASIBILITY AND DISCUSSION PURPOSES ONLY. ADDITIONAL PERMITS, WAIVERS, AND VARIANCE MAY BE REQUIRED UPON FURTHER DESIGN, REVIEW, AND COORDINATION WITH THE TOWN.

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV.	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
ScientSists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	47388.11	DR: MEG	TB	-
		CK: MEG	CADFILE: 47388-10 CONCEPT A	A-02

Attachment 1

New Hampshire DOT Department of Transportation

MS2 Transportation Data Management System

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	82379124	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	Yes
LRS ID	L3790080__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Major Collector	Milepost	
Located On	Peverly Hill Rd		
Loc On Alias	PEVERLY HILL RD SOUTH OF NH 33		

More Detail

STATION DATA

Directions: 2-WAY

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2019	9,549	1,062	11		8,748 (92%)	801 (8%)	
2018	10,823[3]		11		9,978 (92%)	845 (8%)	Grown from 2017
2017	10,611[3]		11		9,847 (93%)	764 (7%)	Grown from 2016
2016	10,403	1,150	11		9,487 (91%)	916 (9%)	
2015	10,527[3]						Grown from 2014

> >>| 1-5 of 20

Travel Demand Model

	Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

VOLUME COUNT

	Date	Int	Total
	Thu 6/6/2019	60	11,266
	Wed 6/5/2019	60	11,049
	Tue 6/4/2019	60	10,901
	Tue 7/19/2016	60	12,808
	Mon 7/18/2016	60	12,033
	Sun 7/17/2016	60	6,806
	Fri 9/13/2013	60	11,838
	Thu 9/12/2013	60	11,713
	Wed 9/11/2013	60	11,902
	Tue 9/10/2013	60	11,404

VOLUME TREND

Year	Annual Growth
2019	-12%
2018	2%
2017	2%
2016	-1%
2015	3%
2014	2%
2013	4%
2010	-7%
2007	-10%

New Hampshire DOT
Department of Transportation

MS2
Transportation Data Management System

Excel Version

Weekly Volume Report

Location ID:	82379124	**Type:**	SPOT
Located On:	Peverly Hill Rd	:	
Direction:	2-WAY		
Community:	PORTSMOUTH	**Period:**	Mon 6/3/2019 - Sun 6/9/2019
AADT:	9549		

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg	Graph
12:00 AM		14	28	24				22	0.2%
1:00 AM		11	18	12				14	0.1%
2:00 AM		16	13	13				14	0.1%
3:00 AM		13	17	20				17	0.2%
4:00 AM		35	39	40				38	0.3%
5:00 AM		125	113	115				118	1.1%
6:00 AM		286	290	263				280	2.5%
7:00 AM		710	771	786				756	6.8%
8:00 AM		867	906	902				892	8.1%
9:00 AM		700	664	707				690	6.2%
10:00 AM		666	688	674				676	6.1%
11:00 AM		773	751	792				772	7.0%
12:00 PM		893	835	916				881	8.0%
1:00 PM		802	872	858				844	7.6%
2:00 PM		828	840	830				833	7.5%
3:00 PM		904	861	916				894	8.1%
4:00 PM		1004	1025	1062				1,030	9.3%
5:00 PM		926	963	973				954	8.6%
6:00 PM		543	548	524				538	4.9%
7:00 PM		299	340	336				325	2.9%
8:00 PM		246	216	237				233	2.1%
9:00 PM		124	133	148				135	1.2%
10:00 PM		74	78	79				77	0.7%
11:00 PM		42	40	39				40	0.4%
Total	**0**	**10,901**	**11,049**	**11,266**	**0**	**0**	**0**		
24hr Total		10901	11049	11266				11,072	
AM Pk Hr		8:00	8:00	8:00					
AM Peak		867	906	902				892	
PM Pk Hr		4:00	4:00	4:00					
PM Peak		1004	1025	1062				1,030	
% Pk Hr		9.21%	9.28%	9.43%				9.31%	

Stephen G. Pernaw & Company, Inc.

Automatic Traffic Recorder Count - Peverly Hill Road, Portsmouth, NH (South of NH Route 33)

Wednesday, September 30, 2020

Period Beginning	CARS SB	CARS NB	TRUCKS SB	TRUCKS NB	TOTAL SB	TOTAL NB	TOT	
12:00 AM	6	3	0	0	6	3	9	
12:15 AM	5	2	0	0	5	2	7	
12:30 AM	4	1	0	0	4	1	5	
12:45 AM	2	2	0	0	2	2	4	25
1:00 AM	0	1	0	0	0	1	1	17
1:15 AM	2	0	0	0	2	0	2	12
1:30 AM	1	1	0	0	1	1	2	9
1:45 AM	1	1	0	1	1	2	3	8
2:00 AM	1	0	1	0	2	0	2	9
2:15 AM	1	1	0	0	1	1	2	9
2:30 AM	1	0	0	0	1	0	1	8
2:45 AM	1	1	0	0	1	1	2	7
3:00 AM	1	2	0	1	1	3	4	9
3:15 AM	0	0	0	0	0	0	0	7
3:30 AM	0	0	0	1	0	1	1	7
3:45 AM	3	0	0	0	3	0	3	8
4:00 AM	1	1	0	0	1	1	2	6
4:15 AM	1	2	0	0	1	2	3	9
4:30 AM	1	0	0	0	1	0	1	9
4:45 AM	4	4	1	0	5	4	9	15
5:00 AM	6	2	1	0	7	2	9	22
5:15 AM	17	4	0	0	17	4	21	40
5:30 AM	9	10	1	0	10	10	20	59
5:45 AM	20	3	1	1	21	4	25	75
6:00 AM	13	13	3	1	16	14	30	96
6:15 AM	17	7	0	0	17	7	24	99
6:30 AM	26	11	3	2	29	13	42	121
6:45 AM	63	22	4	1	67	23	90	186
7:00 AM	50	27	5	0	55	27	82	238
7:15 AM	76	33	4	3	80	36	116	330
7:30 AM	91	41	2	7	93	48	141	429
7:45 AM	150	73	8	6	158	79	237	576
8:00 AM	76	72	4	6	80	78	158	652
8:15 AM	69	61	4	3	73	64	137	673
8:30 AM	71	36	2	7	73	43	116	648
8:45 AM	91	72	3	7	94	79	173	584
9:00 AM	71	54	1	2	72	56	128	554
9:15 AM	68	43	7	2	75	45	120	537
9:30 AM	65	50	4	7	69	57	126	547
9:45 AM	86	45	1	2	87	47	134	508
10:00 AM	80	44	7	0	87	44	131	511
10:15 AM	79	60	8	6	87	66	153	544
10:30 AM	64	51	2	1	66	52	118	536
10:45 AM	85	53	7	3	92	56	148	550
11:00 AM	79	51	7	3	86	54	140	559
11:15 AM	77	60	7	4	84	64	148	554
11:30 AM	81	61	6	9	87	70	157	593
11:45 AM	93	71	7	9	100	80	180	625
					1920	1247	3167	
7:30 - 8:30 AM Peak Hour					404	269	673	

Period Beginning	CARS SB	CARS NB	TRUCKS SB	TRUCKS NB	TOTAL SB	TOTAL NB	TOT	
12:00 PM	98	80	10	10	108	90	198	683
12:15 PM	88	86	3	2	91	88	179	714
12:30 PM	92	81	8	2	100	83	183	740
12:45 PM	88	66	2	3	90	69	159	719
1:00 PM	75	81	4	2	79	83	162	683
1:15 PM	79	74	4	3	83	77	160	664
1:30 PM	79	76	8	6	87	82	169	650
1:45 PM	100	80	3	8	103	88	191	682
2:00 PM	94	68	8	6	102	74	176	696
2:15 PM	92	79	6	6	98	85	183	719
2:30 PM	107	68	5	5	112	73	185	735
2:45 PM	110	102	3	7	113	109	222	766
3:00 PM	113	90	7	2	120	92	212	802
3:15 PM	89	81	3	5	92	86	178	797
3:30 PM	91	91	8	6	99	97	196	808
3:45 PM	94	68	3	2	97	70	167	753
4:00 PM	93	110	0	3	93	113	206	747
4:15 PM	99	111	2	1	101	112	213	782
4:30 PM	86	92	5	0	91	92	183	769
4:45 PM	110	82	4	5	114	87	201	803
5:00 PM	89	100	2	0	91	100	191	788
5:15 PM	100	71	2	0	102	71	173	748
5:30 PM	79	76	1	1	80	77	157	722
5:45 PM	76	48	0	0	76	48	124	645
6:00 PM	72	55	0	0	72	55	127	581
6:15 PM	60	40	0	0	60	40	100	508
6:30 PM	49	40	0	1	49	41	90	441
6:45 PM	58	32	0	0	58	32	90	407
7:00 PM	31	43	0	0	31	43	74	354
7:15 PM	33	25	0	0	33	25	58	312
7:30 PM	29	21	0	0	29	21	50	272
7:45 PM	20	19	0	1	20	20	40	222
8:00 PM	21	23	0	0	21	23	44	192
8:15 PM	16	19	0	0	16	19	35	169
8:30 PM	17	23	0	0	17	23	40	159
8:45 PM	20	13	0	0	20	13	33	152
9:00 PM	15	9	1	0	16	9	25	133
9:15 PM	11	6	0	0	11	6	17	115
9:30 PM	6	9	0	0	6	9	15	90
9:45 PM	12	11	2	0	14	11	25	82
10:00 PM	3	11	0	0	3	11	14	71
10:15 PM	5	7	0	0	5	7	12	66
10:30 PM	1	1	0	0	1	1	2	53
10:45 PM	2	7	0	0	2	7	9	37
11:00 PM	5	5	0	0	5	5	10	33
11:15 PM	2	5	0	0	2	5	7	28
11:30 PM	9	4	0	0	9	4	13	39
11:45 PM	2	7	0	0	2	7	9	39
					2824	2483	5307	
4:00 - 5:00 PM Peak Hour					399	404	803	

DAILY TRAFFIC VOLUME = 8,474 vehicles per day

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: 2047A Gen

Open Date: 10/5/2020
Analysis Date: 10/5/2020

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
210	SFHOUSE 1			198	198	396		8	17	25		28	14	42
	120	Residents												
220	LOW-RISE 1			207	206	413		7	22	29		23	14	37
	60	Dwelling Units												
Unadjusted Volume				405	404	809		15	39	54		51	28	79
Internal Capture Trips				0	0	0		0	0	0		0	0	0
Pass-By Trips				0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets				405	404	809		15	39	54		51	28	79

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition
TRIP GENERATION 10, TRAFFICWARE, LLC

Seasonal Adjustment Factors
NHDOT Group 4 (Urban Highways)

Stephen G. Pernaw & Company, Inc.

Year 2019 Monthly Data - Urban

		Adjustment to	
Month	ADT	Average	Peak
Jan	11,431	1.12	1.23
Feb	11,848	1.08	1.18
Mar	12,141	1.06	1.15
Apr	12,860	1.00	1.09
May	13,551	0.95	1.03
Jun	13,785	0.93	1.02
Jul	13,942	0.92	1.01
Aug	14,016	0.92	1.00
Sep	13,379	0.96	1.05
Oct	13,339	0.96	1.05
Nov	12,265	1.05	1.14
Dec	11,496	1.12	1.22

Year 2018 Monthly Data - Urban

		Adjustment to	
Month	ADT	Average	Peak
Jan	11,282	1.13	1.24
Feb	11,848	1.08	1.18
Mar	11,828	1.08	1.18
Apr	12,491	1.02	1.12
May	13,587	0.94	1.03
Jun	13,911	0.92	1.00
Jul	13,765	0.93	1.01
Aug	13,945	0.92	1.00
Sep	13,168	0.97	1.06
Oct	13,367	0.96	1.04
Nov	12,215	1.05	1.14
Dec	11,963	1.07	1.17

Year 2017 Monthly Data - Urban

		Adjustment to	
Month	ADT	Average	Peak
Jan	12254	1.21	1.33
Feb	13494	1.10	1.21
Mar	14335	1.03	1.14
Apr	15004	0.99	1.09
May	15547	0.95	1.05
Jun	16310	0.91	1.00
Jul	15523	0.95	1.05
Aug	15974	0.93	1.02
Sep	15546	0.95	1.05
Oct	15104	0.98	1.08
Nov	14544	1.02	1.12
Dec	14151	1.05	1.15

September to Peak-Month Factor = 1.05

Stephen G. Pernaw & Company, Inc.

STEPHEN G. PERNAW & COMPANY, INC.
PROJECT: Proposed Residential Development, Portsmouth New Hampshire
NUMBER: 2047A
COUNT STATION: 82379124

HISTORICAL GROWTH CALCULATIONS

LOCATION : Peverly Hill Road (S. of NH33)
CASE : AADT

ARITHMETIC PROJECTIONS

YEAR	AADT
2015	10527
2016	10403
2017	10611
2018	10823

Regression Output:

Constant	-210417.4
Std Err of Y Est	129.62099
R Squared	0.6412368
No. of Observations	4
Degrees of Freedom	2
X Coefficient	109.6
Std Err of Coef.	57.968267

PROJECTIONS

2020	10975
2021	11084
2022	11194
2023	11303
2024	11413
2025	11523
2026	11632
2027	11742
2028	11851
2029	11961
2030	12071

RATE = 110 VPD/YEAR

GEOMETRIC PROJECTIONS

YEAR	AADT	Ln AADT
2015	10527	9.26170
2016	10403	9.24985
2017	10611	9.26965
2018	10823	9.28943

Regression Output:

Constant	-11.49974
Std Err of Y Est	0.0122527
R Squared	0.6384951
No. of Observations	4
Degrees of Freedom	2
X Coefficient	0.0102987
Std Err of Coef.	0.0054796

PROJECTIONS

2020	10979
2021	11092
2022	11207
2023	11323
2024	11440
2025	11559
2026	11678
2027	11799
2028	11921
2029	12045
2030	12170

RATE = 1.0 % / YEAR

Use 2.0%

Stephen G. Pernaw & Company, Inc.

CALCULATION SHEET

Attachment 8

Project:	Portsmouth - Res.	Job Number:	2047A
Calculated By:	SGP	Date:	10/5/2020
Checked By:	CA	Date:	10/5/2020
Sheet No:	1	Of:	1
Subject:	COVID-19 Adjustment Factor		

I. Given:

1. NHDOT traffic count on Peverly Hill Road (south of NH33) in June 2019 (Pre-covid conditions)
   - Average AM peak hour = 892 veh.
   - Average PM peak hour = 1,030 veh.
   - Average weekday = 11,072 veh.
2. SGP ATR count on Wednesday, September 30, 2020
   - AM peak hour = 673 veh.
   - PM peak hour = 803 veh.
   - Weekday = 8,474 veh.
3. NHDOT Group 4 (Urban Highways) seasonal adjustment factors
   - September to peak month = 1.05 (average of 2017, 2018 & 2019)
   - June to peak month = 1.01 (average of 2017, 2018 & 2019)
4. Background growth rate = 1.0/year; use 2.0% to account for other unknown development projects

II. Calculate 2020 peak month volumes using NHDOT June 2019 data (pre-covid conditions)

1. AM = 892 x 1.02 x 1.01 = 919 veh
2. PM = 1,030 X 1.02 x 1.01 = 1,061 veh
3. Weekday = 11,072 x 1.02 x 1.01 = 11,406 veh

III. Calculate 2020 peak month volumes using SGP September 2020 data (during covid)

1. AM = 673 x 1.05 = 707 veh
2. PM = 803 X 1.05 = 843 veh
3. Weekday = 8,474 x 1.05 = 8,898 veh

IV. Calculate individual COVID-19 factors

1. AM = 919 / 707 = 1.30
2. PM = 1,061 / 843 = 1.26
3. Weekday = 11,406 / 8,898 = 1.28

V. Calculate average COVID-19 factor

Average covid factor = (1.30 + 1.26 + 1.28) / 3 = 1.28

Stephen G. Pernaw & Company, Inc.

Location: Portsmouth, New Hampshire
Job Number: 2047A

TRIP DISTRIBUTION ANALYSIS

Work Destination Report - Where Workers are Employed Who Live in the Selection Area - by County Subdivisions

Total All Jobs

Jobs Counts by County Subdivisions Where Workers are Employed - All Jobs	Count	Gateway % A	Gateway % B	Gateway % C		Gateway Allocation A	Gateway Allocation B	Gateway Allocation C	
Portsmouth city (Rockingham, NH)	4,355	0.40	0.40	0.20	1.00	1742	1742	871	4355
Dover city (Strafford, NH)	604	0.50		0.50	1.00	302	0	302	604
Exeter town (Rockingham, NH)	423	1.00			1.00	423	0	0	423
Manchester city (Hillsborough, NH)	399	1.00			1.00	399	0	0	399
Boston city (Suffolk, MA)	371	1.00			1.00	371	0	0	371
Newington town (Rockingham, NH)	343	0.50		0.50	1.00	172	0	172	344
Hampton town (Rockingham, NH)	266	0.70		0.30	1.00	186	0	80	266
Durham town (Strafford, NH)	266	0.30		0.70	1.00	80	0	186	266
Nashua city (Hillsborough, NH)	249	1.00			1.00	249	0	0	249
Salem town (Rockingham, NH)	193	1.00			1.00	193	0	0	193
	7469					4117	1742	1611	7470
						55.1%	23.3%	21.6%	100%
					USE	55	23	22	100

KEY

A=To/From Points West via NH Route 33
B=To/From Points East via NH Route 33
C=To/From Points South via Peverly Hill Road

Attachment 9

HCM 2010 TWSC
3: Peverly Hill Road & Proposed Site Driveway

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	5	2	458	688	5
Future Vol, veh/h	17	5	2	458	688	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	85	85	64	64
Heavy Vehicles, %	0	0	0	8	5	0
Mvmt Flow	19	6	2	539	1075	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1622	1079	1083	0	-	0
Stage 1	1079	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	114	268	652	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	114	268	652	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	652	-	131	-	-
HCM Lane V/C Ratio	0.004	-	0.187	-	-
HCM Control Delay (s)	10.5	0	38.7	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

HCM 2010 TWSC
3: Peverly Hill Road & Proposed Site Driveway

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	6	688	680	22
Future Vol, veh/h	11	3	6	688	680	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	89	89	88	88
Heavy Vehicles, %	0	0	0	2	3	0
Mvmt Flow	12	3	7	773	773	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1573	786	798	0	-	0
Stage 1	786	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	123	395	833	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	395	833	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	452	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.4	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	833	-	142	-	-
HCM Lane V/C Ratio	0.008	-	0.11	-	-
HCM Control Delay (s)	9.4	0	33.4	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Stephen G. Pernaw & Company, Inc.

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

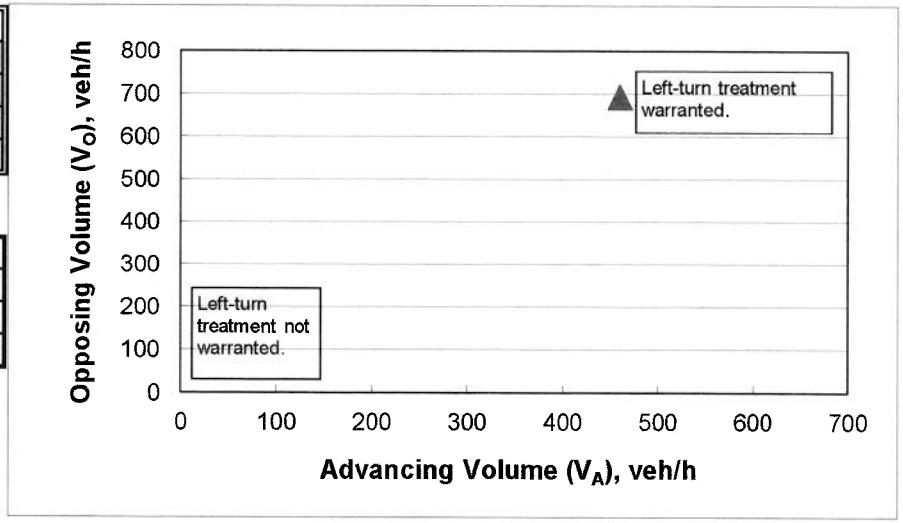
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	0%
Advancing volume (V_A), veh/h:	460
Opposing volume (V_O), veh/h:	693

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1456
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Stephen G. Pernaw & Company, Inc.

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

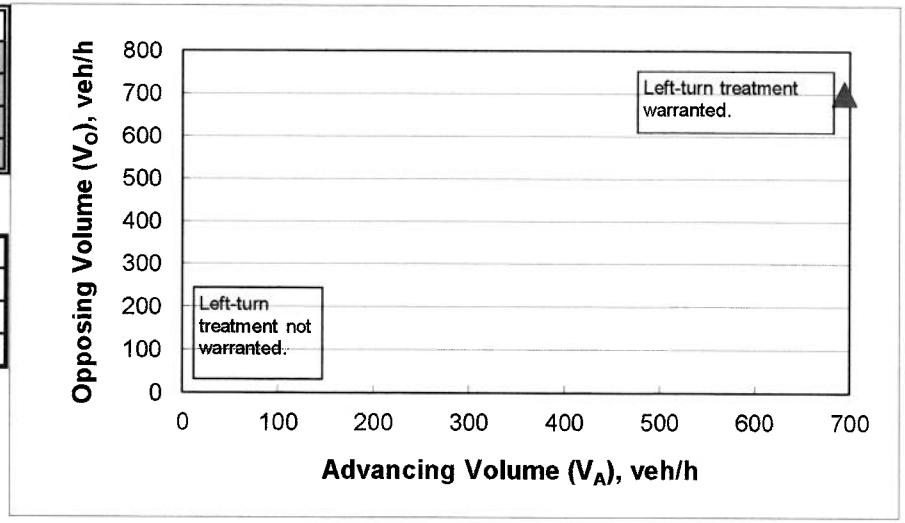
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	694
Opposing volume (V_O), veh/h:	702

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1023
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Stephen G. Pernaw & Company, Inc.

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

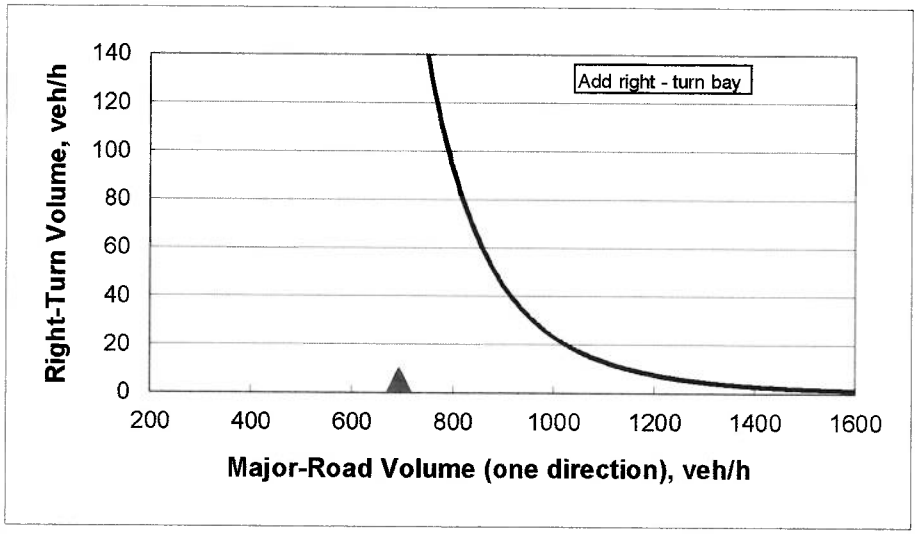
INPUT

2-lane roadway

Variable	Value
Major-road speed, mph:	25
Major-road volume (one direction), veh/h:	693
Right-turn volume, veh/h:	5

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	225
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Stephen G. Pernaw & Company, Inc.

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

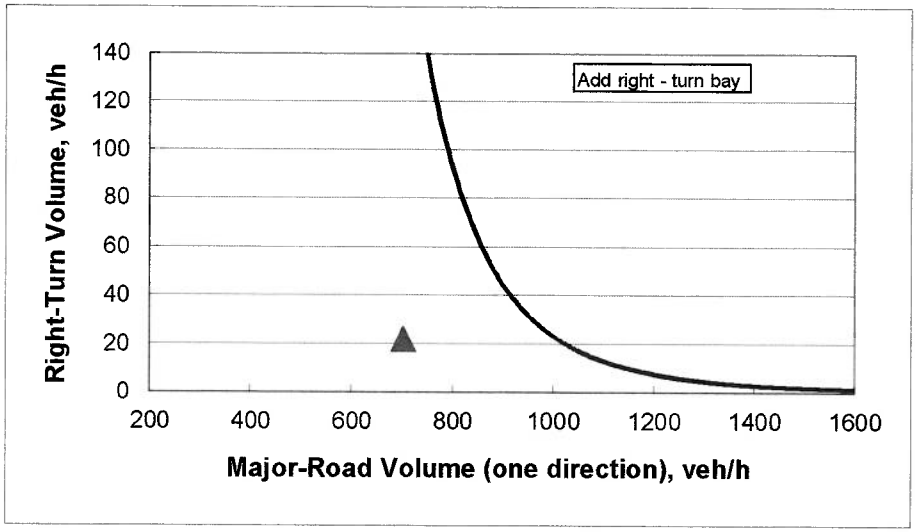
INPUT

2-lane roadway

Variable	Value
Major-road speed, mph:	25
Major-road volume (one direction), veh/h:	702
Right-turn volume, veh/h:	22

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	208
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Attachment 15

Stephen G. Pernaw & Company, Inc.

Figure 2 - 4. Guideline for determining minor-road approach geometry at two-way stop-controlled intersections.

INPUT

Variable	Value
Major-road volume (total of both directions), veh/h:	1153
Percentage of right-turns on minor road, %:	23%
Minor-road volume (one direction), veh/h:	22

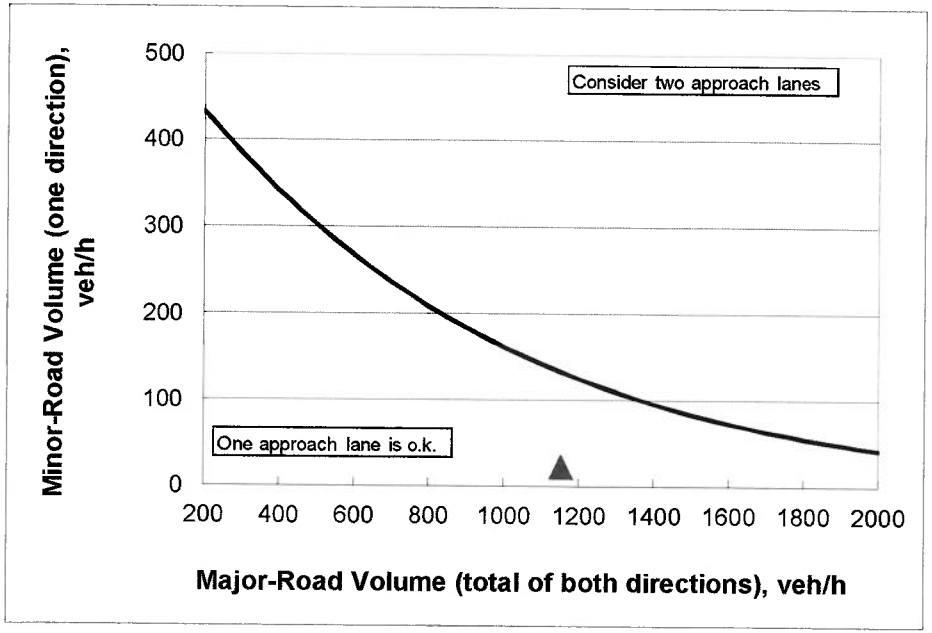
OUTPUT

Variable	Value
Limiting minor-road volume (one direction), veh/h:	132
Guidance for determining minor-road approach geometry:	
ONE approach lane is o.k.	

CALIBRATION CONSTANTS

Minor Road	Critical gap, s:	Follow-up gap, s:
Right-turn capacity, veh/h:	6.2	3.3
Left-turn and through capacity, veh/h:	6.5	4.0

* according to Table 17 - 5 of the HCM



Attachment 16

Stephen G. Pernaw & Company, Inc.

Figure 2 - 4. Guideline for determining minor-road approach geometry at two-way stop-controlled intersections.

INPUT

Variable	Value
Major-road volume (total of both directions), veh/h:	1396
Percentage of right-turns on minor road, %:	21%
Minor-road volume (one direction), veh/h:	14

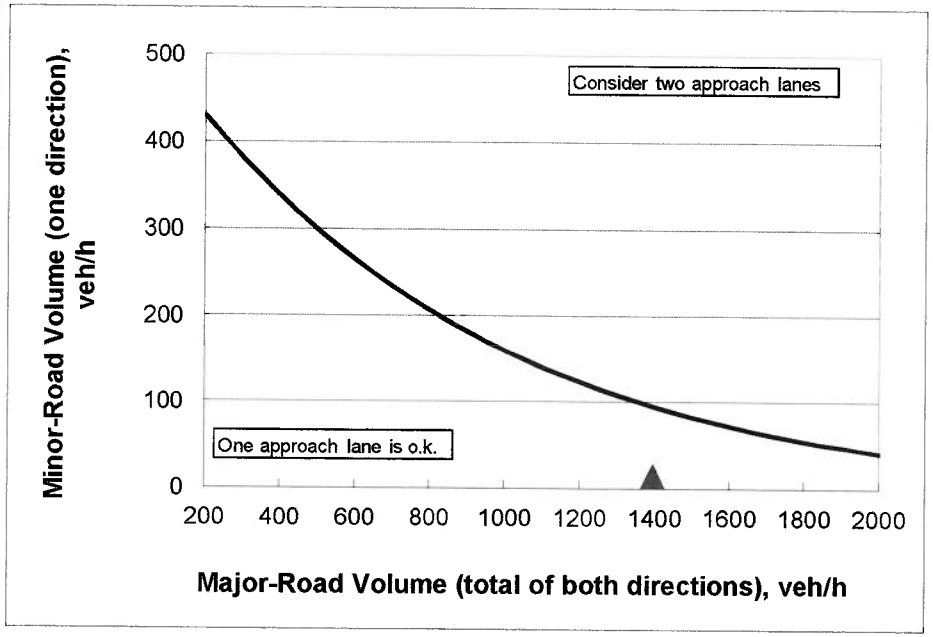
OUTPUT

Variable	Value
Limiting minor-road volume (one direction), veh/h:	95
Guidance for determining minor-road approach geometry:	
ONE approach lane is o.k.	

CALIBRATION CONSTANTS

Minor Road	Critical gap, s:	Follow-up gap, s:
Right-turn capacity, veh/h:	6.2	3.3
Left-turn and through capacity, veh/h:	6.5	4.0

* according to Table 17 - 5 of the HCM



Attachment 17

Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 2047A

To: Jack McTigue, P.E., CPESC
TFMoran - Seacoast Division

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Development – 83 Peverly Hill Road
Portsmouth, New Hampshire

Date: June 17, 2021

As requested, our office has reviewed the plan entitled: *"Overall Site Layout Plan – Peverly Hill Road Condominiums"* dated April 19, 2021 (no revisions, see Attachment 1) and the "Site Layout Plans" (Sheets C-04 through C-12) and offer the following comments:

1. The proposed development has been reduced in size since the publication of our *"Traffic Evaluation"* memorandum dated 10/6/20 from 60 dwelling units to 56 units. This change translates into a slight reduction of -2 (AM) and -3 (PM) fewer vehicle-trips during the peak hour periods than was previously analyzed.
2. The roadway system employs a 26-foot pavement width on the section that extends from Peverly Hill Road to the first and only internal T-intersection. From there, the loop road will be constructed with a 22-foot pavement width. The proposed pavement widths are acceptable from a traffic engineering standpoint given the traffic volumes and travel speeds involved.
3. The various "Site Layout Plans" include several horizontal curves and reverse curves and specifies the installation of vertical granite curb on both sides of the roadway. The elimination of the previously proposed straight tangent sections will reduce travel speeds in the neighborhood. The "side friction" associated with vertical curbing will also serve to reduce travel speeds.
4. The raised crosswalk located between units #44 and #45 will require slower speeds and the advanced warning signs (W17-1) are appropriate. These should be supplemented with an Advisory Speed Plaque (W13-1P).

We find that the current layout of the proposed roadway system is superior to the initial conceptual layout in terms of travel speeds and overall livability. The proposed roadway layout reasonably mitigates the previous concerns with travel speeds within the development.

Attachment

cc: Michael Green, Jenna Green – Green and Company

169 Ocean Boulevard/PO Box 249
Hampton, NH 03842
603.601.8154
TheEngineeringCorp.com
Create | Design | Innovate

Juliet T.H. Walker, AICP
Planning Director
City of Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

June 22, 2021

Ref. T1118

Re: Peverly Hill Road Residential Development
Transportation Peer Review

Dear Ms. Walker:

On behalf of the City of Portsmouth, TEC, Inc. (TEC) has reviewed documents as part of the transportation engineering peer review of a proposed mixed used development located at 83 Peverly Hill Road in Portsmouth. The project consists of constructing 56 dwelling units. Access is provided by one site roadway intersection onto Peverly Hill Road. It is proposed that the site roadway be accepted as a public road by the City.

The following documents were received as part of our review:

- *Traffic Evaluation – Proposed Residential Development*, prepared by Stephen G. Pernaw & Company, Inc. – October 6, 2020
- *Proposed Residential Development Traffic Calming Memorandum,* prepared by Stephen G. Pernaw & Company, Inc. – April 5, 2021
- *Peverly Hill Road Condominiums Site Development Plans,* prepared by TFM – April 19, 2021
- *Peverly Hill Road Condominiums Conceptual plan,* prepared by TFM, May 10, 2021

TEC completed a review of these documents for the City of Portsmouth, and the following provides a summary of the comments that were compiled during our review:

1. In order to be consistent with the Traffic Evaluation, Peverly Hill Road is designated as a north/south roadway within this letter.
2. The Traffic Evaluation presents a study area including one intersection of the site roadway with Peverly Hill Road. TEC concurs with the scope of the study area and does not find that additional intersections are warranted based upon the documented trip generation levels.
3. Traffic counts utilized within the Traffic Evaluation were conducted along Peverly Hill Road in September 2020, when vehicular traffic volumes were impacted by the Covid-19

pandemic. The 2020 volumes were compared with June 2019 traffic volumes recorded by NHDOT in the same location. In order to project future traffic volumes along Peverly Hill Road for the design year of 2032, the September 2020 volumes were increased by a seasonal adjustment factor, a background growth rate, and a Covid-19 adjustment factor. TEC concurs with this methodology and the use of a 2032 horizon year.

The weekday morning and evening peak commuter hours were studied to determine the project's overall effect on the adjacent roadway system. TEC concurs that these time periods are generally appropriate to study the impact for a residential development.

4. The Traffic Evaluation uses data published in the industry standard Institute of Transportation Engineers (ITE) publication, *Trip Generation, 10th Edition* to estimate the traffic generated by the proposed development. The Traffic Evaluation uses a combination of data found under Land Use Code (LUC) 221 – Multi-Family Housing (Mid-Rise) and LUC 210 – Single Family Detached Housing to project future traffic volumes associated with the proposed residential units. The information provided in the TAC Submission, dated April 19, 2021, illustrates the units as three-bedroom detached dwellings averaging 2,400 square feet of living space. No age restriction is proposed for the development. The units appear to be intended to be sold as condominium units, however, the traffic generation characteristics may more closely resemble single family dwellings due to the size, separation, and number of bedrooms in each unit.

   The Traffic Evaluation projects 29 vehicle trips during the weekday morning peak hour and 42 vehicle trips during the weekday evening peak hour using the combined methodology. TEC recommends the use of only LUC 210 - Single Family Detached Housing to reflect the trip generation characteristics of the proposed residential units more accurately. For the 56 proposed units as shown on the Site Plan, LUC 210 projects 41 vehicle trips during the weekday morning peak hour and 55 vehicle trips during the weekday evening peak hour. TEC understands that the increase likely will not change the impact of the site on the adjacent roadway system. However, the Applicant should discuss whether these additional trips can be accommodated safely and efficiently at the site roadway intersection onto Peverly Hill Road.

5. The vehicular traffic generated by the proposed project was distributed onto the adjacent roadway system based upon available Journey-to-Work data published by the US Census Bureau for persons residing in the City of Portsmouth. TEC notes that there are significant employment opportunities within the City of Portsmouth along the Route 1 corridor to the south of the site, which can be accessed directly via Peverly Hill Road. The Applicant should discuss if these employment opportunities were considered when preparing the vehicular traffic distribution, as only 22% of the site generated traffic is projected to travel to/from this direction. The Applicant should review the site distributions and revise the analyses at the intersection of the site roadway with Peverly Hill Road, as necessary.

6. TEC generally concurs with the use of the Highway Capacity Manual 2010 methodology as used within the Synchro version 10 software.

7. The Traffic Evaluation indicates that the site traffic is expected to increase the two-way traffic volume along Peverly Hill Road by 2% north of the site and 1% south of the site in the 2032 future conditions, which is unlikely to be noticeable. The intersection of the site

roadway with Peverly Hill Road is projected to operate with available capacity, minimal queues, and typical delays for intersecting side streets under stop control. No off-site mitigation is proposed to be implemented.

8. The comments as noted above may result in modifications to the results of the capacity and queue analysis and therefore TEC reserves the right to provide additional comments and improvement recommendations upon completion of the peer review comment responses.
9. The site roadway approach to its intersection with Peverly Hill Road is shown with one exiting lane to accommodate left turning and right turning vehicles. Provision of two lanes on this approach may not significantly improve the operation of this approach and maintaining a minimum crossing distance for pedestrians is preferred.
10. Peverly Hill Road provides one travel lane in each direction along most of its length. The northbound approach of Peverly Hill Road widens at its intersection with Middle Road, just to the north of the site, to provide an exclusive left turn lane and a shared left/right turn lane. The taper area for this widening occurs along the site frontage. No dedicated left turn lane is required or provided for northbound left turns into the site roadway. The Applicant should discuss whether any conflicts are anticipated between northbound left turns accessing the site roadway and northbound vehicles wishing to enter the exclusive left turn lane at Middle Road.
11. Provision of a multi-use path along the west side of Peverly Hill Road, extending between Middle Road and West Road is under design by the City of Portsmouth to increase safety for pedestrians and bicyclists and provide infrastructure to accommodate alternative modes of transportation between residential areas and commercial areas along Route 1. The multi-use path will directly benefit the residents of the proposed development by providing the opportunity for multi-modal travel along Peverly Hill Road as well as safe and uninterrupted access to the Portsmouth Plains Playground and recreational area at the intersection of Peverly Hill Road with Middle Road. The Applicant should provide any necessary easements identified by the City in order to facilitate the construction of this path. The site roadway approach at its intersection with Peverly Hill Road should be designed and constructed in anticipation of the multi-use path by including a crosswalk with ADA-compliant curb ramps across the site roadway approach. The City should consider requiring the Applicant to construct the multi-use path along the site frontage and extending north 500 feet toward Middle Road in accordance with the City's design plans to provide a direct connect between the residential development and the recreation area and pedestrian facilities along Middle Road.
12. Sidewalk is provided along one side of the site roadway throughout the site, creating a pedestrian network. Further, connection to the planned Seacoast Greenway Rail Trail is proposed, along with a pocket park and four parking spaces for visitor access. The Applicant should discuss the volume of vehicular traffic that may access the site daily and the anticipated volume of pedestrian and bicycle traffic that are anticipated to use the site roadway between the Rail Trail and the proposed multi-use path along Peverly Hill Road.
13. The site roadway has been designed in accordance with the City of Portsmouth Complete Streets Design Guidelines for a Neighborhood Slow Street. The roadway is 26 feet wide,

which allows for parking along one side of the roadway and two 9-foot travel lanes. Sidewalk along one side of the roadway creates a pedestrian network facility. Bicycles will be accommodated within the roadway. However, in order to experience the benefit of a Complete Streets design along the site roadway, residents should be encouraged to park along at least one side of the roadway.

Should residents not park on-street, the traffic calming nature of the roadway will be reduced, as the entire 26-foot width would be useable by vehicle traffic. While the circular curvature of the roadway will aid in reducing vehicle speeds, alternative forms of traffic calming, such as raising the proposed crosswalks or the addition of speed humps, can be considered along the straight portion of the roadway to keep both resident and visitor vehicular speeds low.

14. The Pernaw memorandum discussing traffic calming opportunities, dated April 5, 2021, recommends additional signage around the proposed crosswalk located at the internal T-intersection to alert vehicles to potential crossing pedestrians. TEC concurs with these recommendations. Similar additional signage is recommended for the proposed crosswalk across the site roadway at the pocket park/Rail Trail connection.

Please do not hesitate to contact me directly if you have any questions concerning this peer review at 978-794-1792.Thank you for your consideration.

Sincerely,
TEC, Inc.
"The Engineering Corporation"

Elizabeth Oltman

Elizabeth Oltman, PE
Director of Transportation Planning

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

May 21, 2021

Raymond C. Pezzullo, P.E.
Assistant City Engineer
Portsmouth Department of Public Works
680 Peverly Hill Road
Portsmouth, NH 03801

Corey Colwell, LLS
Division Manager / Principal
TFMoran Seacoast Division
170 Commerce Way, Suite 102
Portsmouth, NH 03801

Re: **Portsmouth Water Distribution System Model**
Peverly Hill Road Developer Review

Dear Mr. Pezzullo and Mr. Colwell:

As requested, Weston & Sampson has completed the water system evaluation of the proposed residential development located on Peverly Hill Road in Portsmouth, NH. The proposed development includes 56 new single family condominiums on a cul-de-sac. The progress print, dated 03/09/2021, of the "Site Development Plans: Proposed Open Space Residential PUD," prepared by TFMoran Seacoast Division, was used for this review. The plan set shows the development connecting to the existing 6-inch water main in Peverly Hill Road and does not specify a size for the proposed water main in the development. The plans also note that each unit is to have a sprinkler system. Demands were estimated to be about 68,320 gpd by TFMoran Seacoast Division, dated 05/18/2021.

Two hydrant flow tests were performed by Weston & Sampson and City staff, the results of which were used to calibrate the City's hydraulic model in the area of the proposed development. The results of the flow test indicated an available fire flow of 1,326 gpm at 20 psi near the location of the proposed connection to the 8-inch water main on Peverly Hill Road. The hydrants on Peverly Hill Road are connected to the existing 6-inch water main. The hydraulic model was calibrated using the flow test data, carried over into the existing 8-inch water main running parallel to the existing 6-inch water main in Peverly Hill Road. When compared to the hydraulic model, the simulated fire flows were similar to the field observations. Based on these results the model was determined to be adequately calibrated.

The purpose of this evaluation was to determine if the proposed development will receive adequate water pressure and fire flows from the existing Portsmouth water system, and if the development may have an adverse impact on the Portsmouth water system.

REGULATIONS AND EVALUATION CRITERIA

The New Hampshire Code of Administrative Rules and the Insurance Services Office's (ISO) requirements for available fire flow were used as the basis for our determination. The New Hampshire Code of Administrative Rules PUC 600.02 states that: "Each utility shall maintain normal operating pressures of not less than 20 [psi]." Env-Dw 405.32, which applies to community water systems that serve between 25 and 1000 people and so is relevant but not directly applicable in this case, provides additional detail: "The water distribution piping system shall be capable of passing peak flow without excessive frictional loss. At peak flow, pressure at the sill elevation of each lot or unit shall be at least 20 psi." In addition to the regulatory requirement to maintain pressure greater than 20 psi during all conditions, Weston & Sampson recommends that the City maintain a minimum of 35 psi pressure to

all residences in the system during all "typical" demand conditions, which would include peak hour and summertime irrigation demands but exclude fire flows.

The Insurance Services Office (ISO) is an independent organization that provides ratings for town insurance pricing on systems providing fire protection. ISO estimates needed fire flow requirements at representative locations throughout communities and publishes their methodology and guidance for calculating needed fire flow for individual buildings in their "Guide for Determination of Needed Fire Flow." In our experience, the necessary available fire flow for a development like the one proposed here at 83 Peverly Hill Road would be approximately 1,250 gpm at 20 psi.

MODELING RESULTS

The model was run to evaluate the development if connected to the existing 8-inch water main in Peverly Hill Road. The connection to the existing parallel 6-inch water main was evaluated and identified to be less than 1,000 gpm at 20 psi. It is recommended that the new development connect to the existing 8-inch water main and not to the existing parallel 6-inch water main.

The model was evaluated under peak hour demand (PHD) conditions to determine the potential impact on typical system pressure and under maximum day demand (MDD) conditions to determine if the development will receive adequate fire flows. The extended period simulation diurnal curve in the hydraulic model, previously developed for the City of Portsmouth, scaled the MDD by a factor of 2.33 for PHD. The estimated demands provided by the developer denoted that conditions for June/July, which would be a period of MDD conditions. Table 1 below shows how demands were scaled for PHD conditions.

Table 1: Estimated Demands

	Developer Estimated MDD (gpm)	PHD (gpm)
Demand (gpm)	47.4	110.5

EVALUATION

The hydraulic model indicates that the pressures in the development at PHD would be greater than 35 psi, as shown in Table 2 below.

Table 2: Hydraulic Model Results

Pressure (psi) at PHD	Available Fire Flow (gpm) at 20 psi
45.2	1352

The plans indicate that the proposed condominiums will have sprinklers for fire protection. However, it is still recommended that the system be able to provide adequate fire flows to the fire hydrants in the development to handle a fire event outside the limits of the sprinkler systems. Fires on the exterior of the buildings, roofs, a car, or a dumpster would require fire flows from nearby hydrants. It is anticipated that a fire flow of approximately 1,250 gpm for 2 hours at a pressure of 20 psi would be appropriate for this development. The hydraulic model indicates that the available fire flow from the existing 8-inch water main on Peverly Hill Road is in excess of 1,250 gpm, as indicated in Table 2 above.

RECOMMENDATIONS

The hydraulic model indicates that Peverly Hill Road can support peak domestic demands with subsequent pressure greater than the recommended pressure for this type of residential development. The model indicated that the available flow through the existing 8-inch water main in Peverly Hill Road would be in excess of 1,250 gpm. It is recommended that the proposed water main for the development connect to the existing 8-inch water main in Peverly Hill Road and not to the existing parallel 6-inch water main.

We appreciate the opportunity to assist the City of Portsmouth and TF Moran in this matter. Please contact me at 978-532-1900 should you have any questions or require further support.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Leah Stanton, PE
Vice President

Attachments:

Peverly Hill Water Utilities (plan set)
Peverly Hill Water Flows (estimate demands)

\\wse03.local\WSE\Projects\NH\Portsmouth, NH\Modeling On-Call\Peverly Hill Rd\Peverly HIll Rd Developer Review Memo_Draft.docx

NOTES

1. ALL CONDOMINIUM UNITS SHALL HAVE FIRE SUPPRESSION SPRINKLERS SYSTEMS INSTALLED.
2. SEE UTILITY NOTES ON NOTES & LEGEND SHEET (C-01).
3. A THIRD PARTY INSPECTOR SHALL BE ON SITETO INSPECT THE INSTALLATION OF THE UTILITIES.

UTILITY COLOR LEGEND	
WATER	

N

NAD 83

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF MANCHESTER CHURCH OF IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 242 LOT 4

PUBLIC ROAD A
(0.972 FT)

PEVERLY HILL ROAD
(PUBLIC - RIGHT OF WAY)

MAP 232 LOT 92
N/F
JOYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TARLETON
74 LEAVITT AVENUE
PORTSMOUTH, NH 03801
RCRD BK.#5685 PG.#1471

MAP 232 LOT 93
N/F
KENNETH T. BLACK
82 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3743 PG.#1942

MAP 232 LOT 87
N/F
SUSAN L. DIXON
68 WIBIRD STREET
PORTSMOUTH, NH 03801
RCRD BK.#2504 PG.#0028

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1473
PORTSMOUTH, NH 03802
RCRD BK.#2269 PG.#0663

MAP 255 LOT 8
N/F
MERRIMAC VALLEY HOMES, INC.
1794 BRIDGE STREET, UNIT 6
DRACUT, MA 01826
RCRD BK.#5881 PG.#0981

C-29 C-30 C-31 C-32 C-33 C-34 C-35 C-36 C-37

100' WETLAND BUFFER
EDGE OF WETLAND

PC 5+37.80
PT 28+64.63
PC 23+43.80
PT 20+26.50
PT 24+46.67

HORIZONTAL SCALE 1"=100'
100 50 0 100

PROGRESS PRINT
date: 03/09/2021

REV.	DATE	DESCRIPTION	DR	CK

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL UTILITY PLAN

PROPOSED OPEN SPACE RESIDENTIAL PUD

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **FEBRUARY 25, 2021**

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE					
47388.11	DR	JSM	FB	–	C-28
	CK	JJM	CADFILE	47388-11_UTILITY	

Mar 12, 2021 - 12:32am
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 232 LOT 92
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TAR
74 LEAVITT AVENUE
PORTSMOUTH, NH 038(
RCRD BK.#5885 PG.#141

MATCHLINE SEE SHEET - C-30

NAD 83

NOTES

1.

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AB
G

PROPOSED TAPPING SADDLE AND X" GATE VALVE (COORDINATE WITH CITY WATER DEPARTMENT)

PROPOSED 2" CTS FIRE SERIVCE (TYP)
PROPOSED 1" CTS WATER SERVICE (TYP)

PROPOSED D.I. WATER LINE (SIZE TO BE DETERMINED)

100' WETLAND BUFFER

EDGE OF WETLAND

IRF
IRF
WM READING
WM
WM
STOP

PEVERLY HILL ROAD
(PUBLIC RIGHT OF WAY)

0+00 1+00 2+00 3+00 4+00

PI 1+43.45
0+27.27

HORIZONTAL SCALE 1"=20'
20 10 0 20

PROGRESS PRINT
date: 03/09/2021

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PROPOSED OPEN SPACE RESIDENTIAL PUD

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")

FEBRUARY 25, 2021

REV.	DATE	DESCRIPTION	DR	CK

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	C-29

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MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MATCHLINE SEE SHEET - C-31

MATCHLINE SEE SHEET - C-29

MATCHLINE SEE SHEET - C-33

AB
B
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C
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SC

PROPOSED 2" CTS
FIRE SERIVCE (TYP)

PROPOSED 1" CTS
WATER SERVICE (TYP)

PROPOSED D.I. WATER LINE
(SIZE TO BE DETERMINED)

PC 5+37.80
PT 5+83.06
PT 6+56.38
PT 28+64.63

8+00
7+00
29+25.41
29+00
28+00
6+00
5+00
4+00

100' WETLAND BUFFER

EDGE OF WETLAND

HORIZONTAL SCALE 1"=20'
20 10 0 20

N
NAD 83

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811 NH
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PROJ. #	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	C-30

MATCHLINE SEE SHEET - C-32

MATCHLINE SEE SHEET - C-30

PROPOSED D.I. WATER LINE (SIZE TO BE DETERMINED)

PROPOSED 2" CTS FIRE SERIVCE (TYP)

PROPOSED 1" CTS WATER SERVICE (TYP)

PUBLIC ROAD A
(2,932 FT)

12+00 11+00 10+00 9+00 8+00

PROPOSED 2" CTS FIRE SERIVCE (TYP)

PROPOSED 1" CTS WATER SERVICE (TYP)

SRA SRB

MATCHLINE SEE SHEET - C-34

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

NOTES

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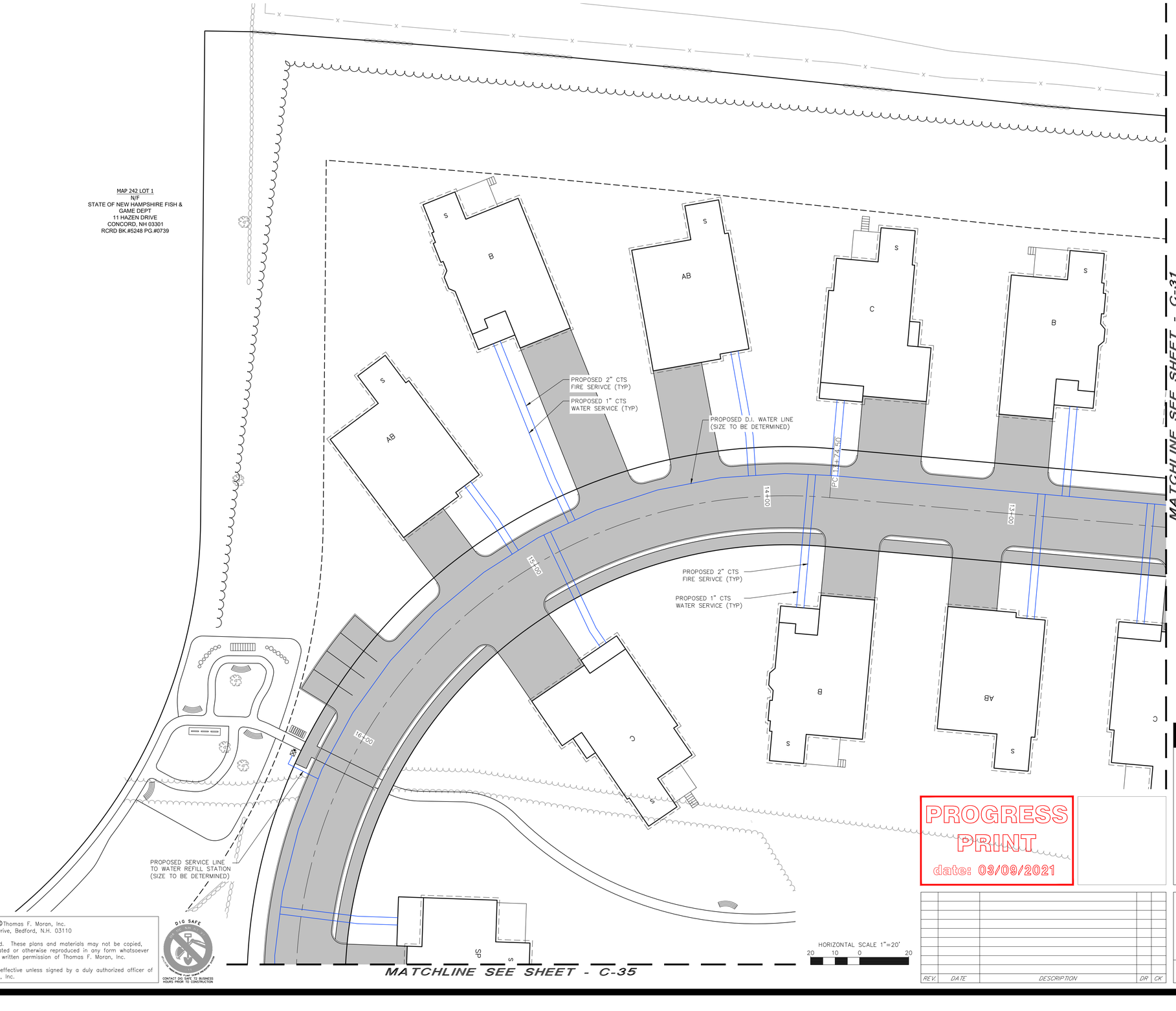
MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739



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NAD 83

HORIZONTAL SCALE 1"=20'
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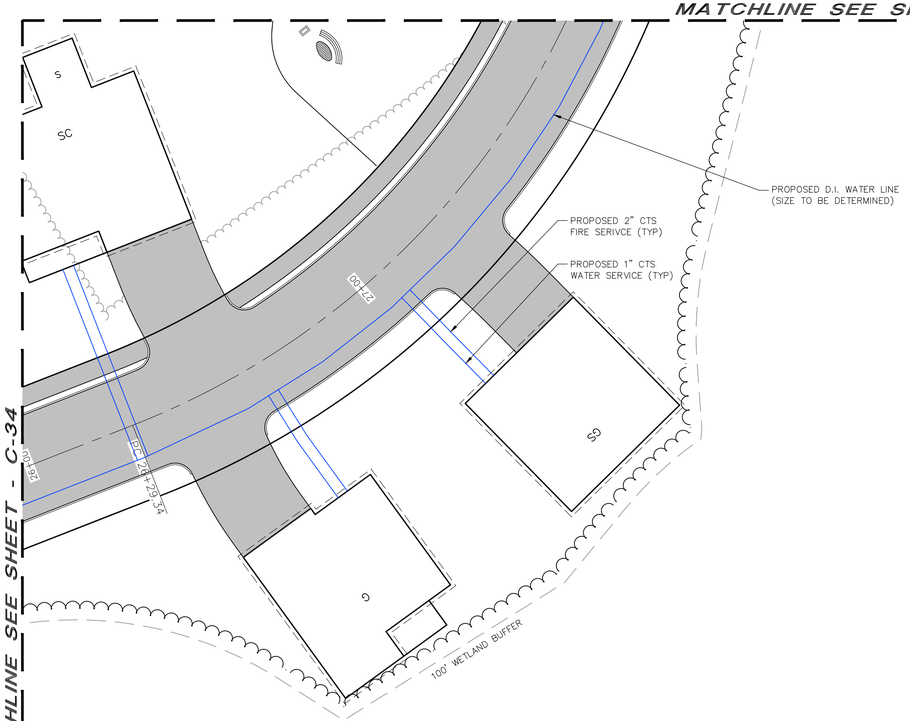
MATCHLINE SEE SHEET - C-30

MATCHLINE SEE SHEET - C-34



EDGE OF WETLAND

EDGE OF WETLAND

NAD 83

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date: 03/09/2021

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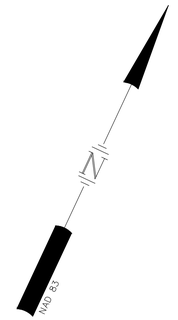

NOTES

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HORIZONTAL SCALE 1"=20'

20 10 0 20

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date: 03/09/2021

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TAX MAP 242 LOT 4

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FEBRUARY 25, 2021

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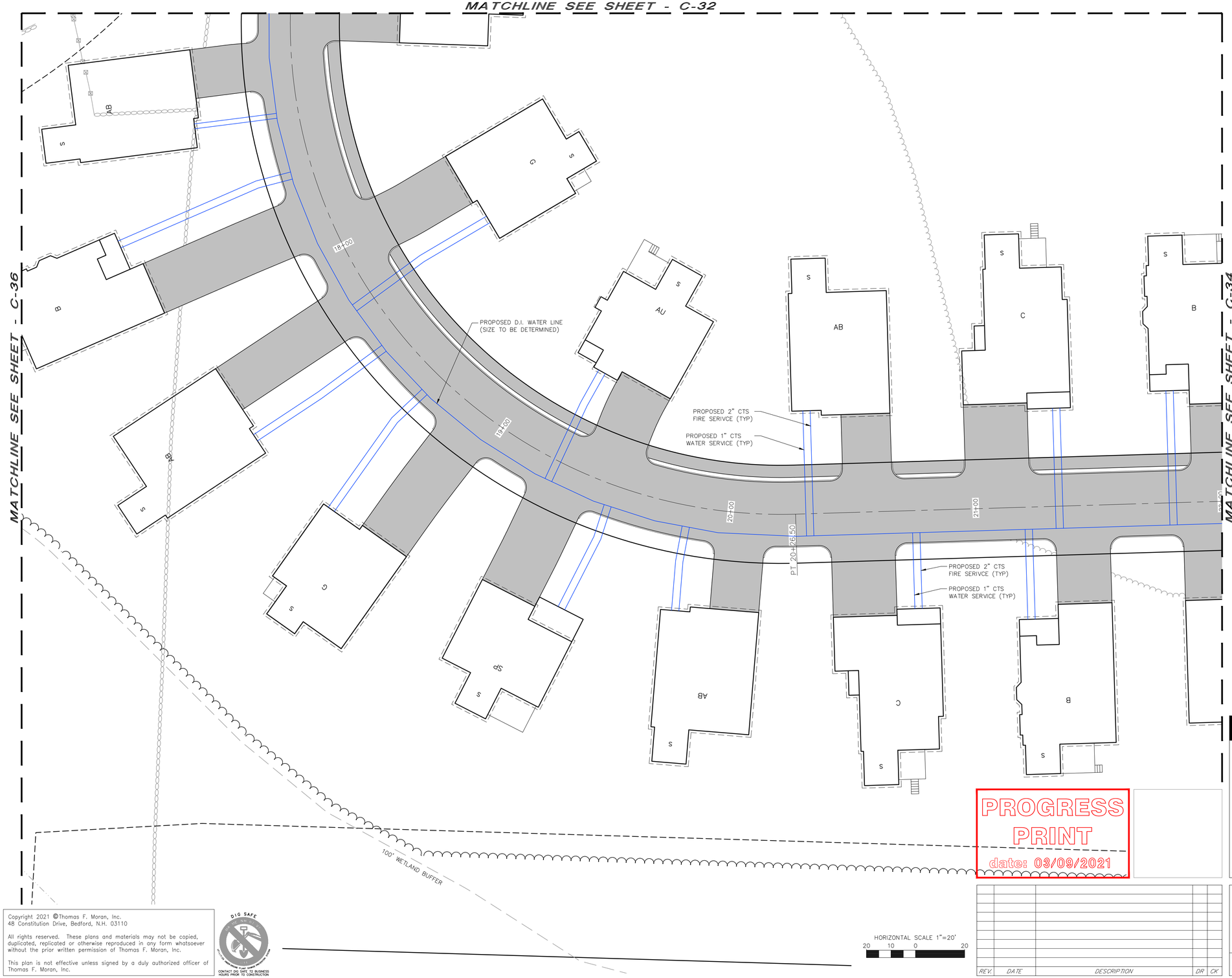
MATCHLINE SEE SHEET - C-32

MATCHLINE SEE SHEET - C-36

MATCHLINE SEE SHEET - C-34



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MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH &
GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MATCHLINE SEE SHEET - C-37

MATCHLINE SEE SHEET - C-35

17+00

18+00

BY

S

B

S

BY

S

G

S

100' WETLAND BUFFER

EDGE OF WETLAND

OLD WETLAND LINE

NEW WETLAND FLAGS A65 & A66 NOT FOUND

HORIZONTAL SCALE 1"=20'
20 10 0 20

N

NAD 83

NOTES

1.

PROGRESS PRINT
date: 03/09/2021

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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47388.11	CK	JJM	CADFILE	47388-11_UTILITY	C-36

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Project **Peverly Hill Rd Condominiums** Date: 5/18/2021

Location **Peverly Hill Rd**

Portsmouth, NH

Unit Water Flows

Total Number of Units 56

Based on 100% 4 Bedroom Units

4 Bedroom Houses

Residences Single Family - 2 Bedroom	300
Additional Flow for 2 Additional Bedroom	300
Gallons Per Day per 4 Bedroom Unit	600

Household Water Flows (Based on NHDES Env-Wq 1008-3 Table 1008-1)

	Number of Units	GPD/ Unit	GPD	
Number of 4 Bedroom	56	600	33,600	
Total Household Flow	56		33,600	GPD for Development

Irrigation Flows (Eto x PF x SF x 0.62) / IE

Conversion Factor	0.62	Galloons per in*sf
Eto - Highest Evapotrans.	0.15	Eto per Portsmouth (June and July)
		Per Rainmaster Historic ET
PF - Plant Factor	1.00	For Lawn
IE - Irrigation Efficiency	0.75	
Square Feet Per Yard	5,000	70'x100' (Lawn) - 2000sf (House)
Irrigation Flows	620	GPD/Unit

	Number of Units	GPD/ Unit	GPD	
Total Irrigation Flow	56	620	34,720	GPD for Development

Total Water Demand =	68,320	GPD for Development

(2) Metered water readings for uses that are as similar as possible to the proposed use, taking into consideration factors such as occupancy and frequency of use, determined as specified in (d), below.

(d) Design flows based on metered water readings shall be calculated:

(1) By finding the average of water meter readings over a period of time that is representative of the volume of water used and multiplying the average by a minimum peaking factor of 2 for commercial light flow or a maximum peaking factor of 3 for commercial heavy flow; or

(2) By measuring not less than 6 months of consecutive daily meter readings, including the month(s) of heaviest use for uses that are seasonal in nature, and using the highest daily flow without application of a peaking factor;

(e) The unit design flow figures referenced in (b) and (c), above, shall be as listed in Table 1008-1, below, subject to (f), below:

Table 1008-1: Unit Design Flow Figures

Use	**Unit Design Flow**
AIRPORTS	5 GPD/Transient plus 10 GPD/Employee
APARTMENTS	See Dwellings
BARS, LOUNGES	See Food Service
BED & BREAKFAST	60 GPD/Guest, based on the greater of 2 guests per room or the actual number of guests the room is designed to accommodate, plus 10 GPD/Employee
BUNKHOUSE	60 GPD/Person
CAMPS:	
Campground with Central Comfort Station	45 GPD/site, plus 20 GPD/Site for the dump station
Recreational Campgrounds with 3-way hookups	60 GPD/Site
Construction Camps	50 GPD/Person
Day Camps (not including meals)	15 GPD/Person
Dining Facility	3 GPD/Person/meal
Residential Youth Recreation Camps	25 GPD/Person plus 3 GPD/Person/meal
CATERERS – Function Rooms	12 GPD/patron
CHURCHES:	
Sanctuary Seating	3 GPD/Seat
Church Suppers	12 GPD/Seat
COUNTRY CLUBS – PRIVATE	
Dining Room	10 GPD/Seat
Snack Bar	10 GPD/Seat
Locker & Showers	20 GPD/Locker
DAY CARE CENTERS	10 GPD/Person
DENTISTS	10 GPD/Chair plus 35 GPD/Staff Member
DOCTOR'S OFFICES	250 GPD/Doctor
DOG KENNELS	50 GPD/Kennel, with one dog per kennel
DWELLINGS:	
Apartment - Studio or One-Bedroom	225 GPD
Apartment - 2 or More Bedrooms	150 GPD/Bedroom
Residence - Single-Family	300 GPD plus 150 GPD for each bedroom over 2
Residence - Duplex	300 GPD plus 150 GPD for each bedroom over 2 for each unit
Rooming House – With Meals	60 GPD/Person
Rooming House – Without Meals	40 GPD/Person
Senior Housing	See Senior Housing

Project #47388.11

DRAINAGE ANALYSIS

F O R

The Peverly Hill Road Condominiums

86 Peverly Hill Road
Portsmouth, NH
Rockingham County

Tax Map 242, Lot 4

Month April 19, 2021
Last Revised June 23, 2021

Prepared By:

TFM Since 1968
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Contents

Table of Figures

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1.0 - SUMMARY & PROJECT DESCRIPTION

The project includes the development of a 56-Unit PUD on 83 Peverly Hill Road, Portsmouth, NH. The existing Tax Map 242 Lot 6 is approximately 4,604,509 sf / 105.7 Acres and currently contains one residential building. The site is within the Single Residence A (SRA) & Single Residence B (SRB) Zoning district is adjacent to a Calvary Cemetery to the North and a wetland to the south. The majority of the buildings on Peverly Hill Road are residential and the surrounding area consists of residential neighborhoods.

The proposed project is to construct 56 single-family unit condominium. Associated improvements include and are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes 56 homes and a public road for access. The 56 buildings and roadway total 247,920 sf / 5.7 acres of impervious area with approximately 732,290 sf / 16.8 acres of disturbance to facilitate the development, this is approximately 5% effective impervious cover. Aside from the 16.8 acres of disturbance, the approximately 88.9 remaining acreage is to be undeveloped. A path is to be constructed connecting the neighborhood with the existing bike path that is under development along the Boston and Main Railroad Tracks.

This analysis has been completed to verify the project will not pose adverse stormwater effects on-site and off-site. Compared to the pre-development conditions, the post-development stormwater management system has been designed to reduce peak runoff rates, reduces runoff volume, reduces the risk of erosion and sedimentation, and improves stormwater runoff quality. In addition, Best Management Practices employed to formulate a plan that assures stormwater quality both during and after construction. The following summarizes the findings from the study.

2.0 - CALCULATION METHODS

The design storms analyzed in this study are the 2-year, 10-year, and 50-year 24-hour storm events. The software program, HydroCAD version 10.00[1] was utilized to calculate the peak runoff rates from these storm events. The program estimates the peak rates using the TR-20 method. A Type III storm pattern was used in the model. Rainfall frequencies for the analyzed region were also incorporated into the model. Rainfall frequencies from the higher of the Extreme Precipitation Rates from Cornell University's Northeast Regional Climate Center (see Appendix A) were used to determine the storm-event intensities, see Table 1. The site lies withing the Great Bay Region, and the rainfalls were increased to take this into account. Design standards were taken from the New Hampshire Stormwater Manual, December 2008[2].

Time of Concentration is the time it takes for water to flow from the hydraulically most remote point in the watershed (with the longest travel time) to the watershed outlet. This time is determined by calculating the time it takes runoff to travel this route under one of three hydrologic conditions: sheet flow, shallow concentrated flow, or channel flow. Because the Intensity-Duration-Frequency (IDF) curve is steep with short TC's, estimating the actual intensity is subject to error and overestimates actual runoff. Due to this, the TCs are adjusted to a minimum of 6 minutes.

[1] HydroCAD version 10.00, HydroCAD Software Solutions LLC, Chocorua, NH, 2013.
[2] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

	24-HOUR RAINFALL RATES		
Storm-Event (year)	Cornell University Rainfall (in)	Factor of Increase For the Great Bay Region	Design Rainfall (in)
2	3.22	115%	3.70
10	4.89	115%	5.62
50	7.43	115%	8.54

Table 1 – 24-Hour Rainfall Rates

3.0 – EXISTING SITE CONDITIONS

The soils within the proposed area of disturbance are identified in accordance with the Site-Specific Soil Survey (see Existing Conditions detail and soil locations). The Site-Specific Soil Survey identifies the soils within the disturbed project area as primarily Newfield sandy loam (HSG B), Hoosic gravelly loamy sand (HSG A), Deerfield loamy sand (HSG B) and Canton sandy loam (HSG B). Hydrologic Soil Group A is classified as having low runoff potential and Hydrologic Soil Group B is classified as moderately low runoff potential.

All other areas that contribute runoff to the project site are composed of Boxford silt loam (HSG C), Scitico silt loam (HSG C), Walpole sandy loam, (HSG C). Hydrologic Soil Group C is classified as having moderately high runoff potential when thoroughly wet.

Offsite soils draining onto the site are classified by the Natural Resource Conservation Service (NRCS) as Scitico Silt Loam (HSG C/D), Eldridge Fine Sandy Loam (HSG C/D), Maybid Silt Loam (HSG C/D), Deerfield Loamy Fine Sand (HSG A), Pennichuck Channery Very Fine Sand Loam (HSG C), Natchaug Mucky Peat (HSG B/D), Hoosic Gravelly Fine Sandy Loam (HSG A) and Squamscott Fine Sandy Loam (HSG C/D). In dual group classifications, the first letter is for drained areas while the second is for un-drained areas.

4.0 - PRE-DEVELOPMENT CONDITIONS

The pre-development condition is characterized by six watersheds. Pre-development subcatchment areas are depicted on the attached plan entitled “Pre-Development Drainage Map,” Sheet D-01 in.

Stormwater runoff from the site that does not infiltrates into the soil, drains into the wetland along the south side of the property (EPOI-1, EPOI-2, EPOI-3, and EPOI-5). A small portion, along the northern edge of the property, drains into the woodlands on the abutting property (EPOI-4 and EPOI-6).

In the pre-development condition, the total impervious area is 78,390 sf over a total drainage analysis area of 775,754 sf.

5.0 - POST-DEVELOPMENT CONDITIONS

The post-development condition is characterized by six watersheds divided into many subcatchment areas. Post-development subcatchment areas are depicted on the attached plan entitled “Post-Development Drainage Map,” sheet D-02.

In the post-development condition, the total impervious area is 333,000 sf over a total drainage analysis area of 732,290 sf disturbed. Impervious area from the project consists of 56 single-family residential buildings, 2932 lf of roadway and associated improvements. Two bioretention areas with internal reservoirs and one subsurface gravel wetland are proposed to treat and mitigate the stormwater runoff from the impact of the new impervious area from the proposed development.

With the exception of the insignificant increase of the 2-year flow at POI-1, the peak runoffs for the proposed project are less than or remains the same as the peak rates of runoff from the existing conditions for all storm events, in accordance with AoT regulations and City stormwater regulations (see Table 2). The flows will all be reduced for the final submission. There will be no adverse effects on the abutting properties from the proposed stormwater management system.

Appendices B and D summarizes all 24-hour storm events for pre- and post-development drainage calculations using HydroCAD analysis. Appendices C and E provide a full summary of the 10-year, 24-hour storm for the pre- and post-development drainage calculations using HydroCAD analysis.

Area Number	2-Year (Flow - cfs)		10-Year (Flow - cfs)		50-Year (Flow - cfs)	
	Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.
POI-1	5.2	5.4	22.2	22.0	58.6	55.2
POI-2	5.7	3.7	22.4	14.3	57.2	41.5
POI-3	11.5	11.5	21.8	21.8	70.4	70.4
POI-4	0.2	0.2	2.7	2.7	12.9	12.9
POI-5	2.7	2.7	7.9	7.9	17.7	17.7
POI-6	0.7	0.7	2.7	2.7	6.8	6.8

Table 2 – Pre and Post Development Flows

6.0 – REGULATORY COMPLIANCE

The project shall meet the stricter of the stormwater standards identified in the New Hampshire Department of Environmental Services (DES) Env-Wq 1500 Alteration of Terrain Regulations and City/Town stormwater management regulations.

6.1 – ALTERATION OF TERRAIN (AOT) CRITERIA

The following regulatory requirements are provided to show the project conformance to the applicable criteria of the NHDES Env-Wq 1500 Alteration of Terrain Regulations which include and are not limited to the following:

Env-Wq 1507.03(a) Pollutant Discharge Minimization Requirements: Stormwater treatment practices described in Env-Wq 1508.03 through Env-Wq 1508.10 shall be acceptable methods for minimizing pollutant discharges to surface waters.

Stormwater is treated using an infiltration practice, specifically a subsurface infiltration basin. The subsurface infiltration basins are designed in accordance with the applicable criteria of Env-Wq 1508.06 as follows:

Per 1508.06(e), the volume of the practice shall be large enough to contain the WQV without depending on infiltration. Refer to the corresponding BMP Worksheet in Section 12 for verification.

Per 1508.06(f), the practice completely drains the WQV within 72 hours or less. Refer to the corresponding BMP Worksheet in Section 12 for verification.

Env-Wq 1507.03(c) Pollutant Discharge Minimization Requirements: Stormwater treatment practices shall be designed with infiltration rates in accordance with Env-Wq 1504.14

Per 1508.06(a), the design infiltration rate of underlaying native soil was considered in accordance with Env-Wq 1504.14. The design infiltration rate for each subsurface infiltration basin is the average from each infiltration test in each basin. Refer to the Infiltration Feasibility Report.

Env-Wq 1507.03(e) Pollutant Discharge Minimization Requirements: Stormwater treatment practices shall be designed for the WQV/WQF, calculated in accordance with Env-Wq 1504.10 and Env-Wq 1504.11.

The regulation is met. Refer to the corresponding BMP Worksheets.

Env-Wq 1507.04(a) Groundwater Recharge Requirements: The proposed development shall reduce to the maximum extent practicable by using groundwater recharge practices as described in Env-Wq 1508.16.

The regulation is met. Refer to the corresponding BMP Worksheet in Section 12 for verification.

Env-Wq 1507.04(c) Groundwater Recharge Requirements: Design Infiltration rates for groundwater recharge practices shall be determined in accordance with Env-Wq 1504.14.

Design infiltration rates were obtained per Ksat testing using a Guelph Permeameter (Amoozemeter) per Env-Wq 1504.14(d). The design infiltration rate for each subsurface infiltration basin is the average from each infiltration test in each basin. Refer to the Infiltration Feasibility Report in Section 16 for verification.

Env-Wq 1507.05 Channel Protection Requirements: The 2-year 24-hour post development peak rate shall not exceed the pre-development peak flow rate for all flows leaving the site and the conditions of Env-Wq 1507.05(b), Env-Wq 1507.05(b)(2), or Env-Wq 1507.05(b)(3).

The 2-year 24-hour post development peak rate and volume is less than the pre-development rate per Env-Wq 1507.05(b)(1)(a). Refer to 5.0 Post Development Conditions.

Env-Wq 1507.06 Control Peak Runoff: The 10-year and 50-year 24-hour post development peak rate shall not exceed the pre-development peak flow rate for all flows leaving the site.

The regulation is met. Refer to Table 2 for peak discharge rate comparison.

7.0 – BEST MANAGEMENT PRACTICES

Best Management Practices will be developed in accordance with the *New Hampshire Stormwater Manual, Volumes Two and Three, December 2008*[3] to formulate a plan that assures stormwater quality both during and after construction. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and mitigate any adverse impacts to stormwater quality resulting from development. Best Management Practices for this project include:

- Temporary practices to be implemented during construction.

- Permanent practices to be implemented after construction.

7.1 – TEMPORARY PRACTICES

1. Erosion, sediment, and stormwater detention measures must be installed as directed by the engineer.
2. All disturbed areas, as well as loam stockpiles, shall be seeded and contained by a silt barrier.
3. Silt barriers must be installed prior to any construction commencing. All erosion control devices including silt barriers and storm drain inlet filters shall be inspected at least once per week and following any rainfall. All necessary maintenance shall be completed within twenty-four (24) hours.
4. Any silt barriers found to be failing must be replaced immediately. Sediment is to be removed from behind the silt fence if found to be one-third the height of the silt barrier or greater.
5. Any area of the site, which has been disturbed and where construction activity will not occur for more than twenty-one (21) days, shall be temporarily stabilized by mulching and seeding.
6. No construction materials shall be buried on-site.
7. After all areas have been stabilized, temporary practices are to be removed, and the area they are removed from must be smoothed and revegetated.
8. Areas must be temporarily stabilized within 14 days of disturbance or seeded and mulched within 3 days of final stabilization.
9. After November 15th, incomplete driveways or parking areas must be protected with a minimum of 3" of crushed gravel, meeting the standards of NHDOT item 304.3.
10. An area shall be considered stable if one of the following has occurred:
    a) Base course gravels are installed in areas to be paved.
    b) A minimum of 85% vegetated growth has been established.
    c) A minimum of 3" of non-erosive material such as stone or rip rap has been installed.
    d) Erosion control blankets have been properly installed.

[3] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

7.2 – PERMANENT PRACTICES

The objectives for developing permanent Best Management Practices for this site include the following:

1. Maintain existing runoff flow characteristics.
    a) Drainage is structured to minimize any offsite increase in runoff.

2. Treatment BMP's are established to ensure the water quality.

3. Maintenance schedules are set to safeguard the long-term working of the stormwater BMP's.

A Stormwater Management Operations & Maintenance Manual is provided to ensure the proper functioning of the system over time.

7.3 – BEST MANAGEMENT PRACTICE EFFICIENCIES

Appendix E of Volume 2 of the New Hampshire Stormwater [4] lists the pollutant removal efficiencies of various BMP's. All proposed BMP's meet all state and City requirements for total suspended solids (TSS) and pollutant removal, Total Nitrogen (TN), and Total Phosphorous (TP).

Bioretention Systems have a 90% TSS removal efficiency, 65% TN removal efficiency, and 65% TP efficiency.

Gravel Wetlands have a 95% TSS removal efficiency, 85% TN removal efficiency, and 64% TP efficiency. Gravel Wetlands have the have the highest removal rating for total nitrogen. The surface of the wetland creates an aerobic zone allowing nitrification of the organic nitrogen and plant debris, and the rock area under the wetland soil allows for an anaerobic zone causing denitrification of the stormwater, releasing nitrogen gas back into the atmosphere.

Bioretention Area #1 and Gravel Wetland #1 both use sediment forebays to pretreat the stormwater. Bioretention Area #2 only receives impervious runoff from roofs and no pretreatment is required. The pretreatment areas help to settle sediment and prevent clogging of treatment areas.

7.3.1 – LID PRACTICES

Gravel Wetlands and Bioretention Areas are both Low Impact Design. The goal of LID systems is to mimic a site's precondition hydrology by infiltrating, filtering, storming, evaporating and detaining stormwater but use of natural landscape features. These treatments filter and detain the stormwater. They use natural processes, such as soil filtration, evapotranspiration (from the plants in the system) and anaerobic and aerobic treatment of stormwater. The detain the stormwater and release it to mimic the predevelopment storm flows.

[4] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

9.0 – CONCLUSION

The proposed stormwater management system will treat, infiltrate, and mitigate the runoff generated from the proposed development and provide protection of groundwater and surface waters as required through the Alteration of Terrain Bureau and City stormwater management regulations. The project has been designed in accordance with NHDES and City regulations. There is little change in the flow characteristics of the site. The proposed project has been designed to pose no adverse effects on surrounding properties.

Respectfully,
TFMoran, Inc.

Jack McTigue, PE, CPESC
Project Manager

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APPENDIX A – EXTREME PRECIPITATION RATES

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Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.783 degrees West
Latitude	43.056 degrees North
Elevation	0 feet
Date/Time	Mon, 19 Oct 2020 18:28:44 -0400

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	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.04	2.67	2.93	**1yr**	2.36	2.82	3.23	3.95	4.57	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.50	3.22	3.58	**2yr**	2.85	3.45	3.95	4.70	5.35	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.15	4.08	4.60	**5yr**	3.62	4.42	5.06	5.96	6.73	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.24	2.90	3.76	4.89	5.55	**10yr**	4.33	5.34	6.11	7.14	8.01	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.14	2.78	3.64	4.76	6.20	7.13	**25yr**	5.49	6.86	7.84	9.07	10.10	**25yr**
50yr	0.54	0.86	1.10	1.54	2.07	2.76	**50yr**	1.79	2.53	3.29	4.33	5.68	7.43	8.62	**50yr**	6.57	8.29	9.48	10.87	12.04	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.17	6.79	8.90	10.43	**100yr**	7.88	10.03	11.45	13.04	14.35	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.15	8.11	10.67	12.61	**200yr**	9.44	12.13	13.84	15.64	17.12	**200yr**
500yr	0.80	1.32	1.72	2.49	3.48	4.77	**500yr**	3.00	4.39	5.78	7.73	10.26	13.56	16.23	**500yr**	12.00	15.60	17.80	19.91	21.62	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.63	0.87	0.92	1.33	1.67	2.24	2.53	**1yr**	1.98	2.43	2.87	3.17	3.91	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.07	3.47	**2yr**	2.72	3.34	3.84	4.57	5.10	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.81	4.22	**5yr**	3.37	4.06	4.74	5.57	6.28	**5yr**
10yr	0.39	0.59	0.74	1.03	1.33	1.60	**10yr**	1.15	1.57	1.81	2.39	3.06	4.40	4.91	**10yr**	3.90	4.72	5.49	6.47	7.25	**10yr**
25yr	0.44	0.67	0.83	1.19	1.57	1.90	**25yr**	1.35	1.86	2.10	2.76	3.54	4.74	5.96	**25yr**	4.19	5.73	6.73	7.88	8.76	**25yr**
50yr	0.48	0.74	0.92	1.32	1.77	2.17	**50yr**	1.53	2.12	2.35	3.07	3.93	5.36	6.90	**50yr**	4.74	6.63	7.85	9.16	10.12	**50yr**
100yr	0.54	0.82	1.02	1.48	2.02	2.48	**100yr**	1.75	2.42	2.63	3.41	4.36	6.03	7.98	**100yr**	5.33	7.67	9.15	10.66	11.69	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.82	**200yr**	1.98	2.76	2.94	3.78	4.80	6.76	9.22	**200yr**	5.98	8.87	10.67	12.42	13.53	**200yr**
500yr	0.69	1.03	1.33	1.93	2.74	3.38	**500yr**	2.36	3.30	3.42	4.32	5.47	7.87	11.18	**500yr**	6.97	10.75	13.07	15.23	16.39	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	3.00	3.16	**1yr**	2.66	3.04	3.60	4.39	5.07	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.44	3.71	**2yr**	3.04	3.57	4.09	4.85	5.65	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.35	4.96	**5yr**	3.85	4.77	5.39	6.38	7.16	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.10	3.94	5.36	6.20	**10yr**	4.74	5.96	6.81	7.84	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.95	4.06	5.14	7.82	8.32	**25yr**	6.92	8.00	9.11	10.34	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.59	4.99	6.30	9.79	10.42	**50yr**	8.66	10.02	11.37	12.72	13.96	**50yr**
100yr	0.79	1.19	1.49	2.16	2.96	3.81	**100yr**	2.55	3.72	4.37	6.14	7.73	12.25	13.04	**100yr**	10.84	12.54	14.19	15.67	17.07	**100yr**
200yr	0.92	1.39	1.76	2.55	3.55	4.65	**200yr**	3.07	4.55	5.33	7.57	9.49	15.37	16.34	**200yr**	13.60	15.71	17.73	19.31	20.89	**200yr**
500yr	1.14	1.70	2.19	3.18	4.53	6.03	**500yr**	3.91	5.90	6.91	10.00	12.48	20.76	22.02	**500yr**	18.37	21.17	23.80	25.43	27.29	**500yr**

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APPENDIX B – PRE-DEVELOPMENT CALCULATIONS

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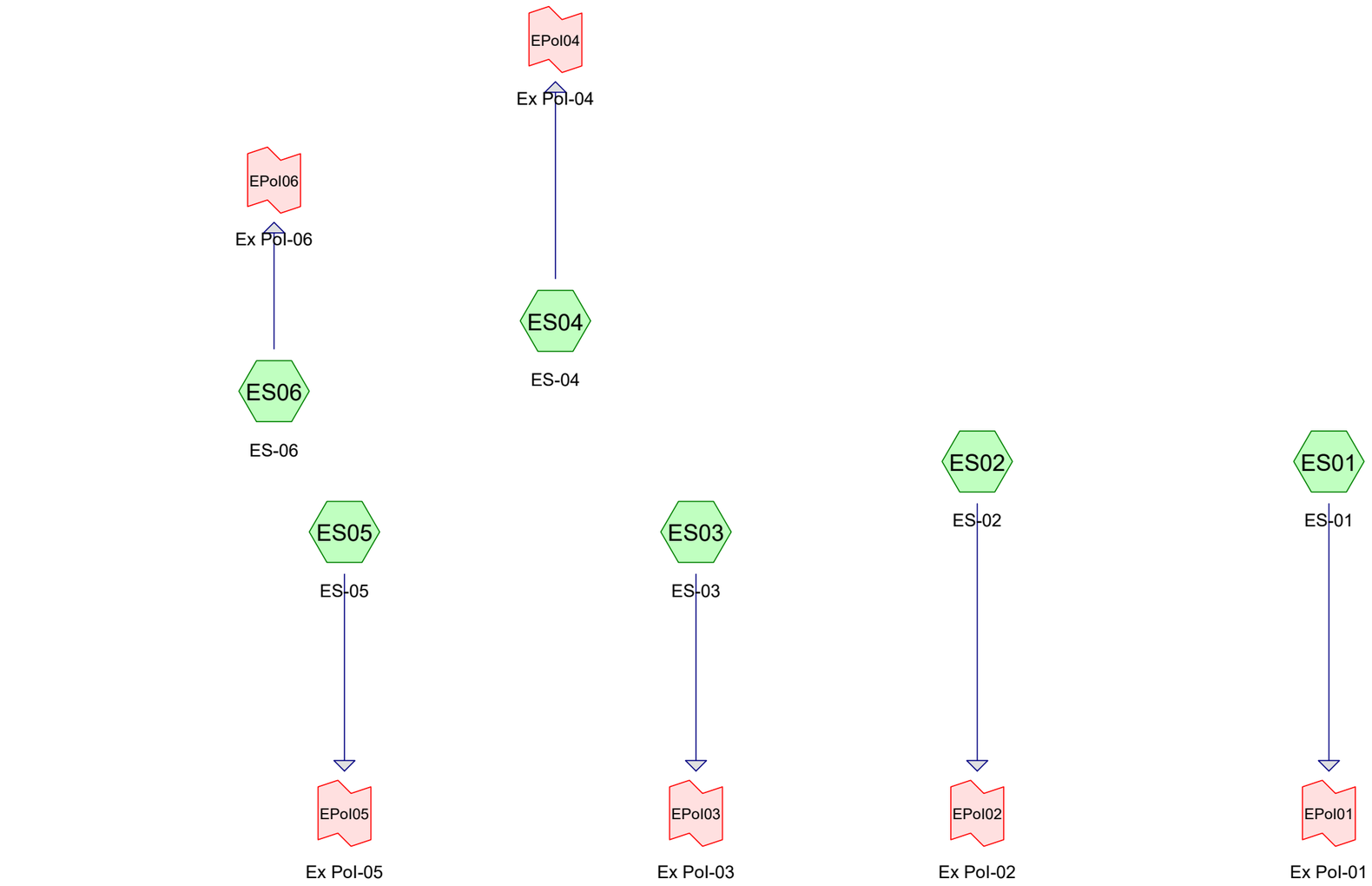
PRE DEVELOPEMENT



Subcat Reach Pond Link

Routing Diagram for 6-10-21_47388-11_Pre-Post-Drainage
Prepared by {enter your company name here}, Printed 6/23/2021
HydroCAD® 10.10-4b s/n 00866 © 2020 HydroCAD Software Solutions LLC

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
803,900	39	>75% Grass cover, Good, HSG A (ES01, ES02, ES04)
183,812	61	>75% Grass cover, Good, HSG B (ES01, ES02, ES04)
3,097	74	>75% Grass cover, Good, HSG C (ES01, ES04)
227	96	Gravel surface, HSG A (ES04)
1,882	96	Gravel surface, HSG C (ES04)
76,964	98	Paved parking, HSG A (ES01, ES02, ES04)
1,391	98	Roofs, HSG A (ES01)
277,822	30	Woods, Good, HSG A (ES01, ES02, ES04)
1,413,864	55	Woods, Good, HSG B (ES01, ES02, ES03, ES04, ES05, ES06)
1,195,197	70	Woods, Good, HSG C (ES01, ES02, ES03, ES04, ES05, ES06)
3,958,156	**56**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
1,160,304	HSG A	ES01, ES02, ES04
1,597,676	HSG B	ES01, ES02, ES03, ES04, ES05, ES06
1,200,176	HSG C	ES01, ES02, ES03, ES04, ES05, ES06
0	HSG D	
0	Other	
3,958,156		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES01: ES-01 Runoff Area=1,086,569 sf 2.77% Impervious Runoff Depth>0.45"
Flow Length=1,030' Tc=23.4 min CN=56 Runoff=5.2 cfs 40,693 cf

Subcatchment ES02: ES-02 Runoff Area=1,302,728 sf 3.02% Impervious Runoff Depth>0.49"
Flow Length=2,000' Tc=39.9 min CN=57 Runoff=5.7 cfs 52,678 cf

Subcatchment ES03: ES-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>0.74"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=3.0 cfs 29,089 cf

Subcatchment ES04: ES-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>0.09"
Flow Length=1,040' Tc=49.8 min CN=44 Runoff=0.2 cfs 5,128 cf

Subcatchment ES05: ES-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>0.75"
Flow Length=720' Tc=34.6 min CN=63 Runoff=2.7 cfs 19,091 cf

Subcatchment ES06: ES-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>0.53"
Flow Length=340' Tc=27.5 min CN=58 Runoff=0.7 cfs 5,508 cf

Link EPol01: Ex Pol-01 Inflow=5.2 cfs 40,693 cf
Primary=5.2 cfs 40,693 cf

Link EPol02: Ex Pol-02 Inflow=5.7 cfs 52,678 cf
Primary=5.7 cfs 52,678 cf

Link EPol03: Ex Pol-03 Inflow=3.0 cfs 29,089 cf
Primary=3.0 cfs 29,089 cf

Link EPol04: Ex Pol-04 Inflow=0.2 cfs 5,128 cf
Primary=0.2 cfs 5,128 cf

Link EPol05: Ex Pol-05 Inflow=2.7 cfs 19,091 cf
Primary=2.7 cfs 19,091 cf

Link EPol06: Ex Pol-06 Inflow=0.7 cfs 5,508 cf
Primary=0.7 cfs 5,508 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 152,187 cf Average Runoff Depth = 0.46"
98.02% Pervious = 3,879,801 sf 1.98% Impervious = 78,355 sf

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES01: ES-01 Runoff Area=1,086,569 sf 2.77% Impervious Runoff Depth>1.37"
Flow Length=1,030' Tc=23.4 min CN=56 Runoff=22.2 cfs 123,777 cf

Subcatchment ES02: ES-02 Runoff Area=1,302,728 sf 3.02% Impervious Runoff Depth>1.43"
Flow Length=2,000' Tc=39.9 min CN=57 Runoff=22.4 cfs 155,520 cf

Subcatchment ES03: ES-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>1.88"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=8.8 cfs 73,690 cf

Subcatchment ES04: ES-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>0.58"
Flow Length=1,040' Tc=49.8 min CN=44 Runoff=2.7 cfs 32,585 cf

Subcatchment ES05: ES-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>1.90"
Flow Length=720' Tc=34.6 min CN=63 Runoff=7.9 cfs 48,262 cf

Subcatchment ES06: ES-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>1.51"
Flow Length=340' Tc=27.5 min CN=58 Runoff=2.7 cfs 15,766 cf

Link EPol01: Ex Pol-01 Inflow=22.2 cfs 123,777 cf
Primary=22.2 cfs 123,777 cf

Link EPol02: Ex Pol-02 Inflow=22.4 cfs 155,520 cf
Primary=22.4 cfs 155,520 cf

Link EPol03: Ex Pol-03 Inflow=8.8 cfs 73,690 cf
Primary=8.8 cfs 73,690 cf

Link EPol04: Ex Pol-04 Inflow=2.7 cfs 32,585 cf
Primary=2.7 cfs 32,585 cf

Link EPol05: Ex Pol-05 Inflow=7.9 cfs 48,262 cf
Primary=7.9 cfs 48,262 cf

Link EPol06: Ex Pol-06 Inflow=2.7 cfs 15,766 cf
Primary=2.7 cfs 15,766 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 449,600 cf Average Runoff Depth = 1.36"
98.02% Pervious = 3,879,801 sf 1.98% Impervious = 78,355 sf

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES01: ES-01 Runoff Area=1,086,569 sf 2.77% Impervious Runoff Depth>3.26"
Flow Length=1,030' Tc=23.4 min CN=56 Runoff=58.6 cfs 294,875 cf

Subcatchment ES02: ES-02 Runoff Area=1,302,728 sf 3.02% Impervious Runoff Depth>3.36"
Flow Length=2,000' Tc=39.9 min CN=57 Runoff=57.2 cfs 364,565 cf

Subcatchment ES03: ES-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>4.04"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=19.8 cfs 158,106 cf

Subcatchment ES04: ES-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>1.89"
Flow Length=1,040' Tc=49.8 min CN=44 Runoff=12.9 cfs 105,208 cf

Subcatchment ES05: ES-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>4.07"
Flow Length=720' Tc=34.6 min CN=63 Runoff=17.7 cfs 103,415 cf

Subcatchment ES06: ES-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>3.49"
Flow Length=340' Tc=27.5 min CN=58 Runoff=6.8 cfs 36,330 cf

Link EPol01: Ex Pol-01 Inflow=58.6 cfs 294,875 cf
Primary=58.6 cfs 294,875 cf

Link EPol02: Ex Pol-02 Inflow=57.2 cfs 364,565 cf
Primary=57.2 cfs 364,565 cf

Link EPol03: Ex Pol-03 Inflow=19.8 cfs 158,106 cf
Primary=19.8 cfs 158,106 cf

Link EPol04: Ex Pol-04 Inflow=12.9 cfs 105,208 cf
Primary=12.9 cfs 105,208 cf

Link EPol05: Ex Pol-05 Inflow=17.7 cfs 103,415 cf
Primary=17.7 cfs 103,415 cf

Link EPol06: Ex Pol-06 Inflow=6.8 cfs 36,330 cf
Primary=6.8 cfs 36,330 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 1,062,500 cf Average Runoff Depth = 3.22"
98.02% Pervious = 3,879,801 sf 1.98% Impervious = 78,355 sf

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APPENDIX C – PRE-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)

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Summary for Subcatchment ES01: ES-01

Run from top of graveyard, thru site, and into wetland.

Runoff = 22.2 cfs @ 12.37 hrs, Volume= 123,777 cf, Depth> 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
28,755	98	Paved parking, HSG A	Pavement
1,391	98	Roofs, HSG A	Roofs
107,595	30	Woods, Good, HSG A	Woods
333,961	55	Woods, Good, HSG B	Woods
284,601	70	Woods, Good, HSG C	Woods
190,112	39	>75% Grass cover, Good, HSG A	Open Space
139,756	61	>75% Grass cover, Good, HSG B	Brush
398	74	>75% Grass cover, Good, HSG C	Brush
1,086,569	56	Weighted Average	
1,056,423		97.23% Pervious Area	
30,146		2.77% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0300	0.22		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.9	210	0.0300	1.21		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
12.8	720	0.0350	0.94		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
23.4	1,030	Total			

Summary for Subcatchment ES02: ES-02

Runoff = 22.4 cfs @ 12.63 hrs, Volume= 155,520 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
39,291	98	Paved parking, HSG A	Pavement
6,841	30	Woods, Good, HSG A	Brush
451,295	55	Woods, Good, HSG B	Woods
446,489	70	Woods, Good, HSG C	Woods
353,745	39	>75% Grass cover, Good, HSG A	Open Space
5,067	61	>75% Grass cover, Good, HSG B	Open Space
1,302,728	57	Weighted Average	
1,263,437		96.98% Pervious Area	
39,291		3.02% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
3.9	500	0.0200	2.12		**Shallow Concentrated Flow, Shallow Concentrated** Grassed Waterway Kv= 15.0 fps
26.9	1,400	0.0300	0.87		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
39.9	2,000	Total			

Summary for Subcatchment ES03: ES-03

Runoff = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
218,042	55	Woods, Good, HSG B	Woods
251,840	70	Woods, Good, HSG C	Woods
469,882	63	Weighted Average	
469,882		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.8	100	0.0200	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
27.8	940	0.0127	0.56		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
62.6	1,040	Total			

Summary for Subcatchment ES04: ES-04

Runoff = 2.7 cfs @ 12.90 hrs, Volume= 32,585 cf, Depth> 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
8,918	98	Paved parking, HSG A	Pavement
227	96	Gravel surface, HSG A	Roadway
1,882	96	Gravel surface, HSG C	Roadway
163,386	30	Woods, Good, HSG A	Woods
169,721	55	Woods, Good, HSG B	Woods
22,827	70	Woods, Good, HSG C	Woods
260,043	39	>75% Grass cover, Good, HSG A	Open Space
38,989	61	>75% Grass cover, Good, HSG B	Open Space
2,699	74	>75% Grass cover, Good, HSG C	Open Space
668,692	44	Weighted Average	
659,774		98.67% Pervious Area	
8,918		1.33% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.4	100	0.0400	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
8.2	300	0.0150	0.61		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
15.2	640	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
49.8	1,040	Total			

Summary for Subcatchment ES05: ES-05

Runoff = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
141,482	55	Woods, Good, HSG B	Open Water
163,730	70	Woods, Good, HSG C	Woods
305,212	63	Weighted Average	
305,212		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0800	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
1.4	120	0.0830	1.44		**Shallow Concentrated Flow, Shallow Concentrates** Woodland Kv= 5.0 fps
13.2	500	0.0160	0.63		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
34.6	720	Total			

Summary for Subcatchment ES06: ES-06

Runoff = 2.7 cfs @ 12.43 hrs, Volume= 15,766 cf, Depth> 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
99,363	55	Woods, Good, HSG B	Woods
25,710	70	Woods, Good, HSG C	Woods
125,073	58	Weighted Average	
125,073		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0600	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
5.1	240	0.0250	0.79		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
27.5	340	Total			

Summary for Link EPol01: Ex Pol-01

Inflow Area = 1,086,569 sf, 2.77% Impervious, Inflow Depth > 1.37" for 10-Year event
Inflow = 22.2 cfs @ 12.37 hrs, Volume= 123,777 cf
Primary = 22.2 cfs @ 12.37 hrs, Volume= 123,777 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link EPol02: Ex Pol-02

Inflow Area = 1,302,728 sf, 3.02% Impervious, Inflow Depth > 1.43" for 10-Year event
Inflow = 22.4 cfs @ 12.63 hrs, Volume= 155,520 cf
Primary = 22.4 cfs @ 12.63 hrs, Volume= 155,520 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link EPol03: Ex Pol-03

Inflow Area = 469,882 sf, 0.00% Impervious, Inflow Depth > 1.88" for 10-Year event
Inflow = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf
Primary = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link EPol04: Ex Pol-04

Inflow Area = 668,692 sf, 1.33% Impervious, Inflow Depth > 0.58" for 10-Year event
Inflow = 2.7 cfs @ 12.90 hrs, Volume= 32,585 cf
Primary = 2.7 cfs @ 12.90 hrs, Volume= 32,585 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link EPol05: Ex Pol-05

Inflow Area = 305,212 sf, 0.00% Impervious, Inflow Depth > 1.90" for 10-Year event
Inflow = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf
Primary = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link EPol06: Ex Pol-06

Inflow Area = 125,073 sf, 0.00% Impervious, Inflow Depth > 1.51" for 10-Year event
Inflow = 2.7 cfs @ 12.43 hrs, Volume= 15,766 cf
Primary = 2.7 cfs @ 12.43 hrs, Volume= 15,766 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

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APPENDIX D – POST-DEVELOPMENT CALCULATIONS

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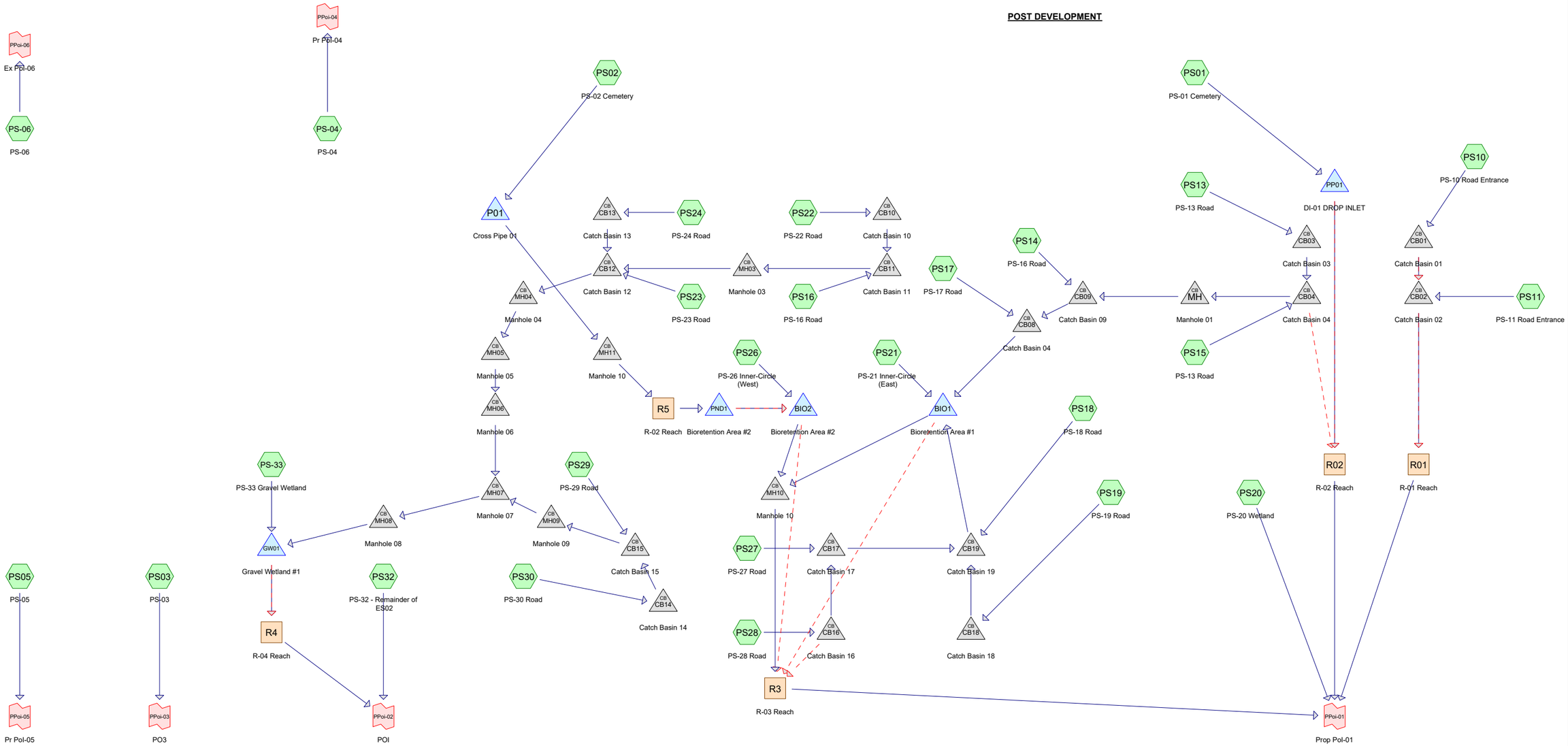

Routing Diagram for 6-10-21_47388-11_Pre-Post-Drainage

Prepared by {enter your company name here}, Printed 6/23/2021

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
851,873	39	>75% Grass cover, Good, HSG A (PS-04, PS01, PS02, PS10, PS11, PS13, PS14, PS15, PS17, PS20, PS21)
470,179	61	>75% Grass cover, Good, HSG B (PS-04, PS-33, PS01, PS02, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS21, PS22, PS23, PS24, PS26, PS27, PS28, PS29, PS30, PS32)
7,911	74	>75% Grass cover, Good, HSG C (PS-04, PS-33, PS20, PS32)
227	96	Gravel surface, HSG A (PS-04)
18,177	96	Gravel surface, HSG B (PS-04, PS-06, PS-33, PS03, PS17, PS18, PS21, PS23, PS24, PS26)
1,882	96	Gravel surface, HSG C (PS-04)
103,506	98	Paved parking, HSG A (PS-04, PS01, PS02, PS10, PS11, PS13, PS14, PS15, PS17)
98,854	98	Paved parking, HSG B (PS13, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS22, PS23, PS24, PS27, PS28, PS29, PS30)
18,780	98	Roofs, HSG A (PS01, PS10, PS13, PS14)
101,857	98	Roofs, HSG B (PS-33, PS01, PS02, PS14, PS18, PS20, PS21, PS22, PS23, PS24, PS26, PS27, PS29)
185,918	30	Woods, Good, HSG A (PS-04, PS01, PS02, PS10, PS20)
908,609	55	Woods, Good, HSG B (PS-04, PS-06, PS-33, PS01, PS02, PS03, PS05, PS20, PS24, PS30, PS32)
1,190,383	70	Woods, Good, HSG C (PS-04, PS-06, PS-33, PS03, PS05, PS20)
3,958,156	**59**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
1,160,304	HSG A	PS-04, PS01, PS02, PS10, PS11, PS13, PS14, PS15, PS17, PS20, PS21
1,597,676	HSG B	PS-04, PS-06, PS-33, PS01, PS02, PS03, PS05, PS13, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS21, PS22, PS23, PS24, PS26, PS27, PS28, PS29, PS30, PS32
1,200,176	HSG C	PS-04, PS-06, PS-33, PS03, PS05, PS20, PS32
0	HSG D	
0	Other	
3,958,156		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-04: PS-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>0.11"
Flow Length=1,040' Tc=49.8 min CN=45 Runoff=0.2 cfs 6,269 cf

Subcatchment PS-06: PS-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>0.57"
Flow Length=340' Tc=27.5 min CN=59 Runoff=0.8 cfs 5,946 cf

Subcatchment PS-33: PS-33 Gravel Runoff Area=603,289 sf 1.53% Impervious Runoff Depth>0.96"
Flow Length=794' Tc=33.4 min CN=67 Runoff=7.6 cfs 48,015 cf

Subcatchment PS01: PS-01 Cemetery Runoff Area=301,519 sf 11.75% Impervious Runoff Depth>0.19"
Flow Length=517' Tc=11.5 min CN=48 Runoff=0.3 cfs 4,746 cf

Subcatchment PS02: PS-02 Cemetery Runoff Area=394,562 sf 8.81% Impervious Runoff Depth>0.14"
Flow Length=1,189' Tc=25.2 min CN=46 Runoff=0.2 cfs 4,513 cf

Subcatchment PS03: PS-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>0.74"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=3.0 cfs 29,089 cf

Subcatchment PS05: PS-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>0.75"
Flow Length=720' Tc=34.6 min CN=63 Runoff=2.7 cfs 19,091 cf

Subcatchment PS10: PS-10 Road Entrance Runoff Area=21,365 sf 39.43% Impervious Runoff Depth>0.71"
Flow Length=164' Tc=8.7 min CN=62 Runoff=0.3 cfs 1,263 cf

Subcatchment PS11: PS-11 Road Entrance Runoff Area=3,593 sf 78.96% Impervious Runoff Depth>2.27"
Flow Length=131' Tc=5.0 min CN=86 Runoff=0.2 cfs 681 cf

Subcatchment PS13: PS-13 Road Runoff Area=32,248 sf 55.72% Impervious Runoff Depth>1.25"
Flow Length=242' Tc=9.0 min CN=72 Runoff=0.9 cfs 3,362 cf

Subcatchment PS14: PS-16 Road Runoff Area=42,709 sf 50.85% Impervious Runoff Depth>1.51"
Flow Length=330' Tc=9.8 min CN=76 Runoff=1.5 cfs 5,370 cf

Subcatchment PS15: PS-13 Road Runoff Area=5,802 sf 78.34% Impervious Runoff Depth>2.27"
Flow Length=207' Tc=5.0 min CN=86 Runoff=0.4 cfs 1,100 cf

Subcatchment PS16: PS-16 Road Runoff Area=6,627 sf 55.82% Impervious Runoff Depth>1.95"
Flow Length=177' Tc=5.0 min CN=82 Runoff=0.4 cfs 1,075 cf

Subcatchment PS17: PS-17 Road Runoff Area=12,439 sf 58.98% Impervious Runoff Depth>1.87"
Flow Length=362' Tc=5.7 min CN=81 Runoff=0.6 cfs 1,938 cf

Subcatchment PS18: PS-18 Road Runoff Area=40,442 sf 46.99% Impervious Runoff Depth>1.72"
Flow Length=290' Tc=10.5 min CN=79 Runoff=1.6 cfs 5,793 cf

Subcatchment PS19: PS-19 Road Runoff Area=12,708 sf 65.47% Impervious Runoff Depth>2.19"
Flow Length=236' Tc=5.0 min CN=85 Runoff=0.8 cfs 2,319 cf

Subcatchment PS20: PS-20 Wetland Runoff Area=498,342 sf 3.58% Impervious Runoff Depth>0.85"
Flow Length=518' Tc=41.1 min CN=65 Runoff=4.8 cfs 35,214 cf

Subcatchment PS21: PS-21 Inner-Circle Runoff Area=35,774 sf 19.91% Impervious Runoff Depth>1.07"
Flow Length=138' Slope=0.0600 '/' Tc=6.1 min CN=69 Runoff=1.0 cfs 3,203 cf

Subcatchment PS22: PS-22 Road Runoff Area=12,972 sf 53.89% Impervious Runoff Depth>1.87"
Flow Length=215' Tc=9.5 min CN=81 Runoff=0.6 cfs 2,020 cf

Subcatchment PS23: PS-23 Road Runoff Area=26,118 sf 59.22% Impervious Runoff Depth>2.03"
Flow Length=333' Slope=0.0200 '/' Tc=6.1 min CN=83 Runoff=1.4 cfs 4,409 cf

Subcatchment PS24: PS-24 Road Runoff Area=57,571 sf 48.08% Impervious Runoff Depth>1.72"
Flow Length=375' Slope=0.0200 '/' Tc=9.6 min CN=79 Runoff=2.3 cfs 8,249 cf

Subcatchment PS26: PS-26 Inner-Circle Runoff Area=108,179 sf 16.12% Impervious Runoff Depth>1.02"
Flow Length=154' Slope=0.0600 '/' Tc=6.1 min CN=68 Runoff=2.7 cfs 9,177 cf

Subcatchment PS27: PS-27 Road Runoff Area=35,948 sf 54.83% Impervious Runoff Depth>1.87"
Flow Length=378' Tc=10.1 min CN=81 Runoff=1.6 cfs 5,596 cf

Subcatchment PS28: PS-28 Road Runoff Area=18,193 sf 41.21% Impervious Runoff Depth>1.51"
Flow Length=359' Tc=7.5 min CN=76 Runoff=0.7 cfs 2,289 cf

Subcatchment PS29: PS-29 Road Runoff Area=23,194 sf 44.34% Impervious Runoff Depth>1.58"
Flow Length=355' Tc=9.6 min CN=77 Runoff=0.9 cfs 3,049 cf

Subcatchment PS30: PS-30 Road Runoff Area=26,650 sf 40.36% Impervious Runoff Depth>1.51"
Flow Length=412' Tc=11.4 min CN=76 Runoff=0.9 cfs 3,350 cf

Subcatchment PS32: PS-32 - Remainder of Runoff Area=69,053 sf 0.00% Impervious Runoff Depth>0.49"
Flow Length=194' Tc=21.2 min CN=57 Runoff=0.4 cfs 2,815 cf

Reach R01: R-01 Reach Avg. Flow Depth=0.04' Max Vel=0.23 fps Inflow=0.5 cfs 1,944 cf
n=0.100 L=501.0' S=0.0199 '/' Capacity=19.5 cfs Outflow=0.2 cfs 1,867 cf

Reach R02: R-02 Reach Avg. Flow Depth=0.04' Max Vel=0.22 fps Inflow=0.3 cfs 4,746 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=0.2 cfs 4,542 cf

Reach R3: R-03 Reach Avg. Flow Depth=0.07' Max Vel=0.34 fps Inflow=0.7 cfs 24,384 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=0.7 cfs 23,666 cf

Reach R4: R-04 Reach Avg. Flow Depth=0.22' Max Vel=0.55 fps Inflow=3.7 cfs 60,021 cf
n=0.100 L=594.0' S=0.0126 '/' Capacity=15.6 cfs Outflow=3.6 cfs 58,998 cf

Reach R5: R-02 Reach Avg. Flow Depth=0.03' Max Vel=0.21 fps Inflow=0.2 cfs 4,491 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=0.2 cfs 4,273 cf

Pond BIO1: Bioretention Area #1 Peak Elev=36.50' Storage=18,123 cf Inflow=8.6 cfs 30,969 cf
Primary=0.5 cfs 20,095 cf Secondary=0.0 cfs 0 cf Outflow=0.5 cfs 20,095 cf

Pond BIO2: Bioretention Area #2 Peak Elev=36.23' Storage=8,836 cf Inflow=2.7 cfs 12,905 cf
Primary=0.2 cfs 4,290 cf Secondary=0.0 cfs 0 cf Outflow=0.2 cfs 4,290 cf

Pond CB01: Catch Basin 01 Peak Elev=36.72' Inflow=0.3 cfs 1,263 cf
Primary=0.3 cfs 1,263 cf Secondary=0.0 cfs 0 cf Outflow=0.3 cfs 1,263 cf

Pond CB02: Catch Basin 02 Peak Elev=36.56' Inflow=0.5 cfs 1,944 cf
Primary=0.5 cfs 1,944 cf Secondary=0.0 cfs 0 cf Outflow=0.5 cfs 1,944 cf

Pond CB03: Catch Basin 03 Peak Elev=36.60' Inflow=0.9 cfs 3,362 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0060 '/' Outflow=0.9 cfs 3,362 cf

Pond CB04: Catch Basin 04 Peak Elev=36.50' Inflow=1.2 cfs 4,461 cf
Primary=1.2 cfs 4,461 cf Secondary=0.0 cfs 0 cf Outflow=1.2 cfs 4,461 cf

Pond CB08: Catch Basin 04 Peak Elev=36.50' Inflow=3.3 cfs 11,770 cf
24.0" Round Culvert n=0.013 L=188.0' S=0.0053 '/' Outflow=3.3 cfs 11,770 cf

Pond CB09: Catch Basin 09 Peak Elev=36.50' Inflow=2.7 cfs 9,832 cf
18.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=2.7 cfs 9,832 cf

Pond CB10: Catch Basin 10 Peak Elev=45.79' Inflow=0.6 cfs 2,020 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=0.6 cfs 2,020 cf

Pond CB11: Catch Basin 11 Peak Elev=45.66' Inflow=0.9 cfs 3,095 cf
12.0" Round Culvert n=0.013 L=275.0' S=0.0075 '/' Outflow=0.9 cfs 3,095 cf

Pond CB12: Catch Basin 12 Peak Elev=44.17' Inflow=4.5 cfs 15,753 cf
12.0" Round Culvert n=0.013 L=79.0' S=0.0076 '/' Outflow=4.5 cfs 15,753 cf

Pond CB13: Catch Basin 13 Peak Elev=44.53' Inflow=2.3 cfs 8,249 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0156 '/' Outflow=2.3 cfs 8,249 cf

Pond CB14: Catch Basin 14 Peak Elev=41.35' Inflow=0.9 cfs 3,350 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0071 '/' Outflow=0.9 cfs 3,350 cf

Pond CB15: Catch Basin 15 Peak Elev=41.15' Inflow=1.7 cfs 6,398 cf
18.0" Round Culvert n=0.013 L=66.0' S=0.0068 '/' Outflow=1.7 cfs 6,398 cf

Pond CB16: Catch Basin 16 Peak Elev=36.50' Inflow=0.7 cfs 2,289 cf
Primary=0.7 cfs 2,289 cf Secondary=0.0 cfs 0 cf Outflow=0.7 cfs 2,289 cf

Pond CB17: Catch Basin 17 Peak Elev=36.50' Inflow=2.2 cfs 7,885 cf
18.0" Round Culvert n=0.013 L=205.0' S=0.0061 '/' Outflow=2.2 cfs 7,885 cf

Pond CB18: Catch Basin 18 Peak Elev=36.50' Inflow=0.8 cfs 2,319 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0063 '/' Outflow=0.8 cfs 2,318 cf

Pond CB19: Catch Basin 19 Peak Elev=36.50' Inflow=4.4 cfs 15,997 cf
24.0" Round Culvert n=0.013 L=117.0' S=0.0051 '/' Outflow=4.4 cfs 15,997 cf

Pond GW01: Gravel Wetland #1 Peak Elev=36.79' Storage=24,558 cf Inflow=9.8 cfs 70,166 cf
Primary=3.7 cfs 60,021 cf Secondary=0.0 cfs 0 cf Outflow=3.7 cfs 60,021 cf

Pond MH: Manhole 01 Peak Elev=36.50' Inflow=1.2 cfs 4,461 cf
15.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=1.2 cfs 4,462 cf

Pond MH03: Manhole 03 Peak Elev=44.29' Inflow=0.9 cfs 3,095 cf
12.0" Round Culvert n=0.013 L=166.0' S=0.0072 '/' Outflow=0.9 cfs 3,095 cf

Pond MH04: Manhole 04 Peak Elev=42.12' Inflow=4.5 cfs 15,753 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0082 '/' Outflow=4.5 cfs 15,753 cf

Pond MH05: Manhole 05 Peak Elev=41.36' Inflow=4.5 cfs 15,753 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0070 '/' Outflow=4.5 cfs 15,753 cf

Pond MH06: Manhole 06 Peak Elev=40.58' Inflow=4.5 cfs 15,753 cf
24.0" Round Culvert n=0.013 L=128.0' S=0.0074 '/' Outflow=4.5 cfs 15,753 cf

Pond MH07: Manhole 07 Peak Elev=39.71' Inflow=6.2 cfs 22,151 cf
24.0" Round Culvert n=0.013 L=285.0' S=0.0054 '/' Outflow=6.2 cfs 22,151 cf

Pond MH08: Manhole 08 Peak Elev=38.05' Inflow=6.2 cfs 22,151 cf
24.0" Round Culvert n=0.013 L=176.0' S=0.0054 '/' Outflow=6.2 cfs 22,151 cf

Pond MH09: Manhole 09 Peak Elev=40.33' Inflow=1.7 cfs 6,398 cf
24.0" Round Culvert n=0.013 L=154.0' S=0.0068 '/' Outflow=1.7 cfs 6,398 cf

Pond MH10: Manhole 10 Peak Elev=35.27' Inflow=0.7 cfs 24,384 cf
24.0" Round Culvert x 2.00 n=0.013 L=232.0' S=0.0050 '/' Outflow=0.7 cfs 24,384 cf

Pond MH11: Manhole 10 Peak Elev=35.26' Inflow=0.2 cfs 4,491 cf
12.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=0.2 cfs 4,491 cf

Pond P01: Cross Pipe 01 Peak Elev=45.42' Storage=37 cf Inflow=0.2 cfs 4,513 cf
12.0" Round Culvert n=0.013 L=338.5' S=0.0050 '/' Outflow=0.2 cfs 4,491 cf

Pond PND1: Bioretention Area #2 Peak Elev=38.26' Storage=834 cf Inflow=0.2 cfs 4,273 cf
Outflow=0.1 cfs 3,728 cf

Pond PP01: DI-01 DROP INLET Peak Elev=38.50' Storage=0 cf Inflow=0.3 cfs 4,746 cf
Primary=0.3 cfs 4,746 cf Secondary=0.0 cfs 0 cf Outflow=0.3 cfs 4,746 cf

Link PPoi-01: Prop Pol-01 Inflow=5.4 cfs 65,290 cf
Primary=5.4 cfs 65,290 cf

Link PPoi-02: POI Inflow=3.7 cfs 61,813 cf
Primary=3.7 cfs 61,813 cf

Link PPoi-03: PO3 Inflow=3.0 cfs 29,089 cf
Primary=3.0 cfs 29,089 cf

Link PPoi-04: Pr PoI-04

Inflow=0.2 cfs 6,269 cf
Primary=0.2 cfs 6,269 cf

Link PPoi-05: Pr PoI-05

Inflow=2.7 cfs 19,091 cf
Primary=2.7 cfs 19,091 cf

Link PPoi-06: Ex PoI-06

Inflow=0.8 cfs 5,946 cf
Primary=0.8 cfs 5,946 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 219,940 cf Average Runoff Depth = 0.67"
91.84% Pervious = 3,635,159 sf 8.16% Impervious = 322,997 sf

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-04: PS-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>0.64"
Flow Length=1,040' Tc=49.8 min CN=45 Runoff=3.2 cfs 35,704 cf

Subcatchment PS-06: PS-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>1.59"
Flow Length=340' Tc=27.5 min CN=59 Runoff=2.9 cfs 16,552 cf

Subcatchment PS-33: PS-33 Gravel Runoff Area=603,289 sf 1.53% Impervious Runoff Depth>2.23"
Flow Length=794' Tc=33.4 min CN=67 Runoff=19.2 cfs 112,040 cf

Subcatchment PS01: PS-01 Cemetery Runoff Area=301,519 sf 11.75% Impervious Runoff Depth>0.83"
Flow Length=517' Tc=11.5 min CN=48 Runoff=3.7 cfs 20,887 cf

Subcatchment PS02: PS-02 Cemetery Runoff Area=394,562 sf 8.81% Impervious Runoff Depth>0.71"
Flow Length=1,189' Tc=25.2 min CN=46 Runoff=2.9 cfs 23,214 cf

Subcatchment PS03: PS-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>1.88"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=8.8 cfs 73,690 cf

Subcatchment PS05: PS-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>1.90"
Flow Length=720' Tc=34.6 min CN=63 Runoff=7.9 cfs 48,262 cf

Subcatchment PS10: PS-10 Road Entrance Runoff Area=21,365 sf 39.43% Impervious Runoff Depth>1.83"
Flow Length=164' Tc=8.7 min CN=62 Runoff=0.9 cfs 3,260 cf

Subcatchment PS11: PS-11 Road Entrance Runoff Area=3,593 sf 78.96% Impervious Runoff Depth>4.05"
Flow Length=131' Tc=5.0 min CN=86 Runoff=0.4 cfs 1,212 cf

Subcatchment PS13: PS-13 Road Runoff Area=32,248 sf 55.72% Impervious Runoff Depth>2.68"
Flow Length=242' Tc=9.0 min CN=72 Runoff=2.1 cfs 7,203 cf

Subcatchment PS14: PS-16 Road Runoff Area=42,709 sf 50.85% Impervious Runoff Depth>3.05"
Flow Length=330' Tc=9.8 min CN=76 Runoff=3.1 cfs 10,851 cf

Subcatchment PS15: PS-13 Road Runoff Area=5,802 sf 78.34% Impervious Runoff Depth>4.05"
Flow Length=207' Tc=5.0 min CN=86 Runoff=0.6 cfs 1,956 cf

Subcatchment PS16: PS-16 Road Runoff Area=6,627 sf 55.82% Impervious Runoff Depth>3.64"
Flow Length=177' Tc=5.0 min CN=82 Runoff=0.7 cfs 2,008 cf

Subcatchment PS17: PS-17 Road Runoff Area=12,439 sf 58.98% Impervious Runoff Depth>3.54"
Flow Length=362' Tc=5.7 min CN=81 Runoff=1.2 cfs 3,665 cf

Subcatchment PS18: PS-18 Road Runoff Area=40,442 sf 46.99% Impervious Runoff Depth>3.34"
Flow Length=290' Tc=10.5 min CN=79 Runoff=3.1 cfs 11,242 cf

Subcatchment PS19: PS-19 Road Runoff Area=12,708 sf 65.47% Impervious Runoff Depth>3.94"
Flow Length=236' Tc=5.0 min CN=85 Runoff=1.4 cfs 4,175 cf

Subcatchment PS20: PS-20 Wetland Runoff Area=498,342 sf 3.58% Impervious Runoff Depth>2.06"
Flow Length=518' Tc=41.1 min CN=65 Runoff=13.1 cfs 85,419 cf

Subcatchment PS21: PS-21 Inner-Circle Runoff Area=35,774 sf 19.91% Impervious Runoff Depth>2.42"
Flow Length=138' Slope=0.0600 '/' Tc=6.1 min CN=69 Runoff=2.3 cfs 7,203 cf

Subcatchment PS22: PS-22 Road Runoff Area=12,972 sf 53.89% Impervious Runoff Depth>3.53"
Flow Length=215' Tc=9.5 min CN=81 Runoff=1.1 cfs 3,819 cf

Subcatchment PS23: PS-23 Road Runoff Area=26,118 sf 59.22% Impervious Runoff Depth>3.74"
Flow Length=333' Slope=0.0200 '/' Tc=6.1 min CN=83 Runoff=2.6 cfs 8,132 cf

Subcatchment PS24: PS-24 Road Runoff Area=57,571 sf 48.08% Impervious Runoff Depth>3.34"
Flow Length=375' Slope=0.0200 '/' Tc=9.6 min CN=79 Runoff=4.6 cfs 16,007 cf

Subcatchment PS26: PS-26 Inner-Circle Runoff Area=108,179 sf 16.12% Impervious Runoff Depth>2.33"
Flow Length=154' Slope=0.0600 '/' Tc=6.1 min CN=68 Runoff=6.6 cfs 21,001 cf

Subcatchment PS27: PS-27 Road Runoff Area=35,948 sf 54.83% Impervious Runoff Depth>3.53"
Flow Length=378' Tc=10.1 min CN=81 Runoff=3.0 cfs 10,583 cf

Subcatchment PS28: PS-28 Road Runoff Area=18,193 sf 41.21% Impervious Runoff Depth>3.05"
Flow Length=359' Tc=7.5 min CN=76 Runoff=1.4 cfs 4,625 cf

Subcatchment PS29: PS-29 Road Runoff Area=23,194 sf 44.34% Impervious Runoff Depth>3.14"
Flow Length=355' Tc=9.6 min CN=77 Runoff=1.7 cfs 6,076 cf

Subcatchment PS30: PS-30 Road Runoff Area=26,650 sf 40.36% Impervious Runoff Depth>3.05"
Flow Length=412' Tc=11.4 min CN=76 Runoff=1.8 cfs 6,769 cf

Subcatchment PS32: PS-32 - Remainder of Runoff Area=69,053 sf 0.00% Impervious Runoff Depth>1.44"
Flow Length=194' Tc=21.2 min CN=57 Runoff=1.6 cfs 8,293 cf

Reach R01: R-01 Reach Avg. Flow Depth=0.07' Max Vel=0.35 fps Inflow=1.2 cfs 4,471 cf
n=0.100 L=501.0' S=0.0199 '/' Capacity=19.5 cfs Outflow=0.7 cfs 4,354 cf

Reach R02: R-02 Reach Avg. Flow Depth=0.17' Max Vel=0.58 fps Inflow=3.7 cfs 20,887 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=2.7 cfs 20,510 cf

Reach R3: R-03 Reach Avg. Flow Depth=0.26' Max Vel=0.75 fps Inflow=7.1 cfs 76,243 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=6.0 cfs 75,061 cf

Reach R4: R-04 Reach Avg. Flow Depth=0.47' Max Vel=0.86 fps Inflow=14.1 cfs 142,953 cf
n=0.100 L=594.0' S=0.0126 '/' Capacity=15.6 cfs Outflow=13.9 cfs 141,491 cf

Reach R5: R-02 Reach Avg. Flow Depth=0.16' Max Vel=0.55 fps Inflow=2.7 cfs 23,178 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=2.4 cfs 22,750 cf

Pond BIO1: Bioretention Area #1 Peak Elev=37.45' Storage=26,568 cf Inflow=17.4 cfs 61,502 cf
Primary=6.8 cfs 43,834 cf Secondary=0.0 cfs 0 cf Outflow=6.8 cfs 43,834 cf

Pond BIO2: Bioretention Area #2 Peak Elev=37.06' Storage=15,220 cf Inflow=6.6 cfs 42,727 cf
Primary=1.2 cfs 32,409 cf Secondary=0.0 cfs 0 cf Outflow=1.2 cfs 32,409 cf

Pond CB01: Catch Basin 01 Peak Elev=37.04' Inflow=0.9 cfs 3,260 cf
Primary=0.9 cfs 3,260 cf Secondary=0.0 cfs 0 cf Outflow=0.9 cfs 3,260 cf

Pond CB02: Catch Basin 02 Peak Elev=36.85' Inflow=1.2 cfs 4,471 cf
Primary=1.2 cfs 4,471 cf Secondary=0.0 cfs 0 cf Outflow=1.2 cfs 4,471 cf

Pond CB03: Catch Basin 03 Peak Elev=38.07' Inflow=2.1 cfs 7,203 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0060 '/' Outflow=2.1 cfs 7,203 cf

Pond CB04: Catch Basin 04 Peak Elev=37.77' Inflow=2.6 cfs 9,160 cf
Primary=2.6 cfs 9,160 cf Secondary=0.0 cfs 0 cf Outflow=2.6 cfs 9,160 cf

Pond CB08: Catch Basin 04 Peak Elev=37.50' Inflow=6.7 cfs 23,676 cf
24.0" Round Culvert n=0.013 L=188.0' S=0.0053 '/' Outflow=6.7 cfs 23,676 cf

Pond CB09: Catch Basin 09 Peak Elev=37.59' Inflow=5.7 cfs 20,011 cf
18.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=5.7 cfs 20,011 cf

Pond CB10: Catch Basin 10 Peak Elev=51.76' Inflow=1.1 cfs 3,819 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=1.1 cfs 3,819 cf

Pond CB11: Catch Basin 11 Peak Elev=51.79' Inflow=1.7 cfs 5,827 cf
12.0" Round Culvert n=0.013 L=275.0' S=0.0075 '/' Outflow=1.7 cfs 5,827 cf

Pond CB12: Catch Basin 12 Peak Elev=50.71' Inflow=8.6 cfs 29,966 cf
12.0" Round Culvert n=0.013 L=79.0' S=0.0076 '/' Outflow=8.6 cfs 29,966 cf

Pond CB13: Catch Basin 13 Peak Elev=52.02' Inflow=4.6 cfs 16,007 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0156 '/' Outflow=4.6 cfs 16,007 cf

Pond CB14: Catch Basin 14 Peak Elev=41.68' Inflow=1.8 cfs 6,769 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0071 '/' Outflow=1.8 cfs 6,769 cf

Pond CB15: Catch Basin 15 Peak Elev=41.50' Inflow=3.5 cfs 12,845 cf
18.0" Round Culvert n=0.013 L=66.0' S=0.0068 '/' Outflow=3.5 cfs 12,845 cf

Pond CB16: Catch Basin 16 Peak Elev=37.63' Inflow=1.4 cfs 4,625 cf
Primary=1.4 cfs 4,623 cf Secondary=0.0 cfs 0 cf Outflow=1.4 cfs 4,623 cf

Pond CB17: Catch Basin 17 Peak Elev=37.61' Inflow=4.3 cfs 15,206 cf
18.0" Round Culvert n=0.013 L=205.0' S=0.0061 '/' Outflow=4.3 cfs 15,206 cf

Pond CB18: Catch Basin 18 Peak Elev=37.52' Inflow=1.4 cfs 4,175 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0063 '/' Outflow=1.4 cfs 4,174 cf

Pond CB19: Catch Basin 19 Peak Elev=37.51' Inflow=8.5 cfs 30,623 cf
24.0" Round Culvert n=0.013 L=117.0' S=0.0051 '/' Outflow=8.5 cfs 30,623 cf

Pond GW01: Gravel Wetland #1 Peak Elev=37.90' Storage=43,488 cf Inflow=23.7 cfs 154,851 cf
Primary=14.1 cfs 142,953 cf Secondary=0.0 cfs 0 cf Outflow=14.1 cfs 142,953 cf

Pond MH: Manhole 01 Peak Elev=37.65' Inflow=2.6 cfs 9,160 cf
15.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=2.6 cfs 9,160 cf

Pond MH03: Manhole 03 Peak Elev=51.04' Inflow=1.7 cfs 5,827 cf
12.0" Round Culvert n=0.013 L=166.0' S=0.0072 '/' Outflow=1.7 cfs 5,827 cf

Pond MH04: Manhole 04 Peak Elev=43.32' Inflow=8.6 cfs 29,966 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0082 '/' Outflow=8.6 cfs 29,966 cf

Pond MH05: Manhole 05 Peak Elev=42.26' Inflow=8.6 cfs 29,966 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0070 '/' Outflow=8.6 cfs 29,966 cf

Pond MH06: Manhole 06 Peak Elev=41.19' Inflow=8.6 cfs 29,966 cf
24.0" Round Culvert n=0.013 L=128.0' S=0.0074 '/' Outflow=8.6 cfs 29,966 cf

Pond MH07: Manhole 07 Peak Elev=40.39' Inflow=12.0 cfs 42,811 cf
24.0" Round Culvert n=0.013 L=285.0' S=0.0054 '/' Outflow=12.0 cfs 42,811 cf

Pond MH08: Manhole 08 Peak Elev=38.67' Inflow=12.0 cfs 42,811 cf
24.0" Round Culvert n=0.013 L=176.0' S=0.0054 '/' Outflow=12.0 cfs 42,811 cf

Pond MH09: Manhole 09 Peak Elev=40.80' Inflow=3.5 cfs 12,845 cf
24.0" Round Culvert n=0.013 L=154.0' S=0.0068 '/' Outflow=3.5 cfs 12,845 cf

Pond MH10: Manhole 10 Peak Elev=35.53' Inflow=7.1 cfs 76,243 cf
24.0" Round Culvert x 2.00 n=0.013 L=232.0' S=0.0050 '/' Outflow=7.1 cfs 76,243 cf

Pond MH11: Manhole 10 Peak Elev=36.08' Inflow=2.7 cfs 23,178 cf
12.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=2.7 cfs 23,178 cf

Pond P01: Cross Pipe 01 Peak Elev=46.47' Storage=714 cf Inflow=2.9 cfs 23,214 cf
12.0" Round Culvert n=0.013 L=338.5' S=0.0050 '/' Outflow=2.7 cfs 23,178 cf

Pond PND1: Bioretention Area #2 Peak Elev=39.49' Storage=5,595 cf Inflow=2.4 cfs 22,750 cf
Outflow=0.8 cfs 21,725 cf

Pond PP01: DI-01 DROP INLET Peak Elev=38.50' Storage=0 cf Inflow=3.7 cfs 20,887 cf
Primary=3.7 cfs 20,887 cf Secondary=0.0 cfs 0 cf Outflow=3.7 cfs 20,887 cf

Link PPoi-01: Prop Pol-01 Inflow=22.0 cfs 185,343 cf
Primary=22.0 cfs 185,343 cf

Link PPoi-02: POI Inflow=14.3 cfs 149,784 cf
Primary=14.3 cfs 149,784 cf

Link PPoi-03: PO3 Inflow=8.8 cfs 73,690 cf
Primary=8.8 cfs 73,690 cf

Link PPoi-04: Pr PoI-04

Inflow=3.2 cfs 35,704 cf
Primary=3.2 cfs 35,704 cf

Link PPoi-05: Pr PoI-05

Inflow=7.9 cfs 48,262 cf
Primary=7.9 cfs 48,262 cf

Link PPoi-06: Ex PoI-06

Inflow=2.9 cfs 16,552 cf
Primary=2.9 cfs 16,552 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 553,850 cf Average Runoff Depth = 1.68"
91.84% Pervious = 3,635,159 sf 8.16% Impervious = 322,997 sf

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-04: PS-04 Runoff Area=668,692 sf 1.33% Impervious Runoff Depth>2.00"
Flow Length=1,040' Tc=49.8 min CN=45 Runoff=13.9 cfs 111,226 cf

Subcatchment PS-06: PS-06 Runoff Area=125,073 sf 0.00% Impervious Runoff Depth>3.60"
Flow Length=340' Tc=27.5 min CN=59 Runoff=7.1 cfs 37,548 cf

Subcatchment PS-33: PS-33 Gravel Runoff Area=603,289 sf 1.53% Impervious Runoff Depth>4.54"
Flow Length=794' Tc=33.4 min CN=67 Runoff=39.9 cfs 228,298 cf

Subcatchment PS01: PS-01 Cemetery Runoff Area=301,519 sf 11.75% Impervious Runoff Depth>2.35"
Flow Length=517' Tc=11.5 min CN=48 Runoff=14.4 cfs 59,129 cf

Subcatchment PS02: PS-02 Cemetery Runoff Area=394,562 sf 8.81% Impervious Runoff Depth>2.12"
Flow Length=1,189' Tc=25.2 min CN=46 Runoff=12.3 cfs 69,776 cf

Subcatchment PS03: PS-03 Runoff Area=469,882 sf 0.00% Impervious Runoff Depth>4.04"
Flow Length=1,040' Tc=62.6 min CN=63 Runoff=19.8 cfs 158,106 cf

Subcatchment PS05: PS-05 Runoff Area=305,212 sf 0.00% Impervious Runoff Depth>4.07"
Flow Length=720' Tc=34.6 min CN=63 Runoff=17.7 cfs 103,415 cf

Subcatchment PS10: PS-10 Road Entrance Runoff Area=21,365 sf 39.43% Impervious Runoff Depth>3.97"
Flow Length=164' Tc=8.7 min CN=62 Runoff=2.1 cfs 7,072 cf

Subcatchment PS11: PS-11 Road Entrance Runoff Area=3,593 sf 78.96% Impervious Runoff Depth>6.85"
Flow Length=131' Tc=5.0 min CN=86 Runoff=0.7 cfs 2,051 cf

Subcatchment PS13: PS-13 Road Runoff Area=32,248 sf 55.72% Impervious Runoff Depth>5.16"
Flow Length=242' Tc=9.0 min CN=72 Runoff=4.0 cfs 13,875 cf

Subcatchment PS14: PS-16 Road Runoff Area=42,709 sf 50.85% Impervious Runoff Depth>5.64"
Flow Length=330' Tc=9.8 min CN=76 Runoff=5.7 cfs 20,081 cf

Subcatchment PS15: PS-13 Road Runoff Area=5,802 sf 78.34% Impervious Runoff Depth>6.85"
Flow Length=207' Tc=5.0 min CN=86 Runoff=1.1 cfs 3,312 cf

Subcatchment PS16: PS-16 Road Runoff Area=6,627 sf 55.82% Impervious Runoff Depth>6.37"
Flow Length=177' Tc=5.0 min CN=82 Runoff=1.1 cfs 3,517 cf

Subcatchment PS17: PS-17 Road Runoff Area=12,439 sf 58.98% Impervious Runoff Depth>6.25"
Flow Length=362' Tc=5.7 min CN=81 Runoff=2.1 cfs 6,477 cf

Subcatchment PS18: PS-18 Road Runoff Area=40,442 sf 46.99% Impervious Runoff Depth>6.00"
Flow Length=290' Tc=10.5 min CN=79 Runoff=5.5 cfs 20,228 cf

Subcatchment PS19: PS-19 Road Runoff Area=12,708 sf 65.47% Impervious Runoff Depth>6.73"
Flow Length=236' Tc=5.0 min CN=85 Runoff=2.3 cfs 7,128 cf

Subcatchment PS20: PS-20 Wetland Runoff Area=498,342 sf 3.58% Impervious Runoff Depth>4.30"
Flow Length=518' Tc=41.1 min CN=65 Runoff=28.2 cfs 178,403 cf

Subcatchment PS21: PS-21 Inner-Circle Runoff Area=35,774 sf 19.91% Impervious Runoff Depth>4.81"
Flow Length=138' Slope=0.0600 '/' Tc=6.1 min CN=69 Runoff=4.6 cfs 14,330 cf

Subcatchment PS22: PS-22 Road Runoff Area=12,972 sf 53.89% Impervious Runoff Depth>6.24"
Flow Length=215' Tc=9.5 min CN=81 Runoff=1.9 cfs 6,750 cf

Subcatchment PS23: PS-23 Road Runoff Area=26,118 sf 59.22% Impervious Runoff Depth>6.49"
Flow Length=333' Slope=0.0200 '/' Tc=6.1 min CN=83 Runoff=4.4 cfs 14,122 cf

Subcatchment PS24: PS-24 Road Runoff Area=57,571 sf 48.08% Impervious Runoff Depth>6.00"
Flow Length=375' Slope=0.0200 '/' Tc=9.6 min CN=79 Runoff=8.1 cfs 28,800 cf

Subcatchment PS26: PS-26 Inner-Circle Runoff Area=108,179 sf 16.12% Impervious Runoff Depth>4.69"
Flow Length=154' Slope=0.0600 '/' Tc=6.1 min CN=68 Runoff=13.6 cfs 42,257 cf

Subcatchment PS27: PS-27 Road Runoff Area=35,948 sf 54.83% Impervious Runoff Depth>6.24"
Flow Length=378' Tc=10.1 min CN=81 Runoff=5.2 cfs 18,703 cf

Subcatchment PS28: PS-28 Road Runoff Area=18,193 sf 41.21% Impervious Runoff Depth>5.64"
Flow Length=359' Tc=7.5 min CN=76 Runoff=2.6 cfs 8,558 cf

Subcatchment PS29: PS-29 Road Runoff Area=23,194 sf 44.34% Impervious Runoff Depth>5.76"
Flow Length=355' Tc=9.6 min CN=77 Runoff=3.2 cfs 11,138 cf

Subcatchment PS30: PS-30 Road Runoff Area=26,650 sf 40.36% Impervious Runoff Depth>5.64"
Flow Length=412' Tc=11.4 min CN=76 Runoff=3.4 cfs 12,526 cf

Subcatchment PS32: PS-32 - Remainder of Runoff Area=69,053 sf 0.00% Impervious Runoff Depth>3.37"
Flow Length=194' Tc=21.2 min CN=57 Runoff=4.0 cfs 19,419 cf

Reach R01: R-01 Reach Avg. Flow Depth=0.12' Max Vel=0.49 fps Inflow=2.6 cfs 9,124 cf
n=0.100 L=501.0' S=0.0199 '/' Capacity=19.5 cfs Outflow=1.7 cfs 8,960 cf

Reach R02: R-02 Reach Avg. Flow Depth=0.37' Max Vel=0.91 fps Inflow=12.2 cfs 59,860 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=10.8 cfs 59,246 cf

Reach R3: R-03 Reach Avg. Flow Depth=0.46' Max Vel=1.04 fps Inflow=16.7 cfs 185,259 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=16.5 cfs 183,777 cf

Reach R4: R-04 Reach Avg. Flow Depth=0.92' Max Vel=1.09 fps Inflow=42.9 cfs 291,109 cf
n=0.100 L=594.0' S=0.0126 '/' Capacity=15.6 cfs Outflow=39.6 cfs 289,076 cf

Reach R5: R-02 Reach Avg. Flow Depth=0.34' Max Vel=0.88 fps Inflow=20.5 cfs 69,715 cf
n=0.100 L=487.0' S=0.0189 '/' Capacity=19.0 cfs Outflow=9.5 cfs 69,017 cf

Pond BIO1: Bioretention Area #1 Peak Elev=38.41' Storage=40,668 cf Inflow=30.0 cfs 111,948 cf
Primary=12.5 cfs 90,717 cf Secondary=0.0 cfs 0 cf Outflow=12.5 cfs 90,717 cf

Pond BIO2: Bioretention Area #2 Peak Elev=37.89' Storage=22,719 cf Inflow=13.6 cfs 108,400 cf
Primary=5.6 cfs 93,847 cf Secondary=0.0 cfs 0 cf Outflow=5.6 cfs 93,847 cf

Pond CB01: Catch Basin 01 Peak Elev=37.62' Inflow=2.1 cfs 7,072 cf
Primary=2.1 cfs 7,072 cf Secondary=0.0 cfs 0 cf Outflow=2.1 cfs 7,072 cf

Pond CB02: Catch Basin 02 Peak Elev=37.32' Inflow=2.6 cfs 9,124 cf
Primary=2.6 cfs 9,124 cf Secondary=0.0 cfs 0 cf Outflow=2.6 cfs 9,124 cf

Pond CB03: Catch Basin 03 Peak Elev=41.65' Inflow=4.0 cfs 13,875 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0060 '/' Outflow=4.0 cfs 13,875 cf

Pond CB04: Catch Basin 04 Peak Elev=40.51' Inflow=4.9 cfs 17,187 cf
Primary=4.2 cfs 16,535 cf Secondary=1.7 cfs 656 cf Outflow=4.9 cfs 17,187 cf

Pond CB08: Catch Basin 04 Peak Elev=38.71' Inflow=10.9 cfs 43,092 cf
24.0" Round Culvert n=0.013 L=188.0' S=0.0053 '/' Outflow=10.9 cfs 43,092 cf

Pond CB09: Catch Basin 09 Peak Elev=39.64' Inflow=8.9 cfs 36,615 cf
18.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=8.9 cfs 36,615 cf

Pond CB10: Catch Basin 10 Peak Elev=76.39' Inflow=1.9 cfs 6,750 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0094 '/' Outflow=1.9 cfs 6,750 cf

Pond CB11: Catch Basin 11 Peak Elev=76.51' Inflow=2.9 cfs 10,267 cf
12.0" Round Culvert n=0.013 L=275.0' S=0.0075 '/' Outflow=2.9 cfs 10,267 cf

Pond CB12: Catch Basin 12 Peak Elev=73.37' Inflow=15.0 cfs 53,189 cf
12.0" Round Culvert n=0.013 L=79.0' S=0.0076 '/' Outflow=15.0 cfs 53,189 cf

Pond CB13: Catch Basin 13 Peak Elev=77.54' Inflow=8.1 cfs 28,800 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0156 '/' Outflow=8.1 cfs 28,800 cf

Pond CB14: Catch Basin 14 Peak Elev=45.05' Inflow=3.4 cfs 12,526 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0071 '/' Outflow=3.4 cfs 12,526 cf

Pond CB15: Catch Basin 15 Peak Elev=44.96' Inflow=6.5 cfs 23,664 cf
18.0" Round Culvert n=0.013 L=66.0' S=0.0068 '/' Outflow=6.5 cfs 23,664 cf

Pond CB16: Catch Basin 16 Peak Elev=40.19' Inflow=2.6 cfs 8,558 cf
Primary=2.7 cfs 8,468 cf Secondary=2.7 cfs 694 cf Outflow=2.6 cfs 8,558 cf

Pond CB17: Catch Basin 17 Peak Elev=40.43' Inflow=7.8 cfs 27,171 cf
18.0" Round Culvert n=0.013 L=205.0' S=0.0061 '/' Outflow=7.8 cfs 27,171 cf

Pond CB18: Catch Basin 18 Peak Elev=39.15' Inflow=2.3 cfs 7,128 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0063 '/' Outflow=2.3 cfs 7,128 cf

Pond CB19: Catch Basin 19 Peak Elev=39.03' Inflow=15.1 cfs 54,526 cf
24.0" Round Culvert n=0.013 L=117.0' S=0.0051 '/' Outflow=15.1 cfs 54,526 cf

Pond GW01: Gravel Wetland #1 Peak Elev=38.88' Storage=63,703 cf Inflow=47.9 cfs 305,152 cf
Primary=16.4 cfs 233,109 cf Secondary=26.4 cfs 58,000 cf Outflow=42.9 cfs 291,109 cf

Pond MH: Manhole 01 Peak Elev=40.00' Inflow=4.2 cfs 16,535 cf
15.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=4.2 cfs 16,535 cf

Pond MH03: Manhole 03 Peak Elev=74.30' Inflow=2.9 cfs 10,267 cf
12.0" Round Culvert n=0.013 L=166.0' S=0.0072 '/' Outflow=2.9 cfs 10,267 cf

Pond MH04: Manhole 04 Peak Elev=51.39' Inflow=15.0 cfs 53,189 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0082 '/' Outflow=15.0 cfs 53,189 cf

Pond MH05: Manhole 05 Peak Elev=48.36' Inflow=15.0 cfs 53,189 cf
18.0" Round Culvert n=0.013 L=79.0' S=0.0070 '/' Outflow=15.0 cfs 53,189 cf

Pond MH06: Manhole 06 Peak Elev=45.17' Inflow=15.0 cfs 53,189 cf
24.0" Round Culvert n=0.013 L=128.0' S=0.0074 '/' Outflow=15.0 cfs 53,189 cf

Pond MH07: Manhole 07 Peak Elev=44.15' Inflow=21.3 cfs 76,854 cf
24.0" Round Culvert n=0.013 L=285.0' S=0.0054 '/' Outflow=21.3 cfs 76,854 cf

Pond MH08: Manhole 08 Peak Elev=40.54' Inflow=21.3 cfs 76,854 cf
24.0" Round Culvert n=0.013 L=176.0' S=0.0054 '/' Outflow=21.3 cfs 76,854 cf

Pond MH09: Manhole 09 Peak Elev=44.32' Inflow=6.5 cfs 23,664 cf
24.0" Round Culvert n=0.013 L=154.0' S=0.0068 '/' Outflow=6.5 cfs 23,664 cf

Pond MH10: Manhole 10 Peak Elev=36.14' Inflow=16.7 cfs 184,564 cf
24.0" Round Culvert x 2.00 n=0.013 L=232.0' S=0.0050 '/' Outflow=16.7 cfs 184,564 cf

Pond MH11: Manhole 10 Peak Elev=79.52' Inflow=20.5 cfs 69,715 cf
12.0" Round Culvert n=0.013 L=85.0' S=0.0053 '/' Outflow=20.5 cfs 69,715 cf

Pond P01: Cross Pipe 01 Peak Elev=212.05' Storage=7,082 cf Inflow=12.3 cfs 69,776 cf
12.0" Round Culvert n=0.013 L=338.5' S=0.0050 '/' Outflow=20.5 cfs 69,715 cf

Pond PND1: Bioretention Area #2 Peak Elev=40.40' Storage=10,138 cf Inflow=9.5 cfs 69,017 cf
Outflow=7.6 cfs 66,143 cf

Pond PP01: DI-01 DROP INLET Peak Elev=40.14' Storage=2,409 cf Inflow=14.4 cfs 59,129 cf
Primary=9.4 cfs 57,720 cf Secondary=2.9 cfs 1,484 cf Outflow=12.2 cfs 59,204 cf

Link PPoi-01: Prop Pol-01 Inflow=55.2 cfs 430,386 cf
Primary=55.2 cfs 430,386 cf

Link PPoi-02: POI Inflow=41.5 cfs 308,496 cf
Primary=41.5 cfs 308,496 cf

Link PPoi-03: PO3 Inflow=19.8 cfs 158,106 cf
Primary=19.8 cfs 158,106 cf

Link PPoi-04: Pr Pol-04

Inflow=13.9 cfs 111,226 cf
Primary=13.9 cfs 111,226 cf

Link PPoi-05: Pr Pol-05

Inflow=17.7 cfs 103,415 cf
Primary=17.7 cfs 103,415 cf

Link PPoi-06: Ex Pol-06

Inflow=7.1 cfs 37,548 cf
Primary=7.1 cfs 37,548 cf

Total Runoff Area = 3,958,156 sf Runoff Volume = 1,206,245 cf Average Runoff Depth = 3.66"
91.84% Pervious = 3,635,159 sf 8.16% Impervious = 322,997 sf

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APPENDIX E – POST-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)

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Summary for Subcatchment PS-04: PS-04

Runoff = 3.2 cfs @ 12.89 hrs, Volume= 35,704 cf, Depth> 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
8,918	98	Paved parking, HSG A	Pavement
227	96	Gravel surface, HSG A	Roadway
7,174	96	Gravel surface, HSG B	Roadway
1,882	96	Gravel surface, HSG C	Roadway
163,386	30	Woods, Good, HSG A	Woods
162,547	55	Woods, Good, HSG B	Woods
22,827	70	Woods, Good, HSG C	Woods
260,043	39	>75% Grass cover, Good, HSG A	Open Space
38,989	61	>75% Grass cover, Good, HSG B	Open Space
2,699	74	>75% Grass cover, Good, HSG C	Open Space
668,692	45	Weighted Average	
659,774		98.67% Pervious Area	
8,918		1.33% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.4	100	0.0400	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
8.2	300	0.0150	0.61		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
15.2	640	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
49.8	1,040	Total			

Summary for Subcatchment PS-06: PS-06

Runoff = 2.9 cfs @ 12.43 hrs, Volume= 16,552 cf, Depth> 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
3,629	96	Gravel surface, HSG B	Roadway
95,734	55	Woods, Good, HSG B	Woods
25,710	70	Woods, Good, HSG C	Woods
125,073	59	Weighted Average	
125,073		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0600	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
5.1	240	0.0250	0.79		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
27.5	340	Total			

Summary for Subcatchment PS-33: PS-33 Gravel Wetland

Run from top of graveyard, thru site, and into wetland.

Runoff = 19.2 cfs @ 12.49 hrs, Volume= 112,040 cf, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
9,250	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
111,932	55	Woods, Good, HSG B	Open Space
441,665	70	Woods, Good, HSG C	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
33,884	61	>75% Grass cover, Good, HSG B	Open Space
3,954	74	>75% Grass cover, Good, HSG C	Open Space
2,604	96	Gravel surface, HSG B	Roadway
0	96	Gravel surface, HSG C	Roadway
603,289	67	Weighted Average	
594,039		98.47% Pervious Area	
9,250		1.53% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0800	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
13.4	694	0.0300	0.87		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
33.4	794	Total			

Summary for Subcatchment PS01: PS-01 Cemetery

Run from top of graveyard, thru site, and into wetland.

Runoff = 3.7 cfs @ 12.21 hrs, Volume= 20,887 cf, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
33,245	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
1,260	98	Roofs, HSG A	Woods
924	98	Roofs, HSG B	Woods
11,085	30	Woods, Good, HSG A	Open Space
2,470	55	Woods, Good, HSG B	Open Space
227,444	39	>75% Grass cover, Good, HSG A	Open Space
25,091	61	>75% Grass cover, Good, HSG B	Open Space
301,519	48	Weighted Average	
266,090		88.25% Pervious Area	
35,429		11.75% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0300	0.22		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.9	210	0.0300	1.21		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.4000	3.16		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
0.7	177	0.0100	4.22	46.39	**Channel Flow, Channel Flow** Area= 11.0 sf Perim= 22.3' r= 0.49' n= 0.022 Earth, clean & straight
11.5	517	Total			

Summary for Subcatchment PS02: PS-02 Cemetery

Runoff = 2.9 cfs @ 12.51 hrs, Volume= 23,214 cf, Depth> 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
33,461	98	Paved parking, HSG A	Pavement
0	98	Paved parking, HSG B	Pavement
0	98	Roofs, HSG A	Pavement
1,316	98	Roofs, HSG B	Pavement
5,444	30	Woods, Good, HSG A	Brush
4,043	55	Woods, Good, HSG B	Woods
316,738	39	>75% Grass cover, Good, HSG A	Open Space
33,560	61	>75% Grass cover, Good, HSG B	Open Space
394,562	46	Weighted Average	
359,785		91.19% Pervious Area	
34,777		8.81% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.0120	0.15		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
12.7	609	0.0130	0.80		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
1.3	480	0.0200	5.96	65.60	**Channel Flow, Channel Flow** Area= 11.0 sf Perim= 22.3' r= 0.49' n= 0.022 Earth, clean & straight
25.2	1,189	Total			

Summary for Subcatchment PS03: PS-03

Runoff = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
41	96	Gravel surface, HSG B	Roadway
218,001	55	Woods, Good, HSG B	Woods
251,840	70	Woods, Good, HSG C	Woods
469,882	63	Weighted Average	
469,882		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.8	100	0.0200	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
27.8	940	0.0127	0.56		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
62.6	1,040	Total			

Summary for Subcatchment PS05: PS-05

Runoff = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
141,482	55	Woods, Good, HSG B	Open Water
163,730	70	Woods, Good, HSG C	Woods
305,212	63	Weighted Average	
305,212		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0800	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
1.4	120	0.0830	1.44		**Shallow Concentrated Flow, Shallow Concentrates** Woodland Kv= 5.0 fps
13.2	500	0.0160	0.63		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
34.6	720	Total			

Summary for Subcatchment PS10: PS-10 Road Entrance

Run from top of graveyard, thru site, and into wetland.

Runoff = 0.9 cfs @ 12.13 hrs, Volume= 3,260 cf, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
4,701	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
3,724	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
298	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
12,642	39	>75% Grass cover, Good, HSG A	Open Space
0	61	>75% Grass cover, Good, HSG B	Open Space
21,365	62	Weighted Average	
12,940		60.57% Pervious Area	
8,425		39.43% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	86	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.6	78	0.0150	2.10	3.57	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
8.7	164	Total			

Summary for Subcatchment PS11: PS-11 Road Entrance

Run from top of graveyard, thru site, and into wetland.

Runoff = 0.4 cfs @ 12.07 hrs, Volume= 1,212 cf, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
2,837	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG A	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	30	Woods, Good, HSG A	Open Space
756	39	>75% Grass cover, Good, HSG A	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
3,593	86	Weighted Average	
756		21.04% Pervious Area	
2,837		78.96% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.09		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.6	128	0.0150	3.55	6.04	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
3.8					**Direct Entry, Miniimum Tc of 5 Min**
5.0	131	Total			

Summary for Subcatchment PS13: PS-13 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 2.1 cfs @ 12.13 hrs, Volume= 7,203 cf, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
9,110	98	Paved parking, HSG A	Woods
216	98	Paved parking, HSG B	Woods
8,644	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
14,278	39	>75% Grass cover, Good, HSG A	Open Space
0	61	>75% Grass cover, Good, HSG B	Open Space
32,248	72	Weighted Average	
14,278		44.28% Pervious Area	
17,970		55.72% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	89	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.7	153	0.0155	3.61	6.14	**Channel Flow, Channel** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
9.0	242	Total			

Summary for Subcatchment PS14: PS-16 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 3.1 cfs @ 12.14 hrs, Volume= 10,851 cf, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

	Area (sf)	CN	Description	Land Use
	4,352	98	Paved parking, HSG A	Woods
*	5,825	98	Paved parking, HSG B	Woods
	5,152	98	Roofs, HSG A	Woods
	6,390	98	Roofs, HSG B	Woods
	0	30	Woods, Good, HSG A	Open Space
	0	55	Woods, Good, HSG B	Open Space
	8,021	39	>75% Grass cover, Good, HSG A	Open Space
	12,969	61	>75% Grass cover, Good, HSG B	Open Space
	42,709	76	Weighted Average	
	20,990		49.15% Pervious Area	
	21,719		50.85% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.7	230	0.0330	5.27	8.96	**Channel Flow, Street Gutter** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
9.8	330	Total			

Summary for Subcatchment PS15: PS-13 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 0.6 cfs @ 12.07 hrs, Volume= 1,956 cf, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
4,051	98	Paved parking, HSG A	Woods
494	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
1,105	39	>75% Grass cover, Good, HSG A	Open Space
152	61	>75% Grass cover, Good, HSG B	Open Space
5,802	86	Weighted Average	
1,257		21.66% Pervious Area	
4,545		78.34% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.09		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
1.0	204	0.0150	3.55	6.04	**Channel Flow, Roadway Gutter** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
3.4					**Direct Entry, Miniimum Tc of 5 Min**
5.0	207	Total			

Summary for Subcatchment PS16: PS-16 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 0.7 cfs @ 12.07 hrs, Volume= 2,008 cf, Depth> 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
3,699	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
2,928	61	>75% Grass cover, Good, HSG B	Open Space
6,627	82	Weighted Average	
2,928		44.18% Pervious Area	
3,699		55.82% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	37	0.0200	0.15		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.7	140	0.0330	3.11	5.29	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
0.2					**Direct Entry, Miniimum Tc of 5 Min**
5.0	177	Total			

Summary for Subcatchment PS17: PS-17 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.2 cfs @ 12.08 hrs, Volume= 3,665 cf, Depth> 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
2,831	98	Paved parking, HSG A	Woods
4,505	98	Paved parking, HSG B	Woods
11	96	Gravel surface, HSG B	Roadway
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
1,020	39	>75% Grass cover, Good, HSG A	Open Space
4,072	61	>75% Grass cover, Good, HSG B	Open Space
12,439	81	Weighted Average	
5,103		41.02% Pervious Area	
7,336		58.98% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	36	0.0200	0.15		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
1.7	326	0.0330	3.11	5.29	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
5.7	362	Total			

Summary for Subcatchment PS18: PS-18 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 3.1 cfs @ 12.15 hrs, Volume= 11,242 cf, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
10,901	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
8,102	98	Roofs, HSG B	Woods
405	96	Gravel surface, HSG B	Roadway
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
21,034	61	>75% Grass cover, Good, HSG B	Open Space
40,442	79	Weighted Average	
21,439		53.01% Pervious Area	
19,003		46.99% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.2	27	0.0200	2.12		**Shallow Concentrated Flow, Shallow Concentrated** Grassed Waterway Kv= 15.0 fps
1.2	163	0.0175	2.27	3.85	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
10.5	290	Total			

Summary for Subcatchment PS19: PS-19 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.4 cfs @ 12.07 hrs, Volume= 4,175 cf, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
8,320	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
4,388	61	>75% Grass cover, Good, HSG B	Open Space
12,708	85	Weighted Average	
4,388		34.53% Pervious Area	
8,320		65.47% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0200	0.14		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.1	7	0.0200	0.87		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 3.70"
1.5	202	0.0175	2.27	3.85	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
0.2					**Direct Entry, Miniimum Tc of 5 Min**
5.0	236	Total			

Summary for Subcatchment PS20: PS-20 Wetland

Run from top of graveyard, thru site, and into wetland.

Runoff = 13.1 cfs @ 12.60 hrs, Volume= 85,419 cf, Depth> 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
357	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
17,465	98	Roofs, HSG B	Woods
5,705	30	Woods, Good, HSG A	Open Space
123,665	55	Woods, Good, HSG B	Open Space
284,611	70	Woods, Good, HSG C	Open Space
9,753	39	>75% Grass cover, Good, HSG A	Open Space
56,388	61	>75% Grass cover, Good, HSG B	Open Space
398	74	>75% Grass cover, Good, HSG C	Open Space
498,342	65	Weighted Average	
480,520		96.42% Pervious Area	
17,822		3.58% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	9	0.5000	0.41		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
27.4	91	0.0300	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
0.7	40	0.0400	1.00		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
12.6	378	0.0100	0.50		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
41.1	518	Total			

Summary for Subcatchment PS21: PS-21 Inner-Circle (East)

Run from top of graveyard, thru site, and into wetland.

Runoff = 2.3 cfs @ 12.09 hrs, Volume= 7,203 cf, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
7,124	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
73	39	>75% Grass cover, Good, HSG A	Open Space
27,558	61	>75% Grass cover, Good, HSG B	Open Space
1,019	96	Gravel surface, HSG B	Roadway
35,774	69	Weighted Average	
28,650		80.09% Pervious Area	
7,124		19.91% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0600	0.28		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.2	38	0.0600	3.67		**Shallow Concentrated Flow, Shallow Concentrated Flow** Grassed Waterway Kv= 15.0 fps
6.1	138	Total			

Summary for Subcatchment PS22: PS-22 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.1 cfs @ 12.13 hrs, Volume= 3,819 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

	Area (sf)	CN	Description	Land Use
	0	98	Paved parking, HSG A	Woods
*	2,919	98	Paved parking, HSG B	Woods
	0	98	Roofs, HSG A	Woods
	4,072	98	Roofs, HSG B	Woods
	0	30	Woods, Good, HSG A	Open Space
*	0	30	Woods, Good, HSG B	Open Space
	0	39	>75% Grass cover, Good, HSG A	Open Space
	5,981	61	>75% Grass cover, Good, HSG B	Open Space
	0	96	Gravel surface, HSG B	Roadway
	12,972	81	Weighted Average	
	5,981		46.11% Pervious Area	
	6,991		53.89% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.4	115	0.0330	5.27	8.96	**Channel Flow, Street Gutter** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
9.5	215	Total			

Summary for Subcatchment PS23: PS-23 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 2.6 cfs @ 12.09 hrs, Volume= 8,132 cf, Depth> 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
13,785	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
1,683	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
10,561	61	>75% Grass cover, Good, HSG B	Open Space
89	96	Gravel surface, HSG B	Roadway
26,118	83	Weighted Average	
10,650		40.78% Pervious Area	
15,468		59.22% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	37	0.0200	0.15		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.0	296	0.0200	2.42	4.12	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
6.1	333	Total			

Summary for Subcatchment PS24: PS-24 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 4.6 cfs @ 12.13 hrs, Volume= 16,007 cf, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

	Area (sf)	CN	Description	Land Use
	0	98	Paved parking, HSG A	Woods
*	13,275	98	Paved parking, HSG B	Woods
	0	98	Roofs, HSG A	Woods
	14,404	98	Roofs, HSG B	Woods
	0	30	Woods, Good, HSG A	Open Space
	32	55	Woods, Good, HSG B	Open Space
	0	39	>75% Grass cover, Good, HSG A	Open Space
	28,810	61	>75% Grass cover, Good, HSG B	Open Space
	1,050	96	Gravel surface, HSG B	Roadway
	57,571	79	Weighted Average	
	29,892		51.92% Pervious Area	
	27,679		48.08% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	91	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
1.2	284	0.0200	4.10	6.97	**Channel Flow, Street Gutter** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.013 Asphalt, smooth
9.6	375	Total			

Summary for Subcatchment PS26: PS-26 Inner-Circle (West)

Run from top of graveyard, thru site, and into wetland.

Runoff = 6.6 cfs @ 12.09 hrs, Volume= 21,001 cf, Depth> 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
17,438	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
88,586	61	>75% Grass cover, Good, HSG B	Open Space
2,155	96	Gravel surface, HSG B	Roadway
108,179	68	Weighted Average	
90,741		83.88% Pervious Area	
17,438		16.12% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0600	0.28		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
0.2	54	0.0600	3.67		**Shallow Concentrated Flow, Shallow Concentrated Flow** Grassed Waterway Kv= 15.0 fps
6.1	154	Total			

Summary for Subcatchment PS27: PS-27 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 3.0 cfs @ 12.14 hrs, Volume= 10,583 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
9,357	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
10,353	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
16,238	61	>75% Grass cover, Good, HSG B	Open Space
35,948	81	Weighted Average	
16,238		45.17% Pervious Area	
19,710		54.83% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	83	0.0200	0.18		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.2	295	0.0171	2.24	3.81	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
10.1	378	Total			

Summary for Subcatchment PS28: PS-28 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.4 cfs @ 12.11 hrs, Volume= 4,625 cf, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
7,498	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
10,695	61	>75% Grass cover, Good, HSG B	Open Space
18,193	76	Weighted Average	
10,695		58.79% Pervious Area	
7,498		41.21% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.3	309	0.0171	2.24	3.81	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
7.5	359	Total			

Summary for Subcatchment PS29: PS-29 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.7 cfs @ 12.14 hrs, Volume= 6,076 cf, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
6,948	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
3,336	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
0	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
12,910	61	>75% Grass cover, Good, HSG B	Open Space
23,194	77	Weighted Average	
12,910		55.66% Pervious Area	
10,284		44.34% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	78	0.0200	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.1	277	0.0171	2.24	3.81	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
9.6	355	Total			

Summary for Subcatchment PS30: PS-30 Road

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.8 cfs @ 12.16 hrs, Volume= 6,769 cf, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
10,755	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
1,756	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
14,139	61	>75% Grass cover, Good, HSG B	Open Space
26,650	76	Weighted Average	
15,895		59.64% Pervious Area	
10,755		40.36% Impervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0600	0.11		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.70"
1.5	27	0.1300	0.30		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.70"
2.5	335	0.0171	2.24	3.81	**Channel Flow, Channel Flow** Area= 1.7 sf Perim= 13.3' r= 0.13' n= 0.022 Earth, clean & straight
11.4	412	Total			

Summary for Subcatchment PS32: PS-32 - Remainder of ES02

Run from top of graveyard, thru site, and into wetland.

Runoff = 1.6 cfs @ 12.33 hrs, Volume= 8,293 cf, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=5.62"

Area (sf)	CN	Description	Land Use
0	98	Paved parking, HSG A	Woods
0	98	Paved parking, HSG B	Woods
0	98	Roofs, HSG A	Woods
0	98	Roofs, HSG B	Woods
0	30	Woods, Good, HSG A	Open Space
46,947	55	Woods, Good, HSG B	Open Space
0	39	>75% Grass cover, Good, HSG A	Open Space
21,246	61	>75% Grass cover, Good, HSG B	Open Space
860	74	>75% Grass cover, Good, HSG C	Open Space
69,053	57	Weighted Average	
69,053		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0800	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.70"
1.2	94	0.0650	1.27		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
21.2	194	Total			

Summary for Reach R01: R-01 Reach

Inflow Area = 24,958 sf, 45.12% Impervious, Inflow Depth > 2.15" for 10-Year event
Inflow = 1.2 cfs @ 12.11 hrs, Volume= 4,471 cf
Outflow = 0.7 cfs @ 12.32 hrs, Volume= 4,354 cf, Atten= 45%, Lag= 12.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.35 fps, Min. Travel Time= 23.7 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 70.3 min

Peak Storage= 965 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 27.91'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 19.5 cfs

25.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 20.0 '/' Top Width= 45.00'
Length= 501.0' Slope= 0.0199 '/'
Inlet Invert= 35.95', Outlet Invert= 26.00'

‡

Summary for Reach R02: R-02 Reach

Inflow Area = 301,519 sf, 11.75% Impervious, Inflow Depth > 0.83" for 10-Year event
Inflow = 3.7 cfs @ 12.21 hrs, Volume= 20,887 cf
Outflow = 2.7 cfs @ 12.46 hrs, Volume= 20,510 cf, Atten= 26%, Lag= 15.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.58 fps, Min. Travel Time= 14.1 min
Avg. Velocity = 0.28 fps, Avg. Travel Time= 29.4 min

Peak Storage= 2,311 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 31.70'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 19.0 cfs

25.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 20.0 '/' Top Width= 45.00'
Length= 487.0' Slope= 0.0189 '/'
Inlet Invert= 35.20', Outlet Invert= 26.00'

‡

Summary for Reach R3: R-03 Reach

[80] Warning: Exceeded Pond MH10 by 2.96' @ 0.00 hrs (35.7 cfs 135,780 cf)

Inflow Area = 739,004 sf, 22.39% Impervious, Inflow Depth > 1.24" for 10-Year event
Inflow = 7.1 cfs @ 12.45 hrs, Volume= 76,243 cf
Outflow = 6.0 cfs @ 12.60 hrs, Volume= 75,061 cf, Atten= 16%, Lag= 9.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.75 fps, Min. Travel Time= 10.8 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 17.2 min

Peak Storage= 3,857 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 35.48'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 19.0 cfs

25.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 20.0 '/' Top Width= 45.00'
Length= 487.0' Slope= 0.0189 '/'
Inlet Invert= 35.20', Outlet Invert= 26.00'

‡

Summary for Reach R4: R-04 Reach

Inflow Area = 756,421 sf, 11.12% Impervious, Inflow Depth > 2.27" for 10-Year event
Inflow = 14.1 cfs @ 12.82 hrs, Volume= 142,953 cf
Outflow = 13.9 cfs @ 13.02 hrs, Volume= 141,491 cf, Atten= 2%, Lag= 12.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.86 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.37 fps, Avg. Travel Time= 26.7 min

Peak Storage= 9,599 cf @ 13.02 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 43.79'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 15.6 cfs

25.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 20.0 '/' Top Width= 45.00'
Length= 594.0' Slope= 0.0126 '/'
Inlet Invert= 33.50', Outlet Invert= 26.00'

‡

Summary for Reach R5: R-02 Reach

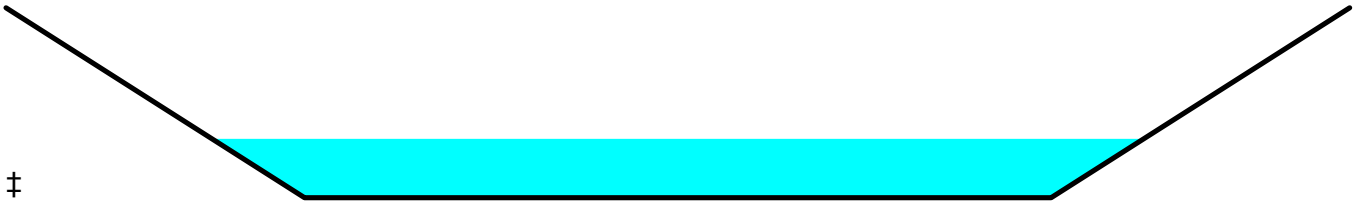
[80] Warning: Exceeded Pond MH11 by 0.44' @ 0.00 hrs (0.6 cfs 9,707 cf)

Inflow Area = 394,562 sf, 8.81% Impervious, Inflow Depth > 0.70" for 10-Year event
Inflow = 2.7 cfs @ 12.66 hrs, Volume= 23,178 cf
Outflow = 2.4 cfs @ 12.84 hrs, Volume= 22,750 cf, Atten= 10%, Lag= 11.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Max. Velocity= 0.55 fps, Min. Travel Time= 14.8 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 27.7 min

Peak Storage= 2,121 cf @ 12.84 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 31.20'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 19.0 cfs

25.00' x 0.50' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 20.0 '/' Top Width= 45.00'
Length= 487.0' Slope= 0.0189 '/'
Inlet Invert= 35.20', Outlet Invert= 26.00'



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Summary for Pond BIO1: Bioretention Area #1

[92] Warning: Device #6 is above defined storage

Inflow Area = 236,263 sf, 47.92% Impervious, Inflow Depth > 3.12" for 10-Year event
Inflow = 17.4 cfs @ 12.12 hrs, Volume= 61,502 cf
Outflow = 6.8 cfs @ 12.44 hrs, Volume= 43,834 cf, Atten= 61%, Lag= 19.2 min
Primary = 6.8 cfs @ 12.44 hrs, Volume= 43,834 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.45' @ 12.44 hrs Surf.Area= 3,387 sf Storage= 26,568 cf

Plug-Flow detention time= 211.6 min calculated for 43,834 cf (71% of inflow)
Center-of-Mass det. time= 118.1 min (942.7 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	32.55'	305 cf	**Media (Irregular)** Listed below (Recalc) 1,524 cf Overall x 20.0% Voids
#2	33.00'	42,376 cf	**Pond Area (Irregular)** Listed below (Recalc) -Impervious
		42,681 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
32.55	3,387	339.6	0	0	3,387
33.00	3,387	339.6	1,524	1,524	3,540

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
33.00	3,387	339.6	0	0	3,387
35.00	5,515	375.1	8,816	8,816	5,529
36.00	6,027	398.4	5,769	14,585	7,014
36.33	6,521	443.9	2,070	16,655	10,067
37.00	8,819	475.4	5,120	21,775	12,392
38.00	14,190	537.5	11,399	33,173	17,423
38.50	22,974	614.2	9,203	42,376	24,459

Device	Routing	Invert	Outlet Devices
#1	Primary	32.55'	**18.0" Round Culvert** L= 79.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.55' / 32.25' S= 0.0038 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	32.55'	**2.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	34.00'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 3	32.55'	**5.000 in/hr Exfiltration over Surface area**
#5	Device 1	37.00'	**24.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	39.00'	**100.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.8 cfs @ 12.44 hrs HW=37.45' TW=35.50' (Dynamic Tailwater)
- **1=Culvert** (Passes 6.8 cfs of 11.5 cfs potential flow)
  - **2=Orifice** (Orifice Controls 0.1 cfs @ 6.72 fps)
  - **3=Orifice** (Passes 0.4 cfs of 1.3 cfs potential flow)
    - **4=Exfiltration** (Exfiltration Controls 0.4 cfs)
  - **5=Grate** (Weir Controls 6.2 cfs @ 2.20 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=32.55' TW=35.20' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond BIO2: Bioretention Area #2

Inflow Area = 502,741 sf, 10.39% Impervious, Inflow Depth > 1.02" for 10-Year event
Inflow = 6.6 cfs @ 12.09 hrs, Volume= 42,727 cf
Outflow = 1.2 cfs @ 15.29 hrs, Volume= 32,409 cf, Atten= 83%, Lag= 192.0 min
Primary = 1.2 cfs @ 15.29 hrs, Volume= 32,409 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.06' @ 15.29 hrs Surf.Area= 8,345 sf Storage= 15,220 cf

Plug-Flow detention time= 225.0 min calculated for 32,409 cf (76% of inflow)
Center-of-Mass det. time= 131.9 min (1,066.6 - 934.7)

Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	1,098 cf	**Media (Irregular)** Listed below (Recalc) -Impervious 5,491 cf Overall x 20.0% Voids
#2	35.00'	37,485 cf	**Pond Area (Irregular)** Listed below (Recalc)
		38,583 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
34.00	5,491	456.6	0	0	5,491
35.00	5,491	456.6	5,491	5,491	5,948

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.00	5,491	456.6	0	0	5,491
38.00	9,855	513.2	22,702	22,702	10,095
39.50	9,855	513.2	14,783	37,485	10,865

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.50' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	34.00'	**1.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 4	35.00'	**5.000 in/hr Exfiltration over Surface area**
#4	Device 1	36.00'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	37.00'	**24.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	38.50'	**100.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.2 cfs @ 15.29 hrs HW=37.06' TW=35.35' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.2 cfs of 4.9 cfs potential flow)
  - **2=Orifice** (Orifice Controls 0.0 cfs @ 6.28 fps)
  - **4=Orifice** (Orifice Controls 0.8 cfs @ 4.32 fps)
    - **3=Exfiltration** (Passes 0.8 cfs of 1.0 cfs potential flow)
  - **5=Grate** (Weir Controls 0.3 cfs @ 0.77 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=34.00' TW=35.20' (Dynamic Tailwater)
- **6=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond CB01: Catch Basin 01

Inflow Area = 21,365 sf, 39.43% Impervious, Inflow Depth > 1.83" for 10-Year event
Inflow = 0.9 cfs @ 12.13 hrs, Volume= 3,260 cf
Outflow = 0.9 cfs @ 12.13 hrs, Volume= 3,260 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.13 hrs, Volume= 3,260 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.04' @ 12.12 hrs
Flood Elev= 39.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.40' / 36.25' S= 0.0075 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	39.43'	**20.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.9 cfs @ 12.13 hrs HW=37.04' TW=36.85' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.9 cfs @ 2.42 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=36.40' TW=36.15' (Dynamic Tailwater)
↑**2=Sharp-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond CB02: Catch Basin 02

Inflow Area = 24,958 sf, 45.12% Impervious, Inflow Depth > 2.15" for 10-Year event
Inflow = 1.2 cfs @ 12.11 hrs, Volume= 4,471 cf
Outflow = 1.2 cfs @ 12.11 hrs, Volume= 4,471 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.11 hrs, Volume= 4,471 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 36.85' @ 12.11 hrs
Flood Elev= 39.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.15'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.15' / 36.04' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	39.85'	**20.0' 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

Primary OutFlow Max=1.2 cfs @ 12.11 hrs HW=36.85' TW=36.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.2 cfs @ 2.94 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=36.15' TW=35.95' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond CB03: Catch Basin 03

Inflow Area = 32,248 sf, 55.72% Impervious, Inflow Depth > 2.68" for 10-Year event
Inflow = 2.1 cfs @ 12.13 hrs, Volume= 7,203 cf
Outflow = 2.1 cfs @ 12.13 hrs, Volume= 7,203 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.13 hrs, Volume= 7,203 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 38.07' @ 12.17 hrs
Flood Elev= 38.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	35.97'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.97' / 35.85' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.0 cfs @ 12.13 hrs HW=37.81' TW=37.53' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.0 cfs @ 2.52 fps)

Summary for Pond CB04: Catch Basin 04

Inflow Area = 38,050 sf, 59.17% Impervious, Inflow Depth > 2.89" for 10-Year event
Inflow = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf
Outflow = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.77' @ 12.19 hrs
Flood Elev= 38.94'

Device	Routing	Invert	Outlet Devices
#1	Primary	35.75'	**15.0" Round Culvert** L= 188.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.75' / 34.80' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	40.46'	**50.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.9 cfs @ 12.12 hrs HW=37.39' TW=37.18' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.9 cfs @ 1.58 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=35.75' TW=35.20' (Dynamic Tailwater)
2=Sharp-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond CB08: Catch Basin 04

Inflow Area = 93,198 sf, 55.33% Impervious, Inflow Depth > 3.05" for 10-Year event
Inflow = 6.7 cfs @ 12.12 hrs, Volume= 23,676 cf
Outflow = 6.7 cfs @ 12.12 hrs, Volume= 23,676 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.7 cfs @ 12.12 hrs, Volume= 23,676 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.50' @ 12.40 hrs
Flood Elev= 39.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**24.0" Round Culvert** L= 188.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.7 cfs @ 12.12 hrs HW=36.74' TW=36.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.7 cfs @ 2.14 fps)

Summary for Pond CB09: Catch Basin 09

Inflow Area = 80,759 sf, 54.77% Impervious, Inflow Depth > 2.97" for 10-Year event
Inflow = 5.7 cfs @ 12.13 hrs, Volume= 20,011 cf
Outflow = 5.7 cfs @ 12.13 hrs, Volume= 20,011 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.7 cfs @ 12.13 hrs, Volume= 20,011 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.59' @ 12.37 hrs
Flood Elev= 40.49'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.15'	**18.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.15' / 34.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.3 cfs @ 12.13 hrs HW=37.07' TW=36.81' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.3 cfs @ 2.43 fps)

Summary for Pond CB10: Catch Basin 10

[58] Hint: Peaked 2.75' above defined flood level

Inflow Area = 12,972 sf, 53.89% Impervious, Inflow Depth > 3.53" for 10-Year event
Inflow = 1.1 cfs @ 12.13 hrs, Volume= 3,819 cf
Outflow = 1.1 cfs @ 12.13 hrs, Volume= 3,819 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.1 cfs @ 12.13 hrs, Volume= 3,819 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2

Peak Elev= 51.76' @ 12.14 hrs
Flood Elev= 49.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.25'	**12.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.25' / 45.10' S= 0.0094 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.13 hrs HW=51.64' TW=51.68' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.0 cfs)

Summary for Pond CB11: Catch Basin 11

[58] Hint: Peaked 2.78' above defined flood level
[80] Warning: Exceeded Pond CB10 by 0.15' @ 12.06 hrs (1.5 cfs 428 cf)

Inflow Area = 19,599 sf, 54.54% Impervious, Inflow Depth > 3.57" for 10-Year event
Inflow = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf
Outflow = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 51.79' @ 12.14 hrs
Flood Elev= 49.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	**12.0" Round Culvert** L= 275.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 43.05' S= 0.0075 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.6 cfs @ 12.11 hrs HW=50.87' TW=50.77' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.6 cfs @ 0.79 fps)

Summary for Pond CB12: Catch Basin 12

[58] Hint: Peaked 3.66' above defined flood level

Inflow Area = 103,288 sf, 52.12% Impervious, Inflow Depth > 3.48" for 10-Year event
Inflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf
Outflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 50.71' @ 12.12 hrs
Flood Elev= 47.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.65'	**12.0" Round Culvert**

L= 79.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 41.65' / 41.05' S= 0.0076 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=8.5 cfs @ 12.11 hrs HW=50.60' TW=43.28' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.5 cfs @ 10.89 fps)

Summary for Pond CB13: Catch Basin 13

[58] Hint: Peaked 4.97' above defined flood level

Inflow Area = 57,571 sf, 48.08% Impervious, Inflow Depth > 3.34" for 10-Year event
Inflow = 4.6 cfs @ 12.13 hrs, Volume= 16,007 cf
Outflow = 4.6 cfs @ 12.13 hrs, Volume= 16,007 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.6 cfs @ 12.13 hrs, Volume= 16,007 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 52.02' @ 12.12 hrs
Flood Elev= 47.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert**
			L= 16.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 43.50' / 43.25' S= 0.0156 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.6 cfs @ 12.13 hrs HW=51.81' TW=50.36' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.6 cfs @ 5.81 fps)

Summary for Pond CB14: Catch Basin 14

Inflow Area = 26,650 sf, 40.36% Impervious, Inflow Depth > 3.05" for 10-Year event
Inflow = 1.8 cfs @ 12.16 hrs, Volume= 6,769 cf
Outflow = 1.8 cfs @ 12.16 hrs, Volume= 6,769 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.8 cfs @ 12.16 hrs, Volume= 6,769 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 41.68' @ 12.15 hrs
Flood Elev= 44.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.80'	**18.0" Round Culvert**
			L= 28.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 40.80' / 40.60' S= 0.0071 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.16 hrs HW=41.68' TW=41.49' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.8 cfs @ 2.45 fps)

Summary for Pond CB15: Catch Basin 15

Inflow Area = 49,844 sf, 42.21% Impervious, Inflow Depth > 3.09" for 10-Year event
Inflow = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf
Outflow = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 41.50' @ 12.15 hrs
Flood Elev= 45.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.50'	**18.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.50' / 40.05' S= 0.0068 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.6 cfs @ 12.15 hrs HW=41.49' TW=40.79' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.6 cfs @ 4.07 fps)

Summary for Pond CB16: Catch Basin 16

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=151)

Inflow Area = 18,193 sf, 41.21% Impervious, Inflow Depth > 3.05" for 10-Year event
Inflow = 1.4 cfs @ 12.11 hrs, Volume= 4,625 cf
Outflow = 1.4 cfs @ 12.11 hrs, Volume= 4,623 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.11 hrs, Volume= 4,623 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.63' @ 12.33 hrs
Flood Elev= 39.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	35.32'	**15.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.32' / 35.20' S= 0.0075 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	40.02'	**20.0' 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

Primary OutFlow Max=0.7 cfs @ 12.11 hrs HW=36.99' TW=36.98' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.7 cfs @ 0.58 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=35.32' TW=35.20' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond CB17: Catch Basin 17

[80] Warning: Exceeded Pond CB16 by 1.66' @ 18.32 hrs (5.3 cfs 47,457 cf)

Inflow Area =	54,141 sf,	50.25% Impervious,	Inflow Depth >	3.37"	for	10-Year event
Inflow =	4.3 cfs @	12.13 hrs,	Volume=	15,206 cf		
Outflow =	4.3 cfs @	12.13 hrs,	Volume=	15,206 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	4.3 cfs @	12.13 hrs,	Volume=	15,206 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.61' @ 12.35 hrs
Flood Elev= 39.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	35.10'	**18.0" Round Culvert** L= 205.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.10' / 33.85' S= 0.0061 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.5 cfs @ 12.13 hrs HW=37.19' TW=36.88' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.5 cfs @ 1.96 fps)

Summary for Pond CB18: Catch Basin 18

[58] Hint: Peaked 0.52' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=54)

Inflow Area =	12,708 sf,	65.47% Impervious,	Inflow Depth >	3.94"	for	10-Year event
Inflow =	1.4 cfs @	12.07 hrs,	Volume=	4,175 cf		
Outflow =	1.4 cfs @	12.07 hrs,	Volume=	4,174 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	1.4 cfs @	12.07 hrs,	Volume=	4,174 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.52' @ 12.40 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.95'	**12.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.95' / 33.85' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=36.27' TW=36.30' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)

Summary for Pond CB19: Catch Basin 19

[58] Hint: Peaked 0.51' above defined flood level
[80] Warning: Exceeded Pond CB18 by 0.09' @ 12.16 hrs (1.2 cfs 2,117 cf)

Inflow Area = 107,291 sf, 50.83% Impervious, Inflow Depth > 3.43" for 10-Year event
Inflow = 8.5 cfs @ 12.12 hrs, Volume= 30,623 cf
Outflow = 8.5 cfs @ 12.12 hrs, Volume= 30,623 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.5 cfs @ 12.12 hrs, Volume= 30,623 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.51' @ 12.39 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.75'	**24.0" Round Culvert** L= 117.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.75' / 33.15' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.5 cfs @ 12.12 hrs HW=36.85' TW=36.52' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 8.5 cfs @ 2.70 fps)

Summary for Pond GW01: Gravel Wetland #1

Inflow Area = 756,421 sf, 11.12% Impervious, Inflow Depth > 2.46" for 10-Year event
Inflow = 23.7 cfs @ 12.43 hrs, Volume= 154,851 cf
Outflow = 14.1 cfs @ 12.82 hrs, Volume= 142,953 cf, Atten= 40%, Lag= 23.5 min
Primary = 14.1 cfs @ 12.82 hrs, Volume= 142,953 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.90' @ 12.82 hrs Surf.Area= 29,693 sf Storage= 43,488 cf

Plug-Flow detention time= 90.2 min calculated for 142,834 cf (92% of inflow)
Center-of-Mass det. time= 52.2 min (908.0 - 855.8)

Volume	Invert	Avail.Storage	Storage Description
#1	34.40'	677 cf	**Media-1 - to Outlet Inv (Irregular)**Listed below (Recalc) 3,387 cf Overall x 20.0% Voids
#2	35.00'	33,430 cf	**Pond Area - 1 (Irregular)**Listed below (Recalc)
#3	34.40'	647 cf	**Media-2 - to Outlet Inv (Irregular)**Listed below (Recalc) 3,233 cf Overall x 20.0% Voids
#4	35.00'	31,526 cf	**Pond Area - 2 (Irregular)**Listed below (Recalc)
		66,280 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
34.40	5,645	356.4	0	0	5,645
35.00	5,645	366.4	3,387	3,387	6,260

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.00	5,645	356.4	0	0	5,645
37.00	7,888	402.2	13,471	13,471	8,512
37.33	8,971	437.5	2,780	16,250	10,875
38.00	9,858	450.1	6,305	22,556	11,813
38.25	11,021	492.1	2,609	25,164	14,964
39.00	11,021	492.1	8,266	33,430	15,334

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
34.40	5,388	380.7	0	0	5,388
35.00	5,388	380.7	3,233	3,233	5,616

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.00	5,388	380.7	0	0	5,388
38.00	9,069	437.3	21,447	21,447	9,271
38.25	10,225	483.0	2,410	23,858	12,620
39.00	10,225	483.0	7,669	31,526	12,982

Device	Routing	Invert	Outlet Devices
#1	Primary	34.40'	**18.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.40' / 33.97' S= 0.0172 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	34.40'	**2.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	35.50'	**12.0" Vert. Upper Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	36.75'	**18.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	38.00'	**12.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=14.1 cfs @ 12.82 hrs HW=37.90' TW=33.96' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 14.1 cfs @ 7.99 fps)
  ├─**2=Orifice** (Passes < 0.3 cfs potential flow)
  ├─**3=Upper Orifice** (Passes < 5.2 cfs potential flow)
  └─**4=Grate** (Passes < 9.1 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=34.40' TW=33.50' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond MH: Manhole 01

Inflow Area = 38,050 sf, 59.17% Impervious, Inflow Depth > 2.89" for 10-Year event
Inflow = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf
Outflow = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.6 cfs @ 12.12 hrs, Volume= 9,160 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 37.65' @ 12.33 hrs
Flood Elev= 41.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**15.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.25' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.5 cfs @ 12.12 hrs HW=37.18' TW=36.95' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.5 cfs @ 2.08 fps)

Summary for Pond MH03: Manhole 03

[58] Hint: Peaked 1.11' above defined flood level
[80] Warning: Exceeded Pond CB11 by 0.76' @ 12.06 hrs (1.7 cfs 384 cf)

Inflow Area = 19,599 sf, 54.54% Impervious, Inflow Depth > 3.57" for 10-Year event
Inflow = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf
Outflow = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.11 hrs, Volume= 5,827 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 51.04' @ 12.12 hrs
Flood Elev= 49.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.95'	**12.0" Round Culvert** L= 166.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.95' / 41.75' S= 0.0072 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.3 cfs @ 12.11 hrs HW=50.77' TW=50.48' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.3 cfs @ 1.68 fps)

Summary for Pond MH04: Manhole 04

Inflow Area = 103,288 sf, 52.12% Impervious, Inflow Depth > 3.48" for 10-Year event
Inflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf
Outflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 43.32' @ 12.12 hrs
Flood Elev= 48.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.95'	**18.0" Round Culvert** L= 79.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.95' / 40.30' S= 0.0082 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.4 cfs @ 12.11 hrs HW=43.28' TW=42.24' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.4 cfs @ 4.75 fps)

Summary for Pond MH05: Manhole 05

Inflow Area = 103,288 sf, 52.12% Impervious, Inflow Depth > 3.48" for 10-Year event
Inflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf
Outflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 42.26' @ 12.11 hrs
Flood Elev= 49.32'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.20'	**18.0" Round Culvert** L= 79.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.20' / 39.65' S= 0.0070 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.5 cfs @ 12.11 hrs HW=42.24' TW=41.18' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.5 cfs @ 4.83 fps)

Summary for Pond MH06: Manhole 06

Inflow Area = 103,288 sf, 52.12% Impervious, Inflow Depth > 3.48" for 10-Year event
Inflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf
Outflow = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.6 cfs @ 12.11 hrs, Volume= 29,966 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 41.19' @ 12.12 hrs
Flood Elev= 50.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.55'	**24.0" Round Culvert** L= 128.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.55' / 38.60' S= 0.0074 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.5 cfs @ 12.11 hrs HW=41.18' TW=40.38' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.5 cfs @ 4.24 fps)

Summary for Pond MH07: Manhole 07

Inflow Area = 153,132 sf, 48.90% Impervious, Inflow Depth > 3.35" for 10-Year event
Inflow = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf
Outflow = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 40.39' @ 12.12 hrs
Flood Elev= 49.23'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**24.0" Round Culvert** L= 285.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.50' / 36.95' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=12.0 cfs @ 12.12 hrs HW=40.39' TW=38.67' (Dynamic Tailwater)
1=Culvert (Outlet Controls 12.0 cfs @ 5.06 fps)

Summary for Pond MH08: Manhole 08

Inflow Area = 153,132 sf, 48.90% Impervious, Inflow Depth > 3.35" for 10-Year event
Inflow = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf
Outflow = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.0 cfs @ 12.12 hrs, Volume= 42,811 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 38.67' @ 12.12 hrs
Flood Elev= 41.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.85'	**24.0" Round Culvert** L= 176.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.85' / 35.90' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=12.0 cfs @ 12.12 hrs HW=38.67' TW=36.37' (Dynamic Tailwater)
1=Culvert (Barrel Controls 12.0 cfs @ 5.26 fps)

Summary for Pond MH09: Manhole 09

Inflow Area = 49,844 sf, 42.21% Impervious, Inflow Depth > 3.09" for 10-Year event
Inflow = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf
Outflow = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.15 hrs, Volume= 12,845 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 40.80' @ 12.14 hrs
Flood Elev= 46.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.65'	**24.0" Round Culvert** L= 154.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.65' / 38.60' S= 0.0068 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.6 cfs @ 12.15 hrs HW=40.79' TW=40.35' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.6 cfs @ 2.78 fps)

Summary for Pond MH10: Manhole 10

[80] Warning: Exceeded Pond BIO1 by 2.64' @ 0.34 hrs (0.6 cfs 23,190 cf)
[80] Warning: Exceeded Pond BIO2 by 1.19' @ 0.34 hrs (0.0 cfs 1,143 cf)

Inflow Area = 739,004 sf, 22.39% Impervious, Inflow Depth > 1.24" for 10-Year event
Inflow = 7.1 cfs @ 12.45 hrs, Volume= 76,243 cf
Outflow = 7.1 cfs @ 12.45 hrs, Volume= 76,243 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.1 cfs @ 12.45 hrs, Volume= 76,243 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 35.53' @ 12.53 hrs
Flood Elev= 41.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	32.15'	**24.0" Round Culvert X 2.00** L= 232.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.15' / 31.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.1 cfs @ 12.45 hrs HW=35.51' TW=35.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 7.1 cfs @ 1.12 fps)

Summary for Pond MH11: Manhole 10

Inflow Area = 394,562 sf, 8.81% Impervious, Inflow Depth > 0.70" for 10-Year event
Inflow = 2.7 cfs @ 12.65 hrs, Volume= 23,178 cf
Outflow = 2.7 cfs @ 12.66 hrs, Volume= 23,178 cf, Atten= 0%, Lag= 0.3 min
Primary = 2.7 cfs @ 12.66 hrs, Volume= 23,178 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 36.08' @ 12.66 hrs
Flood Elev= 41.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.25' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.7 cfs @ 12.66 hrs HW=36.08' TW=35.34' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.7 cfs @ 3.38 fps)

Summary for Pond P01: Cross Pipe 01

Inflow Area = 394,562 sf, 8.81% Impervious, Inflow Depth > 0.71" for 10-Year event
Inflow = 2.9 cfs @ 12.51 hrs, Volume= 23,214 cf
Outflow = 2.7 cfs @ 12.65 hrs, Volume= 23,178 cf, Atten= 10%, Lag= 8.6 min
Primary = 2.7 cfs @ 12.65 hrs, Volume= 23,178 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 46.47' @ 12.65 hrs Surf.Area= 1,519 sf Storage= 714 cf
Flood Elev= 47.50' Surf.Area= 5,085 sf Storage= 3,950 cf

Plug-Flow detention time= 2.8 min calculated for 23,178 cf (100% of inflow)
Center-of-Mass det. time= 2.0 min (935.3 - 933.3)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	7,082 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	25	20.0	0	0	25
46.00	574	136.2	240	240	1,471
47.00	3,122	370.3	1,678	1,918	10,911
48.00	7,524	565.6	5,164	7,082	25,463

Device	Routing	Invert	Outlet Devices
#1	Primary	45.18'	**12.0" Round Culvert** L= 338.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 45.18' / 43.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.7 cfs @ 12.65 hrs HW=46.47' TW=36.08' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.7 cfs @ 3.38 fps)

Summary for Pond PND1: Bioretention Area #2

[63] Warning: Exceeded Reach R5 INLET depth by 4.21' @ 14.36 hrs

Inflow Area = 394,562 sf, 8.81% Impervious, Inflow Depth > 0.69" for 10-Year event
Inflow = 2.4 cfs @ 12.84 hrs, Volume= 22,750 cf
Outflow = 0.8 cfs @ 14.29 hrs, Volume= 21,725 cf, Atten= 65%, Lag= 86.9 min
Primary = 0.8 cfs @ 14.29 hrs, Volume= 21,725 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 39.49' @ 14.29 hrs Surf.Area= 4,504 sf Storage= 5,595 cf

Plug-Flow detention time= 92.0 min calculated for 21,725 cf (95% of inflow)
Center-of-Mass det. time= 70.9 min (1,020.7 - 949.8)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	10,730 cf	**Pond Area (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
38.00	3,036	319.5	0	0	3,036
40.00	5,067	357.7	8,017	8,017	5,203
40.50	5,794	369.8	2,713	10,730	5,927

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	**10.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Primary	38.00'	**6.0" Round Culvert** L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 38.00' / 35.00' S= 0.0536 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.8 cfs @ 14.29 hrs HW=39.49' TW=36.97' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)
2=Culvert (Inlet Controls 0.8 cfs @ 4.24 fps)

Summary for Pond PP01: DI-01 DROP INLET

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 301,519 sf, 11.75% Impervious, Inflow Depth > 0.83" for 10-Year event
Inflow = 3.7 cfs @ 12.21 hrs, Volume= 20,887 cf
Outflow = 3.7 cfs @ 12.21 hrs, Volume= 20,887 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 12.21 hrs, Volume= 20,887 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 38.50' @ 12.21 hrs Surf.Area= 4 sf Storage= 0 cf
Flood Elev= 40.50' Surf.Area= 6,935 sf Storage= 4,444 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (913.2 - 913.2)

Volume	Invert	Avail.Storage	Storage Description
#1	38.50'	4,444 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
38.50	4	8.0	0	0	4
39.00	380	163.1	70	70	2,116
40.00	3,702	491.9	1,756	1,827	19,257
40.50	6,935	663.0	2,617	4,444	34,985

Device	Routing	Invert	Outlet Devices
#1	Primary	36.36'	**12.0" Round Culvert X 2.00** L= 159.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.36' / 35.55' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	40.00'	**20.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.9 cfs @ 12.21 hrs HW=38.50' TW=35.31' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 6.9 cfs @ 4.40 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=38.50' TW=35.20' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link PPoi-01: Prop PoI-01

Inflow Area = 1,563,823 sf, 14.70% Impervious, Inflow Depth > 1.42" for 10-Year event
Inflow = 22.0 cfs @ 12.58 hrs, Volume= 185,343 cf
Primary = 22.0 cfs @ 12.58 hrs, Volume= 185,343 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link PPoi-02: POI

Inflow Area = 825,474 sf, 10.19% Impervious, Inflow Depth > 2.18" for 10-Year event
Inflow = 14.3 cfs @ 12.99 hrs, Volume= 149,784 cf
Primary = 14.3 cfs @ 12.99 hrs, Volume= 149,784 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link PPoi-03: PO3

Inflow Area = 469,882 sf, 0.00% Impervious, Inflow Depth > 1.88" for 10-Year event
Inflow = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf
Primary = 8.8 cfs @ 12.88 hrs, Volume= 73,690 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link PPoi-04: Pr Poi-04

Inflow Area = 668,692 sf, 1.33% Impervious, Inflow Depth > 0.64" for 10-Year event
Inflow = 3.2 cfs @ 12.89 hrs, Volume= 35,704 cf
Primary = 3.2 cfs @ 12.89 hrs, Volume= 35,704 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link PPoi-05: Pr Poi-05

Inflow Area = 305,212 sf, 0.00% Impervious, Inflow Depth > 1.90" for 10-Year event
Inflow = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf
Primary = 7.9 cfs @ 12.51 hrs, Volume= 48,262 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Summary for Link PPoi-06: Ex Poi-06

Inflow Area = 125,073 sf, 0.00% Impervious, Inflow Depth > 1.59" for 10-Year event
Inflow = 2.9 cfs @ 12.43 hrs, Volume= 16,552 cf
Primary = 2.9 cfs @ 12.43 hrs, Volume= 16,552 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

APPENDIX F – NRCS WEB SOIL SURVEY

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

April 30, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:7,640 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

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 1:24,000.

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: Rockingham County, New Hampshire
Survey Area Data: Version 22, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
33A	Scitico silt loam, 0 to 5 percent slopes	15.6	17.7%
38A	Eldridge fine sandy loam, 0 to 3 percent slopes	11.0	12.5%
134	Maybid silt loam	3.0	3.4%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	6.1	6.9%
313A	Deerfield loamy fine sand, 0 to 3 percent slopes	6.1	6.9%
460C	Pennichuck channery very fine sandy loam, 8 to 15 percent slopes	8.6	9.7%
495	Natchaug mucky peat, 0 to 2 percent slopes	1.0	1.1%
510A	Hoosic gravelly fine sandy loam, 0 to 3 percent slopes	0.7	0.8%
510B	Hoosic gravelly fine sandy loam, 3 to 8 percent slopes	29.4	33.4%
510C	Hoosic gravelly fine sandy loam, 8 to 15 percent slopes	5.2	5.9%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	1.5	1.7%
Totals for Area of Interest		**88.0**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Rockingham County, New Hampshire

33A—Scitico silt loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 9cn6
Elevation: 0 to 180 feet
Mean annual precipitation: 47 to 49 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Scitico

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 12 inches: silty clay loam
H3 - 12 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: F144AY019NH - Wet Lake Plain
Hydric soil rating: Yes

Minor Components

Squamscott

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

Maybid

Percent of map unit: 5 percent
Landform: Marine terraces

Hydric soil rating: Yes

Boxford

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

38A—Eldridge fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9cn9
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eldridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldridge

Setting

Parent material: Outwash over glaciolacustrine

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 23 inches: loamy fine sand
H3 - 23 to 62 inches: loamy very fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Squamscott
Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

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

Well drained inclusion
Percent of map unit: 5 percent
Hydric soil rating: No

134—Maybid silt loam

Map Unit Setting
National map unit symbol: 9cmg
Elevation: 0 to 180 feet
Mean annual precipitation: 47 to 50 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition
Maybid and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maybid

Setting
Landform: Marine terraces
Parent material: Silty and clayey marine deposits

Typical profile
H1 - 0 to 9 inches: silt loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 63 inches: silty clay

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None

Frequency of ponding: Frequent
Available water capacity: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Ecological site: F144AY020MA - Very Wet Coastal Lake Plain
Hydric soil rating: Yes

Minor Components

Ossipee

Percent of map unit: 10 percent
Landform: Swamps
Hydric soil rating: Yes

Scitico

Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

Not named wet

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

140C—Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82s
Elevation: 0 to 980 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex

Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, hills, moraines
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Freetown

Percent of map unit: 5 percent
Landform: Bogs, marshes, depressions, kettles, swamps

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Newfields, very stony

Percent of map unit: 5 percent
Landform: Hills, ground moraines, moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scarboro, very stony

Percent of map unit: 3 percent
Landform: Depressions, drainageways, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent
Landform: Ridges, hills
Hydric soil rating: Unranked

313A—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Deerfield

Setting

Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave, convex
Across-slope shape: Concave, linear, convex

Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water capacity: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave, convex
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, kame terraces, outwash terraces
Landform position (three-dimensional): Tread

Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

460C—Pennichuck channery very fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cp0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pennichuck and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pennichuck

Setting

Parent material: Till

Typical profile

H1 - 0 to 11 inches: channery very fine sandy loam
H2 - 11 to 25 inches: very channery fine sandy loam
H3 - 25 to 36 inches: very channery loamy coarse sand
R - 36 to 40 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Not named
Percent of map unit: 10 percent
Hydric soil rating: No

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

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

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

495—Natchaug mucky peat, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2w691
Elevation: 0 to 910 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Natchaug and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Natchaug

Setting
Landform: Depressions, depressions, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Moderately decomposed organic material over loamy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy till

Typical profile
Oe1 - 0 to 12 inches: mucky peat
Oe2 - 12 to 31 inches: mucky peat
2Cg1 - 31 to 39 inches: silt loam
2Cg2 - 39 to 79 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.01 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very high (about 14.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 4 percent
Landform: Depressions, drainageways, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 4 percent
Landform: Outwash plains, depressions, depressions, deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Maybid

Percent of map unit: 2 percent
Landform: Depressions, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

510A—Hoosic gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9cp3

Elevation: 100 to 1,100 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hoosic and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting
Parent material: Outwash

Typical profile
H1 - 0 to 8 inches: gravelly fine sandy loam
H2 - 8 to 15 inches: very gravelly fine sandy loam
H3 - 15 to 60 inches: very gravelly coarse sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Not named
Percent of map unit: 10 percent
Hydric soil rating: No

510B—Hoosic gravelly fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9cp4
Elevation: 100 to 1,100 feet

Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hoosic and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting
Parent material: Outwash

Typical profile
H1 - 0 to 8 inches: gravelly fine sandy loam
H2 - 8 to 15 inches: very gravelly fine sandy loam
H3 - 15 to 60 inches: very gravelly coarse sand

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Not named
Percent of map unit: 10 percent
Hydric soil rating: No

510C—Hoosic gravelly fine sandy loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9cp5
Elevation: 100 to 1,100 feet
Mean annual precipitation: 30 to 50 inches

Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition
Hoosic and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting
Parent material: Outwash

Typical profile
H1 - 0 to 8 inches: gravelly fine sandy loam
H2 - 8 to 15 inches: very gravelly fine sandy loam
H3 - 15 to 60 inches: very gravelly coarse sand

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Not named
Percent of map unit: 5 percent
Hydric soil rating: No

538A—Squamscott fine sandy loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 9cp9
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F

Frost-free period: 120 to 180 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Squamscott

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 4 inches: fine sandy loam
H2 - 4 to 12 inches: loamy sand
H3 - 12 to 19 inches: fine sand
H4 - 19 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: F144AY019NH - Wet Lake Plain
Hydric soil rating: Yes

Minor Components

Scitico

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

Maybid

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

Eldridge

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

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Peverly NCRS Soils Report)

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

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

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

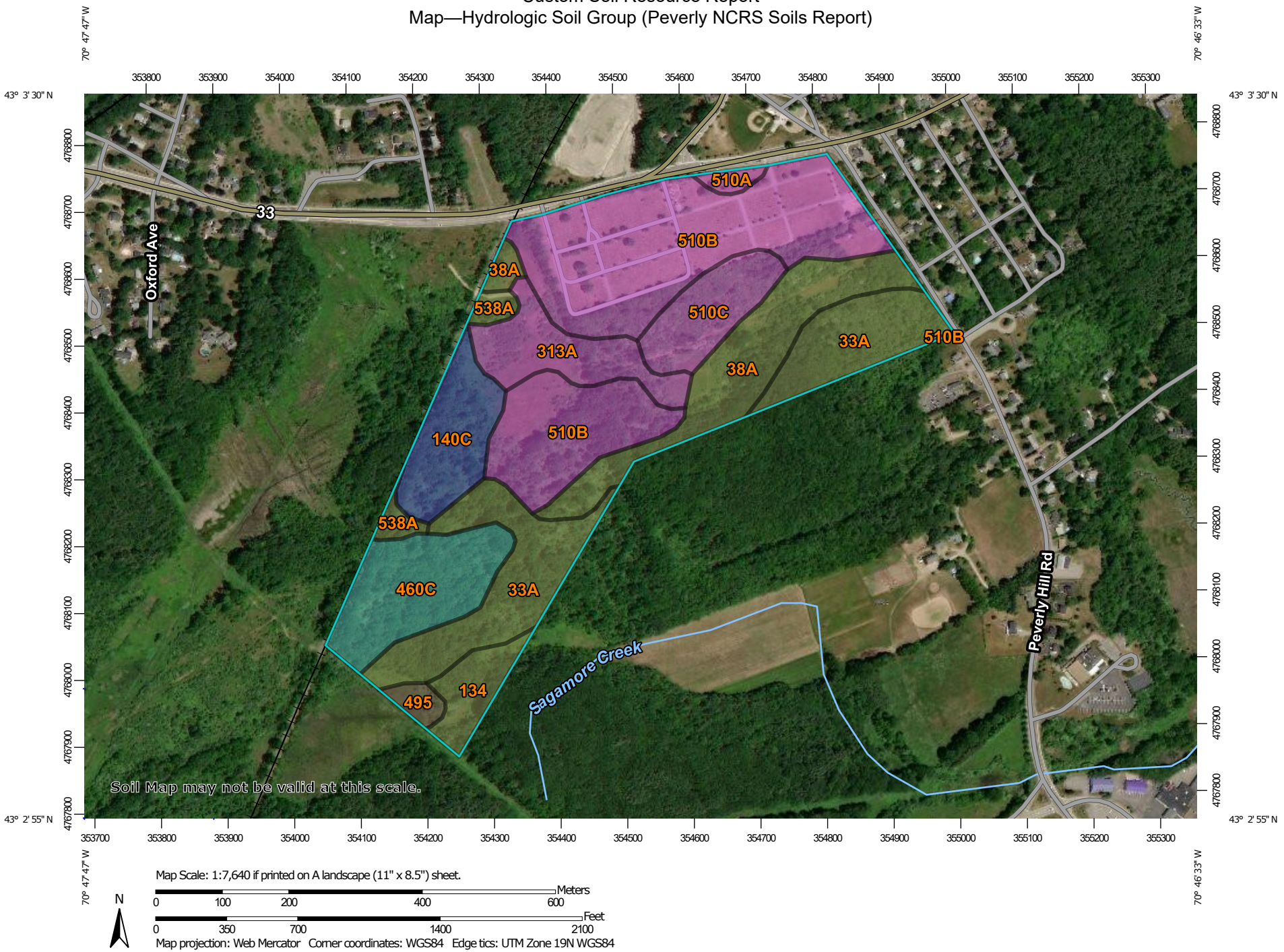
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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

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

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

Custom Soil Resource Report
Map—Hydrologic Soil Group (Peverly NCRS Soils Report)



Map Scale: 1:7,640 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Rockingham County, New Hampshire
Survey Area Data: Version 22, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

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

Table—Hydrologic Soil Group (Peverly NCRS Soils Report)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
33A	Scitico silt loam, 0 to 5 percent slopes	C/D	15.6	17.7%
38A	Eldridge fine sandy loam, 0 to 3 percent slopes	C/D	11.0	12.5%
134	Maybid silt loam	C/D	3.0	3.4%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	B	6.1	6.9%
313A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	6.1	6.9%
460C	Pennichuck channery very fine sandy loam, 8 to 15 percent slopes	C	8.6	9.7%
495	Natchaug mucky peat, 0 to 2 percent slopes	B/D	1.0	1.1%
510A	Hoosic gravelly fine sandy loam, 0 to 3 percent slopes	A	0.7	0.8%
510B	Hoosic gravelly fine sandy loam, 3 to 8 percent slopes	A	29.4	33.4%
510C	Hoosic gravelly fine sandy loam, 8 to 15 percent slopes	A	5.2	5.9%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	C/D	1.5	1.7%
Totals for Area of Interest			**88.0**	**100.0%**

Rating Options—Hydrologic Soil Group (Peverly NCRS Soils Report)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the following National Soil Survey Handbook link: “National Soil Survey Handbook.”

ABC soil

A soil having an A, a B, and a C horizon.

Ablation till

Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil

A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil

The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil

Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone

A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan

A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium

Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl

A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM)

The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions

Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon

A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo

The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

Aspect

The direction toward which a slope faces. Also called slope aspect.

Association, soil

A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity)

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low: 0 to 3
Low: 3 to 6
Moderate: 6 to 9
High: 9 to 12
Very high: More than 12

Backslope

The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp

A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Badland

A landscape that is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover overlying unconsolidated or poorly cemented materials (clays, silts, or sandstones) with, in some cases, soluble minerals, such as gypsum or halite.

Bajada

A broad, gently inclined alluvial piedmont slope extending from the base of a mountain range out into a basin and formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile, parallel to the mountain front, resulting from the convexities of component fans. The term is generally restricted to constructional slopes of intermontane basins.

Basal area

The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation

The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology)

A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane

A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology)

from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system

A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock

The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography

A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace

A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum

Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout (map symbol)

A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed. The adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Borrow pit (map symbol)

An open excavation from which soil and underlying material have been removed, usually for construction purposes.

Bottom land

An informal term loosely applied to various portions of a flood plain.

Boulders

Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks

A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height

An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management

Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte

An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

Cable yarding

A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil

A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche

A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

California bearing ratio (CBR)

The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy

The leafy crown of trees or shrubs. (See Crown.)

Canyon

A long, deep, narrow valley with high, precipitous walls in an area of high local relief.

Capillary water

Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena

A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps

See Terracettes.

Cement rock

Shaly limestone used in the manufacture of cement.

Channery soil material

Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment

Control of unwanted vegetation through the use of chemicals.

Chiseling

Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque

A steep-walled, semicircular or crescent-shaped, half-bowl-like recess or hollow, commonly situated at the head of a glaciated mountain valley or high on the side of a mountain. It was produced by the erosive activity of a mountain glacier. It commonly contains a small round lake (tarn).

Clay

As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions

See Redoximorphic features.

Clay film

A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clay spot (map symbol)

A spot where the surface texture is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser.

Claypan

A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community

The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil

Sand or loamy sand.

Cobble (or cobblestone)

A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material

Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility)

See Linear extensibility.

Colluvium

Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope

Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil

A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions

See Redoximorphic features.

Conglomerate

A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system

Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage

A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil

Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping

Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section

The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat)

A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology)

A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations)

Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop

A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management

Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system

Growing crops according to a planned system of rotation and management practices.

Cross-slope farming

Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown

The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbate

A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Cuesta

An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

Culmination of the mean annual increment (CMAI)

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave

The walls of excavations tend to cave in or slough.

Decreasers

The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing

Postponing grazing or resting grazing land for a prescribed period.

Delta

A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer

A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression, closed (map symbol)

A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage.

Depth, soil

Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement

A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

Diatomaceous earth

A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope

A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace)

A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming

A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural)

Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface

Runoff, or surface flow of water, from an area.

Drainageway

A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw

A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift

A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin

A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff

A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill

See Mine spoil.

Ecological site

An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation

The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation

A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit

Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream

A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation

A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion

The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated)

Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion (geologic)

Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion pavement

A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface

A land surface shaped by the action of erosion, especially by running water.

Escarpment

A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Escarpment, bedrock (map symbol)

A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

Escarpment, nonbedrock (map symbol)

A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.

Esker

A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left

behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock

Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fallow

Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant

A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fertility, soil

The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat)

The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity

The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope

A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil

Sandy clay, silty clay, or clay.

Firebreak

An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom

An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material

Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone

A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain

The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms

A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay

A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step

An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial

Of or pertaining to rivers or streams; produced by stream or river action.

Foothills

A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope

The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb

Any herbaceous plant not a grass or a sedge.

Forest cover

All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type

A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan

A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil

The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai

Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glaciofluvial deposits

Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits

Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil

Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping

Growing crops in strips that grade toward a protected waterway.

Grassed waterway

A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel

Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravel pit (map symbol)

An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel.

Gravelly soil material

Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot (map symbol)

A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments.

Green manure crop (agronomy)

A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water

Water filling all the unblocked pores of the material below the water table.

Gully (map symbol)

A small, steep-sided channel caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage whereas a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock

Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim

Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan

A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology)

A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat)

Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops

Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill

A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope

A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil

A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon: An organic layer of fresh and decaying plant residue.

L horizon: A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon: The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon: The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon: The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon: The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon: Soft, consolidated bedrock beneath the soil.

R layer: Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

M layer: A root-limiting subsoil layer consisting of nearly continuous, horizontally oriented, human-manufactured materials.

W layer: A layer of water within or beneath the soil.

Humus

The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups

Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock

Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation

The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil

A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers

Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration

The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity

The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate

The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Very low: Less than 0.2
Low: 0.2 to 0.4
Moderately low: 0.4 to 0.75
Moderate: 0.75 to 1.25
Moderately high: 1.25 to 1.75
High: 1.75 to 2.5
Very high: More than 2.5

Interfluve

A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology)

A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream

A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders

On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions

See Redoximorphic features.

Irrigation

Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin: Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border: Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding: Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation: Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle): Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow: Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler: Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation: Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding: Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame

A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography)

A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll

A small, low, rounded hill rising above adjacent landforms.

Ksat

See Saturated hydraulic conductivity.

Lacustrine deposit

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain

A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace

A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landfill (map symbol)

An area of accumulated waste products of human habitation, either above or below natural ground level.

Landslide

A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones

Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lava flow (map symbol)

A solidified, commonly lobate body of rock formed through lateral, surface outpouring of molten lava from a vent or fissure.

Leaching

The removal of soluble material from soil or other material by percolating water.

Levee (map symbol)

An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.

Linear extensibility

Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit

The moisture content at which the soil passes from a plastic to a liquid state.

Loam

Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess

Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength

The soil is not strong enough to support loads.

Low-residue crops

Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl

An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Marsh or swamp (map symbol)

A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Not used in map units where the named soils are poorly drained or very poorly drained.

Mass movement

A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses

See Redoximorphic features.

Meander belt

The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar

A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll

One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment

Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil

Very fine sandy loam, loam, silt loam, or silt.

Mesa

A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Metamorphic rock

Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth’s crust. Nearly all such rocks are crystalline.

Mine or quarry (map symbol)

An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines.

Mine spoil

An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil

Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage

Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area

A kind of map unit that has little or no natural soil and supports little or no vegetation.

Miscellaneous water (map symbol)

Small, constructed bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Moderately coarse textured soil

Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil

Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon

A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine

In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil

The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil

Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain

A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can

occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck

Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat

See Hemic soil material.

Mudstone

A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation

A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon

A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil

A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules

See Redoximorphic features.

Nose slope (geomorphology)

A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant

Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter

Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low: Less than 0.5 percent
Low: 0.5 to 1.0 percent
Moderately low: 1.0 to 2.0 percent
Moderate: 2.0 to 4.0 percent
High: 4.0 to 8.0 percent
Very high: More than 8.0 percent

Outwash

Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain

An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace

An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan

A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material

The unconsolidated organic and mineral material in which soil forms.

Peat

Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped

An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment

A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon

The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation

The movement of water through the soil.

Perennial water (map symbol)

Small, natural or constructed lakes, ponds, or pits that contain water most of the year.

Permafrost

Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

pH value

A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil

A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping

Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting

Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit

The moisture content at which a soil changes from semisolid to plastic.

Plasticity index

The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology)

A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Playa

The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Plinthite

The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan

A compacted layer formed in the soil directly below the plowed layer.

Ponding

Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded

Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings

See Redoximorphic features.

Potential native plant community

See Climax plant community.

Potential rooting depth (effective rooting depth)

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning

Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil

The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil

A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use

Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and

promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland

Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil

A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid: Less than 3.5
Extremely acid: 3.5 to 4.4
Very strongly acid: 4.5 to 5.0
Strongly acid: 5.1 to 5.5
Moderately acid: 5.6 to 6.0
Slightly acid: 6.1 to 6.5
Neutral: 6.6 to 7.3
Slightly alkaline: 7.4 to 7.8
Moderately alkaline: 7.9 to 8.4
Strongly alkaline: 8.5 to 9.0
Very strongly alkaline: 9.1 and higher

Red beds

Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations

See Redoximorphic features.

Redoximorphic depletions

See Redoximorphic features.

Redoximorphic features

Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix

See Redoximorphic features.

Regolith

All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief

The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material)

Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill

A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser

The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut

A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments

Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop (map symbol)

An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit.

Root zone

The part of the soil that can be penetrated by plant roots.

Runoff

The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil

A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Saline spot (map symbol)

An area where the surface layer has an electrical conductivity of 8 mmhos/cm more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm or less.

Sand

As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone

Sedimentary rock containing dominantly sand-sized particles.

Sandy spot (map symbol)

A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer.

Sapric soil material (muck)

The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat)

The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are:

Very high: 100 or more micrometers per second (14.17 or more inches per hour)

High: 10 to 100 micrometers per second (1.417 to 14.17 inches per hour)

Moderately high: 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour)

Moderately low: 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour)

Low: 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour)

Very low: Less than 0.01 micrometer per second (less than 0.001417 inch per hour).

To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

Saturation

Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification

The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock

A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum

A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil

A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Severely eroded spot (map symbol)

An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name.

Shale

Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion

The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope (map symbol)

A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

Shoulder

The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune

A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology)

A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica

A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio

The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt

As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils

Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole (map symbol)

A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index

A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic)

Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slide or slip (map symbol)

A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces.

Slope

The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium

Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill

The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement

Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Sodic (alkali) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodic spot (map symbol)

An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less.

Sodicity

The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight: Less than 13:1
Moderate: 13-30:1
Strong: More than 30:1

Sodium adsorption ratio (SAR)

A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock

Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil

A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates

Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand: 2.0 to 1.0
Coarse sand: 1.0 to 0.5
Medium sand: 0.5 to 0.25
Fine sand: 0.25 to 0.10
Very fine sand: 0.10 to 0.05
Silt: 0.05 to 0.002
Clay: Less than 0.002

Solum

The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spoil area (map symbol)

A pile of earthy materials, either smoothed or uneven, resulting from human activity.

Stone line

In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones

Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony

Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony spot (map symbol)

A spot where 0.01 to 0.1 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones.

Strath terrace

A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace

One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping

Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

Platy: Flat and laminated

Prismatic: Vertically elongated and having flat tops

Columnar: Vertically elongated and having rounded tops

Angular blocky: Having faces that intersect at sharp angles (planes)

Subangular blocky: Having subrounded and planar faces (no sharp angles)

Granular: Small structural units with curved or very irregular faces

Structureless soil horizons are defined as follows:

Single grained: Entirely noncoherent (each grain by itself), as in loose sand

Massive: Occurring as a coherent mass

Stubble mulch

Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil

Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling

Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum

The part of the soil below the solum.

Subsurface layer

Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow

The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit

The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer

The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil

The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus

Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts

Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine

An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation)

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field

generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology)

A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes

Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil

The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer

Otherwise suitable soil material that is too thin for the specified use.

Till

Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain

An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil

The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope

The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil

The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements

Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread

The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Tuff

A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

Upland

An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill

The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation

Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve

A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very stony spot (map symbol)

A spot where 0.1 to 3.0 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surface of the surrounding soil is covered by less than 0.01 percent stones.

Water bars

Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering

All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded

Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wet spot (map symbol)

A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

Wilting point (or permanent wilting point)

The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow

The uprooting and tipping over of trees by the wind.

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APPENDIX G – SITE SPECIFIC SOIL MAP & TEST PIT LOGS

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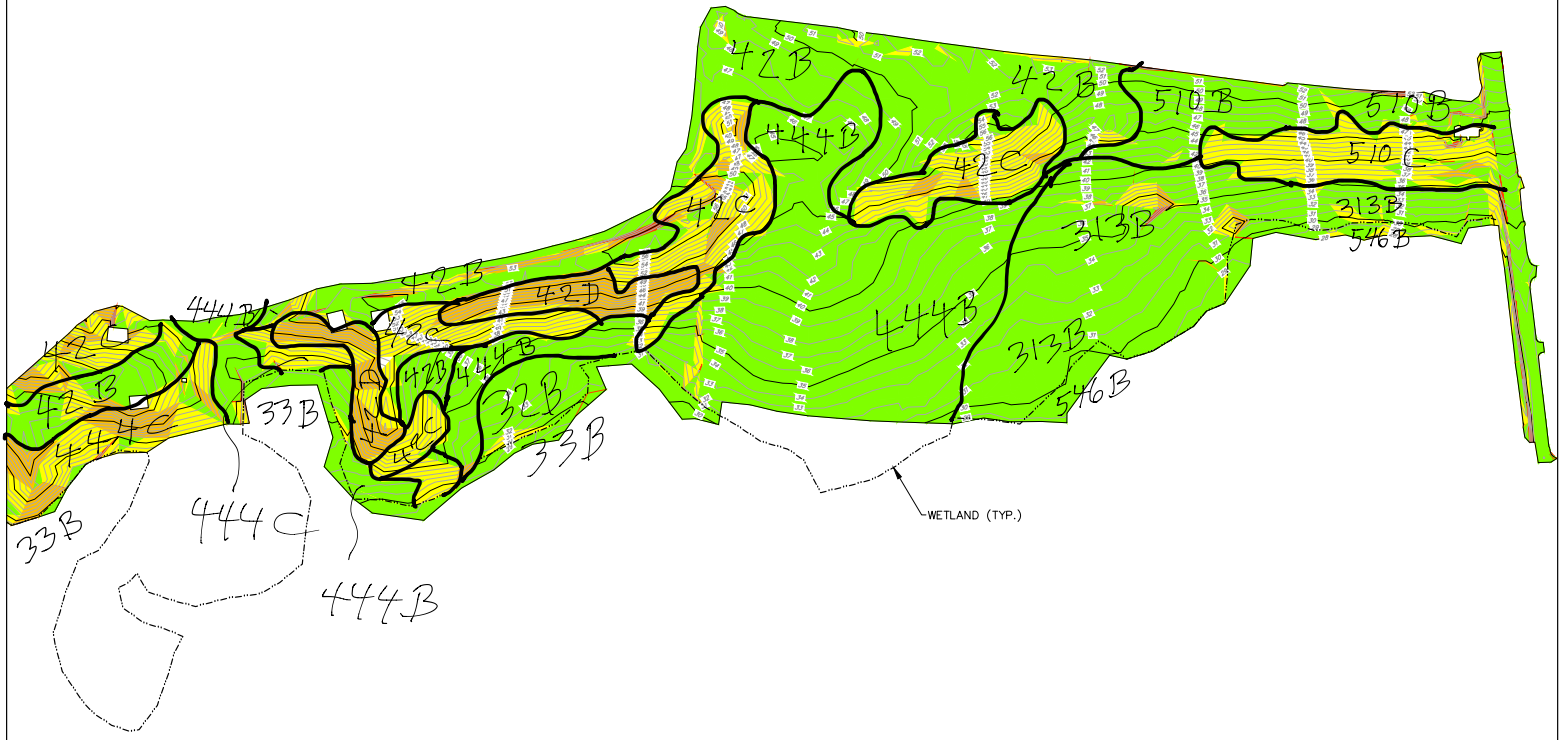
PEVERLY HILL ROAD
EXISTING SLOPE ANALYSIS

Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	0,01%	8,00%	
2	8,01%	15,00%	
3	15,01%	25,00%	
4	25,01%	10000,00%	



SCALE
1"=100'

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TEST PIT DATA

Project	Peverly Hill Road, Portsmouth, NH
Client	Green and Company
GES Project No.	2019211
MM/DD/YY Staff	11-19-2020 JP Gove CSS# 004

Test Pit No. **601**
ESHWT: 49”
Termination @ 95”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-7”	10YR3/3	GRLS	GR	FR	NONE
7-49”	10YR4/6	GRLS	GR	FR	NONE
49-95”	10YR4/4	GRS	OM	FR	10YR2/1, C/P

GR (TEXTURE) = GRAVELLY
LS = LOAMY SAND
S = SAND
FSL = FINE SANDY LOAM
SL = SANDY LOAM
SIL = SILT LOAM
SICL = SILTY CLAY

GR = GRANULAR
OM = MASSIVE
PL = PLATY
BK = BLOCKY

FR = FRIABLE
FI = FIRM
C = COMMON
P = PROMINENT
D = DISTINCT

VF (TEXTURE) = VERY FINE

F (TEXTURE) = FINE

Test Pit No. **602**
ESHWT: 44”
Termination @ 96”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-9”	10YR3/3	GRLS	GR	FR	NONE
9-44”	10YR4/6	GRLS	GR	FR	NONE
44-96”	10YR4/4	GRS	OM	FR	7.5YR5/8, C/P

8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

Test Pit No. **603**
ESHWT: 36”
Termination @ 109”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	GRSL	GR	FR	NONE
12-36”	10YR4/6	GRSL	GR	FR	NONE
36-109”	2.5Y5/4	GRLS	PL	FI	7.5YR5/8, C/P

Test Pit No. **604**
ESHWT: 55”
Termination @ 95”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-14”	10YR3/3	GRSL	GR	FR	NONE
14-55”	10YR4/6	GRSL	GR	FR	NONE
55-95”	2.5Y5/4	GRLS	PL	FI	7.5YR5/8, C/P

Test Pit No. **605**
ESHWT: 37”
Termination @ 102”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-7”	10YR3/3	LS	GR	FR	NONE
7-37”	10YR5/6	LS	GR	FR	NONE
37-102”	2.5Y5/3	S	OM	FR	7.5YR5/8, C/P

Test Pit No. **606**
ESHWT: 30”
Termination @ 97”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-10”	10YR3/3	LS	GR	FR	NONE
10-30”	10YR5/6	LS	GR	FR	NONE
30-97”	2.5Y5/4	S	OM	FR	7.5YR5/8, C/P

Test Pit No. **607**
ESHWT: 30”
Termination @ 96”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-9”	10YR3/3	LS	GR	FR	NONE
9-30”	10YR5/6	LS	GR	FR	NONE
30-96”	2.5Y3/3	S	OM	FR	2.5Y6/6, C/D

Test Pit No. **608**
ESHWT: 23”
Termination @ 97”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-8”	10YR3/3	LS	GR	FR	NONE
8-23”	10YR4/6	LS	GR	FR	NONE
23-97”	2.5Y5/3	S	OM	FR	7.5YR5/8, C/P

Test Pit No. **609**
ESHWT: 35”
Termination @ 111”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/3	GRSL	GR	FR	NONE
12-35”	10YR4/6	GRSL	GR	FR	NONE
35-111”	2.5Y5/3	VFS	OM	FR	7.5YR5/8, C/P

Test Pit No. **610**
ESHWT: 30”
Termination @ 107”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/3	GRSL	GR	FR	NONE
12-30”	10YR5/6	GRSL	GR	FR	NONE
30-107”	2.5Y5/4	VFS	OM	FR	7.5YR5/8, C/P

Test Pit No. **611**
ESHWT: 29”
Termination @ 105”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	GRFSL	GR	FR	NONE
12-29”	10YR4/6	GRLS	GR	FR	NONE
29-105”	2.5Y5/4	VFS	OM	FR	7.5YR5/8, C/P

Test Pit No. **612**
ESHWT: 38”
Termination @ 92”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	GRSL	GR	FR	NONE
12-38”	10YR5/6	GRSL	GR	FR	NONE
38-92”	2.5Y5/4	GRS	PL	FI	7.5YR5/8, C/P

Test Pit No. **613**
ESHWT: 33”
Termination @ 110”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	GRSL	GR	FR	NONE
12-33”	10YR4/6	GRSL	GR	FR	NONE
33-110”	2.5Y5/3	GRFSL	PL	FI	7.5YR5/6, C/P

Test Pit No. **614**
ESHWT: 12”
Termination @ 105”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	FSL	GR	FR	NONE
12-40”	2.5y5/2	SIL	PL	FI	7.5YR5/8, C/P
40-73”	10YR5/6	FS	OM	FR	7.5YR5/8, C/P
73-105”	2.5Y4/2	GRFSL	PL	FI	2.5Y6/6, C/D

Test Pit No. **615**
ESHWT: 17”
Termination @ 108”
Refusal: 108”
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-8”	10YR3/2	FSL	GR	FR	NONE
8-17”	10YR4/6	FSL	GR	FR	NONE
17-44”	2.5Y5/2	SIL	PL	FI	7.5YR5/8, C/P
44-66”	10YR4/4	FS	OM	FR	7.5YR5/8, C/P
66-108”	2.5Y3/3	GRFSL	PL	FI	2.5Y6/6,C/D

108” - BEDROCK

Test Pit No. **616**
ESHWT: 26”
Termination @ 80”
Refusal: No
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-9”	10YR3/2	FSL	GR	FR	NONE
9-26”	10YR4/6	FSL	GR	FR	NONE
26-80”	2.5Y5/4	GRFSL	PL	FI	7.5YR5/8, C/P

Test Pit No. **617**
ESHWT: 35”
Termination @ 80”
Refusal: 80”
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-9”	10YR3/3	GRFSL	GR	FR	NONE
9-35”	10YR4/6	GRFSL	GR	FR	NONE
35-80”	2.5Y5/4	GRFSL	PL	FI	7.5YR5/8, C/P

80” = BEDROCK

Test Pit No. **618**
ESHWT: 22”
Termination @ 57”
Refusal: 57”
Obs. Water: None

Depth	Color	Texture	Structure	Consistence	REDOX; Quantity/Contrast
0-12”	10YR3/2	GRFSL	GR	FR	NONE
12-22”	10YR4/6	GRFSL	GR	FR	NONE
22-57”	2.5Y5/4	GRFSL	PL	FI	7.5YR5/8, C/P

57” = BEDROCK

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TEST PIT & INFILTRATION TEST	
TEST PIT	
#	DEPTH
TP–1	8 FT
TP–2	8 FT
TP–3	8 FT
TP–4	8 FT
TP–5	6 FT
TP–6	6 FT
TP–7	6 FT
TP–8	6 FT
TP–9	6 FT
TP–10	8 FT
TP–11	6 FT
TP–12	10 FT
TP–13	10 FT
TP–14	6 FT
TP–15	6 FT
TP–16	10 FT
TP–17	8 FT
TP–18	8 FT

NOTES

1. TEST PIT LOCATIONS HAVE BEEN CHOSEN TO SATISFY AOT REQUIREMENTS PER ENV-WQ 1504.13(C).
2. TEST PITS DEPTHS LISTED ARE MINIMUM DEPTHS. IF SEASONAL HIGH WATER TABLE IS ENCOUNTERED, THE TEST PITS CAN BE STOPPED.
3. EACH TEST PIT LOCATION SHALL RECORD SHWT PER ENV-WQ 1504.13(D).
4. EACH TEST PIT LOCATION SHALL INCLUDE SOIL PROFILE DESCRIPTIONS PER ENV-WQ 1504.13(F).
5. INFILTRATION TESTING SHALL BE CONDUCTED PER ENV-WQ 1504.14(d)(1) AND AT LEAST 1 FOOT ABOVE SEASONAL HIGH WATER.
6. TEST PIT AND INFILTRATION TEST LOCATIONS ARE NUMBERED IN ORDER OF PRIORITY. PLEASE CONDUCT TESTING IN CHRONOLOGICAL ORDER. PLEASE COMPLETE AS MANY TEST PITS AND INFILTRATION TESTS AS POSSIBLE IN ONE DAY AND REPORT RESULTS TO TFMORAN. FURTHER TEST PITS & INFILTRATION TESTS MAY BE CONDUCTED ON A SEPERATE DAY AND SUBJECT TO REVISION BASED ON RESULTS.
7. INFILTRATION TESTS SHALL BE PERFORMED IN EACH TEST PIT TO DEPTHS OF 3 FEET ABOVE THE OBSERVED WATER TABLE.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

TEST PIT & INFILTRATION TEST LOCATION PLAN

PROPOSED OPEN SPACE RESIDENTIAL PUD

83 PEVERLEY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

1"=200' (11"X17")

SCALE: 1"=100' (22"X34") **NOVEMBER 9, 2020**

DIG SAFE
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE					
47388_11	DR JSM	FB	–	TP–01	
	CK JJM	CADFILE 47388–11_TEST PIT_PRELIMINARY DESIGN			

Nov 09, 2020 - 6:09pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Soils\Test Pits\47388-11_Test Pit_Preliminary Design.dwg

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APPENDIX H –NHDES ONE STOP DATA MAPPER

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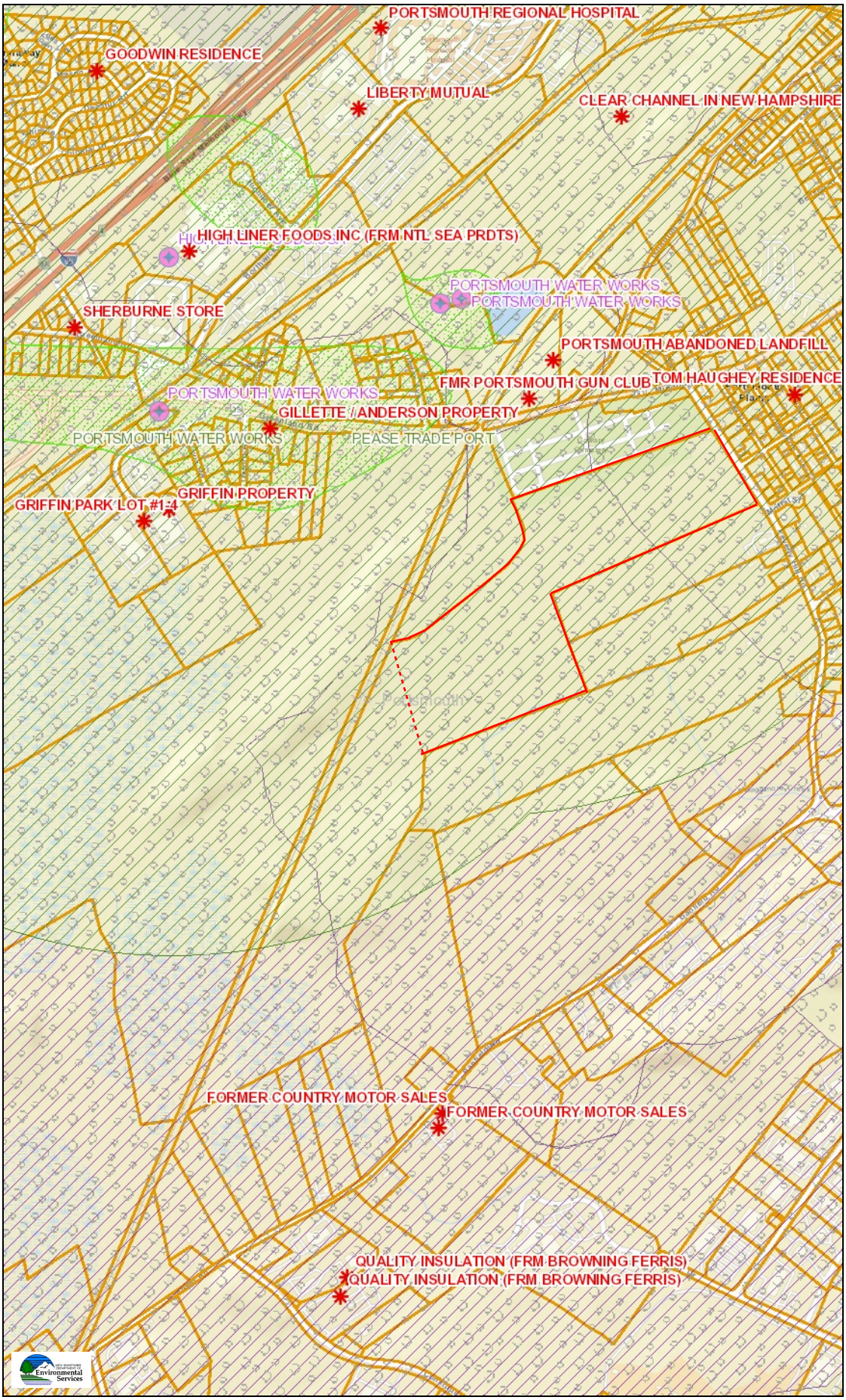
83 Perverly Road



Legend

- Remediation Sites
- Coastal and Great Bay Regi Communities
- Designated Rivers Quarterm Buffer
- Public Water Supply Wells
- Groundwater Classification GA1
- Groundwater Classification GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarte Buffer
- Class A - All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Surface Waters with Impairn 2016 with Quarter Mile Buffe
- Watersheds with Chloride Impairments 2016

Parcels

- Parcel Polygons
- Attributes for Additional Lines

Map Scale

1: 12,988

Map Generated: 4/19/2021

Notes

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APPENDIX I – PRE AND POST-DEVELOPMENT DRAINAGE PLANS

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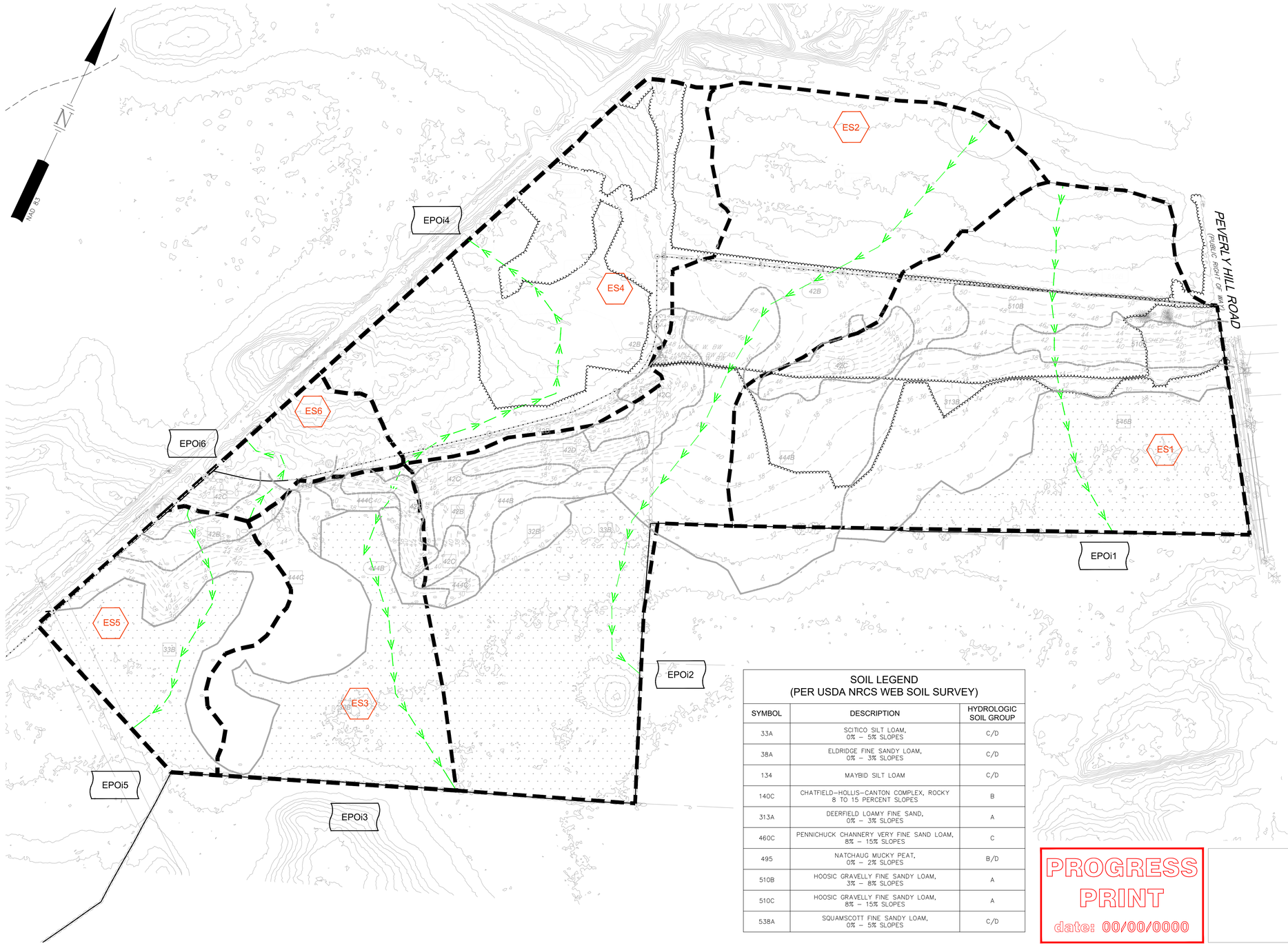

LEGEND

- FLOW PATH (Tc LINE)
- SOIL GROUP BREAK LINE
- EXISTING LOT LINE
- LIMITS OF SUBCATCHMENT
- ES4 — EXISTING SUBCATCHMENT NODE
- EC1 — EXISTING POND AREA AND CULVERT NODE
- EPOi3 — POINT OF INTEREST

SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
32	BOXFORD SILT LOAM	C
33	SCITICO SILT LOAM	C
42	CANTON SANDY LOAM	B
313	DEERFIELD LOAMY SAND	B
444	NEWFIELDS SANDY LOAM	B
510	HOOSIC GRAVELLY LOAMY SAND	A
546	WALPOLE SANDY LOAM	C

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
33A	SCITICO SILT LOAM, 0% – 5% SLOPES	C/D
38A	ELDRIDGE FINE SANDY LOAM, 0% – 3% SLOPES	C/D
134	MAYBID SILT LOAM	C/D
140C	CHATFIELD–HOLLIS–CANTON COMPLEX, ROCKY 8 TO 15 PERCENT SLOPES	B
313A	DEERFIELD LOAMY FINE SAND, 0% – 3% SLOPES	A
460C	PENNICHUCK CHANNERY VERY FINE SAND LOAM, 8% – 15% SLOPES	C
495	NATCHAUG MUCKY PEAT, 0% – 2% SLOPES	B/D
510B	HOOSIC GRAVELLY FINE SANDY LOAM, 3% – 8% SLOPES	A
510C	HOOSIC GRAVELLY FINE SANDY LOAM, 8% – 15% SLOPES	A
538A	SQUAMSCOTT FINE SANDY LOAM, 0% – 5% SLOPES	C/D

PROGRESS PRINT
date: 00/00/0000

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 6

PRE-DEVELOPEMENT DRAINAGE AREAS

PROPOSED OPEN SPACE RESIDENTIAL PUD

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

1"=300" (11"X17")
SCALE: 1"=150" (22"X34")

APRIL 19, 2021

HORIZONTAL SCALE 1"=150'
150 75 0 150

REV.	DATE	DESCRIPTION	DR	CK

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Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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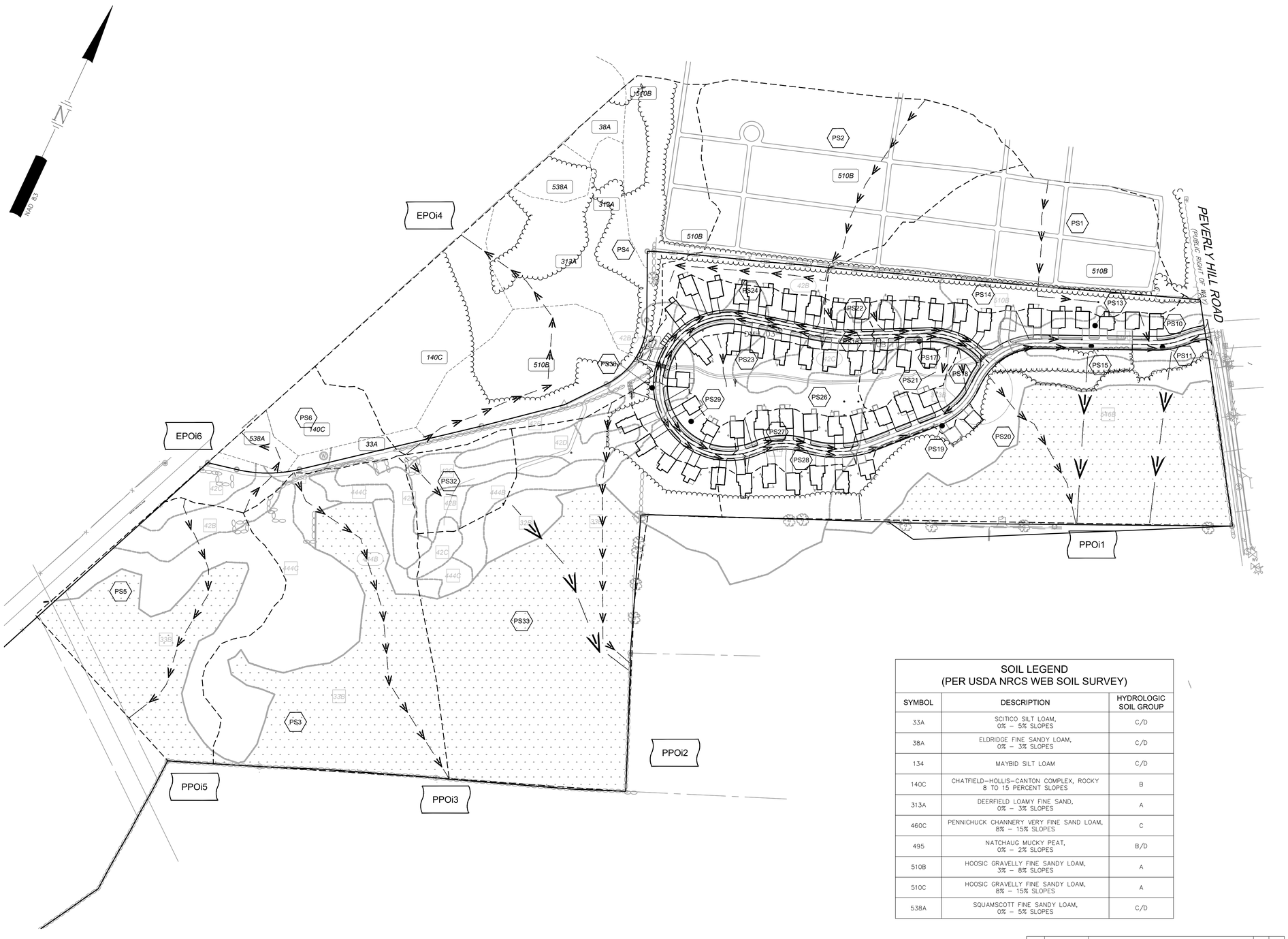

LEGEND

- FLOW PATH (Tc LINE)
- REACH
- SOIL GROUP BREAK LINE
- EXISTING LOT LINE
- LIMITS OF SUBCATCHMENT
- PS4 — PROPOSED SUBCATCHMENT NODE
- PR1 — PROPOSED REACH
- PC1 — PROPOSED POND AREA AND CULVERT NODE
- PPOi3 — POINT OF INTEREST

SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
32	BOXFORD SILT LOAM	C
33	SCITICO SILT LOAM	C
42	CANTON SANDY LOAM	B
313	DEERFIELD LOAMY SAND	B
444	NEWFIELDS SANDY LOAM	B
510	HOOSIC GRAVELLY LOAMY SAND	A
546	WALPOLE SANDY LOAM	C

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
33A	SCITICO SILT LOAM, 0% – 5% SLOPES	C/D
38A	ELDRIDGE FINE SANDY LOAM, 0% – 3% SLOPES	C/D
134	MAYBID SILT LOAM	C/D
140C	CHATFIELD–HOLLIS–CANTON COMPLEX, ROCKY 8 TO 15 PERCENT SLOPES	B
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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 6

OVERALL POST-DEVELOPEMENT DRAINAGE AREAS

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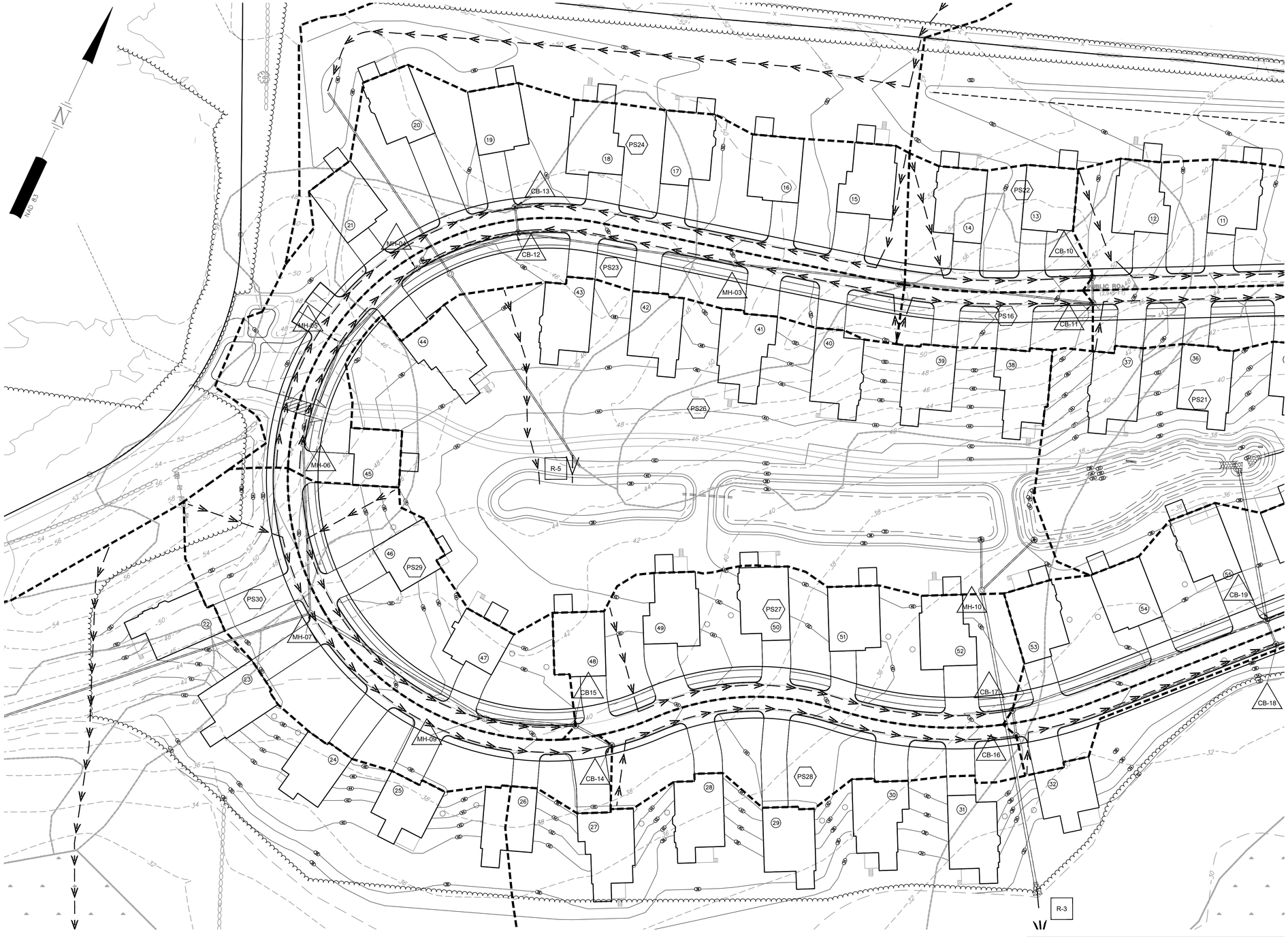

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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 6

POST-DEVELOPEMENT DRAINAGE AREAS

PROPOSED OPEN SPACE RESIDENTIAL PUD

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SCALE: **APRIL 19, 2021**

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HORIZONTAL SCALE 1"=150'
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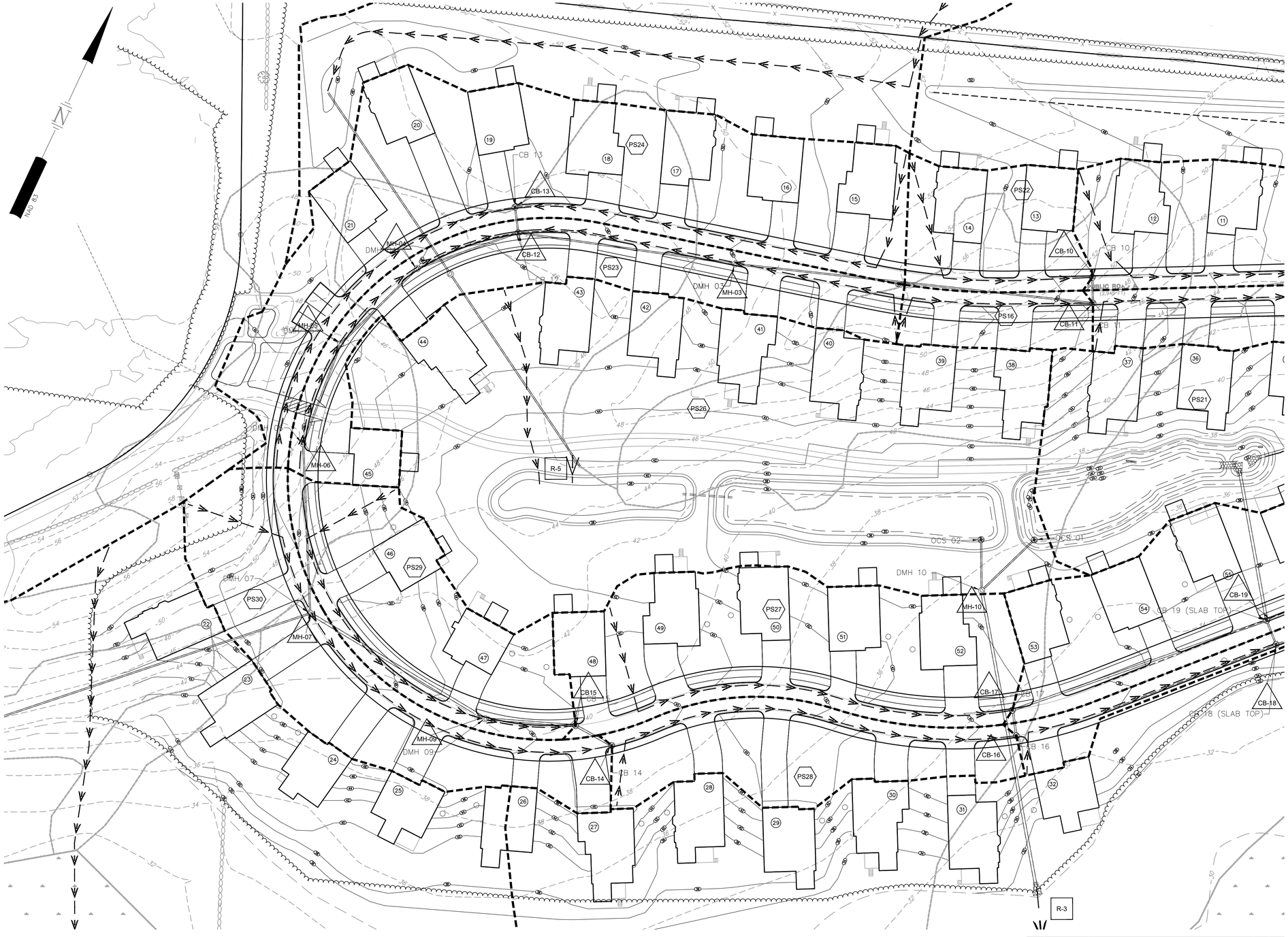

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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 6

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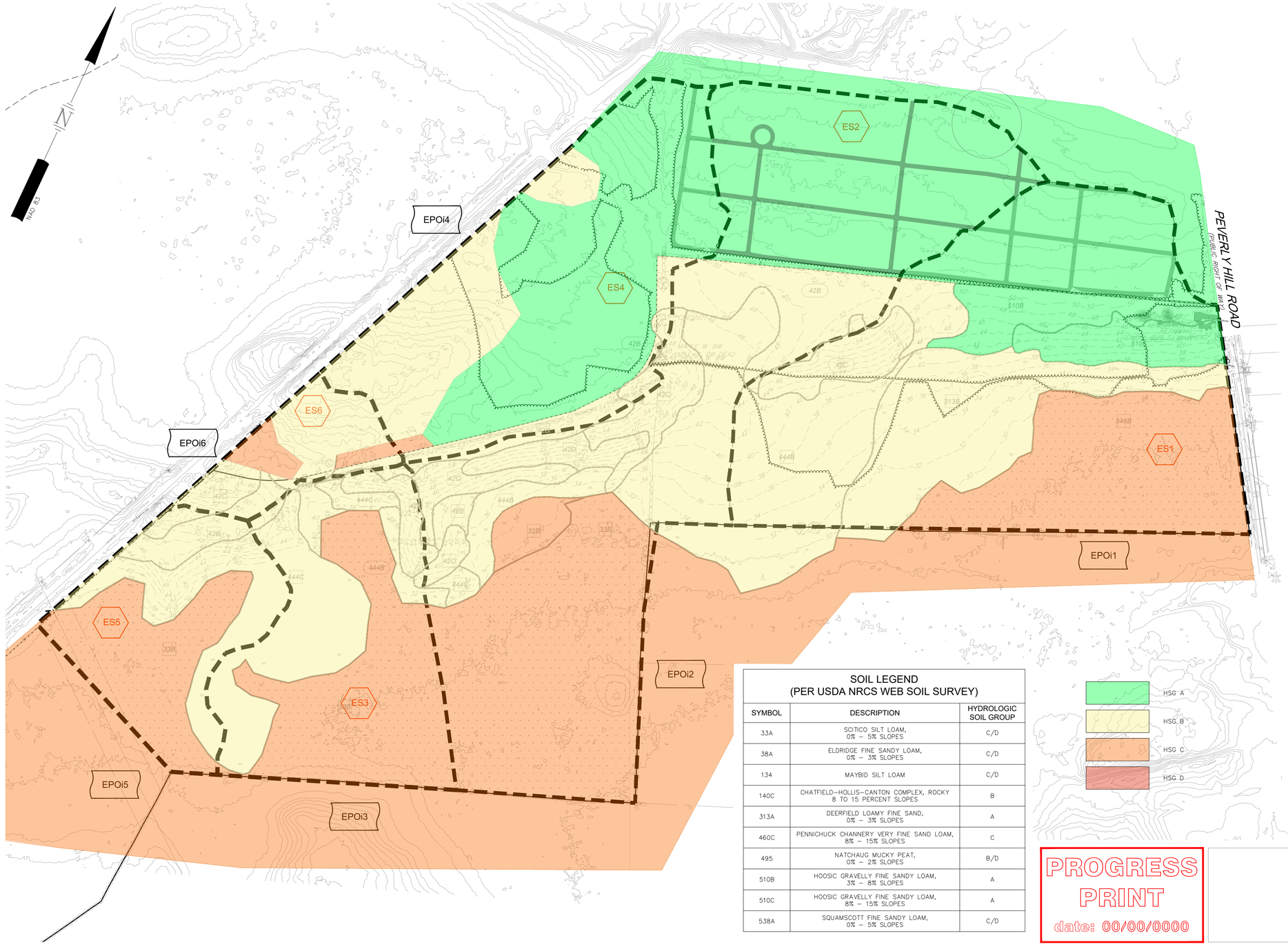

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444	NEWFIELDS SANDY LOAM	B
510	HOOSIC GRAVELLY LOAMY SAND	A
546	WALPOLE SANDY LOAM	C

SUFFIX
B slope = 0–8%
C slope = 8–15%
D slope = 15–25%

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
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HSG A
HSG B
HSG C
HSG D

PROGRESS PRINT
date: 00/00/0000

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 6

HYDROLOGIC SOIL GROUPS

PROPOSED OPEN SPACE RESIDENTIAL PUD

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HORIZONTAL SCALE 1"=150'
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Job #47388.11

NHDES

Application for Sewer Connection Permit

F O R

Peverly Hill Road Development

Peverly Road
Portsmouth, New Hampshire
Rockingham County

Tax Map 242, Lot 04

June 23, 2021

Dennis Greene
June 23, 2021

Prepared By:

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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NEW HAMPSHIRE 200

June 23, 2021

TFM Project No: 47388.11

Dennis Greene, PE
NHDES WWEB
PO Box 95
Concord, NH 03302-0095

Re: Sewer Connection Permit – Peverly Hill Road Portsmouth, NH – Tax Map 242 Lot 4
Peverly Hill Road Development
TFM PIN: 47388.11

Dear Mr. Greene:

On behalf of Green and Company Building and Development Corp., we respectfully submit an Application for Sewer Connection Permit relative to the above referenced project. The following materials are included in this submission:

- Application for Sewer Connection Permit;
- Check for the amount of $2,760.00 for the Sewer Connection Permit;
- Table 1008-1, Unit Design Flow from Pages 47-49 from the NH Code of Administrative Rules, ENV-Wq 1000;
- Calculated Design Sewer Flow
- Full Flow and Approximate Partial Flow Calculations for gravity sewer, Dated April 19, 2021;
- Environmental One Corporation Pressure Sewer Design Analysis for Peverly Hill Road Development;
- Cover Sheet, Existing Conditions, Utility Plans, Sewer Profile and Details of the Site Plan Set titled, “Peverly Hill Road Condominiums; Peverly Hill Road; Tax Map 242, Lot 4; 83 Peverly Hill Road; Portsmouth, New Hampshire; County of Rockingham; Prepared for Green and Company Real Estate. dated April 19, 2021” prepared by TFMoran, Inc.”

This project consists of 56 single unit homes. The homes are serviced by a combination of low-pressure sewers and gravity sewers. 20 of the low-pressure systems discharges into Sewer Manhole 15, after which the flow

becomes gravity. 3 of the low-pressure systems discharges into Sewer Manhole 5, subsequently the flow becomes gravity. The remaining 33 residences are gravity flow.

The proposed project consists of 800 linear feet 2" low-pressure SDR 11 line, 270 linear feet of 1-1/2" low-pressure SDR11 line, 1,789 linear feet of 8" SDR 35 gravity sewer main, 15 proposed sewer manholes and 2 cleanouts for the low-pressure lines.

The City of Portsmouth concurrently reviewing this application. Any revisions based on their comments will be circled on the plans and forwarded to you.

On behalf of our client, we respectfully request review of the application package for approval.

Sincerely,
MSC a division of TFMoran, Inc.

Jack McTigue, PE, CPESC
Project Manager

cc: Rick Green (Green and Company), Michael Green (Green and Company), Jenna Green (Green and Company), and Juliet Walker (City of Portsmouth)

NHDES-W-09-008

APPLICATION FOR SEWER CONNECTION PERMIT
Water Division/Wastewater
Engineering Bureau Design Review Section

RSA/Rule: RSA 485-A:37 / Env-Wq 703.07

TYPE OR PRINT CLEARLY

Use this application for Sewer Connection Permit to request NHDES review/approval for any proposed sewerage design. Under RSAs 485 and 485-A, design plans for new sewerage facilities – whether publicly or privately owned, and regardless of design flow – must be submitted to NHDES for review/approval action at least 30 days prior to construction. Pursuant to Env-Wq 703, design submittals must include 1 set of engineering plans/specifications, pertinent design calculations, the required fee, and a Municipal Certification (signed by an authorized municipal official, see page 2).

1. Engineer of Record - Contact Information		
Engineer / Contact: Jack McTigue, PE	*Company: TFMoran, Inc.*	
Mailing Address: 170 Commerce Way		
Town/City: Portsmouth	*State:* NH	*ZIP:* 03801
Phone Number: (603) 431-2222	*Email: jmctigue@TFMoran.com*	

2. Description of Proposed Work (check all that apply)	
☐	An extension of a collector or interceptor;
☐	A sewage pumping station greater than 50 gpm or serving more than one building;
☒	A proposed sewer that serves more than one building or that requires a manhole at the connection.

Project Name or Description: 56 3-bedroom single family unit resdiential condominium		
Project Location - Street Address: 83 Peverly Hill Road		
Project Location - Town / City: Portsmouth, NH		
Name Of Receiving WWTF: Sewer Division of the Portsmouth NH Department of Public Works		
Average Design Flow (ADF, gal/day): 25,200 GPD		
Proposed Sewer Length (Linear ft)	Pipe Diameter (inches)	Pipe Material
274	1-1/2" Pressure Sewer Services	HDPE SDR-11
820	2" Pressure Sewer Main	HDPE SDR-11
1,696	8" Gravity Sewer	SDR-35

3. Required Fee	
☒	Sewer connection design submittals must be accompanied by a review fee payment based on the project's average design flow - $0.10 per gal/day ("a dime a gallon") for design flows up to 10,000 gal/day, plus $0.05 per gal/day for any flows in excess thereof.
☐	A fee of $200 per plan sheet shall be paid for review of modifications to privately owned pump stations, force mains, interceptors, and wastewater treatment facilities which are not associated with an increase in wastewater flow.
☐	Fees are not required of municipalities for municipal projects.
Fee Enclosed: $2760.00	Please make checks payable to "Treasurer State of NH".

Italics indicate items are optional.

4. Municipal Certification	
On behalf of Peverly Hill Road Condominiums,the Town or City of Portsmouth hereby provides the following municipal certification.	
The municipal sewage collection system and wastewater treatment facilities have been demonstrated, pursuant to Env-Wq 703.07(d), to have adequate processing capability for the proposed added hydraulic flow and organic flow at the time of connection. The proposed sewer connection and/or sewerage design meet with the approval of the local jurisdictional authority.	
Name Of Municipal Official (Project Location):	Title:
Signature:	Date:
Email Address:	
When the Receiving WWTF is in a different Municipality from that of the Project Location, the following additional certification is required.	
Name Of WWTF Official (Host Community):	Title:
Signature:	Date:
Email Address:	

Submit completed application package to:

NHDES Wastewater Engineering Bureau
Design Review Section
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

NOTE: A Separate INDUSTRIAL WASTEWATER INDIRECT DISCHARGE REQUEST (IDR) May be Required For Industrial Waste Contributions, Depending On Quantity And Quality. For Further Information, Contact The Industrial Pretreatment Supervisor Of The Wastewater Engineering Bureau At (603)-271-2052.

Project	**Peverly Hill Rd Condominiums**	Date: 4/9/2021
Location	**Peverly Hill Rd**	
	Portsmouth, NH	

Unit Sewer Flows

Total Number of Units 56

Based on 100% 3 Bedroom Units

3 Bedroom Houses	
Residences Single Family - 2 Bedroom	300
Additional Flow for 1 Additional Bedroom	150
Gallons Perd Day per 3 Bedroom Unit	450

4 Bedroom Houses	
Residences Single Family - 2 Bedroom	300
Additional Flow for 2 Additional Bedroom	300
Gallons Perd Day per 4 Bedroom Unit	600

Design Sewer Flows

	Number of Units	GPD/ Unit	GPD
Number of 3 Bedroom	56	450	25,200
Number of 4 Bedroom	-	600	-
Total Design Flow	56		25,200

State Fee

Cost per GPD	$ 0.10	10,000	$ 1,000.00
In Excess of 10,000 GPD	$ 0.05	15,200	$ 760.00
Pump Station	$200.00	5	$ 1,000.00
Total Cost			$ 2,760.00

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(2) Metered water readings for uses that are as similar as possible to the proposed use, taking into consideration factors such as occupancy and frequency of use, determined as specified in (d), below.

(d) Design flows based on metered water readings shall be calculated:

(1) By finding the average of water meter readings over a period of time that is representative of the volume of water used and multiplying the average by a minimum peaking factor of 2 for commercial light flow or a maximum peaking factor of 3 for commercial heavy flow; or

(2) By measuring not less than 6 months of consecutive daily meter readings, including the month(s) of heaviest use for uses that are seasonal in nature, and using the highest daily flow without application of a peaking factor;

(e) The unit design flow figures referenced in (b) and (c), above, shall be as listed in Table 1008-1, below, subject to (f), below:

Table 1008-1: Unit Design Flow Figures

Use	**Unit Design Flow**
AIRPORTS	5 GPD/Transient plus 10 GPD/Employee
APARTMENTS	See Dwellings
BARS, LOUNGES	See Food Service
BED & BREAKFAST	60 GPD/Guest, based on the greater of 2 guests per room or the actual number of guests the room is designed to accommodate, plus 10 GPD/Employee
BUNKHOUSE	60 GPD/Person
CAMPS:	
Campground with Central Comfort Station	45 GPD/site, plus 20 GPD/Site for the dump station
Recreational Campgrounds with 3-way hookups	60 GPD/Site
Construction Camps	50 GPD/Person
Day Camps (not including meals)	15 GPD/Person
Dining Facility	3 GPD/Person/meal
Residential Youth Recreation Camps	25 GPD/Person plus 3 GPD/Person/meal
CATERERS – Function Rooms	12 GPD/patron
CHURCHES:	
Sanctuary Seating	3 GPD/Seat
Church Suppers	12 GPD/Seat
COUNTRY CLUBS – PRIVATE	
Dining Room	10 GPD/Seat
Snack Bar	10 GPD/Seat
Locker & Showers	20 GPD/Locker
DAY CARE CENTERS	10 GPD/Person
DENTISTS	10 GPD/Chair plus 35 GPD/Staff Member
DOCTOR'S OFFICES	250 GPD/Doctor
DOG KENNELS	50 GPD/Kennel, with one dog per kennel
DWELLINGS:	
Apartment - Studio or One-Bedroom	225 GPD
Apartment - 2 or More Bedrooms	150 GPD/Bedroom
Residence - Single-Family	300 GPD plus 150 GPD for each bedroom over 2
Residence - Duplex	300 GPD plus 150 GPD for each bedroom over 2 for each unit
Rooming House – With Meals	60 GPD/Person
Rooming House – Without Meals	40 GPD/Person
Senior Housing	See Senior Housing

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Sewer Flow Calculations
Peverly Hill Road Condominiums
PIN # 47388.11

6/23/2021

Areas to be filled in are highlighted in yellow

P_f	6	Peak Factor	
I/I	300	gpd/in/mile	5.28E-07 cfs
n_f	0.010	Manning	
k	1.485	Converstion Factor	

Q_{full}	Full Pipe Flow
Q_{cal}	Calculated Flow - Based on Flow Height
Q_{needed}	Required Flow ($Q_{per-use}$+Q_{inf})
Q_{inf}	Flow needed for infiltration
$Q_{per-use}$	Flow Needed Per Use
ΔQ	Difference between Q_{needed} and Q_{cal}

V_{cal1}	Velocity from the approximate flow depth
V_{cal2}	Velocity based on the iterative flow depth
K_h	Constant used to calculate the approximate flow depth Based on an approximation method presented by Esen (1993)
y	Depth of flow
∅	Angle of partial flow based on flow depth
A	Area of partial flow
P	Wetted Perimeter
R_h	Hydraulic Radius

		Flow (cfs)	Flow with Peaking Factor
Residence (4-Bedroom)	600 gpd	0.0009 cfs	0.0056 cfs

TABLE 1 - FULL FLOW AND APPROXIMATE PARTIAL FLOW CALCULATIONS

								Full Flow									Partial Flow				
From	To	Length	Inverts		Slope	Dia		V_{full}	Q_{full}	K_h	∅ full	∅	y/Y	y	A	Units	Q (cfs)			V_{cal1}	Notes
		(ft)	Out	In	(ft/ft)	(in)	(ft)	fps	cfs		rad.	rad.		ft	sf	#	$Q_{per-use}$	Q_{inf}	Q_{needed}	fps	
Pressure Sewer #1																20.00	0.111	0.0000	0.111	NA	Units 23-32, 46-55
PSMH-15	PSMH-14	56	42.90	42.45	0.008	8	0.67	4.03	1.41	0.027	1.89	1.89	0.21	0.14	0.05	2.00	0.011	0.0002	0.123	2.36	Units 22 & 45
PSMH-14	PSMH-13	83	42.35	41.90	0.005	8	0.67	3.31	1.16	0.033	1.99	1.99	0.23	0.15	0.06	0.00	0.000	0.0004	0.123	2.07	
PSMH-13	PSMH-12	83	41.80	41.35	0.005	8	0.67	3.31	1.16	0.033	1.99	1.99	0.23	0.15	0.06	0.00	0.000	0.0004	0.123	2.07	
PSMH-12	PSMH-11	83	41.25	40.80	0.005	8	0.67	3.31	1.16	0.038	2.06	2.06	0.24	0.16	0.07	3.00	0.017	0.0004	0.141	2.16	Units 20-21 & 44
PSMH-11	PSMH-10	83	40.70	40.25	0.005	8	0.67	3.31	1.16	0.039	2.08	2.08	0.25	0.16	0.07	1.00	0.006	0.0004	0.146	2.19	Unit 19
PSMH-10	PSMH-9	244	40.15	38.90	0.005	8	0.67	3.22	1.12	0.053	2.25	2.25	0.28	0.19	0.08	8.00	0.045	0.0010	0.192	2.35	Units 15-18 & 40-43
PSMH-9	PSMH-8	108	38.80	38.25	0.005	8	0.67	3.21	1.12	0.057	2.29	2.29	0.29	0.20	0.09	2.00	0.011	0.0005	0.204	2.39	Units 14 & 39
PSMH-8	PSMH-7	222	38.15	37.05	0.005	8	0.67	3.17	1.11	0.069	2.41	2.41	0.32	0.21	0.10	7.00	0.039	0.0009	0.244	2.51	Units 10-13 & 36-38
PSMH-7	PSMH-6	78	36.95	36.55	0.005	8	0.67	3.22	1.12	0.069	2.42	2.42	0.32	0.22	0.10	1.00	0.006	0.0003	0.249	2.56	Unit 35
PSMH-6	PSMH-5	79	36.45	36.05	0.005	8	0.67	3.21	1.12	0.073	2.45	2.45	0.33	0.22	0.10	2.00	0.011	0.0003	0.261	2.59	Units 8-9
Pressure Sewer #2																3.00	0.017	0.0000	0.017	NA	Units 56 and 33-34
PSMH-5	PSMH-4	132	35.95	35.40	0.005	8	0.67	3.02	1.05	0.007	1.34	1.34	0.11	0.07	0.02	1.00	0.006	0.0006	0.023	1.13	Units 7
PSMH-4	PSMH-3	161	35.30	34.70	0.005	8	0.67	3.02	1.05	0.012	1.54	1.54	0.14	0.09	0.03	3.00	0.017	0.0007	0.040	1.35	Units 4-6
PSMH-3	PSMH-2	223	34.60	33.65	0.005	8	0.67	3.02	1.05	0.017	1.68	1.68	0.17	0.11	0.04	3.00	0.017	0.0009	0.058	1.52	Units 1-3
PSMH-2	PSMH-1	47	33.55	33.35	0.005	8	0.67	3.02	1.05	0.017	1.68	1.68	0.17	0.11	0.04	0.00	0.000	0.0002	0.058	1.52	
PSMH-1	SMH-E1	107	33.25	32.80	0.005	8	0.67	3.02	1.05	0.017	1.69	1.69	0.17	0.11	0.04	0.00	0.000	0.0005	0.059	1.52	

Environment One Corporation

Pressure Sewer Preliminary

Cost and Design Analysis

For

Peverly Hill Road Condominiums
Peverly Hill Road

Prepared For:
TFMoran
170 Commerce Way - Suite 102
Portsmouth NH 03801
Tel: (603) 431-2222
Fax:
Prepared By: Jack McTigue
April 19, 2021

Peverly Hill Road Condominiums
Peverly Hill Road

Prepared by : Jack McTigue **On:** April 19, 2021

Notes :
Two Zones

Zone 1 - Units Units 22-32, 46-55 - Connecting to MH-09

Zone 2 - Units 56 and 33-34 - Connecting to MH-03

<<<<< E N D O F N O T E S >>>>>

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
Jack McTigue

Peverly Hill Road Condominiums
Peverly Hill Road

April 19, 2021

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Gals/day per Pump	Max Flow Per Pump (gpm)	Max Sim Ops	Max Flow (GPM)	Pipe Size (inches)	Max Velocity (FPS)	Length of Main this Zone	Friction Loss Factor (ft/100 ft)	Friction Loss This Zone	Accum Fric Loss (feet)	Max Main Elevation	Minimum Pump Elevation	Static Head (feet)	Total Dynamic Head (ft)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE											Friction loss calculations were based on a Constant for inside roughness "C" of: 150						
1.00	1.00	21	21	450	11.90	5	59.50	2.00	6.44	820.00	7.51	61.55	61.55	43.20	30.00	13.20	74.75
2.00	2.00	3	3	450	13.90	2	27.80	1.50	4.70	274.00	5.44	14.90	14.90	37.05	30.00	7.05	21.95

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Prepared By:
Jack McTigue

Peverly Hill Road Condominiums
Peverly Hill Road

April 19, 2021

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Gallons per 100 lineal feet	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE								Gals per Day per Dwelling		450
1.00	1.00	21	2.00	15.40	820.00	126.30	9,450	74.82	0.32	0.32
2.00	2.00	3	1.50	9.85	274.00	27.00	1,350	50.00	0.48	0.48

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One

E|ONE SPD PUMP PERFORMANCE CURVE

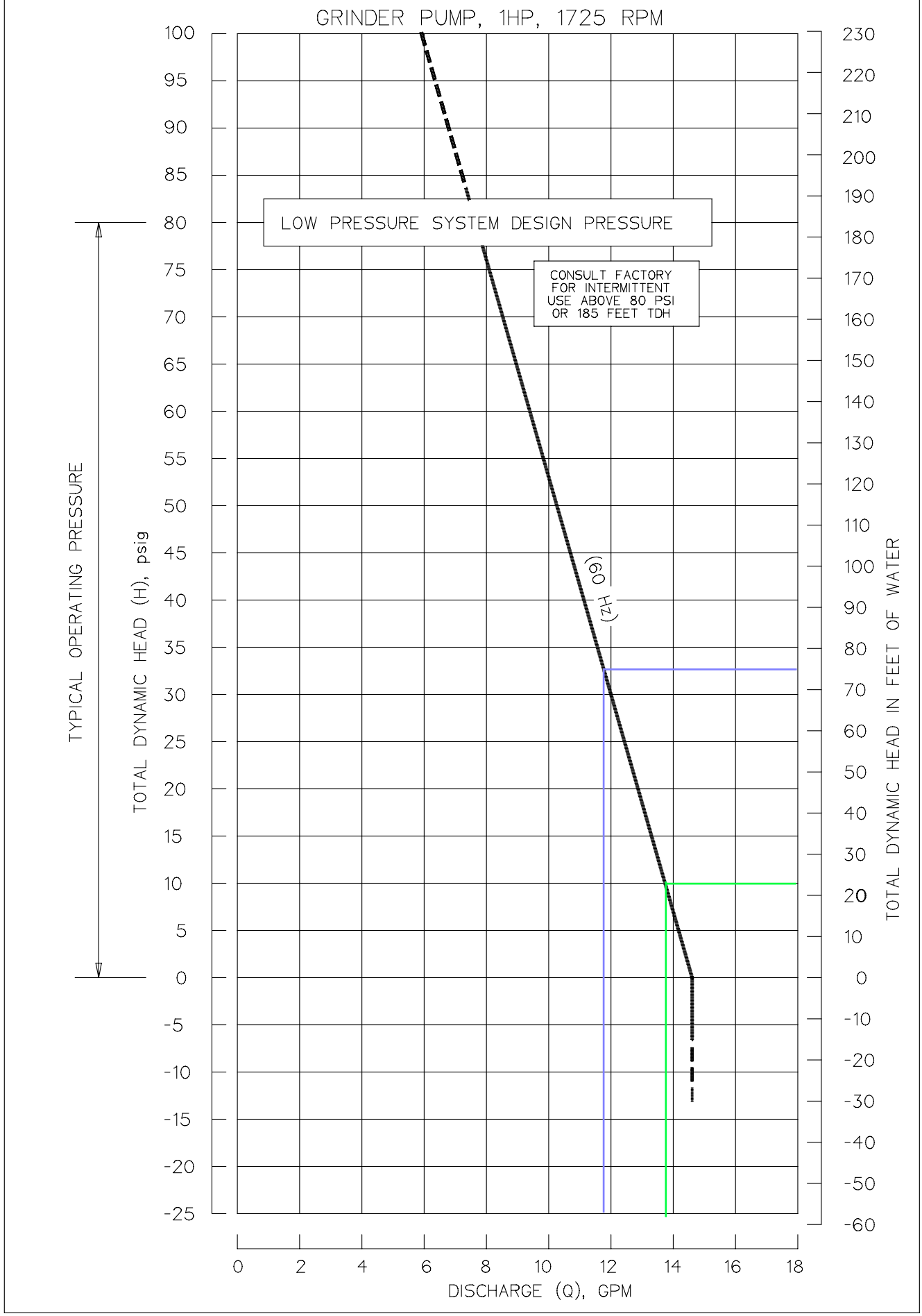

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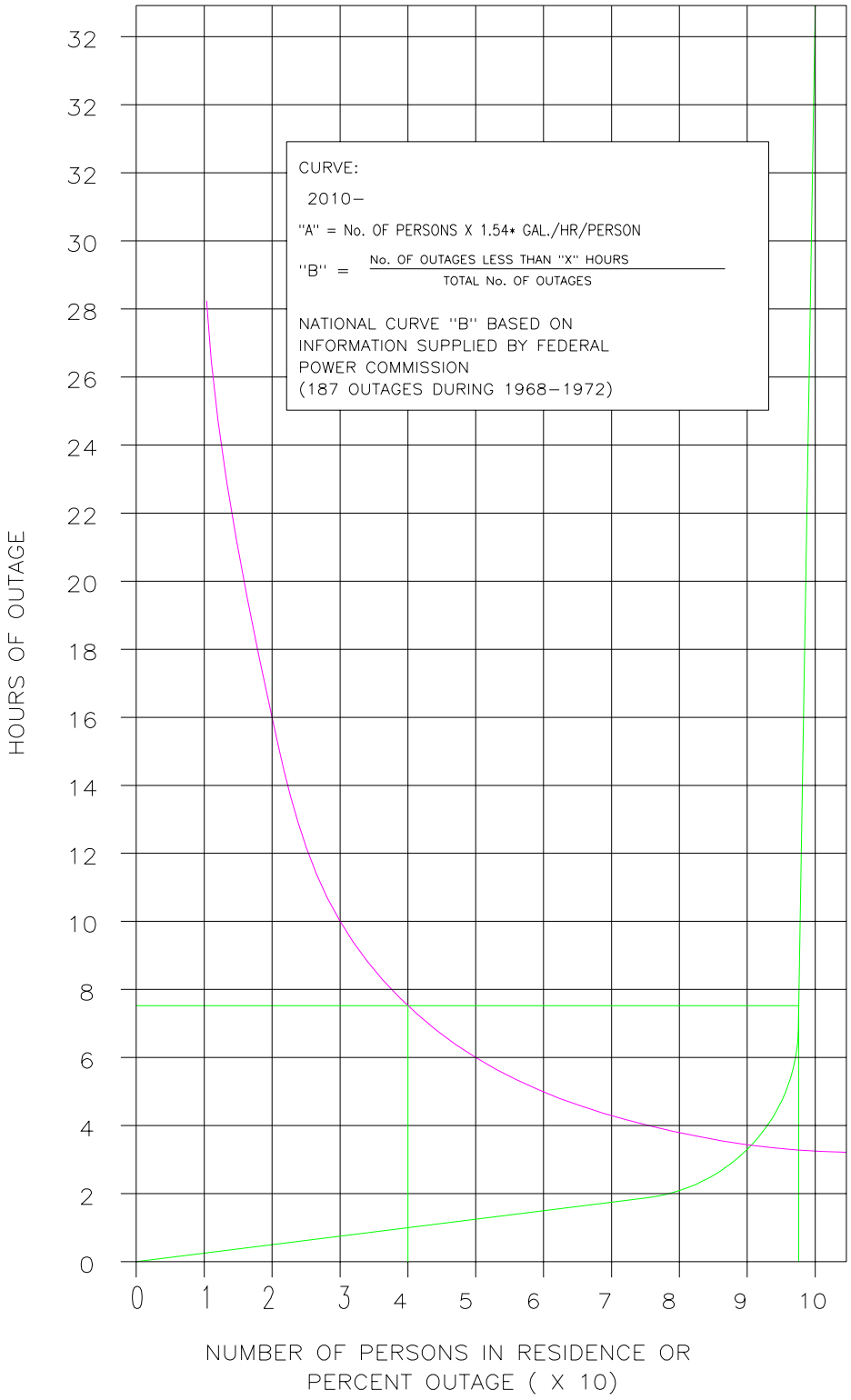
Figure 2

Relationship of GP Storage Capacity to Power Outage Experience



EXAMPLE:

1. GP 2010 INSTALLED
2. FOUR PERSONS IN RESIDENCE
3. FOLLOW VERTICAL LINE 4 UPWARD TO CURVE "A" FOR GP 2010
4. HORIZONTALLY LEFT SHOWS 7–1/2 HOURS OF STORAGE CAPACITY
5. HORIZONTALLY RIGHT TO CURVE "B"
6. VERTICALLY DOWN SHOWS 97% OF THE NATIONS OUTAGES ARE SATISFIED

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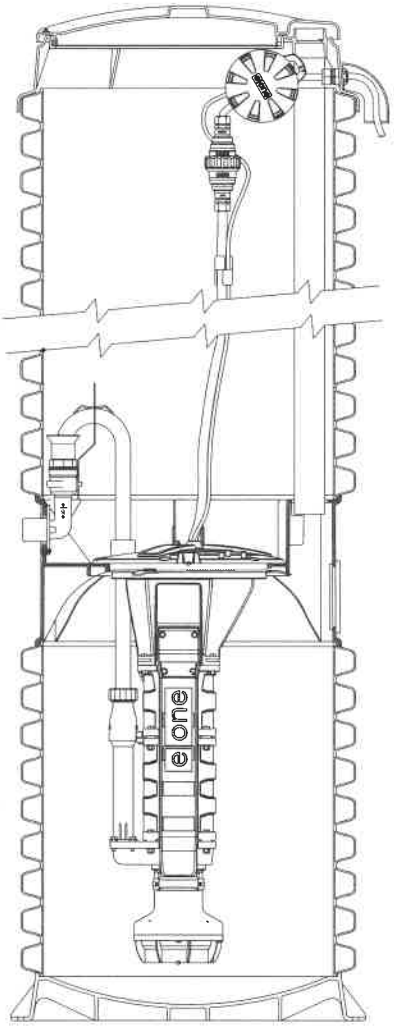
E/ONE EXTREME SERIES

DH071/DR071



General Features

The model DH071 or DR071 grinder pump station is a complete unit that includes: the grinder pump, check valve, HDPE (high density polyethylene) tank, controls, and alarm panel. A single DH071 or DR071 is a popular choice for one, average single-family home and can also be used for up to two average single-family homes where codes allow and with consent of the factory.

- Rated for flows of 700 gpd (2650 lpd)
- 70 gallons (265 liters) of capacity
- Indoor or outdoor installation
- Standard outdoor heights range from 61 inches to 160 inches

The DH071 is the "hardwired," or "wired," model where a cable connects the motor controls to the level controls through watertight penetrations.

The DR071 is the "radio frequency identification" (RFID), or "wireless," model that uses wireless technology to communicate between the level controls and the motor controls.

Operational Information

Motor
1 hp, 1,725 rpm, high torque, capacitor start, thermally protected, 120/240V, 60 Hz, 1 phase

Inlet Connections
4-inch inlet grommet standard for DWV pipe. Other inlet configurations available from the factory.

Discharge Connections
Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

Discharge
15 gpm at 0 psig (0.95 lps at 0 m)
11 gpm at 40 psig (0.69 lps at 28 m)
7.8 gpm at 80 psig (0.49 lps at 56 m)

Accessories

E/One requires that the Uni-Lateral, E/One's own stainless steel check valve, be installed between the grinder pump station and the street main for added protection against backflow.

Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

The Remote Sentry is ideal for installations where the alarm panel may be hidden from view.

Patent Numbers: 5,752,315
5,562,254 5,439,180

E/ONE EXTREME SERIES

E/One Sentry™

Alarm Panel — Basic Package

Description

The E/One Sentry panels are custom designed for use with Environment One grinder pump stations. They can be configured to meet the needs of your application, from basic alarm indication to advanced warning of pending service requirements.

E/One Sentry panels are supplied with audible and visual high level alarms. They are easily installed in accordance with relevant national and local codes. Standard panels are approved by UL, CSA, CE and NSF to ensure high quality and safety.

The panel features a corrosion-proof, NEMA 4X-rated, thermoplastic enclosure. A padlock is provided to prevent unauthorized entry (safety front).

Standard Features

Circuit breakers, 240 or 120 VAC service

Terminal blocks and ground lugs

Audible alarm with manual silence

Manual run feature and run indicator

Redundant "Start" function with high level alarm

Conformal-coated alarm board (both sides)

Alarm board overload protection

Optional Features

Contact group (dry, powered and Remote Sentry)

Inner cover (dead front)

Hour meter

Generator receptacle with auto transfer

GFCI

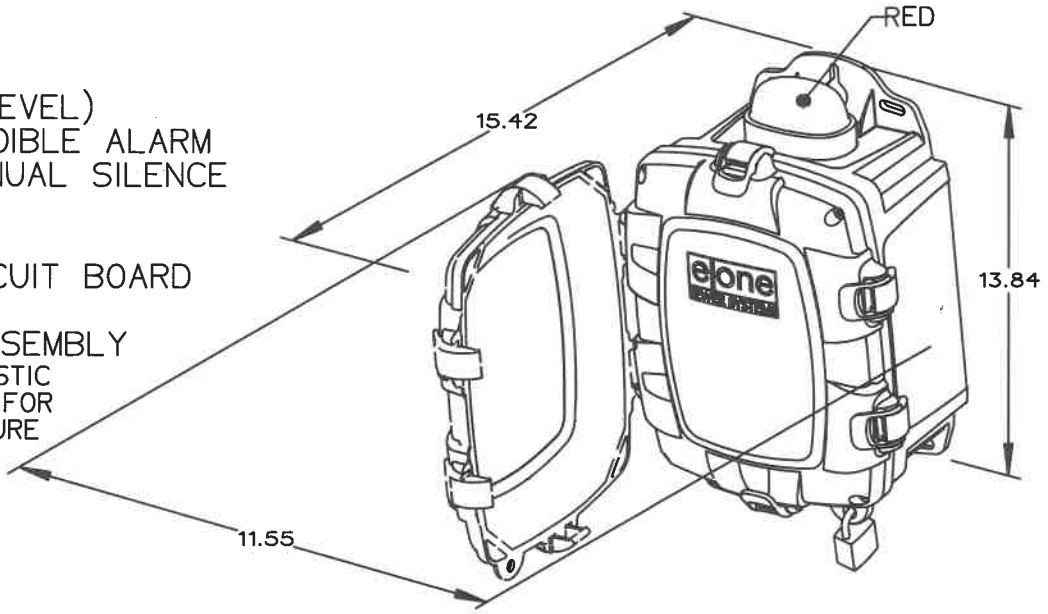
Main service disconnect

Brownout protection

Please consult factory for special applications.

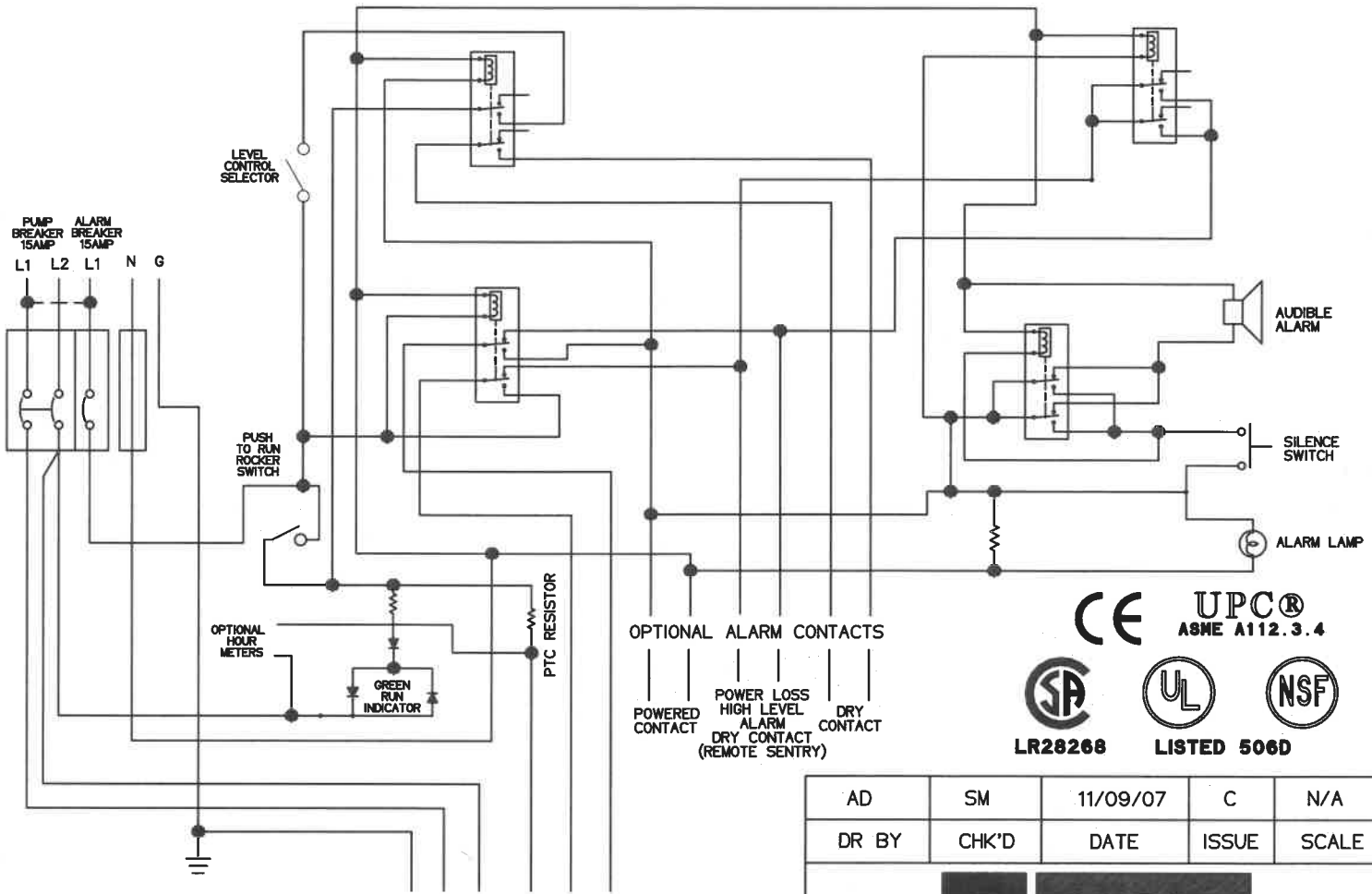
SIMPLEX SENTRY

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
MANUAL RUN
PUMP RUN INDICATOR
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
NEMA 4X ENCLOSURE ASSEMBLY
CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



OPTIONS:

- ☐ ALARM CONTACTS
- ☐ HOUR METER



CE UPC® ASME A112.3.4

CSA LR28268 UL LISTED 506D NSF

PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE:
TYPE TC: DIRECT BURIAL, 12AWG, SIX CONDUCTOR

AD	SM	11/09/07	C	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE

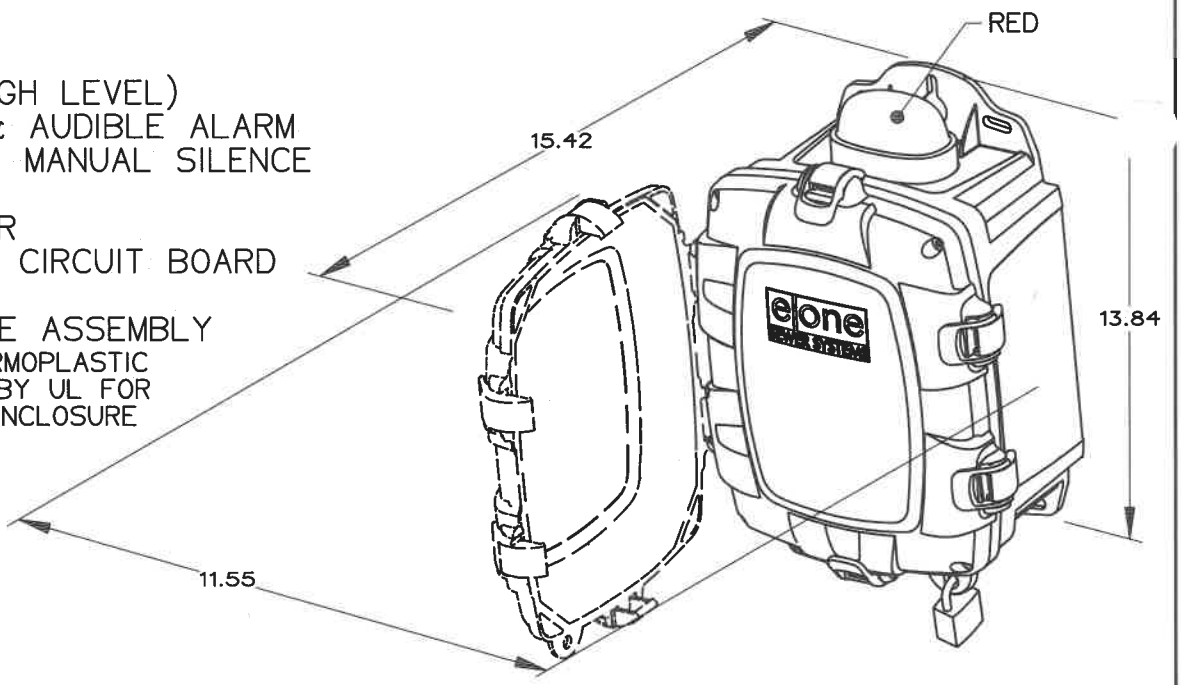
e/one SEWER SYSTEMS

SIMPLEX SENTRY, 240V 60Hz.
DOUBLE POLE POWER

LM000326

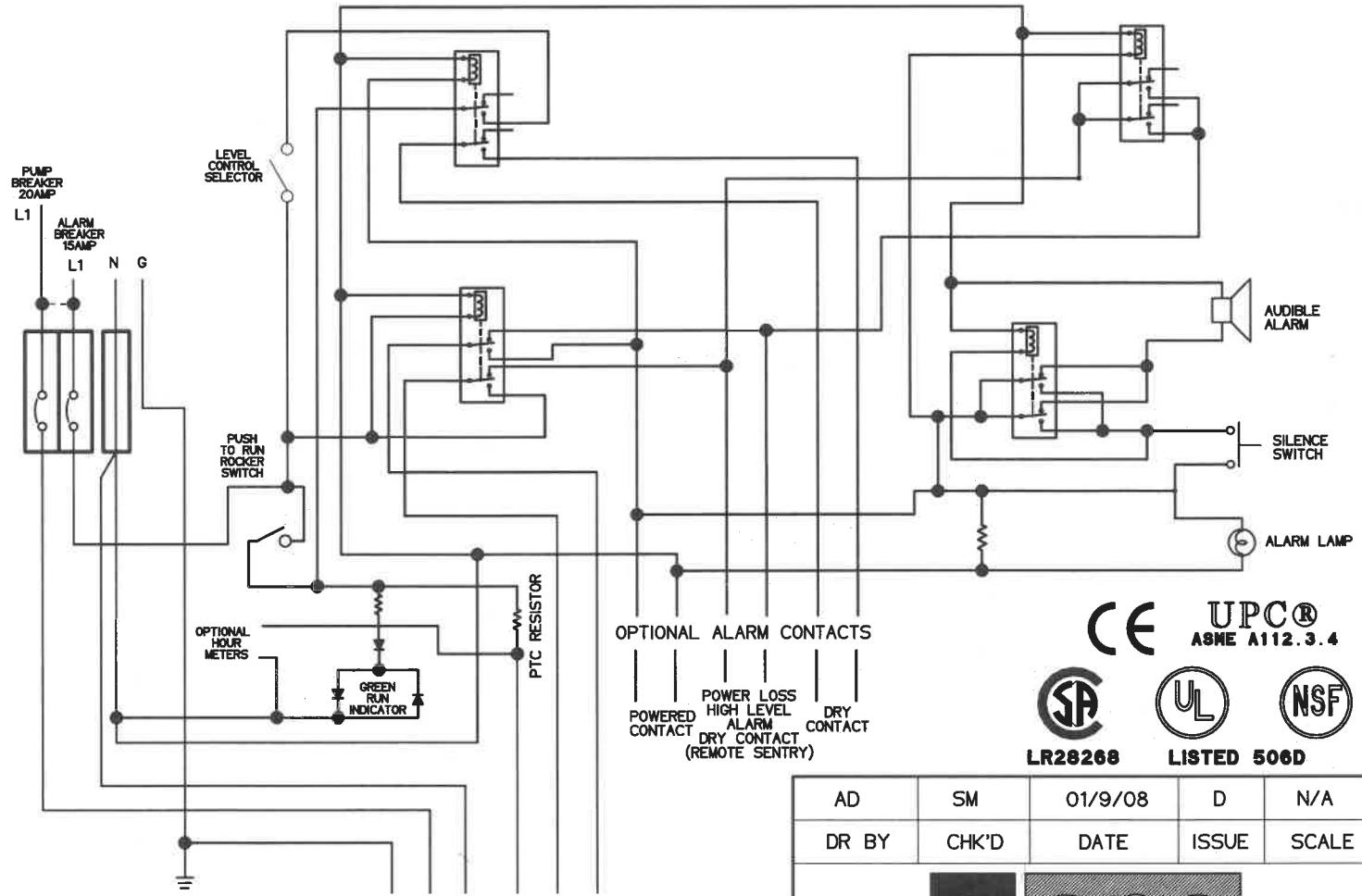
SIMPLEX SENTRY

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
MANUAL RUN
PUMP RUN INDICATOR
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
NEMA 4X ENCLOSURE ASSEMBLY
CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



OPTIONS:

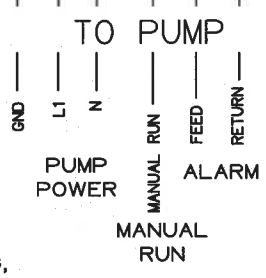
- ☐ ALARM CONTACTS
- ☐ HOUR METER



CE UPC® ASME A112.3.4

LR28268 LISTED 506D

PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	N	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE



CONTROL CABLE:
TYPE TC: DIRECT BURIAL, 12AWG, SIX CONDUCTOR

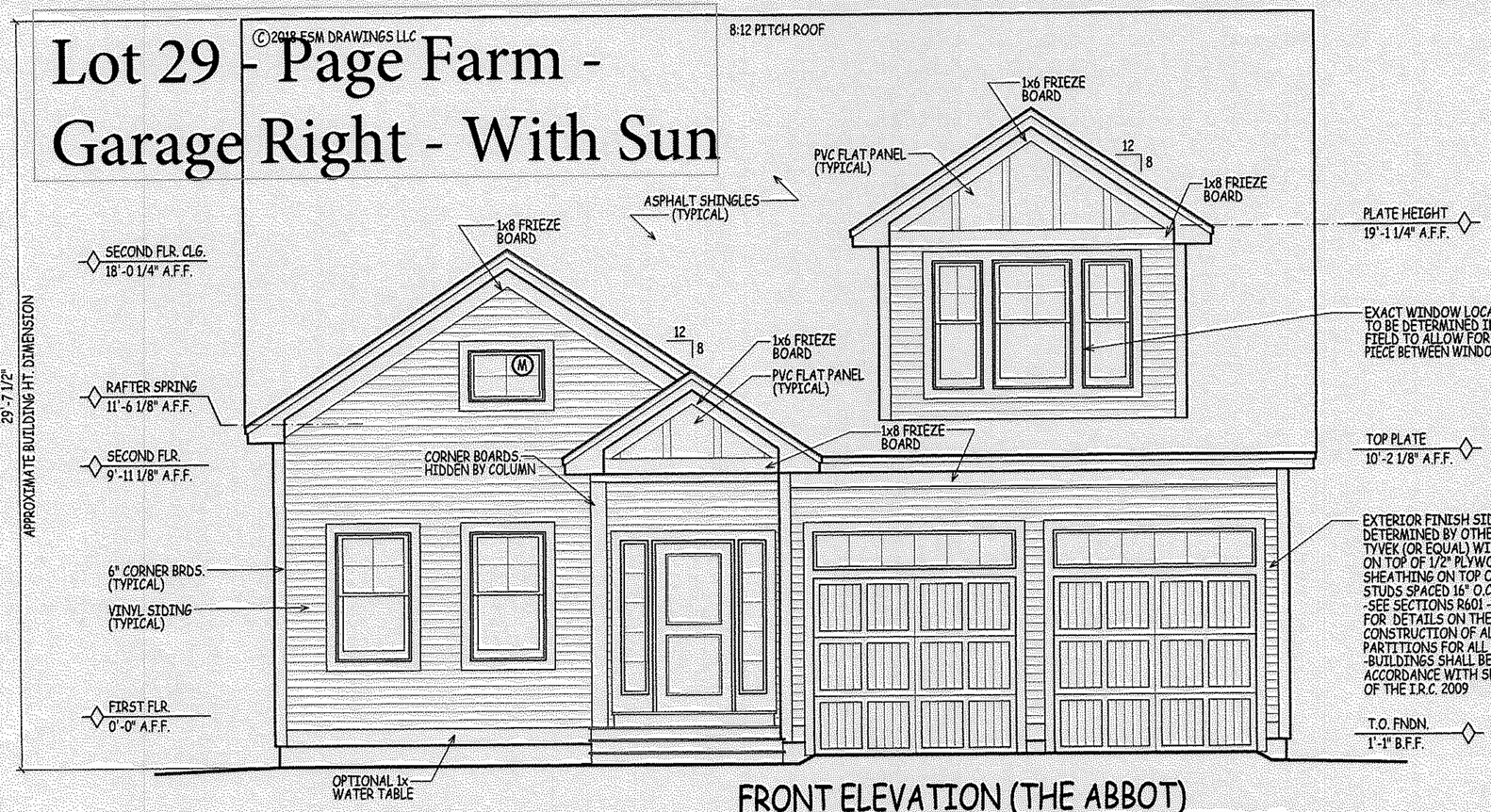
AD	SM	01/9/08	D	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

SIMPLEX SENTRY, 120V 60Hz.
SINGLE POLE POWER

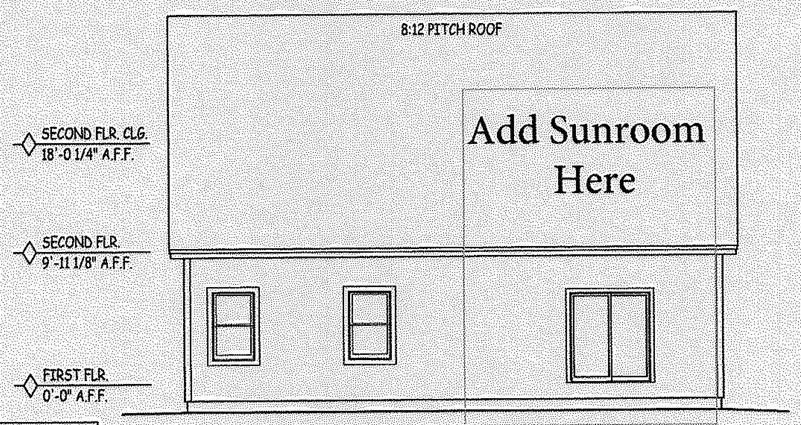
LM000327

Lot 29 - Page Farm - Garage Right - With Sun



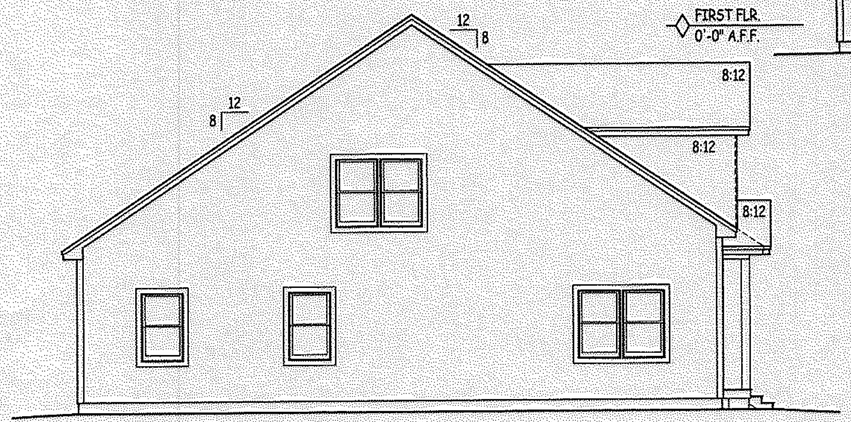
FRONT ELEVATION (THE ABBOT)

SCALE: 1/4" = 1'-0"



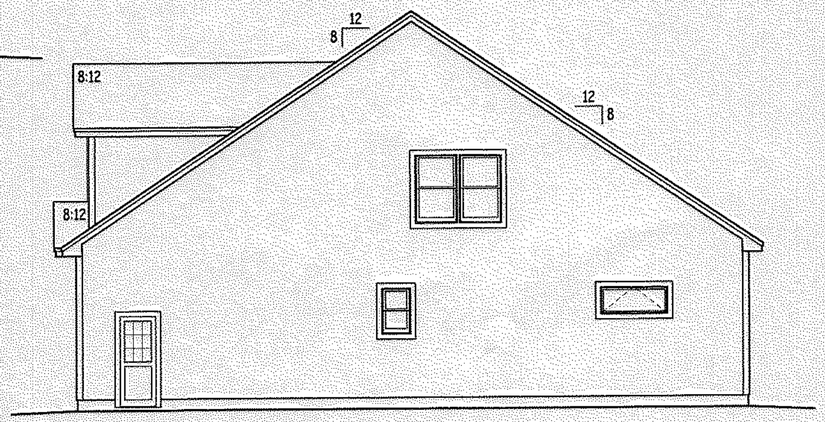
REAR ELEVATION

SCALE: 1/8" = 1'-0"



LEFT ELEVATION

SCALE: 1/8" = 1'-0"



RIGHT ELEVATION

SCALE: 1/8" = 1'-0"

NOTES:
1. DECK(S) NOT SHOWN FOR CLARITY - CONSULT CONTRACTOR IN FIELD FOR EXACT SIZE & LOCATION
2. REFER TO FLOOR PLANS FOR EXACT LOCATION OF WINDOWS & DOORS - DO NOT SCALE FROM ELEVATIONS

NOTE:
THESE ELEVATIONS TO BE USED WITH FLOOR PLANS SHEET 2a & 3a.

EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE, AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS -
IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR IN WHICH THE WINDOW IS LOCATED (REFER TO SECTION R612.2 OF THE I.R.C. 2009)

REFER TO SECTIONS R612.2 FOR WINDOW SILL HEIGHT ABOVE GROUND (OR SURFACE BELOW) AND TO SECTION 310 FOR EGRESS WINDOWS & BASEMENTS PRIOR TO PLACING WINDOW ORDER

REFER TO SECTION 311 FOR MEANS OF EGRESS PRIOR TO ORDERING DOORS

NOTE:
PLANS DESIGNED TO THE 2009 INTERNATIONAL RESIDENTIAL CODE.

FSM DRAWINGS
27 Lowell Street, Suite 102, Manchester, New Hampshire 03101
T: 603.836.6866 www.fsmdrawings.com

PROJECT: THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR: GREEN & CO

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
DATE ISSUED:	09/06/18
SCALE:	AS INDICATED
JOB NO.:	FSM17-206CA

REVISIONS

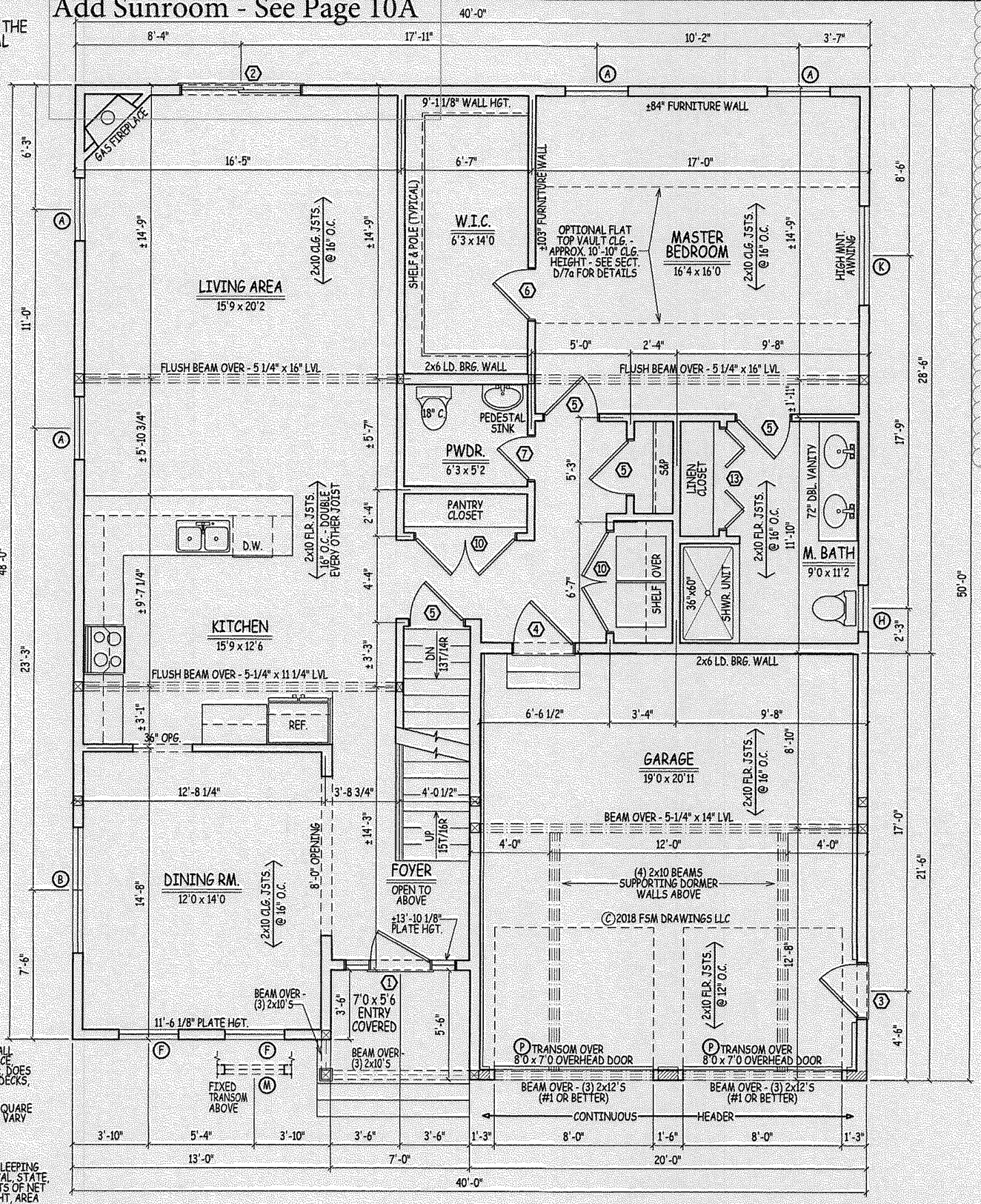
16	08/27/18	THE CALLAWAY & RILEY REVISED PER REQUEST - ISSUED FOR REVIEW AND STAMP
17	09/06/18	BEAM LOCATION UPDATED ON THE ABBOT - ISSUED FOR REVIEW AND STAMP
13	08/03/18	THE CALLAWAY REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP
14	08/15/18	THE RILEY REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP
15	08/15/18	THE ABBOT REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP

1a

Lot 29 Page Farm (Abbot w/ Sun, Garage Right)

NOTE:
PLANS DESIGNED TO THE 2009 INTERNATIONAL RESIDENTIAL CODE.

Add Sunroom - See Page 10A



FIRST FLOOR PLAN

APPROX. 1,515 S.F.

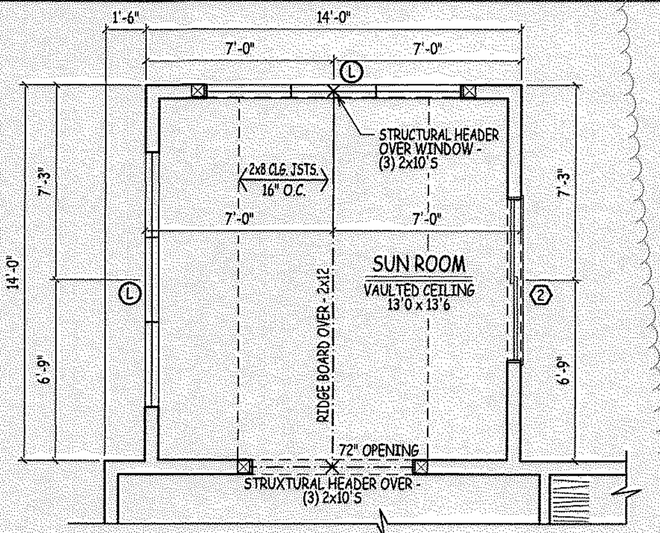
SCALE: 1/4" = 1'-0"

NOTE:
SQUARE FOOTAGE INCLUDES ALL WALL STRUCTURE, LIVING SPACE, CLOSETS, & STAIRS, HOWEVER, DOES NOT INCLUDE GARAGE SPACE, DECKS, OR PATIO'S.

TAKE NOTE THAT BUILDER'S SQUARE FOOTAGE CALCULATIONS MAY VARY FROM DRAFTER'S.

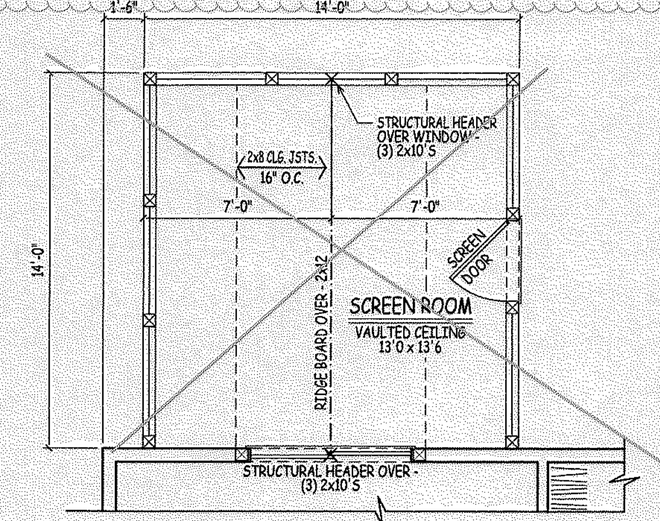
EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE, AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS - IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR IN WHICH THE WINDOW IS LOCATED (REFER TO SECTION R612.2 OF THE I.R.C. 2009)

NOTE:
THIS FLOOR PLAN TO BE USED WITH SECOND FLOOR PLAN SHEET 3a.



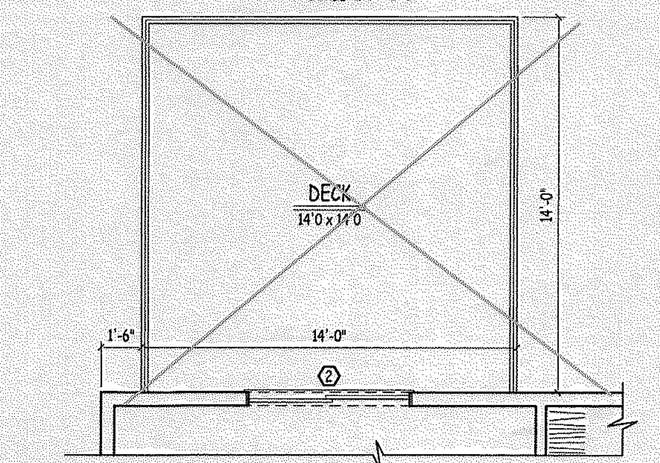
SUN ROOM OPTION

SCALE: 1/4" = 1'-0"



SCREEN ROOM OPTION

SCALE: 1/4" = 1'-0"



DECK OPTION

SCALE: 1/4" = 1'-0"

FSM DRAWINGS
257 Lowell Street, Suite 202, Manchester, New Hampshire 03101
T | 603.836.6661 F | 603.836.6661
www.fsmdrawings.com

PROJECT:
THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR:
GREEN&CO.

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
DATE ISSUED:	09/06/18
SCALE:	AS INDICATED
JOB NO.:	FSM17-206CA

REVISIONS

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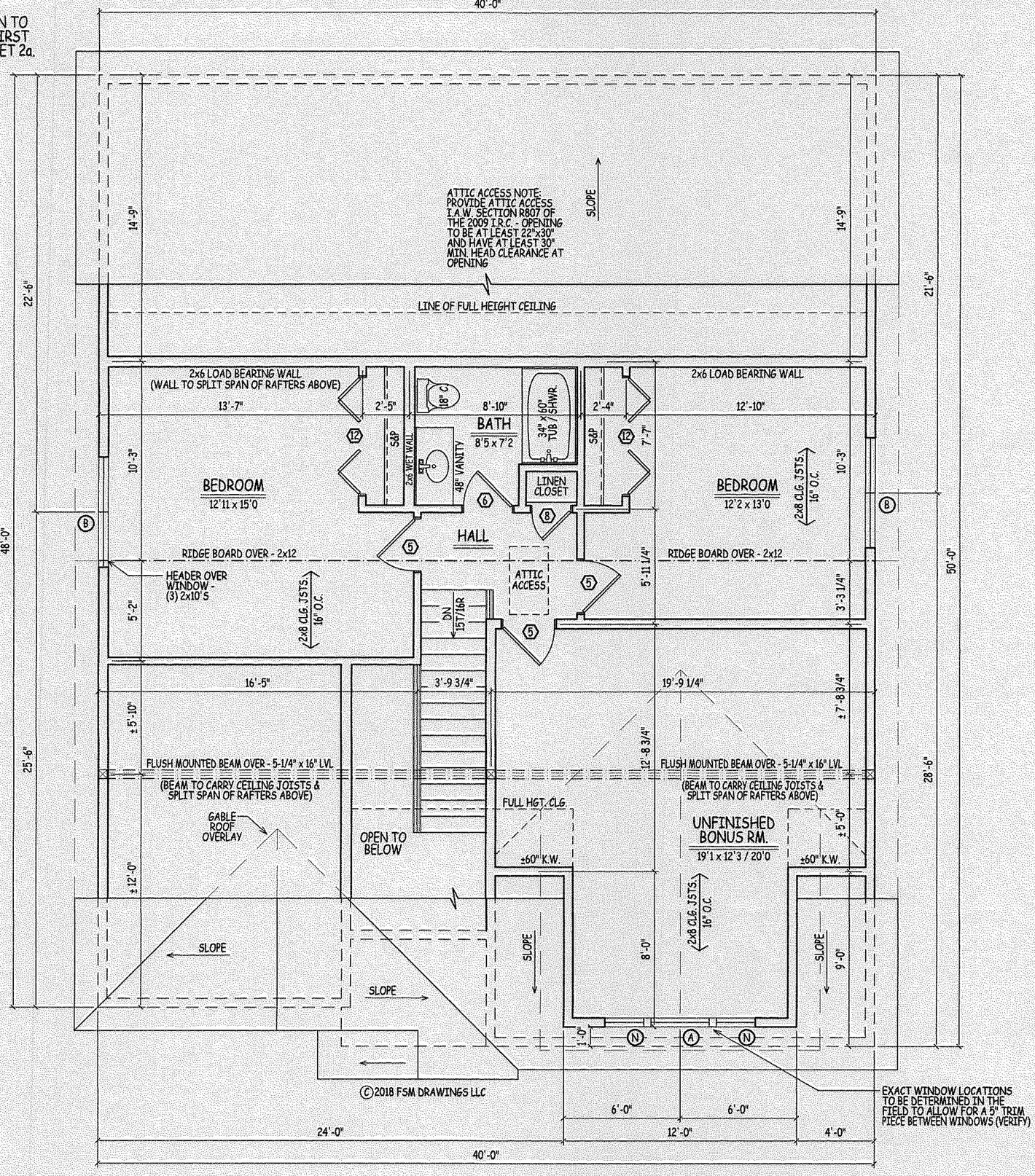
17	09/06/18	BEAM LOCATION UPDATED ON THE ABBOT - ISSUED FOR REVIEW AND STAMP
13	08/03/18	THE CALLAWAY REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP
14	08/15/18	THE RILEY REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP
15	08/15/18	THE ABBOT REVISED PER MARK-UPS - ISSUED FOR REVIEW AND STAMP

2a

NOTE:
THIS FLOOR PLAN TO BE USED WITH FIRST FLOOR PLAN SHEET 2a.



NOTE:
PLANS DESIGNED TO THE 2009 INTERNATIONAL RESIDENTIAL CODE.

SECOND FLOOR PLAN

APPROX. 590 S.F.
(BONUS RM. 330 S.F.)

SCALE: 1/4" = 1'-0"

NOTE:
THESE SCHEDULES ARE TO BE USED WITH FIRST FLOOR PLAN SHEET 2a, & 3a.

DOOR SCHEDULE

MARK	QTY	SIZE	RSO	NOTES
1		3'-0" x 6'-8"		EXT. ENTRY DOOR W/ SIDELITES
2		6'-0" x 6'-8"		EXT. GLASS SLIDER
3		2'-8" x 6'-8"		EXT. 9-LITE
4		3'-0" x 6'-8"		FIRE RATED DOOR
5		2'-8" x 6'-8"		INTERIOR
6		2'-6" x 6'-8"		INTERIOR
7		2'-4" x 6'-8"		INTERIOR
8		2'-0" x 6'-8"		INTERIOR
9		5'-0" x 6'-8"		INT. DBL. FRENCH DOORS
10		5'-0" x 6'-8"		INT. DBL. DOORS
11		4'-0" x 6'-8"		INT. DBL. DOORS
12		6'-0" x 6'-8"		INT. BI-FOLDS
13		5'-0" x 6'-8"		INT. BI-FOLDS
14		4'-0" x 6'-8"		INT. BI-FOLDS

RSO TO BE DETERMINED BY DOOR MANUFACTURER-
CONTRACTOR TO DETERMINE FINAL DOOR COUNT

WINDOW SCHEDULE

MARK	QTY	UNIT	RSO	NOTES
A		DH3862		DOUBLE HUNG (EGRESS)
B		DH3862-2		2 WIDE DBL. HUNG (EGRESS)
C		DH3462		DOUBLE HUNG
D		DH3462-2		2 WIDE DBL. HUNG
E		DH3469-2		2 WIDE DBL. HUNG
F		DH3662		DOUBLE HUNG
G		DH3442		DOUBLE HUNG
H		DH2842		DOUBLE HUNG
J		C4445		DOUBLE CASEMENT
K		A6024		AWNING WINDOW
L		DH3862-3		3 WIDE DBL. HUNG
M		CF3624		FIXED TRANSOM
N		DH2462		DOUBLE HUNG
P				6-LITE GARAGE DOOR TRANSOM

RSO TO BE DETERMINED BY WINDOW MANUFACTURER-
CONTRACTOR TO DETERMINE FINAL WINDOW COUNT
(NOTE: HARVEY WINDOW (VERIFY SERIES WITH CONTRACTOR) SIZES ARE GIVEN ABOVE ONLY FOR THE PURPOSE OF PROVIDING A REFERENCE FOR COMPARING ROUGH OPENING SIZES WITH ANOTHER MANUFACTURER. CONSULT HOME-OWNER FOR THE EXACT WINDOW MANUFACTURER CHOSEN FOR THIS HOME)

NOTE:
SQUARE FOOTAGE INCLUDES ALL WALL STRUCTURE, LIVING SPACE, CLOSETS, & STAIRS, HOWEVER, DOES NOT INCLUDE GARAGE SPACE, DECKS, OR PATIO'S.

TAKE NOTE THAT BUILDER'S SQUARE FOOTAGE CALCULATIONS MAY VARY FROM DRAFTER'S.

EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE, AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS - IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24" ABOVE THE FINISHED FLOOR IN WHICH THE WINDOW IS LOCATED. (REFER TO SECTION R612.2 OF THE I.R.C. 2009)

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PROJECT: THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR: GREEN&CO.

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
DATE ISSUED:	09/06/18
SCALE:	AS INDICATED
JOB NO.:	FSM17-206CA

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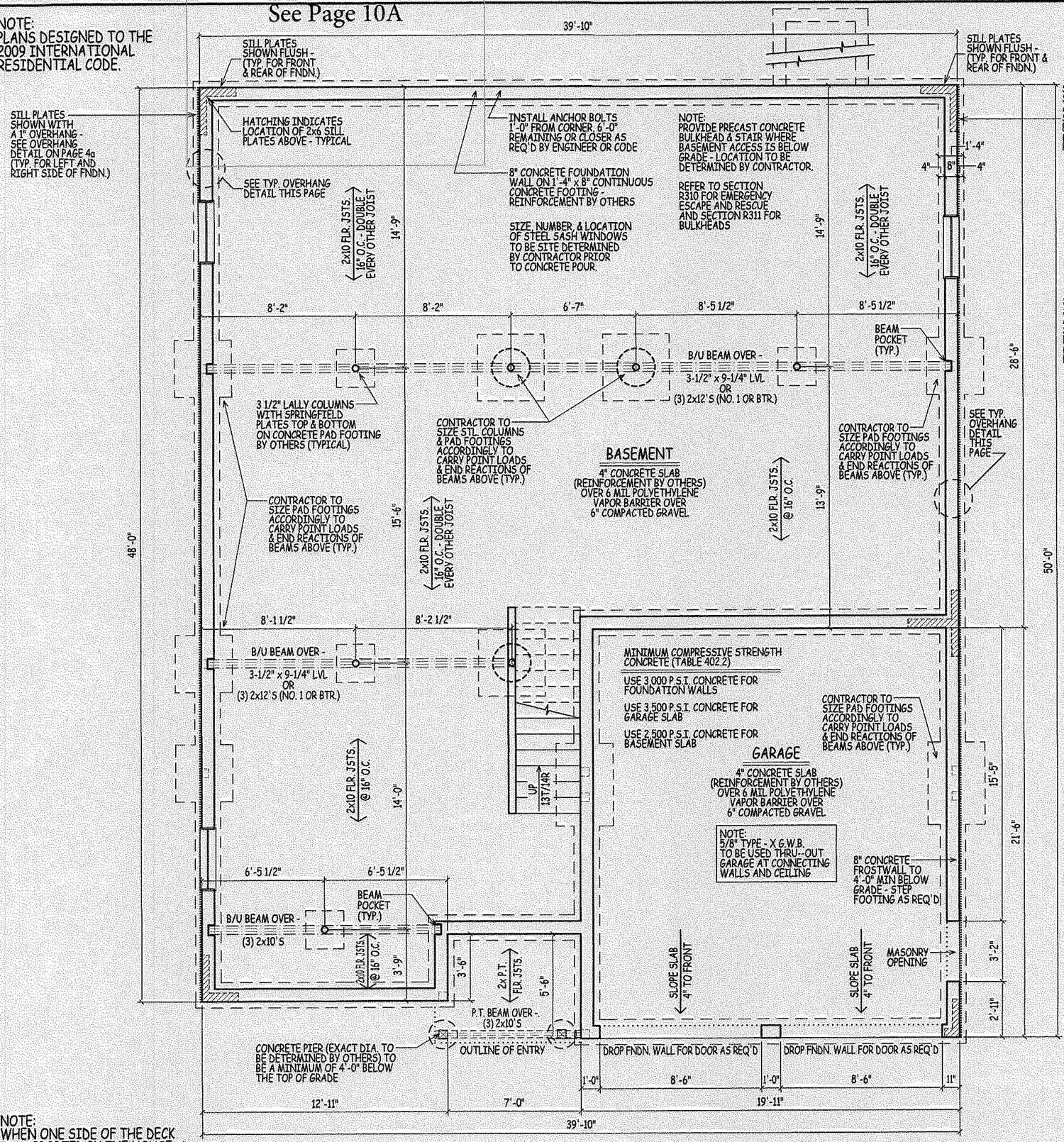
3a

Add Sunroom Foundation

See Page 10A

NOTE:
PLANS DESIGNED TO THE 2009 INTERNATIONAL RESIDENTIAL CODE.

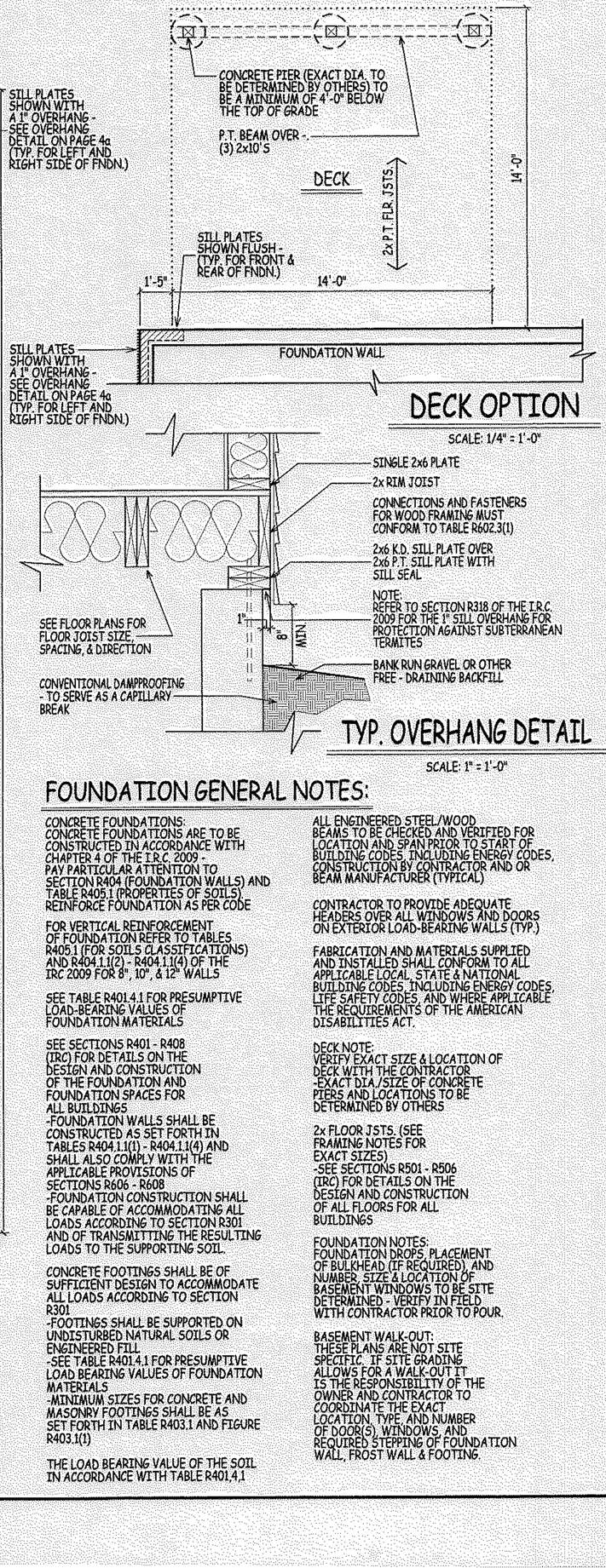


NOTE:
WHEN ONE SIDE OF THE DECK IS SUPPORTED BY THE HOUSE, A LATERAL LOAD CONNECTION IS REQUIRED. HOLD-DOWN TENSION DEVICES SHALL BE INSTALLED IN AT LEAST 2 LOCATIONS WITH A MINIMUM LATERAL-LOAD CAPACITY OF 1,500 LBS. PER DEVICE. (SEE SECTION 502.2.2 OF THE 2009 IRC.)

FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

NOTE:
THIS FOUNDATION PLAN TO BE USED WITH FIRST FLOOR PLAN SHEET 2a.



DECK OPTION

SCALE: 1/4" = 1'-0"

TYP. OVERHANG DETAIL

SCALE: 1" = 1'-0"

FOUNDATION GENERAL NOTES:

CONCRETE FOUNDATIONS:
CONCRETE FOUNDATIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE I.R.C. 2009 - PAY PARTICULAR ATTENTION TO SECTION R404 (FOUNDATION WALLS) AND TABLE R405.1 (PROPERTIES OF SOILS) REINFORCE FOUNDATION AS PER CODE

FOR VERTICAL REINFORCEMENT OF FOUNDATION REFER TO TABLES R405.1 (FOR SOILS CLASSIFICATIONS) AND R404.1.1(2) - R404.1.1(4) OF THE IRC 2009 FOR 8", 10", & 12" WALLS

SEE TABLE R401.4.1 FOR PRESUMPTIVE LOAD-BEARING VALUES OF FOUNDATION MATERIALS

SEE SECTIONS R401 - R408 (IRC) FOR DETAILS ON THE DESIGN AND CONSTRUCTION OF THE FOUNDATION AND FOUNDATION SPACES FOR ALL BUILDINGS
-FOUNDATION WALLS SHALL BE CONSTRUCTED AS SET FORTH IN TABLES R404.1.1(1) - R404.1.1(4) AND SHALL ALSO COMPLY WITH THE APPLICABLE PROVISIONS OF SECTIONS R606 - R608
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CONCRETE FOOTINGS SHALL BE OF SUFFICIENT DESIGN TO ACCOMMODATE ALL LOADS ACCORDING TO SECTION R301
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THE LOAD BEARING VALUE OF THE SOIL IN ACCORDANCE WITH TABLE R401.4.1

ALL ENGINEERED STEEL/WOOD BEAMS TO BE CHECKED AND VERIFIED FOR LOCATION AND SPAN PRIOR TO START OF BUILDING CODES, INCLUDING ENERGY CODES, CONSTRUCTION BY CONTRACTOR AND OR BEAM MANUFACTURER (TYPICAL)

CONTRACTOR TO PROVIDE ADEQUATE HEADERS OVER ALL WINDOWS AND DOORS ON EXTERIOR LOAD-BEARING WALLS (TYP.)

FABRICATION AND MATERIALS SUPPLIED AND INSTALLED SHALL CONFORM TO ALL APPLICABLE LOCAL, STATE & NATIONAL BUILDING CODES, INCLUDING ENERGY CODES, LIFE SAFETY CODES, AND WHERE APPLICABLE THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT.

DECK NOTE:
VERIFY EXACT SIZE & LOCATION OF DECK WITH THE CONTRACTOR
-EXACT DIA./SIZE OF CONCRETE PIERS AND LOCATIONS TO BE DETERMINED BY OTHERS

2x FLOOR JSTS. (SEE FRAMING NOTES FOR EXACT SIZES)
-SEE SECTIONS R501 - R506 (IRC) FOR DETAILS ON THE DESIGN AND CONSTRUCTION OF ALL FLOORS FOR ALL BUILDINGS

FOUNDATION NOTES:
FOUNDATION DROPS, PLACEMENT OF BULKHEAD (IF REQUIRED), AND NUMBER, SIZE & LOCATION OF BASEMENT WINDOWS TO BE SITE DETERMINED - VERIFY IN FIELD WITH CONTRACTOR PRIOR TO POUR.

BASEMENT WALK-OUT:
THESE PLANS ARE NOT SITE SPECIFIC. IF SITE GRADING ALLOWS FOR A WALK-OUT IT IS THE RESPONSIBILITY OF THE OWNER AND CONTRACTOR TO COORDINATE THE EXACT LOCATION, TYPE, AND NUMBER OF DOOR(S), WINDOWS, AND REQUIRED STEPPING OF FOUNDATION WALL, FROST WALL & FOOTING.

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LIFE SAFETY CODES, AND WHERE APPLICABLE THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT.

DOUBLE UP FLOOR JOISTS @ LOCATIONS OF NON-LOAD BEARING WALLS AND UNDER ALL BATHROOMS (I.E. BATHING TUBS/WHIRLPOOLS), KITCHENS, LAUNDRY ROOMS, ETC. (TYPICAL)

CONTRACTOR TO PROVIDE ADEQUATE BLOCKING AND BRIDGING BETWEEN FLOOR JOISTS AS REQUIRED (TYPICAL)

NOTE:
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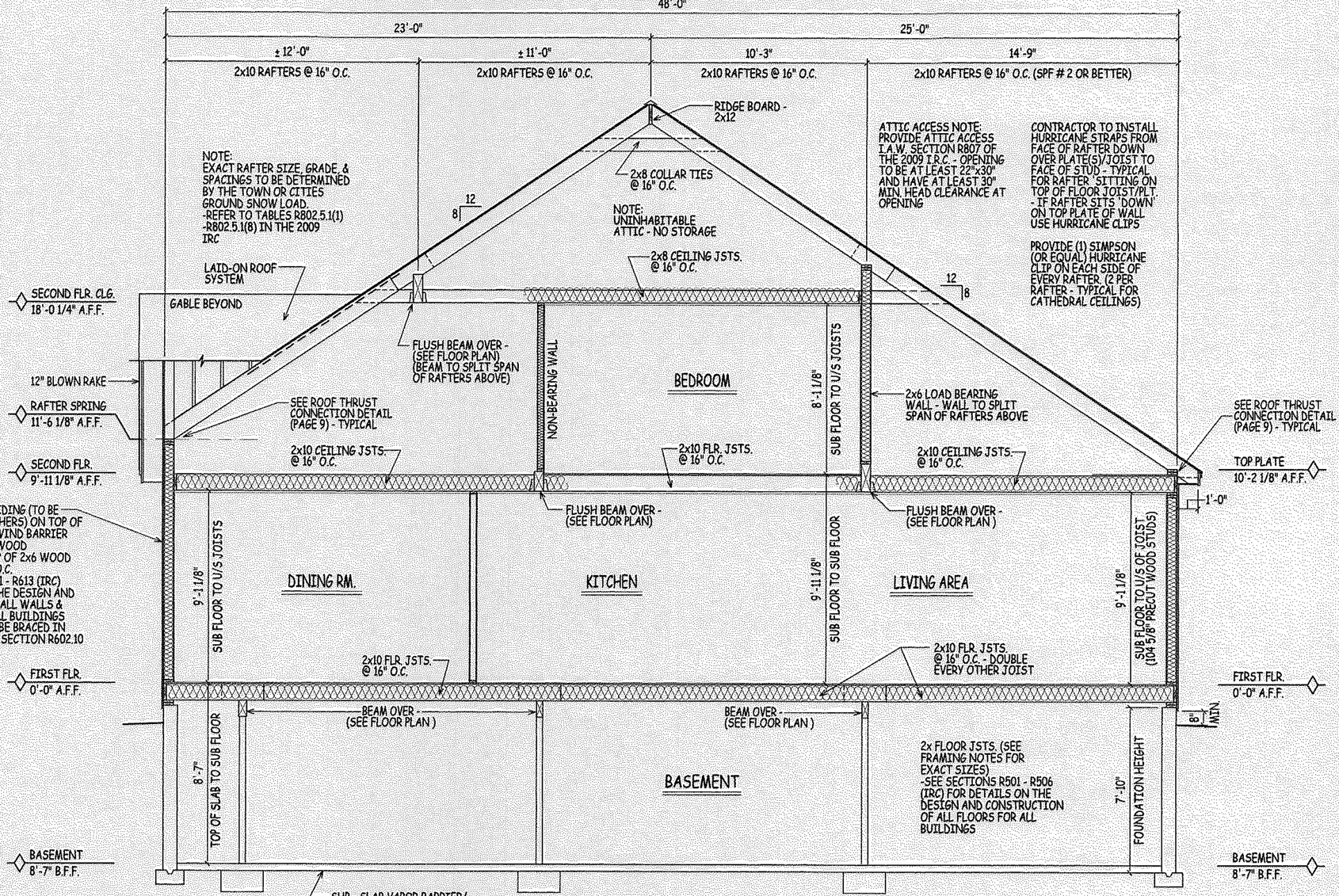
REFER TO SECTIONS R612.2 FOR WINDOW SILL HEIGHT ABOVE GROUND (OR SURFACE BELOW) AND TO SECTION 310 FOR EGRESS WINDOWS & BASEMENTS PRIOR TO PLACING WINDOW ORDER

REFER TO SECTION 311 FOR MEANS OF EGRESS PRIOR TO ORDERING DOORS



CROSS SECTION A/5a

SCALE: 1/4" = 1'-0"

ROOF CONSTRUCTION:

VERIFY RIDGE BOARD SIZE IN FIELD (LENGTH TO EXCEED PLUM CUT OF RAFTER)

2 x 10 RAFTERS @ 16" O.C. (U.N.O.)
2 x 8 COLLAR TIES @ 16" O.C.
2 x 8 CEILING JOISTS @ 16"
235# ASPHALT SHINGLES ON 15# BUILDING PAPER ON 5/8" PLYWOOD SHEATHING
ICE & WEATHER SHIELD AT RAFTER TAILS & VALLEYS
EAVE/RAKE: METAL DRIP EDGE
1x4 PINE BLOCKING (SUB-FASCIA)
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3/8" AC EXT. GD. PLYWD SOFFIT W/2" CONT. LOUVERED VENT (SOFFIT ONLY)

EXTERIOR WALL CONSTRUCTION:

2 x 6 WOOD STUDS @ 16" O.C. W/TYVEK (OR EQUAL) WIND BARRIER AND 1/2" PLYWD.
2 x 6 DOUBLE TOP PLATE
2 x 6 SINGLE BOTTOM PLATE

INTERIOR CONSTRUCTION:

2 x 4 WOOD STUDS @ 16" O.C.
2 x 4 DOUBLE TOP PLATE (LD. BRG. ONLY)
2 x 4 SINGLE BOTTOM PLATE
WALL- 1/2" GYPSUM WALL BOARD EA. SIDE STUD - MOISTURE-RESISTANT / FIRE-RATED WHERE REQUIRED
CLG.- 1/2" G.W.B. ON 1x3 WOOD STRAPPING @ 16"O.C.- MOISTURE-RESISTANT / FIRE-RATED WHERE REQUIRED
2x12 STAIR STRINGERS @ 12" O.C.

FLOOR CONSTRUCTION:

2x10 FLOOR JOISTS @ 16" O.C. WITH 3/4" TONGUE & GROOVE PLYWD. GLUED & NAILED (TYP. U.O.N.)

BUILT-UP BEAMS SIZED BY CONTRACTOR

FOUNDATION CONSTRUCTION:

8" CONCRETE FOUNDATION WALL WITH DBL. 2x6 P.T. SILL WITH SILL SEAL
8" CONC. FROST WALLS (WHERE SHOWN) TO 48" BELOW GD.
CONTINUOUS CONCRETE FOOTING - SIZE BY OTHERS
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INSULATION

WALLS: R-20 CAVITY INSULATION OR R-13 PLUS R-5
FLOOR: R-30 OR INSULATION SUFFICIENT TO FILL JOIST CAVITY
CEILING: R-38 (ZONE 5) OR R-49 (ZONE 6) - HOWEVER, IF MAINTAINING THE FULL R VALUE OVER THE PLATES (RAISED) R-30 (ZONE 5) OR R-38 (ZONE 6)

NOTE:
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5a

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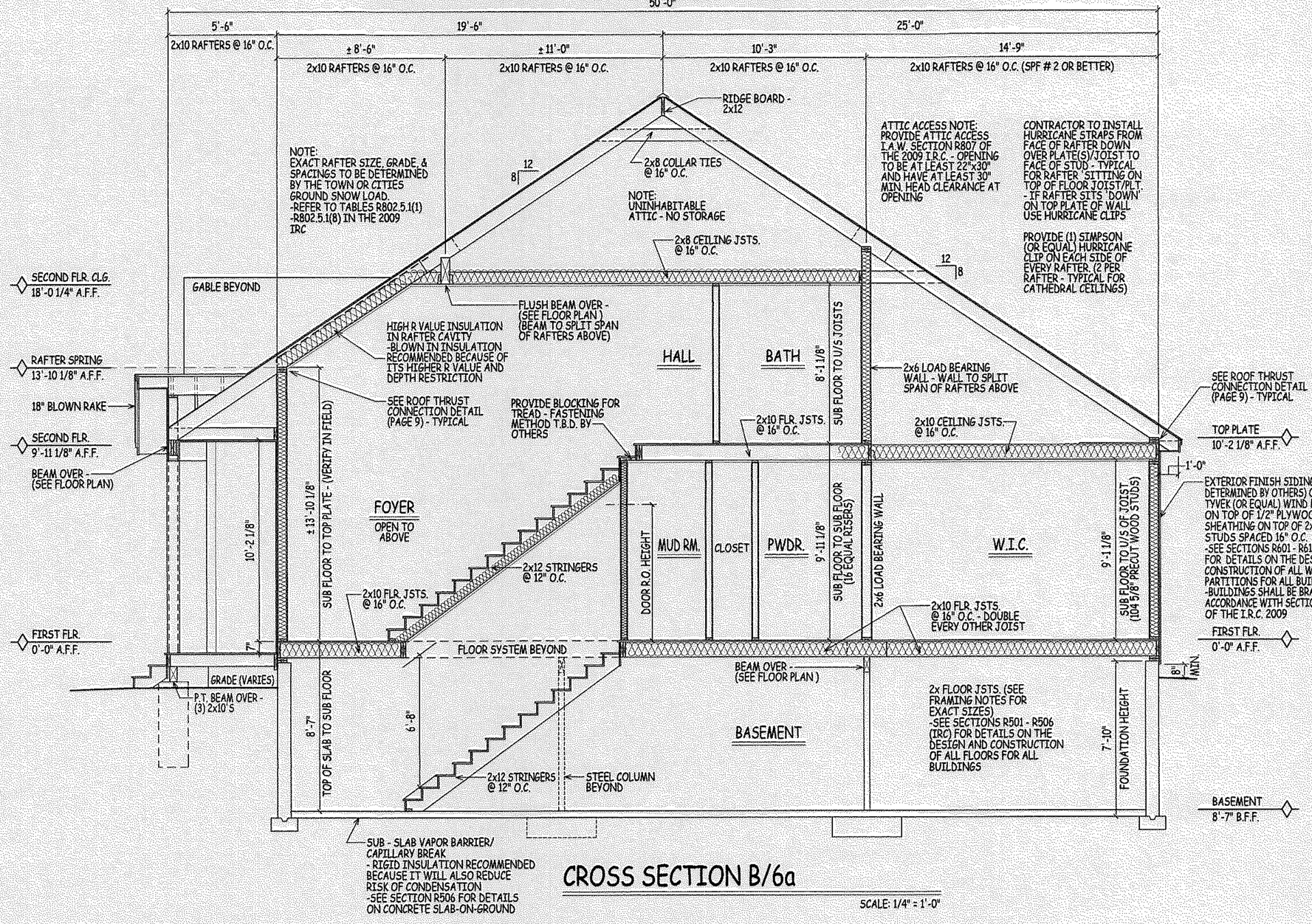

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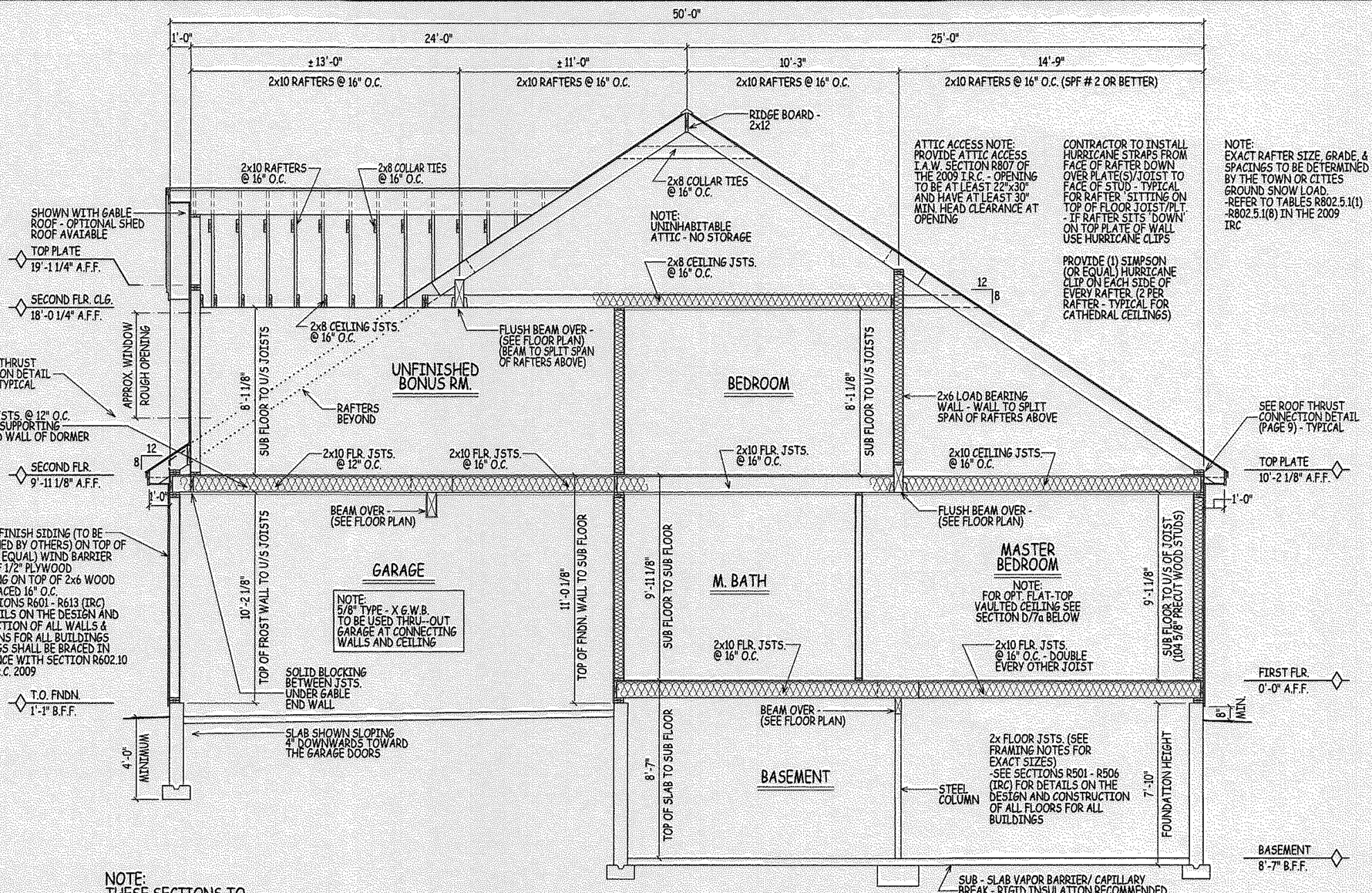
ENERGY EFFICIENCY NOTE:
COMPLIANCE SHALL BE DEMONSTRATED BY EITHER MEETING THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE 2009 OR MEETING THE REQUIREMENTS OF CHAPTER 11 IN THE 2009 INTERNATIONAL RESIDENTIAL CODE

ALL ENGINEERED STEEL/WOOD BEAMS TO BE CHECKED AND VERIFIED FOR LOCATION AND SPAN PRIOR TO START OF CONSTRUCTION BY CONTRACTOR AND OR BEAM MANUFACTURER (TYPICAL)

THE CONTRACTOR IS TO ENSURING WINDOWS MEET PREVAILING BUILDING AND LIFESAFETY CODES FOR MINIMUM EGRESS CLEAR OPENING HEIGHT, WIDTH, AND AREA - THE CONTRACTOR WILL ADJUST WINDOW SCHEDULE ACCORDINGLY.

REFER TO SECTIONS R612.2 FOR WINDOW SILL HEIGHT ABOVE GROUND (OR SURFACE BELOW) AND TO SECTION 310 FOR EGRESS WINDOWS & BASEMENTS PRIOR TO PLACING WINDOW ORDER

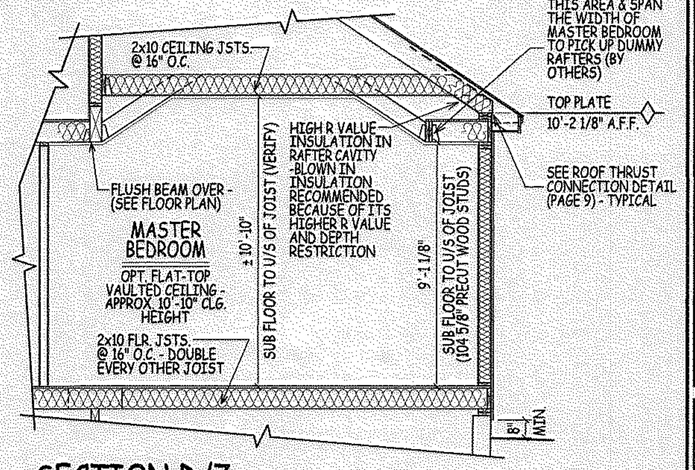
REFER TO SECTION 311 FOR MEANS OF EGRESS PRIOR TO ORDERING DOORS



NOTE:
THESE SECTIONS TO BE USED WITH FLOOR PLANS SHEET 2a, 3a & 4a.

CROSS SECTION C/7a

SCALE: 1/4" = 1'-0"



SECTION D/7a

SCALE: 1/4" = 1'-0"

ROOF CONSTRUCTION:

VERIFY RIDGE BOARD SIZE IN FIELD (LENGTH TO EXCEED PLUM CUT OF RAFTER)

2 x 10 RAFTERS @ 16" O.C. (U.N.O.)

2 x 8 COLLAR TIES @ 16" O.C.

2 x 8 CEILING JOISTS @ 16"

235# ASPHALT SHINGLES ON 15# BUILDING PAPER ON 5/8" PLYWOOD SHEATHING

ICE & WEATHER SHIELD AT RAFTER TAILS & VALLEYS

EAVE/RAKE: METAL DRIP EDGE
1x4 PINE BLOCKING (SUB-FASCIA)
1x8 PINE BD. FASCIA
3/8" AC EXT. GD. PLYWD SOFFIT W/2" CONT. LOUVERED VENT (SOFFIT ONLY)

EXTERIOR WALL CONSTRUCTION:

2 x 6 WOOD STUDS @ 16" O.C. W/TYVEK (OR EQUAL) WIND BARRIER AND 1/2" PLYWD.

2 x 6 DOUBLE TOP PLATE

2 x 6 SINGLE BOTTOM PLATE

INTERIOR CONSTRUCTION:

2 x 4 WOOD STUDS @ 16" O.C.

2 x 4 DOUBLE TOP PLATE (LD. BRG. ONLY)

2 x 4 SINGLE BOTTOM PLATE

WALL- 1/2" GYPSUM WALL BOARD EA. SIDE STUD - MOISTURE-RESISTANT / FIRE-RATED WHERE REQUIRED

CLG.- 1/2" G.W.B. ON 1x3 WOOD STRAPPING @ 16"O.C.- MOISTURE-RESISTANT / FIRE-RATED WHERE REQUIRED

2x12 STAIR STRINGERS @ 12" O.C.

FLOOR CONSTRUCTION:

2x10 FLOOR JOISTS @ 16" O.C. WITH 3/4" TONGUE & GROOVE PLYWD. GLUED & NAILED (TYP. U.O.N.)

BUILT-UP BEAMS SIZED BY CONTRACTOR

FOUNDATION CONSTRUCTION:

8" CONCRETE FOUNDATION WALL WITH DBL. 2x6 P.T. SILL WITH SILL SEAL

8" CONC. FROST WALLS (WHERE SHOWN) TO 48" BELOW GD.

CONTINUOUS CONCRETE FOOTING - SIZE BY OTHERS

REFER TO SECTION R404.1.2.2 FOR HORIZONTAL AND VERTICAL REINFORCEMENT FOR FOUNDATION WALLS

PROVIDE MATCHING CORNER DOWELS LAP 50 BAR DIAMETERS (TYPICAL)

PROVIDE 3 1/2" DIA. STEEL COLUMNS OVER CONCRETE FOOTINGS AS REQ'D FOR BEAMS SHOWN ON PLAN

INSULATION

WALLS: R-20 CAVITY INSULATION OR R-13 PLUS R-5

FLOOR: R-30 OR INSULATION SUFFICIENT TO FILL JOIST CAVITY

CEILING: R-38 (ZONE 5) OR R-49 (ZONE 6) - HOWEVER, IF MAINTAINING THE FULL R VALUE OVER THE PLATES (RAISED) R-30 (ZONE 5) OR R-38 (ZONE 6)

FSM DRAWINGS
Sasha Bird
03101
27 Lowell Street
Manchester, New Hampshire
T| (603)305.5861
www.fsmdrawings.com

PROJECT: THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR: GREEN&CO

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
DATE ISSUED:	09/06/18
SCALE:	AS INDICATED
JOB NO.:	FSM17-206CA

REVISIONS

16	08/27/18	THE CALLAWAY & RILEY REVISED PER REQUEST - ISSUED FOR REVIEW AND STAMP
17	09/06/18	BEAM LOCATION UPDATED ON THE ABBOT - ISSUED FOR REVIEW AND STAMP
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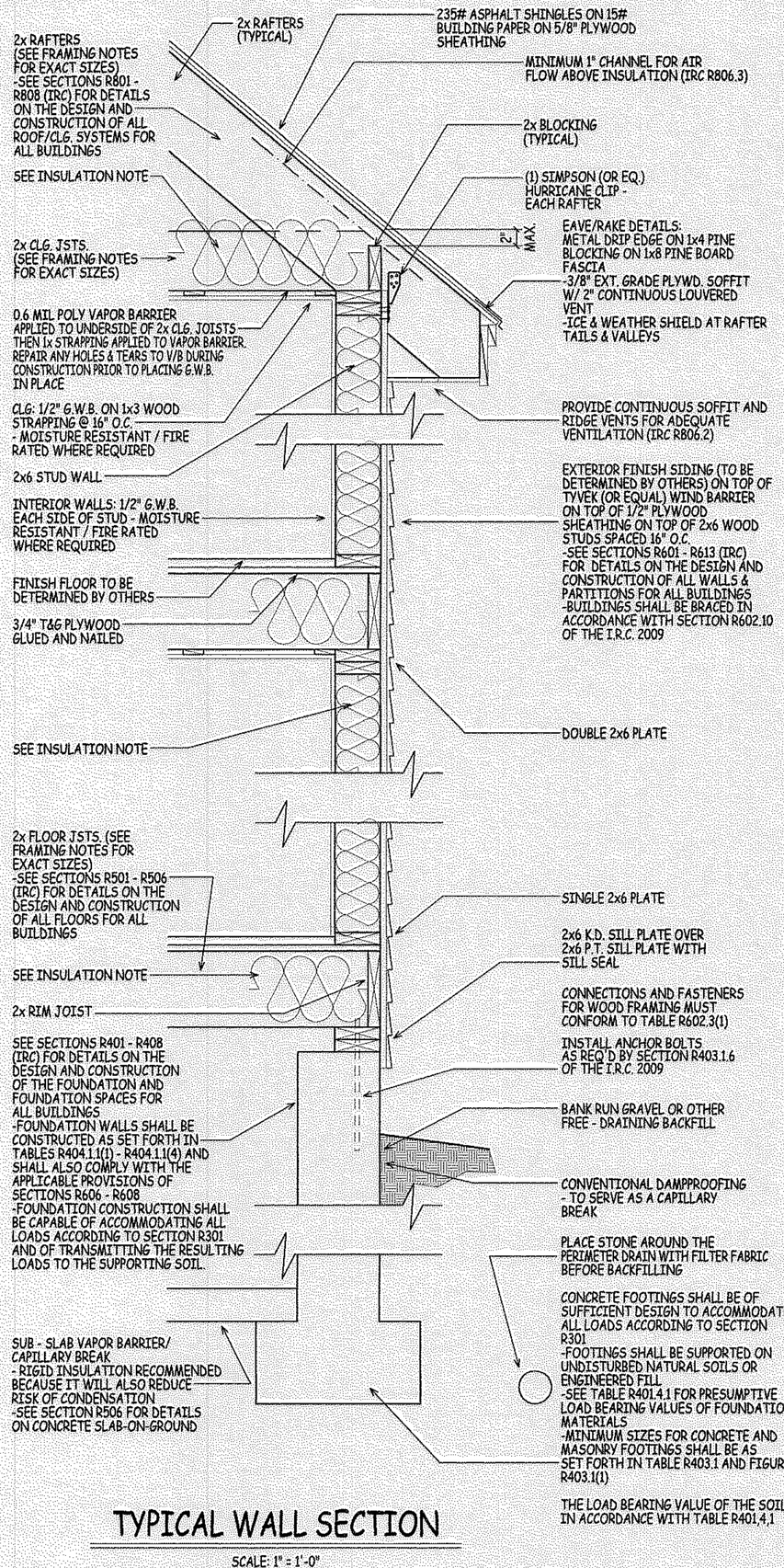
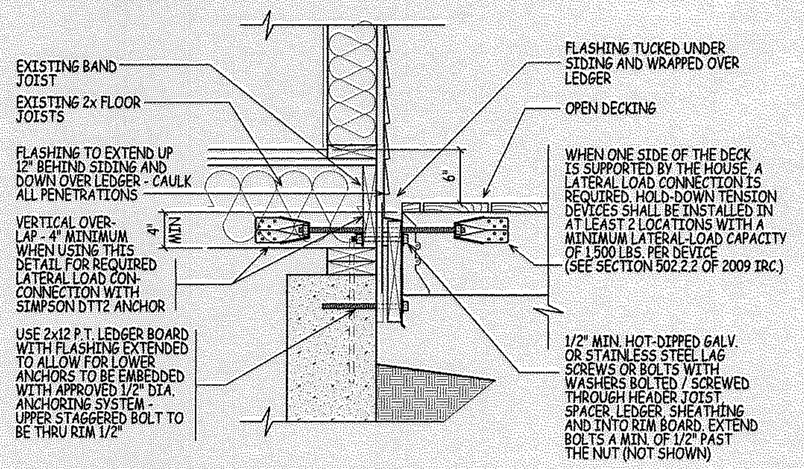
7a



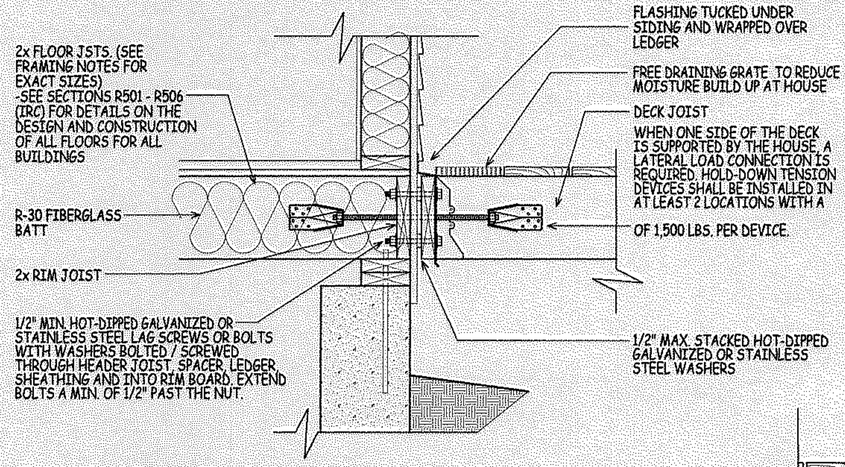
TYPICAL WALL SECTION

SCALE: 1" = 1'-0"



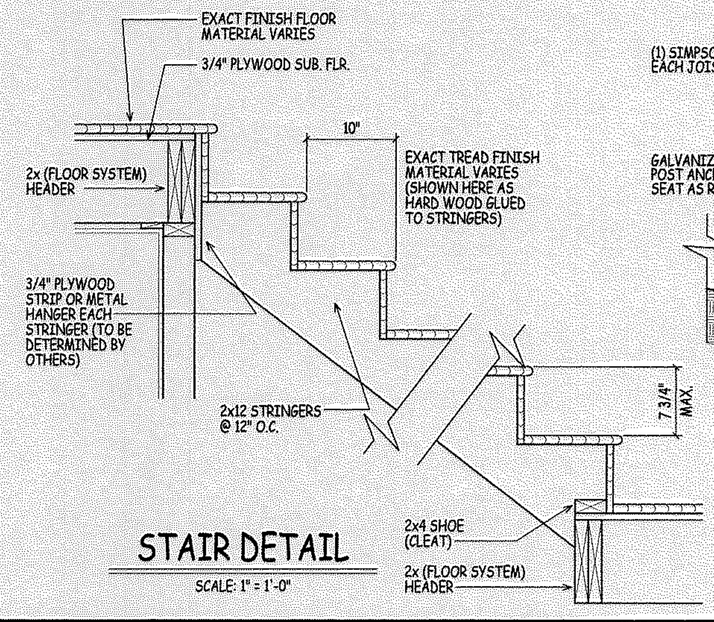
DECK DETAIL - STEP DN. OPTION CONNECTION

SCALE: 1" = 1'-0"



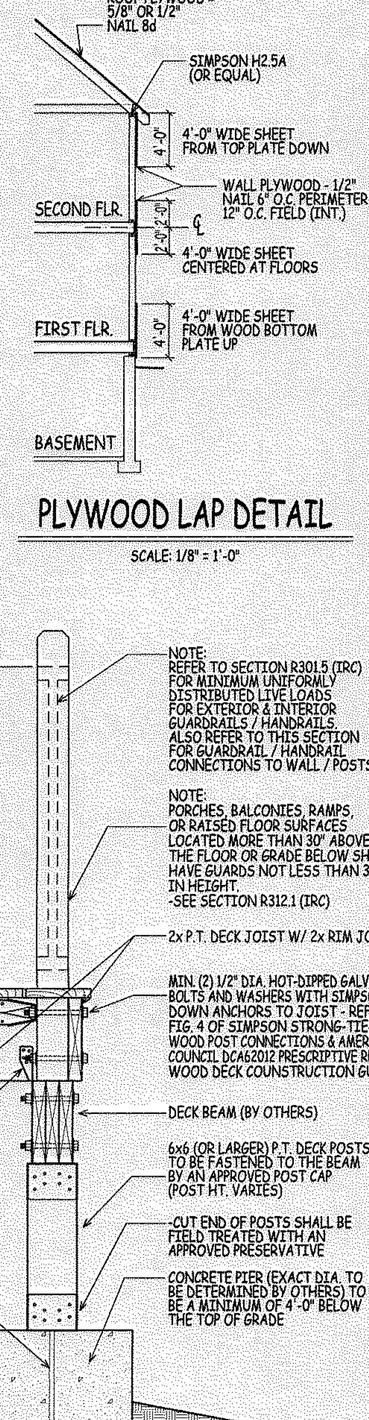
DECK DETAIL - NO STEP OPTION CONNECTION

SCALE: 1" = 1'-0"



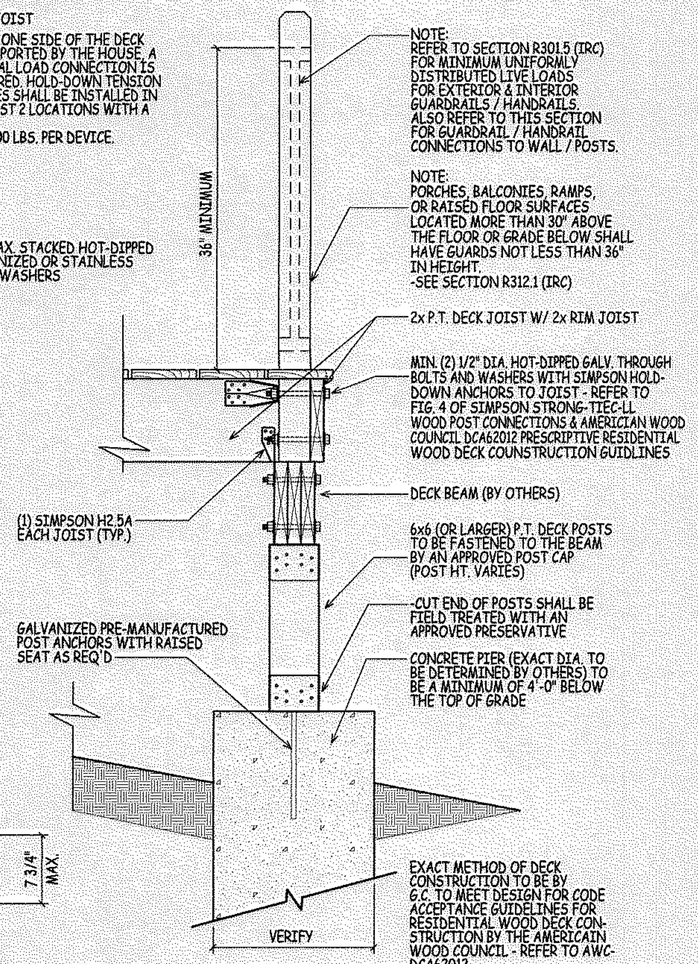
STAIR DETAIL

SCALE: 1" = 1'-0"



PLYWOOD LAP DETAIL

SCALE: 1/8" = 1'-0"



TYPICAL DECK DETAILS

SCALE: 1" = 1'-0"

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87 Lowell Street Suite 205
Manchester, New Hampshire 03101
[T] 603.836.5846 [E] fsmdrawings@gmail.com
[F] 603.836.5861 www.fsmdrawings.com

PROJECT: THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR:

GREEN&CO

DRAWN BY:	MM/JW
CHECKED BY:	MM
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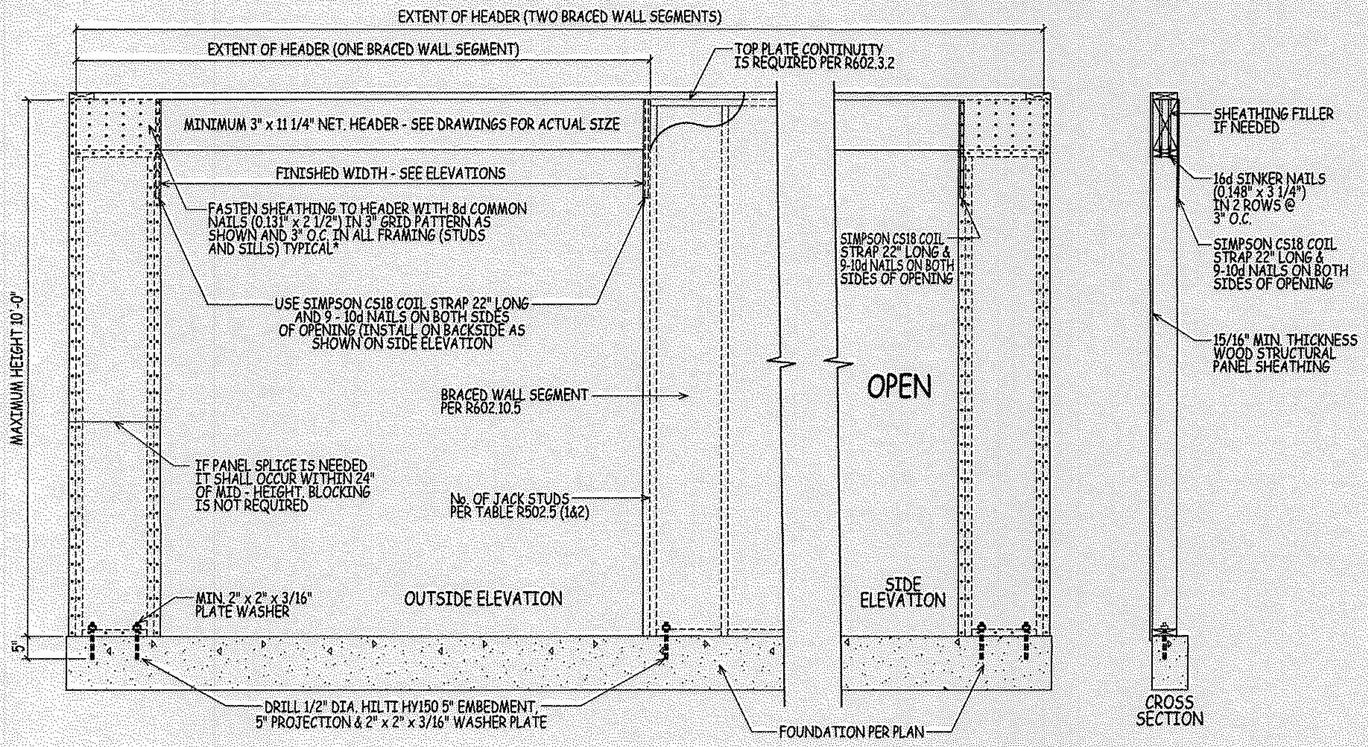
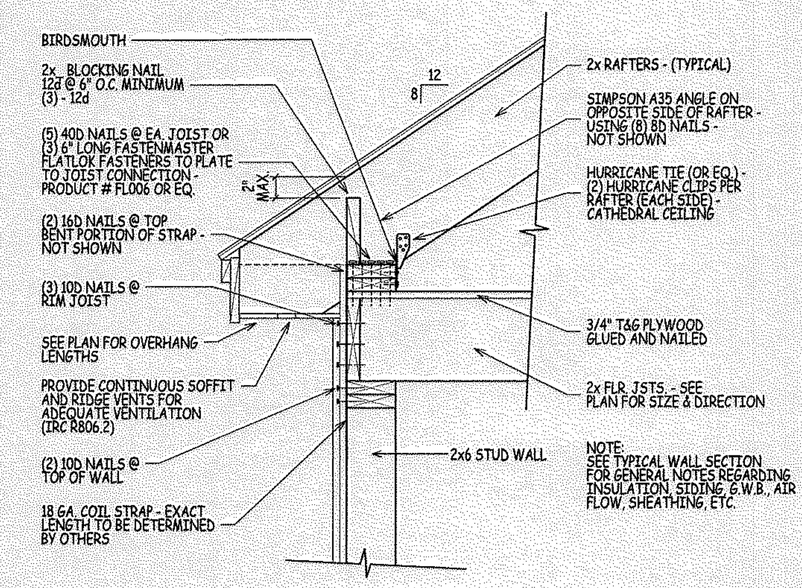
8



NARROW WALL OVER CONCRETE OR MASONRY BLOCK FOUNDATION

FIGURE R602.10.3.4

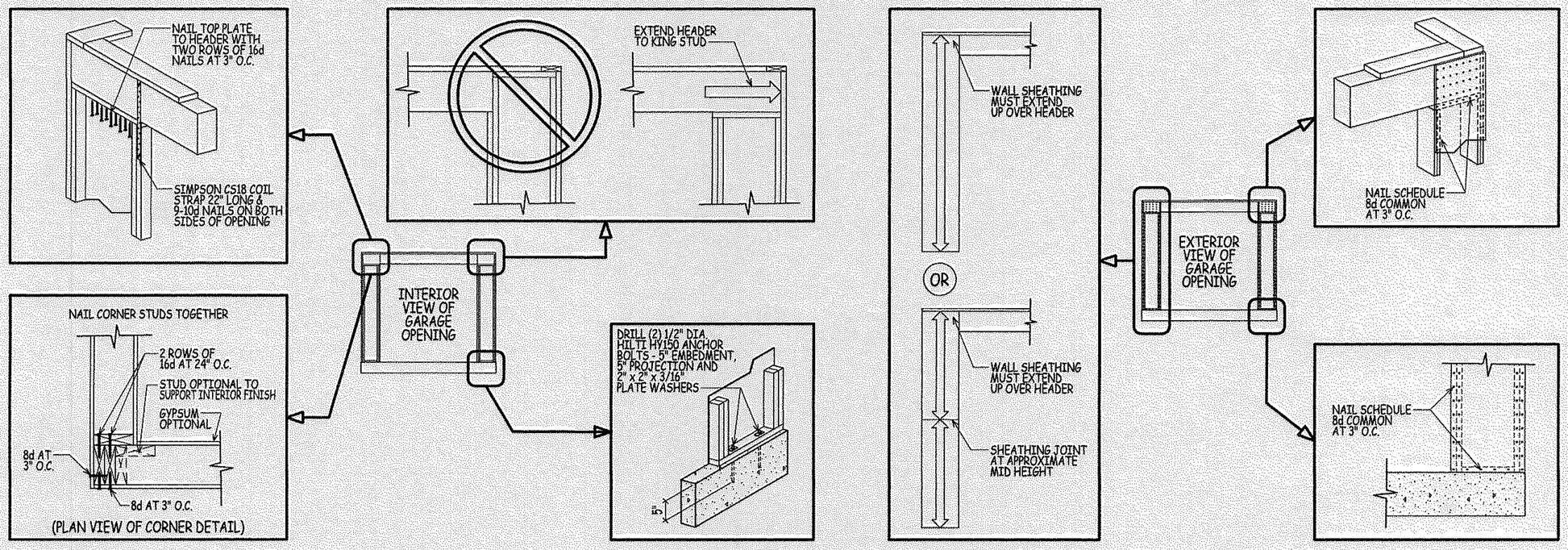


ROOF THRUST CONNECTION DETAIL

SCALE: 1" = 1'-0"

DETAIL AT GARAGE OVERHEAD DOORS

NOT TO SCALE



APA NARROW WALL BRACING METHOD FRAMING TIPS (FORM F435)

THE APA NARROW WALL BRACING METHOD IS A SIMPLE, SITE - BUILT SOLUTION THAT ALLOWS BUILDERS TO CONSTRUCT SEGMENTS AS NARROW AS 16" NEXT TO WINDOW AND DOOR OPENINGS. BE SURE TO CHECK FOR THESE ESSENTIAL DETAILS WHEN CONSTRUCTING THE APA NARROW WALL BRACING METHOD AROUND GARAGE OPENINGS.

APA PUBLICATION G440 "WHOLE HOUSE BRACING" IS AVAILABLE FOR ADDITIONAL INFORMATION.

FSM DRAWINGS
22 Lowell Street, Suite 200, Manchester, New Hampshire 03101
p) 603.625.5881 f) 603.625.5883 www.fsmdrawings.com

PROJECT: THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR: GREEN&CO

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
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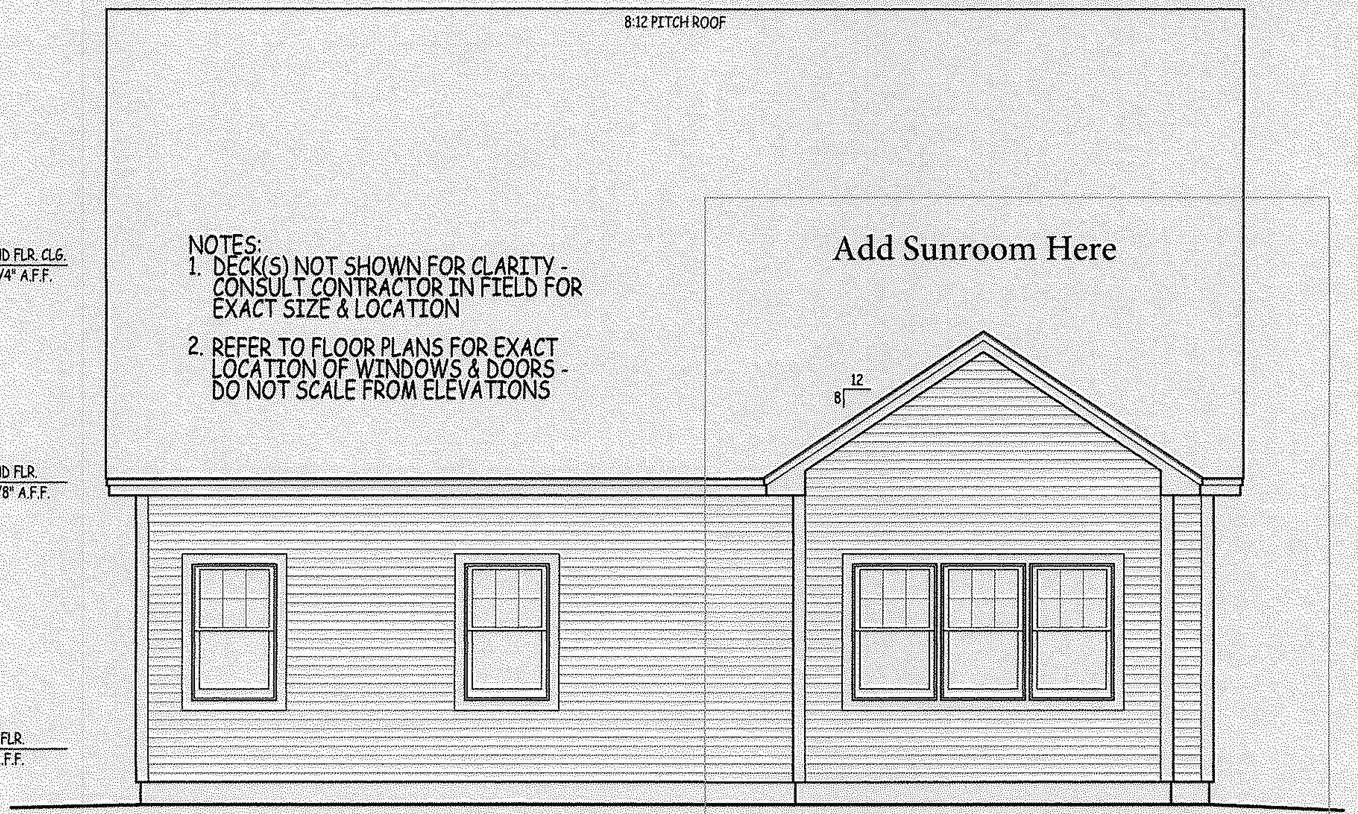
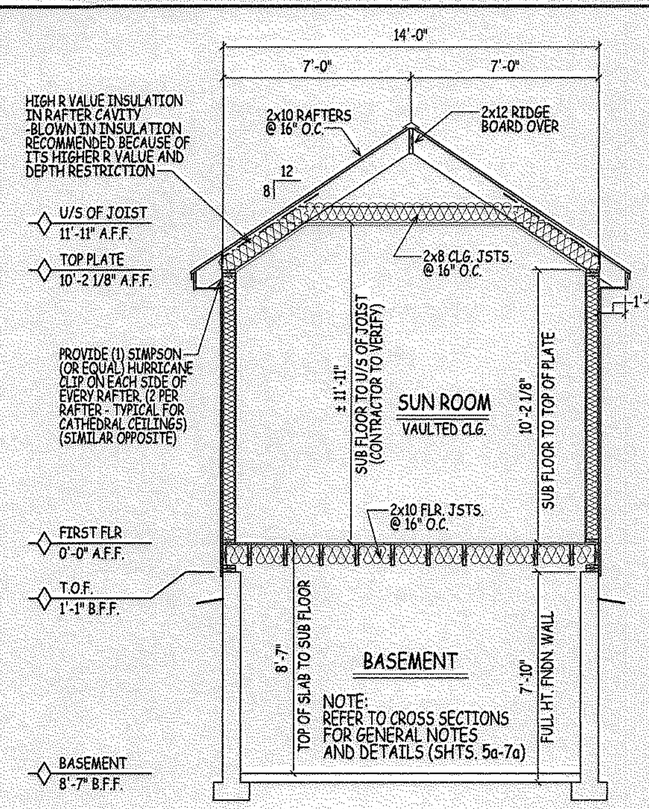


REAR ELEVATION

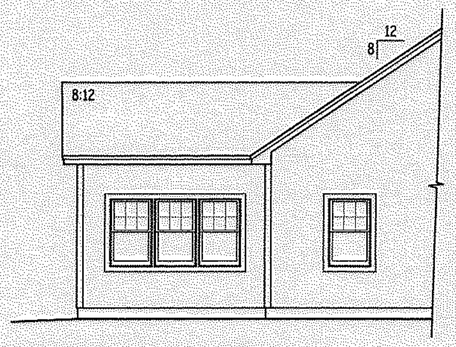
(SUN ROOM OPTION)

SCALE: 1/4" = 1'-0"



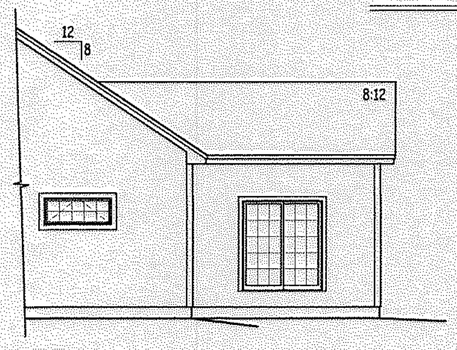
SUN ROOM CROSS SECTION

SCALE: 1/4" = 1'-0"



LEFT ELEVATION

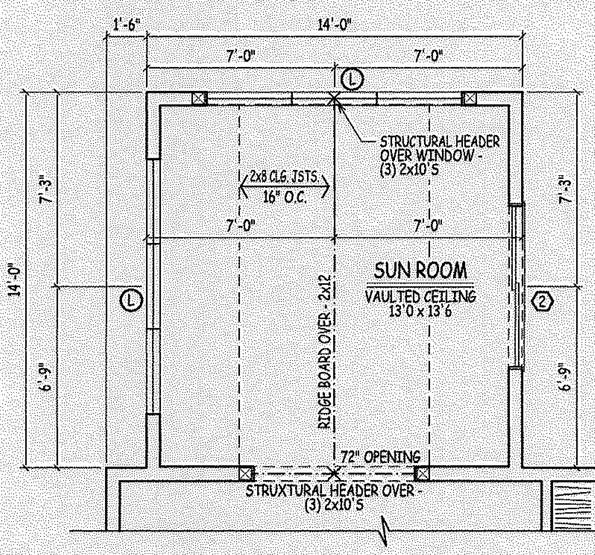
SCALE: 1/8" = 1'-0"



RIGHT ELEVATION

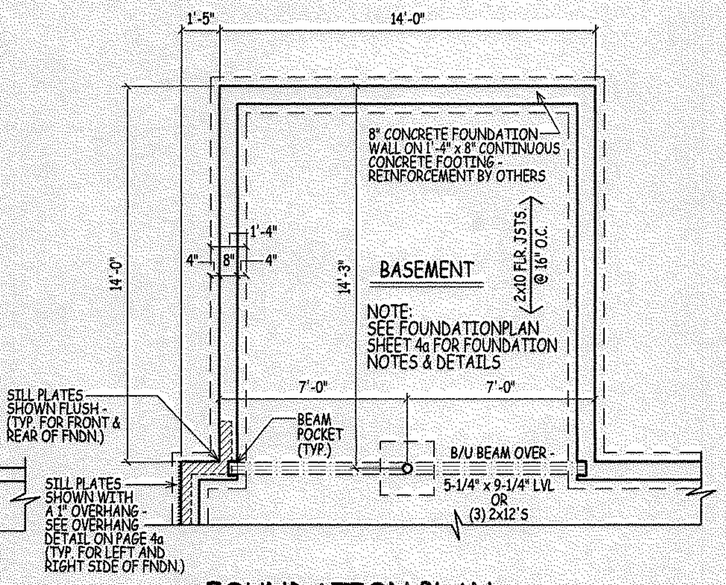
SCALE: 1/8" = 1'-0"

NOTE:
THIS PAGE TO BE USED
WITH SHEETS 1a, 2a, 3a, & 4a



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

FSM DRAWINGS
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Manchester, New Hampshire
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www.fsmdrawings.com

PROJECT:
THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR:
GREEN&CO

DRAWN BY:	MM/JW
CHECKED BY:	MM
DATE DRAWN:	09/06/18
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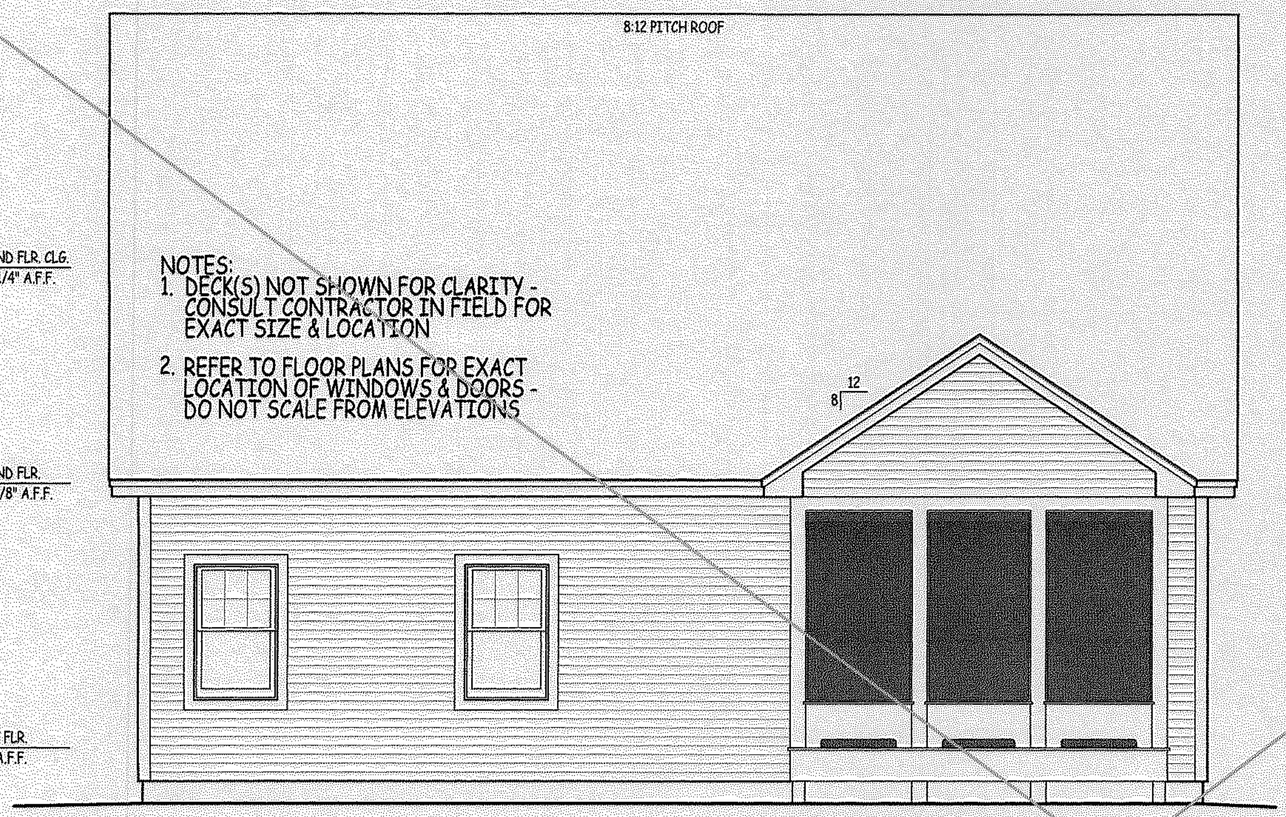
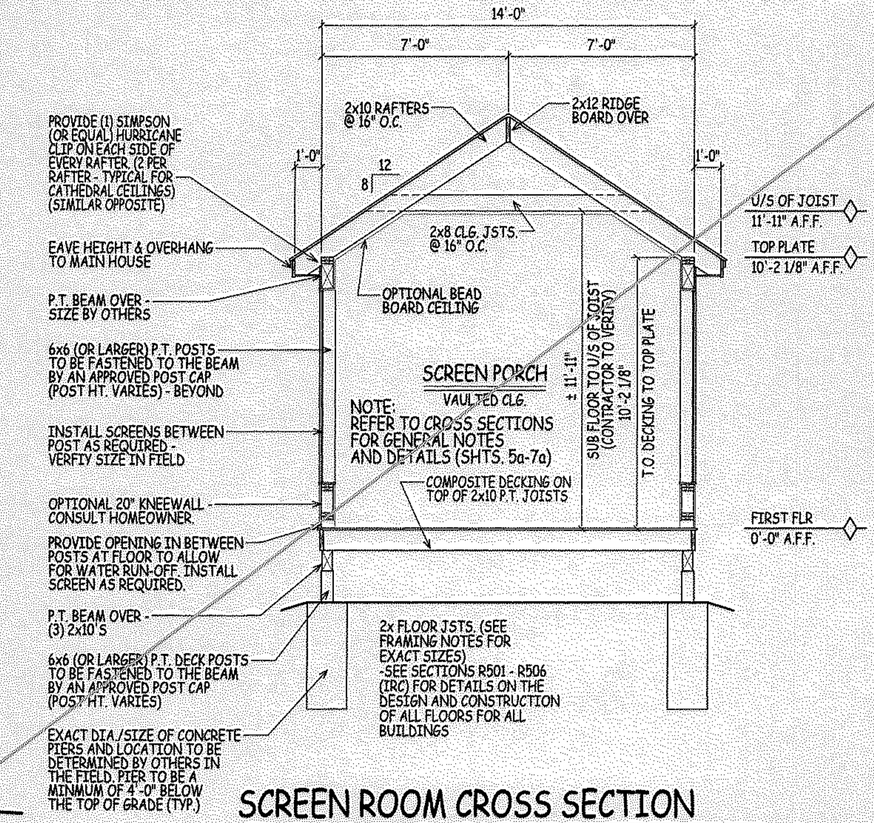
10a



REAR ELEVATION

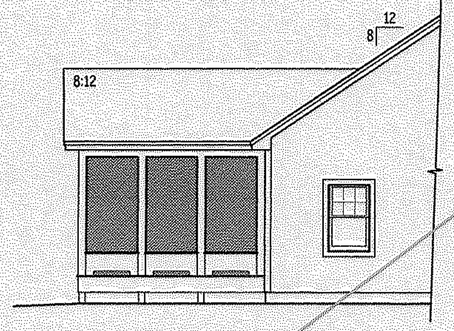
(SCREEN ROOM OPTION)

SCALE: 1/4" = 1'-0"



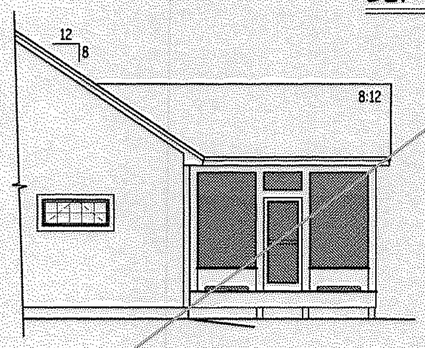
SCREEN ROOM CROSS SECTION

SCALE: 1/4" = 1'-0"



LEFT ELEVATION

SCALE: 1/8" = 1'-0"



RIGHT ELEVATION

SCALE: 1/8" = 1'-0"

NOTE:
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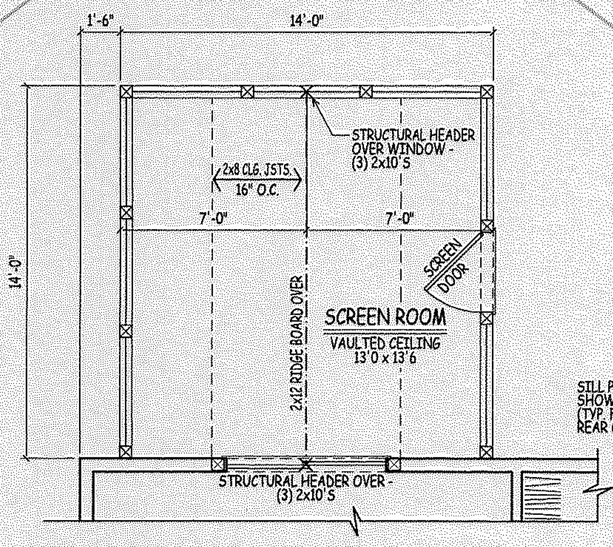
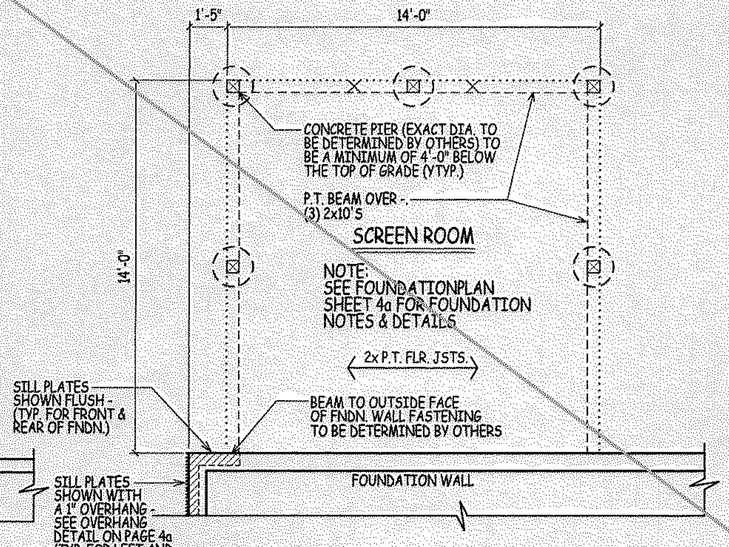


FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

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Manchester, New Hampshire 03101
P (603) 232-8439 www.fsmdrawings.com
F (603) 625-2865 www.fsmdrawings.com

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THE ABBOT
PAGE FARM - ATKINSON, NH

PREPARED FOR:
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11a

934.126 GL Aurelia

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2302 SF	0 SF	0 SF	2302 SF	2302 SF	2302 SF
Bedrooms	3	1	0	4	3	4
Baths	2.5	0.0	0.0	2.5	2.5	2.5

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http://www.artformhomeplans.com/TermsConditions.a5w

Artform Home Plans

Dear Builders and Home Buyers,

In addition to our Terms and Conditions (the "Terms"), please be aware of the following:

This design may not yet have Construction Drawings (as defined in the Terms), and is, therefore, only available as a Design Drawing (as defined in the Terms and together with Construction Drawings, "Drawings'). It is possible that during the conversion of a Design Drawing to a final Construction Drawing, changes may be necessary including, but not limited to, dimensional changes. Please see Plan Data Explained on www.ArtformHomePlans.com to understand room sizes, dimensions and other data provided. We are not responsible for typographical errors.

Artform Home Plans ("Artform") requires that our Drawings be built substantially as designed. Artform will not be obligated by or liable for use of this design with markups as part of any builder agreement. While we attempt to accommodate where possible and reasonable, and where the changes do not denigrate our design, any and all changes to Drawings must be approved in writing by Artform. It is recommended that you have your Drawing updated by Artform prior to attaching any Drawing to any builder agreement. Artform shall not be responsible for the misuse of or unauthorized alterations to any of its Drawings.

Facade Changes:

- To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Artform.
- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

Floor plan layout and/or Structural Changes:

- Structural changes always require the express written consent of Artform
- If you wish to move or remove walls or structural elements (such as removal of posts, increases in house size, ceiling height changes, addition of dormers, etc), please do not assume it can be done without other additional changes (even if the builder or lumber yard says you can).

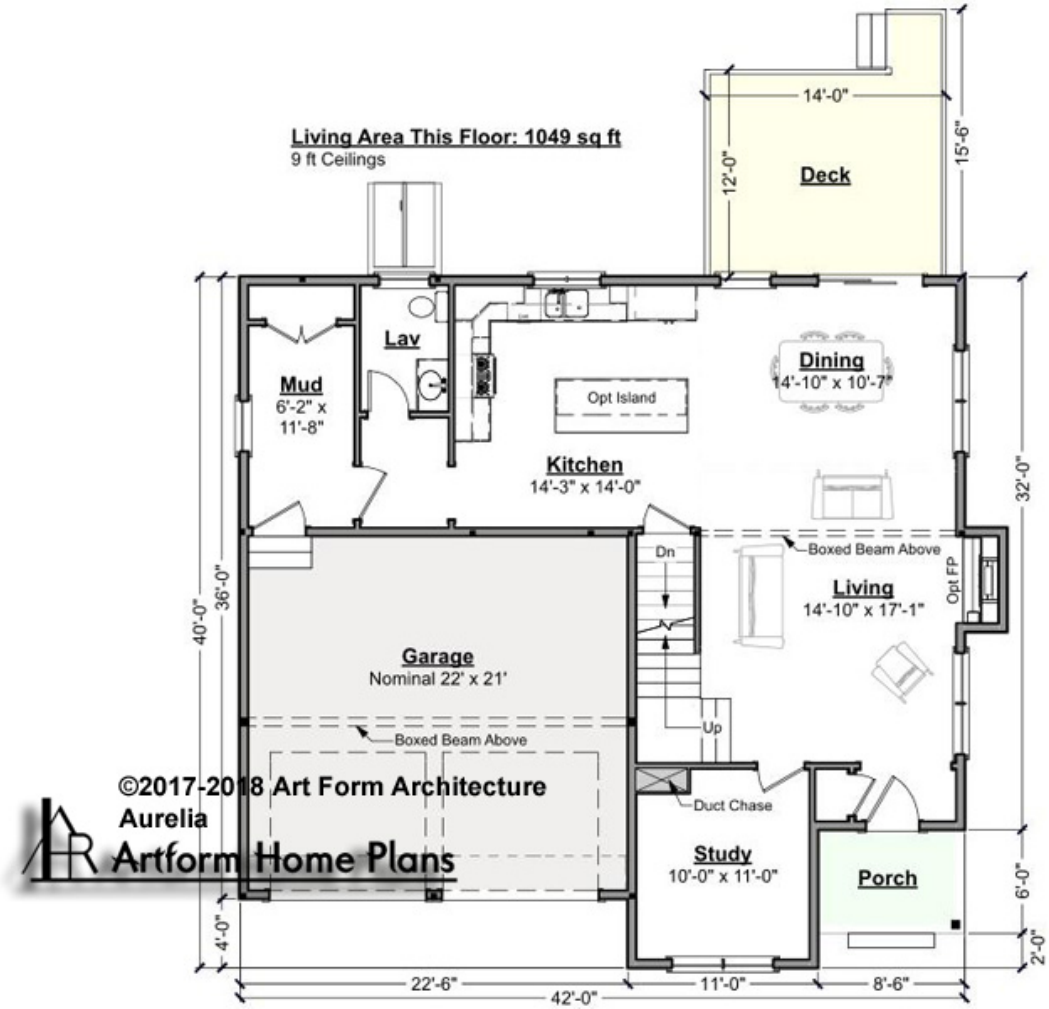
934.126 GL Aurelia

First Floor

	Area	Beds	Baths
Main	1049 SF	0	0.5
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**1049 SF**	**1**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



934.126 GL Aurelia

Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1253 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1253 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost

Some features show are optional. Your Purchase & Sale Agreement governs, whether items are labeled "optional" in this document or not.

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934.126 GL Aurelia

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	9'-0"

* See Major Change information on plan page for cost

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934.126 GL Aurelia

Artform Home Plans

Front Elevation

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934.126 GL Aurelia

Artform Home Plans

Right Elevation

934.126 GL Aurelia

Artform Home Plans

Rear Elevation

934.126 GL Aurelia

Artform Home Plans

Left Elevation

1016.124 GL Carter

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2670 SF	0 SF	0 SF	2670 SF	2670 SF	2670 SF
Bedrooms	3	0	0	3	3	3
Baths	2.5	0.0	0.0	2.5	2.5	2.5

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In addition to our Terms and Conditions (the "Terms"), please be aware of the following:

This design may not yet have Construction Drawings (as defined in the Terms), and is, therefore, only available as a Design Drawing (as defined in the Terms and together with Construction Drawings, "Drawings'). It is possible that during the conversion of a Design Drawing to a final Construction Drawing, changes may be necessary including, but not limited to, dimensional changes. Please see Plan Data Explained on www.ArtformHomePlans.com to understand room sizes, dimensions and other data provided. We are not responsible for typographical errors.

Artform Home Plans ("Artform") requires that our Drawings be built substantially as designed. Artform will not be obligated by or liable for use of this design with markups as part of any builder agreement. While we attempt to accommodate where possible and reasonable, and where the changes do not denigrate our design, any and all changes to Drawings must be approved in writing by Artform. It is recommended that you have your Drawing updated by Artform prior to attaching any Drawing to any builder agreement. Artform shall not be responsible for the misuse of or unauthorized alterations to any of its Drawings.

Facade Changes:

- To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Artform.
- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

Floor plan layout and/or Structural Changes:

- Structural changes always require the express written consent of Artform
- If you wish to move or remove walls or structural elements (such as removal of posts, increases in house size, ceiling height changes, addition of dormers, etc), please do not assume it can be done without other additional changes (even if the builder or lumber yard says you can).

1016.124 GL Carter

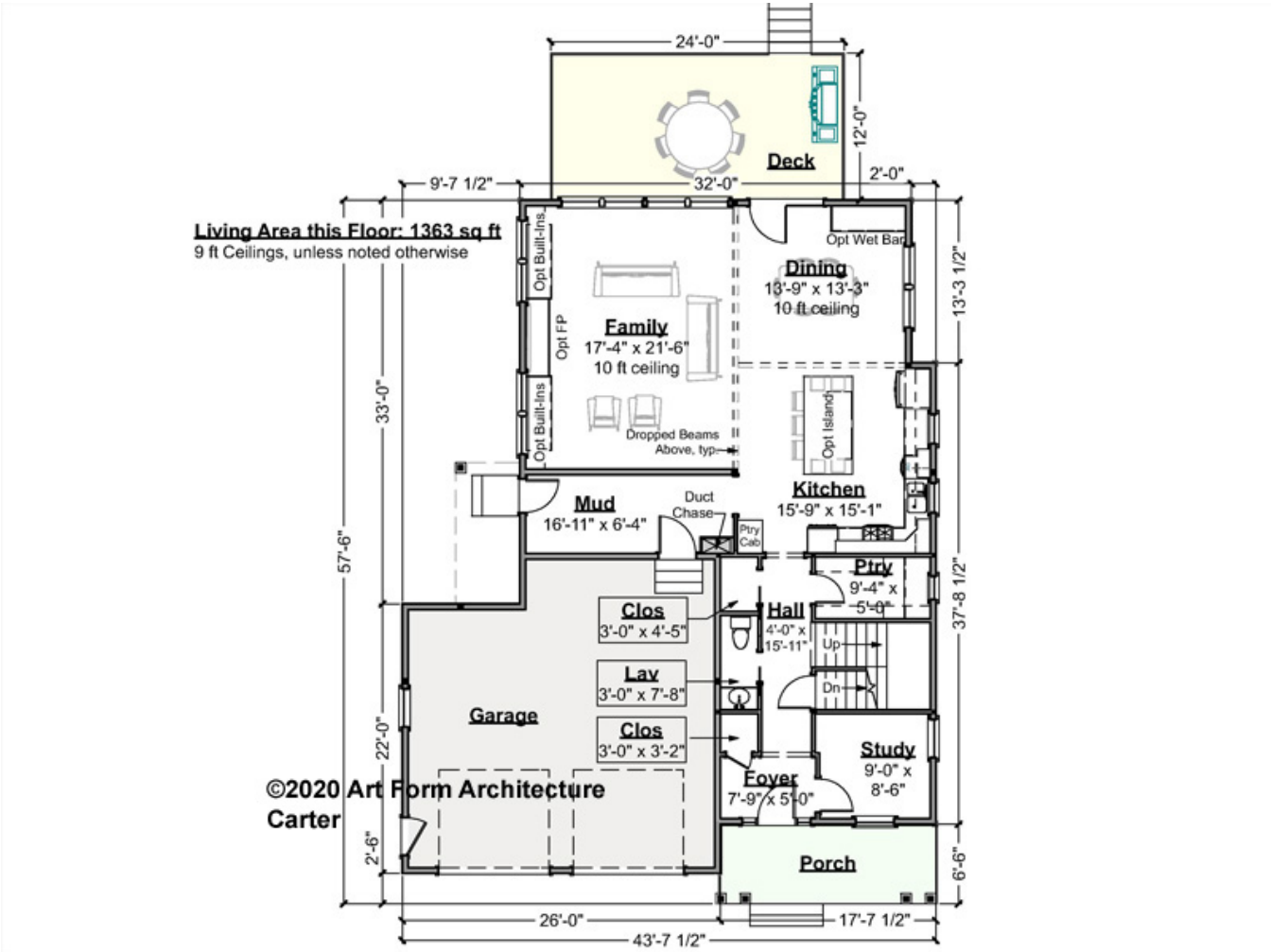
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	1363 SF	0	0.5
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1363 SF**	**0**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	9'-0"

* See Major Change information on plan page for cost



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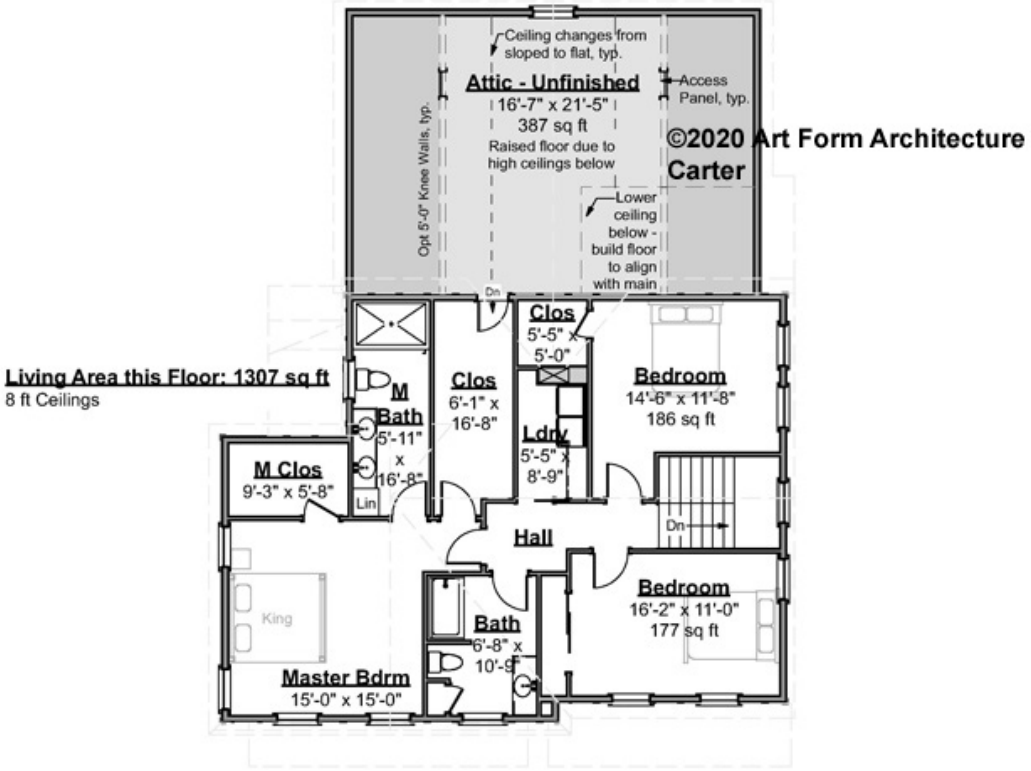
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1307 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1307 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



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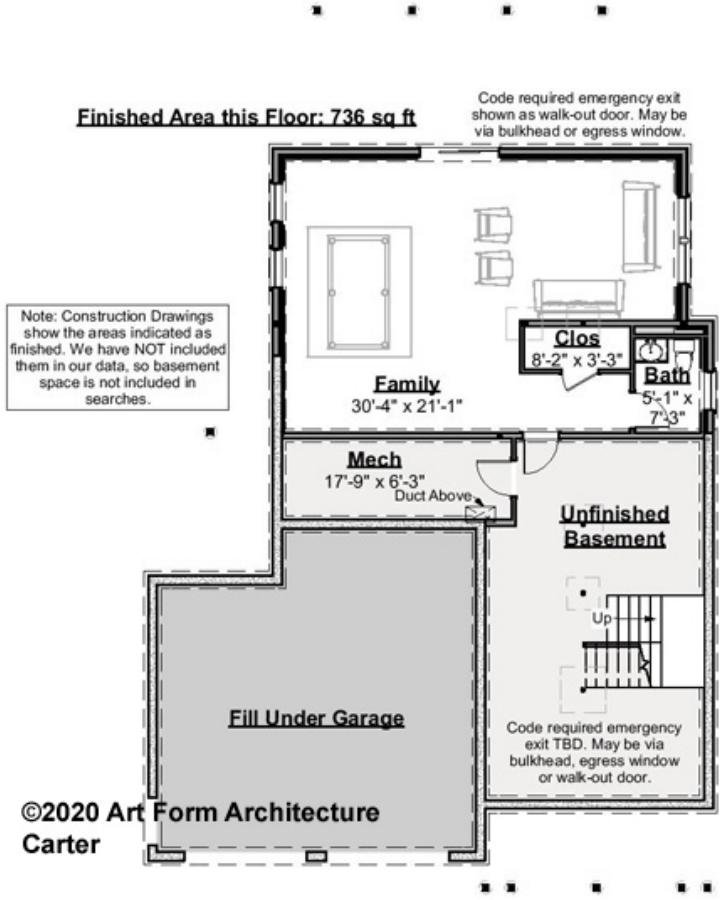
Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	8'-4"

* See Major Change information on plan page for cost



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Artform Home Plans

Front Elevation

Some features show are optional. Your Purchase & Sale Agreement governs, whether items are labeled "optional" in this document or not.

We are not responsible for typographical errors.

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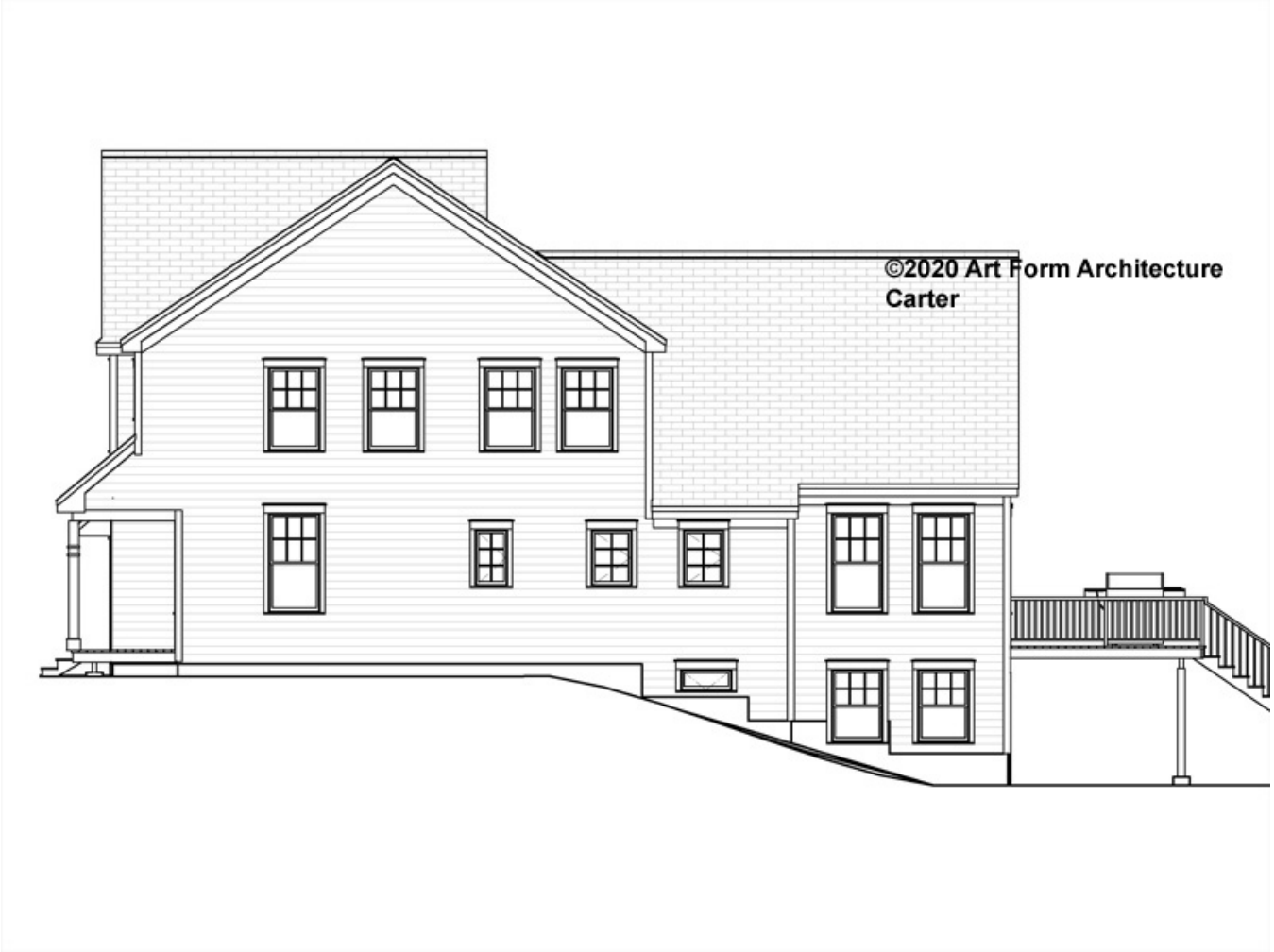
Artform Home Plans

Right Elevation



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Artform Home Plans

Rear Elevation

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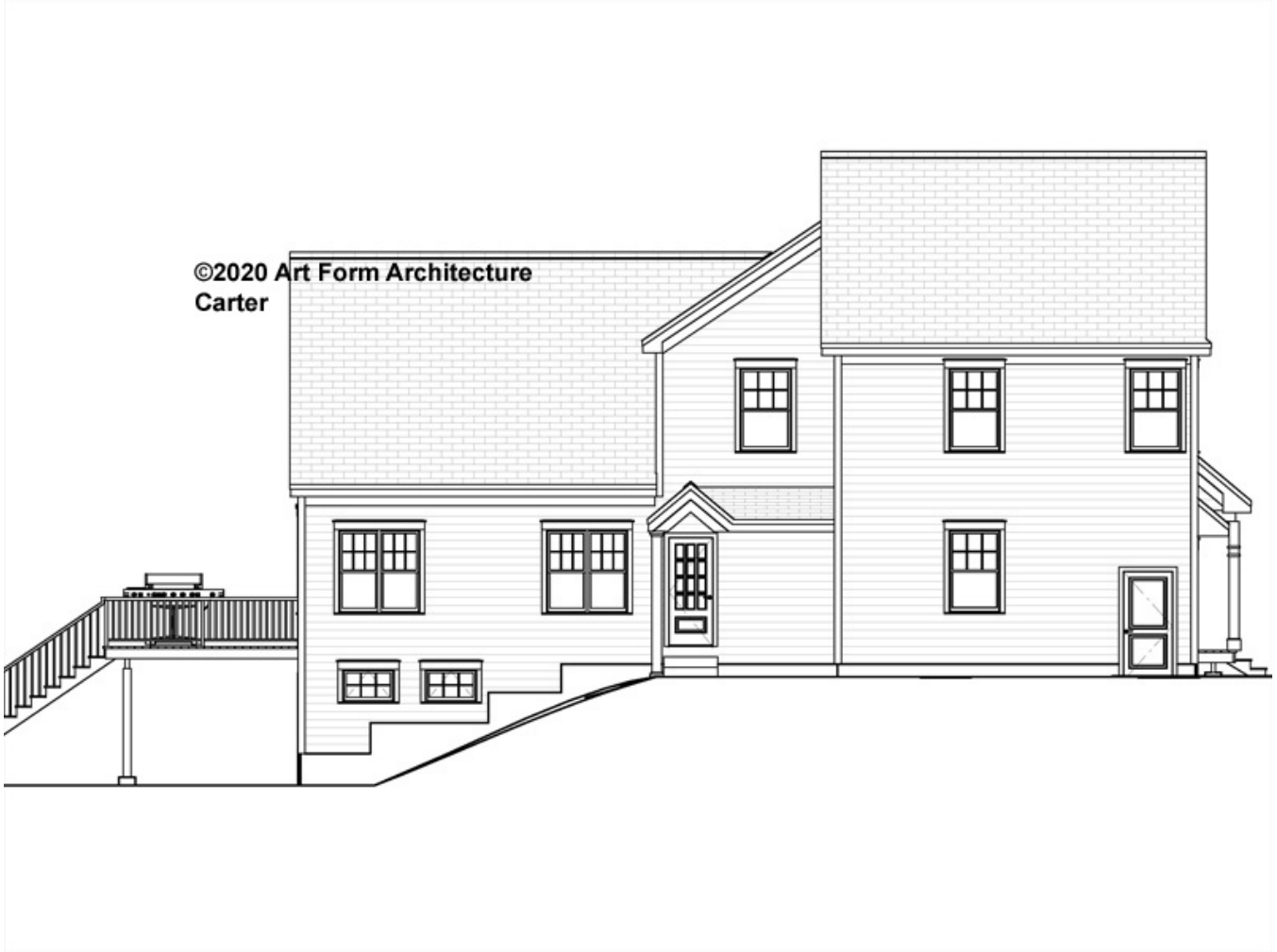
Artform Home Plans

Left Elevation



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Artform Home Plans

Rear Render

Wall Types

Exterior walls 2x6 wood stud
Interior walls 2x4 wood stud, unless noted otherwise

Wall Keys

(2) 2x wood studs on the flat
(3) 2x3 wood stud wall, 16" oc
(6) 2x6 wood stud wall, 16" oc
Note: 2x4 wood stud wall, 16" oc unless otherwise noted

Key Notes

A — 30" x 22" Minimum Attic Access Panel - Insulated (RO 34" x 26")
F — Field locate for plumbing or mechanical
V — Verify size of fixture or appliance Adjust dimensions to accommodate
S — Snug - Door or Window trim will be snug and may need to be cut down
C — Center - Place door or window centered on wall
D — Double Stud or structural mull – adapt to suit chosen window brand. Object is to have some "bite" for curtain hardware and exterior aesthetics.
SD — Smoke Detector
CO — Carbon Monoxide Detector
HD — Heat Detector

Dimensions

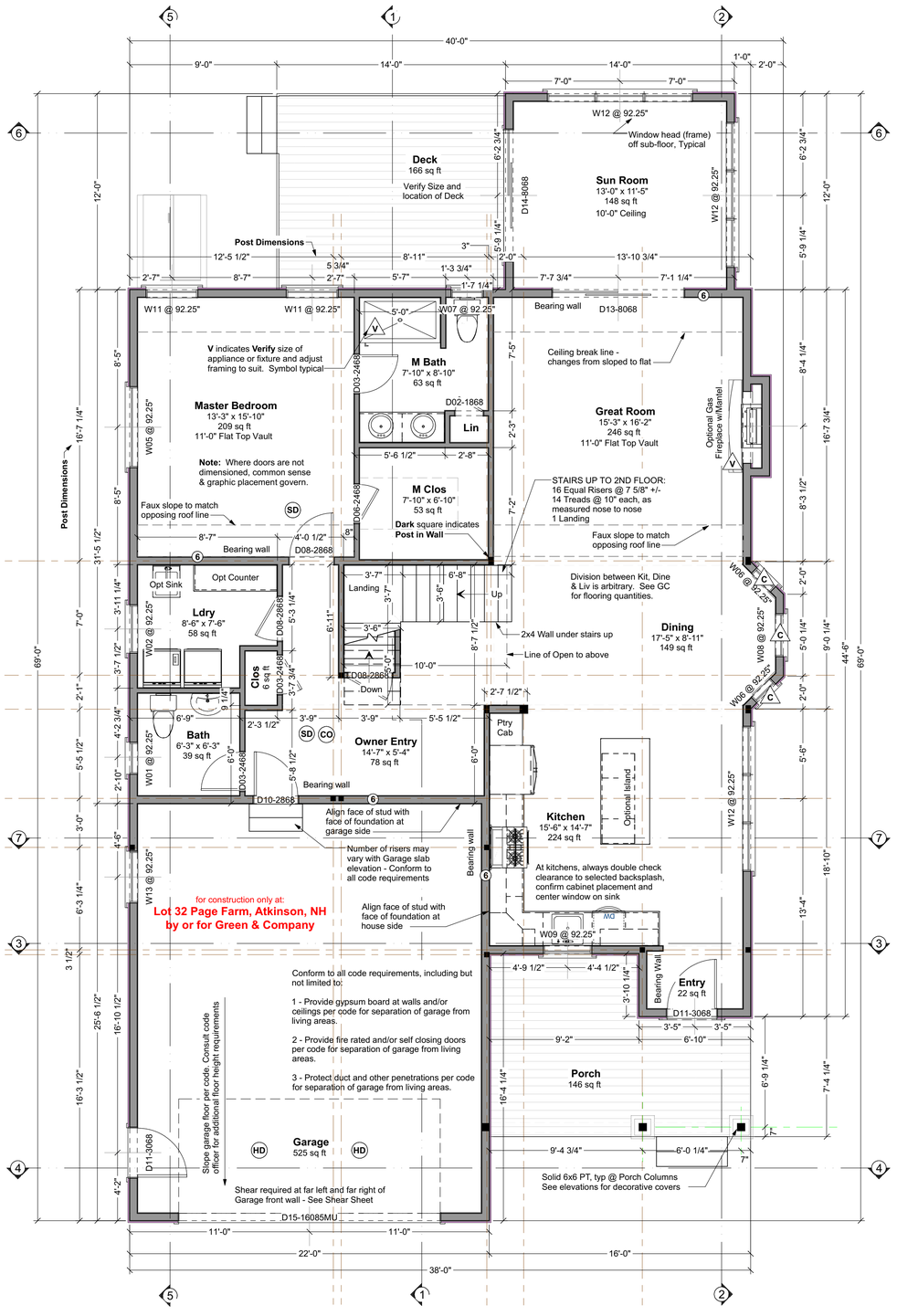
1. Dimensions are to face of stud, unless noted otherwise.
2. Closets are 24" clear inside, unless dimensioned otherwise.

Square Footages

1. Sq ft numbers are interior to room for use in calculating finishes.
2. Cabinets and fixtures not subtracted.
3. Add for doorways when floor finishes run through.

Notes

1. Exterior walls 2x6 wood stud @ 16" oc. Provide insulation & vapor barrier conforming to state or local codes. Interior sheathing 1/2" gypsum board. Provide 1/2" exterior rated sheathing, house wrap with drainage plane and siding. Provide step flashing at walls adjacent to roof planes.
2. Interior walls 2x4 wood stud @ 16" oc, unless noted otherwise.
3. Roof - see structural for rafter sizes. Provide 5/8" exterior rated roof sheathing 15# roofing felt, ice & water shield at eaves and valleys, aluminum drip edge and asphalt shingles or metal roofing. Structure not calculated to support slate or tile. Flash all penetrations. Provide cricket at any added chimneys.
4. Provide roof and/or ceiling insulation per code. Provide soffit and ridge vents where required for insulation strategy. (Verify with code officer - closed cell spray foam or dense-pack cellulose installed at rafters and filling ridge and eaves generally contra-indicates venting, batt insulation always requires venting).
5. Provide smoke detectors where shown, where required by code and where required by local authorities.
6. Provide fire resistive materials where required by code, including but not limited to, firestopping at penetrations, 1/2" drywall on walls and 5/8" drywall on ceilings to separate garage (where garage present in design) from dwelling, and separation of dwellings (where more than one dwelling present in design), and protection of flammable insulation materials.
7. Compliance with code requirements for rooms size and clearances, (hallway widths, room sizes, etc) assume 1/2" drywall on walls and 1/2" drywall on 3/4" strapping on ceilings. Adjust as required if materials differ.
8. Shear is only called out where Continuous Portal Frame will not suffice. See Section R602.10.4 (Pages 173 - 179) of the IRC 2009.



First Floor Plan

1/4" scale

Living Area this Floor: 1562 sq ft
9ft Finished Ceilings (Unless Noted Otherwise)

NOTE TO HOMEOWNER:
These construction plans ARE NOT a part of your construction contract with your builder, unless your P&S agreement specifies that they are. Your P&S and it's attachments (like the builder's specifications or a review set of this design) describes what you and your builder agreed the builder would build for you. We here at Artform Home Plans do not have the authority to obligate your builder to provide you with amenities like fireplaces and spa tubs. The contract between you and your builder governs.

Balmalcolm

Dear Code Officer,

These are predesigned home plans, designed to bring good design and construction drawings to people at more affordable prices and faster time frames than traditional architecture. Where traditional "Internet" home plans disclaim all responsibility, we split responsibility between us (Artform) and the owner. We encourage the future homeowners to use a quality builder who can assist them with this. They are responsible for thermal and moisture decisions and for meeting code in ways that a quality builder should know without an explicit detail. We are responsible for things that are directly related to the design and/or that a quality builder couldn't reasonably figure out on their own - specifically the following IRC 2009 code sections:

1 - Room sizes (Section R304)
2 - Ceiling Height (Section R305)
3 - Floor space & ceiling height at Toilet, Bath and Shower Spaces (Section R307)
4 - Hallway widths (Section R311.6)
5 - Door types & sizes (Section R311.2)
6 - Floor space in front of doors (Section R311.3)
7 - Stair width - The stairs in our designs will be a minimum of 36" wide measured wall surface to wall surface, allowing compliance with R311.7.1 with installation of correct handrail.
8 - Stairway headroom (Section R311.7.2)
9 - Stair treads and risers (Section R311.7.5)
10 - Landings for stairways (Section R311.7.6)
11 - Emergency Escape Window Sizes (Section R310.2.1, R310.2.2, R310.2.3 and R310.2.4). Casement windows may require manufacturer's emergency escape window hardware. Will also comply with NFPA 101.
12 - Structural Floor Framing (Section R502.3) Where dimensional lumber is shown, framing members will be sized according to this section of the code. Where engineered wood products are shown, those framing members will be size according to the manufacturer's tables for loads and spans, or sizes will have been calculating using manufacturer's published materials properties.
13 - See structural sheets for additional notes.

The builder can and should add information to this set, such as Rescheck, a hand markup of our generic thermal and moisture section, additional information about doors and windows (such as fire rating, tempering, etc), foundation drops relative to site grading, and sometimes their chosen method of basement egress. These drawings are not intended to be used without that additional information.

Where a construction address is shown on the drawings, it is for copyright control only. We have not inspected the site, adapted the design to state specific laws (except where it says so in the drawings) or site or region specific climate conditions. Homeowner and/or Builder shall be responsible for thermal and moisture control strategies, materials choices and compliance with applicable laws and ordinances.

Please do feel free to call us with any questions. We can and do update our drawings and standard notes to address specific concerns, especially in jurisdictions where our clients will be building again.

Dear Everybody,

With these drawings a copyright license is granted for a single construction only at Lot 32 Page Farm, Atkinson, NH by or for Green & Company. This is a License to Build, and does not include a License to Modify, except as required to conform to building code or fulfill builder's/owners responsibilities.

Permissible uses of these drawings:

1. All activities associated with construction at the listed address.
2. Pricing or preliminary discussions with zoning or code officials for construction at other addresses, with prior notification to Artform Home Plans - just use the Contact form on the web site – http://www.artformhomeplans.com/contact.a5w

Not Permitted:

1. Application for any permits or other approvals for construction at properties other than the listed address, including but not limited to construction, zoning, conservation, or design review.
2. Modification of the basic design.

Use of these drawings outside these parameters is a violation of federal copyright law, punishable by both civil action and criminal prosecution, as it is stealing or enabling theft of "intellectual property". Making modifications to plans, even significant ones, does not change this, under copyright law, that's considered "derivative works".

We can provide drawings suitable for use in obtaining design or zoning approvals without incurring the expense of a full set of construction drawings. Contact us for more information.
AFHP CD Commons 18.4 X19

These drawings are intended for use by an experienced professional builder in responsible charge of the entire project, including but not limited to mechanical, electrical and sitework. Any additional adaptation for these trades or other trades must be determined prior to start of construction. Contact Artform for any adjustments needed.

Your use of these drawings constitutes an acceptance of responsibility as outlined in "Dear Code Officer" on the first page of these drawings, and on our web site: http://www.artformhomeplans.com/TermsConditions.a5w

If you have any concerns or questions, please feel free to contact us. We are happy to clarify matters that fall within our scope, as listed on the first page. We can also often provide affordable support for issues that are your responsibility, such as energy design/calcs, or additional detailing.

Artform Home Plans
AFHP Design # 540.126.v16 ER

Balmalcolm
Lot 32 Page Farm
Atkinson, NH

1

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 6/13/2019, drawn by ACJ

Issued for:
Construction

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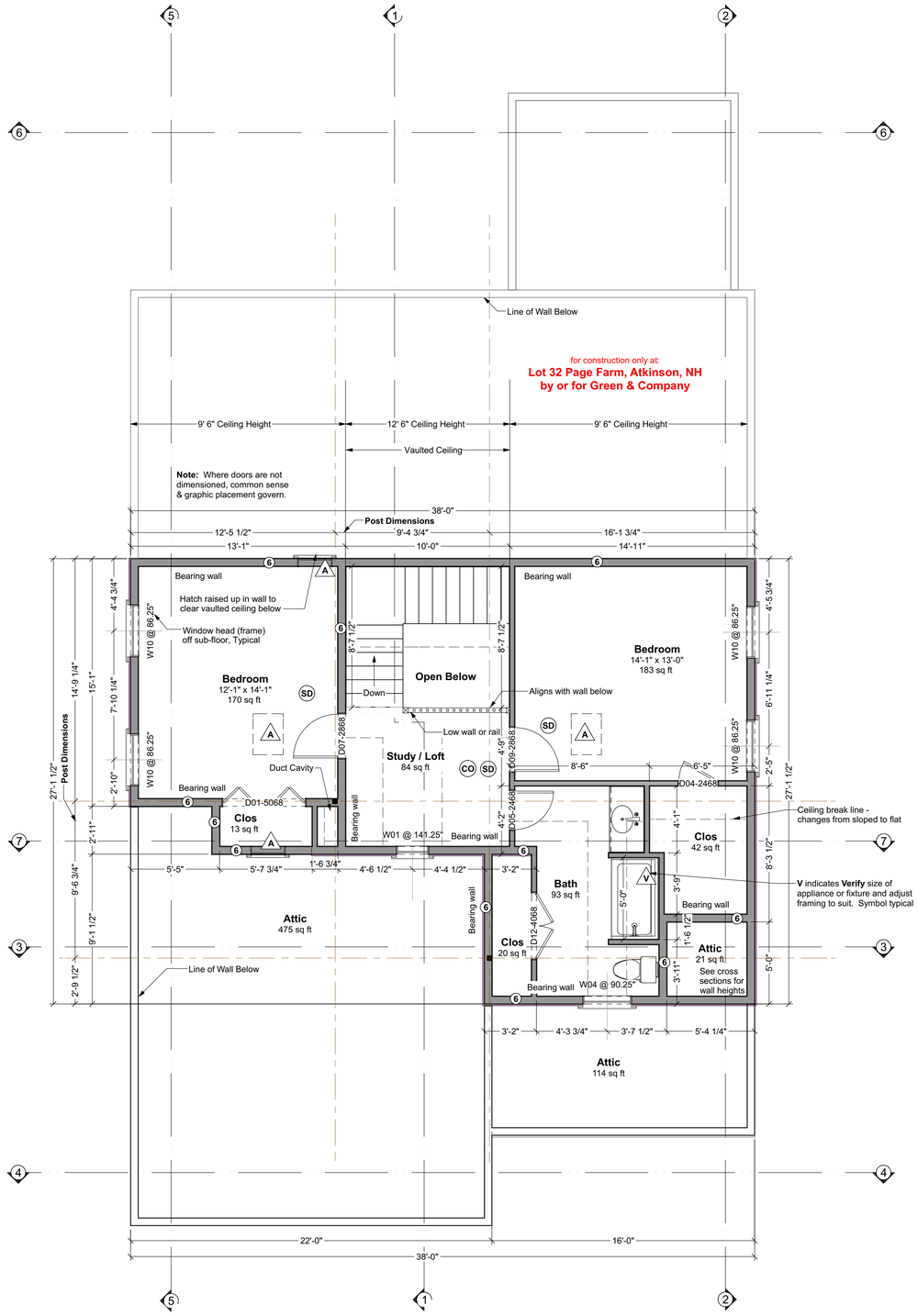
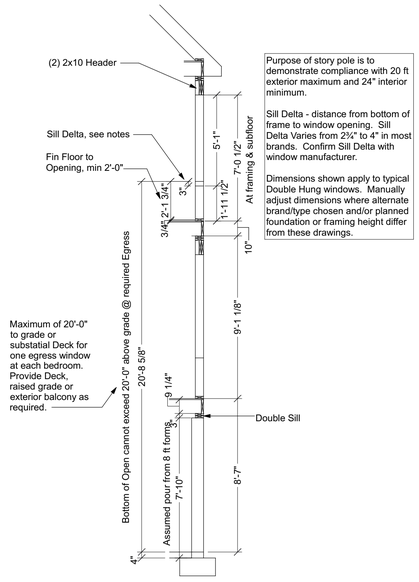


Second Floor Plan

1 0 1 2 3 4

Living Area this Floor: 793 sq ft
9'-6" Ceilings, unless noted otherwise



Purpose of story pole is to demonstrate compliance with 20 ft exterior maximum and 24" interior minimum.

Sill Delta - distance from bottom of frame to window opening. Sill Delta Varies from 2½" to 4" in most brands. Confirm Sill Delta with window manufacturer.

Dimensions shown apply to typical Double Hung windows. Manually adjust dimensions where alternate brand/type chosen and/or planned foundation or framing height differ from these drawings.

Window Story Pole

Scale ¼"=1'-0"

Door & Window Notes

1. **Rated Doors:** Provide fire rated and/or self-closing doors where required by local codes or local authorities
2. **Trimmed Openings:** Trimmed openings not shown on schedule. See Plan.
3. **Window Tempering:** Provide tempered windows where required by local codes or local authorities. Tempering column provided here for convenience. Windows have not been reviewed for tempering requirements.
4. **Window RO's:** 1/4" or 1/2" on each of 4 sides allowed for window RO's, typical. Review framing size vs RO size. Adjust per manufacturer's requirements and/or builder preference.
5. **Egress Windows:** Provide minimum one door or window meeting egress requirements in basement, in each sleeping room, in each potential sleeping room, and other locations required by local code, in sizes required by local code. Note that casement windows coded by manufacturer as meeting IRC 2006 egress requirements typically need to be ordered with specific hardware. Emergency Escape Window Sizes (Section R310.1.1, R310.1.2, R310.1.3 and R310.1.4). Will also comply with NFPA 101.
6. **Basement Windows:** Add basement windows as required to meet state or local code requirements, including but not limited to egress and light/ventilation.
7. **Skylights:** Skylights are not shown on this schedule, but may be required. Consult builder and/or see floor plan.
8. **Minimum window sill height:** IRC 2009 and later requires that floor window sills be 24" from floor. Confirm bottom of window opening relative to frame. Adjust head heights as required to conform to IRC

DOOR SCHEDULE

NUMBER	QTY	FLOOR	SIZE	WIDTH	HEIGHT	TYPE	COMMENTS
D01	1	2	5068 L/R	60 "	80 "	4 DR. BIFOLD	
D02	1	1	1868 R IN	20 "	80 "	HINGED	
D03	3	1	2468 L IN	28 "	80 "	HINGED	
D04	1	2	2468 R IN	28 "	80 "	HINGED	
D05	1	2	2468 L IN	28 "	80 "	HINGED	
D06	1	1	2468 R IN	28 "	80 "	HINGED	
D07	1	2	2868 L IN	32 "	80 "	HINGED	
D08	3	1	2868 R IN	32 "	80 "	HINGED	
D09	1	2	2868 R IN	32 "	80 "	HINGED	
D10	1	1	2868 L EX	32 "	80 "	HINGED	
D11	2	1	3068 R EX	36 "	80 "	HINGED	
D12	1	2	4068 L/R IN	48 "	80 "	DOUBLE HINGED	
D13	1	1	8068 R IN	96 "	80 "	SLIDER	
D14	1	1	8068 L EX	96 "	80 "	SLIDER	
D15	1	1	16085	192 "	101 "	MULLED UNIT	GARAGE W/ TRANSOM

WINDOW SCHEDULE

NUMBER	QTY	WIDTH	HEIGHT	R/O	EGRESS	TEMPERED	DESCRIPTION	MANUFACTURER	COMMENTS
W01	2	23 1/2 "	23 1/2 "	24"X24"			SINGLE AWNING		
W02	1	35 1/2 "	23 1/2 "	36"X24"			SINGLE AWNING		
W03	1	35 1/2 "	35 1/2 "	36"X36"			SINGLE AWNING		
W04	1	35 1/2 "	35 1/2 "	36"X36"		YES	SINGLE AWNING		
W05	1	59 1/2 "	23 1/2 "	60"X24"			SINGLE AWNING		
W06	2	19 1/2 "	65 1/2 "	20"X66"			DOUBLE HUNG		
W07	1	23 1/2 "	51 1/2 "	24"X52"		YES	DOUBLE HUNG		
W08	1	31 1/2 "	65 1/2 "	32"X66"			DOUBLE HUNG		
W09	1	35 1/2 "	47 1/2 "	36"X48"			DOUBLE HUNG		
W10	4	38 "	61 1/2 "	38 1/2"X62"	YES		DOUBLE HUNG		
W11	2	38 "	65 1/2 "	38 1/2"X66"	YES		DOUBLE HUNG		
W12	3	106 1/2 "	65 1/2 "	107"X66"			3X DH		
W13	1	38 "	65 1/2 "	38 1/2"X66"			DOUBLE HUNG		

Artform Home Plans
AFHP Design # 540.126.v16 ER

Balmalcolm
Lot 32 Page Farm
Atkinson, NH

2

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 6/13/2019, drawn by ACJ

Issued for:
Construction

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Structural General Notes:

1. Builder shall consult and follow the building code and other regulations in effect for the building site for all construction details not shown in these drawings. Requirements described here are specific to this design and/or are provided as reference. Additional building code or local requirements may apply.

2. Builder shall maintain a safe worksite, including but not limited to, provision of temporary supports where appropriate and adherence to applicable safety standards.

3. Design is based on the snow load listed on the framing plans, 100 mph basic wind speed, Exposure type B, soil bearing capacity of 2000 psf, and Seismic Category C, unless otherwise noted on the framing plans. Builder shall promptly inform Artform Home Plans of differing conditions.

Foundations

1. No footing shall be poured on loose or unsuitable soils, in water or on frozen ground.

2. All exterior footings to conform to all applicable code requirements for frost protection.

3. All concrete shall have a minimum compressive strength of at least 3000 PSI at 28 days.

4. Foundation anchorage to comply with IRC 2009 Section R403.1.6, it shall consist of minimum size 1/2" diameter anchor bolts with 3/16" x 2" x 2" washers at a maximum of 72" oc for two stories or 48" oc for more than two stories, max of 12" from each corner, min of 2 bolts per wall. Anchor bolt shall extend 7" into concrete or grouted cells of concrete masonry units. Be aware that a garage under may be counted by your code officer as a story. Additional anchorage may be required at braced walls.

Wood Framing

1. All structural wood shall be identified by a grade mark or certificate of inspection by a recognized inspection agency.

2. Structural wood shall be Spruce-Pine-Fir (SPF) #2 or better.

3. When used, LVL or PSL indicate Laminated Veneer Lumber or Parallel Strand Lumber, respectively. Products used shall equal or exceed the strength properties for the size indicated as manufacturered by TrusJoist.

4. When used, AJS indicates wood I-joists as manufactured by Boise Cascade. Products of alternate manufacturers may be substituted provided they meet or exceed the strength properties for the member specified.

5. All floor joists shall have bridging installed at mid-span or at 8'-0" oc maximum.

6. Floor systems are designed for performance with subfloor glued and screwed.

7. At posts, provide solid framing/blocking to supports below. Provide minimum 1 1/2" bearing length for all beams and headers, unless noted otherwise.

8. All wood permanently exposed to the weather, in contact with concrete or in contact with the ground shall meet code requirements for wood in these environments.

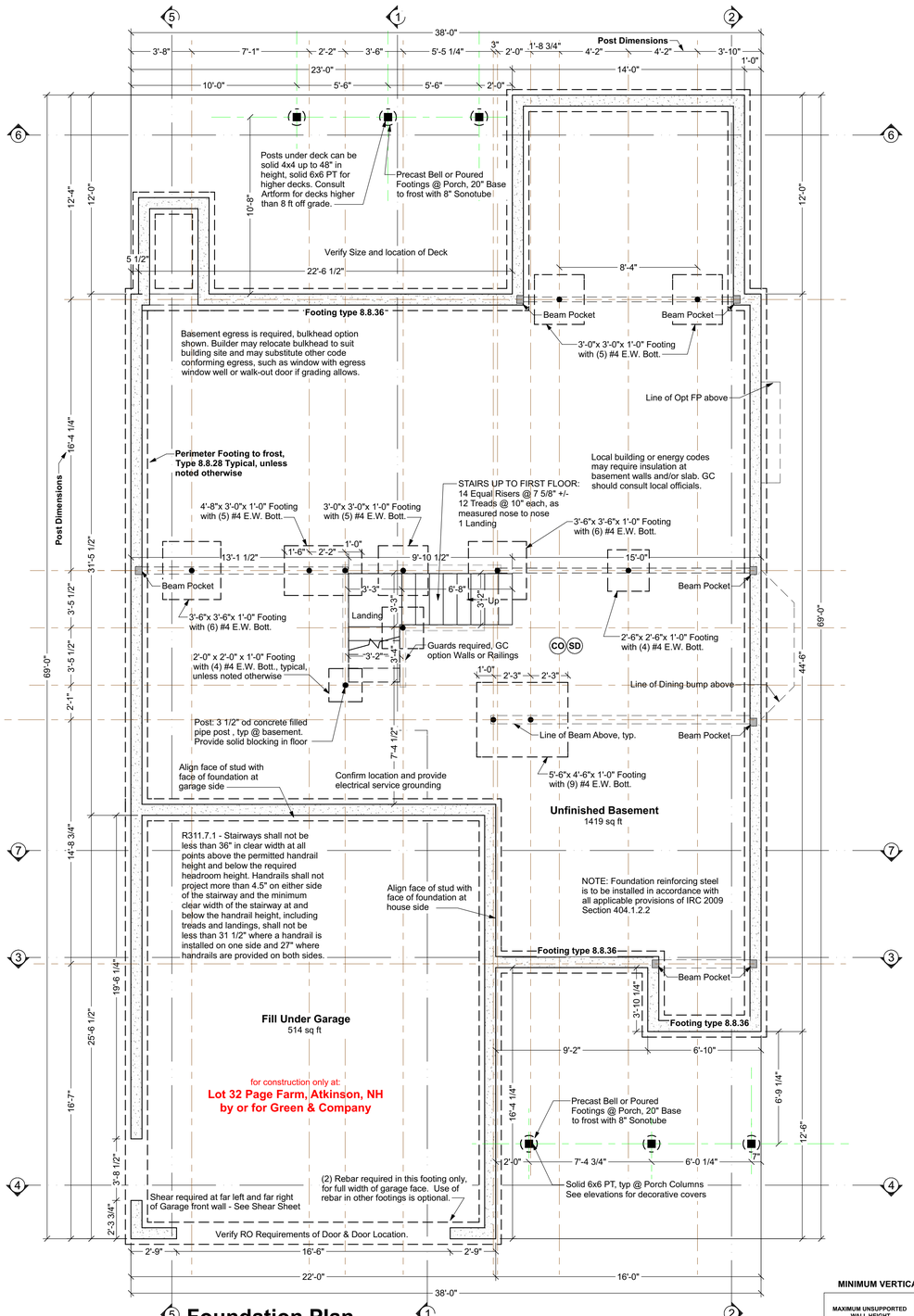
9. Deck ledgers shall be securely attached to the structure and/or independently supported, including against lateral movement, per building code requirements and best practices. Unless otherwise noted, decks shall have solid 4x4 pt posts up to 6 ft above grade, and solid 8x8 for heights above that.

10. Wherever beams are noted as Flush framed, install joist hangers at all joists, sized appropriately for the members being connected.

11. Support the lower end of roof beams via minimum 2" horizontal bearing on a post, ledger or via an appropriately sized and configured hanger.

12. Where multiple beams are supported on one post, provide min 2" bearing for each, via either appropriately sized post cap or additional post(s).

13. Hangers, post caps, ties and other connectors shall be as manufactured by Simpson Strong Tie, as designed to connect the members shown, and shall be installed per manufacturer's instructions.



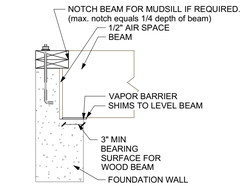
Foundation Plan

Structure designed for Snow Load of 55 PSF

1 0 1 2 3 4

Ceiling height may vary: 8 ft Forms

Post Caps: Typically supplier calculates weights based on these framing plans. Contact Art Form if additional information is needed.



Beam Pocket

Scale 1/2"=1'-0"

TYPICAL PERIMETER FOUNDATION WALL:

- 8" poured concrete, 8 ft forms, min 7'-10" finished, with total of 3 rebar, as follows:
- (1) #4 rebar, 4" from top
- (1) #4 rebar @ vertical midpoint. Omit this rebar at walls 4 ft high or less.
- (1) #4 rebar, min 3" from bottom or per code
- Lap corners & splices of rebar per code.
- Secure sill to foundation with 1/2" diameter anchor bolts that extend 7" into concrete and tightened with a nut and washer @ 6' oc & max 12" from each corner & each end @ wood sill splices - if built-up sill, bolts must extend through all sill plates or straps must secure all sill plates.

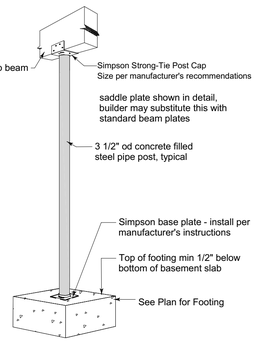
TYPICAL PERIMETER FOOTING:

1. Verify that depth of home matches chart. Depth is foundation dimension eave to eave. Contact Artform Home Plans if you believe the chart does not match the plan.
2. Select column for snow load shown on the structural plans.
3. Select soil bearing pressure based on soil type and/or consultation with code officer.
4. The required footing size is at the intersection of the Snow Load and Soil PSI. Rebar is not required. Key or pin foundation wall to footing per code. For the purposes of permitting, soil bearing for New England is assumed to be 2,000 PSI.

FAQ - Adding rebar to footings does not reduce the required width. Rebar affects performance with earth movement, like an earthquake and has near zero effect on bearing capacity.

Guide to Soil PSI

3,000	Sandy gravel and/or gravel (GW and GP)
2,000	Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM and GC)
1,500	Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH)



Typical Basement Post

Not to scale

Footing Size Type 8.8.28	up to 28 ft plan depth 8 ft nominal basement height 8" foundation wall Full basement plus 2 stories				
		Snow Load			
		50	60	70	80
Soil PSI	3,000	16" x 8"	16" x 8"	16" x 8"	16" x 8"
	2,000	18" x 8"	18" x 8"	18" x 8"	20" x 8"
	1,500	22" x 8"	22" x 8"	24" x 8"	24" x 8"

Footing Size Type 8.8.32	29-32 ft plan depth 8 ft nominal basement height 8" foundation wall Full basement plus 2 stories				
		Snow Load			
		50	60	70	80
Soil PSI	3,000	16" x 8"	16" x 8"	16" x 8"	16" x 8"
	2,000	18" x 8"	20" x 8"	20" x 8"	22" x 8"
	1,500	24" x 8"	26" x 8"	26" x 8"	28" x 8"

Footing Size Type 8.8.36	33-36 ft plan depth 8 ft nominal basement height 8" foundation wall Full basement plus 2 stories				
		Snow Load			
		50	60	70	80
Soil PSI	3,000	16" x 8"	16" x 8"	16" x 8"	16" x 8"
	2,000	20" x 8"	20" x 8"	22" x 8"	24" x 8"
	1,500	26" x 8"	28" x 8"	30" x 8"	30" x 8"

Foundation Contractor Check List

Confirm or review the following prior to forming & pouring foundation

Initials	Date	Checked
____	_____	Confirmed soil bearing
____	_____	Checked w/GC for added foundation steps to suit grade
____	_____	Confirm sill plate thickness (foundation bolts to extend through all)
____	_____	Confirmed garage door size
____	_____	Checked w/GC for added basement windows
____	_____	Checked w/GC for added basement man doors
____	_____	Confirmed sizes & locations mech/plbg penetrations
____	_____	Confirmed sizes and locations of beams w/GC, added or adjusted beam pockets
____	_____	Confirmed location and installed electrical service grounding - See GC for location

MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH (203MM) NOMINAL FLAT CONCRETE BASEMENT WALL

MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (inches)		
		Soil classes and design lateral soil (psf per foot of depth)		
		GW, GP, SW, SP 30	GM, GC, SM, SM-SC and ML 45	SC, ML-CL and inorganic CL 60
8	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 37
	7	NR	6 @ 36	6 @ 35
	8	6 @ 41	6 @ 35	6 @ 26

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Balmalcolm
Lot 32 Page Farm
Atkinson, NH

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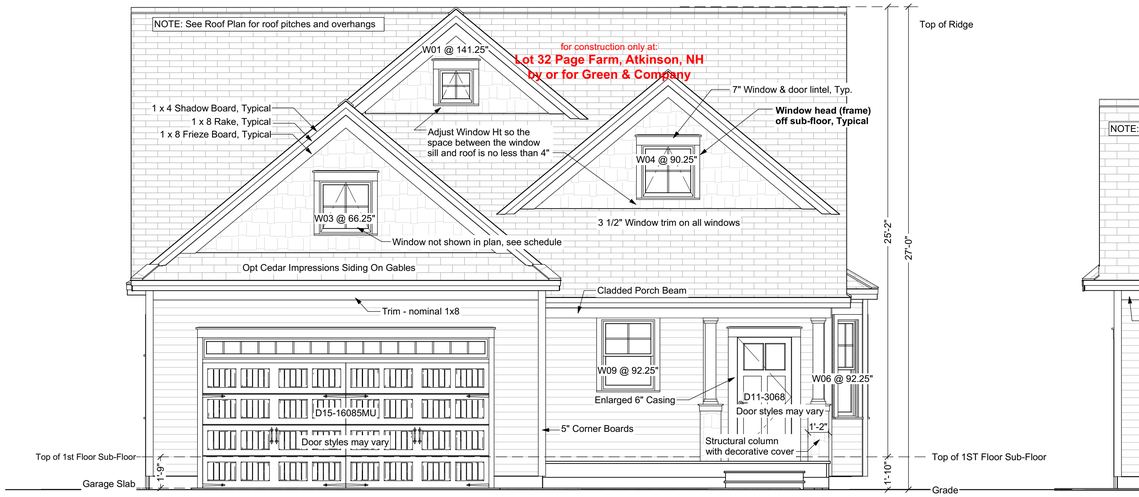
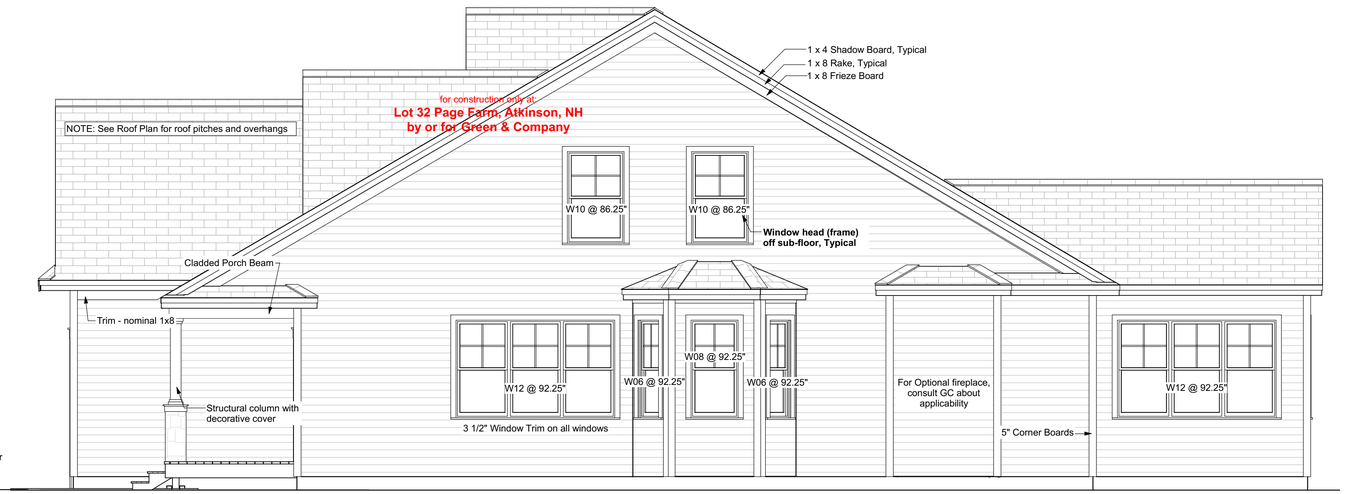


Garage slab height may vary. If garage slab height is lower than shown, consult Artform for aesthetic direction. Taller garage doors, transoms, lintels and/or additional frieze boards may be required to achieve desired look.

Not shown - number of steps may vary - handrail may be required per code.

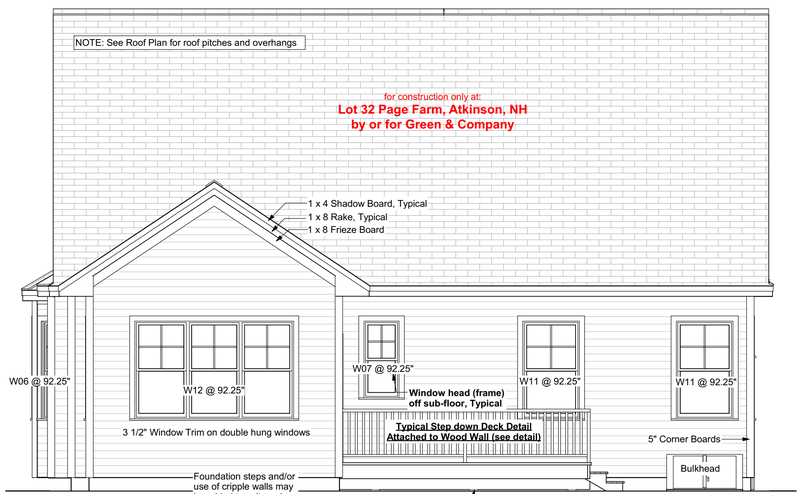
Front Elevation

Note - Actual grade level may vary. Where zoning height restrictions apply, builder shall verify conformance. Manual markup of drawings to demonstrate compliance is recommended.



Right Elevation

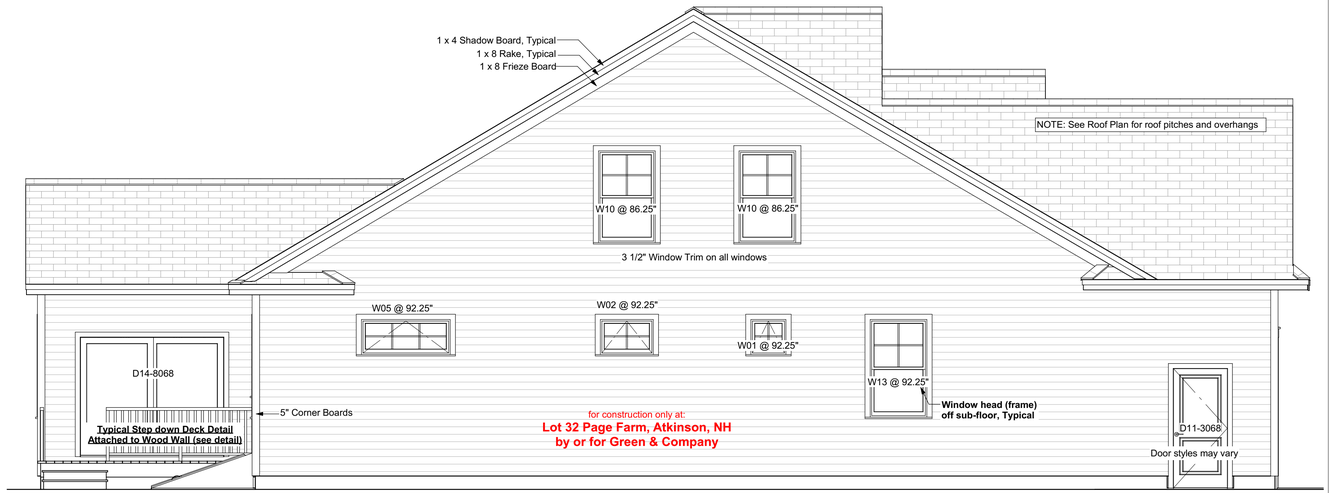
Foundation steps and/or use of cripple walls may be added to suit grade.



Rear Elevation

Posts under deck can be solid 4x4 up to 48" in height, solid 6x6 PT for higher decks. Consult Artform for decks higher than 8 ft off grade.

Basement egress is required, bulkhead option shown. Builder may relocate bulkhead to suit building site and may substitute other code conforming egress, such as window with egress window well or walk-out door if grading allows.



Left Elevation

Foundation steps and/or use of cripple walls may be added to suit grade.

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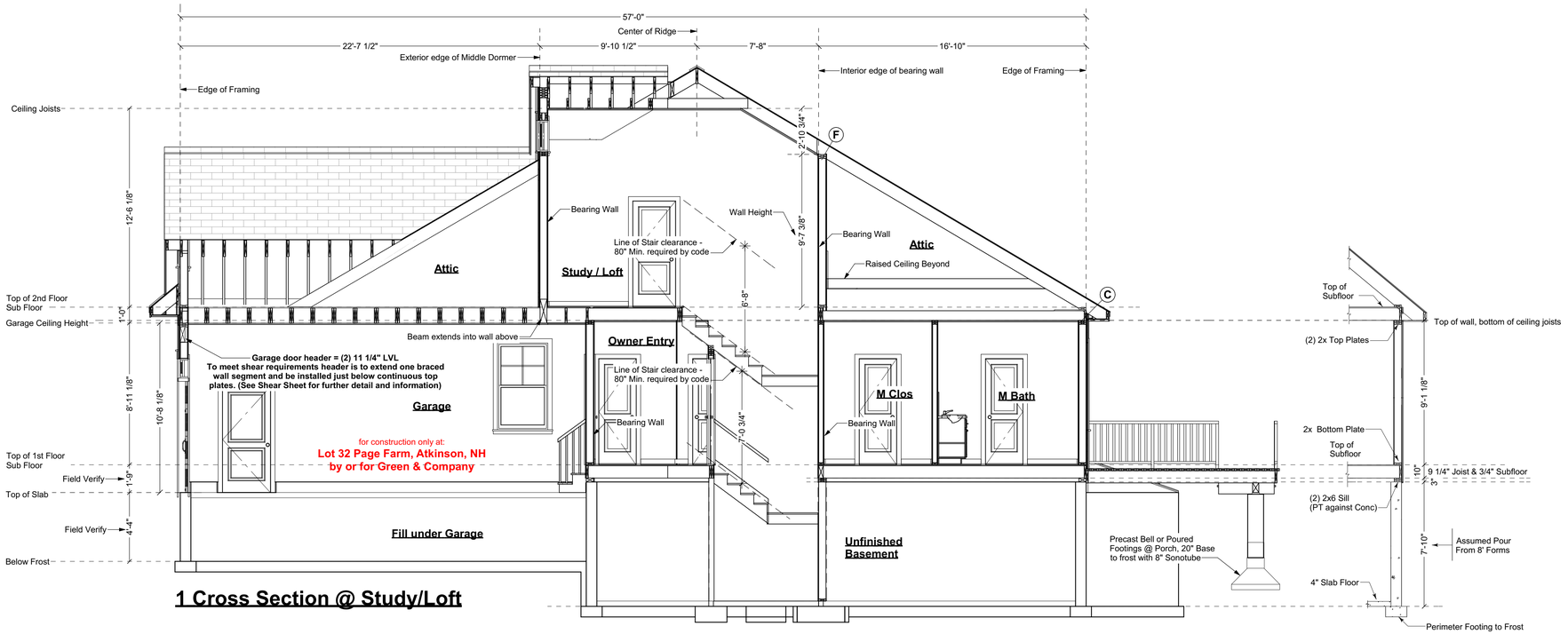
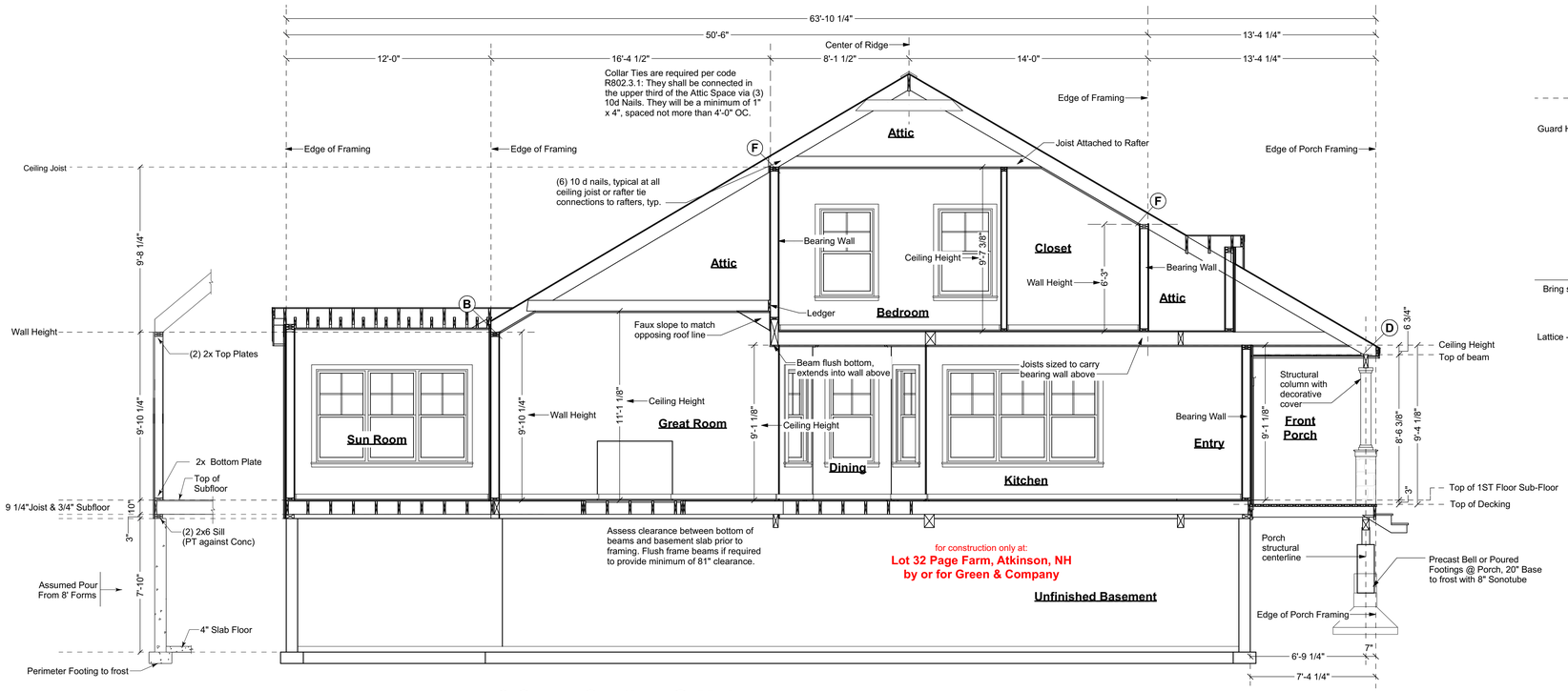
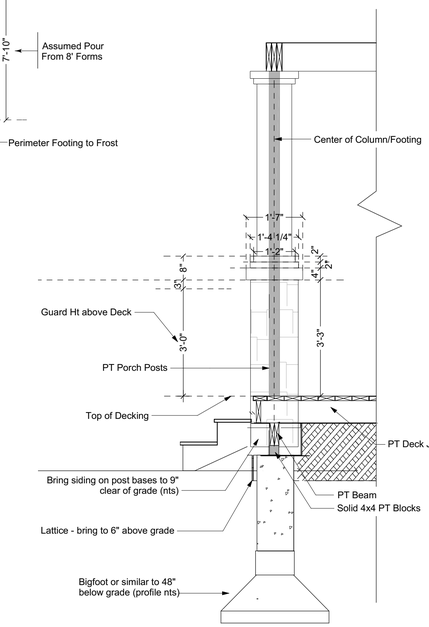


1 Cross Section @ Study/Loft



2 Cross Section @ Main



Column Detail

From Column Center = 5" to Edge of Decking, 4" to Edge of Deck Framing.

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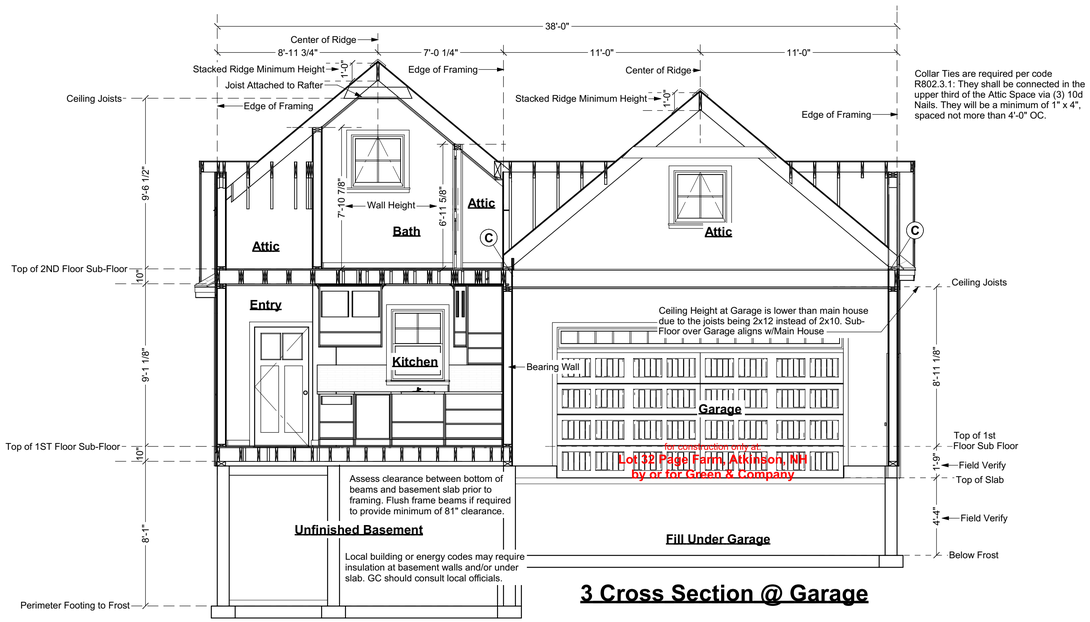
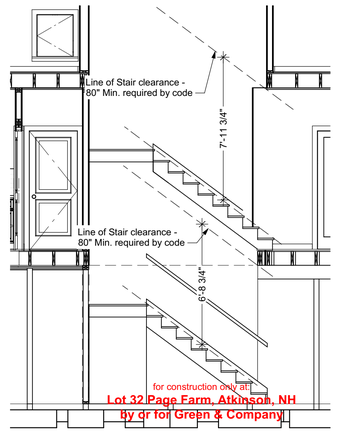
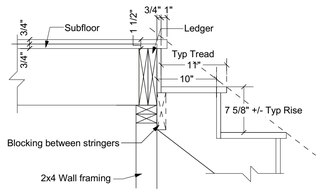


3 Cross Section @ Garage



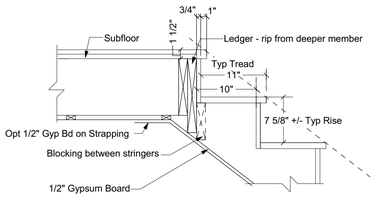
Line of Stair Clearance (Lower)



Detail shows assumptions used for framing plan RO
Framer may adjust to suit different head support methods

Top of Carriage (B)

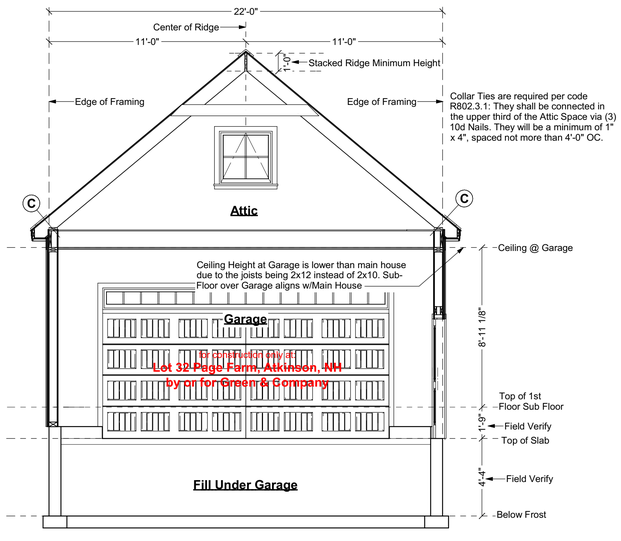
Scale: 1" = 1'-0"



Detail shows assumptions used for framing plan RO
Framer may adjust to suit different head support methods

Top of Carriage (C)

Scale: 1" = 1'-0"



4 Cross Section @ Front Porch

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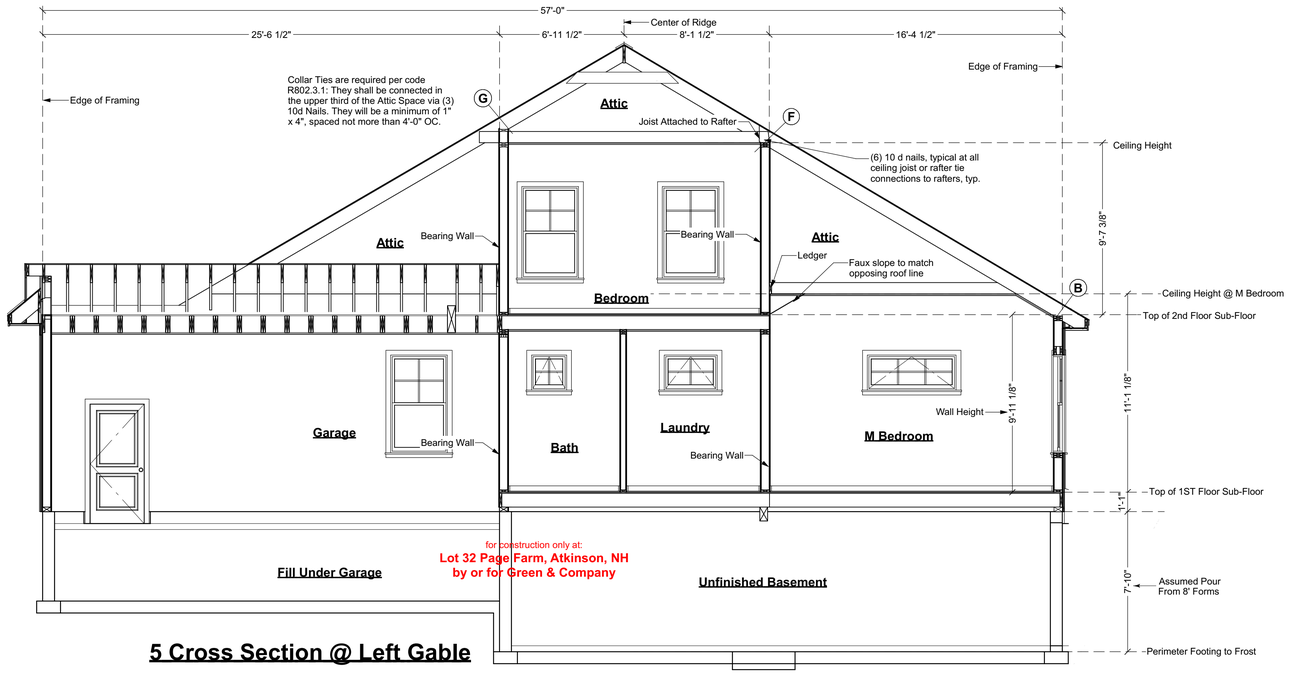

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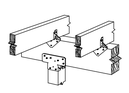
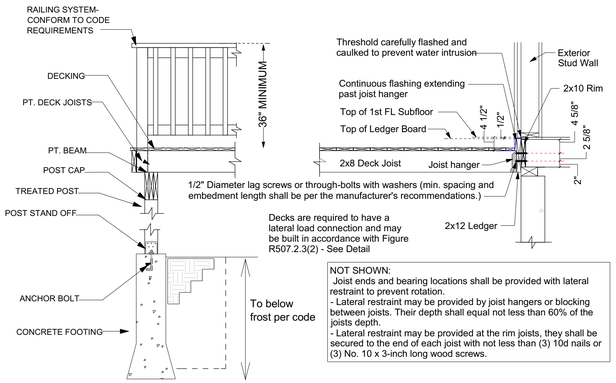
5 Cross Section @ Left Gable



POST CAP & JOIST ATTACHMENT

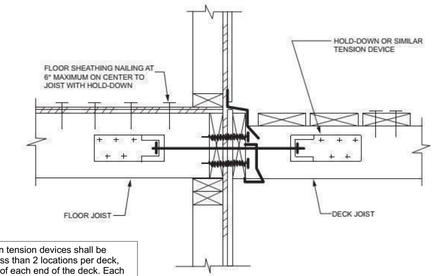
POST CAP

POST STAND OFF



Deck Ledger Attachment Detail for Step Down

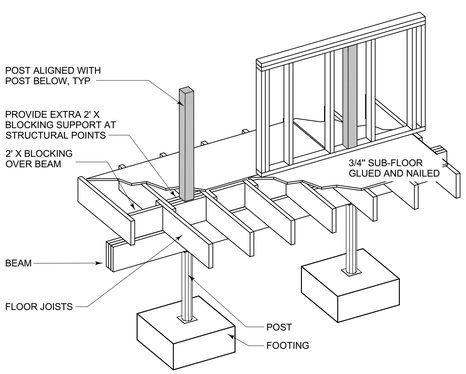
Scale: 1/2" = 1'-0"

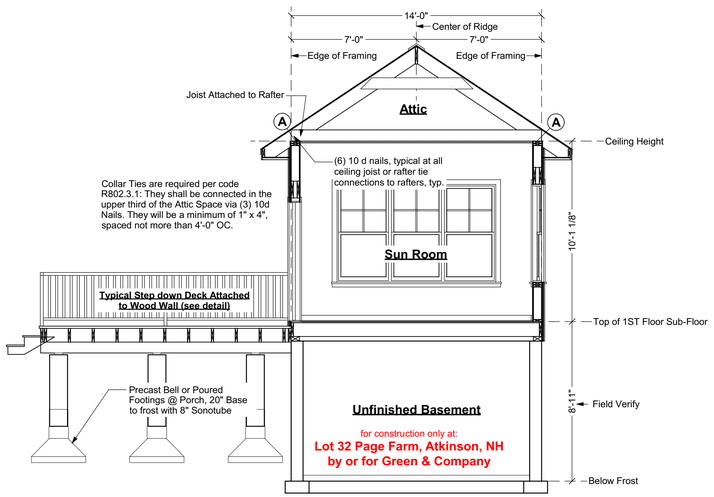


NOTE: hold down tension devices shall be installed in not less than 2 locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 lbs.

FIGURE R507.2.3(2)
DECK ATTACHMENT FOR LATERAL LOADS

Follow manufacturer's instructions both for installation of joist hangers to joist and to beam. The illustration below, by Simpson Strong Tie, is provided as a courtesy. Consult their full manual for acceptable fastener sizes and other important instructions.





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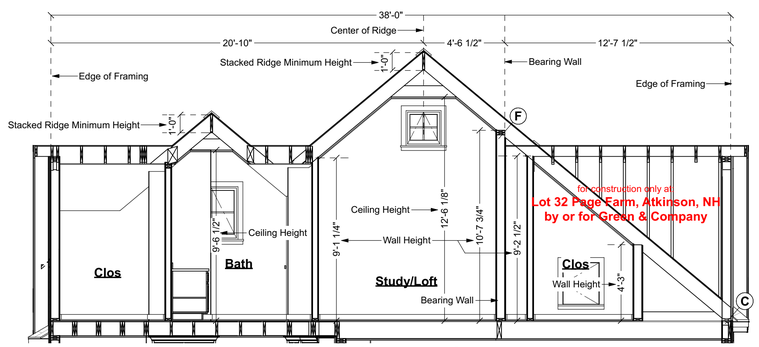
6 Cross Section @ Sun Room



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7 Cross Section @ Bath

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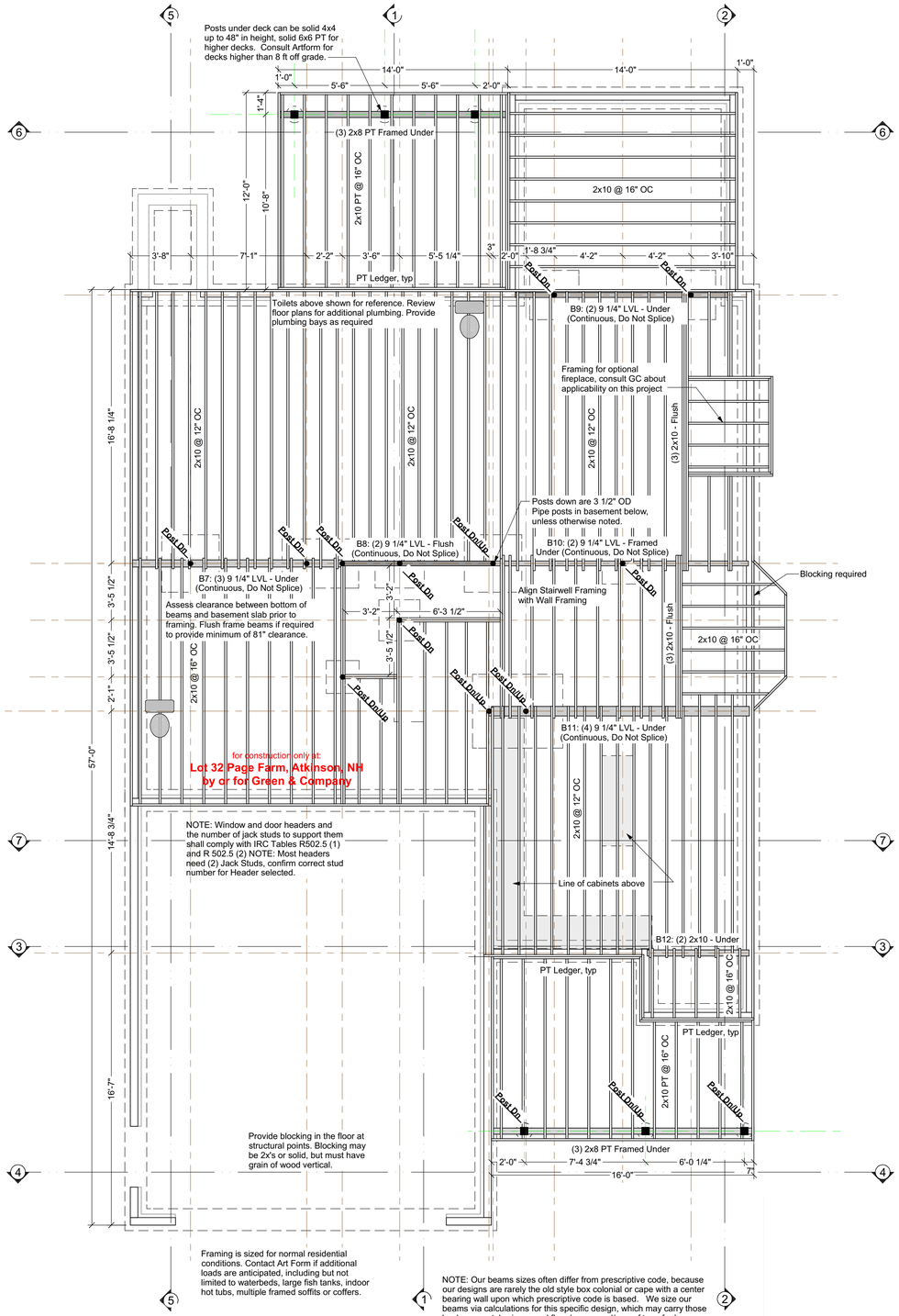
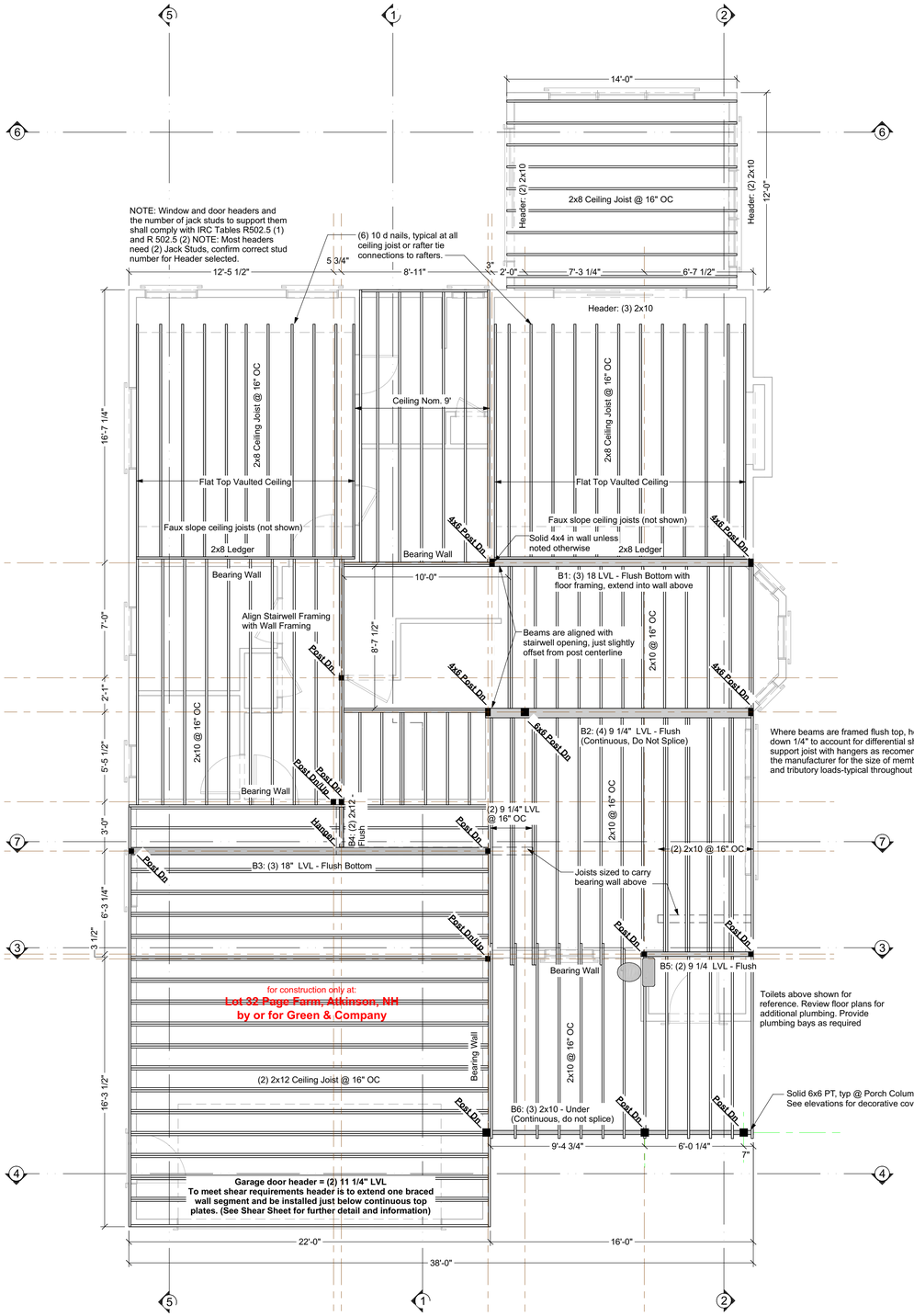


First Floor Framing

Structure designed for Snow Load of 55 PSF

1 0 1 2 3 4



Second Floor Framing

Structure designed for Snow Load of 55 PSF

1 0 1 2 3 4

Framing is sized for normal residential conditions. Contact Art Form if additional loads are anticipated, including but not limited to waterbeds, large fish tanks, indoor hot tubs, multiple framed soffits or coffers.

Built-up Beams:
Unless otherwise noted, connect multiple 1 3/4" ply beams as follows:
3 ply & up, fasteners are per side

(2) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 24" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 24" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 14" LVL:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 9 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 11 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

(4) 16" LVL or greater:
- Flush framed
  - (3) rows 5" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

Beam Substitutions:

(2) 9 1/4" LVL may replace a double or triple 2x10 beam. No other substitutions are allowed. Conventional lumber beams MAY NOT be substituted for LVL beams by any "rule of thumb". Substitutions must be calculated by either Artform or a structural engineer. If calculated by a structural engineer, provide stamped plans and/or calculations.

We specify LVL beams as built up members to allow framers to use existing stock. You may substitute single piece LVLs of equivalent overall size for built-up members, unless otherwise noted.

Built-up members MAY NOT replace single piece LVL's where specified.

Where a beam of 1 3/4" or less in width is specified as framed under, either brace at 48" or double member for lateral stability.

Artform Home Plans

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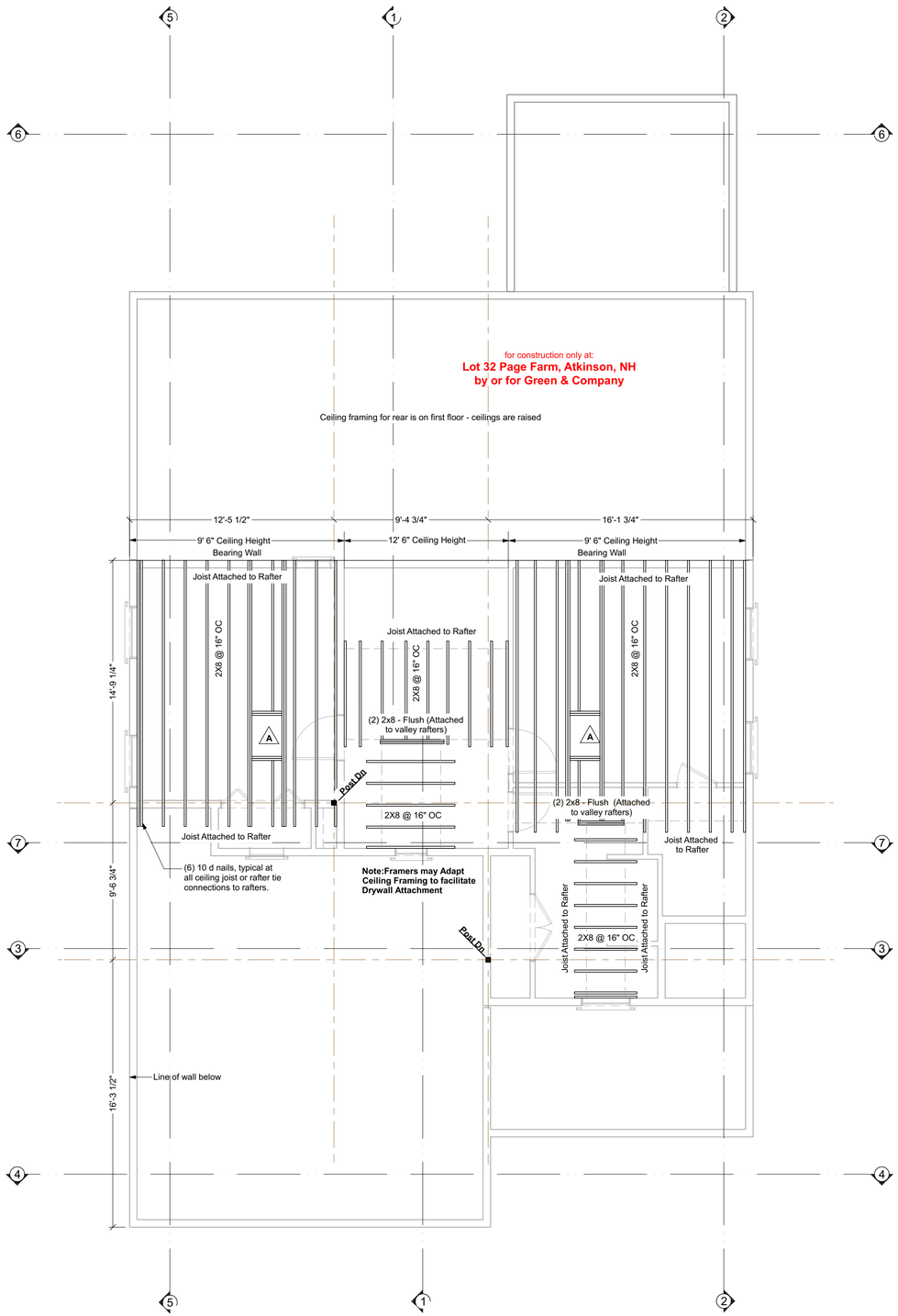
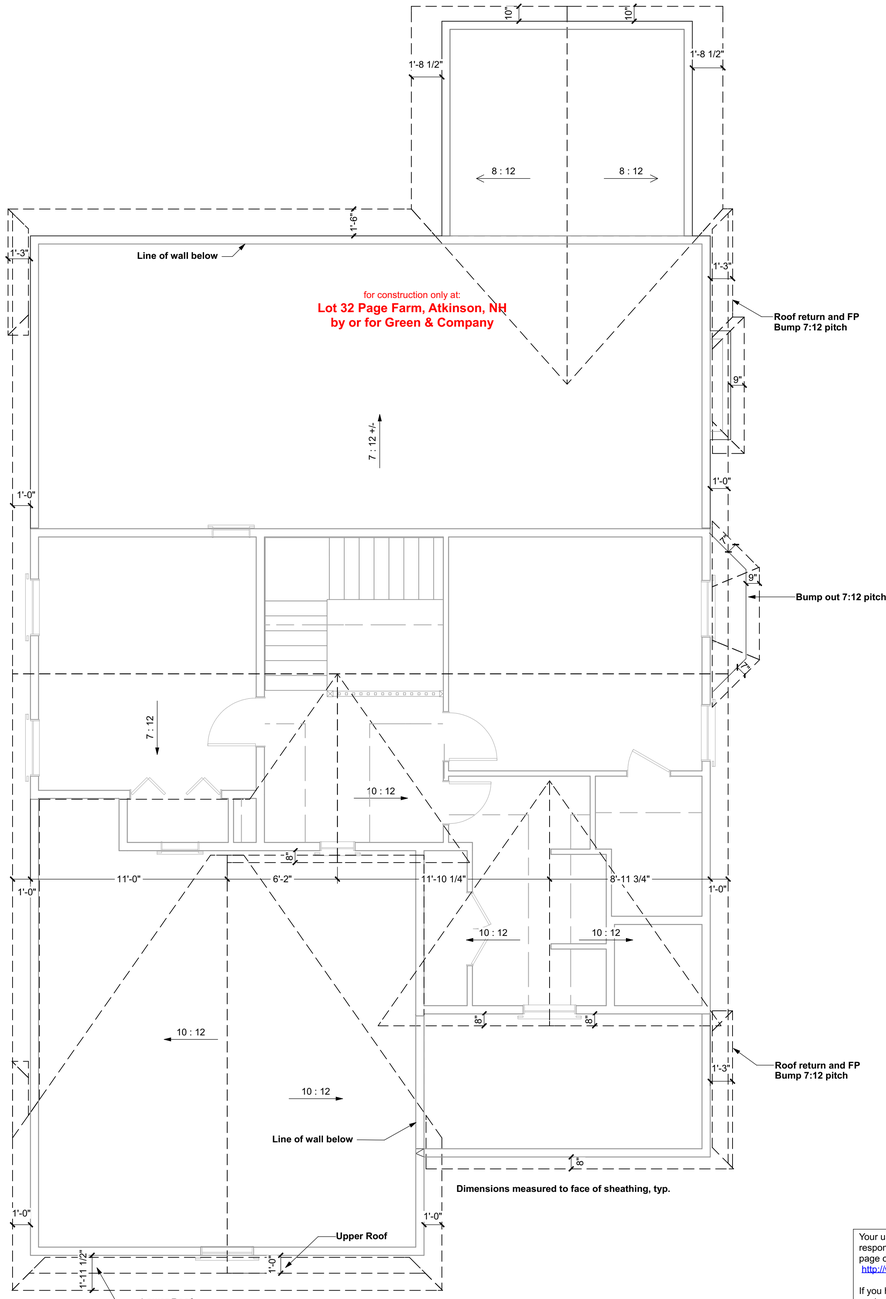


Ceiling Framing

Structure designed for
Snow Load of 55 PSF

1 0 1 2 3 4



Roof Plan

1 0 1 2 3 4

In case of conflict exterior trim alignment takes precedence over overhang dimensions

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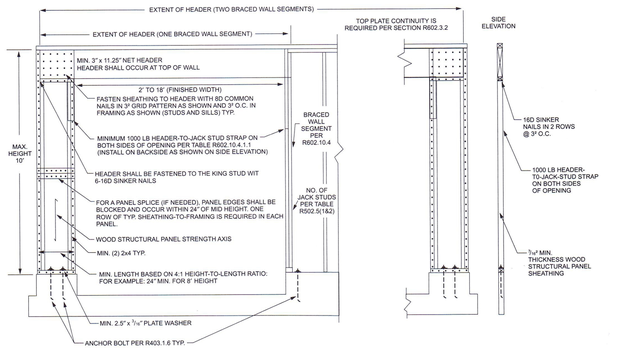
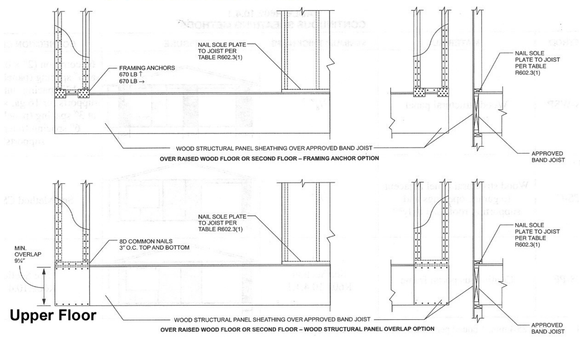
TABLE R602.10.4.1
CONTINUOUS SHEATHING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
CS-WSP	Wood structural panel	3/8"		6d common (2" × 0.113") nails at 6" spacing (panel edges) and at 12" spacing (intermediate supports) or 16 ga. × 1 3/4 staples at 3" spacing (panel edges) and 6" spacing (intermediate supports)



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.4
METHOD PFG PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.4.1.1
METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION

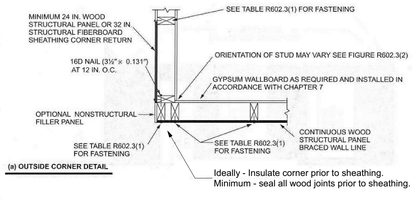
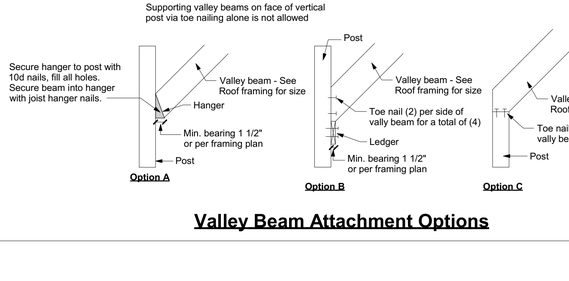
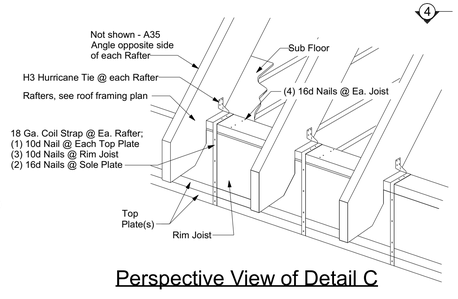


FIGURE R602.10.4.4(1)
TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING



Valley Beam Attachment Options



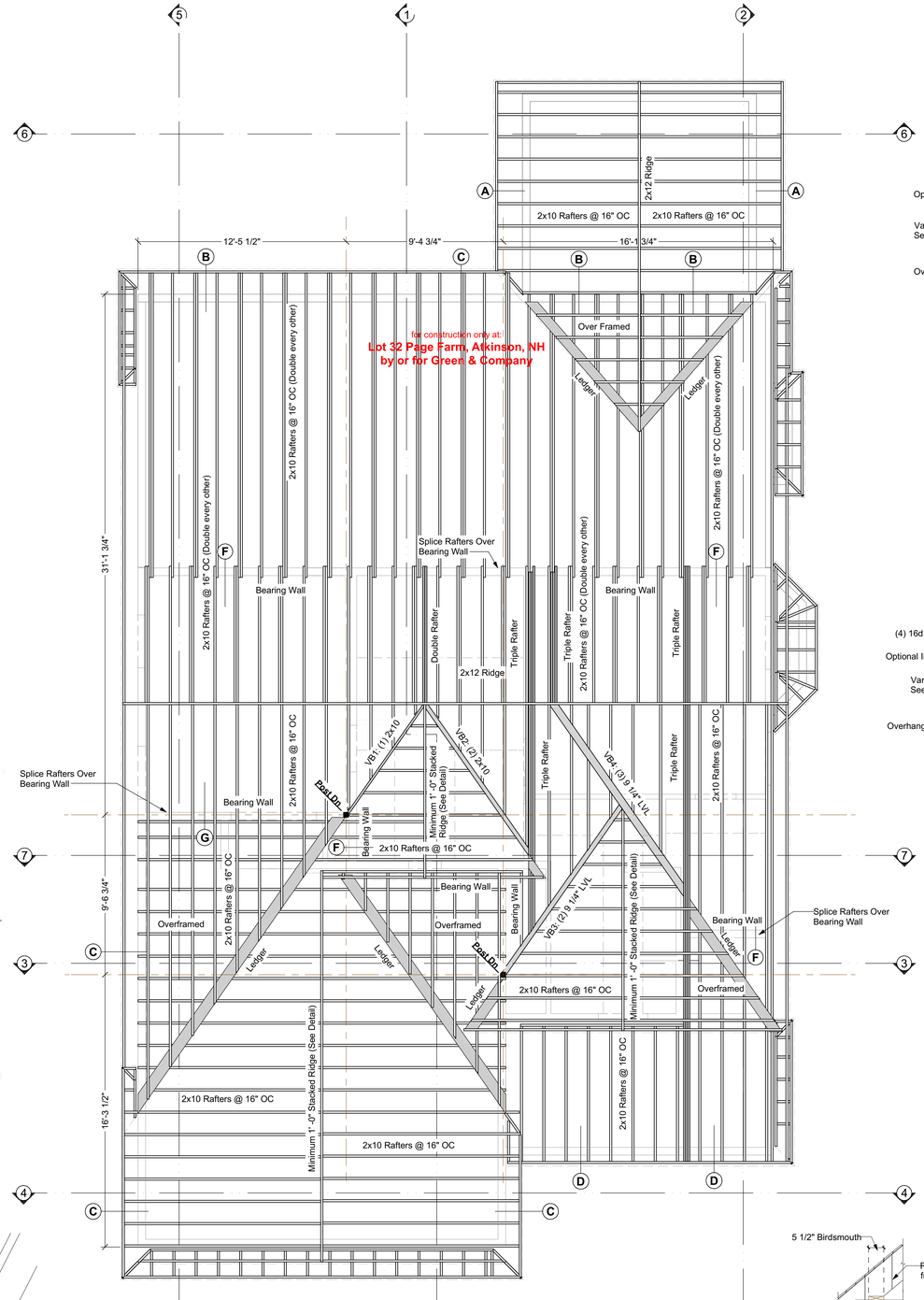
Perspective View of Detail C

Shear Wall Details

Not to Scale

Notes:

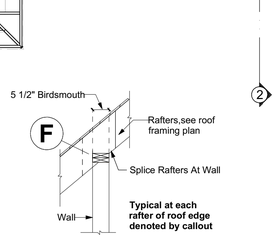
- See plans for locations where shear panels are required.
- Details shown here are for one method and for typical conditions. An alternate shear method allowed per code or approved by the code officer may be substituted.
- If the method at left is used at Garages where width of panel is 20" or more, wall height may be 10 ft as shown in detail at left. Where panel width is 18"-20", wall height may be 9 ft. Where panel is 16"-18", wall height may be 8 ft. Where panel is less, consult architect for additional design.
- If the method at left is used, increase foundation wall height at front and for 2 ft along wall returns as required to meet maximum wood stud wall heights, and extend sheathing and siding in front of wall to achieve desired aesthetics. Untreaded wood may not be in direct contact with concrete - use treated wood or provide a barrier, such as a rubber membrane or felt paper.
- Note that if sheathing is to be used as wall bracing all vertical joints in required braced wall panels must be blocked. [2009 IRC section R602.1.8]

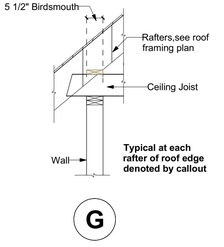


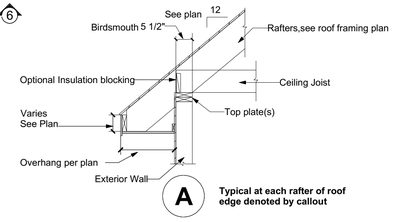
Roof Framing

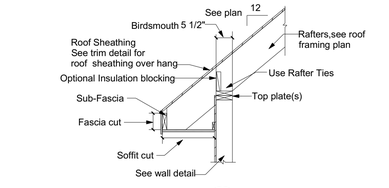
Structure designed for Snow Load of 55 PSF

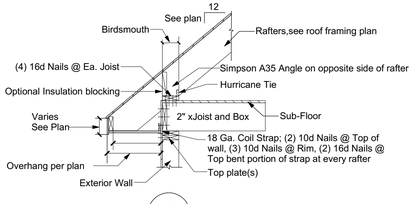
1 0 1 2 3 4

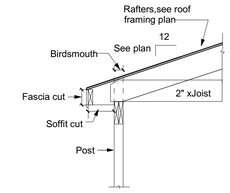


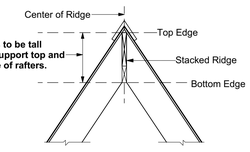












Stacked Ridge Detail

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Wall Types

Exterior walls 2x6 wood stud
Interior walls 2x4 wood stud, unless noted otherwise

Wall Keys

(2) 2x wood studs on the flat

(6) 2x6 wood stud wall, 16" oc

Note: 2x4 wood stud wall, 16" oc unless otherwise noted

Key Notes

(A) 30" x 22" Minimum Attic Access Panel - Insulated (RO 34" x 26")

(F) Field locate for plumbing or mechanical

(V) Verify size of fixture or appliance Adjust dimensions to accommodate

(C) Center - Place door or window centered on wall

(SD) Smoke Detector (HD) Heat Detector

(CO) Carbon Monoxide Detector

Dimensions

1. Dimensions are to face of stud, unless noted otherwise.
2. Closets are 24" clear inside, unless dimensioned otherwise.

Square Footages

1. Sq ft numbers are interior to room for use in calculating finishes.
2. Cabinets and fixtures not subtracted.
3. Add for doorways when floor finishes run through.

Notes

1. Exterior walls 2x6 wood stud @ 16" oc. Provide insulation & vapor barrier conforming to state or local codes. Interior sheathing 1/2" gypsum board. Provide 1/2" exterior rated sheathing, house wrap with drainage plane and siding. Provide step flashing at walls adjacent to roof planes.

2. Interior walls 2x4 wood stud @ 16" oc, unless noted otherwise.

3. Roof - see structural for rafter sizes. Provide 5/8" exterior rated roof sheathing 15# roofing felt, ice & water shield at eaves and valleys, aluminum drip edge and asphalt shingles or metal roofing. Structure not calculated to support slate or tile. Flash all penetrations. Provide cricket at any added chimneys.

4. Provide roof and/or ceiling insulation per code. Provide soffit and ridge vents where required for insulation strategy. (Verify with code officer - closed cell spray foam or dense-pack cellulose installed at rafters and filling ridge and eaves generally contra-indicates venting, batt insulation always requires venting).

5. Provide smoke, carbon monoxide, and heat detectors where shown and where required by code and where required by local authorities.

6. Provide fire resistive materials where required by code, including but not limited to, firestopping at penetrations, 5/8" Type X drywall on walls and ceilings to separate garage (where garage present in design) from dwelling, and separation of dwellings (where more than one dwelling present in design), and protection of flammable insulation materials. See Table R306.6 IRC 2015.

7. Compliance with code requirements for rooms size and clearances, (hallway widths, room sizes, etc) assume 1/2" drywall on walls and 1/2" drywall on 3/4" strapping on ceilings. Adjust as required if materials differ.

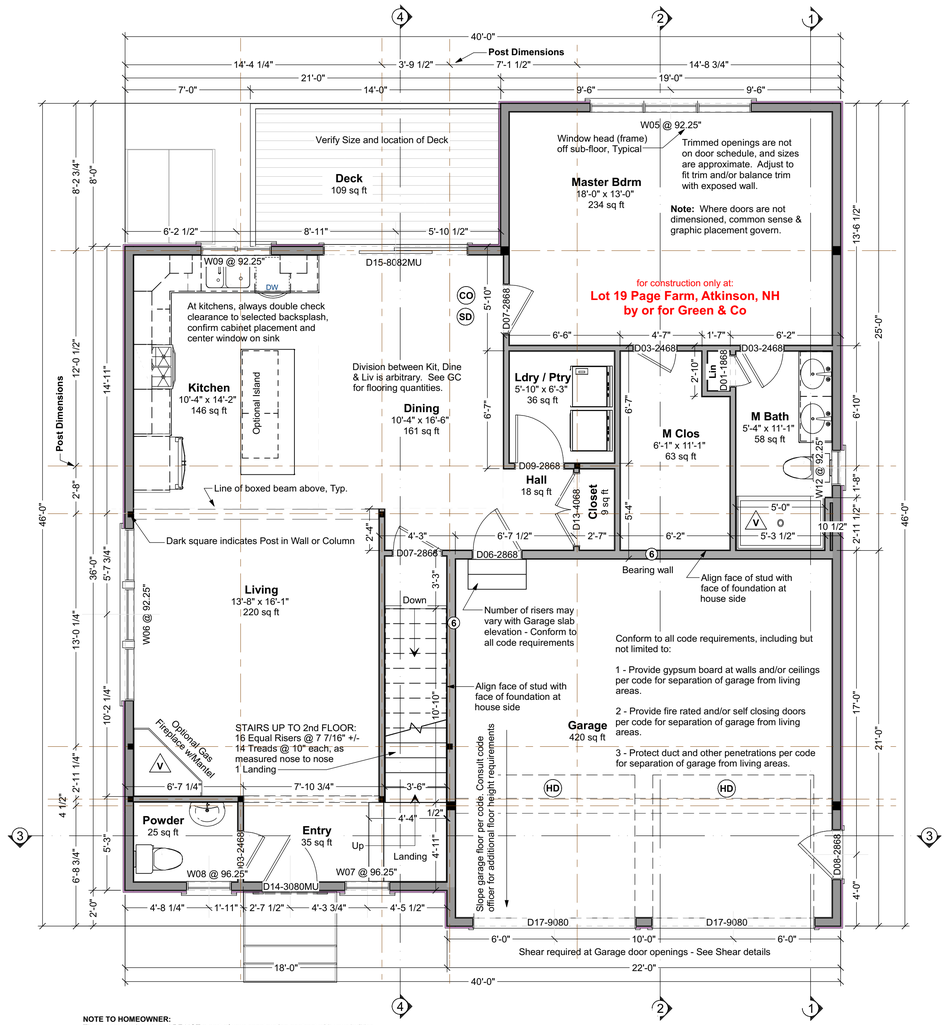
8. Shear is only called out where Continuous Portal Frame will not suffice. See Section R602.10.4 (Pages 177 - 188) of the IRC 2015.

General Design Notes

1 Builder shall consult and follow the building code and other regulations in effect for the building site for all construction details not shown in these drawings. Requirements described here are specific to this design and/or are provided as reference. Additional building code or local requirements may apply.

2 Builder shall maintain a safe worksite, including but not limited to, provision of temporary supports where appropriate and adherence to applicable safety standards.

3 Design is based on the snow load listed on the framing plans, 100 mph basic wind speed, Exposure type B, soil bearing capacity of 2000 psf, and Seismic Category C, unless otherwise noted on the framing plans. Builder shall promptly inform Artform Home Plans of differing conditions.



NOTE TO HOMEOWNER:
These construction plans ARE NOT a part of your construction contract with your builder, unless your P&S agreement specifies that they are. Your P&S and it's attachments (like the builder's specifications or a review set of this design) describes what you and your builder agreed the builder would build for you. We here at Artform Home Plans do not have the authority to obligate your builder to provide you with amenities like fireplaces and spa tubs. The contract between you and your builder governs.

First Floor Plan

1 0 1 2 3 4

Living Area this Floor: 1193 sq ft
9 ft Finished Ceiling Height

Gaira 40x46

Dear Code Officer,

These are predesigned home plans, designed to bring good design and construction drawings to people at more affordable prices and faster time frames than traditional architecture. Where traditional "internet" home plans disclaim all responsibility, we split responsibility between us (Artform) and the owner. We encourage the future homeowners to use a quality builder who can assist them with this. They are responsible for thermal and moisture decisions and for meeting code in ways that a quality builder should know without an explicit detail. We are responsible for things that are directly related to the design and/or that a quality builder couldn't reasonably figure out on their own - specifically the following IRC 2015 code sections:

1 - Room sizes (Section R304)
2 - Ceiling Height (Section R305)
3 - Floor space & ceiling height at Toilet, Bath and Shower Spaces (Section R307)
4 - Hallway widths (Section R311.6)
5 - Door types & sizes (Section R311.2)
6 - Floor space in front of doors (Section R311.3)
7 - Stair width - The stairs in our designs will be a minimum of 36" wide measured wall surface to wall surface, allowing compliance with R311.7.1 with installation of correct handrail.
8 - Stairway headroom (Section R311.7.2)
9 - Stair treads and risers (Section R311.7.5)
10 - Landings for stairways (Section R311.7.6)
11 - Emergency Escape Window Sizes (Section R310.2.1, R310.2.2, R310.2.3 and R310.2.4). Casement windows may require manufacturer's emergency escape window hardware. Will also comply with NFPA 101.
12 - Structural Floor Framing (Section R502.3) Where dimensional lumber is shown, framing members will be sized according to this section of the code. Where engineered wood products are shown, those framing members will be size according to the manufacturer's tables for loads and spans, or sizes will have been calculating using manufacturer's published materials properties.
13 - See structural sheets for additional notes.

The builder can and should add information to this set, such as Rescheck, a hand markup of our generic thermal and moisture section, additional information about doors and windows (such as fire rating, tempering, etc), foundation drops relative to site grading, and sometimes their chosen method of basement egress. These drawings are not intended to be used without that additional information.

Where a construction address is shown on the drawings, it is for copyright control only. We have not inspected the site, adapted the design to state specific laws (except where it says so in the drawings) or site or region specific climate conditions. Homeowner and/or Builder shall be responsible for thermal and moisture control strategies, materials choices and compliance with applicable laws and ordinances.

Please do feel free to call us with any questions. We can and do update our drawings and standard notes to address specific concerns, especially in jurisdictions where our clients will be building again.

Dear Everybody,

With these drawings a copyright license is granted for a single construction only at Lot 19 Page Farm, Atkinson, NH by or for Green & Co. This is a License to Build, and does not include a License to Modify, except as required to conform to building code or fulfill builder's/owners responsibilities.

Permissible uses of these drawings:

1. All activities associated with construction at the listed address.
2. Pricing or preliminary discussions with zoning or code officials for construction at other addresses, with prior notification to Artform Home Plans - just use the Contact form on the web site – http://www.artformhomeplans.com/contact.a5w

Not Permitted:

1. Application for any permits or other approvals for construction at properties other than the listed address, including but not limited to construction, zoning, conservation, or design review.
2. Modification of the basic design.

Use of these drawings outside these parameters is a violation of federal copyright law, punishable by both civil action and criminal prosecution, as it is stealing or enabling theft of "intellectual property". Making modifications to plans, even significant ones, does not change this, under copyright law, that's considered "derivative works".

We can provide drawings suitable for use in obtaining design or zoning approvals without incurring the expense of a full set of construction drawings. Contact us for more information.

AFHP PDI Dimensions 19.7 X13 - IRC 2015

These drawings are intended for use by an experienced professional builder in responsible charge of the entire project, including but not limited to mechanical, electrical and sitework. Any additional adaptation for these trades or other trades must be determined prior to start of construction. Contact Artform for any adjustments needed.

Your use of these drawings constitutes an acceptance of responsibility as outlined in "Dear Code Officer" on the first page of these drawings, and on our web site: http://www.artformhomeplans.com/TermsConditions.a5w

If you have any concerns or questions, please feel free to contact us. We are happy to clarify matters that fall within our scope, as listed on the first page. We can also often provide affordable support for issues that are your responsibility, such as energy design/calcs, or additional detailing.

Artform Home Plans

AFHP Design # 742.124.v6 KL

Gaira 40x46
Lot 19 Page Farm
Atkinson, NH

1

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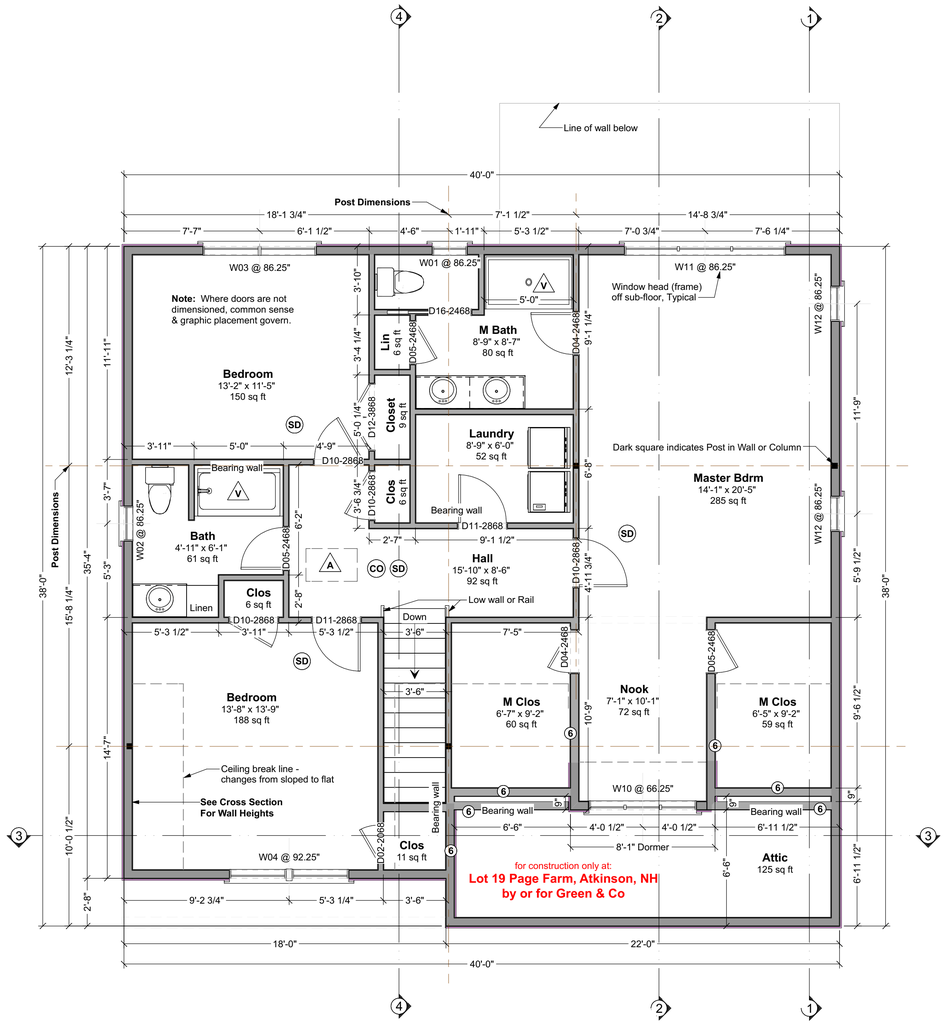
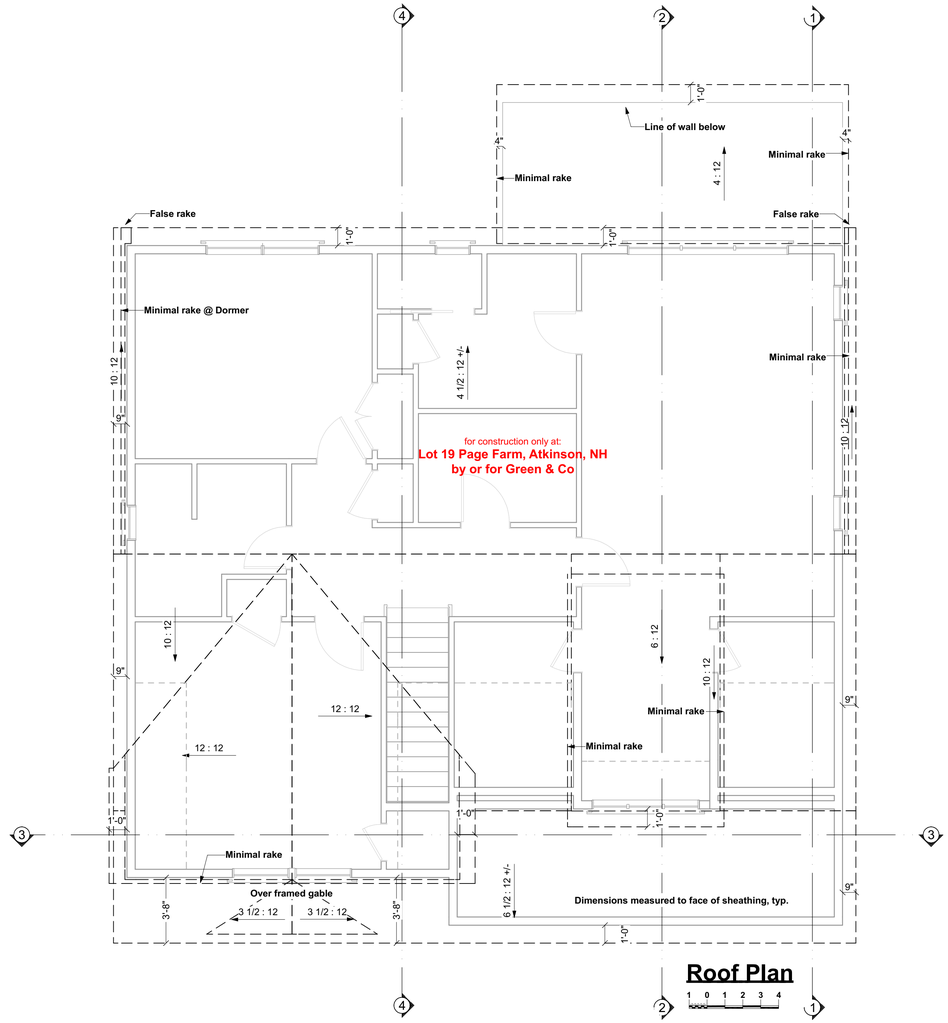


Second Floor Plan

1 0 1 2 3 4

Living Area this Floor: 1321 sq ft
8 ft Finished Ceiling Height



Roof Plan

1 0 1 2 3 4

Door & Window Notes

1. **Rated Doors:** Provide fire rated and/or self-closing doors where required by local codes or local authorities
2. **Trimmed Openings:** Trimmed openings not shown on schedule. See Plan.
3. **Window Tempering:** Provide tempered windows where required by local codes or local authorities. Tempering column provided here for convenience. Windows have not been reviewed for tempering requirements.
4. **Window RO's:** 1/4" or 1/2" on each of 4 sides allowed for window RO's, typical. Review framing size vs RO size. Adjust per manufacturer's requirements and/or builder preference.
5. **Egress Windows:** Provide minimum one door or window meeting egress requirements in basement, in each sleeping room, in each potential sleeping room, and other locations required by local code, in sizes required by local code. Note that casement windows coded by manufacturer as meeting IRC 2015 egress requirements typically need to be ordered with specific hardware. Emergency Escape Window Sizes (Section R310.2.1, R310.2.2, R310.2.3 and R310.2.4). Will also comply with NFPA 101.
6. **Basement Windows:** Add basement windows as required to meet state or local code requirements, including but not limited to egress and light/ventilation.
7. **Skylights:** Skylights are not shown on this schedule, but may be required. Consult builder and/or see floor plan.
8. **Minimum window sill height:** IRC 2015 requires that floor window sills be 24" from floor. Confirm bottom of window opening relative to frame. Conform to IRC 2015 R312.1.

DOOR SCHEDULE

NUMBER	QTY	FLOOR	SIZE	WIDTH	HEIGHT	TYPE	COMMENTS
D01	1	1	1868 L IN	20 "	80 "	HINGED	
D02	1	2	2068 L IN	24 "	80 "	HINGED	
D03	3	1	2468 R IN	28 "	80 "	HINGED	
D04	2	2	2468 R IN	28 "	80 "	HINGED	
D05	3	2	2468 L IN	28 "	80 "	HINGED	
D06	1	1	2868 R EX	32 "	80 "	HINGED	
D07	2	1	2868 R IN	32 "	80 "	HINGED	
D08	1	1	2868 L EX	32 "	80 "	HINGED	
D09	1	1	2868 L IN	32 "	80 "	HINGED	
D10	4	2	2868 R IN	32 "	80 "	HINGED	
D11	2	2	2868 L IN	32 "	80 "	HINGED	
D12	1	2	3868 L/R IN	44 "	80 "	DOUBLE HINGED	
D13	1	1	4068 L/R IN	48 "	80 "	DOUBLE HINGED	
D14	1	1	3080	36 "	95 7/8 "	MULLED UNIT	HINGED W/TRANSOM
D15	1	1	8082	96 "	98 "	MULLED UNIT	SLIDER W/TRANSOM
D16	1	2	2468 R	28 "	80 "	POCKET	
D17	2	1	9080	108 "	96 "	GARAGE	

WINDOW SCHEDULE

NUMBER	QTY	WIDTH	HEIGHT	R/O	EGRESS	TEMPERED	DESCRIPTION	COMMENTS
W01	1	23 1/2 "	35 1/2 "	24"X36"			DOUBLE HUNG	
W02	1	23 1/2 "	47 1/2 "	24"X48"		YES	DOUBLE HUNG	
W03	1	76 "	61 1/2 "	76 1/2"X62"	YES		2X DH	
W04	1	80 "	61 1/2 "	80 1/2"X62"			2X DH	
W05	1	108 "	61 1/2 "	108 1/2"X62"	YES		3X DH	
W06	1	115 1/2 "	61 1/2 "	116"X62"			3X DH	
W07	1	30 "	41 1/2 "	30 1/2"X42"		YES	SINGLE CASEMENT-HR	
W08	1	30 "	41 1/2 "	30 1/2"X42"			SINGLE CASEMENT-HL	
W09	1	47 "	47 1/2 "	47 1/2"X48"			DOUBLE CASEMENT-LHL/RHR	
W10	1	72 "	23 1/2 "	72 1/2"X24"			TRIPLE CASEMENT-LHL/RHR	
W11	1	108 "	47 1/2 "	108 1/2"X48"	YES		TRIPLE CASEMENT-LHL/RHR	
W12	3	23 1/2 "	23 1/2 "	24"X24"			SINGLE AWNING	

Artform Home Plans

AFHP Design # 742.124.v6 KL
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Gaira 40x46
Lot 19 Page Farm
Atkinson, NH

2

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Foundations

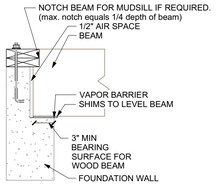
1. No footing shall be poured on loose or unsuitable soils, in water or on frozen ground.

2. All exterior footings to conform to all applicable code requirements for frost protection.

3. All concrete shall have a minimum compressive strength of at least 5000 PSI at 28 days.

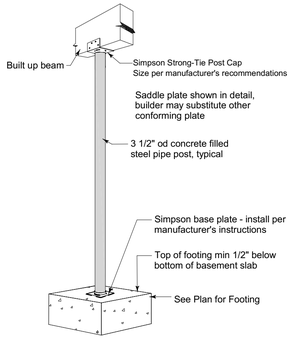
4. Foundation anchorage to comply with IRC 2015 Section R403.1.6, it shall consist of minimum size 1/2" diameter anchor bolts with 3/16" x 2" x 2" washers at a maximum of 72" oc for two stories or 48" oc for more than two stories, max of 12" from each corner, min of 2 bolts per wall. Anchor bolt shall extend 7" into concrete or grouted cells of concrete masonry units. Be aware that a garage under may be counted by your code officer as a story. Additional anchorage may be required at braced walls.

5. Foundation reinforcing steel is to be installed in accordance with all applicable provisions of IRC 2015 Section 404.1.3.2



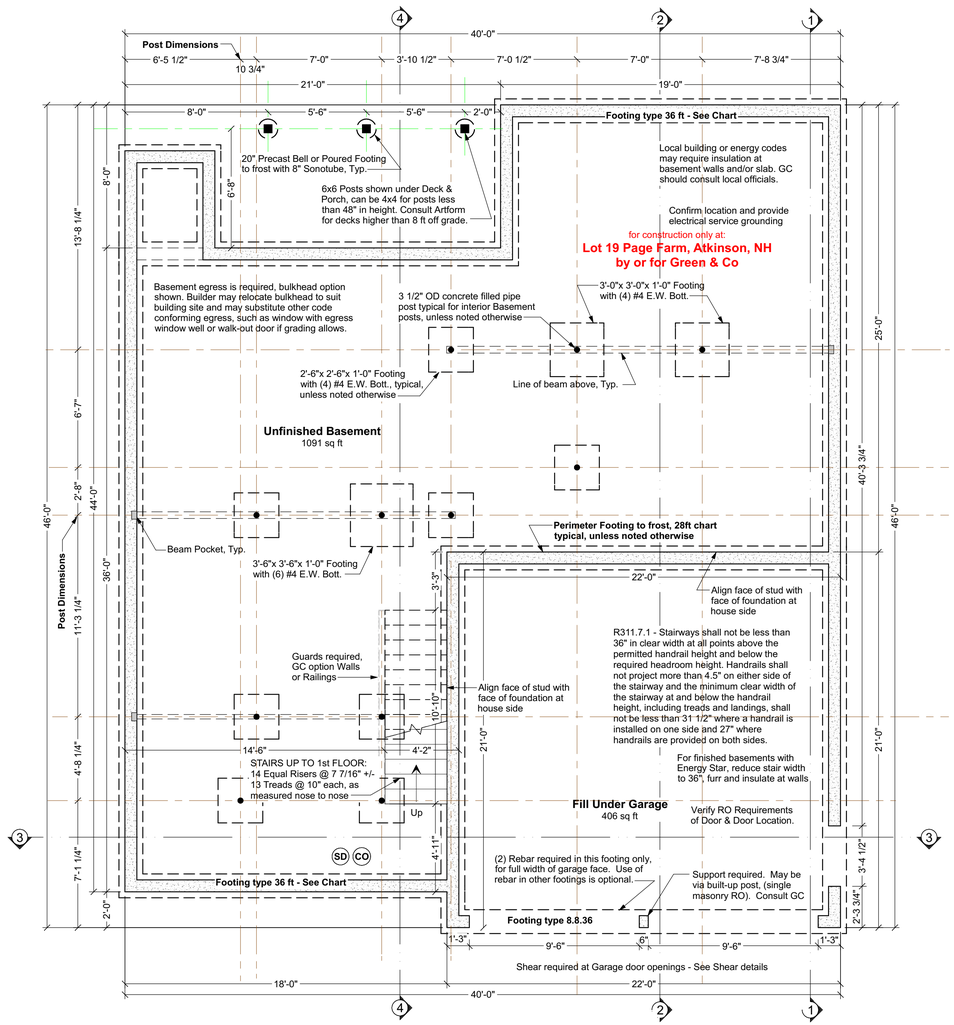
Beam Pocket

Scale 1/2"=1'-0"



Typical Basement Post

Not to Scale



Foundation Plan

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4

Ceiling Height may vary: 8 ft forms

TYPICAL PERIMETER FOUNDATION WALL:

- 8" poured concrete, 8 ft forms, min 7'-10" finished, with total of 3 rebar, as follows:
- (1) #4 rebar, 4" from top
- (1) #4 rebar @ vertical midpoint. Omit this rebar at walls 4 ft high or less.
- (1) #4 rebar, min 3" from bottom or per code
- Lap corners & splices of rebar per code.
- Secure sill to foundation with 1/2" diameter anchor bolts that extend 7" into concrete and tightened with a nut and washer @ 6' oc & max 12" from each corner & each end @ wood sill splices - if built-up sill, bolts must extend through all sill plates or straps must secure all sill plates.

TYPICAL PERIMETER FOOTING:

1. Use Footing chart(s) below to verify that depth of home matches chart. Depth is foundation dimension eave to eave. Contact Artform Home Plans if you believe the chart does not match the plan.
2. Select row for snow load shown on the structural plans.
3. Select a column for soil bearing pressure based on soil type and/or consultation with code officer.
4. The required footing size is at the intersection of the Snow Load and Soil PSF. Rebar is not required. Key or pin foundation wall to footing per code.

FAQ - Adding rebar to footings does not reduce the required width. Rebar affects performance with earth movement, like an earthquake and has near zero effect on bearing capacity.

8" wall - Footing Size for 28 Ft wide house				
Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	23 x 7.5	17 x 6	12 x 6
55 PSF	2 Story – Plus Basement	23.5 x 7.75	17.25 x 6	12 x 6
60 PSF	2 Story – Plus Basement	24 x 8	17.5 x 6	12 x 6
65 PSF	2 Story – Plus Basement	24.5 x 8.25	17.75 x 6	12 x 6
70 PSF	2 Story – Plus Basement	25 x 8.5	18 x 6	12 x 6

8" wall - Footing Size for 32 Ft wide house				
Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	25 x 8.5	19 x 6	12 x 6
55 PSF	2 Story – Plus Basement	25.5 x 8.75	19.25 x 6	12.5 x 6
60 PSF	2 Story – Plus Basement	26 x 9	19.5 x 6	13 x 6
65 PSF	2 Story – Plus Basement	26.5 x 9.25	19.75 x 6	13.5 x 6
70 PSF	2 Story – Plus Basement	27 x 9.5	20 x 6	14 x 6

8" wall - Footing Size for 36 Ft wide house				
Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	27 x 9.5	21 x 7	14 x 7
55 PSF	2 Story – Plus Basement	27.5 x 9.75	21.25 x 7	14.5 x 7
60 PSF	2 Story – Plus Basement	28 x 10	21.5 x 7	15 x 7
65 PSF	2 Story – Plus Basement	28.5 x 10.25	21.75 x 7	15.5 x 7
70 PSF	2 Story – Plus Basement	29 x 10.5	22 x 7	16 x 7

Foundation Contractor Check List

Confirm or review the following prior to forming & pouring foundation

Initials Date Checked

____ _____ Confirmed soil bearing
____ _____ Checked w/GC for added foundation steps to suit grade
____ _____ Confirm sill plate thickness (foundation bolts to extend through all)
____ _____ Confirmed garage door size
____ _____ Checked w/GC for added basement windows
____ _____ Checked w/GC for added basement man doors
____ _____ Confirmed sizes & locations mech/plbg penetrations
____ _____ Confirmed sizes and locations of beams w/GC, added or adjusted beam pockets
____ _____ Confirmed location and installed electrical service grounding - See GC for location

MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH (203MM) NOMINAL FLAT CONCRETE BASEMENT WALL

MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (inches)		
		Soil classes and design lateral soil (psf per foot of depth)		
		GW, GP, SW, SP 30	GM, GC, SM, SM-SC and ML 45	SC, ML-CL and inorganic CL 60
8	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 37
	7	NR	6 @ 36	6 @ 35
	8	6 @ 41	6 @ 35	6 @ 26

Artform Home Plans

AFHP Design # 742.124.v6 KL

Gaira 40x46
Lot 19 Page Farm
Atkinson, NH

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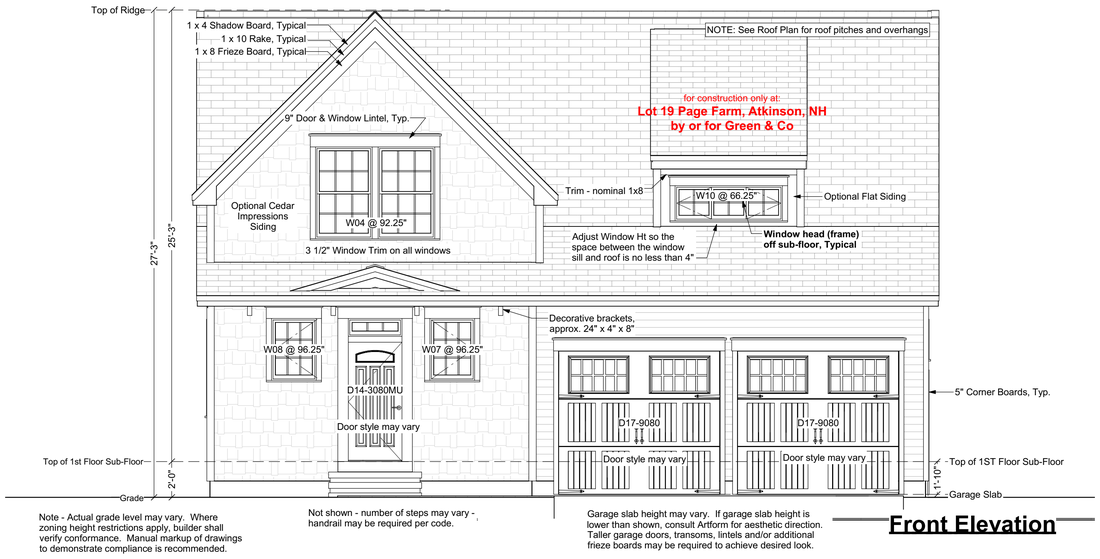
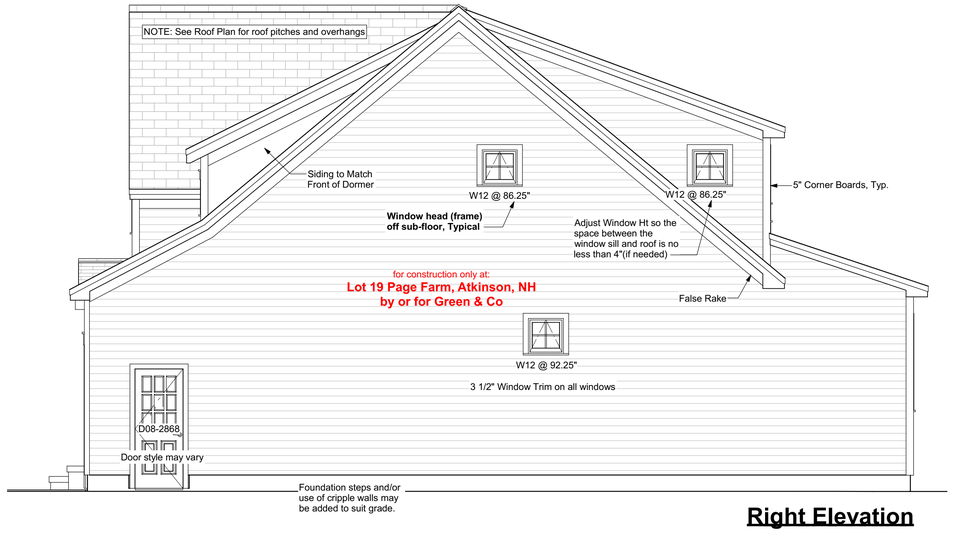


Note - Actual grade level may vary. Where zoning height restrictions apply, builder shall verify conformance. Manual markup of drawings to demonstrate compliance is recommended.

Not shown - number of steps may vary - handrail may be required per code.

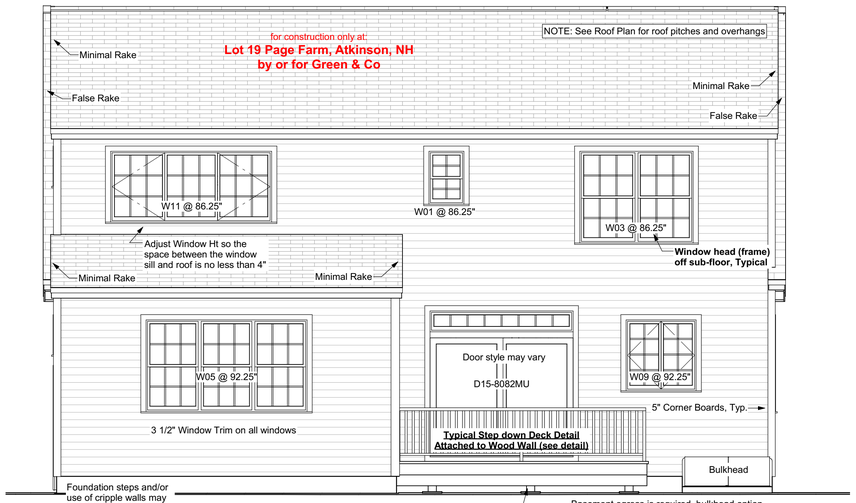
Garage slab height may vary. If garage slab height is lower than shown, consult Artform for aesthetic direction. Taller garage doors, transoms, lintels and/or additional frieze boards may be required to achieve desired look.

Front Elevation



Foundation steps and/or use of cripple walls may be added to suit grade.

Right Elevation

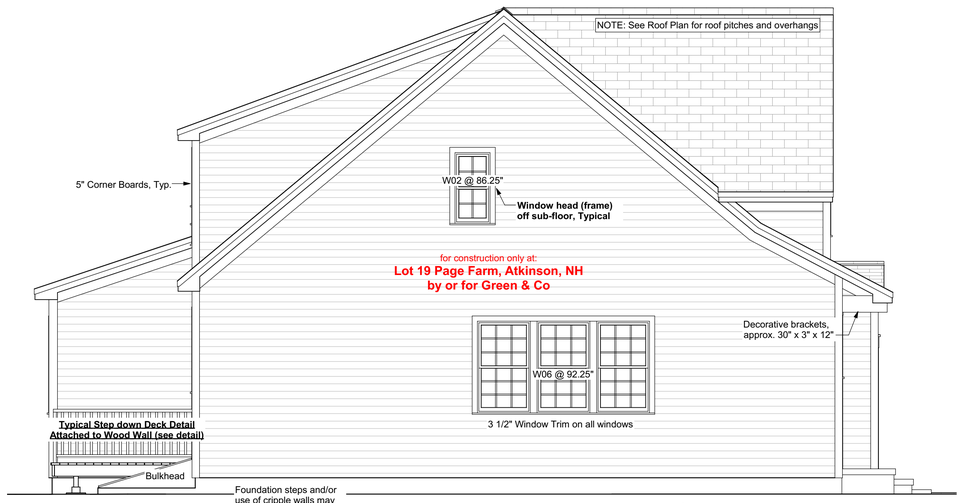


Foundation steps and/or use of cripple walls may be added to suit grade.

6x6 Posts shown under Deck & Porch, can be 4x4 for posts less than 48" in height. Consult Artform for decks higher than 8 ft off grade.

Basement egress is required, bulkhead option shown. Builder may relocate bulkhead to suit building site and may substitute other code conforming egress, such as window with egress window well or walk-out door if grading allows.

Rear Elevation



Foundation steps and/or use of cripple walls may be added to suit grade.

Left Elevation

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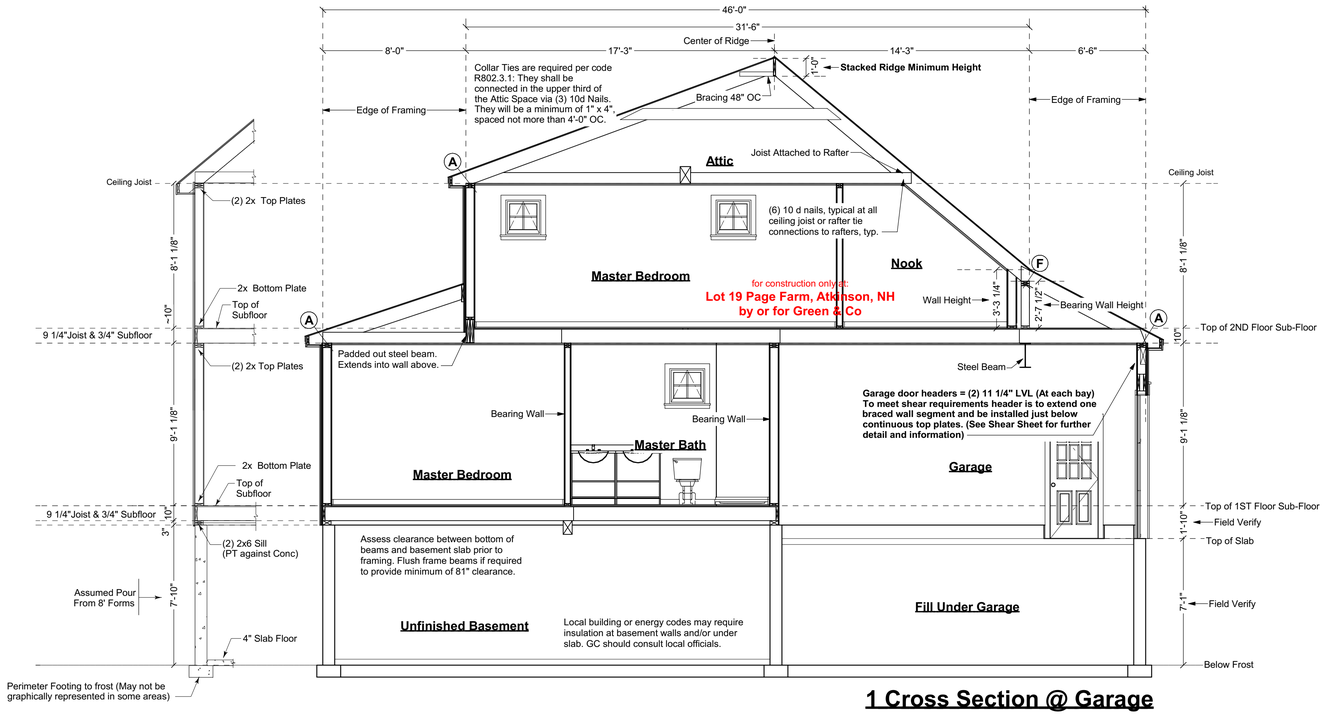
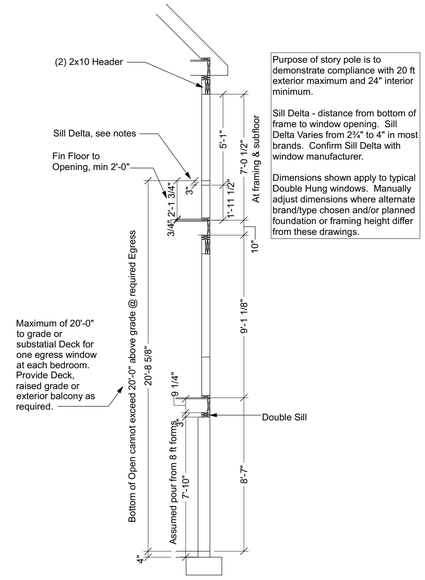


1 Cross Section @ Garage



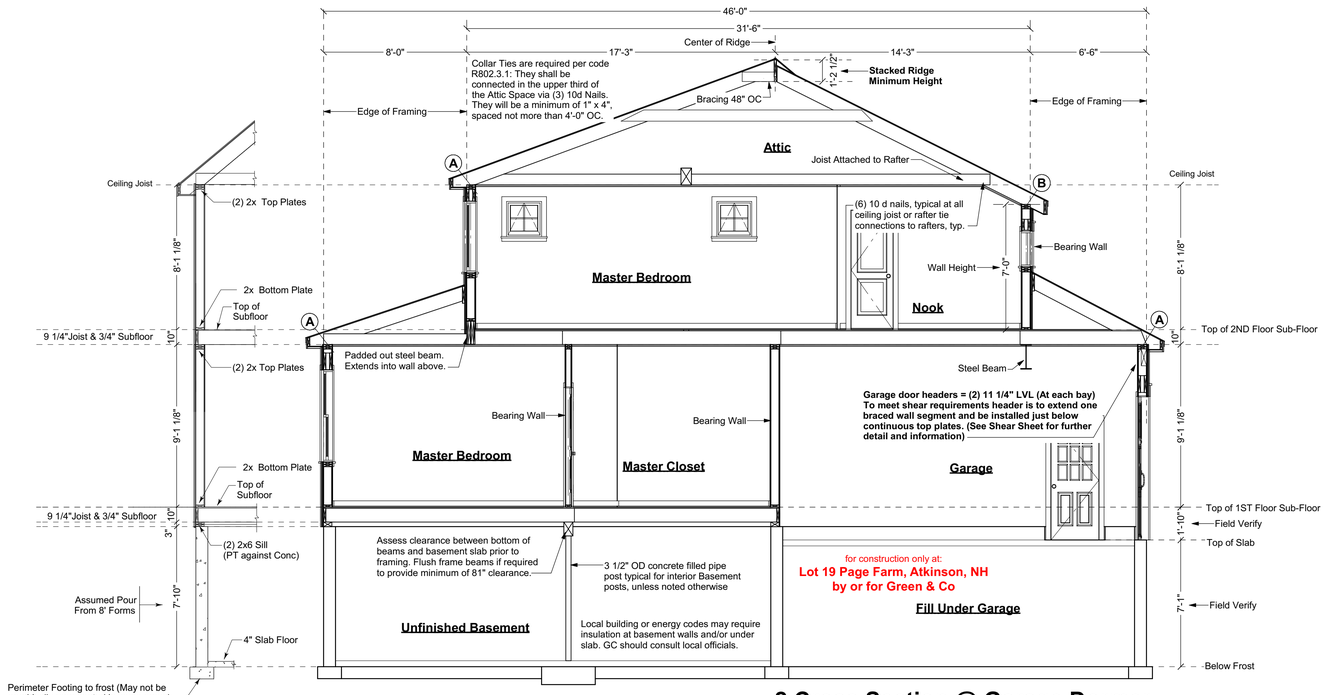
Purpose of story pole is to demonstrate compliance with 20 ft exterior maximum and 24" interior minimum.

Sill Delta - distance from bottom of frame to window opening. Sill Delta Varies from 2¾" to 4" in most brands. Confirm Sill Delta with window manufacturer.

Dimensions shown apply to typical Double Hung windows. Manually adjust dimensions where alternate brand/type chosen and/or planned foundation or framing height differ from these drawings.

Window Story Pole

Scale ¼"=1'-0"



2 Cross Section @ Garage Dormer

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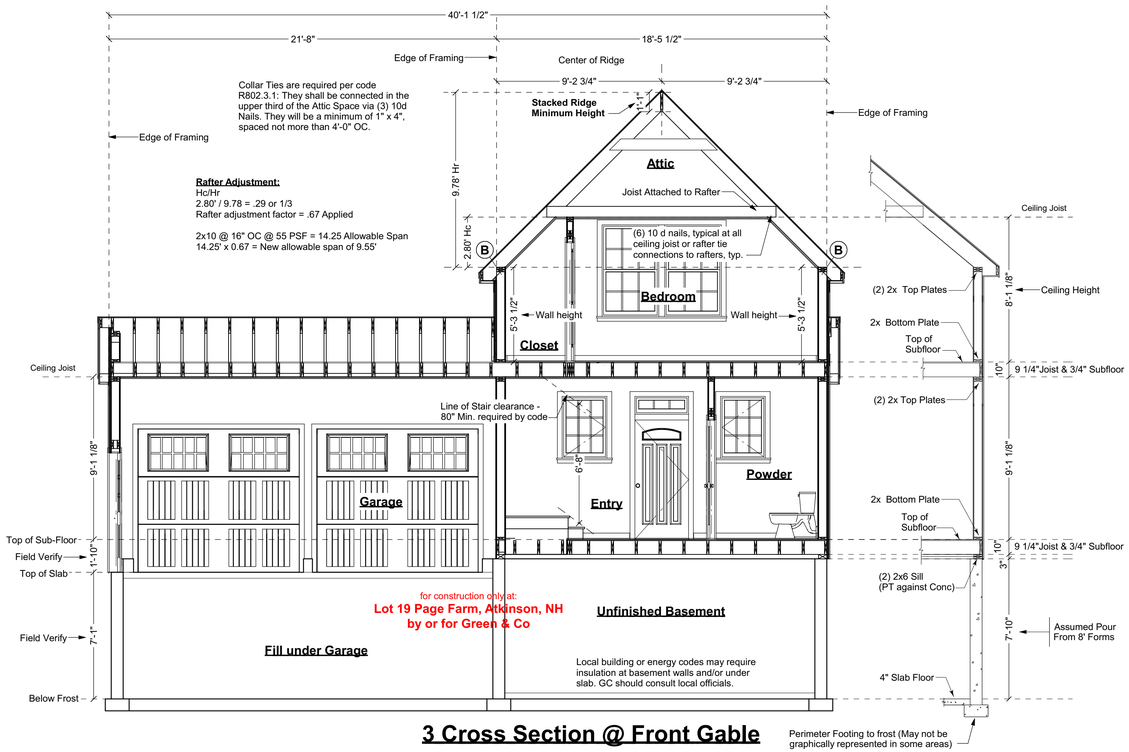
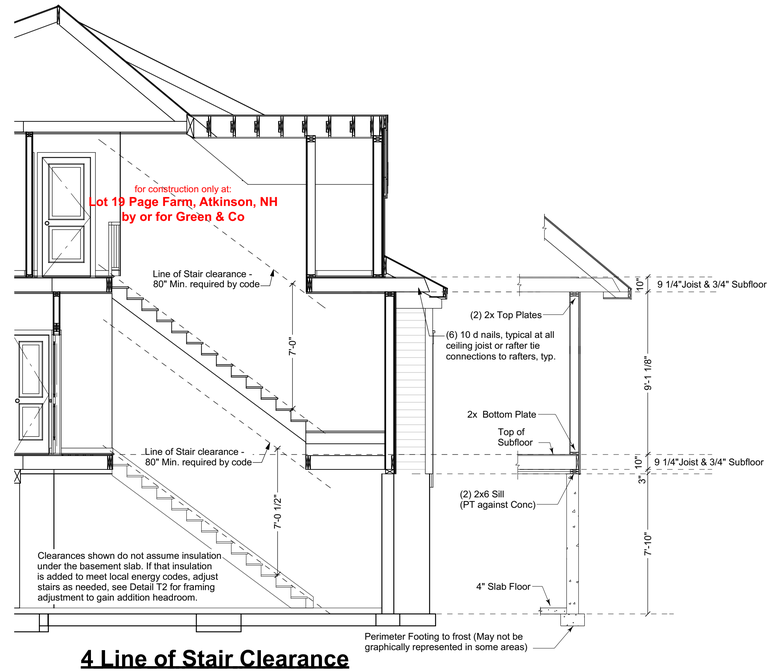
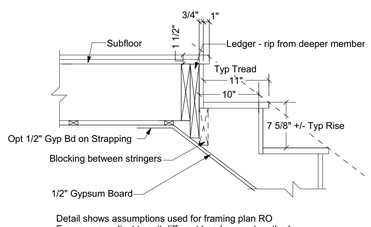


3 Cross Section @ Front Gable



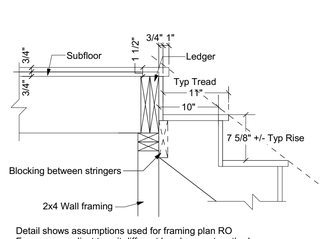
4 Line of Stair Clearance



Detail shows assumptions used for framing plan RO
Framer may adjust to suit different head support methods

Top of Carriage (C)

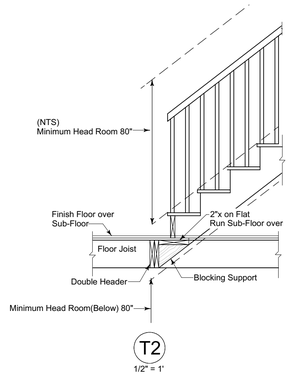
Scale: 1" = 1'-0"



Detail shows assumptions used for framing plan RO
Framer may adjust to suit different head support methods

Top of Carriage (B)

Scale: 1" = 1'-0"



Artform Home Plans

AFHP Design # 742.124.v6 KL

Gaira 40x46
Lot 19 Page Farm
Atkinson, NH

6

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TABLE R602.10.4
BRACING METHODS

METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Continuous Sheathing Methods	**CS-WSP** Continuously sheathed wood structural panel	3/8"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table R602.3(1) or R602.3(2)	Varies by fastener

Method PFG: Portal frame at garage door openings shall be constructed in accordance with Figure R602.10.6.3. Note this method is allowed on either side of garage door openings.

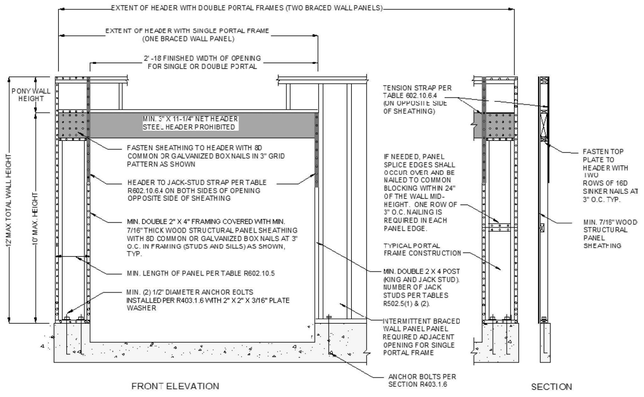


FIGURE R602.10.6.3
METHOD PFG—PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C

Method CS-PF: Continuously sheathe portal frame shall be constructed in accordance with Figure 602.10.6.4. The number of continuously sheathed portal frame panels in a single braced wall line shall not exceed four.

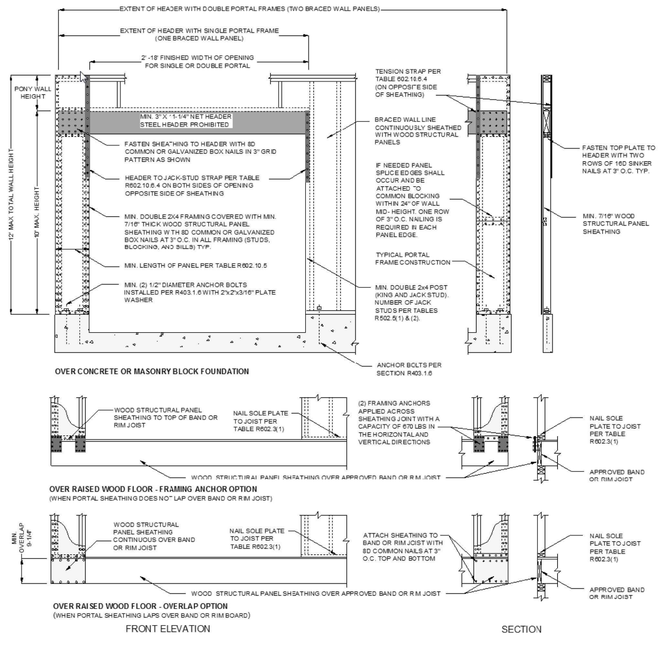
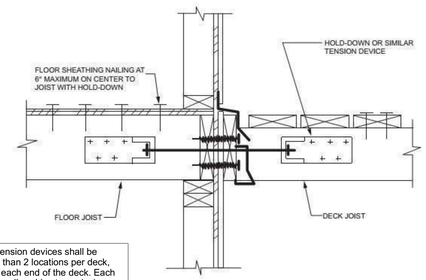


FIGURE R602.10.6.4
METHOD CS-PF—CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION



NOTE: hold down tension devices shall be installed in not less than 2 locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 lbs.

FIGURE R507.2.3(1)
DECK ATTACHMENT FOR LATERAL LOADS

SIMPSON STRONG-TIE ACH WITH TWO H1'S

POST CAP & JOIST ATTACHMENT

POST CAP

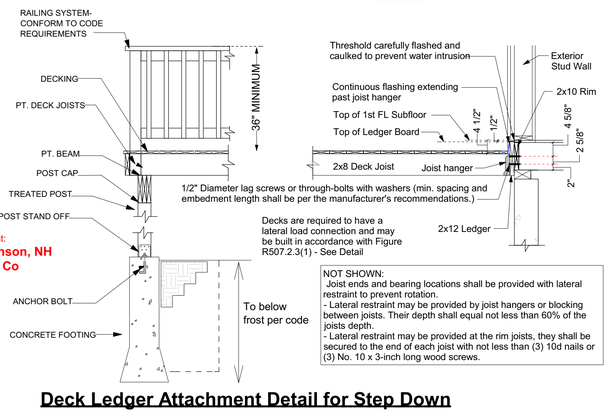
POST STAND OFF

Follow manufacturer's instructions both for installation of joist hangers to joist and to beam. The illustration below, by Simpson Strong Tie, is provided as a courtesy. Consult their full manual for acceptable fastener sizes and other important instructions.

SHORT NAILS Do not use short (1½") nails for double shear nailing.

Double shear nailing should use full length common nails

Shorter nails may not be used as double shear nails



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Lot 19 Page Farm, Atkinson, NH
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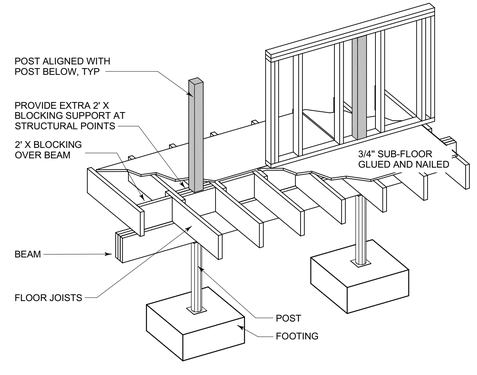
Deck Ledger Attachment Detail for Step Down

Scale: 1/2" = 1'-0"



Shear Wall Details

Not to Scale

Notes:

- See plans for locations where shear panels are required.
- Details shown here are for one method and for typical conditions. An alternate shear method allowed per code or approved by the code officer may be substituted.
- If the method at left is used at Garages where width of panel is 20" or more, wall height may be 10 ft as shown in detail at left. Where panel width is 18"-20", wall height may be 9 ft. Where panel is 16"-18", wall height may be 8 ft. Where panel is less, consult architect for additional design.
- If the method at left is used, increase foundation wall height at front and for 2 ft along wall returns as required to meet maximum wood stud wall heights, and extend sheathing and siding in front of wall to achieve desired aesthetics. Untreaded wood may not be in direct contact with concrete - use treated wood or provide a barrier, such as a rubber membrane or felt paper.
- Note that if sheathing is to be used as wall bracing all vertical joints in required braced wall panels must be blocked. [2015 IRC section R602.10.10]

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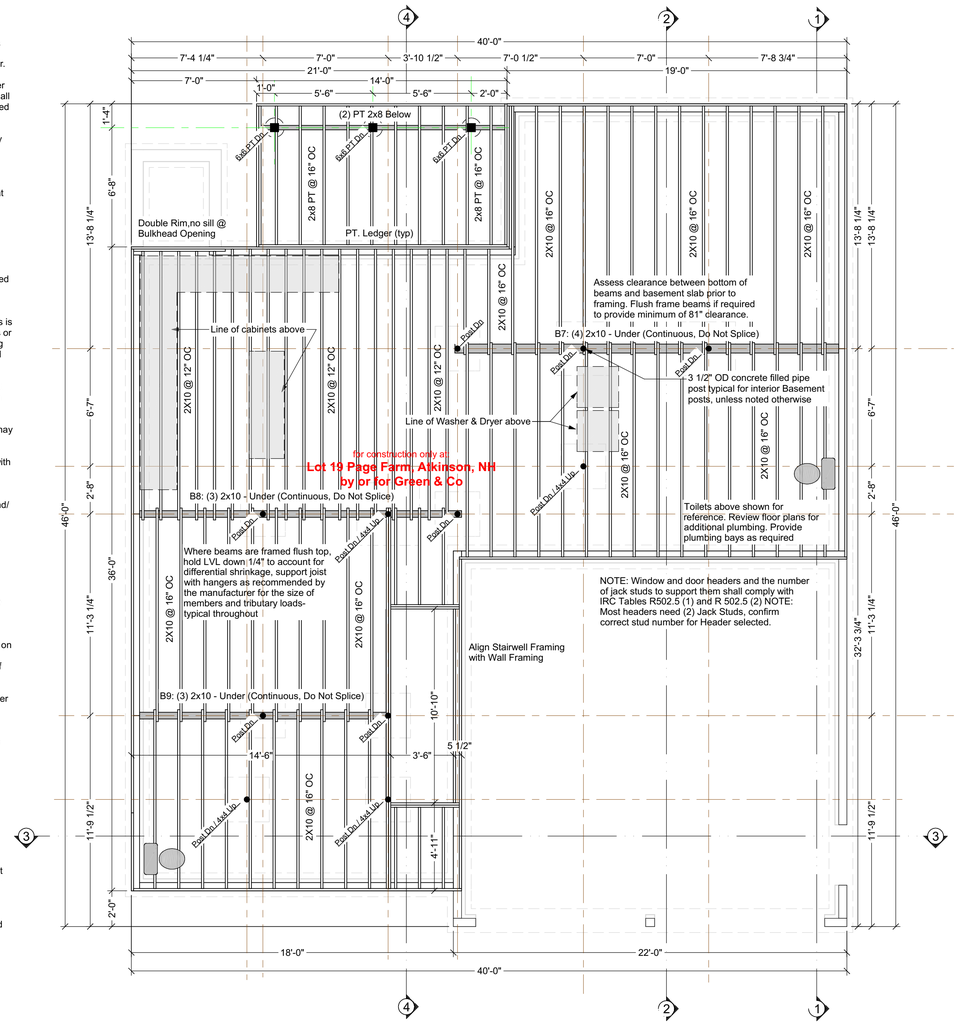
Wood Framing Notes:

1. All structural wood shall be identified by a grade mark or certificate of inspection by a recognized inspection agency.
2. Structural wood shall be Spruce-Pine-Fir (SPF) #2 or better.
3. When used, LVL or PSL indicate Laminated Veneer Lumber or Parallel Strand Lumber, respectively. Products used shall equal or exceed the strength properties for the size indicated as manufactured by TrusJoist.
4. When used, TJI indicates wood I-joists as manufactured by TrusJoist. Products of alternate manufacturers may be substituted provided they meet or exceed the strength properties for the member specified.
5. All floor joists shall have bridging installed at mid-span or at 8'-0" oc maximum.
6. Floor systems are designed for performance with subfloor glued and screwed.
7. Per code R502.6.1 Floor joists splicing over bearing walls allowed, shall lap a min 3" over walls and shall be nailed together with a minimum of (3) 10d face nails. Also permitted is a wood or metal splice with strength equal to or greater than that provided by the nailed lap.
8. Per code R802.3.2 Ceiling joists splicing over bearing walls is allowed, shall lap a min 3" or butted over bearing partitions or beams and toenailed to the bearing member. Where ceiling joists are used to provide resistance to rafter thrust, lapped joists shall be nailed together in accordance with Table R802.5.1(9), and butted joists shall be tied together in a manner to resist such thrust. Joists that do not resist thrust shall be permitted to be nailed together in accordance with Table R602.3(1).
9. Provide blocking in the floor at structural points. Blocking may be 2x's or solid, but must have grain of wood vertical.
10. All wood permanently exposed to the weather, in contact with concrete or in contact with the ground shall meet code requirements for wood in these environments.
11. Deck ledgers shall be securely attached to the structure and/ or independently supported. Deck lateral load connection required see IRC 2015 Section R507.2.4
12. Wherever beams are noted as Flush framed, install joist hangers at all joists, sized appropriately for the members being connected.
13. Support the lower end of roof beams via minimum 2" horizontal bearing on a post, ledger or via an appropriately sized and configured hanger.
14. The ends of each joist, beam or girder shall have not less than 1.5" of bearing on wood or metal and not less then 3" on masonry or concrete except where supported on a 1" x 4" ribbon strip and nailed to the adjacent stud or by the use of approved joist hangers.
15. Post caps where required are typically calculated by supplier using weights based on these framing plans. Contact Art Form if additional information is needed.
16. Hangers, post caps, post bases, ties and other connectors shall be as manufactured by Simpson Strong Tie, as designed to connect the members shown, and shall be installed per manufacturer's instructions.

Prefabricated Wood Trusses

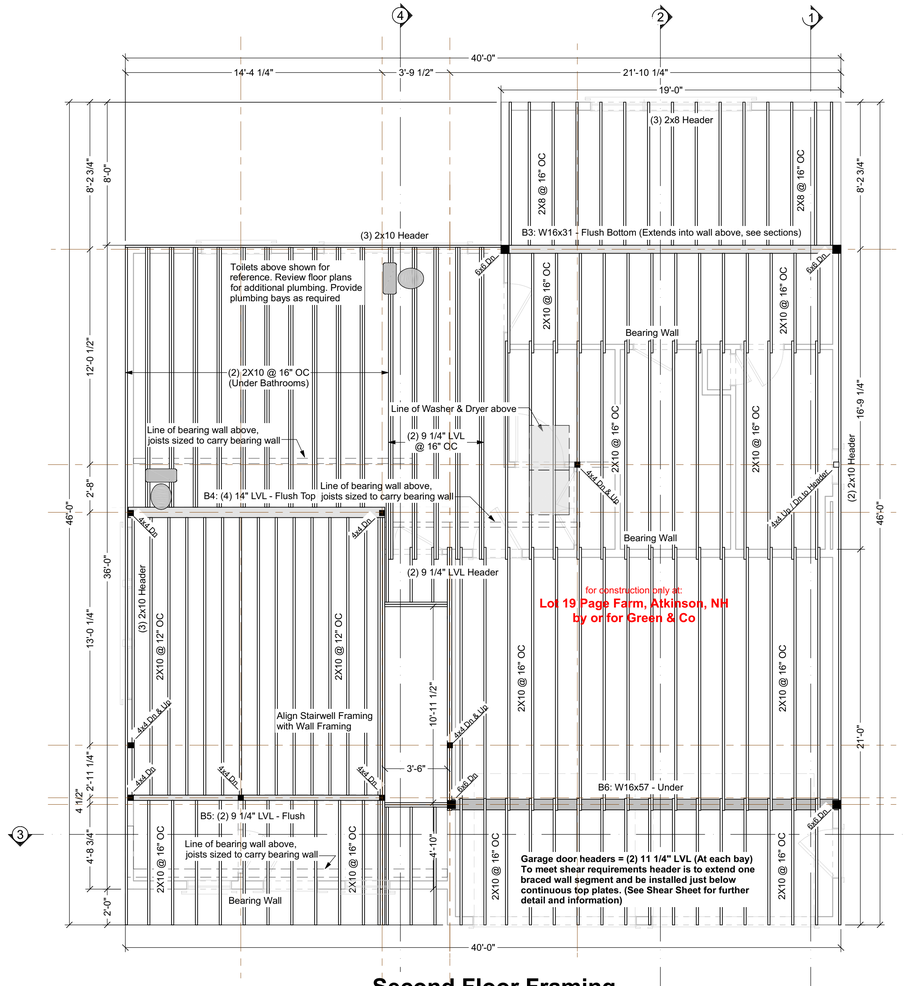
1. Where trusses are indicated on the drawings, truss design shall be provided by truss manufacturer.
2. Trusses shall be designed in accordance with applicable provisions of the latest edition of the National Design Specifications for Wood Construction (NDS), American Forst and Paper Association (APA), and Design Specifications for Metal Plate Connected Wood Trusses (ANSI/TPI 1), Truss Plate Institute (TPI) and code of jurisdiction.
3. Manufacturer shall furnish design drawings bearing seal and registration number of a structural engineer licensed in the state where project will be built.



First Floor Framing

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4



Second Floor Framing

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4

Built-up Beams:
Unless otherwise noted, connect multiple 1 3/4" ply beams as follows:
3 ply & up, fasteners are per side

(2) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 24" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 24" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 14" LVL:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 9 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 11 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

(4) 16" LVL or greater:
- Flush framed
  - (3) rows 5" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

Beam Substitutions:

(2) 9 1/4" LVL may replace a double or triple 2x10 beam. No other substitutions are allowed. Conventional lumber beams MAY NOT be substituted for LVL beams by any "rule of thumb". Substitutions must be calculated by either Artform or a structural engineer. If calculated by a structural engineer, provide stamped plans and/or calculations.

We specify LVL beams as built up members to allow framers to use existing stock. You may substitute single piece LVLs of equivalent overall size for built-up members, unless otherwise noted.

Built-up members MAY NOT replace single piece LVL's where specified.

Where a beam of 1 3/4" or less in width is specified as framed under, either brace at 48" or double member for lateral stability.

Notes: Beam & Joist Sizing

1. Our beams sizes often differ from prescriptive code, because our designs are rarely the old style box colonial or cape with a center bearing wall upon which prescriptive code is based. We size our beams via calculations for this specific design, which may carry those loads separately via second floor beams and/or roof transfer beams. Beam or joist sizes, types and/or spacing may not be reduced or alternates substituted without our express permission.
2. Walls intended to be bearing are labeled as such. This information is provided to aid code officer in understanding the framing. It does not indicate permission to add loads to those walls, or any other walls.
3. Framing is sized for normal residential conditions. Contact Artform if additional loads are anticipated, including but not limited to waterbeds, large fish tanks, indoor hot tubs, multiple framed soffits or coffers.
4. In states where the designer is a licensed architect, (NH, MA, ME, CT & NY as of the date of issue) we are happy to stamp our drawings at no additional charge. In other states we are happy to provide calculations. Administration fees apply with provision of calculations. Code officer is encouraged to call with any questions about our methodology.

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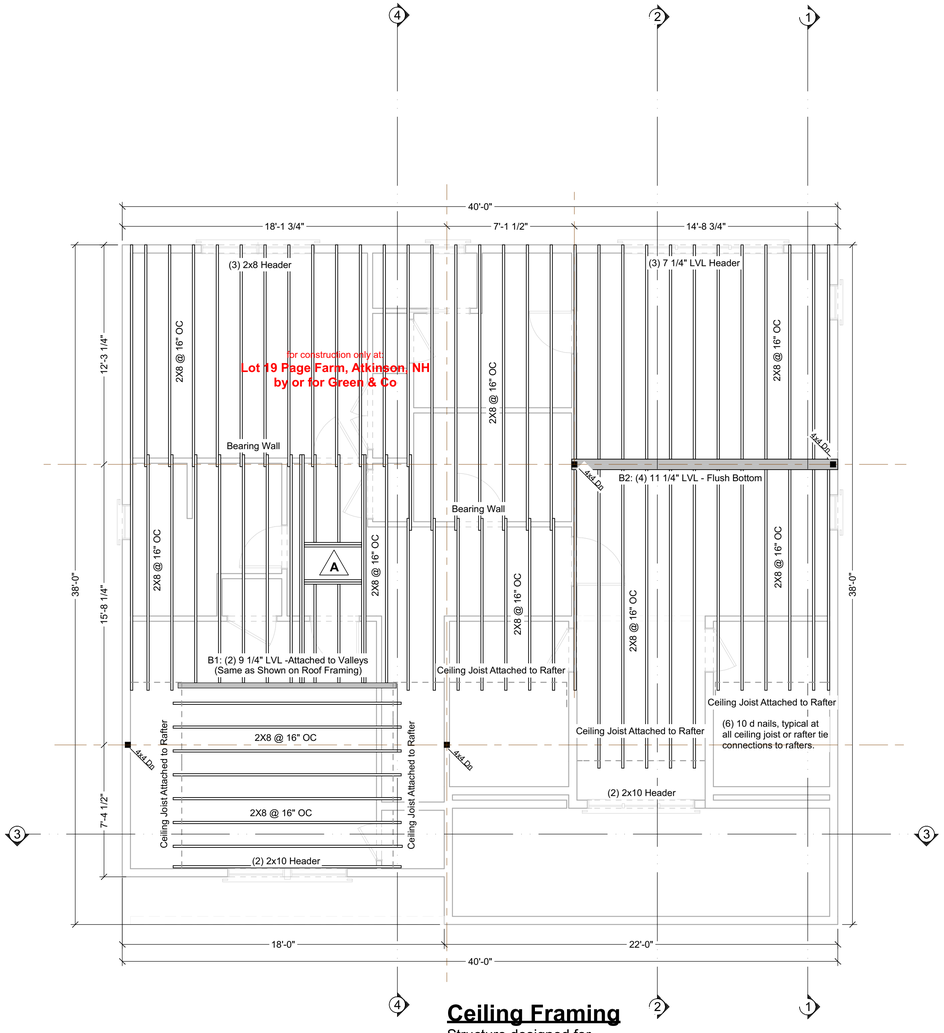
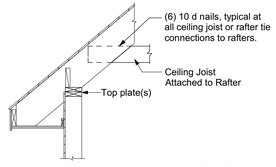
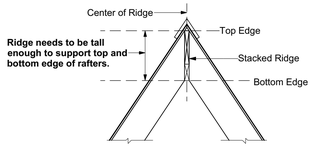


Ceiling Framing

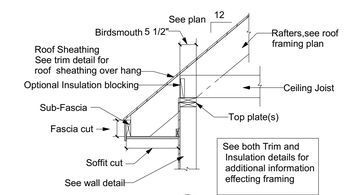
Structure designed for
Snow Load of 55 psf



Joist Attached to Rafter



Stacked Ridge Detail



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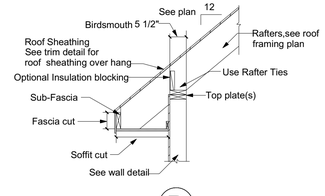

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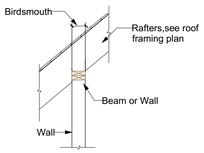

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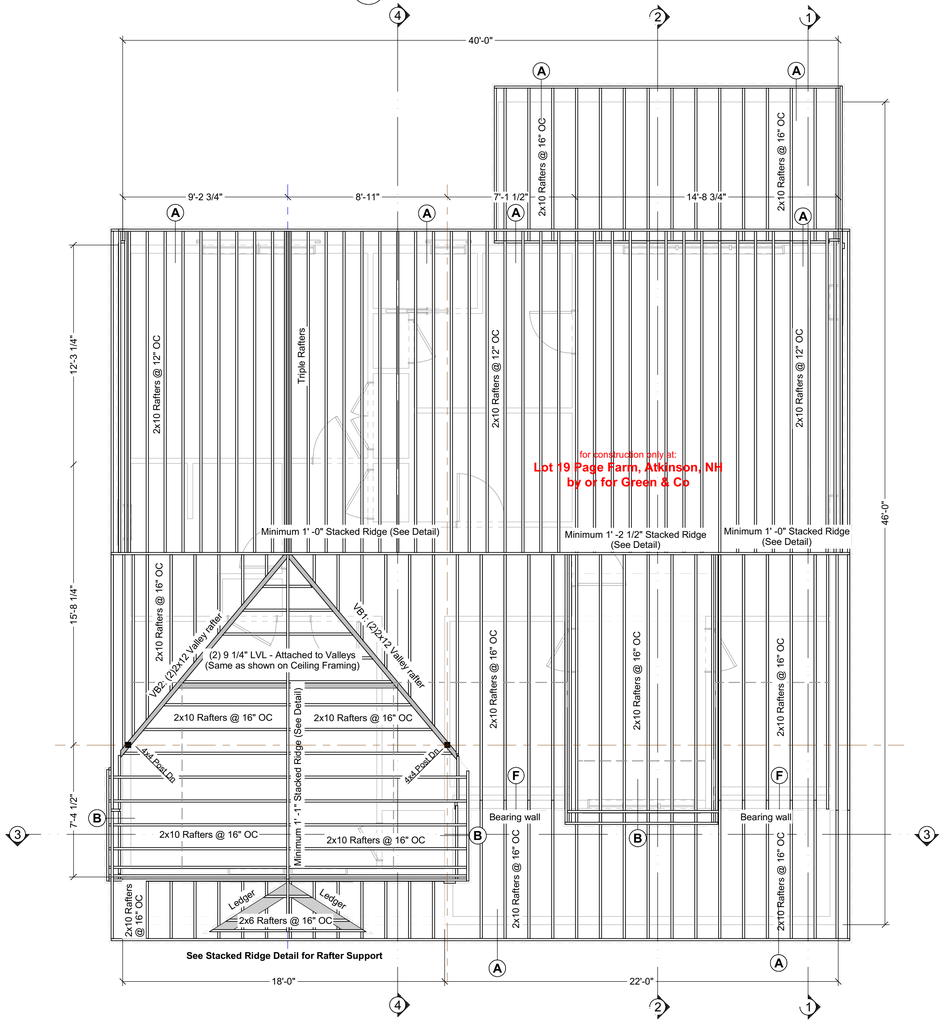
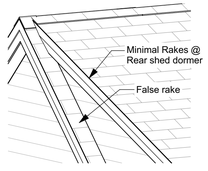


Roof Framing

Provide Hurricane ties per code

Structure designed for
Snow Load of 55 psf

NOTE: See Roof Plan for
roof pitches and overhangs



Alternate:
12" False Rake and a 6" Shed Dormer Rake

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481.124.v10 KR Sweet Cherry Pie

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2404 SF	0 SF	0 SF	2404 SF	2404 SF	2404 SF
Bedrooms	3	1	0	4	3	4
Baths	2.5	0.0	0.0	2.5	2.5	2.5

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- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

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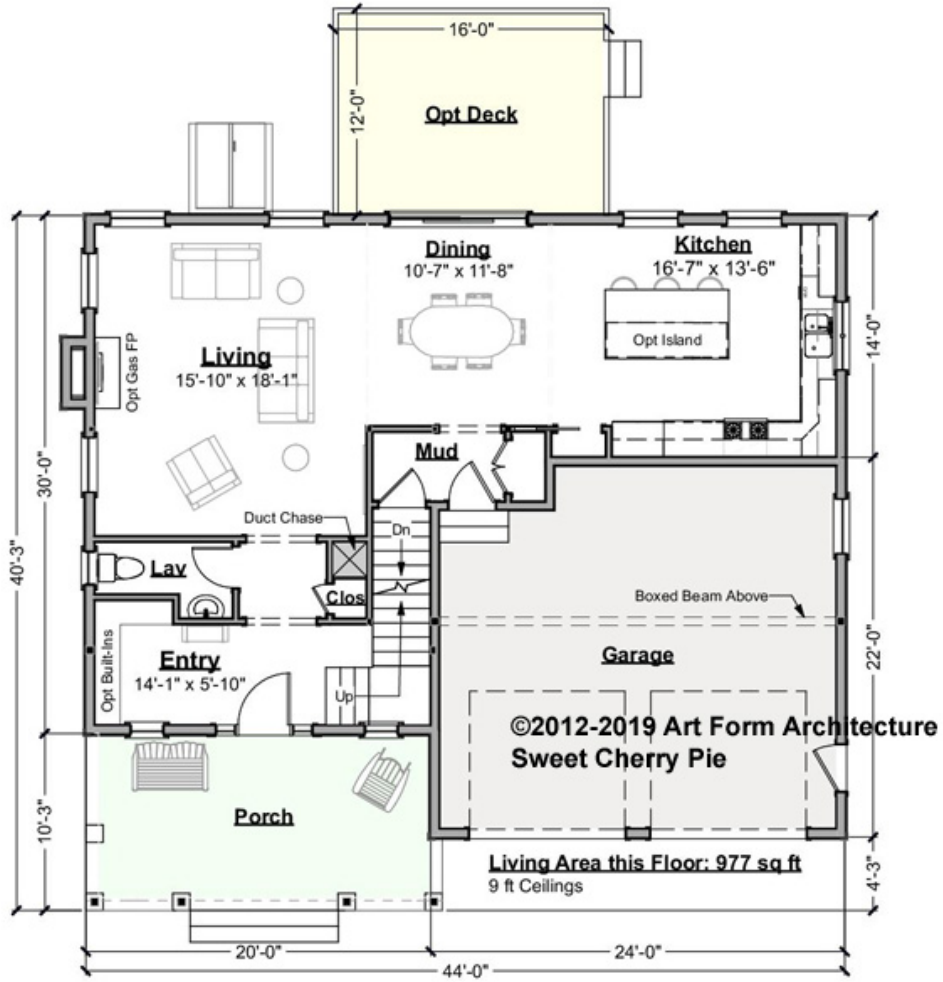
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	977 SF	0	0.5
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**977 SF**	**0**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



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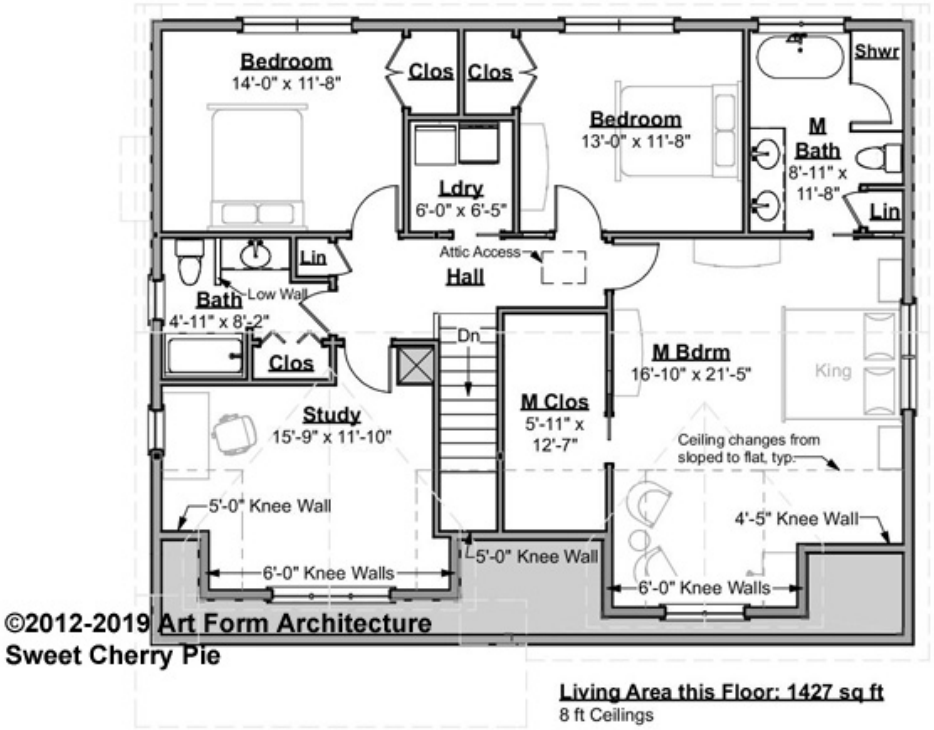
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1427 SF	3	2
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**1427 SF**	**4**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	9'-0"

* See Major Change information on plan page for cost



Sweet Cherry Pie

Living Area this Floor: 1427 sq ft
8 ft Ceilings

Some features show are optional. Your Purchase & Sale Agreement governs, whether items are labeled "optional" in this document or not.

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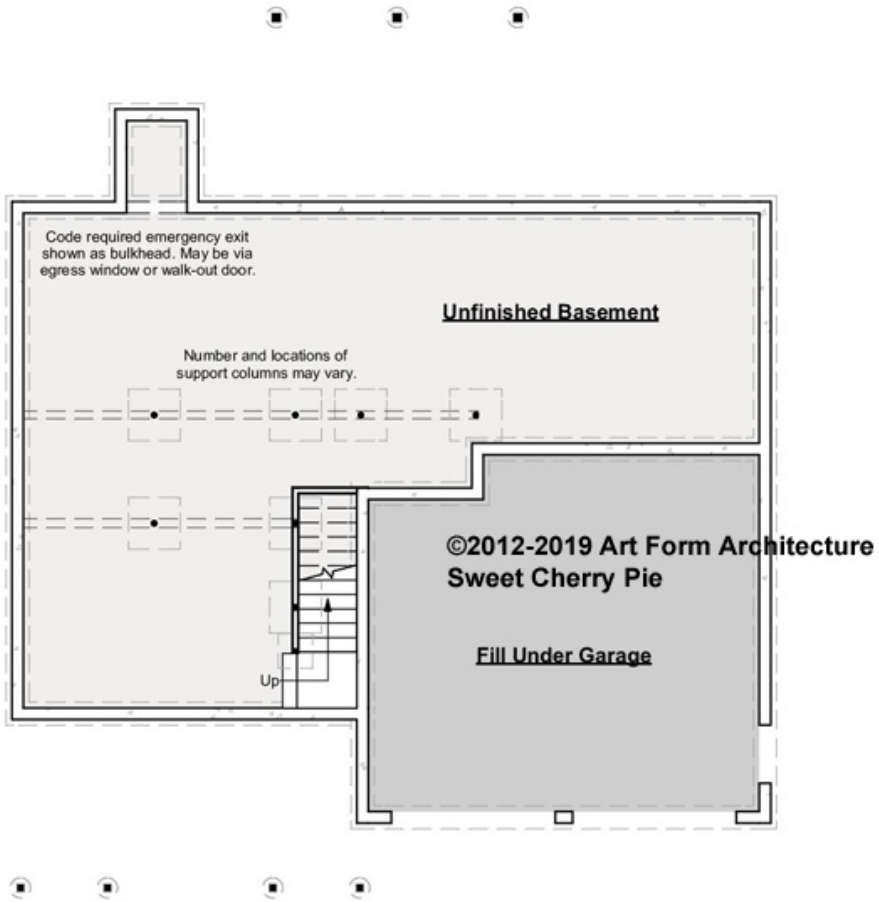
Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	9'-0"

* See Major Change information on plan page for cost



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Artform Home Plans

Front Elevation

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Artform Home Plans

Right Elevation

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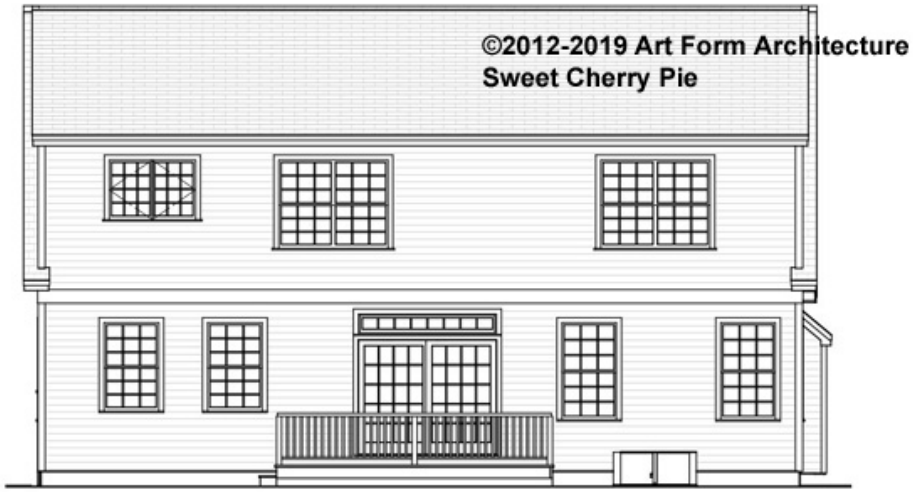
Artform Home Plans

Rear Elevation



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Artform Home Plans

Left Elevation

1032.124 GL Sinclair

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2886 SF	0 SF	0 SF	2886 SF	2886 SF	2886 SF
Bedrooms	4	1	0	5	4	5
Baths	3.5	0.0	0.0	3.5	3.5	3.5

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1032.124 GL Sinclair

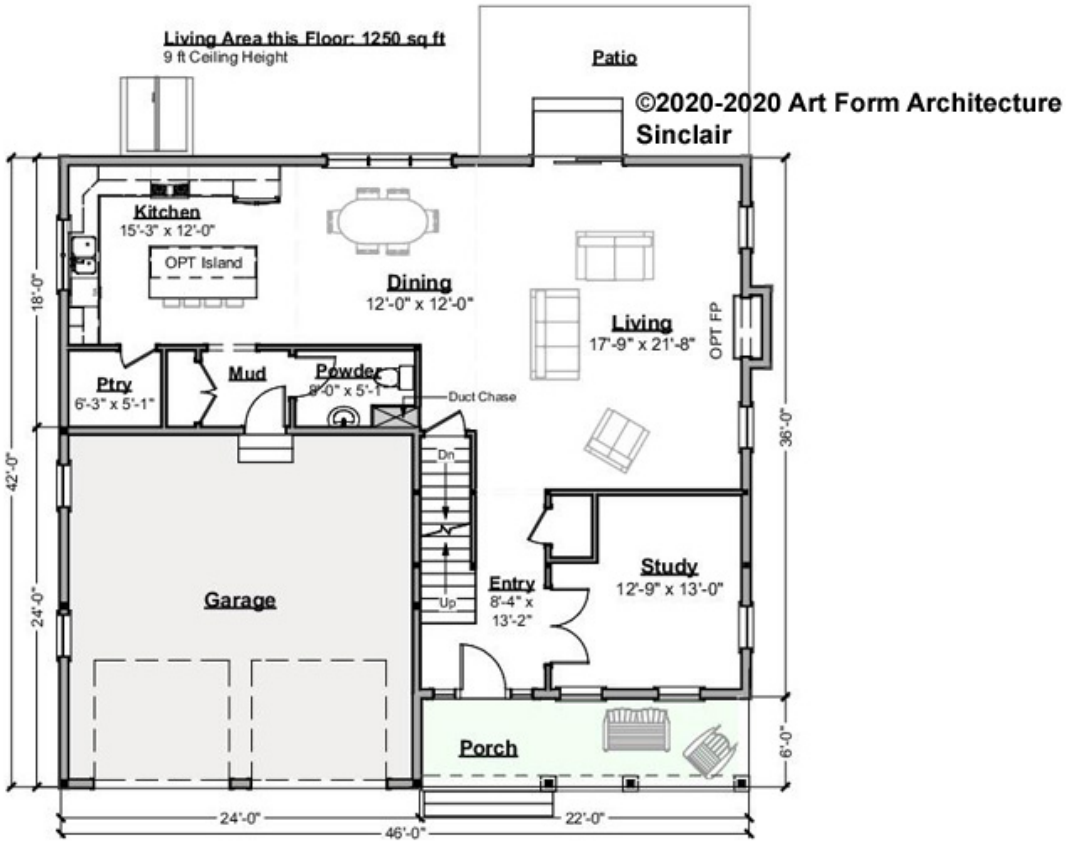
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	1250 SF	0	0.5
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**1250 SF**	**1**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



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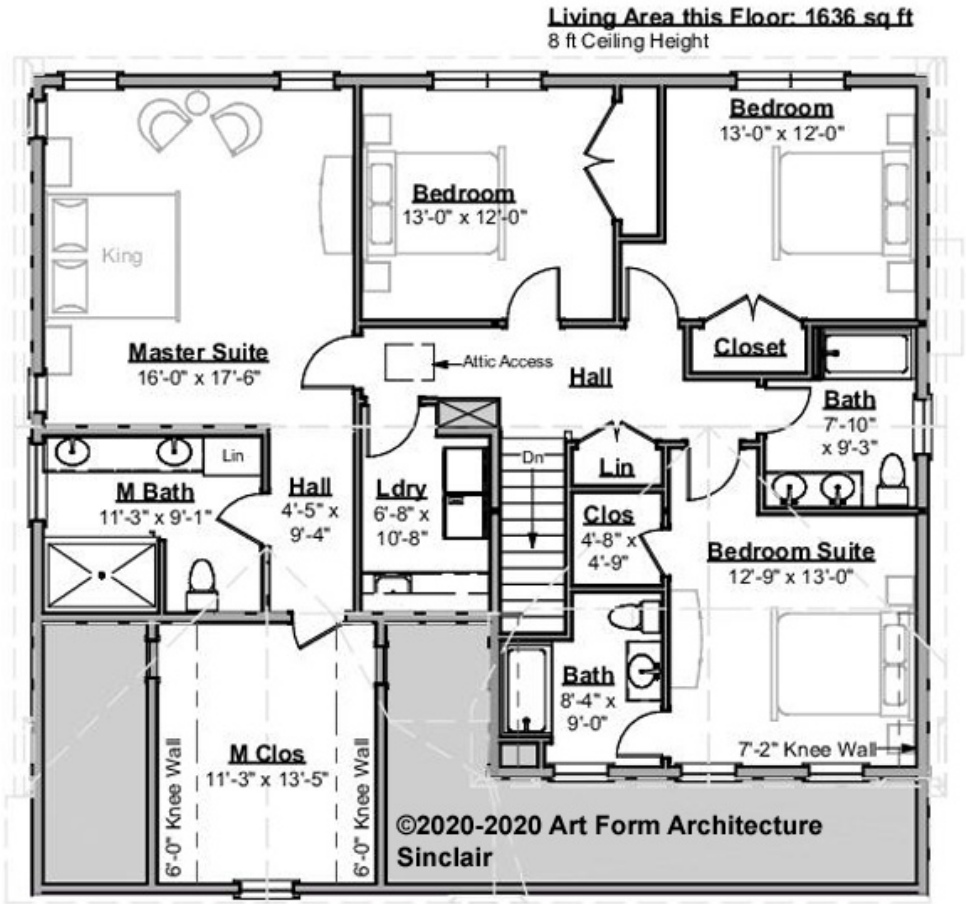
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1636 SF	4	3
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1636 SF**	**4**	**3**

Ceiling Height	
Shown	8'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



1032.124 GL Sinclair

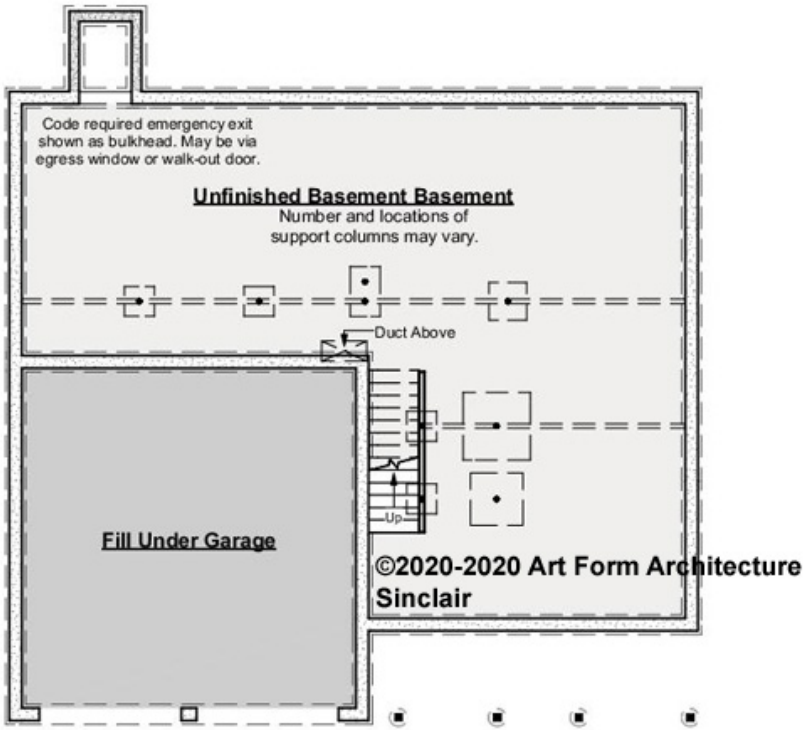
Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	9'-0"

* See Major Change information on plan page for cost



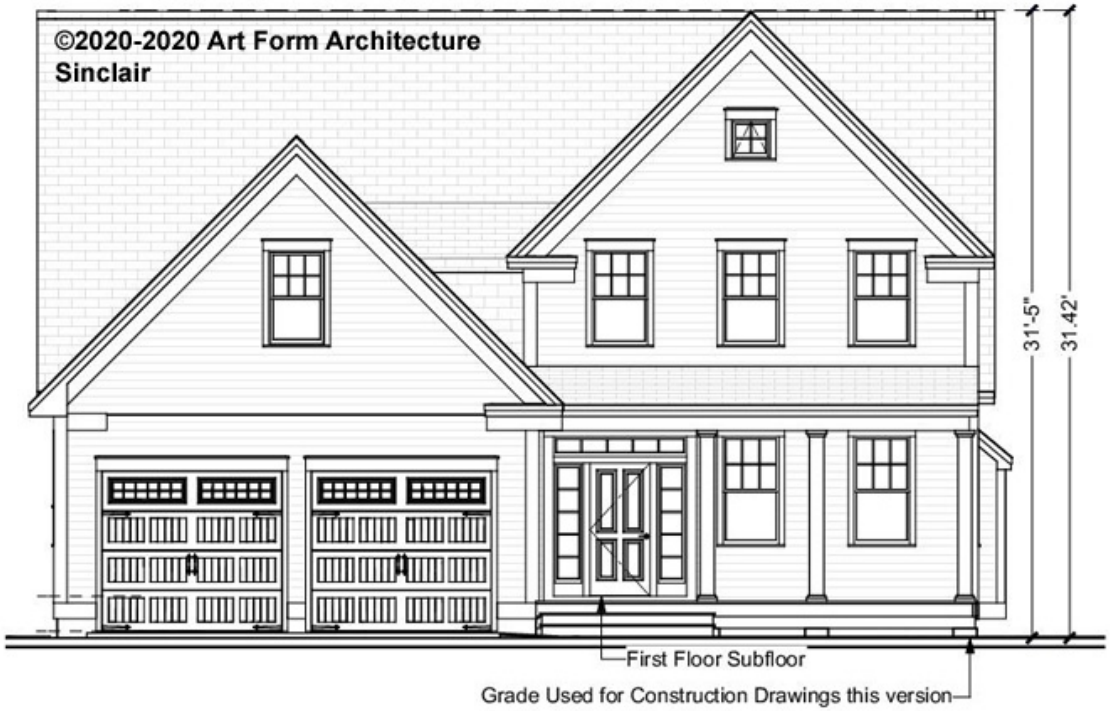
Some features show are optional. Your Purchase & Sale Agreement governs, whether items are labeled "optional" in this document or not.

We are not responsible for typographical errors.

1032.124 GL Sinclair

Artform Home Plans

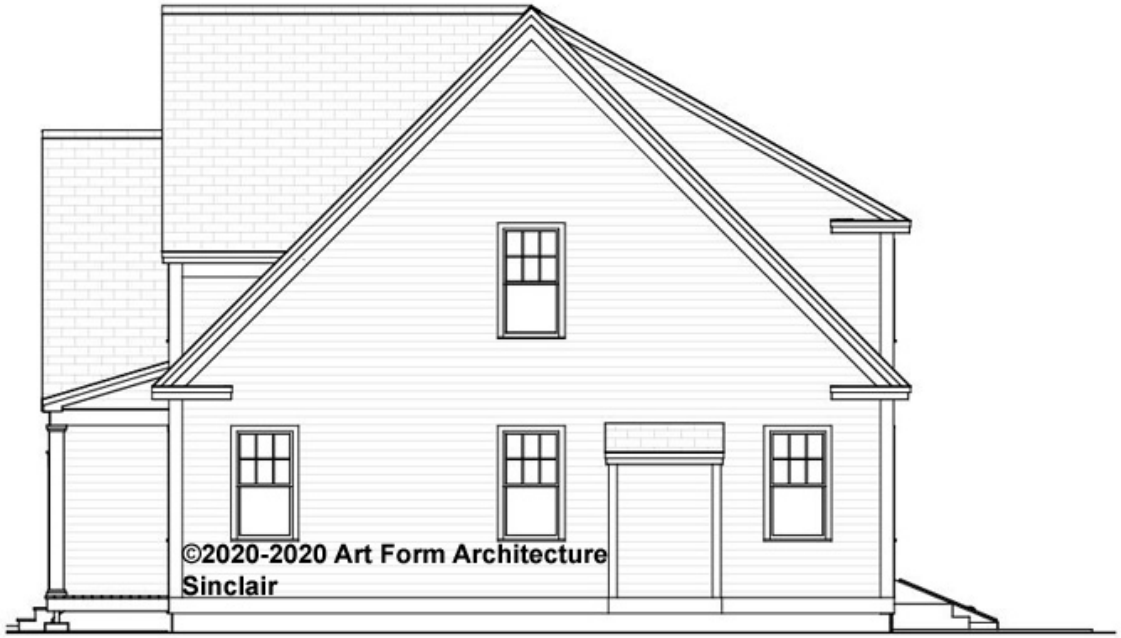
Front Elevation



1032.124 GL Sinclair

Artform Home Plans

Right Elevation



1032.124 GL Sinclair

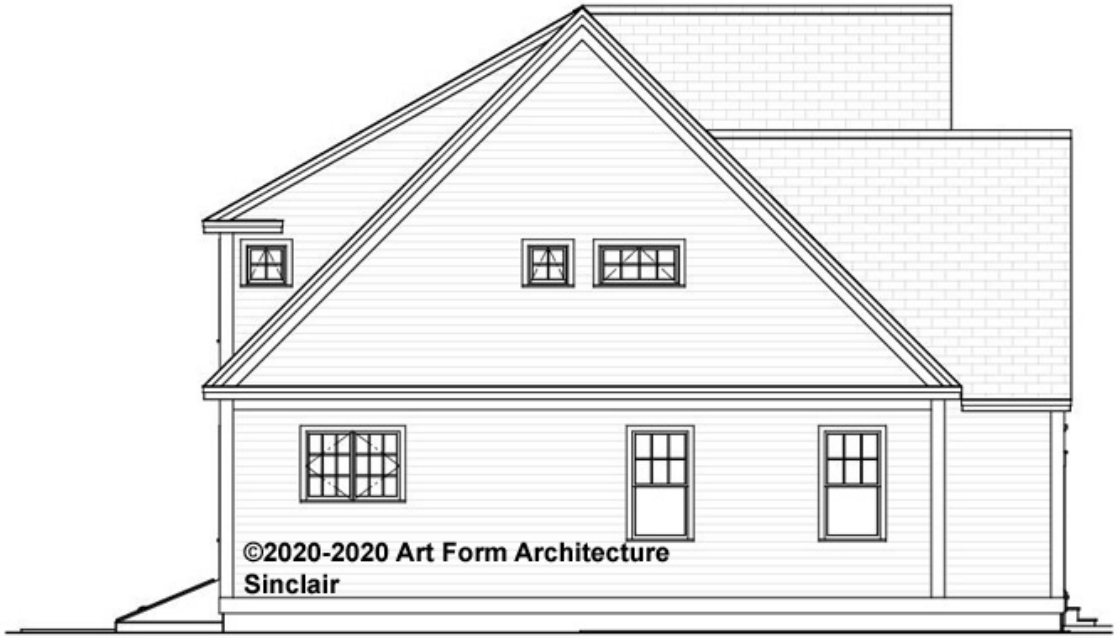
Artform Home Plans

Rear Elevation

1032.124 GL Sinclair

Artform Home Plans

Left Elevation



405.124.v2 KR Stephanie

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	1797 SF	0 SF	0 SF	1797 SF	1797 SF	1797 SF
Bedrooms	3	1	0	4	3	4
Baths	2.5	0.0	0.0	2.5	2.5	2.5

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http://www.artformhomeplans.com/TermsConditions.a5w

Artform Home Plans

Dear Builders and Home Buyers,

In addition to our Terms and Conditions (the "Terms"), please be aware of the following:

This design may not yet have Construction Drawings (as defined in the Terms), and is, therefore, only available as a Design Drawing (as defined in the Terms and together with Construction Drawings, "Drawings'). It is possible that during the conversion of a Design Drawing to a final Construction Drawing, changes may be necessary including, but not limited to, dimensional changes. Please see Plan Data Explained on www.ArtformHomePlans.com to understand room sizes, dimensions and other data provided. We are not responsible for typographical errors.

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Facade Changes:

- To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Artform.
- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

Floor plan layout and/or Structural Changes:

- Structural changes always require the express written consent of Artform
- If you wish to move or remove walls or structural elements (such as removal of posts, increases in house size, ceiling height changes, addition of dormers, etc), please do not assume it can be done without other additional changes (even if the builder or lumber yard says you can).

405.124.v2 KR Stephanie

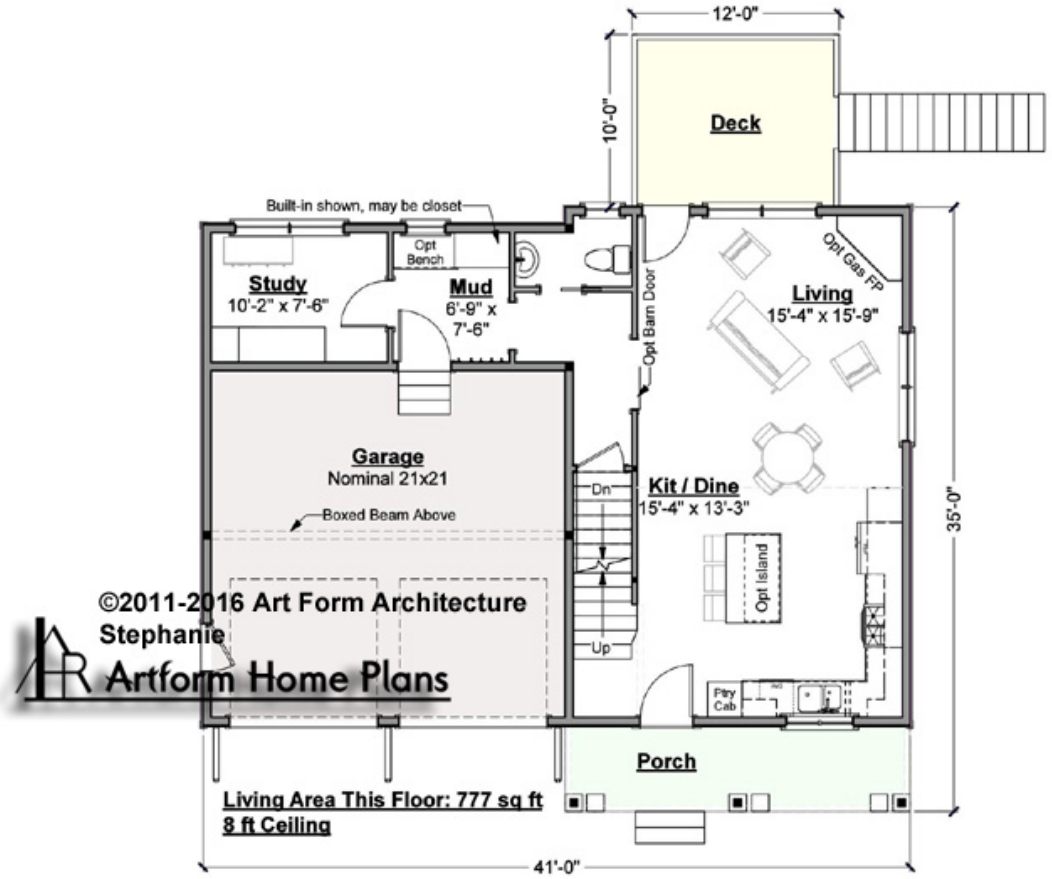
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	777 SF	0	0.5
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**777 SF**	**1**	**0.5**

Ceiling Height	
Shown	8'-0"
Possible*	8'-8"

* See Major Change information on plan page for cost



Some features show are optional. Your Purchase & Sale Agreement governs, whether items are labeled "optional" in this document or not.

We are not responsible for typographical errors.

405.124.v2 KR Stephanie

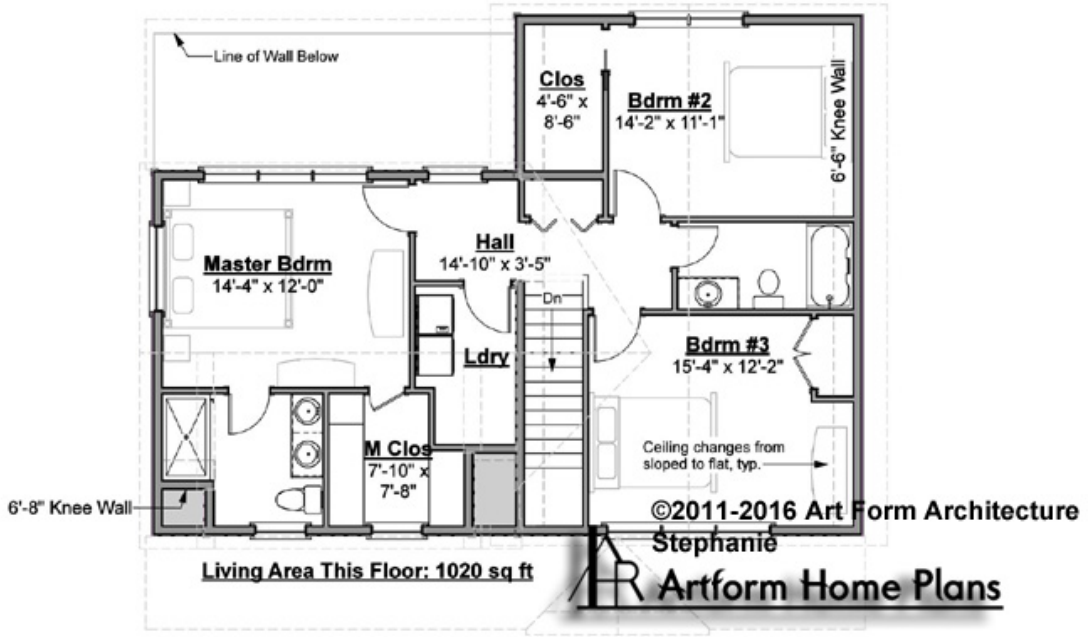
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1020 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1020 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	9'-0"

* See Major Change information on plan page for cost



405.124.v2 KR Stephanie

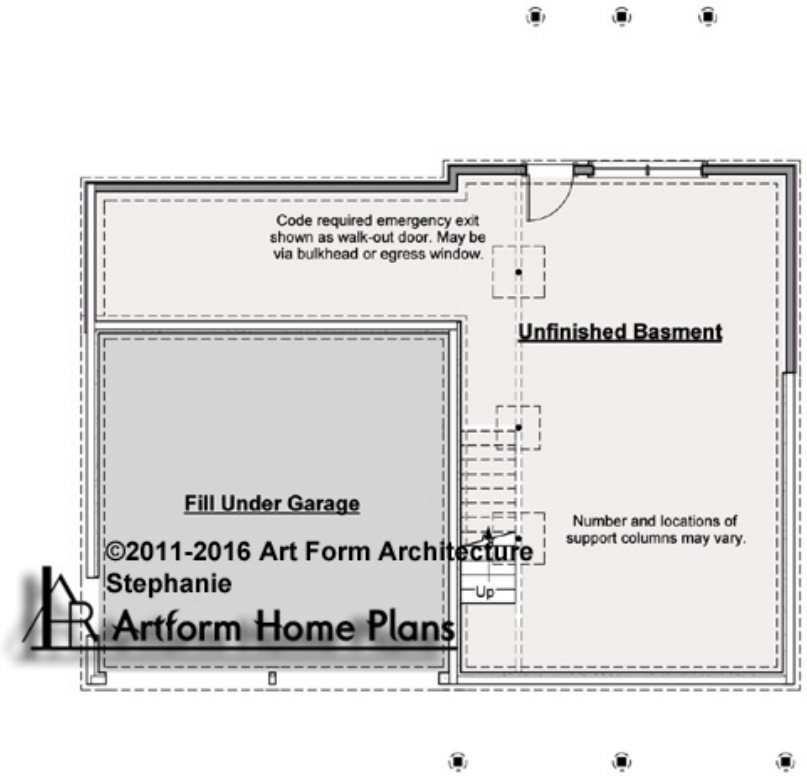
Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	9'-0"

* See Major Change information on plan page for cost

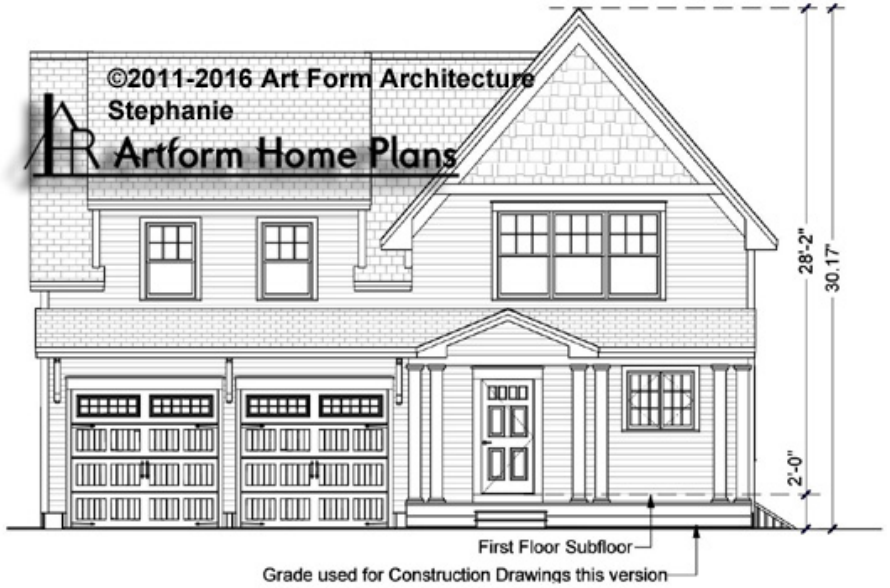


WEB 405.124.v2 Stephanie

405.124.v2 KR Stephanie

Artform Home Plans

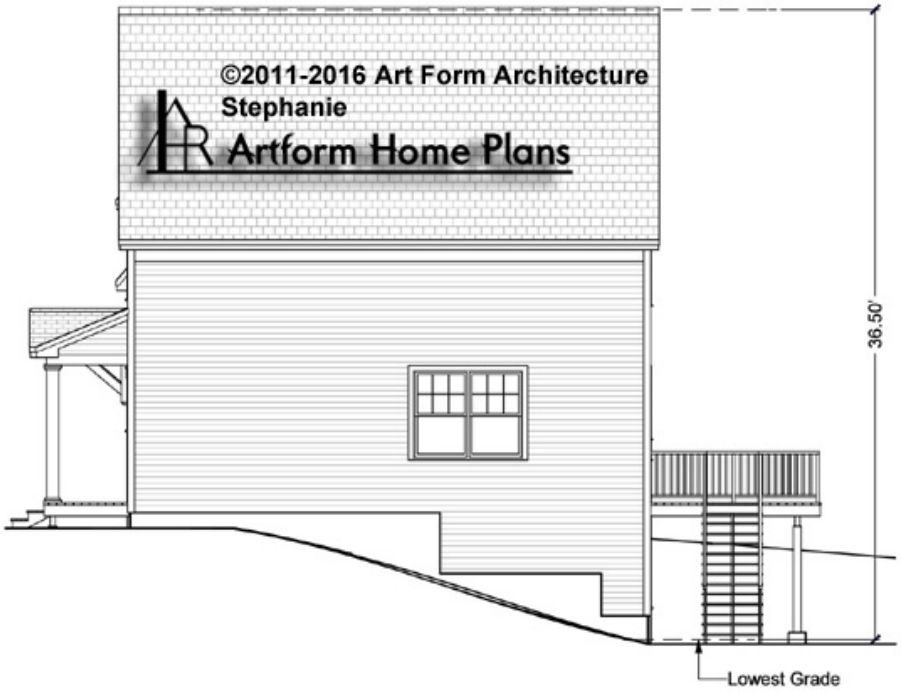
Front Elevation



405.124.v2 KR Stephanie

Artform Home Plans

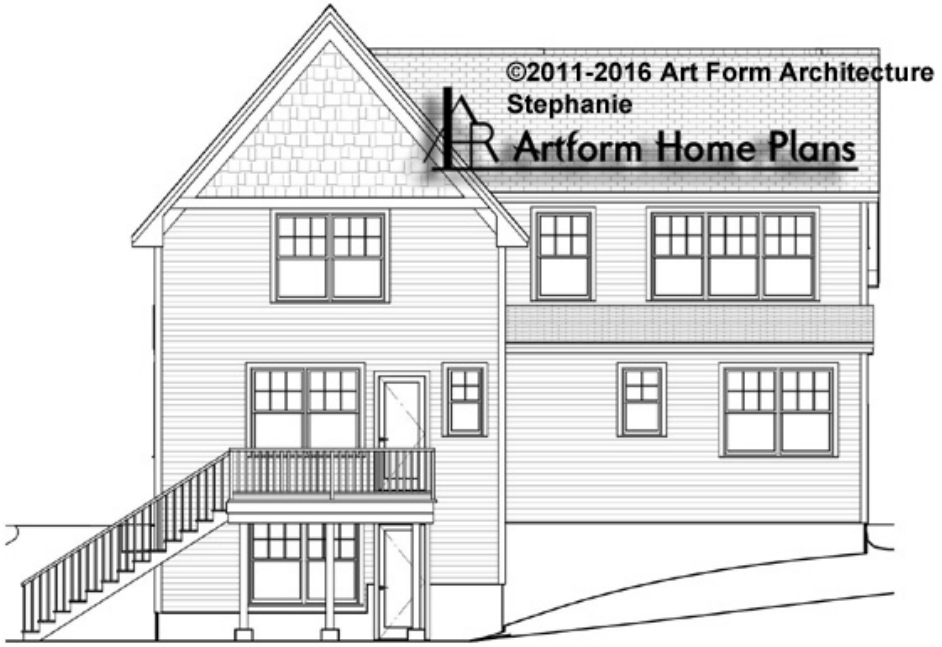
Right Elevation



405.124.v2 KR Stephanie

Artform Home Plans

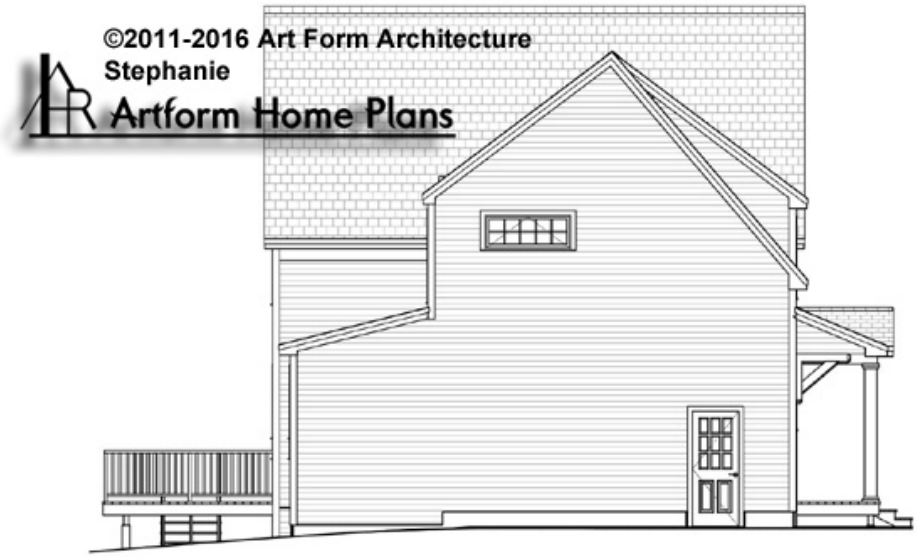
Rear Elevation



WEB 405.124.v2 Stephanie

405.124.v2 KR Stephanie

Left Elevation



148.124.v6 KR Sweet Liberty

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2413 SF	0 SF	0 SF	2413 SF	2413 SF	2413 SF
Bedrooms	3	0	0	3	3	3
Baths	2.5	0.0	0.0	2.5	2.5	2.5

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Artform Home Plans

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148.124.v6 KR Sweet Liberty

First Floor

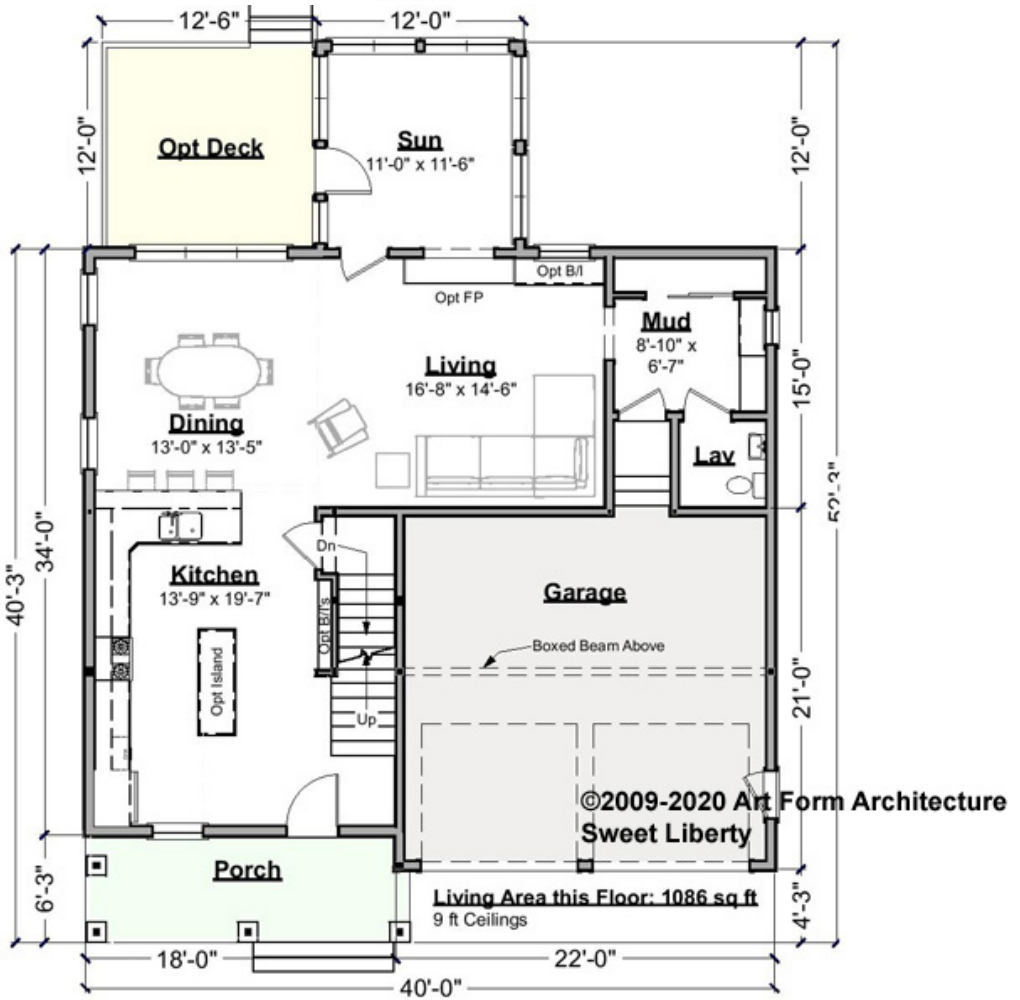
	Area	Beds	Baths
Main	1086 SF	0	0.5
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1086 SF**	**0**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost

Notes This Design:

Side entry garage will require some structural redesign - a beam to transfer load from that post.



148.124.v6 KR Sweet Liberty

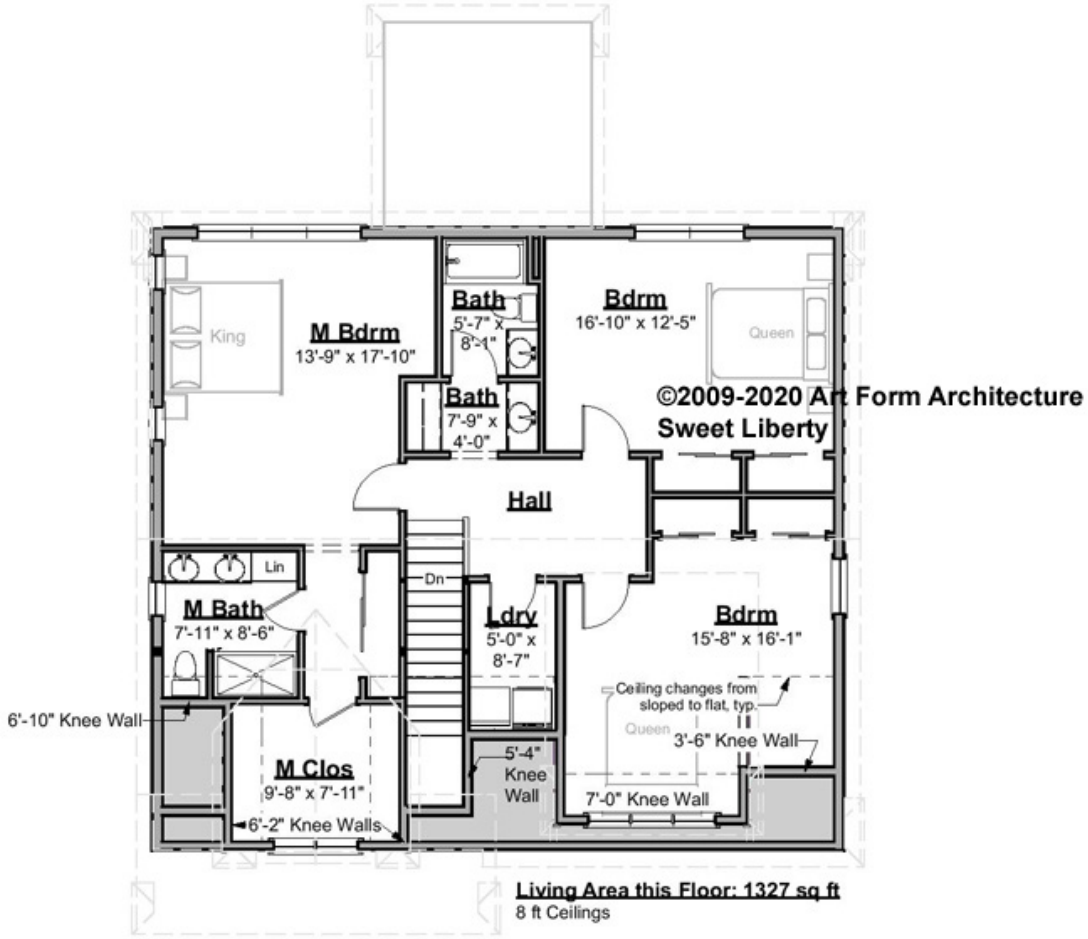
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1327 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1327 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	9'-0"

* See Major Change information on plan page for cost



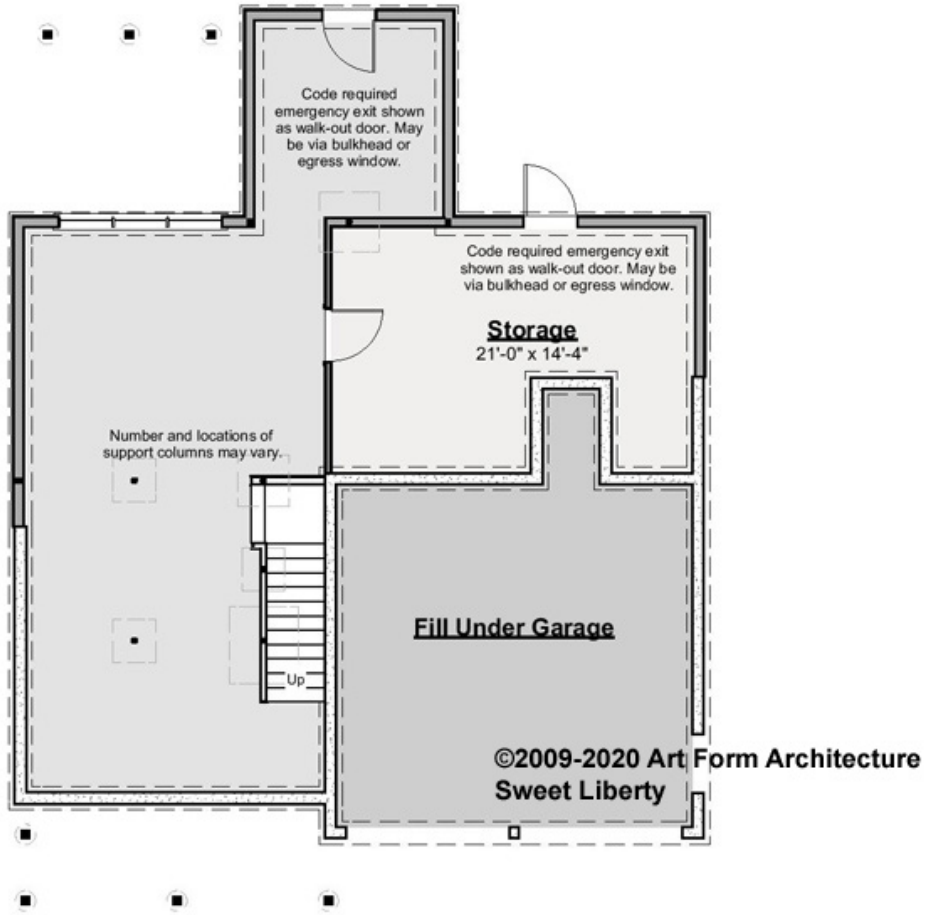
148.124.v6 KR Sweet Liberty

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

Ceiling Height	
Shown	7'-8"
Possible*	9'-0"

* See Major Change information on plan page for cost



CRS 148.124.v6 KR Sweet Liberty

148.124.v6 KR Sweet Liberty

Artform Home Plans

Front Elevation

CRS 148.124.v6 KR Sweet Liberty

148.124.v6 KR Sweet Liberty

Artform Home Plans

Right Elevation

CRS 148.124.v6 KR Sweet Liberty

148.124.v6 KR Sweet Liberty

Artform Home Plans

Rear Elevation

CRS 148.124.v6 KR Sweet Liberty

148.124.v6 KR Sweet Liberty

Artform Home Plans

Left Elevation

CRS 148.124.v6 KR Sweet Liberty

4/23/2020 3:51:45 PM

Green & Company

Wall Types

Exterior walls 2x6 wood stud
Interior walls 2x4 wood stud, unless noted otherwise

Wall Keys

(2) 2x wood studs on the flat

(6) 2x6 wood stud wall, 16" oc

Note: 2x4 wood stud wall, 16" oc unless otherwise noted

Key Notes

A — 30" x 22" Minimum Attic Access Panel - Insulated (RO 34" x 26")

F — Field locate for plumbing or mechanical

V — Verify size of fixture or appliance Adjust dimensions to accommodate

C — Center - Place door or window centered on wall

SD — Smoke Detector

HD — Heat Detector

CO — Carbon Monoxide Detector

Dimensions

1. Dimensions are to face of stud, unless noted otherwise.
2. Closets are 24" clear inside, unless dimensioned otherwise.

Square Footages

1. Sq ft numbers are interior to room for use in calculating finishes.
2. Cabinets and fixtures not subtracted.
3. Add for doorways when floor finishes run through.

Notes

1. Exterior walls 2x6 wood stud @ 16" oc. Provide insulation & vapor barrier conforming to state or local codes. Interior sheathing 1/2" gypsum board. Provide 1/2" exterior rated sheathing, house wrap with drainage plane and siding. Provide step flashing at walls adjacent to roof planes.

2. Interior walls 2x4 wood stud @ 16" oc, unless noted otherwise.

3. Roof - see structural for rafter sizes. Provide 5/8" exterior rated roof sheathing 15# roofing felt, ice & water shield at eaves and valleys, aluminum drip edge and asphalt shingles or metal roofing. Structure not calculated to support slate or tile. Flash all penetrations. Provide cricket at any added chimneys.

4. Provide roof and/or ceiling insulation per code. Provide soffit and ridge vents where required for insulation strategy. (Verify with code officer - closed cell spray foam or dense-pack cellulose installed at rafters and filling ridge and eaves generally contra-indicates venting, batt insulation always requires venting).

5. Provide smoke, carbon monoxide, and heat detectors where shown and where required by code and where required by local authorities.

6. Provide fire resistive materials where required by code, including but not limited to, firestopping at penetrations, 5/8" Type X drywall on walls and ceilings to separate garage (where garage present in design) from dwelling, and separation of dwellings (where more than one dwelling present in design), and protection of flammable insulation materials. See Table R306.6 IRC 2015.

7. Compliance with code requirements for rooms size and clearances, (hallway widths, room sizes, etc) assume 1/2" drywall on walls and 1/2" drywall on 3/4" strapping on ceilings. Adjust as required if materials differ.

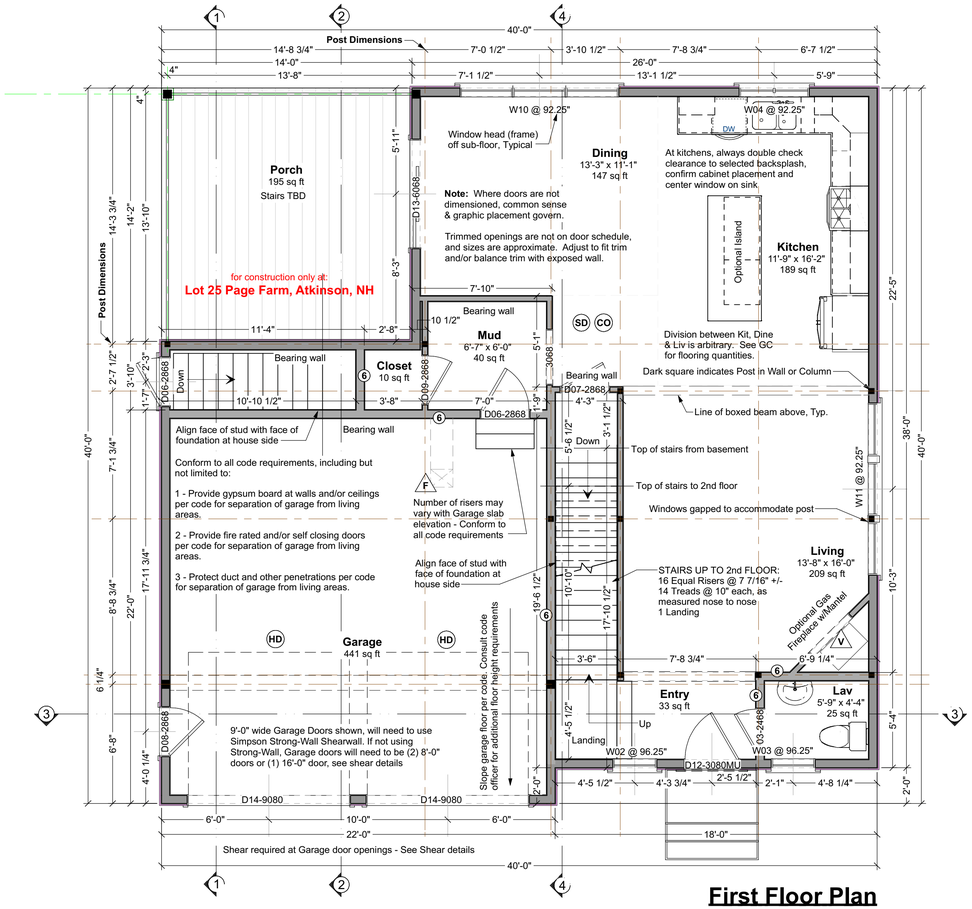
8. Shear is only called out where Continuous Portal Frame will not suffice. See Section R602.10.4 (Pages 177 - 188) of the IRC 2015.

General Design Notes

1 Builder shall consult and follow the building code and other regulations in effect for the building site for all construction details not shown in these drawings. Requirements described here are specific to this design and/or are provided as reference. Additional building code or local requirements may apply.

2 Builder shall maintain a safe worksite, including but not limited to, provision of temporary supports where appropriate and adherence to applicable safety standards.

3 Design is based on the snow load listed on the framing plans, 100 mph basic wind speed, Exposure type B, soil bearing capacity of 2000 psf, and Seismic Category C, unless otherwise noted on the framing plans. Builder shall promptly inform Artform Home Plans of differing conditions.



First Floor Plan

Living Area this Floor: 854 sq ft
9 ft Finished Ceiling Height

1 0 1 2 3 4

NOTE TO HOMEOWNER:
These construction plans ARE NOT a part of your construction contract with your builder, unless your P&S agreement specifies that they are. Your P&S and it's attachments (like the builder's specifications or a review set of this design) describes what you and your builder agreed the builder would build for you. We here at Artform Home Plans do not have the authority to obligate your builder to provide you with amenities like fireplaces and spa tubs. The contract between you and your builder governs.

Door & Window Notes

1. **Rated Doors:** Provide fire rated and/or self-closing doors where required by local codes or local authorities

2. **Trimmed Openings:** Trimmed openings not shown on schedule. See Plan.

3. **Window Tempering:** Provide tempered windows where required by local codes or local authorities. Tempering column provided here for convenience. Windows have not been reviewed for tempering requirements.

4. **Window RO's:** 1/4" or 1/2" on each of 4 sides allowed for window RO's, typical. Review framing size vs RO size. Adjust per manufacturer's requirements and/or builder preference.

5. **Egress Windows:** Provide minimum one door or window meeting egress requirements in basement, in each sleeping room, in each potential sleeping room, and other locations required by local code, in sizes required by local code. Note that casement windows coded by manufacturer as meeting IRC 2015 egress requirements typically need to be ordered with specific hardware. Emergency Escape Window Sizes (Section R310.2.1, R310.2.2, R310.2.3 and R310.2.4). Will also comply with NFPA 101.

6. **Basement Windows:** Add basement windows as required to meet state or local code requirements, including but not limited to egress and light/ventilation.

7. **Skylights:** Skylights are not shown on this schedule, but may be required. Consult builder and/or see floor plan.

8. **Minimum window sill height:** IRC 2015 requires that floor window sills be 24" from floor. Confirm bottom of window opening relative to frame. Conform to IRC 2015 R312.1.

DOOR SCHEDULE

NUMBER	QTY	FLOOR	SIZE	WIDTH	HEIGHT	TYPE	COMMENTS
D01	1	2	2068 R IN	24 "	80 "	HINGED	
D02	1	2	2468 L	28 "	80 "	POCKET	
D03	1	1	2468 L IN	28 "	80 "	HINGED	
D04	3	2	2468 L IN	28 "	80 "	HINGED	
D05	3	2	2468 R IN	28 "	80 "	HINGED	
D06	2	1	2868 L EX	32 "	80 "	HINGED	
D07	1	1	2868 L IN	32 "	80 "	HINGED	
D08	1	1	2868 R EX	32 "	80 "	HINGED	
D09	1	1	2868 R IN	32 "	80 "	HINGED	
D10	3	2	2868 L IN	32 "	80 "	HINGED	
D11	2	2	2868 R IN	32 "	80 "	HINGED	
D12	1	1	3080	36 "	96 "	MULLED UNIT	HINGED W/TRANSOM
D13	1	1	6068 R EX	72 "	80 "	SLIDER	
D14	2	1	9080	108 "	96 "	GARAGE	

WINDOW SCHEDULE

NUMBER	QTY	WIDTH	HEIGHT	R/O	EGRESS	TEMPERED	DESCRIPTION	COMMENTS
W01	2	23 1/2 "	23 1/2 "	24"X24"			SINGLE AWNING	
W02	1	29 1/2 "	41 1/2 "	30"X42"		YES	SINGLE CASEMENT-HL	
W03	1	29 1/2 "	41 1/2 "	30"X42"			SINGLE CASEMENT-HR	
W04	1	47 "	47 1/2 "	47 1/2"X48"			DOUBLE CASEMENT-LHL/RHR	
W05	1	70 1/2 "	23 1/2 "	71"X24"			TRIPLE CASEMENT-LHL/RHR	
W06	1	106 1/2 "	47 1/2 "	107"X48"	YES		TRIPLE CASEMENT-LHL/RHR	
W07	1	23 1/2 "	35 1/2 "	24"X36"			DOUBLE HUNG	
W08	1	23 1/2 "	47 1/2 "	24"X48"		YES	DOUBLE HUNG	
W09	2	76 "	61 1/2 "	76 1/2"X62"	YES		2X DH	
W10	1	106 1/2 "	65 1/2 "	107"X66"			3X DH	
W11	1	115 1/2 "	65 1/2 "	116"X66"			3X DH	

Giselle 40x40

Dear Code Officer,

These are predesigned home plans, designed to bring good design and construction drawings to people at more affordable prices and faster time frames than traditional architecture. Where traditional "internet" home plans disclaim all responsibility, we split responsibility between us (Artform) and the owner. We encourage the future homeowners to use a quality builder who can assist them with this. They are responsible for thermal and moisture decisions and for meeting code in ways that a quality builder should know without an explicit detail. We are responsible for things that are directly related to the design and/or that a quality builder couldn't reasonably figure out on their own - specifically the following IRC 2015 code sections:

1 - Room sizes (Section R304)
2 - Ceiling Height (Section R305)
3 - Floor space & ceiling height at Toilet, Bath and Shower Spaces (Section R307)
4 - Hallway widths (Section R311.6)
5 - Door types & sizes (Section R311.2)
6 - Floor space in front of doors (Section R311.3)
7 - Stair width - The stairs in our designs will be a minimum of 36" wide measured wall surface to wall surface, allowing compliance with R311.7.1 with installation of correct handrail.
8 - Stairway headroom (Section R311.7.2)
9 - Stair treads and risers (Section R311.7.5)
10 - Landings for stairways (Section R311.7.6)
11 - Emergency Escape Window Sizes (Section R310.2.1, R310.2.2, R310.2.3 and R310.2.4). Casement windows may require manufacturer's emergency escape window hardware. Will also comply with NFPA 101.
12 - Structural Floor Framing (Section R502.3) Where dimensional lumber is shown, framing members will be sized according to this section of the code. Where engineered wood products are shown, those framing members will be size according to the manufacturer's tables for loads and spans, or sizes will have been calculating using manufacturer's published materials properties.
13 - See structural sheets for additional notes.

The builder can and should add information to this set, such as Rescheck, a hand markup of our generic thermal and moisture section, additional information about doors and windows (such as fire rating, tempering, etc), foundation drops relative to site grading, and sometimes their chosen method of basement egress. These drawings are not intended to be used without that additional information.

Where a construction address is shown on the drawings, it is for copyright control only. We have not inspected the site, adapted the design to state specific laws (except where it says so in the drawings) or site or region specific climate conditions. Homeowner and/or Builder shall be responsible for thermal and moisture control strategies, materials choices and compliance with applicable laws and ordinances.

Please do feel free to call us with any questions. We can and do update our drawings and standard notes to address specific concerns, especially in jurisdictions where our clients will be building again.

Dear Everybody,

With these drawings a copyright license is granted for a single construction only at Lot 25 Page Farm, Atkinson, NH by or for Green & Company. This is a License to Build, and does not include a License to Modify, except as required to conform to building code or fulfill builder's/owners responsibilities.

Permissible uses of these drawings:
1. All activities associated with construction at the listed address.
2. Pricing or preliminary discussions with zoning or code officials for construction at other addresses, with prior notification to Artform Home Plans - just use the Contact form on the web site – http://www.artformhomeplans.com/contact.a5w.

Not Permitted:
1. Application for any permits or other approvals for construction at properties other than the listed address, including but not limited to construction, zoning, conservation, or design review.
2. Modification of the basic design.

Use of these drawings outside these parameters is a violation of federal copyright law, punishable by both civil action and criminal prosecution, as it is stealing or enabling theft of "intellectual property". Making modifications to plans, even significant ones, does not change this, under copyright law, that's considered "derivative works".

We can provide drawings suitable for use in obtaining design or zoning approvals without incurring the expense of a full set of construction drawings. Contact us for more information.

AFHP CD Commons 20.2 X11 - IRC 2015

These drawings are intended for use by an experienced professional builder in responsible charge of the entire project, including but not limited to mechanical, electrical and sitework. Any additional adaptation for these trades or other trades must be determined prior to start of construction. Contact Artform for any adjustments needed.

Your use of these drawings constitutes an acceptance of responsibility as outlined in "Dear Code Officer" on the first page of these drawings, and on our web site: http://www.artformhomeplans.com/TermsConditions.a5w

If you have any concerns or questions, please feel free to contact us. We are happy to clarify matters that fall within our scope, as listed on the first page. We can also often provide affordable support for issues that are your responsibility, such as energy design/calcs, or additional detailing.

Artform Home Plans
AFHP Design # 918.124.v3 GL

Giselle 40x40
Lot 25 Page Farm
Atkinson, NH

1

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 4/23/2020, drawn by ACJ

Issued for:
Construction

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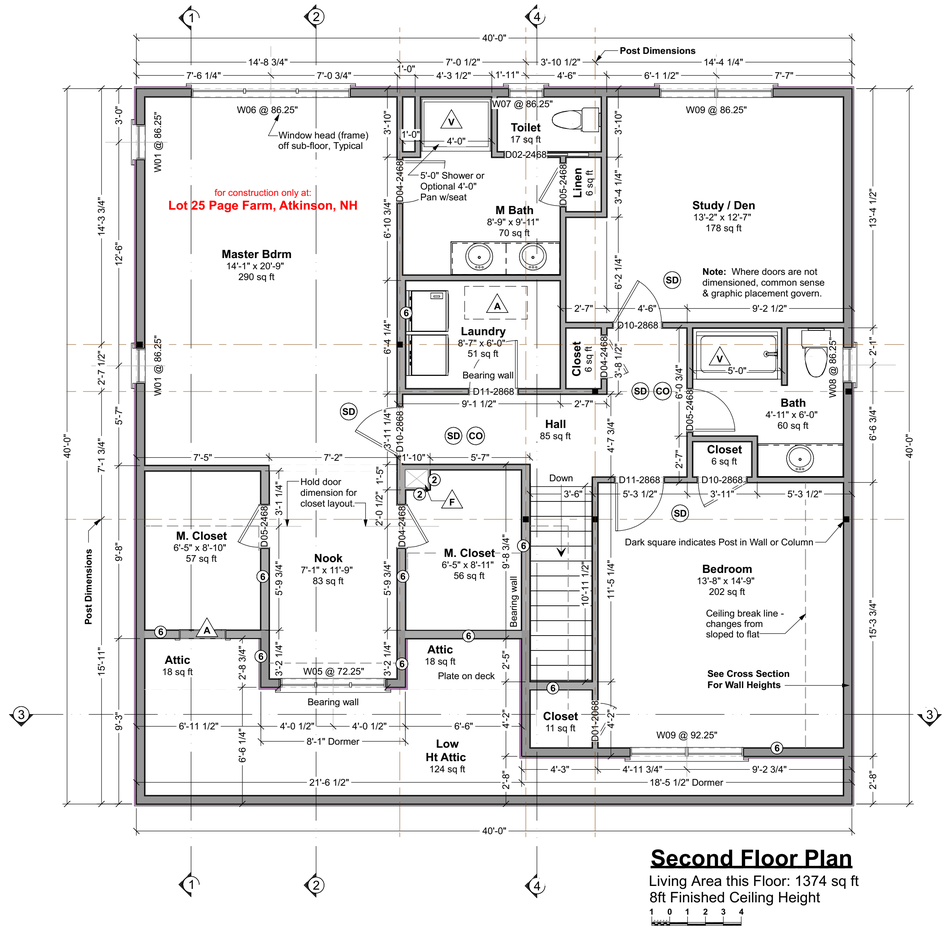
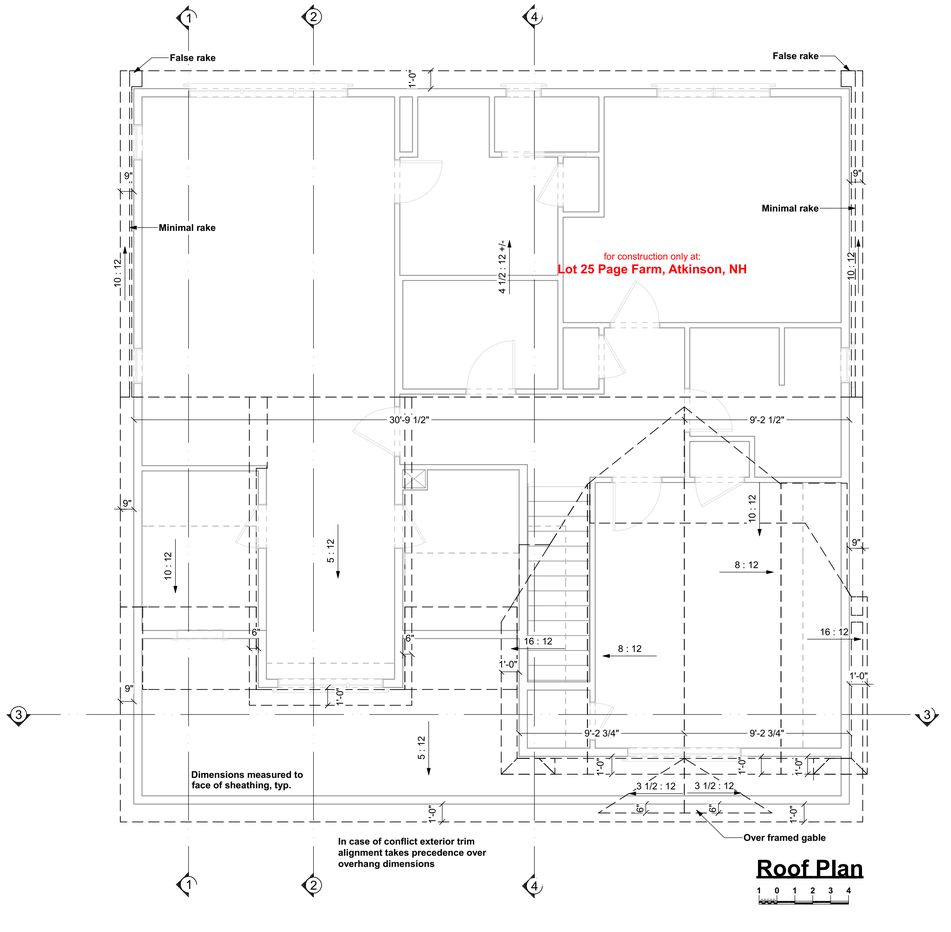


Second Floor Plan

Living Area this Floor: 1374 sq ft
8ft Finished Ceiling Height

1 0 1 2 3 4



Roof Plan

1 0 1 2 3 4

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Atkinson, NH

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Foundations

1. No footing shall be poured on loose or unsuitable soils, in water or on frozen ground.
2. All exterior footings to conform to all applicable code requirements for frost protection.
3. All concrete shall have a minimum compressive strength of at least 3000 PSI at 28 days.
4. Foundation anchorage to comply with IRC 2015 Section R403.1.6, it shall consist of minimum size 1/2" diameter anchor bolts with 3/16" x 2" x 2" washers at a maximum of 72" oc for two stories or 48" oc for more than two stories, max of 12" from each corner, min of 2 bolts per wall. Anchor bolt shall extend 7" into concrete or grouted cells of concrete masonry units. Be aware that a garage under may be counted by your code officer as a story. Additional anchorage may be required at braced walls.
5. Foundation reinforcing steel is to be installed in accordance with all applicable provisions of IRC 2015 Section 404.1.3.2

TYPICAL PERIMETER FOUNDATION WALL:

- 8" poured concrete, 8 ft forms, min 7'-10" finished, with total of 3 rebar, as follows:
- (1) #4 rebar, 4" from top
- (1) #4 rebar @ vertical midpoint. Omit this rebar at walls 4 ft high or less.
- (1) #4 rebar, min 3" from bottom or per code
- Lap corners & splices of rebar per code.
- Secure sill to foundation with 1/2" diameter anchor bolts that extend 7" into concrete and tightened with a nut and washer @ 6' oc & max 12" from each corner & each end @ wood sill splices - if built-up sill, bolts must extend through all sill plates or straps must secure all sill plates.

TYPICAL PERIMETER FOOTING:

1. Use Footing chart(s) below to verify that depth of home matches chart. Depth is foundation dimension eave to eave. Contact Artform Home Plans if you believe the chart does not match the plan.
2. Select row for snow load shown on the structural plans.
3. Select a column for soil bearing pressure based on soil type and/or consultation with code officer.
4. The required footing size is at the intersection of the Snow Load and Soil PSF. Rebar is not required. Key or pin foundation wall to footing per code.

FAQ - Adding rebar to footings does not reduce the required width. Rebar affects performance with earth movement, like an earthquake and has near zero effect on bearing capacity.

Guide to Soil PSF

3,000	Sandy gravel and/or gravel (GW and GP)
2,000	Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM and GC)
1,500	Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH)

8" wall - Footing Size for 28 Ft wide house

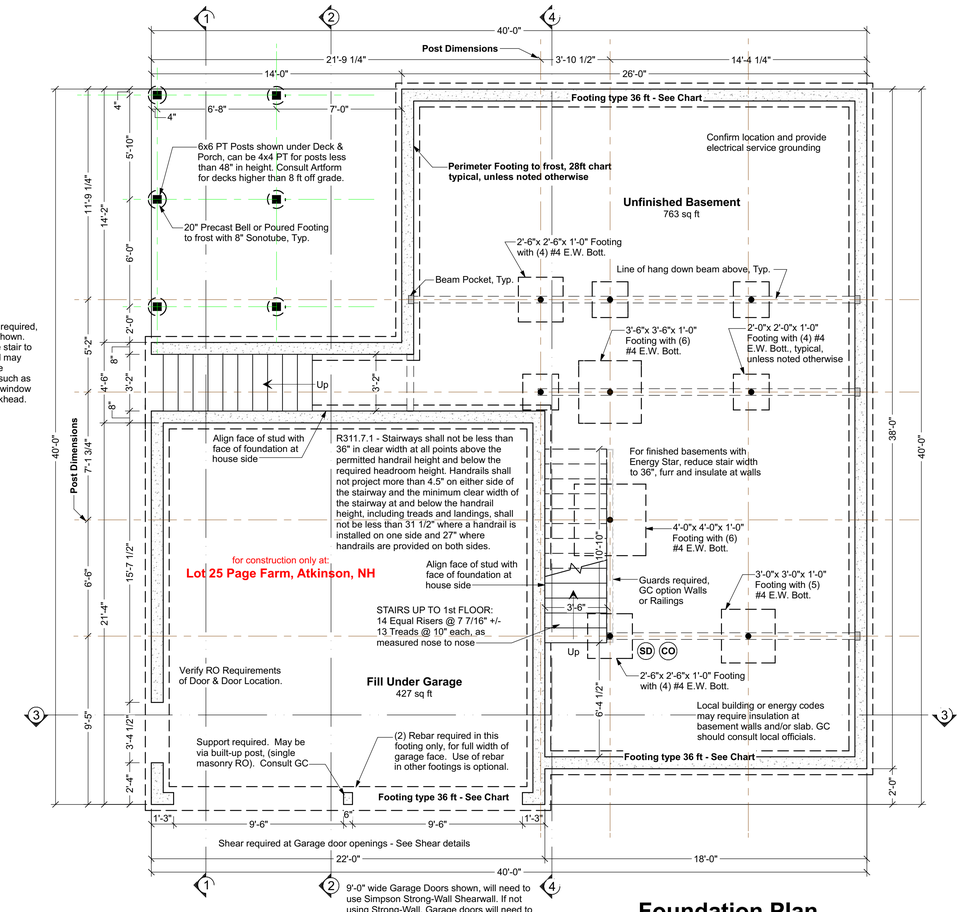
Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	23 x 7.5	17 x 6	12 x 6
55 PSF	2 Story – Plus Basement	23.5 x 7.75	17.25 x 6	12 x 6
60 PSF	2 Story – Plus Basement	24 x 8	17.5 x 6	12 x 6
65 PSF	2 Story – Plus Basement	24.5 x 8.25	17.75 x 6	12 x 6
70 PSF	2 Story – Plus Basement	25 x 8.5	18 x 6	12 x 6

8" wall - Footing Size for 32 Ft wide house

Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	25 x 8.5	19 x 6	12 x 6
55 PSF	2 Story – Plus Basement	25.5 x 8.75	19.25 x 6	12.5 x 6
60 PSF	2 Story – Plus Basement	26 x 9	19.5 x 6	13 x 6
65 PSF	2 Story – Plus Basement	26.5 x 9.25	19.75 x 6	13.5 x 6
70 PSF	2 Story – Plus Basement	27 x 9.5	20 x 6	14 x 6

8" wall - Footing Size for 36 Ft wide house

Snow Load	Story and type of structure	Load Bearing Value of Soil (PSF) 1500 PSF	2000 PSF	3000 PSF
50 PSF	2 Story – Plus Basement	27 x 9.5	21 x 7	14 x 7
55 PSF	2 Story – Plus Basement	27.5 x 9.75	21.25 x 7	14.5 x 7
60 PSF	2 Story – Plus Basement	28 x 10	21.5 x 7	15 x 7
65 PSF	2 Story – Plus Basement	28.5 x 10.25	21.75 x 7	15.5 x 7
70 PSF	2 Story – Plus Basement	29 x 10.5	22 x 7	16 x 7



Foundation Plan

Structure designed for
Snow Load of 55 psf
Ceiling Height may vary: 8 ft forms

1 0 1 2 3 4

Foundation Contractor Check List

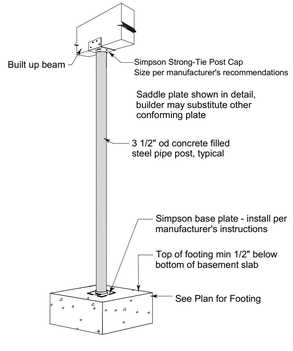
Confirm or review the following prior to forming & pouring foundation

Initials Date Checked

____ _____ Confirmed soil bearing
____ _____ Checked w/GC for added foundation steps to suit grade
____ _____ Confirm sill plate thickness (foundation bolts to extend through all)
____ _____ Confirmed garage door size
____ _____ Checked w/GC for added basement windows
____ _____ Checked w/GC for added basement man doors
____ _____ Confirmed sizes & locations mech/plbg penetrations
____ _____ Confirmed sizes and locations of beams w/GC, added or adjusted beam pockets
____ _____ Confirmed location and installed electrical service grounding - See GC for location

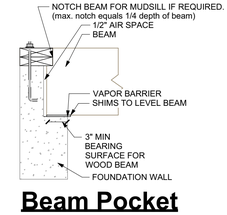
MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH (203MM) NOMINAL FLAT CONCRETE BASEMENT WALL

MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MIAXIMUM UNBALANCED BACKFILL HEIGHT (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (inches) Soil classes and design lateral soil (psf per foot of depth) GW, GP, SW, SP 30	GM, GC, SM, SM-SC and ML 45	SC, ML-CL and inorganic CL 60
8	4	NR	NR	NR
	5	NR	NR	NR
	6	NR	NR	6 @ 37
	7	NR	6 @ 36	6 @ 35
	8	6 @ 41	6 @ 35	6 @ 26



Typical Basement Post

Not to Scale



Beam Pocket

Scale 1/2"=1'-0"

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NOTE: See Roof Plan for roof pitches and overhangs

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Lot 25 Page Farm, Atkinson, NH

1 x 4 Shadow Board, Typical
1 x 8 Rake, Typical
1 x 8 Frieze Board, Typical
Decorative brackets, approx. 14" D x 4" W x 15 3/4" H
Top of Ridge
7" Window Lintel, Typ.
5" Corner Boards
Optional Flat Siding
Optional Cedar Impressions Siding
3 1/2" Window Trim on all windows
W05 @ 72.25"
W09 @ 92.25"
Adjust Window Ht so the space between the window sill and roof is no less than 4"
Window head (frame) off sub-floor, Typical
25'-3"
27'-3"
Trim - nominal 1x10
Decorative brackets, approx. 8" D x 3 1/2" W x 8" H
9" Door lintel, typ.
9" Window lintel
W02 @ 96.25"
W03 @ 96.25"
9" Window lintel
D12-3080MU
5" Corner Boards
D14-9080
D14-9080
Door styles may vary
6" Enlarged Casing
Top of 1ST Floor Sub-Floor
Top of 1st Floor Sub-Floor
1'-10"
2'-0"
Garage Slab
Grade

Garage slab height may vary. If garage slab height is lower than shown, consult Artform for aesthetic direction. Taller garage doors, transoms, lintels and/or additional frieze boards may be required to achieve desired look.

Note - Actual grade level may vary. Where zoning height restrictions apply, builder shall verify conformance. Manual markup of drawings to demonstrate compliance is recommended.

Not shown - number of steps may vary - handrail may be required per code.

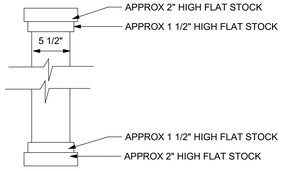
Front Elevation

NOTE: See Roof Plan for roof pitches and overhangs

5" Corner Boards
W08 @ 86.25"
3 1/2" Window Trim on all windows
Siding to match front gable
for construction only at:
Lot 25 Page Farm, Atkinson, NH
Trim - nominal 1x8
Decorative brackets, approx. 8" D x 3 1/2" W x 8" H
W11 @ 92.25"
Window head (frame) off sub-floor, Typical

Foundation steps and/or use of cripple walls may be added to suit grade.

Right Elevation



NOTE: See Roof Plan for roof pitches and overhangs

for construction only at:
Lot 25 Page Farm, Atkinson, NH
Minimal Rake @ Shed Dormer
Minimal Rake @ Shed Dormer
W09 @ 86.25"
3 1/2" Window Trim on all windows
W07 @ 86.25"
Window head (frame) off sub-floor, Typical
W06 @ 86.25"
5" Corner Boards
False Rake
False Rake
W04 @ 92.25"
W10 @ 92.25"
Cladded Porch Beam
5 1/2"
Typical Step down Deck Detail Attached to Wood Wall (see detail)

Foundation steps and/or use of cripple walls may be added to suit grade.

6x6 Posts shown under Deck & Porch, can be 4x4 for posts less than 48" in height. Consult Artform for decks higher than 8 ft off grade.

Rear Elevation

NOTE: See Roof Plan for roof pitches and overhangs

for construction only at:
Lot 25 Page Farm, Atkinson, NH
Siding to Match Front of Dormer
W01 @ 86.25"
W01 @ 86.25"
3 1/2" Window Trim on all windows
Window head (frame) off sub-floor, Typical
Cladded Porch Beam
D13-6068
Typical Step down Deck Detail Attached to Wood Wall (see detail)
D06-2868
D08-2868
Door styles may vary

Foundation steps and/or use of cripple walls may be added to suit grade.

Basement egress is required, walk-out door option shown. Builder may relocate walk-out door to suit building site and may substitute other code conforming egress, such as window with egress window well or bulkhead.

Left Elevation

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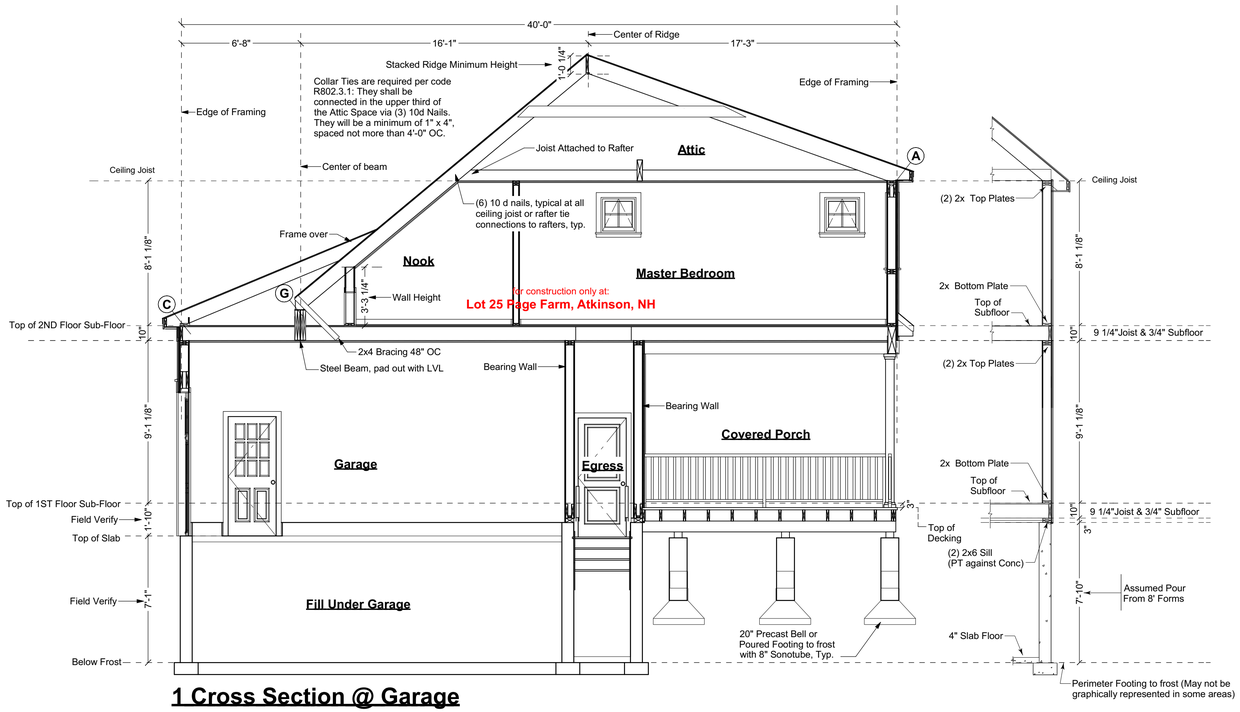
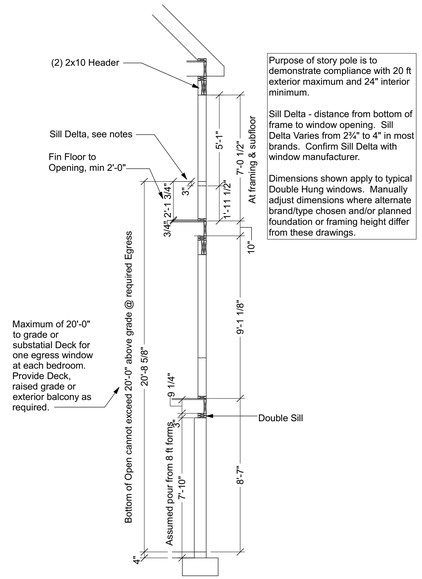
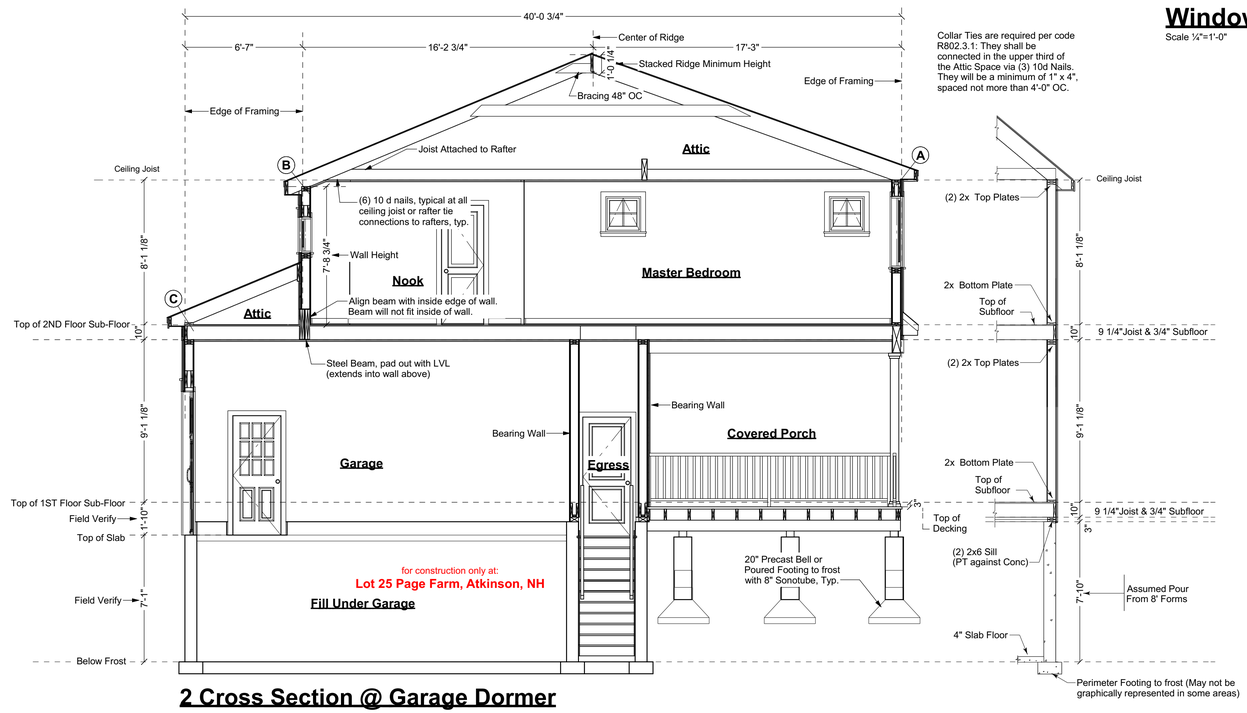


1 Cross Section @ Garage



Window Story Pole

Scale ¼"=1'-0"



2 Cross Section @ Garage Dormer

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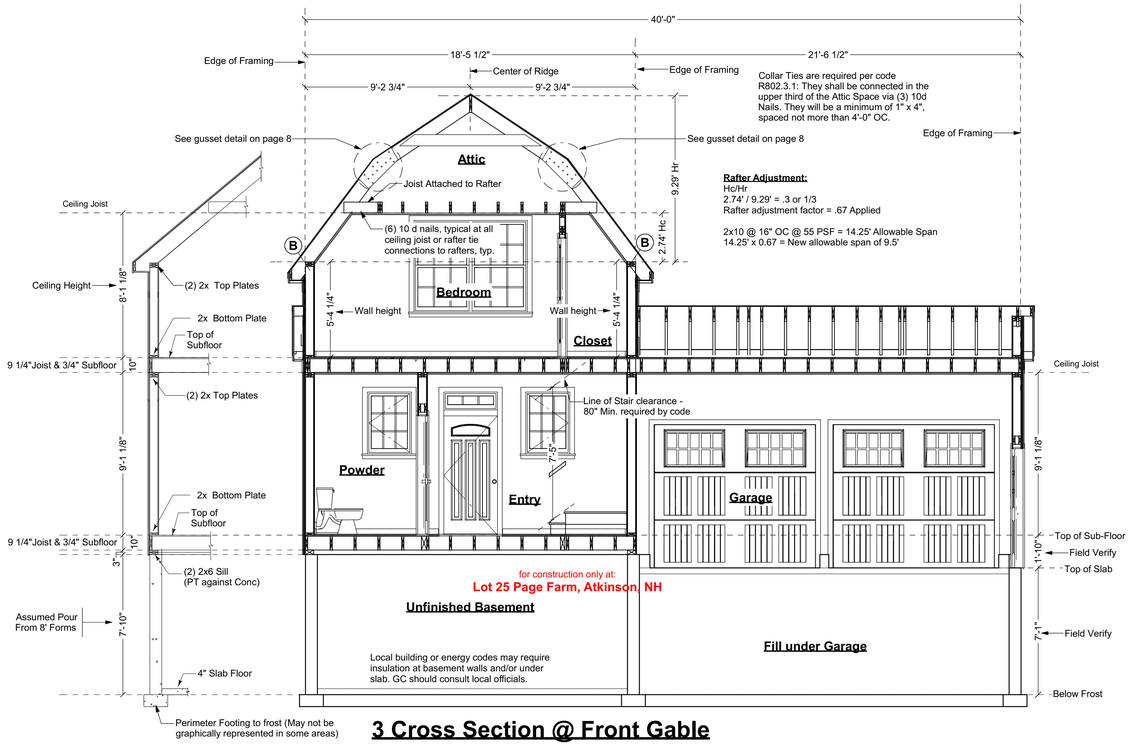
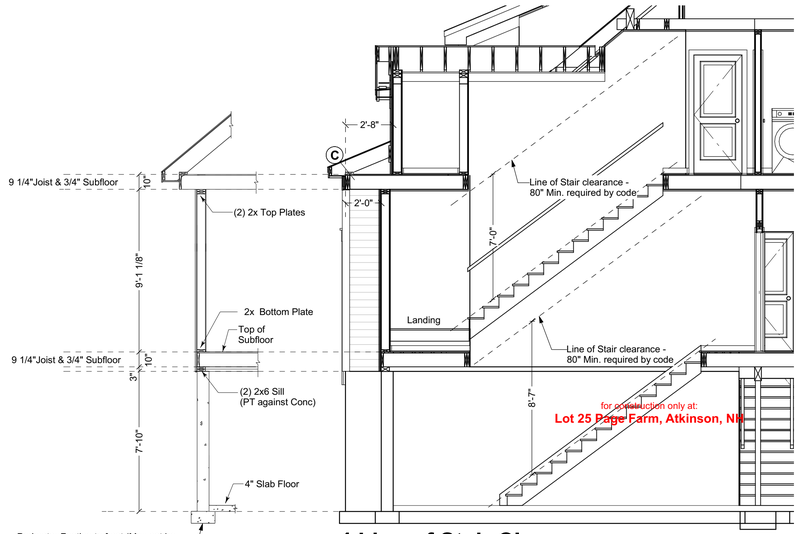
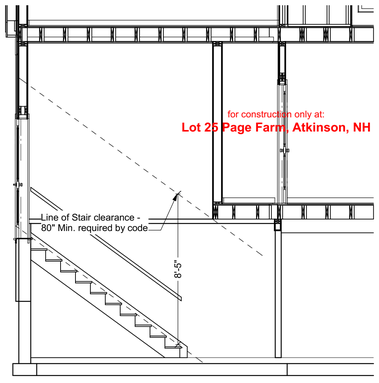


3 Cross Section @ Front Gable

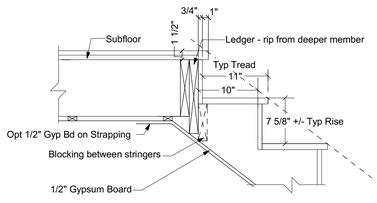


4 Line of Stair Clearance

Clearances shown do not assume insulation under the basement slab. If that insulation is added to meet local energy codes, adjust stairs as needed, see Detail T2 for framing adjustment to gain addition headroom.



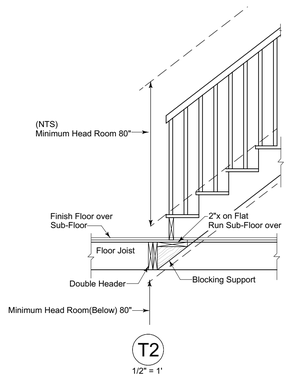
Line of Stair Clearance (Egress)



Detail shows assumptions used for framing plan RO
Framer may adjust to suit different head support methods

Top of Carriage (C)

Scale: 1" = 1'-0"



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Method PFG: Portal frame at garage door openings shall be constructed in accordance with Figure R602.10.6.3. Note this method is allowed on either side of garage door openings.

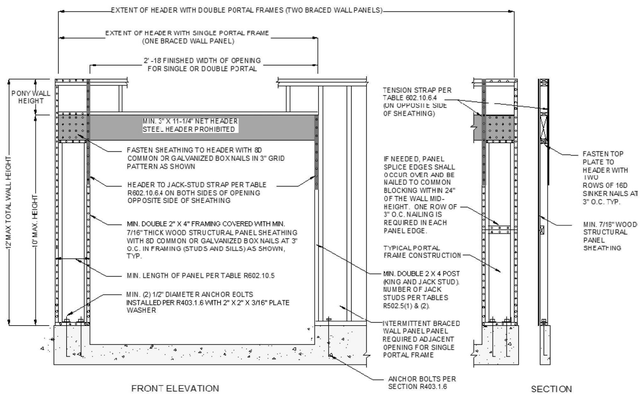


FIGURE R602.10.6.3
METHOD PFG—PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C

TABLE R602.10.6.4

TENSION STRAP CAPACITY FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHODS PFH, PFG AND CS-PF BRACED WALL PANELS

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (feet)	MAXIMUM TOTAL WALL HEIGHT (feet)	MAXIMUM OPENING WIDTH (feet)	TENSION STRAP CAPACITY REQUIRED (pounds)[a, b]					
				Ultimate Design Wind Speed V_{ult} (mph)					
				110	115	130	110	115	130
				Exposure B			Exposure C		
2 × 4 No. 2 Grade	0	10	18	1,000	1,000	1,000	1,000	1,000	1,050
	1	10	9	1,000	1,000	1,000	1,000	1,000	1,750
			16	1,000	1,025	2,050	2,075	2,500	3,950
			18	1,000	1,275	2,375	2,400	2,850	DR
	2	10	9	1,000	1,000	1,475	1,500	1,875	3,125
			16	1,775	2,175	3,525	3,550	4,125	DR
			18	2,075	2,500	3,950	3,975	DR	DR
	2	12	9	1,150	1,500	2,650	2,675	3,175	DR
			16	2,875	3,375	DR	DR	DR	DR
			18	3,425	3,975	DR	DR	DR	DR
	4	12	9	2,275	2,750	DR	DR	DR	DR
			12	3,225	3,775	DR	DR	DR	DR
2 × 6 Stud Grade	2	12	9	1,000	1,000	1,700	1,700	2,025	3,050
			16	1,825	2,150	3,225	3,225	3,675	DR
			18	2,200	2,550	3,725	3,750	DR	DR
	4	12	9	1,450	1,750	2,700	2,725	3,125	DR
			16	2,050	2,400	DR	DR	DR	DR
			18	3,350	3,800	DR	DR	DR	DR

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

a. DR = Design Required.

b. Straps shall be installed in accordance with manufacturer's recommendations.

R602.10.4 Construction methods for braced wall panels

Intermittent and continuously sheathed braced wall panels shall be constructed in accordance with this section and the methods listed in Table R602.10.4.

TABLE 91.5.602.10.4

BRACING METHODS[f]

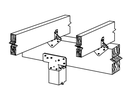
METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Intermittent Bracing Method	**PFG** Portal frame at garage	15/32"		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	**CS-WSP** Continuously sheathed wood structural panel	15/32"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table 91.5.602.3(1) or 91.5.602.3(2)	Varies by fastener

Shear Wall Details

Not to Scale

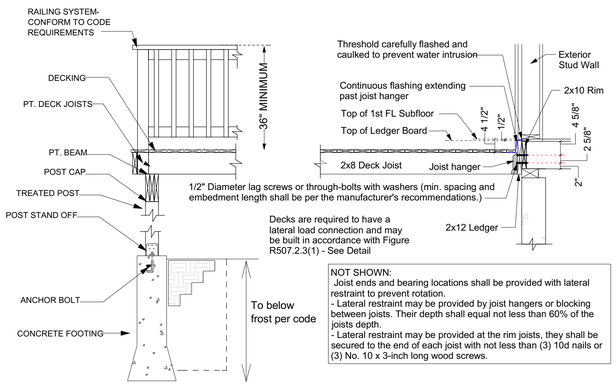
Notes:

- See plans for locations where shear panels are required.
- Details shown here are for one method and for typical conditions. An alternate shear method allowed per code or approved by the code officer may be substituted.
- Note that if sheathing is to be used as wall bracing all vertical joints in required braced wall panels must be blocked. [2015 IRC section R602.10.10]



SIMPSON STRONG-TIE ACH WITH TWO H1'S

POST CAP & JOIST ATTACHMENT



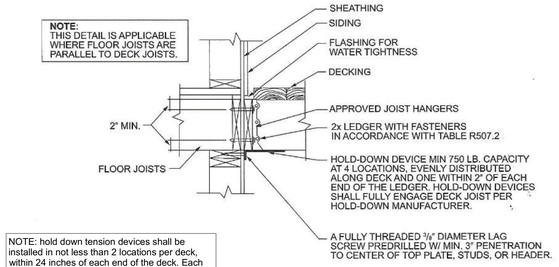
NOT SHOWN:
Joist ends and bearing locations shall be provided with lateral restraint to prevent rotation.
- Lateral restraint may be provided by joist hangers or blocking between joists. Their depth shall equal not less than 60% of the joists depth.
- Lateral restraint may be provided at the rim joists, they shall be secured to the end of each joist with not less than (3) 10d nails or (3) No. 10 x 3-inch long wood screws.

POST CAP

POST STAND OFF

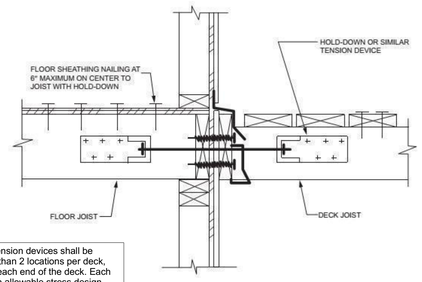
Deck Ledger Attachment Detail for Step Down

Scale: 1/2" = 1'-0"



NOTE: hold down tension devices shall be installed in not less than 2 locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 lbs.

FIGURE R507.2.3(2)
DECK ATTACHMENT FOR LATERAL LOADS

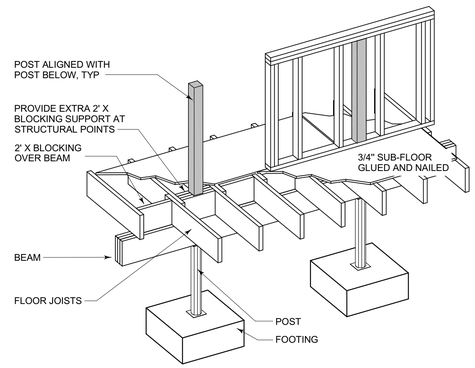


NOTE: hold down tension devices shall be installed in not less than 2 locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 lbs.

FIGURE R507.2.3(1)
DECK ATTACHMENT FOR LATERAL LOADS

Follow manufacturer's instructions both for installation of joist hangers to joist and to beam. The illustration below, by Simpson Strong Tie, is provided as a courtesy. Consult their full manual for acceptable fastener sizes and other important instructions.

SHORT NAILS Do not use short (1½") nails for double shear nailing.



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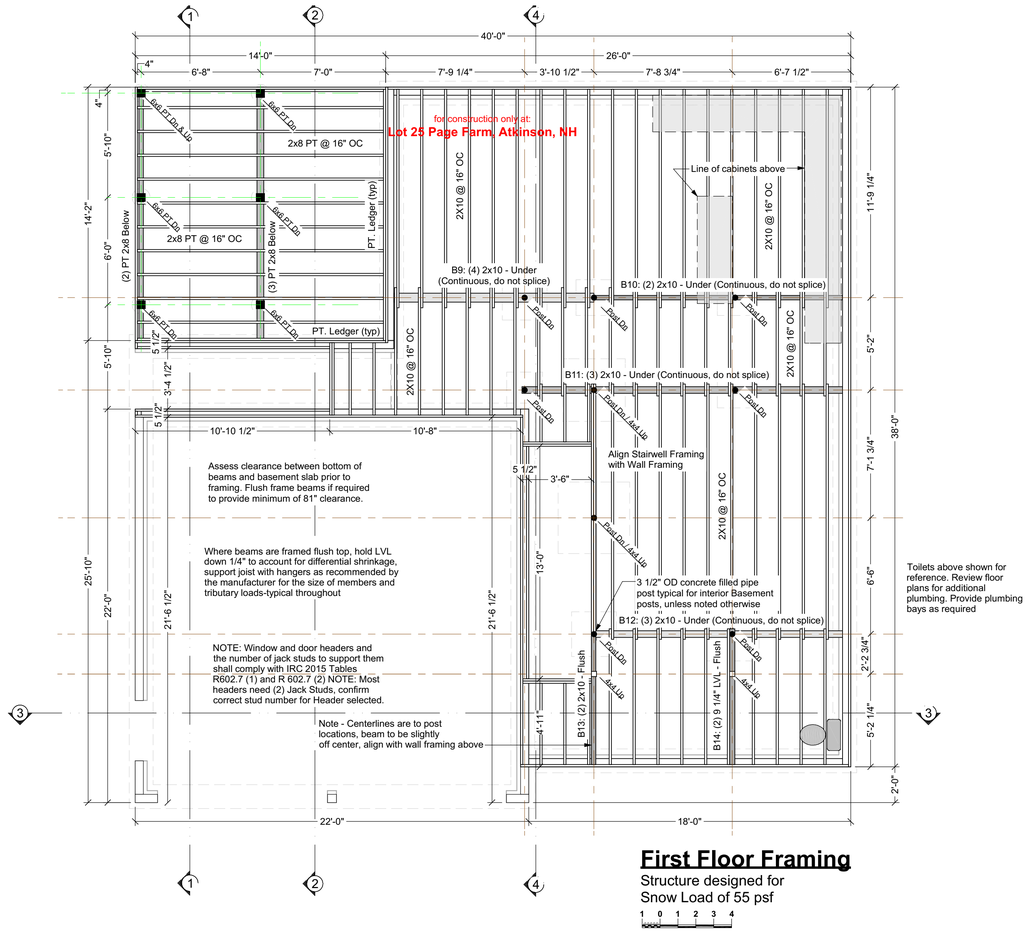
Wood Framing Notes:

1. All structural wood shall be identified by a grade mark or certificate of inspection by a recognized inspection agency.
2. Structural wood shall be Spruce-Pine-Fir (SPF) #2 or better.
3. When used, LVL or PSL indicate Laminated Veneer Lumber or Parallel Strand Lumber, respectively. Products used shall equal or exceed the strength properties for the size indicated as manufactured by TrusJoist.
4. When used, TJI indicates wood I-joists as manufactured by TrusJoist. Products of alternate manufacturers may be substituted provided they meet or exceed the strength properties for the member specified.
5. All floor joists shall have bridging installed at mid-span or at 8'-0" oc maximum.
6. Floor systems are designed for performance with subfloor glued and screwed.
7. Per code R502.6.1 Floor joists splicing over bearing walls allowed, shall lap a min 3" over walls and shall be nailed together with a minimum of (3) 10d face nails. Also permitted is a wood or metal splice with strength equal to or greater than that provided by the nailed lap.
8. Per code R802.3.2 Ceiling joists splicing over bearing walls is allowed, shall lap a min 3" or butted over bearing partitions or beams and toenailed to the bearing member. Where ceiling joists are used to provide resistance to rafter thrust, lapped joists shall be nailed together in accordance with Table R802.5.1(9), and butted joists shall be tied together in a manner to resist such thrust. Joists that do not resist thrust shall be permitted to be nailed together in accordance with Table R602.3(1).
9. Provide blocking in the floor at structural points. Blocking may be 2x's or solid, but must have grain of wood vertical.
10. All wood permanently exposed to the weather, in contact with concrete or in contact with the ground shall meet code requirements for wood in these environments.
11. Deck ledgers shall be securely attached to the structure and/ or independently supported. Deck lateral load connection required see IRC 2015 Section R507.2.4
12. Wherever beams are noted as Flush framed, install joist hangers at all joists, sized appropriately for the members being connected.
13. Support the lower end of roof beams via minimum 2" horizontal bearing on a post, ledger or via an appropriately sized and configured hanger.
14. The ends of each joist, beam or girder shall have not less than 1.5" of bearing on wood or metal and not less then 3" on masonry or concrete except where supported on a 1" x 4" ribbon strip and nailed to the adjacent stud or by the use of approved joist hangers.
15. Post caps where required are typically calculated by supplier using weights based on these framing plans. Contact Art Form if additional information is needed.
16. Hangers, post caps, post bases, ties and other connectors shall be as manufactured by Simpson Strong Tie, as designed to connect the members shown, and shall be installed per manufacturer's instructions.

Prefabricated Wood Trusses

1. Where trusses are indicated on the drawings, truss design shall be provided by truss manufacturer.
2. Trusses shall be designed in accordance with applicable provisions of the latest edition of the National Design Specifications for Wood Construction (NDS), American Forst and Paper Association (APA), and Design Specifications for Metal Plate Connected Wood Trusses (ANSI/TPI 1), Truss Plate Institute (TPI) and code of jurisdiction.
3. Manufacturer shall furnish design drawings bearing seal and registration number of a structural engineer licensed in the state where project will be built.



First Floor Framing

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4

Built-up Beams:
Unless otherwise noted, connect multiple 1 3/4" ply beams as follows:
3 ply & up, fasteners are per side

(2) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 24" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 24" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(2) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 9 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 19.2" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 19.2" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 11 1/4" LVL:
- Flush framed
  - (2) rows 3 3/8" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 14" LVL:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(3) 16" LVL or greater:
- Flush framed
  - (3) rows 3 3/8" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x3 1/2 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 9 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 24" oc

(4) 11 1/4" LVL:
- Flush framed
  - (2) rows 5" TrussLock @ 16" oc, or
  - (2) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

(4) 16" LVL or greater:
- Flush framed
  - (3) rows 5" TrussLock @ 16" oc, or
  - (3) rows SDS 1/4x6 @ 16" oc
- Framed under (2) rows 10d nails @ 12" oc

Beam Substitutions:

(2) 9 1/4" LVL may replace a double or triple 2x10 beam. No other substitutions are allowed. Conventional lumber beams MAY NOT be substituted for LVL beams by any "rule of thumb". Substitutions must be calculated by either Artform or a structural engineer. If calculated by a structural engineer, provide stamped plans and/or calculations.

We specify LVL beams as built up members to allow framers to use existing stock. You may substitute single piece LVLs of equivalent overall size for built-up members, unless otherwise noted.

Built-up members MAY NOT replace single piece LVL's where specified.

Where a beam of 1 3/4" or less in width is specified as framed under, either brace at 48" or double member for lateral stability.

Notes: Beam & Joist Sizing

1. Our beams sizes often differ from prescriptive code, because our designs are rarely the old style box colonial or cape with a center bearing wall upon which prescriptive code is based. We size our beams via calculations for this specific design, which may carry those loads separately via second floor beams and/or roof transfer beams. Beam or joist sizes, types and/or spacing may not be reduced or alternates substituted without our express permission.
2. Walls intended to be bearing are labeled as such. This information is provided to aid code officer in understanding the framing. It does not indicate permission to add loads to those walls, or any other walls.
3. Framing is sized for normal residential conditions. Contact Artform if additional loads are anticipated, including but not limited to waterbeds, large fish tanks, indoor hot tubs, multiple framed soffits or coffers.
4. In states where the designer is a licensed architect, (NH, MA, ME, CT & NY as of the date of issue) we are happy to stamp our drawings at no additional charge. In other states we are happy to provide calculations. Administration fees apply with provision of calculations. Code officer is encouraged to call with any questions about our methodology.

Artform Home Plans
AFHP Design # 918.124.v3 GL
© 2008-2020 Art Form Architecture 603.431.9559

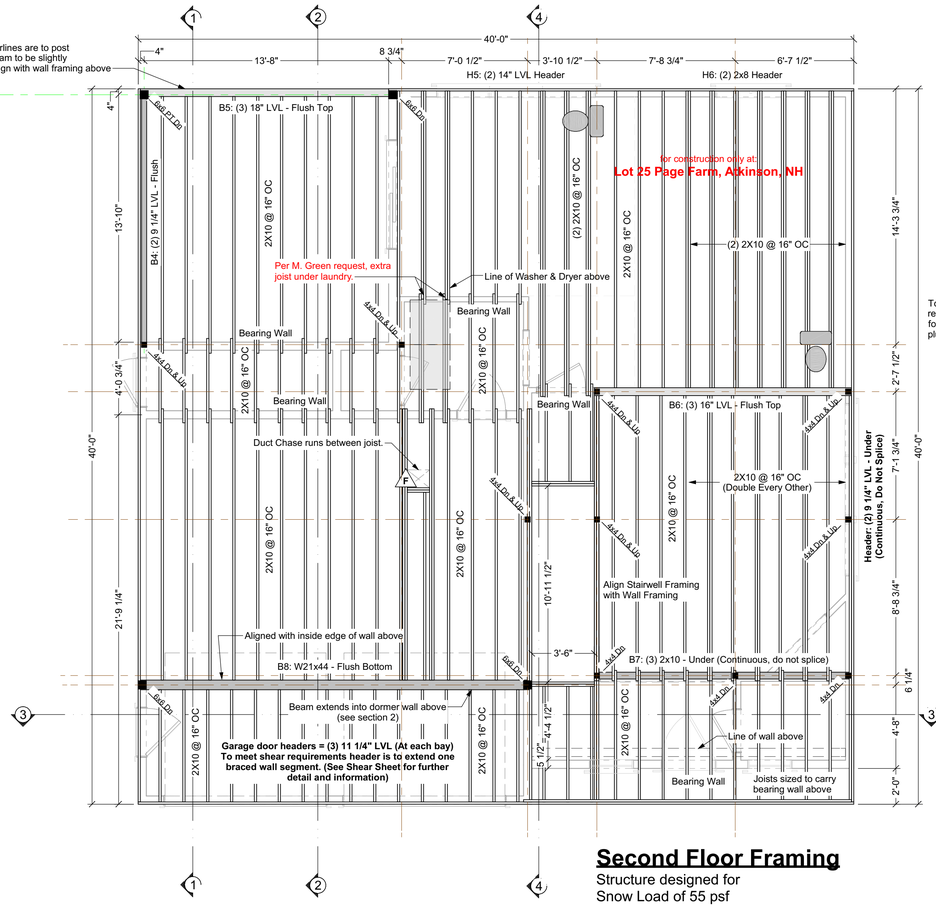
Giselle 40x40
Lot 25 Page Farm
Atkinson, NH

8

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 4/23/2020, drawn by ACJ

Issued for:
Construction

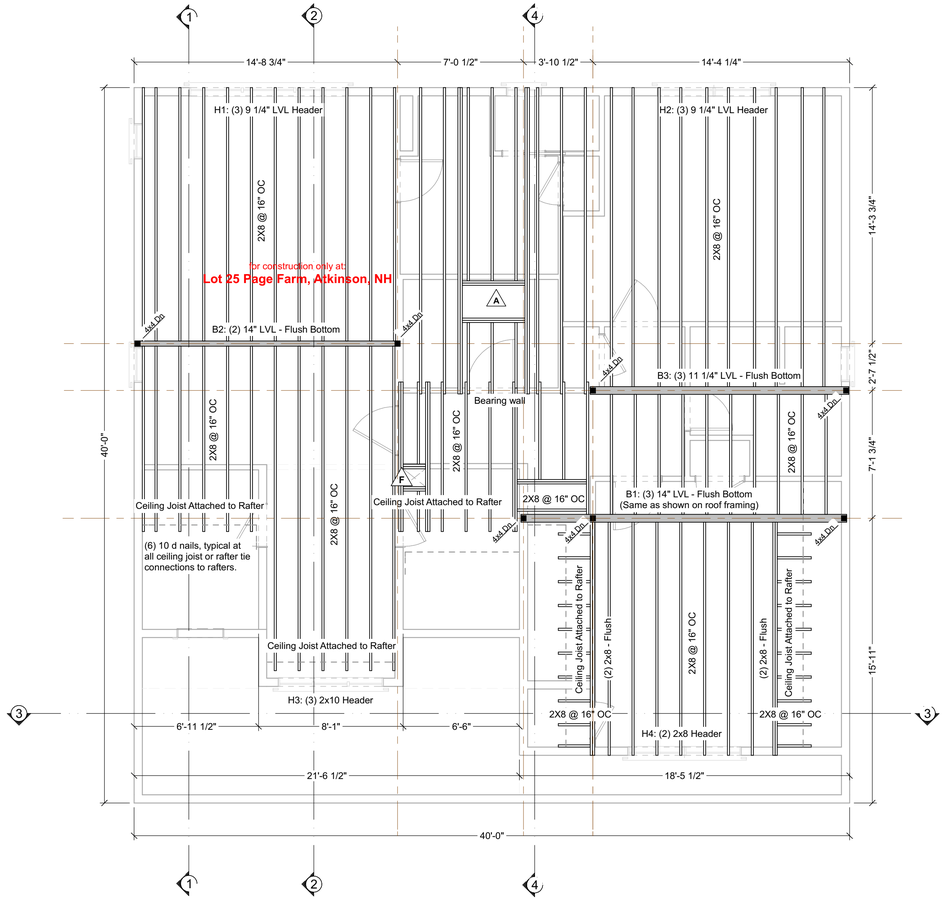
...



Second Floor Framing

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4



Ceiling Framing

Structure designed for
Snow Load of 55 psf

1 0 1 2 3 4

Artform Home Plans
AFHP Design # 918.124.v3 GL
© 2008-2020 Art Form Architecture 603.431.9559

Giselle 40x40
Lot 25 Page Farm
Atkinson, NH

9

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 4/23/2020, drawn by ACJ

Issued for:
Construction

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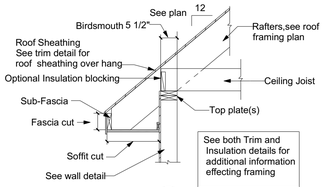

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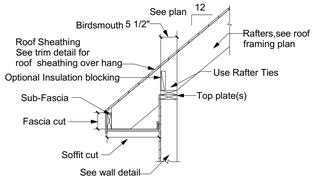

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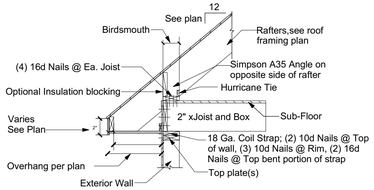

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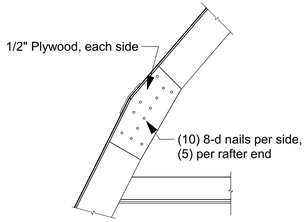
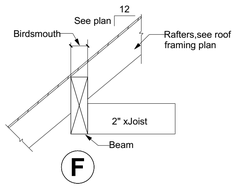


Gusset Detail



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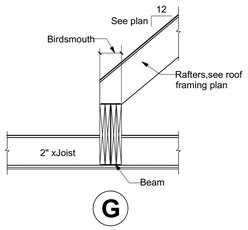
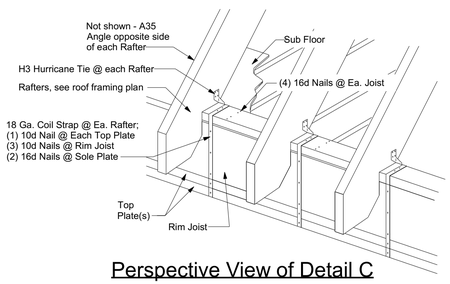
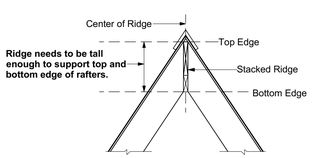


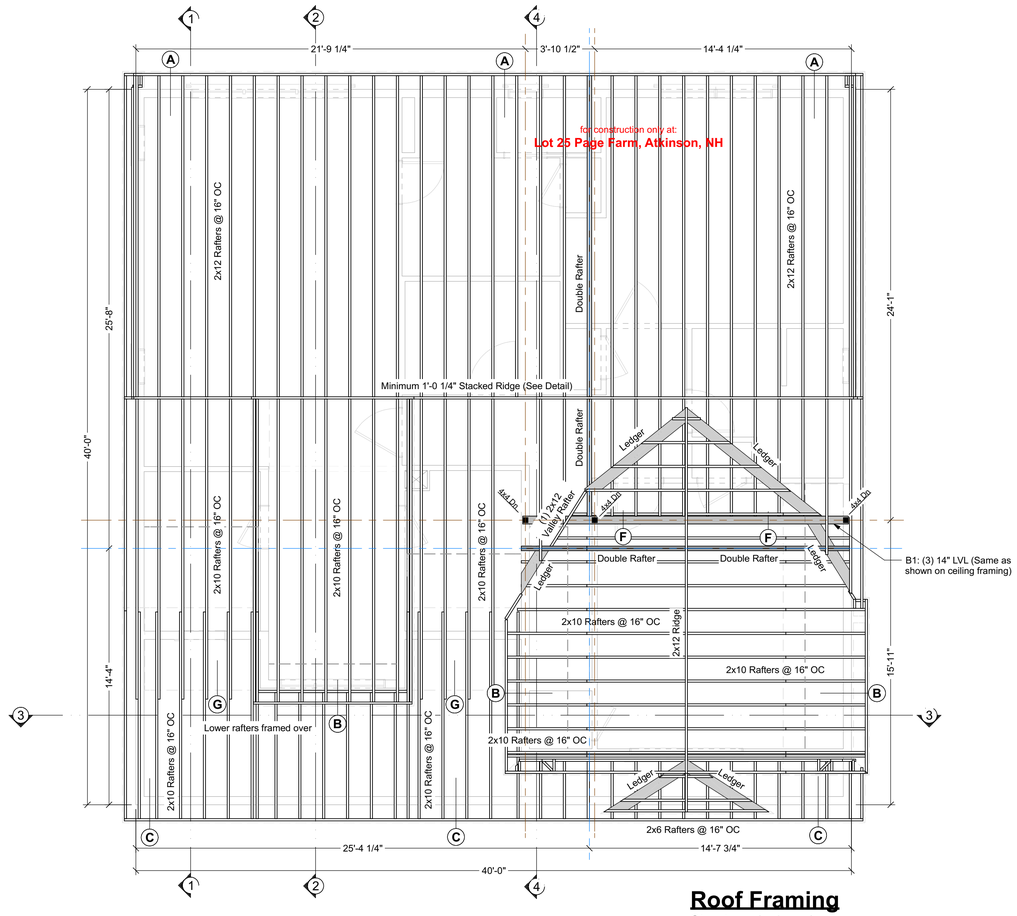
G



Perspective View of Detail C



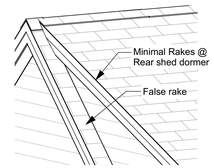
Stacked Ridge Detail



Roof Framing

Structure designed
for Snow Load of 55 psf
Provide Hurricane ties per code

1 0 1 2 3 4



Alternate:
12" False Rake and a 6" Shed Dormer Rake

Artform Home Plans

AFHP Design # 918.124.v3 GL

Giselle 40x40
Lot 25 Page Farm
Atkinson, NH

10

1/4"=1'-0" unless noted otherwise / Print @ 1:1
PDF created on: 4/23/2020, drawn by ACJ

Issued for:
Construction

...

PUD SITE DATA

DIMENSIONAL REQUIREMENTS (PROPOSED PUD USE)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
MINIMUM LOT SIZE	10 AC	100± AC
FRONTAGE	100 FT OR (2) @ 50'	665± FT
BASE RESIDENTIAL DENSITY:	74 RESIDENCES	56 RESIDENCES
MINIMUM INTERNAL SETBACKS:		
FRONT	20 FT	20 FT
SIDE	25 FT	TBD
REAR	25 FT	25 FT
BETWEEN BUILDINGS	30 FT	30 FT
MINIMUM OPEN SPACE	25%	83%
MINIMUM PERIMETER BUFFER:		
FRONT	100 FT	>100 FT
SIDE	50 FT	>50 FT
REAR	50 FT	>50 FT

BASE RESIDENTIAL DENSITY CALCULATIONS

REQUIRED BASE RESIDENTIAL DENSITY:

SRA:
- DEVELOPABLE AREA = TOTAL AREA – WETLANDS – 15% SLOPES = 3,938,561 SF – 1,684,960 SF – 156,927 SF = 2,096,674 SF
- MINIMUM LOT AREA PER DWELLING = 1 AC = 43,560 SF

SRB:
- DEVELOPABLE AREA = TOTAL AREA – WETLANDS – 15% SLOPES = 665,948 SF – 286,452 SF – 1,217 SF
- MINIMUM LOT AREA PER DWELLING = 15,000 SF

TOTAL REQUIRED = DEVELOPABLE AREA / MINIMUM LOT AREA PER DWELLING
(SRA) 2,096,674 SF / 43,560 SF = 48.1 RESIDENCES
(SRB) 378,279 SF / 15,000 SF = 25.2 RESIDENCES
TOTAL = 74 RESIDENCES

ROADWAY LENGTH

TOTAL ROADWAY	= 2,945 FT
TOTAL DEAD END ROADWAY	= 2,945 FT

HOUSE LEGEND

LETTER	HOUSE TYPE
AB	ABBOTT
AU	AURELIA
B	BALMALCOLM
C	CARTER
G	GIARA
GS	GISELLE
SC	SINCLAIR
SP	SWEET CHEERY PIE
S	SUNROOM

*NO STRUCTURES PERMITTED IN EXTERNAL YARD SETBACKS. EXTERNAL YARDS SHALL BE LANDSCAPED AND SHALL NOT BE USED FOR VEHICULAR PARKING.

HORIZONTAL SCALE 1"=40'

REV'S	DATE	DESCRIPTION	DR	CK
1	6/14/2021	REVISED PLAN TO SHOW NEW ROAD ALIGNMENT	JSM	JJM

SITE DEVELOPMENT PLAN

TAX MAP 242 LOT 4

OVERALL SITE LAYOUT COLOR PLAN

PEVERLY HILL ROAD CONDOMINIUMS

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

SCALE: 1" = 40' (30" X 48") **MAY 4, 2021**

Seacoast Division
TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	CK
47388.11	JSM	JJM
	TA	JJM
	CADFILE	

C-1

DIG SAFE
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

THIS PLAN IS A PRELIMINARY CONCEPTUAL DESIGN FOR SITE LOCATION FEASIBILITY AND DISCUSSION PURPOSES ONLY. ADDITIONAL PERMITS, WAIVERS, AND VARIANCE MAY BE REQUIRED UPON FURTHER DESIGN, REVIEW, AND COORDINATION WITH THE TOWN.

Jun 18, 2021 - 6:45pm
P:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Concepts\47388-11_PUD_Condo_TAC_Rev2.dwg

PARSON WOODS CONDOMINIUM

83 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE
APRIL 19, 2021
LAST REVISED JUNE 23, 2021

GENERAL INFORMATION

OWNER
MAP 242 LOT 4
STOKEL SB & NA TRUST 37.5% INT,
PHILIP J 25% INT
83 PEVERLY HILL RD
PORTSMOUTH, NH 03801

APPLICANT/PREPARED FOR
GREEN AND COMPANY REAL ESTATE
11 LAFAYETTE RD
NORTH HAMPTON, NH 03868

RESOURCE LIST

PLANNING/ZONING DEPARTMENT
1 JUNKINS AVE
PORTSMOUTH, NH 03801
603-610-7216

BUILDING DEPARTMENT
1 JUNKINS AVE
PORTSMOUTH, NH 03801
603-610-7243
ROBERT MARSILIA,
CHIEF BUILDING INSPECTOR

PUBLIC WORKS
600 PEVERLY HILL RD
PORTSMOUTH, NH 03801
603-472-1530
PETER RICE, PUBLIC WORKS DIRECTOR

POLICE DEPARTMENT
3 JUNKINS AVE
PORTSMOUTH, NH 03801
603-427-1510
MARK NEWPORT, CHIEF

FIRE DEPARTMENT
170 COURT ST
PORTSMOUTH, NH 03801
603-427-1515
PATRICK HOWE, CHIEF

ASSOCIATED PROFESSIONALS

ENVIRONMENTAL SERVICES
GOVE ENVIRONMENTAL SERVICES
8 CONTINENTAL DRIVE
BUILDING 2 – UNIT H
EXETER, NH 03833

SOIL SCIENTIST
GOVE ENVIRONMENTAL SERVICES
8 CONTINENTAL DRIVE
BUILDING 2 – UNIT H
EXETER, NH 03833
JIM GOVE, CERTIFIED SOIL SCIENTIST

TRAFFIC ENGINEER
STEPHEN G. PERNAW & COMPANY, INC.
PO BOX 1721
CONCORD, NH 03302
603-731-8500
STEPHEN G. PERNAW, PE, PTOE

VICINITY PLAN

HORIZONTAL SCALE 1"=1,000'
1,000 500 0 1,000

ZONING MAP

HORIZONTAL SCALE 1"=1,000'
1,000 500 0 1,000

INDEX OF SHEETS

SHEET	SHEET TITLE	REVISION DATE
C-00	COVER	
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S-01 – S-04	EXISTING CONDITIONS PLAN	
S-05	CONDOMINIUM SITE PLAN	
C-02	SITE PREPARATION & DEMOLITION PLAN	
C-03	OVERALL SITE LAYOUT PLAN	
C-04 – C-11	SITE LAYOUT PLANS	
C-12 – C-15	ROAD-A PLAN & PROFILE	
C-16	OVERALL GRADING & DRAINAGE PLAN	
C-17 – C-25	GRADING & DRAINAGE PLANS	
C-26	OVERALL UTILITY PLAN	
C-27 – C-33	UTILITY PLANS	
C-34	OVERALL EROSION CONTROL PLAN	
C-35 – C-44	EROSION CONTROL PLANS	
C-45	OVERALL LANDSCAPE PLAN	
C-46 – C-54	LANDSCAPE PLANS	
C-55	OVERALL LIGHTING PLAN	
C-56 – C-63	LIGHTING PLANS	
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C-66	SITE DISTANCE PLAN & PROFILE	
C-67	PEDESTRIAN & BIKE PATH	
C-68 – C-75	DETAILS	

WAIVERS

THE FOLLOWING WAIVERS FROM THE CITY OF PORTSMOUTH SITE REVIEW REGULATIONS ARE BEING REVIEWED BY THE PLANNING BOARD:

1. PORTSMOUTH SUBDIVISION RULES AND REGULATIONS, RESIDENTIAL STREET MINIMUM STANDARDS (PG. 36), REQUIRING 32' OF PAVEMENT WIDTH.
2. PORTSMOUTH SUBDIVISION RULES AND REGULATIONS SECTION VI(3)(B), MINIMUM RIGHT-OF-WAY FOR MAIN THOROUGHFARES SHALL NOT BE LESS THAN 50 FEET.
3. PORTSMOUTH SITE PLAN REVIEW REGULATIONS SECTION 2.5.4.3(c), TRUCK TURNING MINIMUM VEHICLE ALLOWED BEING A WB-50.

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
CITY SITE PLAN REVIEW	PENDING	–	–
OPEN SPACE PLANED UNIT DEVELOPMENT CONDITIONAL USE PERMIT	PENDING	–	–
NHDES ALT. OF TERRAIN	PENDING	–	–
NHDES SEWER CONNECTION PERMIT	PENDING	–	–
EPA SWPPP	PENDING	–	–

THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4
COVER
PARSON WOODS CONDOMINIUM LLC
83 PEVERLY HILL ROAD, PORTSMOUTH, NH
OWNED BY
STOKEL SB & NA TRUST, PHILIP J 25% INT
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: NTS **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_COVER	C-00

LEGEND

PROPOSED

	PROPERTY LINE
	ZONING LINE
	EASEMENT
	BASELINE
	FLOODPLAIN
	EDGE OF WATERBODY
	EDGE OF WETLAND
	SETBACK (WETLAND)
	SETBACK (STRUCTURE)
	SETBACK (PARKING)
	SETBACK (LANDSCAPE)
	GRAVEL ROAD
EOP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
SGC	SLOPED GRANITE CURB
CC	CONCRETE CURB
ICC	INTEGRATED CONCRETE CURB
BIT	BUTIMINOUS ASPHALT CURB
CCB	CAPE COD BERM
	SAWCUT
	BUILDING
	BUILDING ROOF OVERHANG
	BUILDING FOUNDATION
	BUILDING ENTRANCE
	OVERHEAD DOOR
	TREE LINE
O O O	FENCE (CHAIN LINK)
X X	FENCE (WIRE)
□ □ □	FENCE (STOCKADE)
	GUARDRAIL
	STONE WALL
	RETAINING WALL
X X X	SILT FENCE
SS SS SS	SILT SOCK
	SOIL BOUNDARY
	LIMIT OF GRADING
XXX	CONTOUR
TC100.50 BC100.00 OR X100.00	SPOT GRADE
##	PARKING COUNT
DSLY	YELLOW DOUBLE SOLID LINE
SSLY	YELLOW SINGLE SOLID LINE
SSLW	WHITE SINGLE SOLID LINE
SBLW	WHITE SINGLE BROKEN LINE
STOP	STOP BAR
	CROSSWALK
	ACCESSIBLE PARKING SYMBOL
	PAVEMENT ARROW
	TRAFFIC FLOW ARROW (NOT PAINTED)
	SIGN (SINGLE POST)
	SIGN (DOUBLE POST)
	SIGN (PYLON)
	SIGN (MONUMENT)
	BOLLARD
D	DUMPSTER PAD

PROPOSED

	CONCRETE
	GRAVEL
	HEAVY DUTY PAVEMENT
	CONSTRUCTION ENTRANCE
	SNOW STORAGE
	RIPRAP
	INLET PROTECTION
	DRAIN LINE
	DRAINAGE SWALE
	STORMWATER BMP
S	SEWER LINE
FM	SEWER FORCE MAIN LINE
W	WATER LINE
G	GAS LINE
OHE	OVERHEAD UTILITY LINE
UGE	UNDERGROUND UTILITY LINE
	CATCH BASIN
	DRAIN INLET
	OUTLET CONTROL STRUCTURE
	ROOF DRAIN
	DRAIN CLEANOUT
	DRAIN MANHOLE
	FARED END SECTION
	SEWER CLEAN OUT
	SEWER MANHOLE
	SEWER VENT
	DRAIN/SEWER/WATER PLUG OR CAP
	HYDRANT
	FIRE DEPARTMENT CONNECTION
	WATER GATE VALVE
	WATER SHUTOFF
	THRUST BLOCK
	WATER METER
	WATER MANHOLE
	WELL
	GAS GATE VALVE
	GAS SHUT OFF
	GAS METER
	TELEPHONE MANHOLE
	ELECTRIC MANHOLE
	TRAFFIC CONTROL CABINET
	ELECTRIC HANDHOLE
	ELECTRIC PULL BOX
	ELECTRIC METER
	FLOOD LIGHT
	LIGHT POLE
	UTILITY POLE
	GUY POLE
T	TRANSFORMER PAD
B-#	BORING LOCATION
TP-#	TEST PIT LOCATION
IT-#	INFILTRATION TEST LOCATION
MW-#	MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

DIG SAFE
CALL BEFORE YOU DIG
811
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. THE CONDOMINIUM SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
4. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE CITY OF PORTSMOUTH.
5. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
6. AN ALTERATION OF TERRAIN PERMIT IS REQUIRED PER ENV-WQ 1503.02. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 OR AS APPLICABLE.
7. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
8. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
9. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
10. PRIOR TO COMMENCING ANY SITE WORK ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
11. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
12. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
13. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
14. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
15. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT BETWEEN THE HOURS OF 7:00 AM AND 9:00 PM, MONDAY THROUGH FRIDAY IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION, PORTSMOUTH, NEW HAMPSHIRE"
    - F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - G. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - K. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    - M. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
    - N. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - O. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.

GRADING NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEERS RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THEN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
21. DENSITY REQUIREMENTS:

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

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, ENCASE THE SANITARY LINE IN 6" THICK CONCRETE FOR A DISTANCE OF 10' EITHER SIDE OF THE CROSSING, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 3' HORIZONTALLY TO THE WATER LINE.
11. INSTALLATION OF ALL WATER AND SEWER TO BE WITNESSED BY A THIRD-PARTY INSPECTORS.
12. EACH CONDO WILL HAVE A SEPARATE IRRIGATION METER AND IRRIGATION SYSTEM.
13. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
14. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
15. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
16. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
17. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
18. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
19. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	MUNICIPAL
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	UNITIL
ELECTRIC	EVERSOURCE
TELEPHONE	CONSOLIDATED COMMUNICATIONS FKA FAIRPOINT COMMUNICATIONS
CABLE	COMCAST

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

NOTES AND LEGEND

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_NOTES	C-01

Jun 23, 2021 - 2:18pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Notes.dwg

LEGEND:

MAP 137 LOT 11	ASSESSORS MAP AND LOT NUMBER
CHB	CHORD BEARING
CHL	CHORD LENGTH
I	INDUSTRIAL ZONE
L	LENGTH
NRP	NATURAL RESOURCE PROTECTION ZONE
N/F	NOW OR FORMERLY
R	RADIUS
RU	RURAL ZONE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
Δ	CENTRAL ANGLE
S.F.	SQUARE FEET
SRA	SINGLE RESIDENCE A ZONE
SRB	SINGLE RESIDENCE B ZONE
TC	TRANSPORTATION CORRIDOR ZONE
	BOUNDARY LINE
	STONE WALL
X	WIRE FENCE
	EDGE OF WETLAND
	WETLAND BUFFER
W	WELL
	WETLANDS

PLAN REFERENCES:

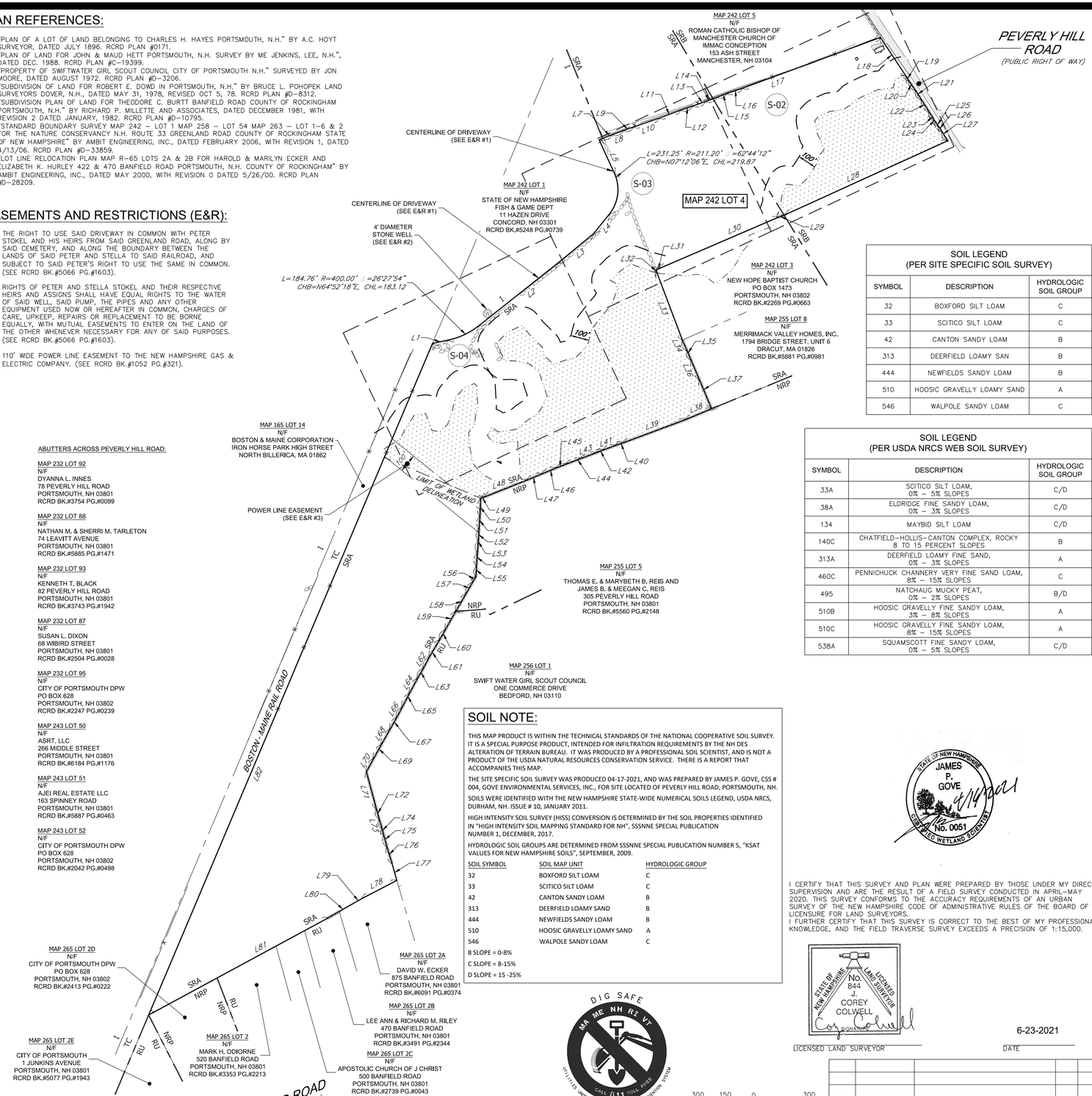
1. "PLAN OF A LOT OF LAND BELONGING TO CHARLES H. HAYES PORTSMOUTH, N.H." BY A.C. HOYT SURVEYOR, DATED JULY 1896. RCRD PLAN #0171.
2. "PLAN OF LAND FOR JOHN & MAUD HETT PORTSMOUTH, N.H. SURVEY BY ME JENKINS, LEE, N.H.", DATED DEC. 1988. RCRD PLAN #C–19399.
3. "PROPERTY OF SWIFTWATER GIRL SCOUT COUNCIL CITY OF PORTSMOUTH N.H." SURVEYED BY JON MOORE, DATED AUGUST 1972. RCRD PLAN #D–3206.
4. "SUBDIVISION OF LAND FOR ROBERT E. DOWD IN PORTSMOUTH, N.H." BY BRUCE L. POHOPEK LAND SURVEYORS DOVER, N.H., DATED MAY 31, 1978, REVISED OCT 5, 78. RCRD PLAN #D–8312.
5. "SUBDIVISION PLAN OF LAND FOR THEODORE C. BURTT BANFIELD ROAD COUNTY OF ROCKINGHAM PORTSMOUTH, N.H." BY RICHARD P. MILLETTE AND ASSOCIATES, DATED DECEMBER 1981, WITH REVISION 2 DATED JANUARY, 1982. RCRD PLAN #D–10795.
6. "STANDARD BOUNDARY SURVEY MAP 242 – LOT 1 MAP 258 – LOT 54 MAP 263 – LOT 1–6 & 2 FOR THE NATURE CONSERVANCY LLH. ROUTE 33 GREENLAND ROAD COUNTY OF ROCKINGHAM STATE OF NEW HAMPSHIRE" BY AMBIT ENGINEERING, INC., DATED FEBRUARY 2006, WITH REVISION 1, DATED 4/13/06. RCRD PLAN #D–33859.
7. "LOT LINE RELOCATION PLAN MAP R–65 LOTS 2A & 2B FOR HAROLD & MARILYN ECKER AND ELIZABETH K. HURLEY 422 & 470 BANFIELD ROAD PORTSMOUTH, N.H. COUNTY OF ROCKINGHAM" BY AMBIT ENGINEERING, INC., DATED MAY 2000, WITH REVISION 0 DATED 5/26/00. RCRD PLAN #D–28209.

EASEMENTS AND RESTRICTIONS (E&R):

1. THE RIGHT TO USE SAID DRIVEWAY IN COMMON WITH PETER STOKEL AND HIS HEIRS FROM SAID GREENLAND ROAD, ALONG BY SAID CEMETERY, AND ALONG THE BOUNDARY BETWEEN THE LANDS OF SAID PETER AND STELLA TO SAID RAILROAD, AND SUBJECT TO SAID PETER'S RIGHT TO USE THE SAME IN COMMON. (SEE RCRD BK.#5066 PG.#1603).
2. RIGHTS OF PETER AND STELLA STOKEL AND THEIR RESPECTIVE HEIRS AND ASSIGNS SHALL HAVE EQUAL RIGHTS TO THE WATER OF SAID WELL, SAID PUMP, THE PIPES AND ANY OTHER EQUIPMENT USED NOW OR HEREAFTER IN COMMON, CHARGES OF CARE, UPKEEP, REPAIRS OR REPLACEMENT TO BE BORNE EQUALLY, WITH MUTUAL EASEMENTS TO ENTER ON THE LAND OF THE OTHER WHENEVER NECESSARY FOR ANY OF SAID PURPOSES. (SEE RCRD BK.#5066 PG.#1603).
3. 110' WIDE POWER LINE EASEMENT TO THE NEW HAMPSHIRE GAS & ELECTRIC COMPANY. (SEE RCRD BK.#1052 PG.#321).

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N78°08'44"E	85.87'
L2	N51°37'18"E	544.02'
L3	N50°33'19"E	248.37'
L4	N38°55'51"E	136.50'
L5	N24°30'55"W	199.99'
L7	N69°17'23"E	56.05'
L8	N69°46'08"E	65.15'
L9	N70°28'21"E	57.22'
L10	N70°58'09"E	146.93'
L11	N69°38'29"E	122.30'
L12	N71°01'01"E	69.20'
L13	N70°36'35"E	73.15'
L14	N70°09'53"E	65.99'
L15	N68°45'39"E	56.30'
L16	N71°22'53"E	90.32'
L17	N69°46'51"E	792.39'
L18	N33°28'11"W	253.49'
L19	N30°43'03"W	25.87'
L20	N34°50'10"W	64.05'
L21	N32°23'37"W	59.65'
L22	N32°36'14"W	75.31'
L23	N32°30'33"W	44.57'
L24	N31°38'38"W	14.39'
L25	N33°17'28"W	36.28'
L26	N33°32'47"W	33.10'
L27	N32°28'55"W	58.19'
L28	S65°32'22"W	961.06'
L29	S69°39'32"W	39.37'
L30	S66°43'10"W	699.69'
L31	S61°50'59"W	21.03'
L32	S21°45'52"E	10.17'
L33	S20°39'30"E	392.22'
L34	S24°19'08"E	65.84'
L35	S22°34'53"E	52.86'
L36	S23°02'43"E	111.50'
L37	S22°45'01"E	171.93'
L38	S67°19'43"W	152.24'
L39	S69°35'00"W	360.76'
L40	S71°11'01"W	41.19'
L41	S69°52'05"W	74.38'
L42	S68°05'19"W	38.26'

LINE TABLE		
LINE #	BEARING	DISTANCE
L43	S69°37'42"W	88.49'
L44	S69°05'04"W	85.94'
L45	S68°46'51"W	56.81'
L46	S67°27'31"W	81.81'
L47	S67°26'04"W	87.58'
L48	S68°24'11"W	247.91'
L49	S70°35'06"W	20.09'
L50	S02°20'46"W	96.94'
L51	S04°10'09"W	71.99'
L52	S02°55'30"W	60.89'
L53	S04°46'48"W	64.75'
L54	S04°06'17"W	73.30'
L55	S02°44'38"W	55.33'
L56	S30°51'45"W	36.06'
L57	S29°37'18"W	72.38'
L58	S30°17'36"W	108.68'
L59	S29°36'04"W	113.60'
L60	S29°36'07"W	62.04'
L61	S30°55'15"W	107.77'
L62	S27°41'10"W	68.75'
L63	S30°19'04"W	62.95'
L64	S28°10'44"W	90.88'
L65	S27°46'33"W	84.72'
L66	S28°09'12"W	63.04'
L67	S29°23'48"W	74.83'
L68	S29°32'16"W	94.54'
L69	S29°00'39"W	86.86'
L70	S28°38'51"W	79.24'
L71	S15°03'54"E	206.01'
L72	S15°34'48"E	56.79'
L73	S16°34'18"E	55.67'
L74	S14°35'44"E	35.23'
L75	S15°16'42"E	66.01'
L76	S16°55'11"E	94.64'
L77	S15°41'57"E	93.63'
L78	N62°33'20"E	210.79'
L79	N60°22'36"E	85.15'
L80	N60°02'43"E	125.36'
L81	N61°36'13"E	1100.89'
L82	S22°55'14"W	3930.00'



SOIL NOTE:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED 04-17-2021, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC., FOR SITE LOCATED OF PEVERLY HILL ROAD, PORTSMOUTH, NH.

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE # 10, JANUARY 2011.

HIGH INTENSITY SOIL SURVEY (HISS) CONVERSION IS DETERMINED BY THE SOIL PROPERTIES IDENTIFIED IN "HIGH INTENSITY SOIL MAPPING STANDARD FOR NH", SSSNNE SPECIAL PUBLICATION NUMBER 1, DECEMBER, 2017.

HYDROLOGIC SOIL GROUPS ARE DETERMINED FROM SSSNNE SPECIAL PUBLICATION NUMBER 5, "KSAT VALUES FOR NEW HAMPSHIRE SOILS", SEPTEMBER, 2009.

SOIL SYMBOL	SOIL MAP UNIT	HYDROLOGIC GROUP
32	BOXFORD SILT LOAM	C
33	SCITICO SILT LOAM	C
42	CANTON SANDY LOAM	B
313	DEERFIELD LOAMY SAND	B
444	NEWFIELDS SANDY LOAM	B
510	HOOSIC GRAVELLY LOAMY SAND	A
546	WALPOLE SANDY LOAM	C

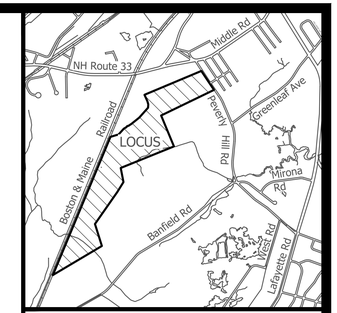
B SLOPE = 0-8%
C SLOPE = 8-15%
D SLOPE = 15 -25%

DIG SAFE
NH ME RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

300 150 0 300
Graphic Scale in Feet

SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)		
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
32	BOXFORD SILT LOAM	C
33	SCITICO SILT LOAM	C
42	CANTON SANDY LOAM	B
313	DEERFIELD LOAMY SAN	B
444	NEWFIELDS SANDY LOAM	B
510	HOOSIC GRAVELLY LOAMY SAND	A
546	WALPOLE SANDY LOAM	C

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)		
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
33A	SCITICO SILT LOAM, 0% – 5% SLOPES	C/D
38A	ELDRIDGE FINE SANDY LOAM, 0% – 3% SLOPES	C/D
134	MAYBID SILT LOAM	C/D
140C	CHATFIELD–HOLLIS–CANTON COMPLEX, ROCKY 8 TO 15 PERCENT SLOPES	B
313A	DEERFIELD LOAMY FINE SAND, 0% – 3% SLOPES	A
460C	PENNICHUCK CHANNERY VERY FINE SAND LOAM, 8% – 15% SLOPES	C
495	NATCHAUG MUCKY PEAT, 0% – 2% SLOPES	B/D
510B	HOOSIC GRAVELLY FINE SANDY LOAM, 3% – 8% SLOPES	A
510C	HOOSIC GRAVELLY FINE SANDY LOAM, 8% – 15% SLOPES	A
538A	SQUAMSCOTT FINE SANDY LOAM, 0% – 5% SLOPES	C/D



LOCATION PLAN

NOTES:

1. THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE A (SRA) & SINGLE RESIDENCE B (SRB) ZONING DISTRICTS.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 242 AS LOT 4.
3. THE PARCEL IS LOCATED IN ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 33015C0270F, MAP REVISED JANUARY 29, 2021.
4. DIMENSIONAL REQUIREMENTS:

	SRA	SRB
	REQUIRED:	
MINIMUM LOT AREA:	1 ACRE	15,000 SF
LOT AREA PER DWELLING UNIT:	1 ACRE	15,000 SF
CONTINUOUS STREET FRONTAGE:	150'	100'
LOT DEPTH:	200'	100'
MINIMUM YARD DIMENSIONS:		
FRONT:	30'	30'
SIDE:	20'	10'
REAR:	40'	30'
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT:		
SLOPED ROOF	35'	35'
FLAT ROOF	30'	30'
BUILDING COVERAGE:	10%	20%
MINIMUM OPEN SPACE:	50%	40%

PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.520.

5. OWNER OF RECORD:
MAP 242 LOT 4:
STELLA B. STOKEL 1993 TRUST,
NANCY A. STOKEL 1993 TRUST & PHILIP J. STOKEL
83 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#5066 PG.#1603
6. PARCEL AREA:
MAP 242 LOT 4:
4,604,509 S.F.
(105.7050 ACRES)
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE OVERALL BOUNDARY LINES OF MAP 242 LOT 4.
9. FIELD SURVEY COMPLETED BY TCE, MVP & PJT IN APRIL–MAY 2020 USING A TOPCON DS103, TOPCON HIPER–SR, TOPCON HIPER–V AND A CARLSON RT4 DATA COLLECTOR.
10. HORIZONTAL DATUM IS NAD83 (2011) PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NAVD88 (GEOID12B) PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
11. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
12. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
13. WETLAND DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES ON FEBRUARY 18, 2020 AND REVISED ON MAY 14, 2020 IN ACCORDANCE WITH THE 1987 ARMY CORP OF ENGINEERS WETLAND MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. FIELD LOCATED BY TFMORAN, INC.
14. THE ABANDONED CEMETERY SHOWN ON SHEET S–03 IS BELIEVED TO BE THE FORMER HAYES FAMILY CEMETERY. CURRENT OWNERS OF THE PROPERTY ACKNOWLEDGE THAT ALL BODIES HAVE BEEN EXHUMED FROM THIS LOCATION. NO GRAVESTONES EXIST AT THIS CEMETERY. THE 25' BUFFER TO THE CEMETERY IS SHOWN AS AN ABUNDANCE OF CAUTION.

STATE OF NEW HAMPSHIRE
JAMES P. GOVE
4/14/2021
No. 0051
CERTIFIED WETLAND SCIENTIST

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN APRIL–MAY 2020. 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 IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

STATE OF NEW HAMPSHIRE
No. 844
JOHN J. COREY COLWELL
LICENSED LAND SURVEYOR
SIGNATURE

6-23-2021
DATE

REV.	DATE	DESCRIPTION	DR	CK
1	6/21/2021	NO REVISIONS THIS SHEET	IID	BMK

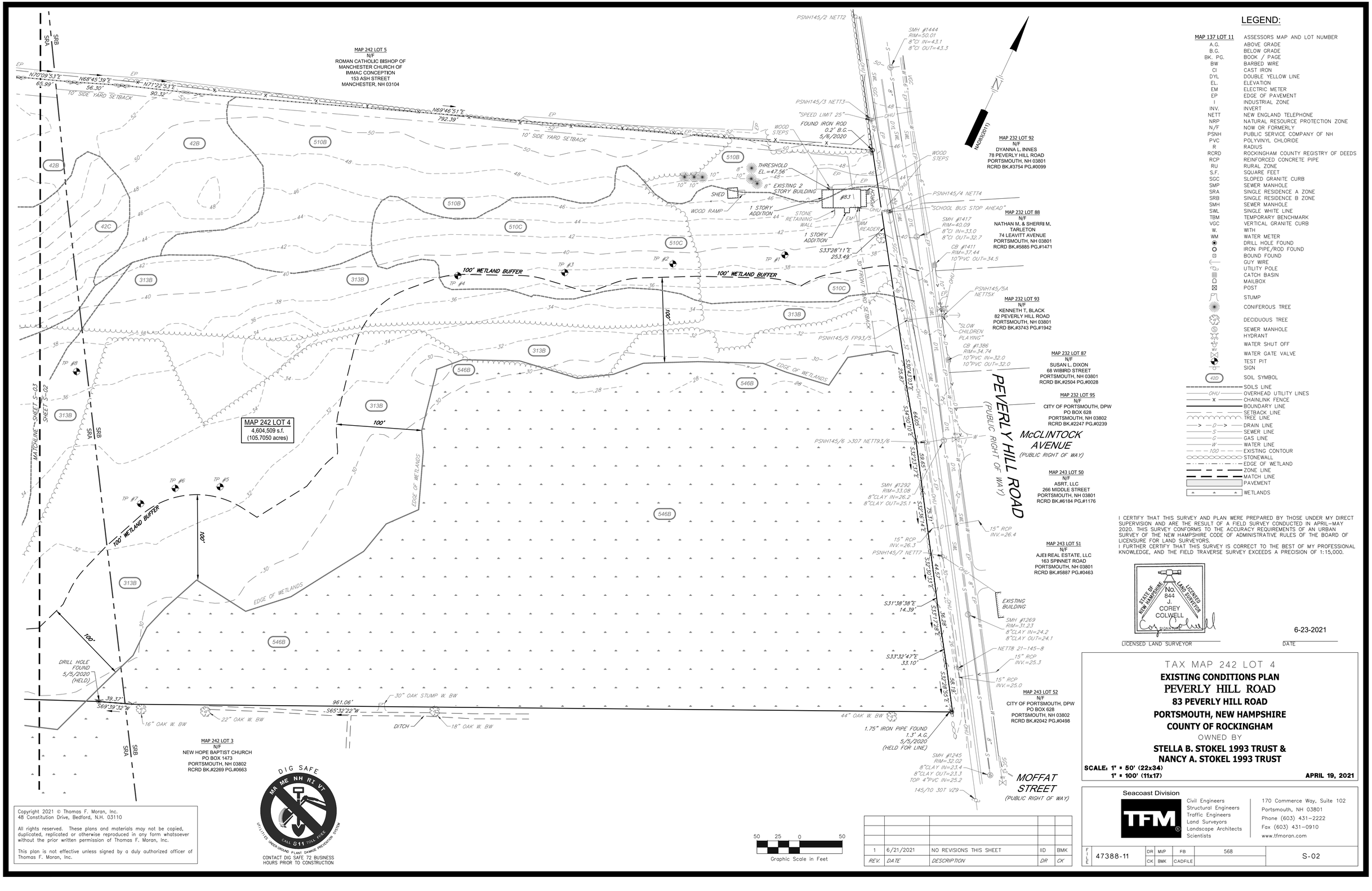
TAX MAP 242 LOT 4
OVERALL EXISTING CONDITIONS PLAN
PEVERLY HILL ROAD
83 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
STELLA B. STOKEL 1993 TRUST, NANCY A. STOKEL 1993 TRUST & PHILIP J. STOKEL

SCALE: 1" = 300' (22x34)
1" = 600' (11x17)
APRIL 19, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431–2222
Fax (603) 431–0910
www.tfmoran.com

FILE	47388-11	DR	MVP	FB	568	S-01
		CK	BMK	CADFILE		

Jun 21, 2021 - 10:12am
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Carlson Survey\Dwgs\47388-11 Overall.dwg



LEGEND:

MAP 137 LOT 11	ASSESSORS MAP AND LOT NUMBER
A.G.	ABOVE GRADE
B.G.	BELOW GRADE
BK. PG.	BOOK / PAGE
BW	BARBED WIRE
CI	CAST IRON
DYL	DOUBLE YELLOW LINE
EL.	ELEVATION
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
I	INDUSTRIAL ZONE
INV.	INVERT
NETT	NEW ENGLAND TELEPHONE
NRP	NATURAL RESOURCE PROTECTION ZONE
N/F	NOW OR FORMERLY
PSNH	PUBLIC SERVICE COMPANY OF NH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RCP	REINFORCED CONCRETE PIPE
RU	RURAL ZONE
S.F.	SQUARE FEET
SGC	SLOPED GRANITE CURB
SMP	SEWER MANHOLE
SRA	SINGLE RESIDENCE A ZONE
SRB	SINGLE RESIDENCE B ZONE
SMH	SEWER MANHOLE
SWL	SINGLE WHITE LINE
TBM	TEMPORARY BENCHMARK
VGC	VERTICAL GRANITE CURB
W.	WITH
WM	WATER METER
	DRILL HOLE FOUND
	IRON PIPE/ROD FOUND
	BOUND FOUND
	GUY WIRE
	UTILITY POLE
	CATCH BASIN
	MAILBOX
	POST
	STUMP
	CONIFEROUS TREE
	DECIDUOUS TREE
	SEWER MANHOLE
	HYDRANT
	WATER SHUT OFF
	WATER GATE VALVE
	TEST PIT
	SIGN
42D	SOIL SYMBOL
	SOILS LINE
OHU	OVERHEAD UTILITY LINES
X	CHAINLINK FENCE
	BOUNDARY LINE
	SETBACK LINE
	TREE LINE
D	DRAIN LINE
S	SEWER LINE
G	GAS LINE
W	WATER LINE
100	EXISTING CONTOUR
	STONEWALL
	EDGE OF WETLAND
	ZONE LINE
	MATCH LINE
	PAVEMENT
	WETLANDS

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN APRIL–MAY 2020. 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 IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

STATE OF NEW HAMPSHIRE — No. 844 — J. COREY COLWELL — LICENSED LAND SURVEYOR

LICENSED LAND SURVEYOR — 6-23-2021 DATE

TAX MAP 242 LOT 4

EXISTING CONDITIONS PLAN

PEVERLY HILL ROAD

83 PEVERLY HILL ROAD

PORTSMOUTH, NEW HAMPSHIRE

COUNTY OF ROCKINGHAM

OWNED BY

STELLA B. STOKEL 1993 TRUST & NANCY A. STOKEL 1993 TRUST

SCALE: 1" = 50' (22x34)
1" = 100' (11x17)

APRIL 19, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
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FILE		DR	MVP	FB	568	
	47388-11	CK	BMK	CADFILE		S-02

REV.	DATE	DESCRIPTION	DR	CK
1	6/21/2021	NO REVISIONS THIS SHEET	IID	BMK

50 25 0 50
Graphic Scale in Feet

DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Jun 21, 2021 - 10:13am
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Carlson Survey\Dwgs\47388-11 Survey.dwg

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

N65°56'25"E 19.08'
IRON ROD FOUND #738 FLUSH 4/28/2020 (HELD)
DRILL HOLE FOUND 4/28/2020 (HELD)
N69°17'23"E 56.05'
N69°46'08"E 65.15'
N70°28'21"E 57.22'
N70°58'09"E 146.93'
N69°38'29"E 122.30'
N71°01'01"E 69.20'
N70°36'35"E 73.15'
N70°09'53"E 65.99'
REMAINS OF STONE WALL (TYPICAL)
20' SIDE YARD SETBACK
SRB
SRA
EP
12" MAPLE W. BW
N24°30'55"W 199.99'
20' SIDE YARD SETBACK
CENTERLINE OF DRIVEWAY (SEE E&R #1 SHEET S-01)
IRON ROD FOUND #738 FLUSH 4/28/2020 (HELD)
24" CHESNUT W. BW
L=231.53' R=209.00' Δ=63°28'21" CHB=N07°12'06"E, CHL=219.87
20" MAPLE W. BW
4" MAPLE W. BW DEAD
12" CHERRY W. BW
IRON ROD FOUND #738 FLUSH 4/28/2020 (HELD)
RAILROAD SPIKE FOUND 0.1' B.G. 4/28/2020 (HELD)
N38°55'51"E 136.50
25' CEMETERY BUFFER
ABANDONED CEMETERY- NO EVIDENCE OF GRAVESTONES FOUND. (SEE NOTE 14 SHEET S-01)
STONE POSTS W/METAL RAILS (TYPICAL)
N50°33'19"E 248.37'
20' SIDE YARD SETBACK
100' WETLAND BUFFER
100'
100'
100' WETLAND BUFFER
EDGE OF WETLANDS
S61°50'59"W 21.03'
S21°45'52"E 10.17'
S20°29'30"E 392.22'
7" HICKORY W. BW
9" HICKORY W. BW
699.69'
S66°43'10"W
12" HICKORY W. BW
9" HICKORY W. BW
EDGE OF WETLANDS
MATCHLINE - SHEET S-03
SHEET S-02
MATCHLINE - SHEET S-04
SHEET S-03
MAP242(811)

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE
FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MAP 242 LOT 4
4,604,509 s.f.
(105.7050 acres)

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1473
PORTSMOUTH, NH 03802
RCRD BK.#2269 PG.#0663

TP #8
TP #9
TP #10
TP #11
TP #12
TP #13
TP #14

42B 42C 42D 444B 313B 32B 33B

LEGEND:

MAP 137 LOT 11	ASSESSORS MAP AND LOT NUMBER
B.G.	BELOW GRADE
BK. PG.	BOOK / PAGE
BW	BARBED WIRE
CHB	CHORD BEARING
CHL	CHORD LENGTH
EP	EDGE OF PAVEMENT
I	INDUSTRIAL ZONE
L	LENGTH
N/F	NOW OR FORMERLY
R	RADIUS
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RU	RURAL ZONE
S.F.	SQUARE FEET
SRA	SINGLE RESIDENCE A ZONE
SRB	SINGLE RESIDENCE B ZONE
TP	TEST PIT
W.	WITH
⊠	POST
Δ	CENTRAL ANGLE
	TEST PIT
	DECIDUOUS TREE
42D	SOIL SYMBOL
	SOILS LINE
x	CHAINLINK FENCE
	BOUNDARY LINE
	SETBACK LINE
	TREE LINE
100	EXISTING CONTOUR
	STONEWALL
	EDGE OF WETLAND
	ZONE LINE
	MATCH LINE
	PAVEMENT
	WETLANDS

NOTES:

1. SEE SHEET S-01 FOR OVERALL BOUNDARY, NOTES, PLAN REFERENCES AND LOCATION PLAN.

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STATE OF NEW HAMPSHIRE No. 844 J. COREY COLWELL LICENSED LAND SURVEYOR
SIGNATURE

LICENSED LAND SURVEYOR

6-23-2021
DATE

TAX MAP 242 LOT 4
EXISTING CONDITIONS PLAN
PEVERLY HILL ROAD
83 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
STELLA B. STOKEL 1993 TRUST &
NANCY A. STOKEL 1993 TRUST

SCALE: 1" = 50' (22x34)
1" = 100' (11x17)
APRIL 19, 2021

DIG SAFE MA ME NH RI VT CALL 811 TOLL FREE UTILITY UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

50 25 0 50
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK
1	6/21/2021	NO REVISIONS THIS SHEET	IID	BMK

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Structural Engineers
Traffic Engineers
Land Surveyors
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Scientists
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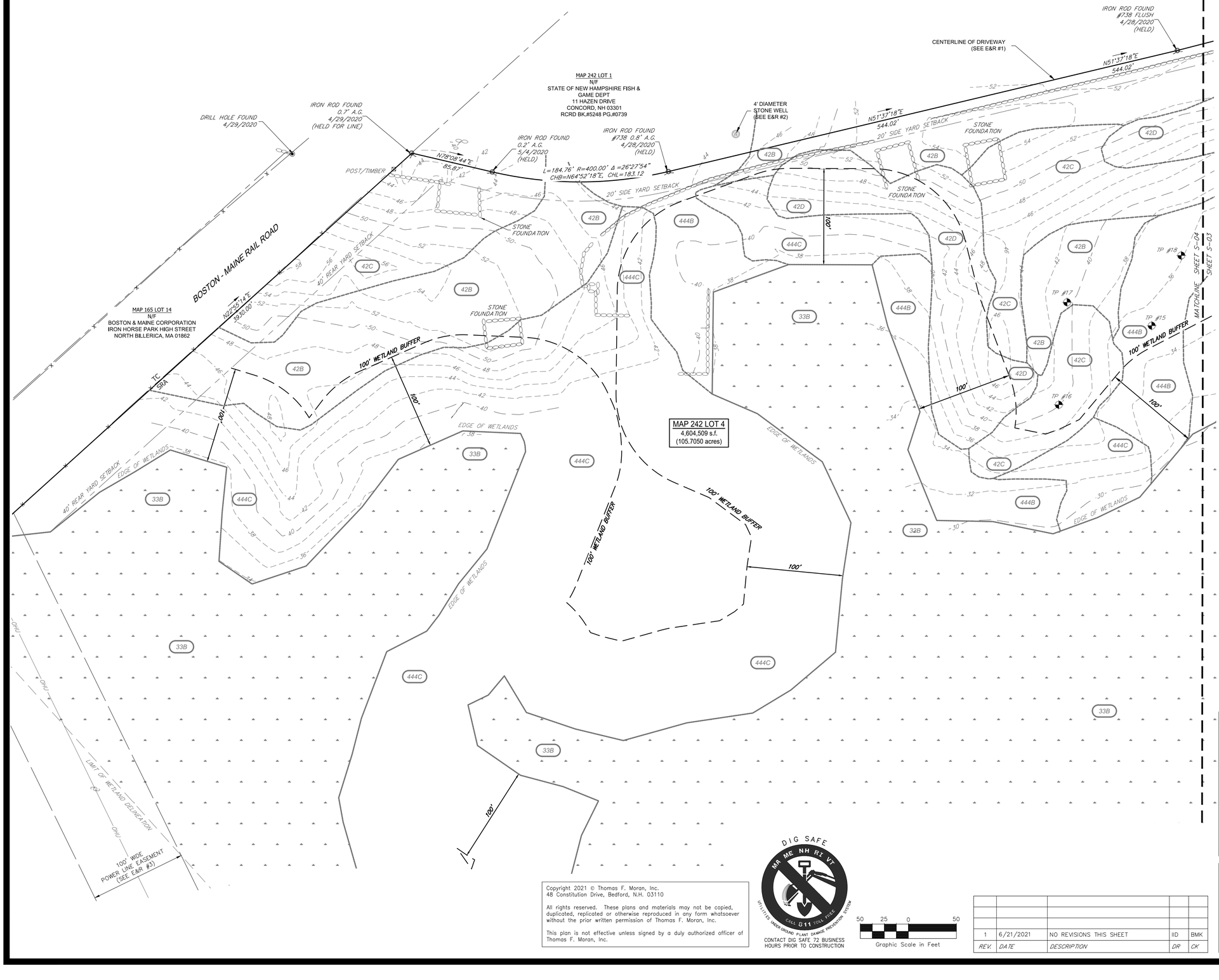
FILE	DR	MVP	FB	568	S-03
47388-11	CK	BMK	CADFILE		

Jun 21, 2021 - 11:37am
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Carlson Survey\Dwgs\47388-11 Survey.dwg



LEGEND:

MAP 137 LOT 11	ASSESSORS MAP AND LOT NUMBER
A.G.	ABOVE GRADE
BK. PG.	BOOK / PAGE
CHB	CHORD BEARING
CHL	CHORD LENGTH
I	INDUSTRIAL ZONE
L	LENGTH
N/F	NOW OR FORMERLY
R	RADIUS
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
SRA	SINGLE RESIDENCE A ZONE
TC	TRANSPORTATION CORRIDOR ZONE
TP	TEST PIT
Δ	CENTRAL ANGLE
◉	DRILL HOLE FOUND
○	IRON PIPE/ROD FOUND
⊠	POST
	TEST PIT
42D	SOIL SYMBOL
	SOILS LINE
x	CHAINLINK FENCE
	BOUNDARY LINE
	SETBACK LINE
	TREE LINE
100	EXISTING CONTOUR
	STONEWALL
	EDGE OF WETLAND
	ZONE LINE
	MATCH LINE
	PAVEMENT
	WETLANDS

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STATE OF NEW HAMPSHIRE — No. 844 — J. COREY COLWELL — LICENSED LAND SURVEYOR

SIGNATURE

LICENSED LAND SURVEYOR

6-23-2021
DATE

TAX MAP 242 LOT 4

EXISTING CONDITIONS PLAN

PEVERLY HILL ROAD

83 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

OWNED BY

STELLA B. STOKEL 1993 TRUST &
NANCY A. STOKEL 1993 TRUST

SCALE: 1" = 50' (22x34)
1" = 100' (11x17)

APRIL 19, 2021

DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

50 25 0 50
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK
1	6/21/2021	NO REVISIONS THIS SHEET	IID	BMK

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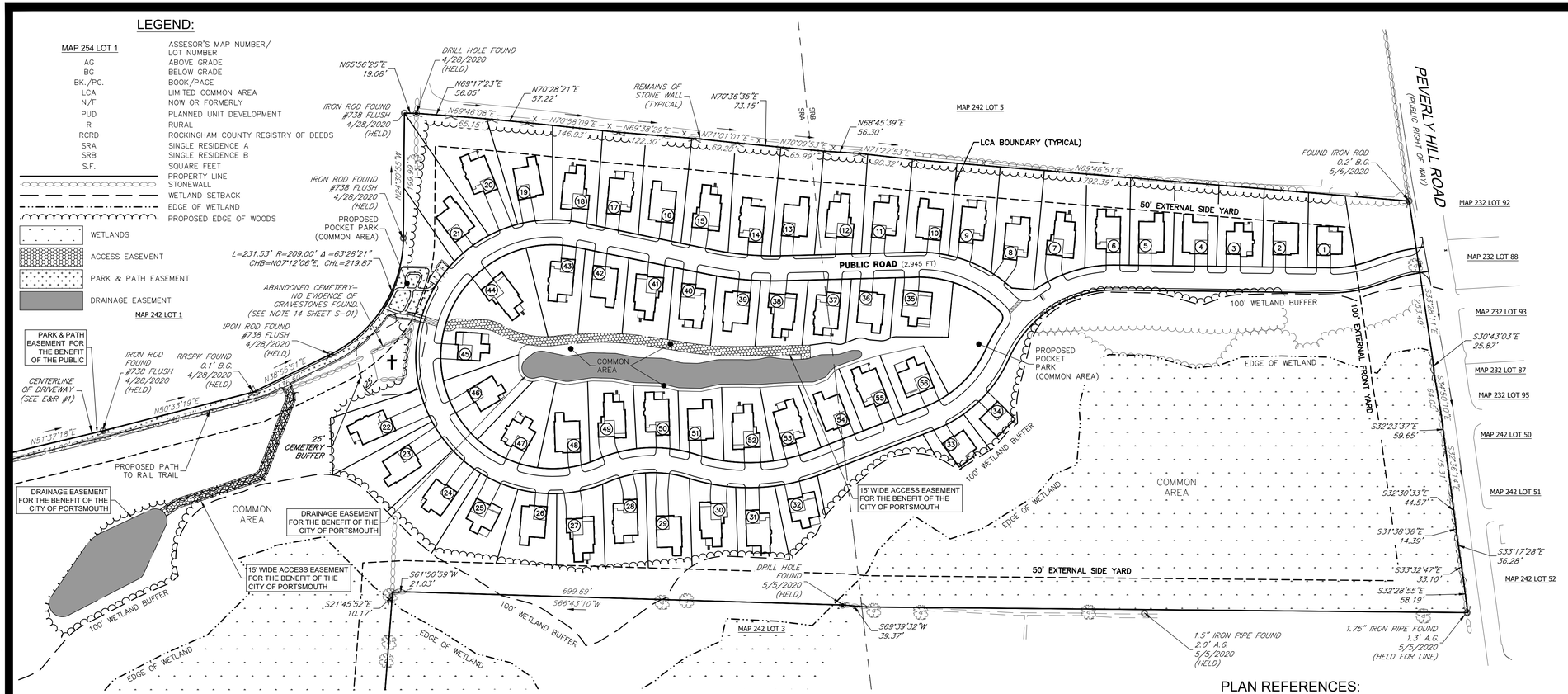
www.tfmoran.com

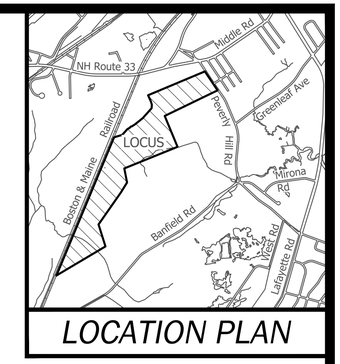
FILE	DR	MVP	FB	568	
47388-11	CK	BMK	CADFILE		S-04

Jun 21, 2021 - 11:38am
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Carlson Survey\Dwgs\47388-11 Survey.dwg

LEGEND:

MAP 254 LOT 1	ASSESSOR'S MAP NUMBER/ LOT NUMBER
AG	ABOVE GRADE
BG	BELOW GRADE
BK./PG.	BOOK/PAGE
LCA	LIMITED COMMON AREA
N/F	NOW OR FORMERLY
PUD	PLANNED UNIT DEVELOPMENT
R	RURAL
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
SRA	SINGLE RESIDENCE A
SRB	SINGLE RESIDENCE B
S.F.	SQUARE FEET
	PROPERTY LINE
	STONEWALL
	WETLAND SETBACK
	EDGE OF WETLAND
	PROPOSED EDGE OF WOODS
	WETLANDS
	ACCESS EASEMENT
	PARK & PATH EASEMENT
	DRAINAGE EASEMENT





LOCATION PLAN

NOTES:

1. THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE A (SRA) & SINGLE RESIDENCE B (SRB) ZONING DISTRICTS.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 242 AS LOT 4.
3. THE PARCEL IS LOCATED IN ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 33015C0270F, MAP REVISED JANUARY 29, 2021.
4. DIMENSIONAL REQUIREMENT OF OPEN SPACE RESIDENTIAL PUD (OS–PUD)

	REQUIRED:	PROPOSED:
MINIMUM LOT AREA:	10 ACRES	105.705 ACRES
MINIMUM STREET FRONTAGE:	100'	665'
MINIMUM EXTERNAL YARDS:		
FRONT:	100'	113.9'
SIDE & REAR:	50'	50.2'; 1,191.4'
MINIMUM INTERNAL YARDS:		
FRONT:	20'	20.9'
SIDE & REAR:	25'	30.0'
MINIMUM SEPARATION BETWEEN STRUCTURES:	30'	30.0'
COMMON OPEN SPACE:	25%	83%

PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.725

5. OWNER OF RECORD:
MAP 242 LOT 4:
STELLA B. STOKEL 1993 TRUST,
NANCY A. STOKEL 1993 TRUST & PHILIP J. STOKEL
83 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#5066 PG.#1603
6. PARCEL AREA:

	SUBMITTED AREA:	COMMON AREA:	LIMITED COMMON AREA:
MAP 242 LOT 4:			
	4,604,509 S.F.	4,604,509 S.F.	(SEE CHART)
	(105.7050 ACRES)	(105.7050 ACRES)	(105.7050 ACRES)

7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO DEPICT THE COMMON AREAS AND LIMITED COMMON AREAS OF MAP 242 LOT 4. CONSTRUCTION OF UNITS NOT YET BEGUN. THE FINAL METES AND BOUNDS OF THE UNITS AND THEIR ASSIGNED LIMITED COMMON AREAS SHALL BE DETERMINED BY AS–BUILT PLANS WITH AN AMENDED CONDOMINIUM SITE PLAN TO BE RECORDED UPON COMPLETION OF EACH UNIT.
9. THESE UNITS ARE FOR RESIDENTIAL USE ONLY.
10. FIELD SURVEY COMPLETED BY TCE, MVP & PJT IN APRIL–MAY 2020 USING A TOPCON DS103, TOPCON HIPER–SR, TOPCON HIPER–V AND A CARLSON RT4 DATA COLLECTOR.
11. HORIZONTAL DATUM IS NAD83 (2011) PER STATIC GPS OBSERVATIONS.
12. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
13. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
14. WETLAND DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES ON FEBRUARY 18, 2020 AND REVISED ON MAY 14, 2020 IN ACCORDANCE WITH THE 1987 ARMY CORP OF ENGINEERS WETLAND MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. FIELD LOCATED BY TFMORAN, INC.
15. THE UNITS SHOWN HEREON ARE TO BE SERVED BY THE CITY OF PORTSMOUTH PUBLIC WATER SUPPLY.
16. THE UNITS SHOWN HERE TO BE SERVICED BY MUNICIPAL SEWER.
17. TRASH AND SNOW REMOVAL IS THE RESPONSIBILITY OF THE PRIVATE HOMEOWNERS.

PLAN REFERENCES:

1. "PLAN OF A LOT OF LAND BELONGING TO CHARLES H. HAYES PORTSMOUTH, N.H." BY A.C. HOYT SURVEYOR, DATED JULY 1896. RCRD PLAN #0171.
2. "PLAN OF LAND FOR JOHN & MAUD HETT PORTSMOUTH, N.H. SURVEY BY ME JENKINS, LEE, N.H.", DATED DEC. 1988. RCRD PLAN #C–19399.
3. "PROPERTY OF SWIFTWATER GIRL SCOUT COUNCIL CITY OF PORTSMOUTH N.H." SURVEYED BY JON MOORE, DATED AUGUST 1972. RCRD PLAN #D–3206.
4. "SUBDIVISION OF LAND FOR ROBERT E. DOWD IN PORTSMOUTH, N.H." BY BRUCE L. POHOPEK LAND SURVEYORS DOVER, N.H., DATED MAY 31, 1978, REVISED OCT 5, 78. RCRD PLAN #D–8312.
5. "SUBDIVISION PLAN OF LAND FOR THEODORE C. BURTT BANFIELD ROAD COUNTY OF ROCKINGHAM PORTSMOUTH, N.H." BY RICHARD P. MILLETTE AND ASSOCIATES, DATED DECEMBER 1981, WITH REVISION 2 DATED JANUARY, 1982. RCRD PLAN #D–10795.
6. "STANDARD BOUNDARY SURVEY MAP 242 – LOT 1 MAP 258 – LOT 54 MAP 263 – LOT 1–6 & 2 FOR THE NATURE CONSERVANCY N.H. ROUTE 33 GREENLAND ROAD COUNTY OF ROCKINGHAM STATE OF NEW HAMPSHIRE" BY AMBIT ENGINEERING, INC., DATED FEBRUARY 2006, WITH REVISION 1, DATED 4/13/06. RCRD PLAN #D–33859.
7. "LOT LINE RELOCATION PLAN MAP R–65 LOTS 2A & 2B FOR HAROLD & MARILYN ECKER AND ELIZABETH K. HURLEY 422 & 470 BANFIELD ROAD PORTSMOUTH, N.H. COUNTY OF ROCKINGHAM" BY AMBIT ENGINEERING, INC., DATED MAY 2000, WITH REVISION 0 DATED 5/26/00. RCRD PLAN #D–28209.

LIMITED COMMON AREA	
LCA 1	7,946 S.F.
LCA 2	8,750 S.F.
LCA 3	9,275 S.F.
LCA 4	9,301 S.F.
LCA 5	9,680 S.F.
LCA 6	10,136 S.F
LCA 7	12,415 S.F.
LCA 8	13,065 S.F.
LCA 9	10,953 S.F.
LCA 10	10,486 S.F.
LCA 11	10,848 S.F.
LCA 12	11,829 S.F.
LCA 13	11,864 S.F.
LCA 14	12,399 S.F.
LCA 15	12,651 S.F.
LCA 16	11,751 S.F.
LCA 17	10,773 S.F.
LCA 18	11,325 S.F.
LCA 19	12,780 S.F.
LCA 20	16,654 S.F.
LCA 21	12,942 S.F.
LCA 22	11,522 S.F.
LCA 23	11,681 S.F.
LCA 24	11,347 S.F.
LCA 25	11,662 S.F.
LCA 26	9,226 S.F.
LCA 27	9,172 S.F.
LCA 28	9,950 S.F.
LCA 29	10,540 S.F.
LCA 30	8,810 S.F.
LCA 31	8,221 S.F.
LCA 32	6,739 S.F.
LCA 33	5,223 S.F.
LCA 34	4,640 S.F.
LCA 35	8,716 S.F.
LCA 36	6,905 S.F.
LCA 37	7,149 S.F.
LCA 38	7,852 S.F.
LCA 39	7,717 S.F.
LCA 40	7,913 S.F.
LCA 41	8,637 S.F.
LCA 42	9,011 S.F.
LCA 43	10,291 S.F.
LCA 44	12,923 S.F.
LCA 45	7,165 S.F.
LCA 46	9,901 S.F.
LCA 47	9,586 S.F.
LCA 48	8,989 S.F.
LCA 49	8,461 S.F.
LCA 50	6,828 S.F.
LCA 51	7,245 S.F.
LCA 52	8,327 S.F.
LCA 53	8,032 S.F.
LCA 54	7,946 S.F.
LCA 55	7,217 S.F.
LCA 56	7,202 S.F.

EASEMENTS AND RESTRICTIONS (E&R):

1. THE RIGHT TO USE SAID DRIVEWAY IN COMMON WITH PETER STOKEL AND HIS HEIRS FROM SAID GREENLAND ROAD, ALONG BY SAID CEMETERY, AND ALONG THE BOUNDARY BETWEEN THE LANDS OF SAID PETER AND STELLA TO SAID RAILROAD, AND SUBJECT TO SAID PETER'S RIGHT TO USE THE SAME IN COMMON. (SEE RCRD BK.#5066 PG.#1603).
2. RIGHTS OF PETER AND STELLA STOKEL AND THEIR RESPECTIVE HEIRS AND ASSIGNS SHALL HAVE EQUAL RIGHTS TO THE WATER OF SAID WELL, SAID PUMP, THE PIPES AND ANY OTHER EQUIPMENT USED NOW OR HEREAFTER IN COMMON, CHARGES OF CARE, UPKEEP, REPAIRS OR REPLACEMENT TO BE BORNE EQUALLY, WITH MUTUAL EASEMENTS TO ENTER ON THE LAND OF THE OTHER WHENEVER NECESSARY FOR ANY OF SAID PURPOSES. (SEE RCRD BK.#5066 PG.#1603).
3. 100' WIDE POWER LINE EASEMENT TO THE NEW HAMPSHIRE GAS & ELECTRIC COMPANY. (SEE RCRD BK.#1052 PG.#321).

ABUTTERS:

MAP 165 LOT 14
N/F
BOSTON & MAINE CORPORATION
IRON HORSE PARK HIGH STREET
NORTH BILLERICA, MA 01862

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE
FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1473
PORTSMOUTH, NH 03802
RCRD BK.#2269 PG.#0663

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF MANCHESTER CHURCH OF IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 255 LOT 5
N/F
THOMAS E. & MARYBETH B. REIS AND JAMES B. & MEEGAN C. REIS
305 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#5560 PG.#2148

MAP 255 LOT 8
N/F
MERRIMAC VALLEY HOMES, INC.
1794 BRIDGE STREET, UNIT 6
DRACUT, MA 01826
RCRD BK.#5881 PG.#0981

MAP 256 LOT 1
N/F
SWIFT WATER GIRL SCOUT COUNCIL
ONE COMMERCE DRIVE
BEDFORD, NH 03110

MAP 265 LOT 2
N/F
MARK H. ODIORNE
520 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3353 PG.#2213

MAP 265 LOT 2A
N/F
DAVID W. ECKER
875 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.#6091 PG.#0374

MAP 265 LOT 2B
N/F
LEE ANN & RICHARD M. RILEY
470 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3491 PG.#2344

MAP 265 LOT 2C
N/F
APOSTOLIC CHURCH OF J CHRIST
500 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.#2739 PG.#0043

MAP 265 LOT 2D
N/F
CITY OF PORTSMOUTH DPW
PO BOX 628
PORTSMOUTH, NH 03802
RCRD BK.#2413 PG.#0222

MAP 265 LOT 2E
N/F
CITY OF PORTSMOUTH
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
RCRD BK.#5077 PG.#1943

ABUTTERS ACROSS PEVERLY HILL ROAD:

MAP 232 LOT 92
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TARLETON
74 LEAVITT AVENUE
PORTSMOUTH, NH 03801
RCRD BK.#5885 PG.#1471

MAP 232 LOT 93
N/F
KENNETH T. BLACK
82 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3743 PG.#1942

MAP 232 LOT 87
N/F
SUSAN L. DIXON
68 WIBIRD STREET
PORTSMOUTH, NH 03801
RCRD BK.#2504 PG.#0028

MAP 232 LOT 95
N/F
CITY OF PORTSMOUTH DPW
PO BOX 628
PORTSMOUTH, NH 03802
RCRD BK.#2247 PG.#0239

MAP 243 LOT 50
N/F
ASRT, LLC
266 MIDDLE STREET
PORTSMOUTH, NH 03801
RCRD BK.#6184 PG.#1176

MAP 243 LOT 51
N/F
AJEI REAL ESTATE LLC
163 SPINNEY ROAD
PORTSMOUTH, NH 03801
RCRD BK.#5887 PG.#0463

MAP 243 LOT 52
N/F
CITY OF PORTSMOUTH DPW
PO BOX 628
PORTSMOUTH, NH 03802
RCRD BK.#2042 PG.#0498

DIG SAFE
MA ME NH RI VT
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=100'
100 50 0 100

I HEREBY CERTIFY THAT THIS PLAN IS ACCURATE AND COMPLIES WITH NHRSA 356–B:20(I). ALL UNITS OR PORTIONS THEREOF DEPICTED ON ANY PORTION OF THE SUBMITTED LAND OTHER THAN WITHIN THE BOUNDARIES OF ANY CONVERTIBLE LAND HAVE NOT YET BEGUN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION. THIS SURVEY IS AN URBAN SURVEY AS CLASSIFIED IN THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THE TRAVERSE WAS COMPLETED BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

STATE OF NEW HAMPSHIRE — No. 844 — J. COREY COLWELL — LICENSED LAND SURVEYOR — SIGNATURE

LICENSED LAND SURVEYOR

6-23-2021
DATE

1	6/21/2021	REVISE PER REGULATORY COMMENTS	IID	BMK
REV.	DATE	DESCRIPTION	DR	CK

TAX MAP 242 LOT 4
CONDOMINIUM SITE PLAN
PEVERLY HILL ROAD
83 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
STELLA B. STOKEL 1993 TRUST, NANCY A. STOKEL 1993 TRUST & PHILIP J. STOKEL

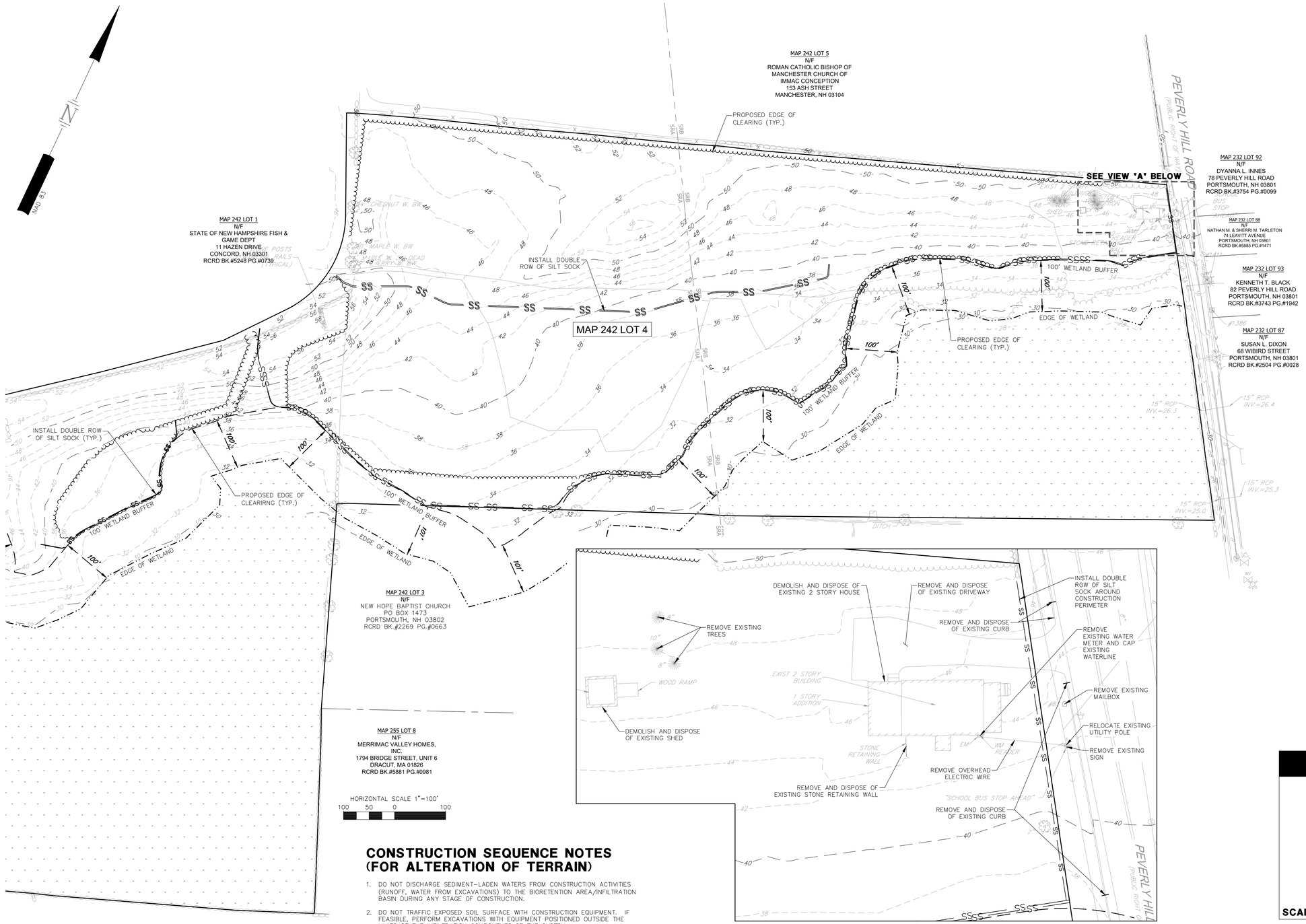
SCALE: 1" = 100' (22x34)
1" = 200' (11x17)
APRIL 19, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431–2222
Fax (603) 431–0910
www.tfmoran.com

FILE	47388-11	DR		FB		S-05
		CK		CADFILE		

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON DATE



VIEW "A"

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
6. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
7. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION SYSTEM. STORWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.

DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

1. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
2. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
4. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
5. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS./1000 SF SHALL BE USED).
6. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
7. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
8. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
9. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
10. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
11. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
13. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
14. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
15. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
17. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
18. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA/INFILTRATION BASIN DURING ANY STAGE OF CONSTRUCTION.
2. 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.
3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE THE BIORETENTION AREA/INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE PREPARATION & DEMOLITION PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: AS SHOWN **APRIL 19, 2021**

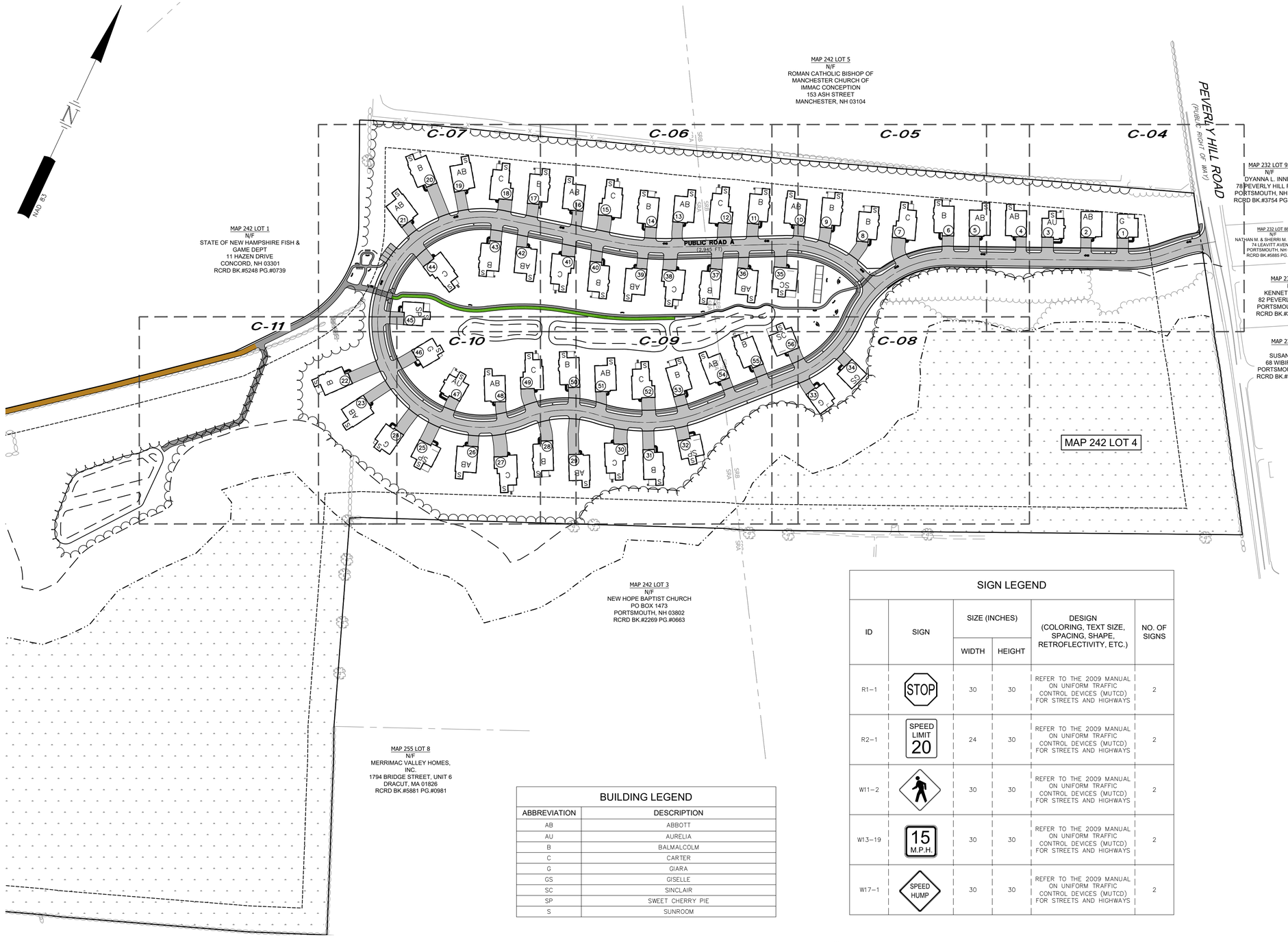
REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_SITEPREP	C-02

JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

Jun 23, 2021 - 2:19pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_SitePrep.dwg



SITE DATA

OWNER OF RECORD OF MAP 242 LOT 4:
STELLA B. STOKEL 1993 TRUST
NANCY A. STOKEL 1993 TRUST & PHILIP J. STOKEL
83 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801

DEED REFERENCE TO PARCEL IS BK 5066 PG 1603
AREA OF PARCEL = 4,801,500± SF OR 110± ACRES

ZONED: SINGLE RESIDENCE A (SRA) & SINGLE RESIDENCE B (SRB)
EXISTING USE: RESIDENTIAL (SINGLE FAMILY DWELLING)
PROPOSED USE: RESIDENTIAL (OPEN SPACE PLANNED UNIT CONDOMINIUM DEVELOPMENT)

THE PURPOSE OF THIS PLAN IS TO DEPICT A DEVELOPMENT OF 56 SINGLE FAMILY CONDOMINIUM UNITS WITH ASSOCIATED ROADWAY, UTILITIES, AND SITE IMPROVEMENTS..

BASE RESIDENTIAL DENSITY CALCULATIONS:

REQUIRED BASE RESIDENTIAL DENSITY:

SRA:
- DEVELOPABLE AREA = TOTAL AREA – WETLANDS – 15% SLOPES
  = 3,938,561 SF – 1,684,960 SF – 156,927 SF
  = 2,096,674 SF
- MINIMUM LOT AREA PER DWELLING = 1 AC = 43,560 SF

SRB:
- DEVELOPABLE AREA = TOTAL AREA – WETLANDS – 15% SLOPE
  = 665,948 SF – 286,452 SF – 1,217 SF
  = 378,279 SF
- MINIMUM LOT AREA PER DWELLING = 15,000 SF

MAXIMUM UNITS FOR DEVELOPMENT = DEVELOPABLE AREA / MINIMUM LOT AREA PER DWELLING
(SRA) 2,096,674 SF / 43,560 SF = 48.1 UNITS
(SRB) 378,279 SF / 15,000 SF = 25.2 UNITS
TOTAL = 74 UNITS
PROPOSED UNITS FOR OS–PUD = 56 UNITS

PARKING CALCULATIONS:
REQUIRED: 1.3 SPACES/UNIT PLUS ONE (1) VISITOR SPACE FOR EVERY 5 DWELLING UNITS.
TOTAL REQUIRED = 84 SPACES

PROPOSED: 224 SPACES (2 GARAGE SPACES PER UNIT, PLUS 2 PRIVATE DRIVEWAY SPACES PER UNIT)

EFFECTIVE IMPERVIOUS SURFACE CALCULATIONS:
IMPERVIOUS AREA/TOTAL LOT AREA = 509,454 SF/45,832,250 SF = 0.011
TOTAL EFFECTIVE IMPERVIOUS SURFACE = 1.10%

NOTES

1. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
2. SEE GENERAL NOTES ON NOTES & LEGEND SHEET (C–01).
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
5. THE 2–FOOT PANEL ALONG THE EDGE OF THE ROADWAY TO BE USED FOR SNOW STORAGE.
6. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
7. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGED SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
8. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
9. BUILDING SIZE, STYLE, AND LOCATION SHOWN ARE APPROXIMATE AND FOR DEMONSTRATIVE PURPOSED ONLY. FINAL BUILDING LOCATION, SIZE, AND STYLES TO BE DETERMINED PRIOR TO ISSUANCE OF A BUILDING PERMIT, AND SHALL MEET ALL APPLICABLE CITY AND STATE REGULATIONS.
10. SETBACKS ARE BASED ON THE BUILDING WALLS NOT OVERHANGS. SEPARATION (BUILDING SEPARATION) IS BASED ON THE DEFINITION OF BUILDING COVERAGE IN THE PORTSMOUTH ZONING REGULATIONS, ARTICLE 15, DEFINITIONS. THIS EXEMPTS OVERHANGS LESS THAN 30" FROM THE VERTICAL WALL, TYING THE SETBACK TO THE VERTICAL WALL.

SIGN LEGEND

ID	SIGN	SIZE (INCHES) WIDTH	SIZE (INCHES) HEIGHT	DESIGN (COLORING, TEXT SIZE, SPACING, SHAPE, RETROFLECTIVITY, ETC.)	NO. OF SIGNS
R1–1	STOP	30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	2
R2–1	SPEED LIMIT 20	24	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	2
W11–2		30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	2
W13–19	15 M.P.H.	30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	2
W17–1	SPEED HUMP	30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	2

BUILDING LEGEND

ABBREVIATION	DESCRIPTION
AB	ABBOTT
AU	AURELIA
B	BALMALCOLM
C	CARTER
G	GIARA
GS	GISELLE
SC	SINCLAIR
SP	SWEET CHERRY PIE
S	SUNROOM

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

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STATE OF NEW HAMPSHIRE
JOHN McTIGUE
No. 14956
LICENSED
PROFESSIONAL ENGINEER

Seacoast Division
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Portsmouth, NH 03801
Phone (603) 431–2222
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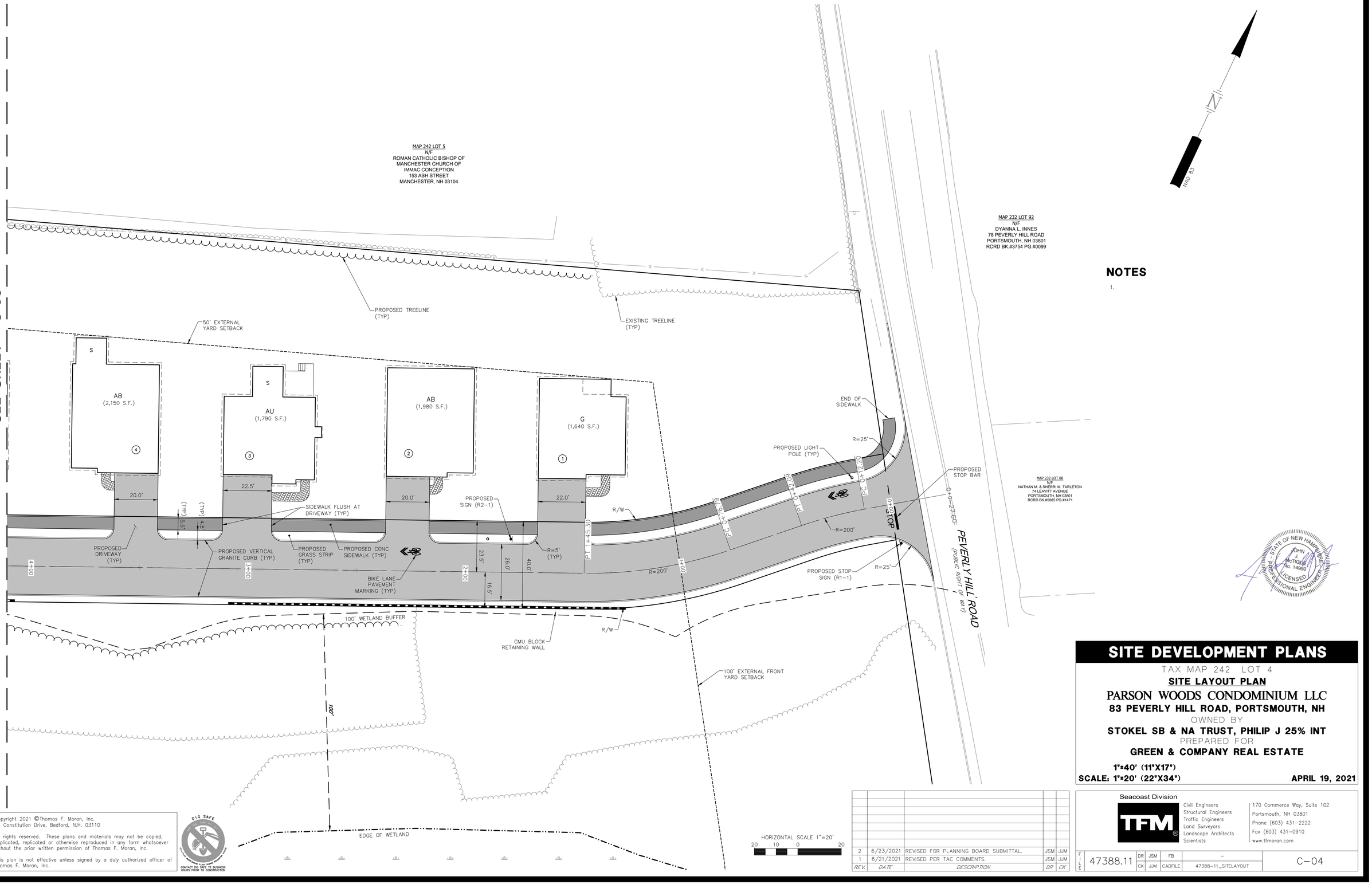

NOTES

1.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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20 10 0 20

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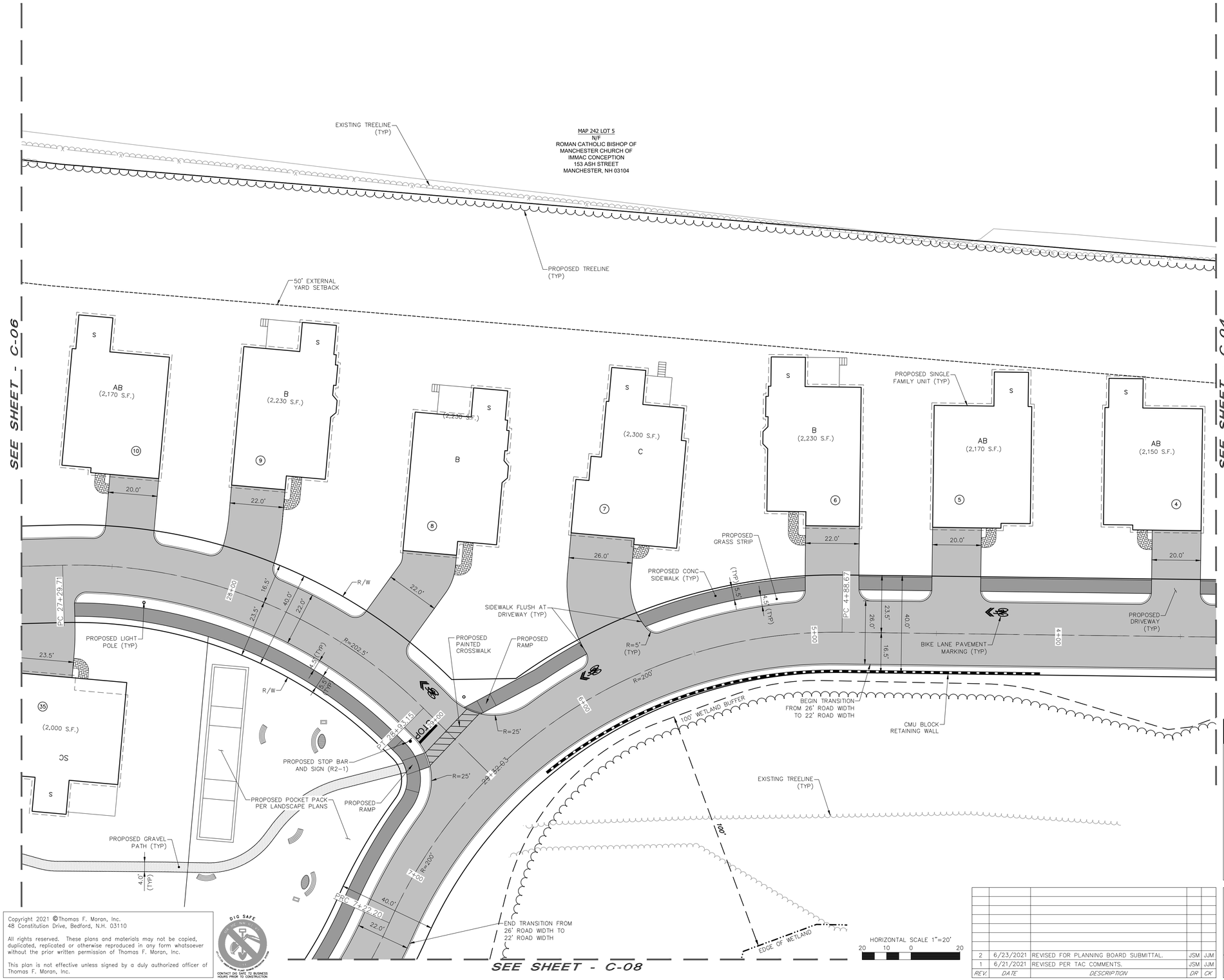
No. 14950
LICENSED PROFESSIONAL ENGINEER



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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

PROPOSED TREELINE (TYP)

50' EXTERNAL YARD SETBACK

B (2,230 S.F.) — 20
AB (2,170 S.F.) — 19
C (2,300 S.F.) — 18
B (2,230 S.F.) — 17
AB (2,170 S.F.) — 21
(2,230 S.F.) B — 43
(2,170 S.F.) AB — 42
(2,300 S.F.) C — 44
(2,300 S.F.) C
SP (1,870 S.F.)

22.0' | 20.0' | 26.0' | 21.5' | 20.0' | 22.0'

PROPOSED DRIVEWAY (TYP)
R/W
PROPOSED VERTICAL GRANITE CURB (TYP)
R=5' (TYP)
SIDEWALK FLUSH AT DRIVEWAY (TYP)
PROPOSED ADVISORY SIGN 20 MPH (W13-1P)
PROPOSED LIGHT POLE (TYP)
PROPOSED GRASS STRIP (TYP)
PROPOSED CONCRETE SIDEWALK (TYP)
PROPOSED SINGLE FAMILY UNIT (TYP)
PROPOSED SIGNS (W13-1P) (W17-1)
(4) STANDARD PARKING STALLS
9.5' (TYP)
19.0'
BIKE LANE PAVEMENT MARKING (TYP)
PROPOSED (W11-2)
PROPOSED RAISED CROSSWALK WITH STRIPING
PROPOSED CURB RAMP
PROPOSED GRAVEL PATH (TYP)
PROPOSED GRASS PAVER PATH (TYP)
PROPOSED SIGN (W11-2)
PROP BENCH (TYP)
PROPOSED GRAVEL PATH (TYP)
4.0'
10.0'
6.0'
24.5'
00+61
00+02
00+12
22+00
PT 24+83.95

SEE SHEET - C-10
SEE SHEET - C-06

N
NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

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JOHN J. MCTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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47388.11	CK	JJM	CADFILE	47388-11_SITELAYOUT	C-07

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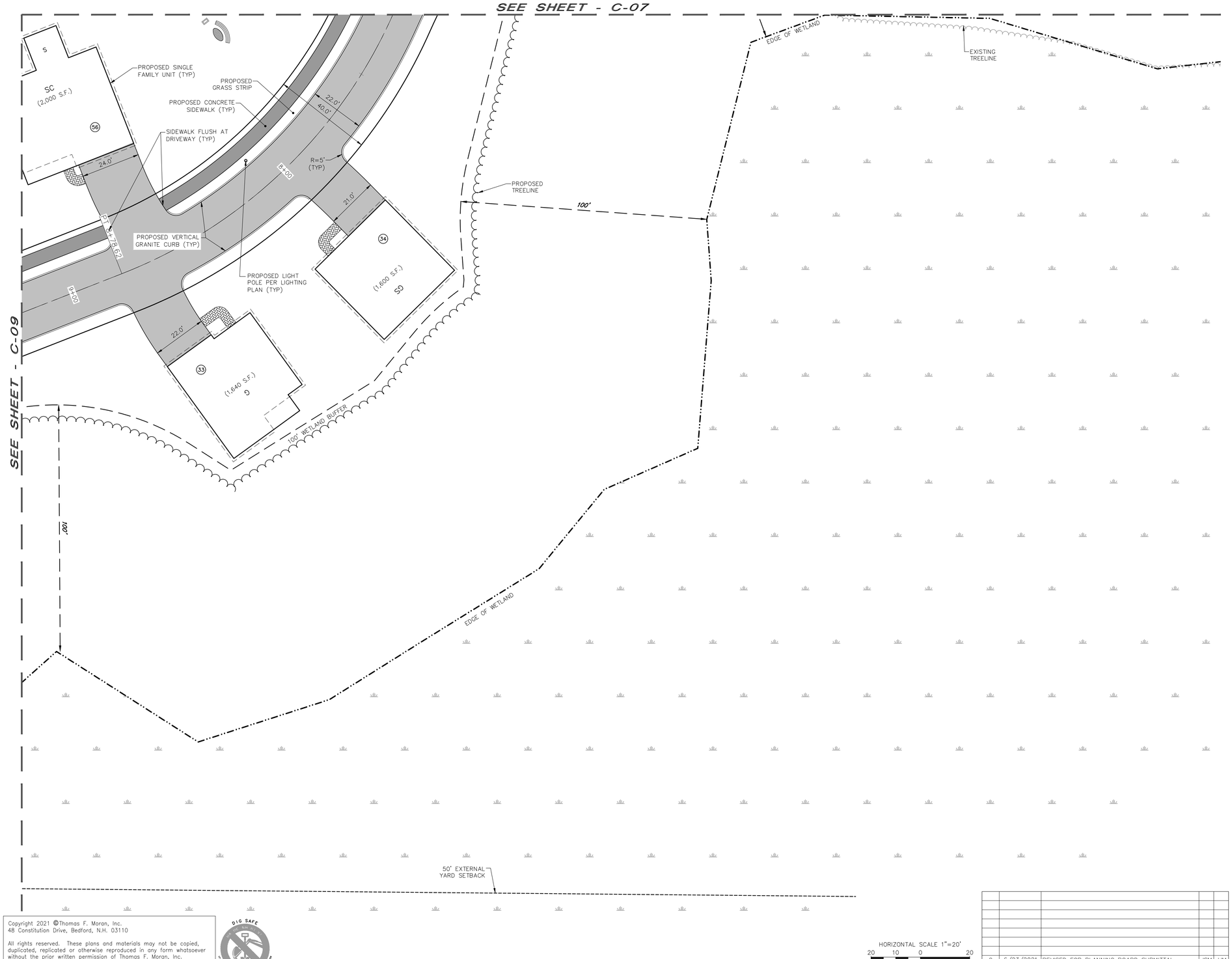

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HORIZONTAL SCALE 1"=20'
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JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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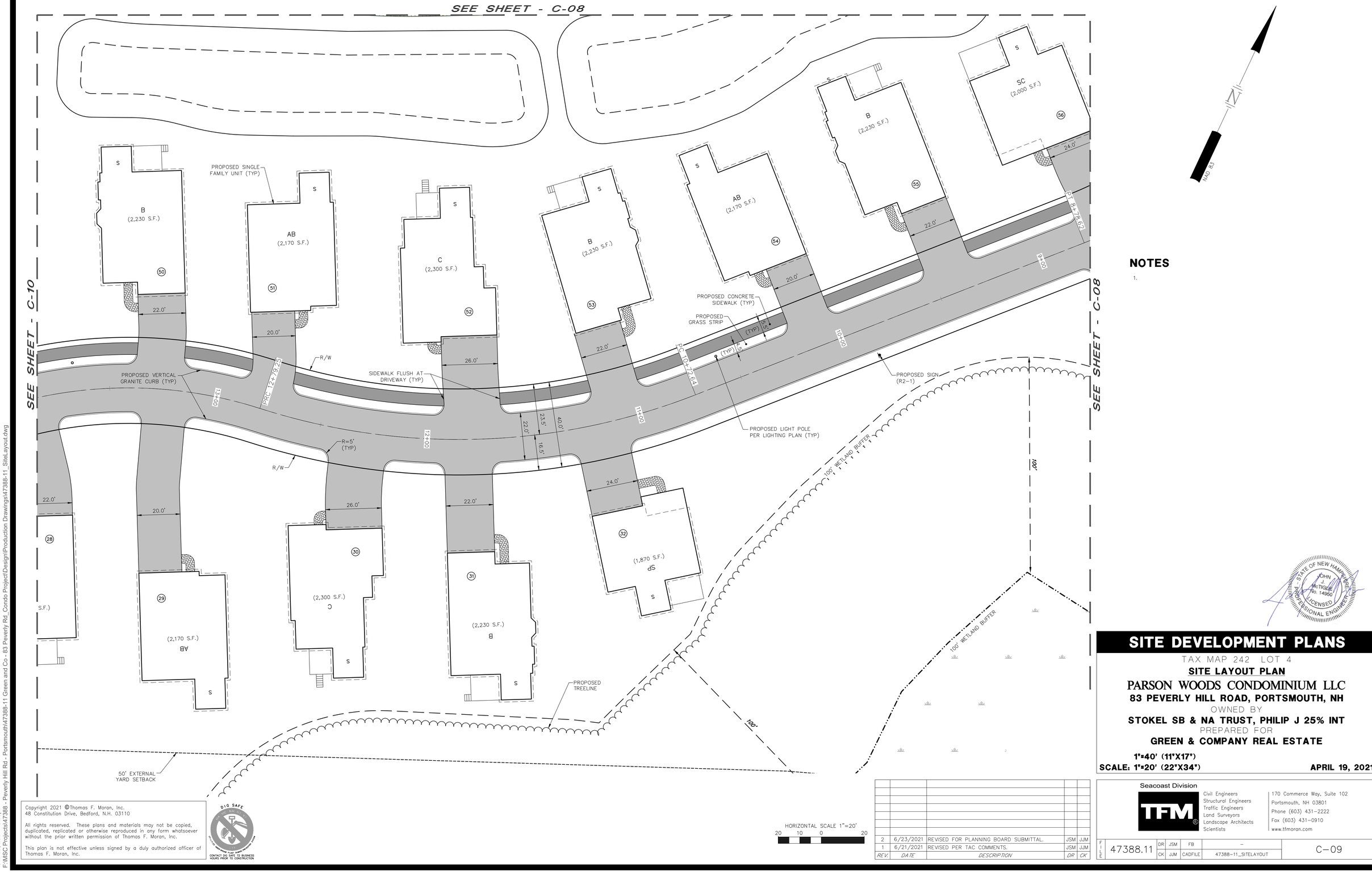

NOTES

1.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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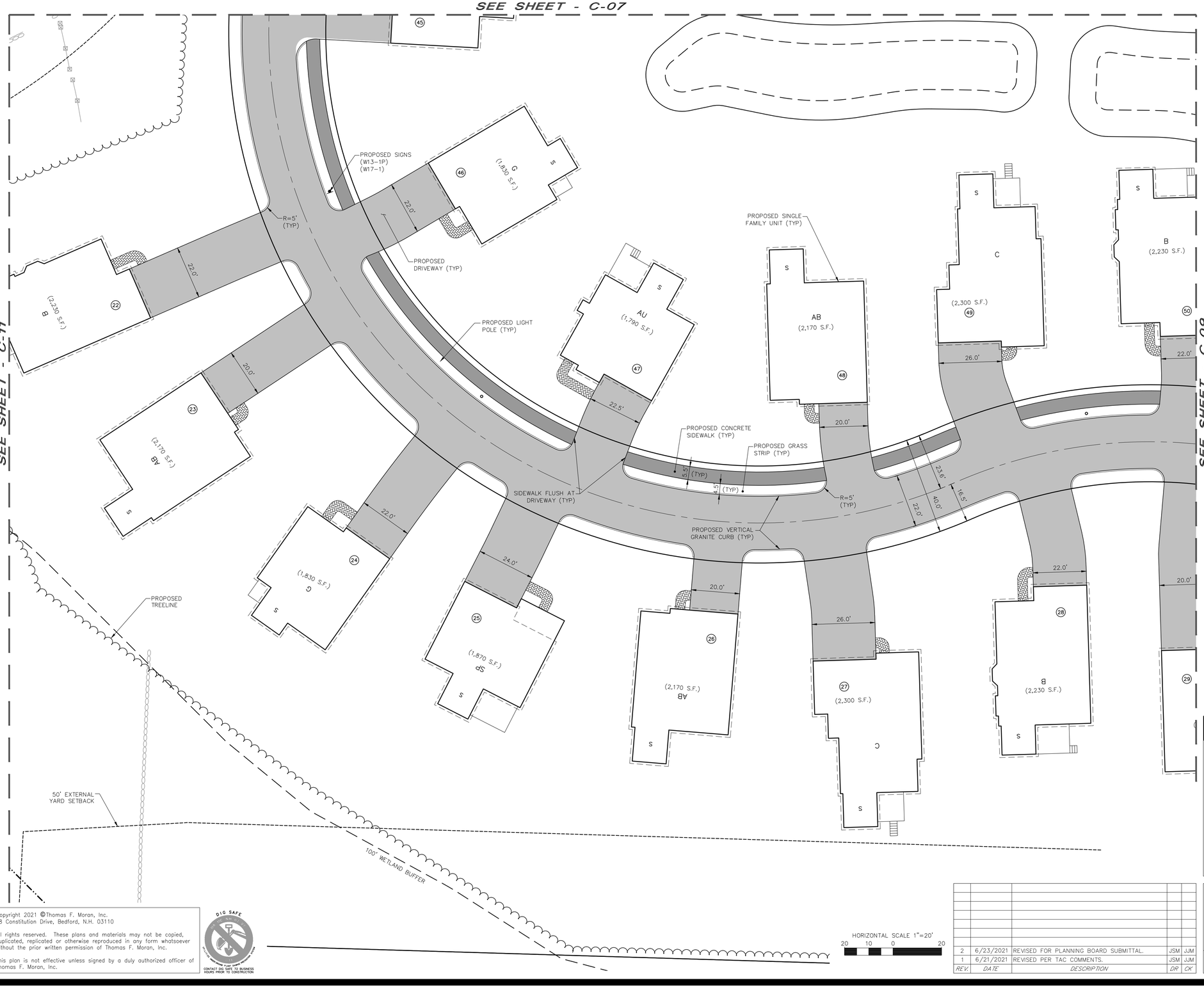

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JOHN J. McTIGUE No. 14660 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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PREPARED FOR

GREEN & COMPANY REAL ESTATE

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APRIL 19, 2021

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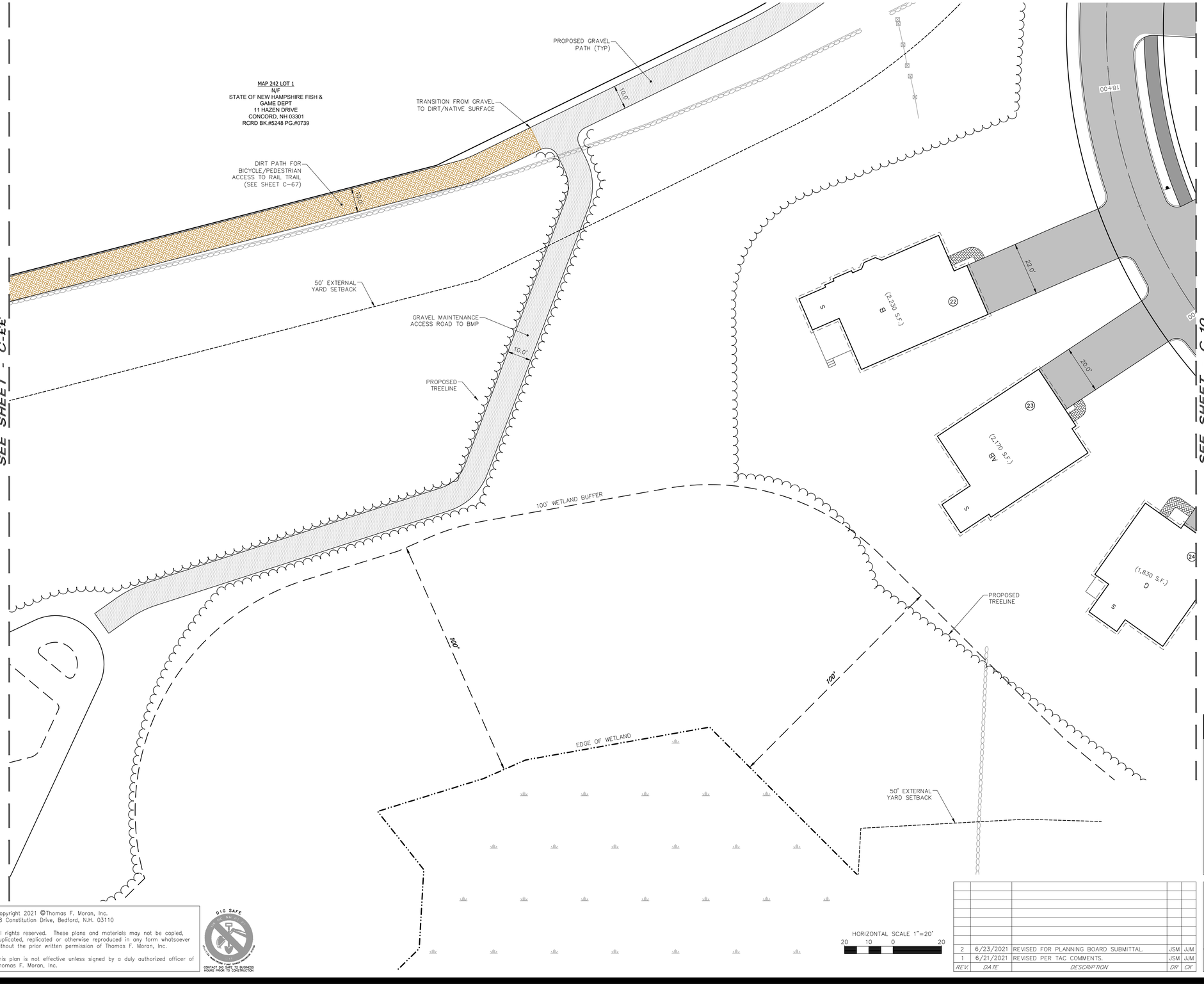

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE LAYOUT PLAN

PARSON WOODS CONDOMINIUM LLC

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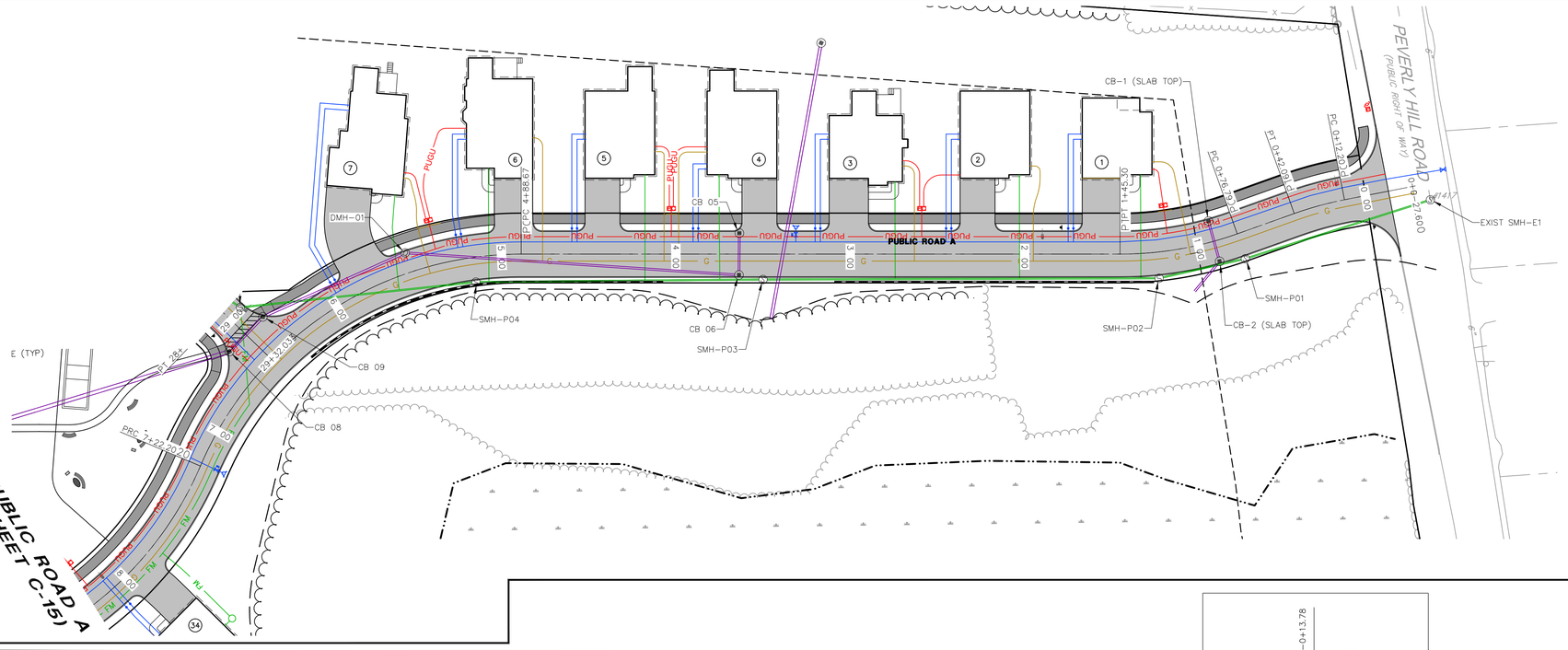
MATCHLINE PUBLIC ROAD A (SHEET C-13)



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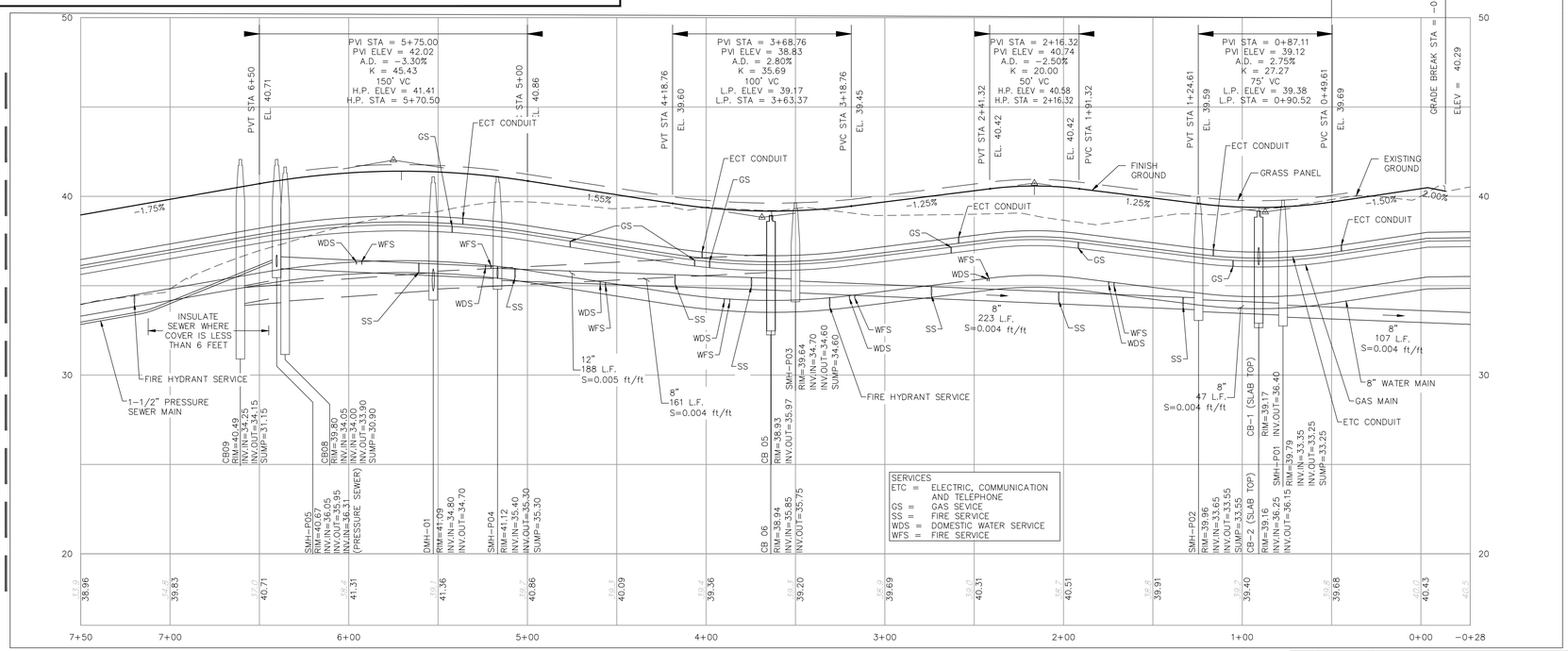
MATCHLINE PUBLIC ROAD A (SHEET C-13)



PUBLIC ROAD A

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

ROAD-A PLAN & PROFILE

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

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JOHN J. MCTIGUE, No. 14960, STATE OF NEW HAMPSHIRE, LICENSED PROFESSIONAL ENGINEER

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47388.11	CK	JJM	CADFILE	47388-11_PLANPROFILE	C-12

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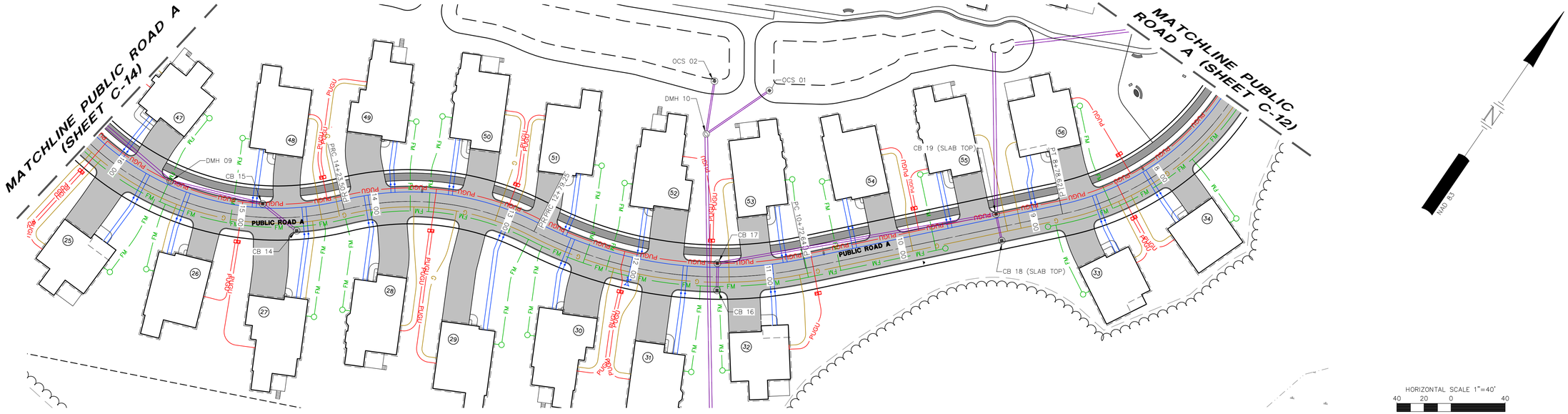
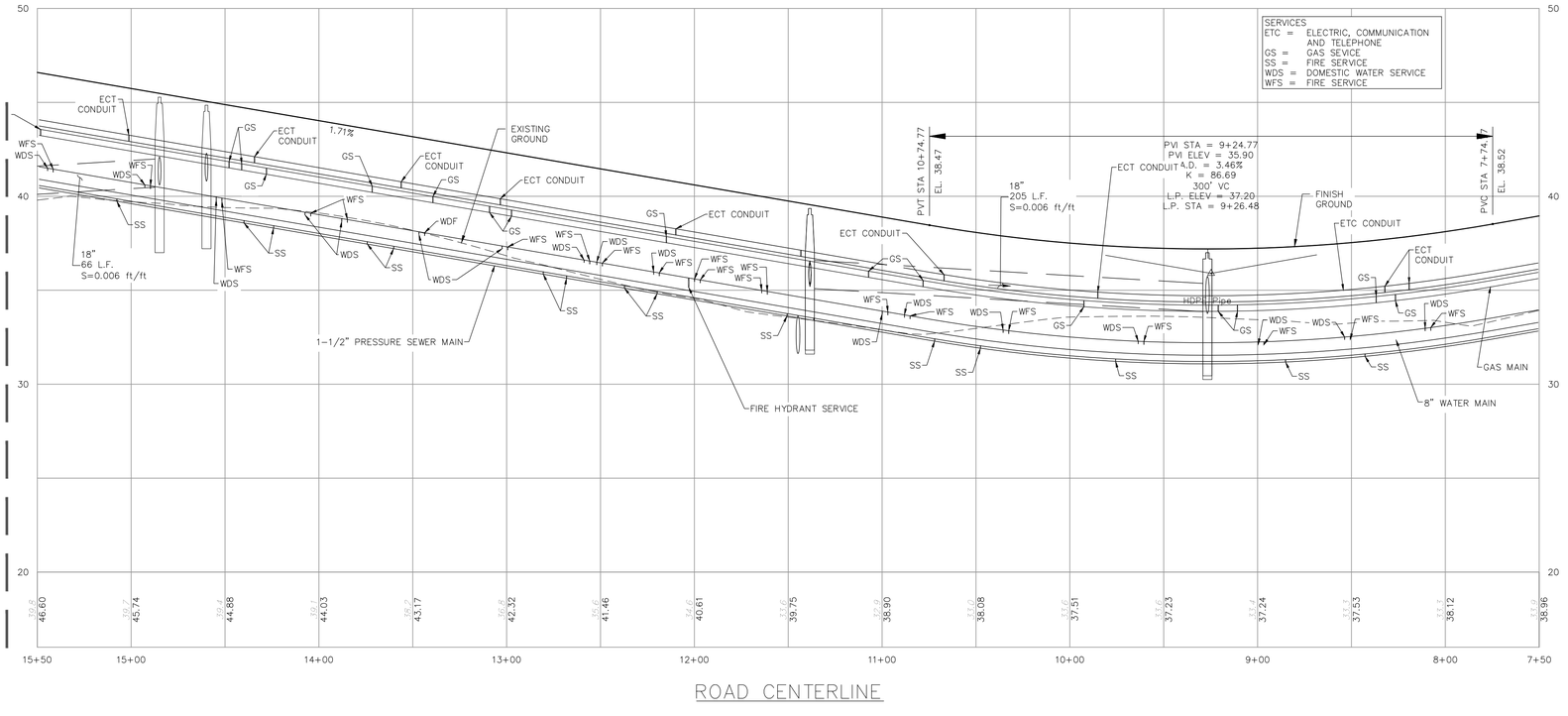




PUBLIC ROAD A

DIG SAFE
CALL DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

ROAD-A PLAN & PROFILE

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=80' (11"X17")

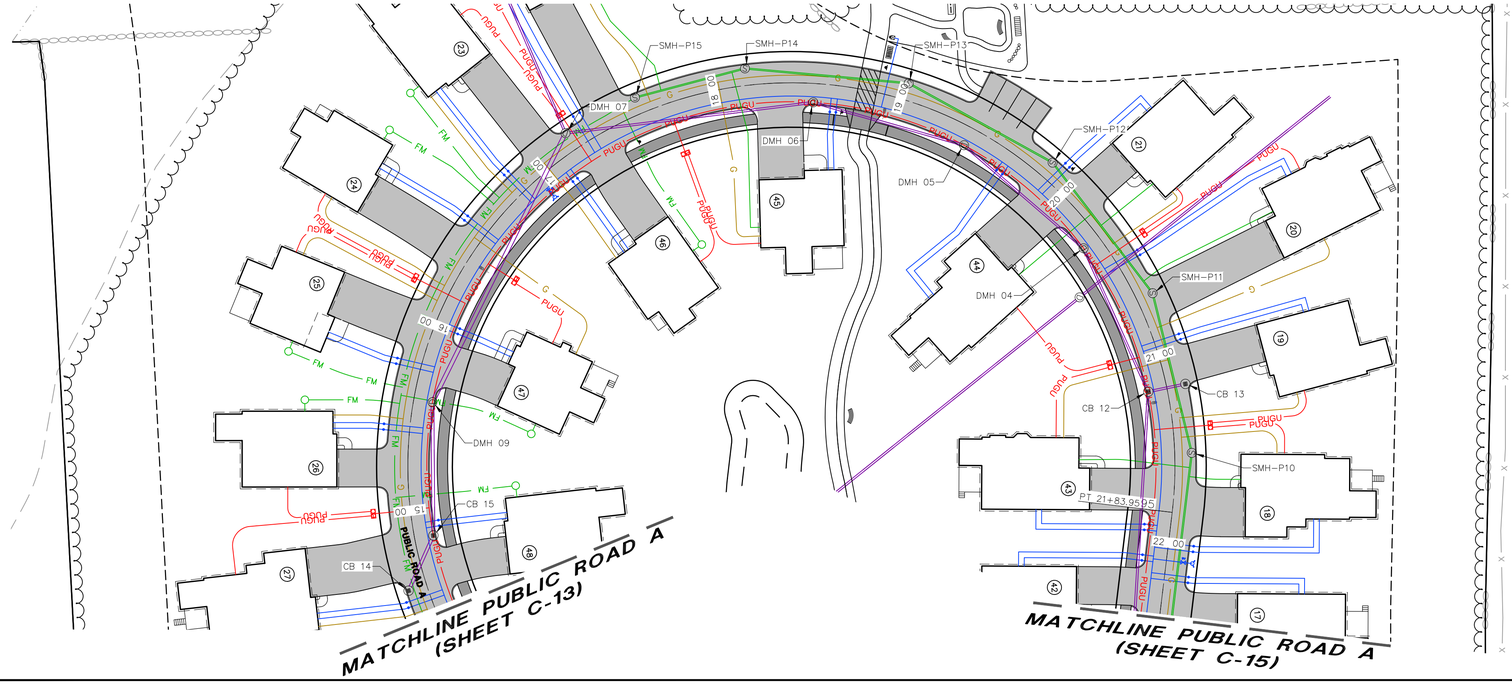
SCALE: 1"=40' (22"X34")

APRIL 19, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

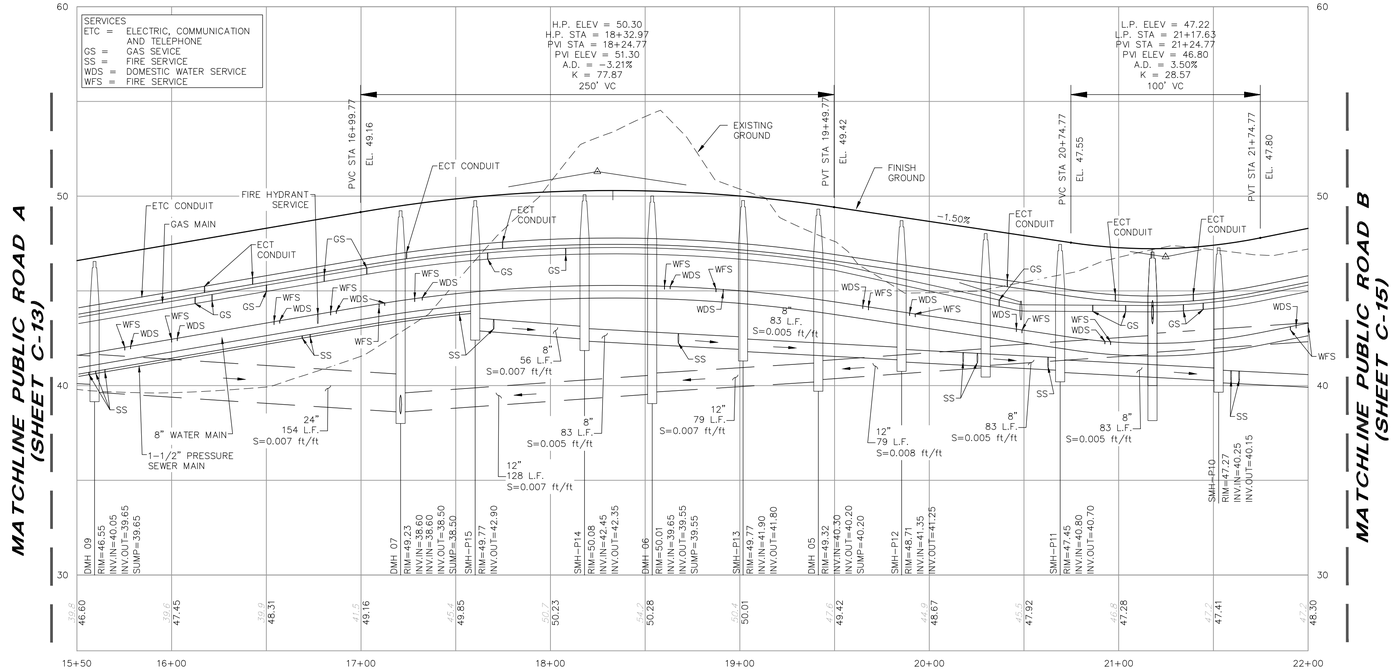
FILE	DR	JSM	FB	–	C-13
47388.11	CK	JJM	CADFILE	47388-11_PLANPROFILE	

Jun 23, 2021 - 3:23pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_PlanProfile.dwg



NAD 83

HORIZONTAL SCALE 1"=40'
40 20 0 40



PUBLIC ROAD A

HORIZONTAL SCALE 1"=40'
4 0 4

VERTICAL SCALE 1"=4'

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

ROAD-A PLAN & PROFILE

PARSON WOODS CONDOMINIUM LLC

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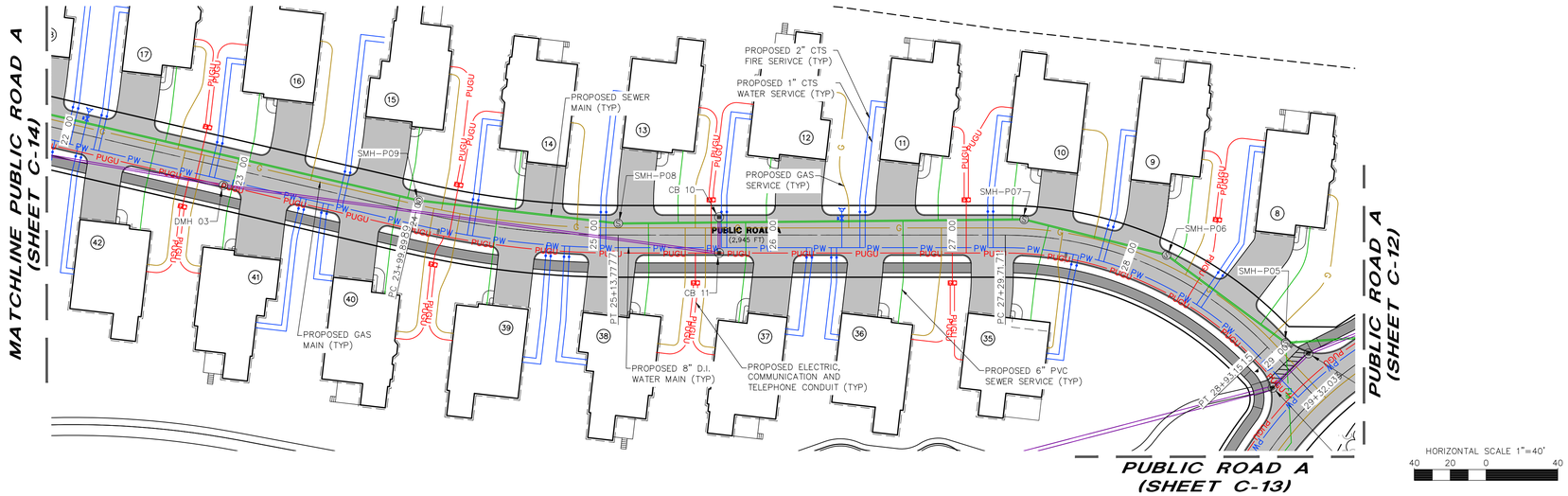
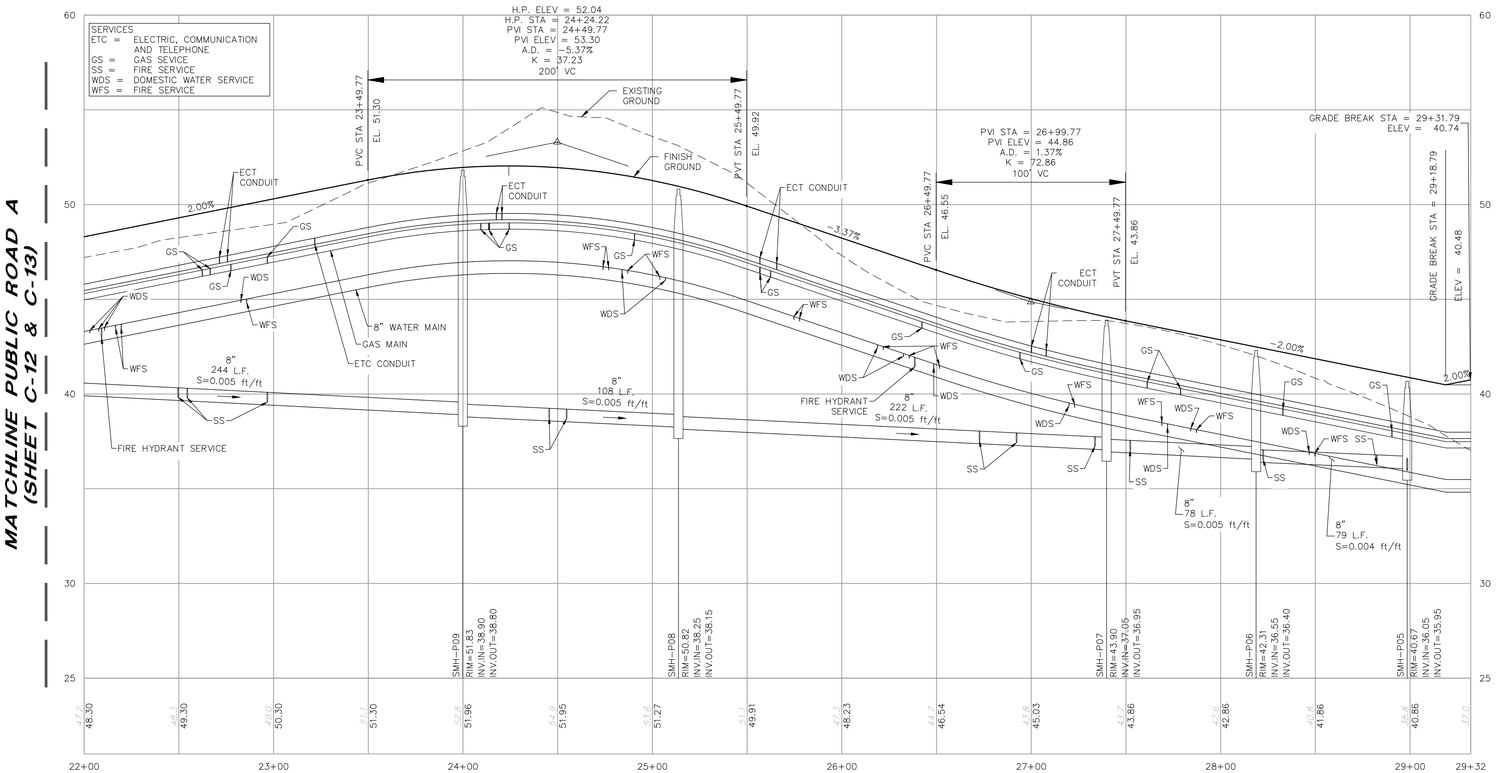
FILE	DR	JSM	FB	–	C-14
47388.11	CK	JJM	CADFILE	47388-11_PLANPROFILE	

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

Jun 23, 2021 - 3:23pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_PlanProfile.dwg





PUBLIC ROAD A

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

ROAD-A PLAN & PROFILE

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

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PREPARED FOR

GREEN & COMPANY REAL ESTATE

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STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER

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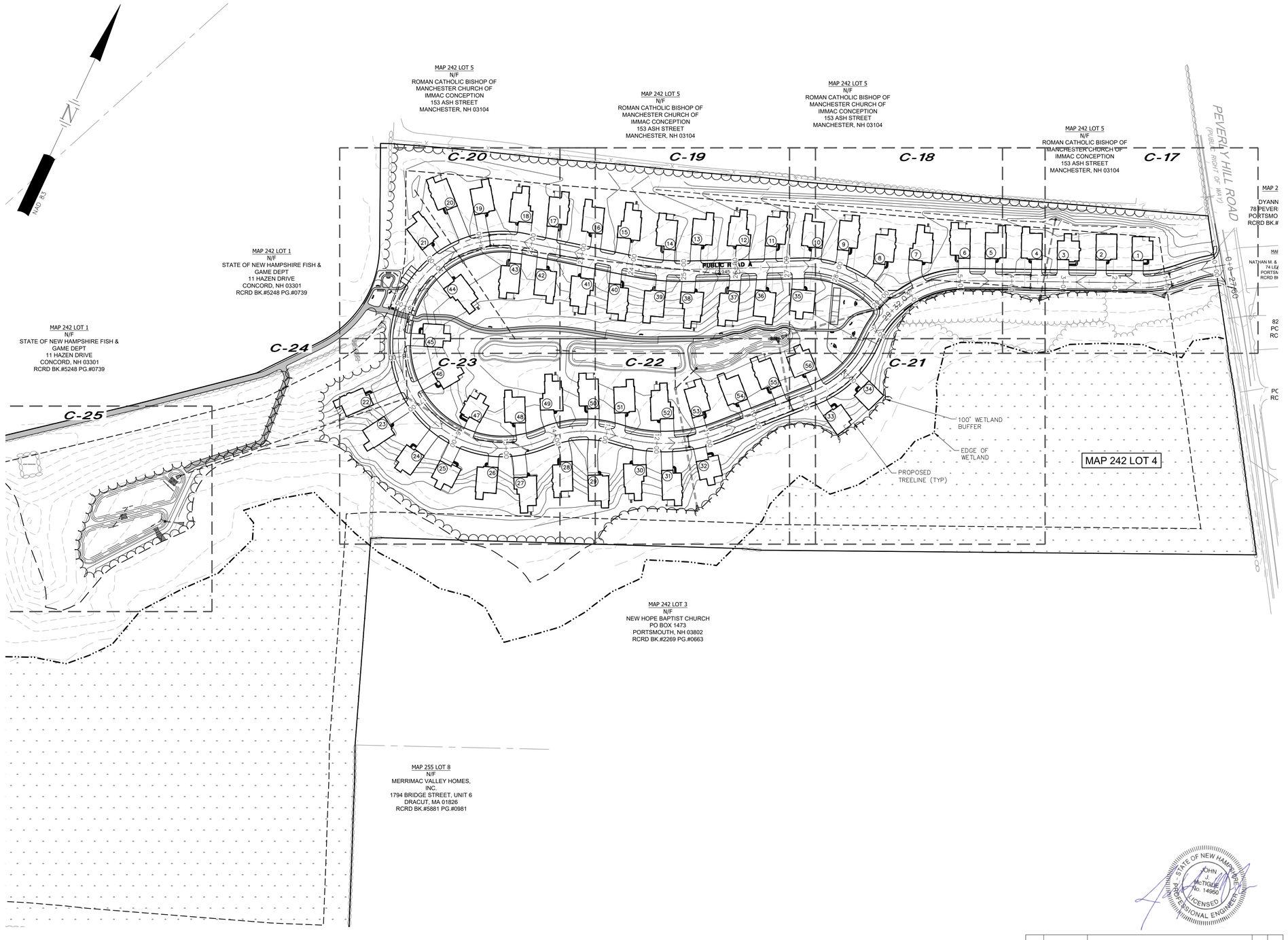
FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_PLANPROFILE	C-15



BEST MANAGEMENT PRACTICES FOR BLASTING

1. PURPOSE. THE PURPOSE OF THIS PART IS TO ESTABLISH BEST MANAGEMENT PRACTICES FOR BLASTING TO MINIMIZE THE POTENTIAL FOR GROUNDWATER CONTAMINATION, TO ENSURE THAT THE GROUNDWATER CAN BE USED FOR EXISTING AND FUTURE DRINKING WATER SUPPLY SOURCES. (SEE RN3 AT P. V) #12342, EFF 8-15-17

2. LOADING PRACTICES. THE FOLLOWING BLAST HOLE LOADING PRACTICES SHALL BE IMPLEMENTED:
   - A. THE DRILLER SHALL MAINTAIN DRILLING LOGS TO DOCUMENT:
     - I. THE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED; AND
     - II. GROUNDWATER CONDITIONS;
   - B. THE DRILLER SHALL COMMUNICATE THE CONTENTS OF THE DRILLING LOGS DIRECTLY TO THE BLASTER;
   - C. EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SUCH THAT THEY ARE:
     - I. USED IN THE BOREHOLE;
     - II. RETURNED TO THE DELIVERY VEHICLE; OR
     - III. PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL;
   - D. SPILLAGE AROUND THE BOREHOLE SHALL BE:
     - I. PLACED IN THE BOREHOLE; OR
     - II. CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL;
   - E. LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND NOT LEFT IN THE BLAST HOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED;
   - F. LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT; AND
   - G. EXPLOSIVES SHALL BE LOADED IN ACCORDANCE WITH INDUSTRY STANDARD PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. SOURCE. (SEE RN3 AT P. V) #12342, EFF 8-15-17

3. EXPLOSIVE SELECTION. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE:
   - A. APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION; AND
   - B. HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT.

4. PREVENTION OF MISFIRES. INDUSTRY-STANDARD PRACTICES SHALL BE IMPLEMENTED TO PREVENT MISFIRES.

5. MUCK AND ROCK MANAGEMENT.
   - A. FOR PURPOSES OF THIS PART, THE FOLLOWING DEFINITIONS APPLY:
     - I. "BLASTED MATERIAL" MEANS ALL OF THE EARTH MATERIAL LOOSENED AS A RESULT OF THE BLASTING;
     - II. "MUCK" MEANS THE BLASTED MATERIAL REMAINING AFTER THE ROCKS HAVE BEEN REMOVED; AND
     - III. "ROCKS" MEANS THE LARGER PIECES OF BLASTED MATERIAL THAT ARE SEPARATED FROM THE MUCK FOR USE ELSEWHERE, INCLUDING FOR FEEDSTOCK OF A ROCK CRUSHING OPERATION.
   - B. MUCK SHALL BE REMOVED FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
   - C. ROCKS SHALL BE MANAGED SO AS TO PREVENT WATER SUPPLY WELLS OR SURFACE WATERS FROM BEING CONTAMINATED BY RUNOFF.

6. SPILL PREVENTION MEASURES AND SPILL MITIGATION.
   - A. FUEL AND OTHER REGULATED SUBSTANCES SHALL BE MANAGED AS REQUIRED BY ENV-WQ 401.04.
   - B. PERSONNEL WORKING AT THE BLAST SITE SHALL BE TRAINED IN HOW TO RESPOND TO A SPILL OF THE REGULATED SUBSTANCES BEING USED AT THE SITE.

7. FUELING AND MAINTENANCE OF CONSTRUCTION EQUIPMENT.
   - A. IF ANY CONSTRUCTION EQUIPMENT, INCLUDING BUT NOT LIMITED TO EARTHMOVING, EXCAVATION, AND BORING EQUIPMENT, WILL BE FUELED FROM A TANK TRUCK OR OTHER CONTAINER THAT IS MOVED AROUND THE SITE, THE FOLLOWING SHALL APPLY:
     - I. PORTABLE CONTAINMENT EQUIPMENT THAT IS SIZED TO CONTAIN THE MOST LIKELY VOLUME OF FUEL TO BE SPILLED DURING A FUEL TRANSFER SHALL BE USED, WHERE THE MOST LIKELY VOLUME TO BE SPILLED IS DETERMINED BASED ON THE FUEL TRANSFER RATE, THE AMOUNT OF FUEL BEING TRANSFERRED, THE DISTANCE BETWEEN THE HOSE NOZZLE AND PUMP SHUT OFF SWITCH, AND THE RESPONSE TIME OF PERSONNEL AND EQUIPMENT AVAILABLE AT THE FACILITY;
     - II. THE CONTAINMENT EQUIPMENT SHALL BE POSITIONED TO CATCH ANY FUEL SPILLS DUE TO OVERFILLING THE EQUIPMENT AND ANY OTHER SPILLS THAT MIGHT OCCUR AT OR NEAR THE FUEL FILLER PORT TO THAT EQUIPMENT;
     - III. THE TYPE OF CONTAINMENT EQUIPMENT USED AND ITS POSITIONING AND USE SHALL ACCOUNT FOR ALL OF THE DRIP POINTS ASSOCIATED WITH THE FUEL FILLING PORT AND THE HOSE FROM THE FUEL DELIVERY TRUCK; AND
     - IV. PERSONNEL SHALL NOT LEAVE THE IMMEDIATE AREA WHILE FUEL IS BEING TRANSFERRED, TO ENSURE THAT ANY SPILLS WILL BE OF LIMITED VOLUME.
   - B. IF THE SITE WILL HAVE A FIXED LOCATION FOR FUELING CONSTRUCTION EQUIPMENT, THE FOLLOWING SHALL APPLY:
     - I. ALL FUEL CONTAINERS, INCLUDING BUT NOT LIMITED TO SKID-MOUNTED TANKS, DRUMS, AND FIVE GALLON CANS, SHALL HAVE SECONDARY CONTAINMENT THAT:
       1. IS CAPABLE OF CONTAINING 110% OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER; AND
       2. HAS AN IMPERVIOUS FLOOR;
     - II. SECONDARY CONTAINMENT FOR TANKS MAY COMPRISE A METAL, PLASTIC, POLYMER OR PRECAST CONCRETE VAULT PROVIDING 110 PERCENT OF THE VOLUME OF THE LARGEST FUEL STORAGE CONTAINER;
     - III. FOR FUEL CONTAINERS, SECONDARY CONTAINMENT MAY COMPRISE CONTAINMENT PALLETS;
     - IV. THE AREA WHERE FUEL IS TRANSFERRED SHALL BE A FLAT, IMPERVIOUS AREA THAT:
       1. IS ADJACENT TO THE FUEL CONTAINER(S); AND
       2. EXTENDS BEYOND THE FULL REACH, OR LENGTH, OF THE FUEL HOSE; AND
     - V. SECONDARY CONTAINMENT AREAS MAY BE IN THE FORM OF A BASIN THAT IS:
       1. SLOPED DOWN TO A CENTRAL LOW POINT OR BERMED ALONG THE PERIMETER;
       2. LINED WITH A CONTINUOUS SHEET OF 20 MIL OR THICKER POLYMER MATERIAL OR APPROPRIATE GEOMEMBRANE LINER; AND
       3. BACKFILLED WITH AT LEAST 6 INCHES OF SAND.

NOTES:

1. A THIRD PARTY SHALL INSPECTOR SHALL BE ON SITE TO INSPECT THE INSTALLATION OF THE STORM DRAINAGE SYSTEMS.
2. SEE GRADING NOTES ON NOTES & LEGEND SHEET (C-01).
3. LOT GRADING SHOWN IS APPROXIMATE AND MAY VARY DEPENDING ON HOUSE SIZE, STYLE, AND LOCATION. STORMWATER SHALL BE DIRECTED TO AREAS SHOWN ON THIS PLAN.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14950 — LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=100'
100 50 0 100

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2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	C-16

DIG SAFE — CONTACT DIG SAFE - 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 232 LOT 92
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TAR
74 LEAVITT AVENUE
PORTSMOUTH, NH 038(
RCRD BK.#5885 PG.#14

NAD 83

PROPOSED 6" PERFORATED HDPE UNDERDRAIN ALONG BASE OF SLOPE (12" BELOW SURFACE)

DROP INLET 01
RIM=38.75
INV.OUT=36.18
SUMP=36.18

CB-1 (SLAB TOP)
RIM=39.17
INV.OUT=36.40
SUMP=33.40

CB 05
RIM=38.93
INV.OUT=35.97
SUMP=32.97

CB 06
RIM=38.94
INV.IN=35.85
INV.OUT=35.75
SUMP=32.75

CB-2 (SLAB TOP)
RIM=39.16
INV.IN=36.25
INV.OUT=36.15
SUMP=33.15

18" HDPE Pipe
159 L.F.
S=0.005 ft/ft

12" HDPE Pipe
20 L.F.
S=0.005 ft/ft

12" HDPE Pipe
20 L.F.
S=0.006 ft/ft

12" HDPE Pipe
20 L.F.
S=0.005 ft/ft

39.17 LP

40.58 HP

39.38 LP

TW=40.0
BW=40.0

TW=40.0
BW=39.0

TW=40.6
BW=37.6

TW=40.9
BW=37.4

TW=40.4
BW=37.4

TW=40.0
BW=38.75

INV. 35.37

INV. 36.04

PROPOSED UNDERDRAIN
50' ONE EACH SIDE
OF BASIN

PROPOSED UNDERDRAIN
30' ONE EACH SIDE OF BASIN

AB

AU

G

S

PEVERLY HILL ROAD
(PUBLIC RIGHT OF WAY)

MATCHLINE SEE SHEET - C-18

HORIZONTAL SCALE 1"=20'
20 10 0 20

JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

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PROJ.	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	C-17

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F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

PROPOSED 6"
PERFORATED HDPE
UNDERDRAIN ALONG
BASE OF SLOPE (12"
BELOW SURFACE)

NAD 83

MATCHLINE SEE SHEET - C-19

MATCHLINE SEE SHEET - C-17

CB 09
RIM=40.49
INV.IN=34.25
INV.OUT=34.15
SUMP=31.15

15" HDPE Pipe
85 L.F.
S=0.005 ft/ft

12" HDPE Pipe
188 L.F.
S=0.005 ft/ft

41.41 HP

CB 08
RIM=39.80
INV.IN=34.00
INV.OUT=33.90
SUMP=30.90

18" HDPE Pipe
24 L.F.
S=0.005 ft/ft

24" HDPE Pipe
188 L.F.
S=0.005 ft/ft

CB 05
RIM=38.93
INV.OUT=35.97
SUMP=32.97

12" HDPE Pipe
20 L.F.
S=0.005 ft/ft

39.17 LP

CB 06
RIM=38.94
INV.IN=35.85
INV.OUT=35.75
SUMP=32.75

TW=41.0
BW=39.0

TW=40.7
BW=38.7

TW=40.0
BW=40.0

TW=41.7
BW=39.7

TW=41.5
BW=37

TW=41.0
BW=40.5

100'

HORIZONTAL SCALE 1"=20'
20 10 0 20

MATCHLINE SEE SHEET - C-21

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

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FILE	DR	JSM	FB	–	C-18
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	

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F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

MATCHLINE SEE SHEET - C-20

MATCHLINE SEE SHEET - C-18

PROPOSED 6" PERFORATED HDPE UNDERDRAIN ALONG BASE OF SLOPE (12" BELOW SURFACE)

CB 10
RIM=49.01
INV.OUT=45.25
SUMP=42.25

12" HDPE Pipe
275 L.F.
S=0.007 ft/ft

52.04 HP

12" HDPE Pipe
16 L.F.
S=0.007 ft/ft

PUBLIC ROAD A
(2,945 FT)

DMH 03
RIM=49.93
INV.IN=43.05
INV.OUT=42.95
SUMP=42.95

CB 11
RIM=49.01
INV.IN=45.10
INV.OUT=45.00
SUMP=42.00

24" HDPE Pipe
188 L.F.
S=0.005 ft/ft

INV. 33.00

INV. 33.15

PROPOSED BIORETENTION AREA #1

PROPOSED BIORETENTION AREA #2

OCS 02
RIM=37.00
INV.OUT=34.00
SUMP=31.00

OCS 01
RIM=36.00
INV.OUT=32.55
SUMP=29.55

DMH 10
RIM=38.98
INV.IN=32.25

12" HDPE Pipe
36 L.F.

24" HDPE Pipe
53 L.F.
S=0.075 ft/ft

24" HI
117 L.
S=0.0

MATCHLINE SEE SHEET - C-22

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

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Jun 23, 2021 - 2:21pm
P:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

PROPOSED INLET
INV. IN=45.80

CENTERLINE OF DRIVEWAY
(SEE E&R #1)

PROPOSED UNDERDRAIN
75' ONE EACH SIDE
OF BASIN

12" HDPE Pipe
16 L.F.
S=0.012 ft/ft

47.22 LP

CB 13
RIM=47.05
INV.OUT=43.50
SUMP=40.50

12" HDPE Pipe
166 L.F.
S=0.007 ft/ft

12" HDPE Pipe
79 L.F.
S=0.007 ft/ft

DMH11
RIM=48.61
INV.IN=43.15
INV.OUT=43.05
SUMP=43.05

CB 12
RIM=47.05
INV.IN=43.25
INV.IN=41.75
INV.OUT=41.65
SUMP=38.65

12" HDPE Pipe
79 L.F.
S=0.008 ft/ft

DMH 04
RIM=48.02
INV.IN=41.05
INV.OUT=40.95
SUMP=40.95

12" HDPE Pipe
178 L.F.
S=0.016 ft/ft

DMH 03
RIM=49.93
INV.IN=43.05
INV.OUT=42.95
SUMP=42.95

DMH 05
RIM=49.32
INV.IN=40.30
INV.OUT=40.20
SUMP=40.20

12" HDPE Pipe
79 L.F.
S=0.007 ft/ft

50.30 HP

MATCHLINE SEE SHEET - C-23

MATCHLINE SEE SHEET - C-19

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")

APRIL 19, 2021

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	–	C-20
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	

Jun 23, 2021 - 2:21pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

MATCHLINE SEE SHEET - C-18

MATCHLINE SEE SHEET - C-22

24" HDPE Pipe
117 L.F.
S=0.005 ft/ft

PROPOSED UNDERDRAIN
150' ONE EACH SIDE
OF BASIN

12" HDPE Pipe
16 L.F.
S=0.005 ft/ft

CB 19 (SLAB TOP)
RIM=37.00
INV.IN=33.85
INV.IN=33.85
INV.OUT=33.75
SUMP=30.75

CB 18 (SLAB TOP)
RIM=37.00
INV.OUT=33.95
SUMP=30.95

100'

100'

8.00%

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
CONTACT DIG SAFE - 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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PARSON WOODS CONDOMINIUM LLC

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APRIL 19, 2021

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FILE	DR	JSM	FB	–	C-21
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	

Jun 23, 2021 - 2:21pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

MATCHLINE SEE SHEET - C-23

MATCHLINE SEE SHEET - C-21

MATCHLINE SEE SHEET - C-21

PROPOSED BIORETENTION AREA #2

PROPOSED BIORETENTION AREA #1

OCS 02
RIM=37.00
INV.OUT=34.00
SUMP=31.00

OCS 01
RIM=36.00
INV.OUT=32.55
SUMP=29.55

DMH 10
RIM=38.98
INV.IN=32.25
INV.IN=33.50
INV.OUT=32.15
SUMP=32.15

12" HDPE Pipe
35 L.F.
S=0.013 ft/ft

12" HDPE Pipe
53 L.F.
S=0.005 ft/ft

24" HDPE Pipe
117 L.F.
S=0.005 ft/ft

CB 17
RIM=39.35
INV.IN=35.20
INV.OUT=35.10
SUMP=32.10

18" HDPE Pipe
205 L.F.
S=0.006 ft/ft

12" HDPE Pipe
16 L.F.
S=0.005 ft/ft

15" HDPE Pipe
16 L.F.
S=0.006 ft/ft

PROPOSED UNDERDRAIN
150' ONE EACH SIDE
OF BASIN

CB 19 (SLAB TOP)
RIM=37.00
INV.IN=33.85
INV.IN=33.85
INV.OUT=33.75
SUMP=30.75

CB 18 (SLAB
RIM=37.00
INV.OUT=33.
SUMP=30.95

24" HDPE Pipe
232 L.F.
S=0.005 ft/ft

CB 16
RIM=39.35
INV.OUT=35.32
SUMP=32.32

INV. 31.00'

100'

100'

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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PREPARED FOR

GREEN & COMPANY REAL ESTATE

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SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

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FILE		DR	JSM	FB	–	
	47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	C-22

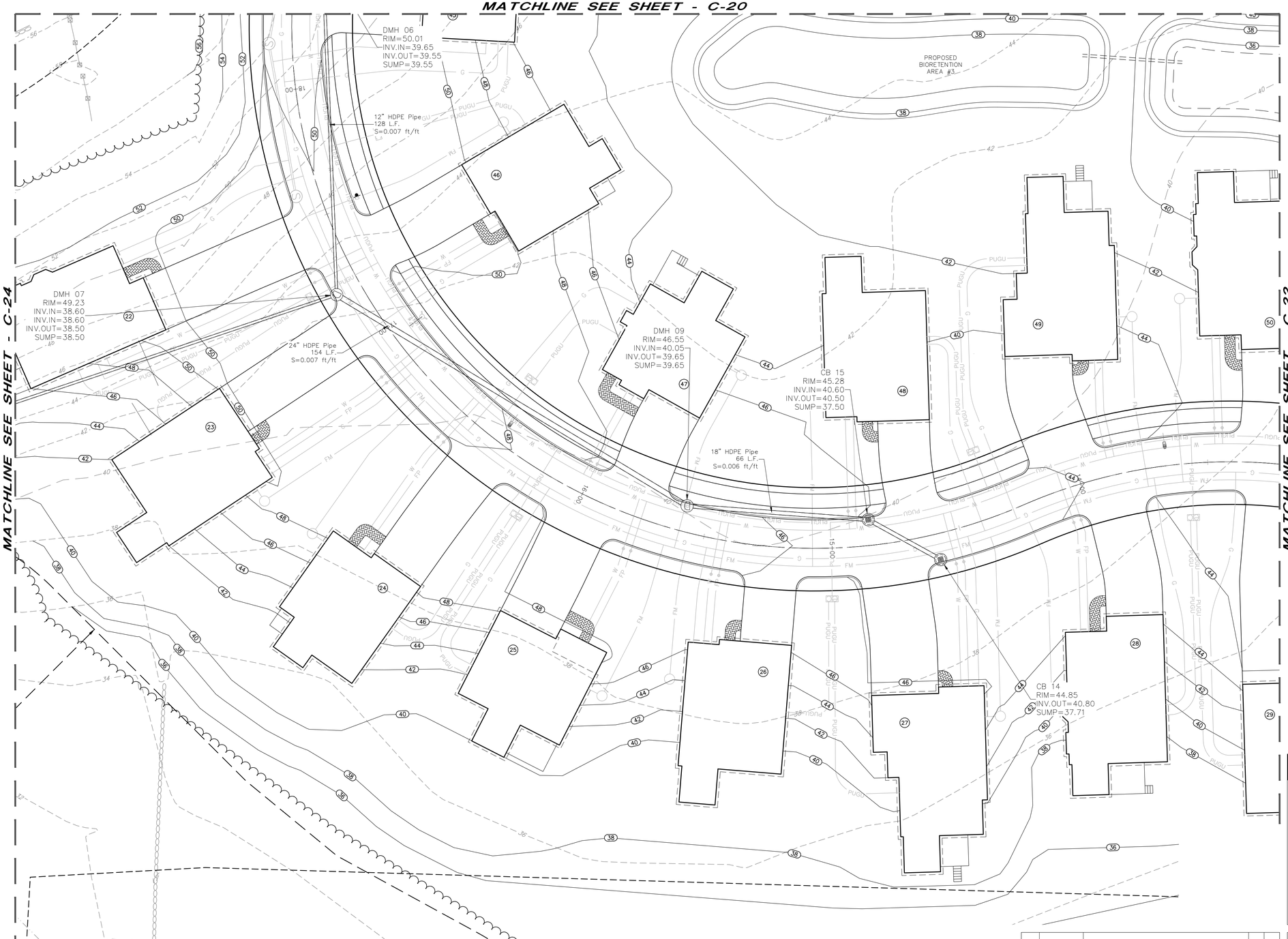
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Jun 23, 2021 - 2:21pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Grading

MATCHLINE SEE SHEET - C-20

MATCHLINE SEE SHEET - C-24

MATCHLINE SEE SHEET - C-22



DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1473
PORTSMOUTH, NH 03802
BOOK BK 4328 PG 2063

HORIZONTAL SCALE 1"=20'
20 10 0 20

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JOHN J. McTIGUE
No. 14950
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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	C-23

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH &
GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MATCHLINE SEE SHEET - C-25

MATCHLINE SEE SHEET - C-23

DMH 07
RIM=49.23
INV.IN=38.60
INV.IN=38.60
INV.OUT=38.50
SUMP=38.50

24" HDPE Pipe
154 L.F.
S=0.007 ft/ft

12" HDPE Pipe
285 L.F.
S=0.005 ft/ft

DMH 08
RIM=40.83
INV.IN=36.95
INV.OUT=36.85
SUMP=36.85

12" HDPE Pipe
76 L.F.
S=0.005 ft/ft

INV. 35.90

OCS 03
RIM=37.75
INV.OUT=34.41
SUMP=31.41

INV. 33.97

100'

100'

OLD WETLAND LINE

NEW WETLAND FLAGS A65 & A66 NOT FOUND

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

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SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
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Landscape Architects
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Fax (603) 431-0910
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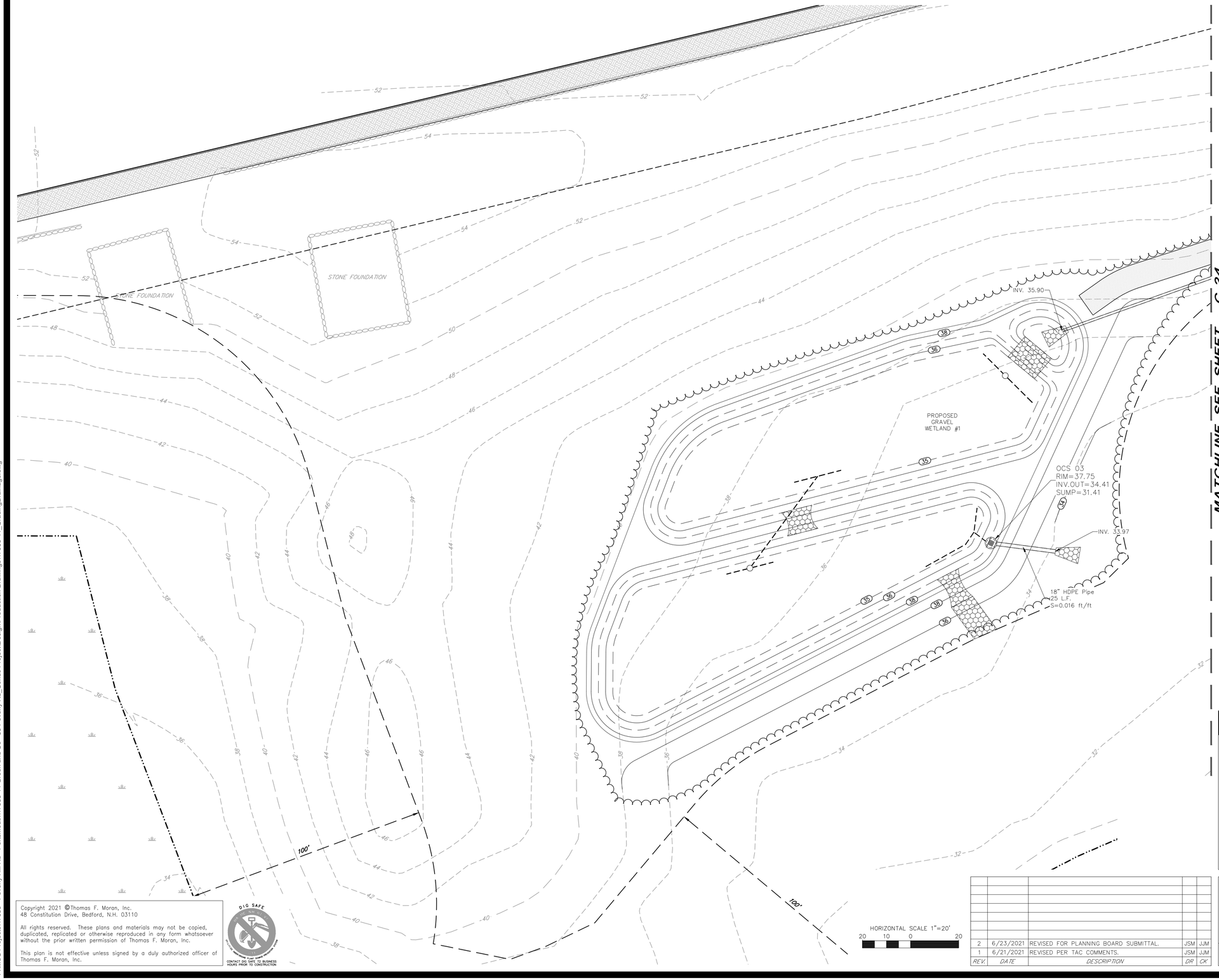
PROJECT	DR	JSM	FB	–	C-24
47388.11	CK	JJM	CADFILE	47388-11_GRADINGDRAINAGE	

Jun 23, 2021 - 2:21pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg



HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
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JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

GRADING & DRAINAGE PLAN

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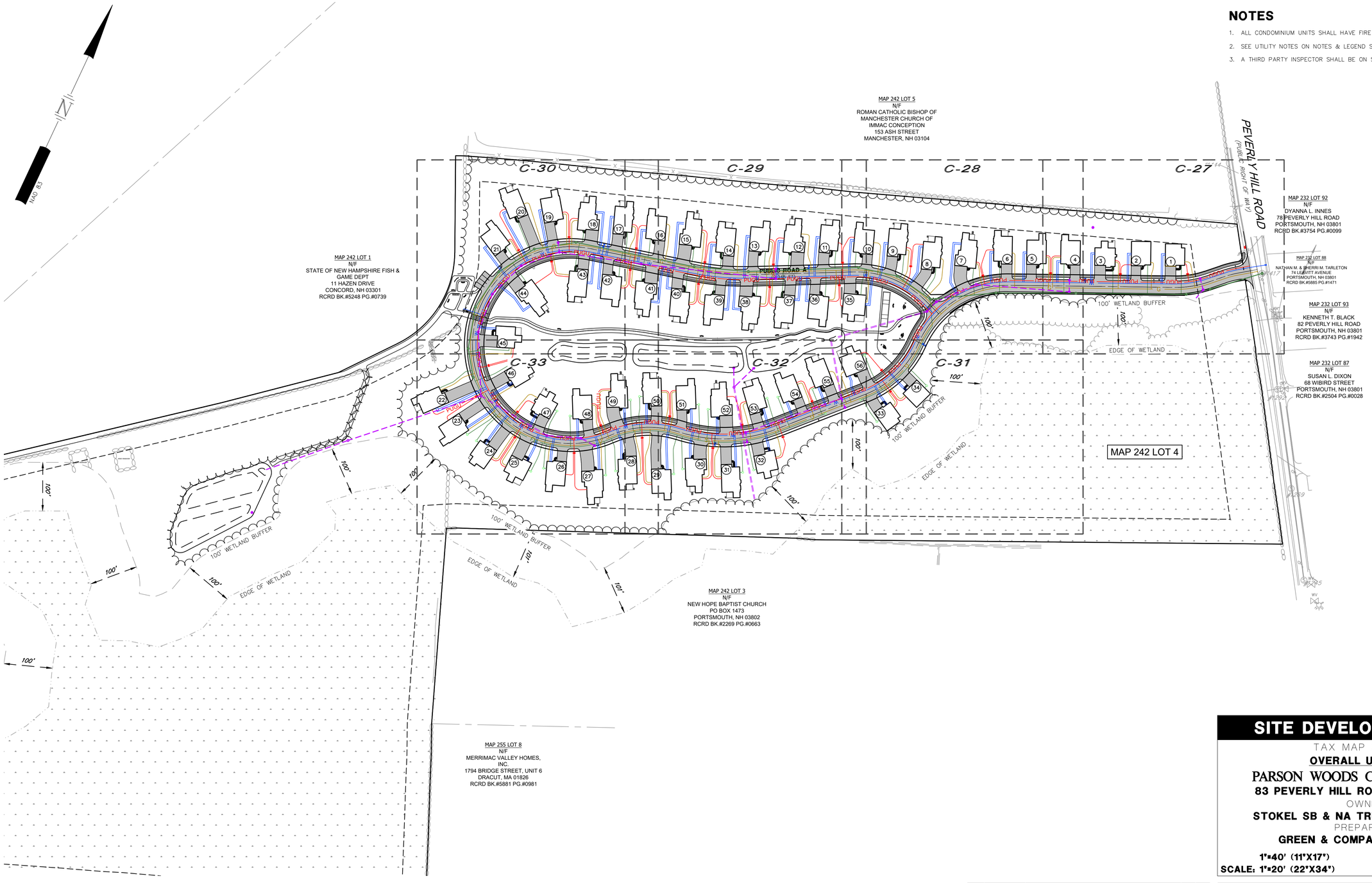
FILE	DR	FB	–	
47388.11	JSM			C-25
	CK	CADFILE	47388-11_GRADINGDRAINAGE	
	JJM			

Jun 23, 2021 - 2:21pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_GradingDrainage.dwg

NOTES

1. ALL CONDOMINIUM UNITS SHALL HAVE FIRE SUPPRESSION SPRINKLERS SYSTEMS INSTALLED.
2. SEE UTILITY NOTES ON NOTES & LEGEND SHEET (C-01).
3. A THIRD PARTY INSPECTOR SHALL BE ON SITETO INSPECT THE INSTALLATION OF THE UTILITIES.

UTILITY COLOR LEGEND	
WATER	
SEWER	
ELECTRIC & COMMUNICATIONS	
GAS	
STORM DRAIN	



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HORIZONTAL SCALE 1"=100'
100 50 0 100

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

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SCALE: 1"=20' (22"X34")

APRIL 19, 2021

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FILE	DR	JSM	FB	–	C-26
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	

Jun 23, 2021 - 3:33pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

MATCHLINE SEE SHEET - C-28

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 232 LOT 92
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TAR
74 LEAVITT AVENUE
PORTSMOUTH, NH 038(
RCRD BK.#5885 PG.#141

PSNH145/3 NETT3
#1444
"SPEED LIMIT 25"
NAD 83
N

PROPOSED TAPPING SADDLE AND 8" GATE VALVE (COORDINATE WITH CITY WATER DEPARTMENT)
RELOCATED UTILITY POLE (PSNH145/4 NETT4) WITH UNDERGROUND ELECTRIC & COMMUNICATION CONDUITS WITH SWEEPS FROM POLE (COORDINATE WITH UTILITY COMPANY)
#83
PROPOSED GAS SERVICE (COORDINATE WITH UTILITY COMPANY)
PROPOSED 2" CTS FIRE SERIVCE (TYP)
PROPOSED 1" CTS WATER SERVICE (TYP)
PROPOSED 6" PVC SEWER SERVICE LINE (TYP)
PROPOSED HYDRANT AND VALVE (TYP)
PROPOSED 8" D.I. WATER MAIN
8" 223 L.F. S=0.0 ft/ft
8" 107 L.F. S=0.0 ft/ft
8" 47 L.F. S=0.0 ft/ft
CONNECT TO FUTURE GAS MAIN (COORDINATE WITH UTILITY COMPANY)
EXIST SMH-E1
RIM=40.09
INV.IN=32.80
SUMP=32.80
#1411
PEVERLY HILL ROAD
(PUBLIC RIGHT OF WAY)
SMH-P03
RIM=39.64
INV.IN=34.70
INV.OUT=34.60
SUMP=34.60
SMH-P02
RIM=39.96
INV.IN=33.65
INV.OUT=33.55
SUMP=33.55
SMH-P01
RIM=39.79
INV.IN=33.35
INV.OUT=33.25
SUMP=33.25
PROPOSED UNDERGROUND UTILITIES (COORDINATE WITH UTILITY COMPANY)
PROPOSED GAS MAIN (COORDINATE WITH UTILITY COMPANY)
PROPOSED ELECTRIC CONTROL PANEL AND ELECTRIC SERVICE (TYP)
PROPOSED CURB STOP (TYP)
PROPOSED UNDERGROUND UTILITIES (COORDINATE WITH UTILITY COMPANY)
100' WETLAND BUFFER
100'
EDGE OF WETLAND
PSNH145/5 FP93/5
PSNH
P1 1+45.30
0+00
1+00
2+00
3+00
4+00

HORIZONTAL SCALE 1"=20'
20 10 0 20

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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JOHN J. McTIGUE No. 14860 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

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PREPARED FOR

GREEN & COMPANY REAL ESTATE

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SCALE: 1"=20' (22"X34")

APRIL 19, 2021

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FILE	DR	JSM	FB	–	C-27
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	

Jun 23, 2021 - 3:31pm
P:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

NAD 83

MATCHLINE SEE SHEET - C-29

MATCHLINE SEE SHEET - C-27

PROPOSED ELECTRIC
CONTROL PANEL AND
ELECTRIC SERVICE (TYP)

SMH-P07
RIM=43.90
INV.IN=37.05
INV.OUT=36.95
SUMP=36.95

SMH-P06
RIM=42.31
INV.IN=36.55
INV.OUT=36.40
SUMP=36.40

PROPOSED 6" PVC SEWER
SERVICE LINE (TYP)

8"
78 L.F.
S=0.0 ft/ft

8"
75 L.F.
S=0.0 ft/ft

PC 27+29.71

28+00

28+50

29+00

PC 28+35.15

SMH-P05
RIM=40.67
INV.IN=36.05
INV.OUT=35.95
SUMP=35.95

PROPOSED GAS SERVICE
(COORDINATE WITH
UTILITY COMPANY)

8"
132 L.F.
S=0.0 ft/ft

5+00

PC 4+88.67

5+50

6+00

PROPOSED 2" CTS
FIRE SERIVCE (TYP)

PROPOSED 1" CTS
WATER SERVICE (TYP)

SMH-P04
RIM=41.12
INV.IN=35.40
INV.OUT=35.30
SUMP=35.30

8"
161 L.F.
S=0.0 ft/ft

SMH-P03
RIM=39.64
INV.IN=34.70
INV.OUT=34.60
SUMP=34.60

PROPOSED CURB
STOP (TYP)

100' WETLAND BUFFER

PROPOSED 8" D.I.
WATER MAIN (TYP)

PROPOSED GAS MAIN
(COORDINATE WITH
UTILITY COMPANY)

100'

EDGE OF WETLAND

PROPOSED HYDRANT
AND VALVE (TYP)

7+00

PRC 7+22.20

MATCHLINE SEE SHEET - C-31

HORIZONTAL SCALE 1"=20'
20 10 0 20

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14955
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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SCALE: 1"=20' (22"X34")

APRIL 19, 2021

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PROJECT	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	C-28

Jun 23, 2021 - 3:31pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14960 LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

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PREPARED FOR

GREEN & COMPANY REAL ESTATE

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SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

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PROJECT	DR	JSM	FB	–	C-29
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	

Jun 23, 2021 - 3:31pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

PROPOSED ELECTRIC CONTROL PANEL AND ELECTRIC SERVICE (TYP)

SMH-P10
RIM=47.27
INV.IN=40.25
INV.OUT=40.15
SUMP=40.15

PROPOSED HYDRANT AND VALVE (TYP)

PROPOSED 6" PVC SEWER SERVICE LINE (TYP)

8" S.L.F. 83 L.F. S=0.0 ft/ft

SMH-P12
RIM=48.71
INV.IN=41.35
INV.OUT=41.25
SUMP=41.25

SMH-P11
RIM=47.45
INV.IN=40.80
INV.OUT=40.70
SUMP=40.70

PROPOSED CURB STOP (TYP)

PROPOSED GAS SERVICE (COORDINATE WITH UTILITY COMPANY)

PROPOSED UNDERGROUND UTILITIES (COORDINATE WITH UTILITY COMPANY)

PROPOSED 2" CTS FIRE SERIVCE (TYP)

PROPOSED 1" CTS WATER SERVICE (TYP)

SMH-P13
RIM=49.77
INV.IN=41.90
INV.OUT=41.80
SUMP=41.80

PROPOSED 8" D.I. WATER MAIN (TYP)

PROPOSED GAS MAIN (COORDINATE WITH UTILITY COMPANY)

PROPOSED 1" WATER SERVICE LINE TO WATER REFILL STATION

MATCHLINE SEE SHEET - C-29

MATCHLINE SEE SHEET - C-33

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")

APRIL 19, 2021

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

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Fax (603) 431-0910
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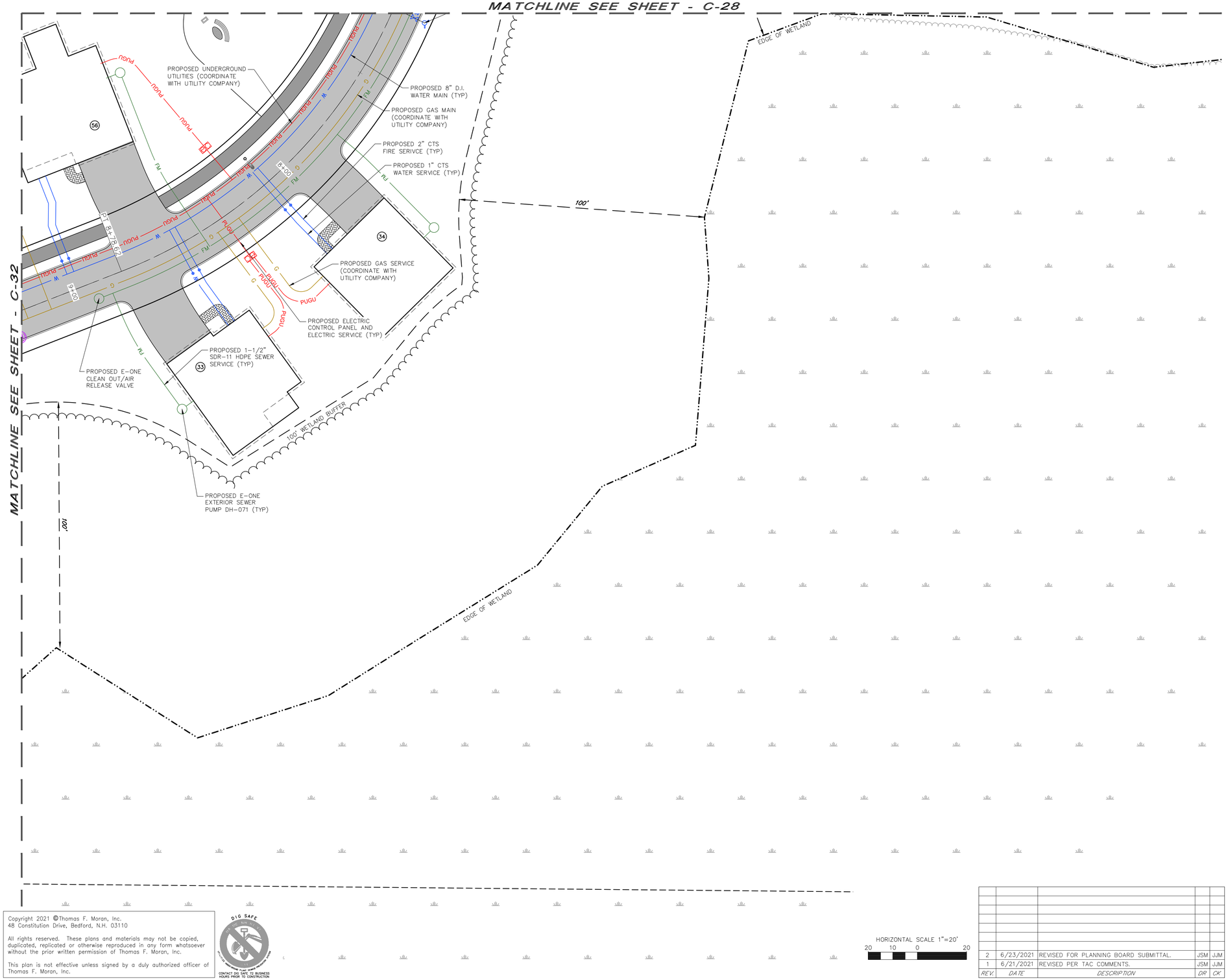
FILE	47388.11	DR	JSM	FB	–	C-30
		CK	JJM	CADFILE	47388-11_UTILITY	

Jun 23, 2021 - 3:31pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Utility.dwg

MATCHLINE SEE SHEET - C-28

MATCHLINE SEE SHEET - C-32



DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

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STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

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APRIL 19, 2021

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FILE	47388.11	DR	JSM	FB	–	C-31
		CK	JJM	CADFILE	47388-11_UTILITY	

MATCHLINE SEE SHEET - C-29

MATCHLINE SEE SHEET - C-33

MATCHLINE SEE SHEET - C-31

MATCHLINE

PROPOSED UNDERGROUND UTILITIES (COORDINATE WITH UTILITY COMPANY)

PROPOSED ELECTRIC CONTROL PANEL AND ELECTRIC SERVICE (TYP)

PROPOSED CURB STOP (TYP)

PROPOSED E-ONE CLEAN OUT/AIR RELEASE VALVE

PROPOSED GAS MAIN (COORDINATE WITH UTILITY COMPANY)

PROPOSED 2" CTS FIRE SERIVCE (TYP)

PROPOSED 1" CTS WATER SERVICE (TYP)

PROPOSED 8" D.I. WATER LINE

PROPOSED 1-1/2" SDR-11 HDPE SEWER SERVICE (TYP)

PROPOSED E-ONE EXTERIOR SEWER PUMP DH-071 (TYP)

PROPOSED HYDRANT AND VALVE (TYP)

PROPOSED 8" D.I. WATER MAIN (TYP)

100' WETLAND BUFFER

100'

NAD 83

HORIZONTAL SCALE 1"=20'

20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_UTILITY	C-32

JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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MATCHLINE SEE SHEET - C-30

MATCHLINE SEE SHEET - C-32

SMH-P14
RIM=50.08
INV.IN=42.45
INV.OUT=42.35
SUMP=42.35

SMH-P15
RIM=49.77
INV.OUT=42.90
SUMP=42.90

PROPOSED 6" PVC SEWER SERVICE LINE (TYP)

PROPOSED E-ONE EXTERIOR SEWER PUMP DH-071 (TYP)

PROPOSED 1-1/2" SDR-11 HDPE SEWER SERVICE (TYP)

PROPOSED HYDRANT AND VALVE (TYP)

PROPOSED GAS MAIN (COORDINATE WITH UTILITY COMPANY)

PROPOSED ELECTRIC CONTROL PANEL AND ELECTRIC SERVICE (TYP)

PROPOSED 8" D.I. WATER MAIN

PROPOSED 8" D.I. WATER MAIN (TYP)

PROPOSED 2" CTS FIRE SERIVCE (TYP)

PROPOSED 1" CTS WATER SERVICE (TYP)

18+00 56 L.F. 8" S=0.0 %/%

PROP. 14"x3.50"

100' WETLAND BUFFER

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1423
PORTSMOUTH, NH 03802
BCRD BK 4236 PG 2063

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

UTILITY PLAN

PARSON WOODS CONDOMINIUM LLC
83 PEVERLY HILL ROAD, PORTSMOUTH, NH
OWNED BY
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1"=40' (11"X17")
SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950 LICENSED
PROFESSIONAL ENGINEER

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47388.11	CK	JJM	CADFILE	47388-11_UTILITY	

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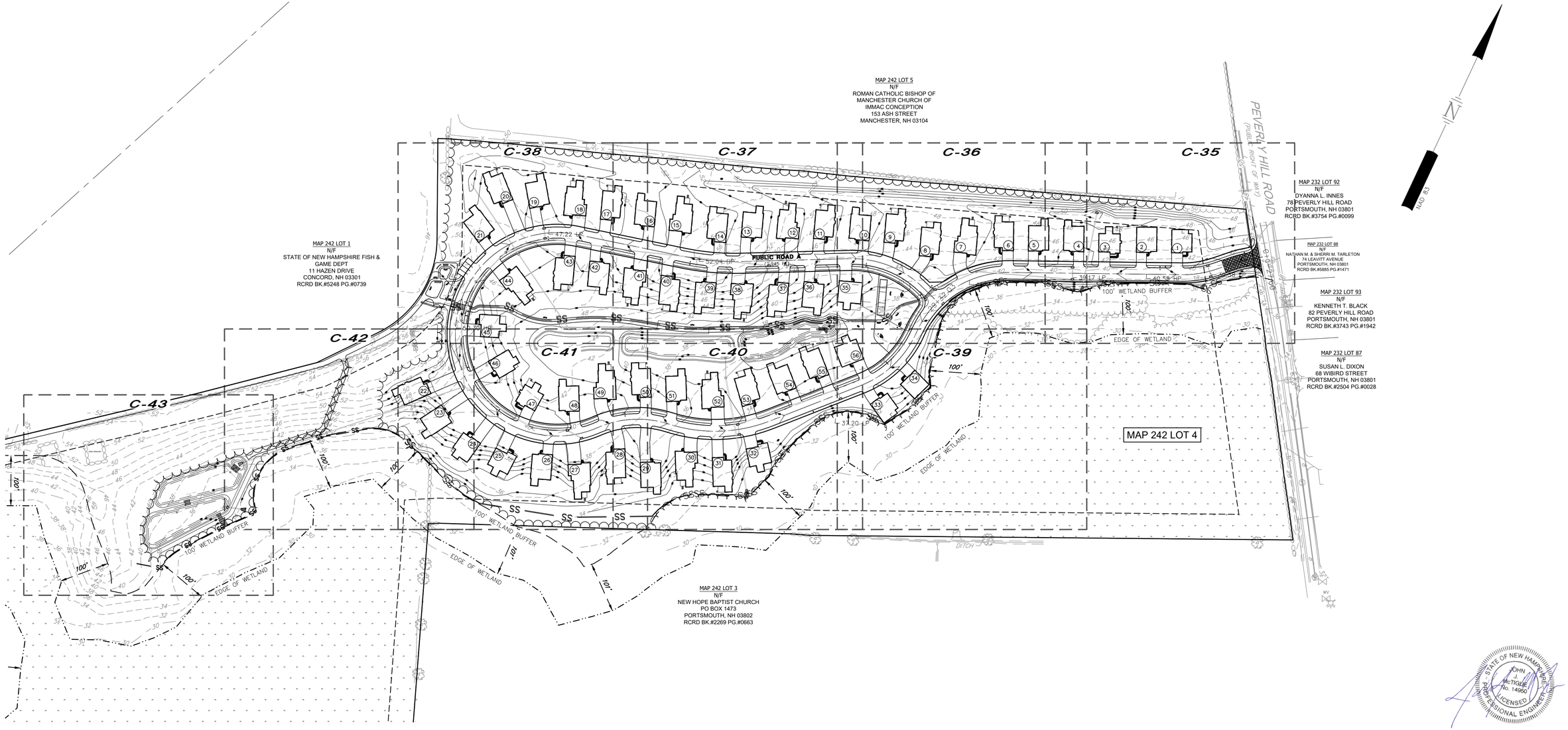

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL EROSION CONTROL PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

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1"=200' (11"X17"

SCALE: 1"=100' (22"X34") **APRIL 19, 2021**

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HORIZONTAL SCALE 1"=100'
100 50 0 100

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FILE		DR	JSM	FB	–	
	47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	C-34

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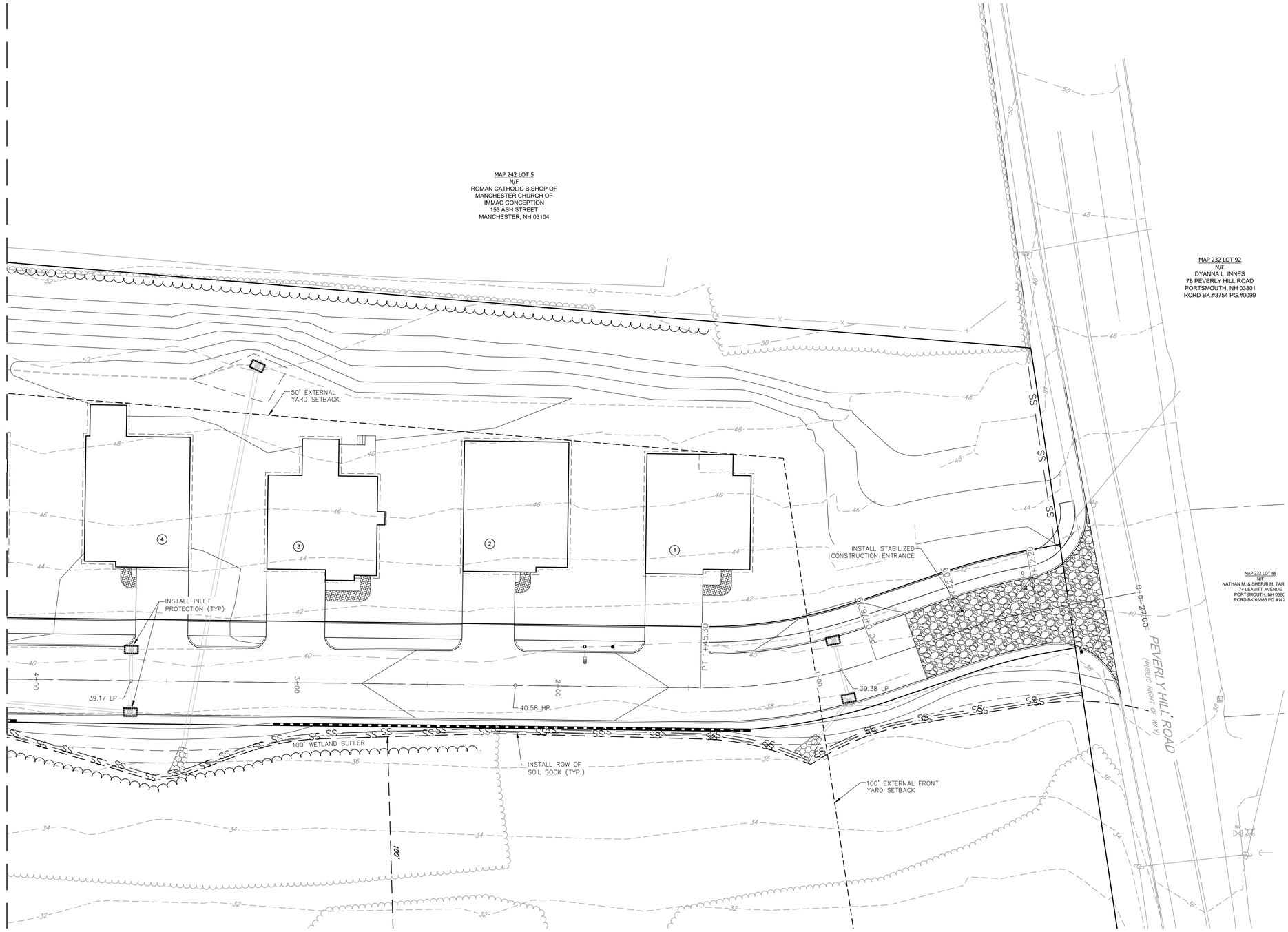

NOTES

1. SEE GENERAL EROSION CONTROL NOTES ON THE EROSION CONTROL DETAIL SHEET AND THE APPROVED SWPPP.
2. INSTALL SILT BARRIER ALONG THE PERIMETER OF THE AREA TO BE DISTURBED AS FIRST ORDER OF WORK.
3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED. INLET PROTECTION BARRIERS SHALL BE IN PLACE AT ALL CATCH BASINS PRIOR TO THE DISTURBANCE OF SOIL.
4. DUST CONTROL SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IT SHALL BE ACCOMPLISHED BY THE UNIFORM APPLICATION OF CALCIUM CHLORIDE AT THE RATE OF 1-1/2 POUNDS PER SQUARE YARD BY MEANS OF A LIME SPREADER OR OTHER APPROVED METHOD. WATER MAY ALSO BE USED FOR DUST CONTROL, AND APPLIED BY SPRINKLING WITH WATER TRUCK DISTRIBUTORS, AS REQUIRED.
5. THE SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. THE SITE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE FOR, OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
6. SILT PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THIS PLAN SET.
7. CONSTRUCT JUTE MATTING ON ALL SLOPES STEEPER THAN 3:1, DISTURBED AREAS SLOPING TOWARDS WETLANDS AND ALL LOCATIONS SHOWN ON PLAN.
8. INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAIN STORM OF 0.10" OR GREATER. REPAIR/MODIFY SILT BARRIER AS NECESSARY TO MAXIMIZE FILTER EFFICIENCY. REMOVE SEDIMENT WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
9. PROVIDE SILT BARRIERS AT THE BASE OF CUT AND FILL SLOPES UNTIL COMPLETION OF THE PROJECT OR UNTIL VEGETATION BECOMES ESTABLISHED ON SLOPES. EROSION PROTECTION BELOW FILL SLOPES SHALL BE PLACED IMMEDIATELY AFTER CLEARING, PRIOR TO EMBANKMENT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE REVEGETATED AS QUICKLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
11. ALL WORK AREAS TO BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY PREDICTED SIGNIFICANT RAIN EVENT.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED
    B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
    C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED
    D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
13. ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
14. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
15. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
16. EROSION CONTROL BERM MAY BE USED IN PLACE OF ONE LAYER OF SILT SOCK.
17. TURBIDITY CURTAIN TO BE USED IN PLACE OF DOUBLE LAYER OF SILT SOCK WHEN STANDING WATER IS ENCOUNTERED.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950
PROFESSIONAL ENGINEER
LICENSED

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	C-35

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MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MATCHLINE SEE SHEET - C-37

MATCHLINE SEE SHEET - C-35

50' EXTERNAL
YARD SETBACK

INSTALL DOUBLE
ROW OF SILT SOCK

INSTALL DOUBLE ROW
OF SILT SOCK (TYP.)

INSTALL INLET
PROTECTION

100' WETLAND BUFFER

41.41 HP

39.17 LP

PC 27+29.71

PT 28+43.15

PC 4+88.67

28+00

29+00

29+32.03

5+00

4+00

7+00

SSC 7+52.20

100'

N

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

MATCHLINE SEE SHEET - C-39

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL PLAN

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	C-36

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HORIZONTAL SCALE 1"=20'
20 10 0 20

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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	C-37

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MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

50' EXTERNAL YARD SETBACK (TYP.)

INSTALL INLET PROTECTION (TYP)

INSTALL DOUBLE ROW OF SILT SOCK (TYP.)

MATCHLINE SEE SHEET - C-41

MATCHLINE SEE SHEET - C-37

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

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JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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MATCHLINE SEE SHEET - C-36

MATCHLINE SEE SHEET - C-40

INSTALL INLET PROTECTION

INSTALL DOUBLE ROW OF SILT SOCK (TYP.)

100' WETLAND BUFFER

EDGE OF WETLAND

50' EXTERNAL YARD SETBACK

100'

100'

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

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SITE DEVELOPMENT PLANS

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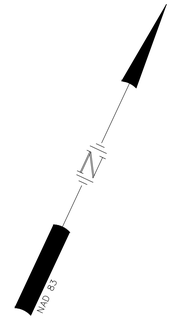

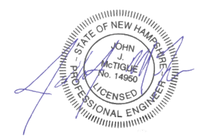

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL PLAN

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STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34")

APRIL 19, 2021

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

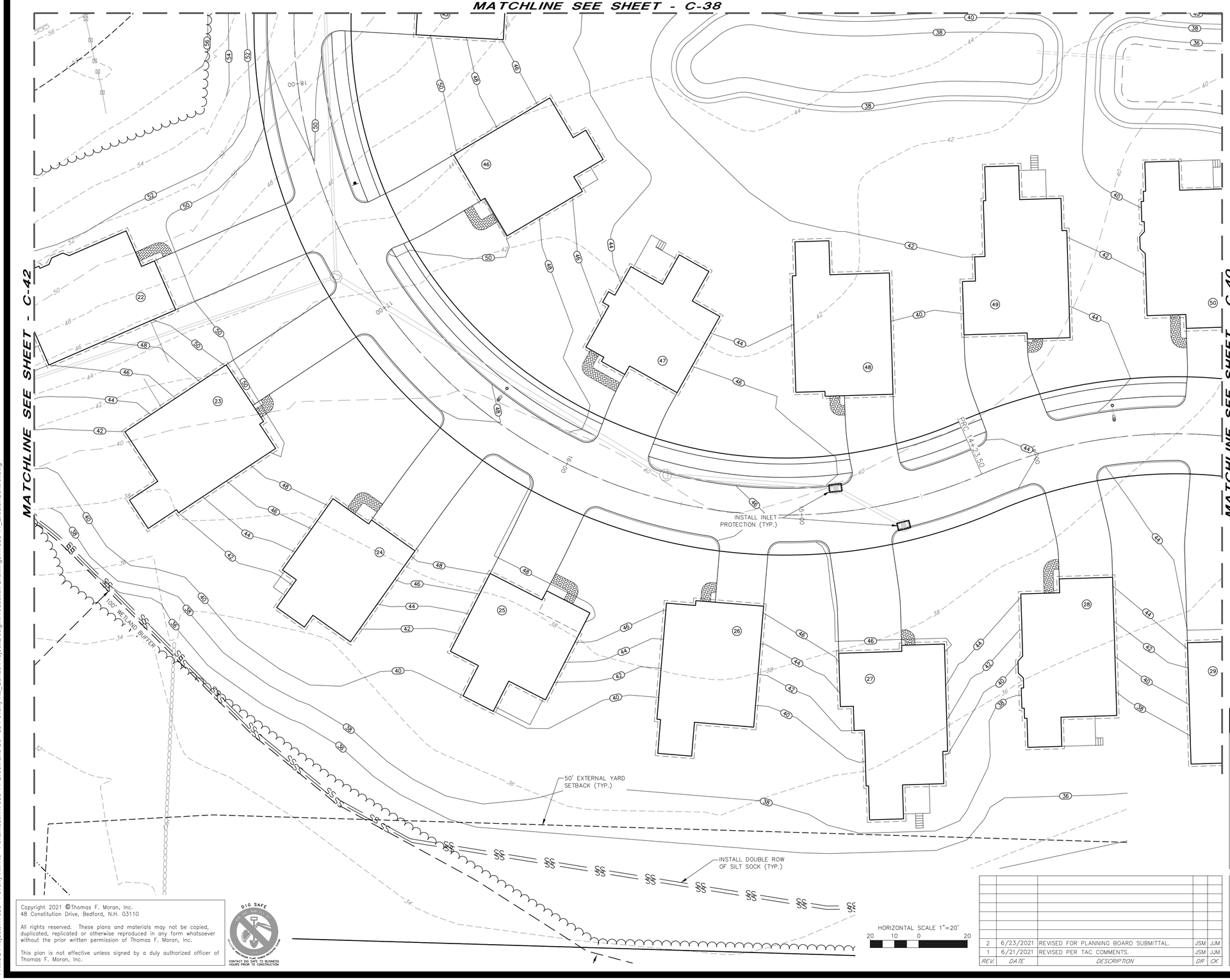
Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

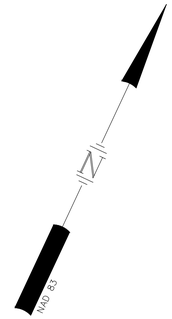
FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	C-40

MATCHLINE SEE SHEET - C-38

MATCHLINE SEE SHEET - C-42

MATCHLINE SEE SHEET - C-40





HORIZONTAL SCALE 1"=20'
20 10 0 20

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STATE OF NEW HAMPSHIRE
JOHN J. MCTIGUE No. 14990 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

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FILE	DR	JSM	FB	–	C-41
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	

Jun 23, 2021 - 2:22pm
F:\M&C Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_ErosionControl.dwg

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH &
GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MATCHLINE SEE SHEET - C-43

MATCHLINE SEE SHEET - C-41

50' EXTERNAL
YARD SETBACK

INSTALL DOUBLE ROW
OF SILT SOCK (TYP.)

INSTALL DOUBLE ROW
OF SILT SOCK (TYP.)

100' WETLAND BUFFER

100'

100'

EDGE OF WETLAND

PROPOSED FES
RIPRAP APRON

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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STATE OF NEW HAMPSHIRE
JOHN J McTIGUE
No. 14950
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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FILE	47388.11	DR	JSM	FB	–	C-42
		CK	JJM	CADFILE	47388-11_EROSIONCONTROL	

Jun 23, 2021 - 2:22pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_ErosionControl.dwg

50' EXTERNAL YARD SETBACK

STONE FOUNDATION

STONE FOUNDATION

EDGE OF WETLAND

100' WETLAND BUFFER

100' WETLAND BUFFER

100'

100'

INSTALL DOUBLE ROW OF SILT SOCK (TYP.)

MATCHLINE SEE SHEET - C-42

NAD 83

HORIZONTAL SCALE 1"=20'
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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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FILE	DR	JSM	FB	–	C-43
47388.11	CK	JJM	CADFILE	47388-11_EROSIONCONTROL	

Jun 23, 2021 - 3:35pm
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SOIL CHARACTERISTICS

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF NEWFIELDS SANDY LOAM, DEERFIELD LOAMY SAND, HOOSIC GRAVELLY LOAMY SAND, CANTON SAND LOAM, BOXFORD SILT LOAM, AND WALPOLE SANDY LOAM. THE MAJORITY OF THE SOIL IS HSG B & C.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 775,000 SQUARE FEET (17.80 ACRES).

CRITICAL NOTE: THIS DRAWING IS PROVIDED FOR GENERAL GUIDANCE. ALL SPECIAL EROSION CONTROL MEASURES MUST BE EXECUTED IN ACCORDANCE WITH CURRENT STATE AND LOCAL REGULATIONS, APPROVED SWPPP AND PERMIT REQUIREMENTS.

SEQUENCE OF MAJOR ACTIVITIES

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY EROSION CONTROL MEASURES PER APPROVED SWPPP IF REQUIRED.
2. DEMOLISH EXISTING SITE WORK DESIGNATED FOR REMOVAL.
3. COMPLETE MAJOR GRADING OF SITE.
4. CONSTRUCT BUILDING PAD, STORMWATER SYSTEM, AND SITE UTILITIES.
5. CONSTRUCT PARKING LOT.
6. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE ALL INLET PROTECTION, SILT BARRIERS AND SEDIMENT THAT HAS BEEN TRAPPED BY THESE DEVICES.
7. CONSULT APPROVED SWPPP FOR CONDITIONS RELATED TO NOTICE OF TERMINATION, IF REQUIRED.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

1. BASE COURSE GRAVELS, WHICH MEET THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2, HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT BARRIERS. ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH BARRIER FILTERS. STONE RIPRAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSIVE VELOCITIES ARE ENCOUNTERED.

OFF SITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.

INSTALLATION, MAINTENANCE AND INSPECTION OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.

1. STABILIZATION OF ALL SWALES, DITCHES AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
2. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. (5 AC MAX)
3. ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 0.10" OR GREATER.
4. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
5. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT BARRIER WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE BARRIER.
6. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
7. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
9. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

B. FILTERS / BARRIERS

1. SILT SOCKS

   A. KNOTTED MESH NETTING MATERIAL SHALL BE DELIVERED TO SITE IN A 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" MATERIAL, FILLED WITH COMPOST CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
PH	TMECC 04.11-A	5.0 TO 8.0
PARTICLE SIZE	TMECC 02.02-B	2" SIEVE AND MIN. 60% GREATER THAN THE ⅜" SIEVE
MOISTURE CONTENT		STND TESTING < 60%

   MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN-MADE MATERIALS

   MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.

   B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.

   C. SILT BARRIER 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 DRAINAGE AREA ABOVE THEM.

3. MAINTENANCE

   A. SILT BARRIERS SHALL BE INSPECTED WEEKLY AND 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 BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.

   B. SHOULD THE FABRIC 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 SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY 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 BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

C. MULCHING

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' OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.

   B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.

   THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA, WHERE THE LENGTH OF TIME VARIES 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.

   WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

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.

D. VEGETATIVE PRACTICE

1. AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 4". THEN, FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED THICKNESS AS SPECIFIED IN THESE PLANS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.
2. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER AND OTHER FOREIGN MATERIAL, AS WELL AS STONES OVER 1" IN DIAMETER, SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE. THE LOAM SHALL BE RAKED SMOOTH AND EVEN.
3. THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS.
4. SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.
5. ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.
6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.
8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.
9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4" AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.
10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.
11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.
13. UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK. IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. FOR TEMPORARY PLANTINGS AFTER SEPTEMBER 30, TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

   A. FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.
   B. FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 500 POUNDS PER ACRE.

   MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:

WINTER RYE (FALL SEEDING)	2.5 LBS/1,000 SF
OATS (SPRING SEEDING)	2.0 LBS/1,000 SF
MULCH	1.5 TONS/ACRE

E. CATCH BASIN INLET PROTECTION

1. INLET BASKET STRUCTURE

   A. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO DISTURBING PAVEMENT AND SHALL REMAIN IN PLACE AND MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

   B. MOLD 6X6, 42 LB. WIRE SUPPORT AROUND INLET FRAME AND GRATE AND EXTEND 6" BEYOND SIDES. SECURE FILTER FABRIC TO WIRE SUPPORT.

   C. THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:

      GRAB STRENGTH: 45 LB. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682)
      MULLEN BURST STRENGTH: MIN. 60PSI (ASTM D774)

   D. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 GPM.

   E. THE INLET PROTECTION SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

   F. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

F. WINTER CONSTRUCTION SEQUENCE

1. ALL PROPOSED POST-DEVELOPMENT LANDSCAPED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1 AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
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 WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWFALL AFTER EACH STORM EVENT.

TIMING OF CONTROLS/MEASURES

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

WASTE DISPOSAL

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

SPILL PREVENTION

1. MATERIAL MANAGEMENT PRACTICES
   THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:

   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

   A. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
   B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
   D. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
   E. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
   F. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

   HAZARDOUS PRODUCTS:
   THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

   A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
   B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
   C. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

2. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

   PETROLEUM PRODUCTS:
   ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

   FERTILIZERS:
   FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

   PAINTS:
   ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

   CONCRETE TRUCKS:
   CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA DESIGNATED ON SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

F. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.

G. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

DUST CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

STATE OF NEW HAMPSHIRE — JOHN J. MCTIGUE No. 14050 LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

EROSION CONTROL NOTES

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")
SCALE: 1"=20' (22"X34")
APRIL 19, 2021

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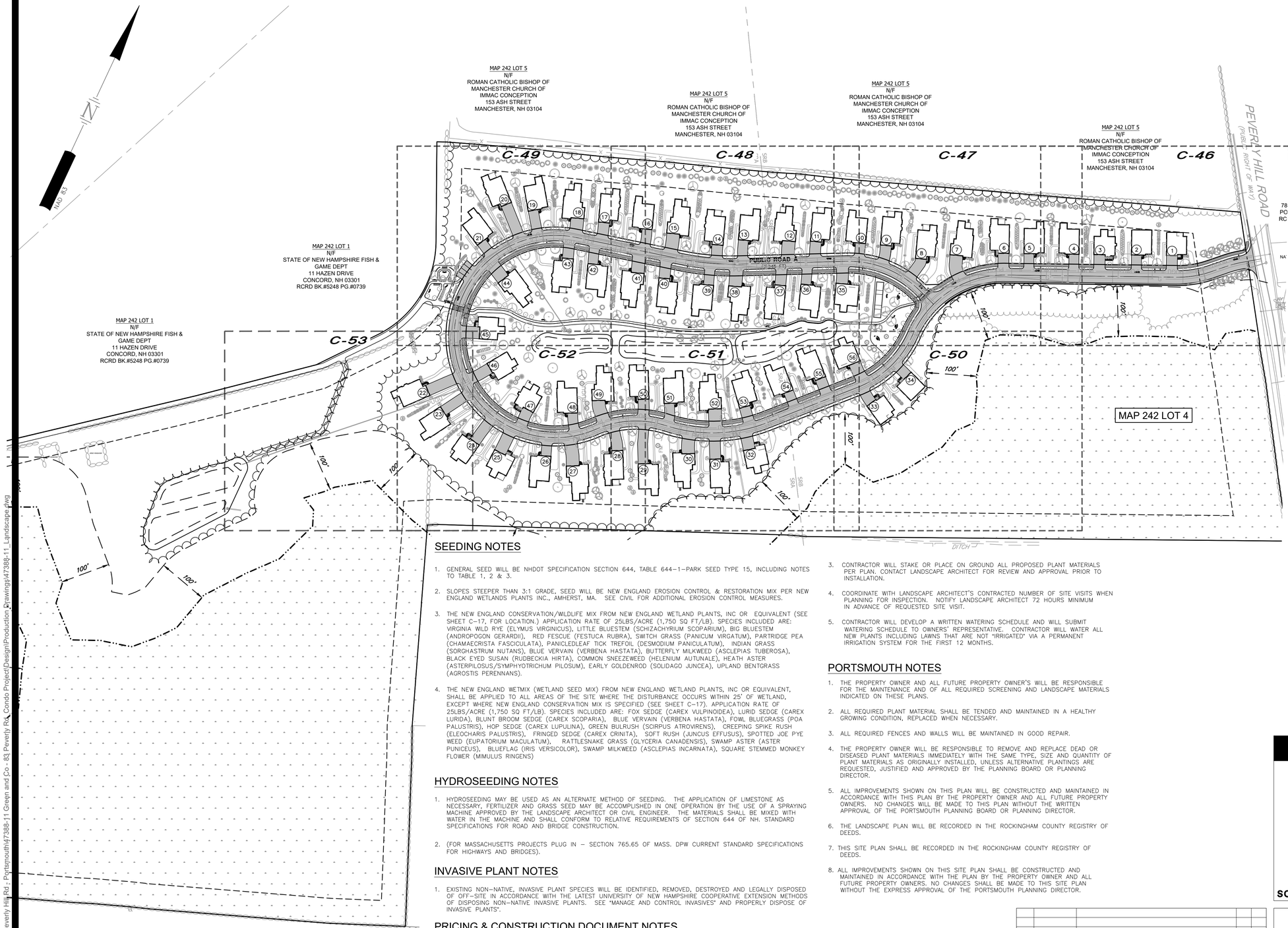
DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



LANDSCAPE NOTES

1. CONTRACTOR WILL LOCATE, VERIFY AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWNWORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES WILL IMMEDIATELY BE REPORTED TO THE LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE, SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
2. CONTRACTOR WILL FURNISH AND PLANT ALL PLANTS IN QUANTITIES AS SHOWN ON THIS PLAN. IN CASES OF DISCREPANCY BETWEEN PLAN AND LIST CLARIFY WITH LANDSCAPE ARCHITECT PRIOR TO PLACING PURCHASE ORDER AND AGAIN PRIOR TO PLANTING.
3. SEE PLANTING DETAILS AND IF INCLUDED, SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. PLANT TYPES MAY VARY BASED ON AVAILABILITY AND SUPPLY. THIS LAYOUT REPRESENTS THE INTENT OF THE PLANTING AND APPROXIMATE NUMBERS OF PLANTS TO BE PROVIDED.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE THE APPROPRIATE ARRANGEMENTS TO PROVIDE ALL PLANTS AND MATERIALS TO ACCOMMODATE PLANTING WITHIN THE TIME ALLOWED BY THE CONSTRUCTION SCHEDULE.
6. PLANTING SHALL BE COMPLETED FROM APRIL 15TH THROUGH OCTOBER 15TH UNLESS OTHERWISE NOTED IN SPECIFICATIONS. THERE WILL BE NO PLANTING DURING JULY AND AUGUST UNLESS SPECIAL PROVISIONS ARE MADE FOR DROUGHT BY PROVIDING ADDITIONAL WATERING.
7. ALL PLANTS WILL BE NURSERY GROWN.
8. PLANTS WILL BE IN ACCORDANCE, AT A MINIMUM, WITH CURRENT EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN HORTICULTURE INDUSTRY ASSOCIATION.
9. TREES WILL BE PRUNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI A300 PART 1, "TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE STANDARD PRACTICES".
10. PLANTS MATERIAL IS SUBJECT TO APPROVAL / REJECTION BY THE LANDSCAPE ARCHITECT AT THE SITE AND AT THE NURSERY.
11. ALL PLANTS WILL BE MOVED WITH ROOT SYSTEMS AS SOLID UNITS AND WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. NO PLANT WILL BE ACCEPTED WHEN BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN BEFORE PLANTING. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE WILL BE HEELED-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL AND THEN WATERING. DURING TRANSPORT, ALL PLANT MATERIALS WILL BE WRAPPED WITH WIND PROOF COVERING.
12. NEWLY PLANTED MATERIAL WILL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL GRADE OF THE PLANT PRIOR TO DIGGING.
13. PROPOSED TREES OVERHANGING SIDEWALKS, ROADS OR PARKING WILL BEGIN BRANCHING NATURALLY (NOT PRUNED) AT 6' HEIGHT.
14. MULCH FOR PLANTED AREAS (NOT INCLUDING RAIN GARDENS) WILL BE AGED SHREDDED PINE BARK, PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS UNLESS OTHERWISE SHOWN.
15. PLANT MATERIAL WILL BE LOCATED OUTSIDE BUILDING DRIPLINES AND ROOF VALLEY POINTS OF CONCENTRATION TO PREVENT DAMAGE TO PLANTS. CLARIFY DISCREPANCIES WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
16. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED, WILL RECEIVE SIX (6) INCH LOAM AND SEED AT THE DIRECTION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
17. ALL PLANT GROUPINGS WILL BE IN MULCH BEDS UNLESS OTHERWISE SPECIFIED OR NOTED ON PLANS. WHERE MULCHED PLANT BED ABUTS LAWN, PROVIDE TURF CUT EDGE.

LANDSCAPE GUARANTEE AND MAINTENANCE NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR ALL MEANS, METHODS AND TECHNIQUES OF WATERING.
2. CONTRACTOR WILL BEGIN WATERING IMMEDIATELY AFTER PLANTING. ALL PLANTS WILL BE THOROUGHLY WATERED TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS WILL BE WATERED WEEKLY, OR MORE OFTEN, IF NECESSARY DURING THE FIRST GROWING SEASON BUT NOT LESS THAN ONE YEAR.
3. WATER ALL LAWNS AS REQUIRED. DO NOT LET NEWLY PLANTED LAWNS DRY OUT DURING THE FIRST FOUR WEEKS MINIMUM.
4. ALL NEW LAWNS WILL BE MAINTAINED AND MOWED A MINIMUM THREE (3) TIMES BEFORE REQUESTING REVIEW BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE FOR ACCEPTANCE. MAINTENANCE AND MOWING WILL CONTINUE UNTIL ACCEPTED BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE IS ISSUED IN WRITING.
5. THE CONTRACTOR WILL MAINTAIN AND GUARANTEE ALL PLANTINGS TO BE IN GOOD HEALTHY, FLOURISHING AND ACCEPTABLE CONDITION FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF ACCEPTANCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. ALL GRASSES, TREES AND SHRUBS THAT, IN THE OPINION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHOWING LESS THAN 80% HEALTHY GROWTH AT THE END OF ONE (1) YEAR PERIOD WILL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.
6. DECIDUOUS PLANT MATERIAL INSTALLED AFTER SEPTEMBER 30 AND BEFORE APRIL 15 WILL NOT BE REVIEWED THAT SEASON FOR ACCEPTANCE DUE TO STAGE OF LEAF PHYSIOLOGY. THIS PLANT MATERIAL WILL NOT BE REVIEWED UNTIL FOLLOWING GROWING SEASON. GUARANTEE PERIOD WILL BEGIN ONLY AFTER ACCEPTANCE BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE.
7. EVERGREEN PLANT MATERIAL INSTALLED AFTER OCTOBER 30 AND BEFORE APRIL 15 WILL NOT BE REVIEWED THAT SEASON FOR ACCEPTANCE DUE TO END OF GROWTH SEASON. THIS PLANT MATERIAL WILL NOT BE REVIEWED UNTIL FOLLOWING GROWING SEASON. GUARANTEE PERIOD WILL BEGIN ONLY AFTER ACCEPTANCE BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE.

SEEDING NOTES

1. GENERAL SEED WILL BE NHDOT SPECIFICATION SECTION 644, TABLE 644-1-PARK SEED TYPE 15, INCLUDING NOTES TO TABLE 1, 2 & 3.
2. SLOPES STEEPER THAN 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA. SEE CIVIL FOR ADDITIONAL EROSION CONTROL MEASURES.
3. THE NEW ENGLAND CONSERVATION/WILDLIFE MIX FROM NEW ENGLAND WETLAND PLANTS, INC OR EQUIVALENT (SEE SHEET C-17, FOR LOCATION.) APPLICATION RATE OF 25LBS/ACRE (1,750 SQ FT/LB). SPECIES INCLUDED ARE: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
4. THE NEW ENGLAND WETMIX (WETLAND SEED MIX) FROM NEW ENGLAND WETLAND PLANTS, INC OR EQUIVALENT, SHALL BE APPLIED TO ALL AREAS OF THE SITE WHERE THE DISTURBANCE OCCURS WITHIN 25' OF WETLAND, EXCEPT WHERE NEW ENGLAND CONSERVATION MIX IS SPECIFIED (SEE SHEET C-17). APPLICATION RATE OF 25LBS/ACRE (1,750 SQ FT/LB). SPECIES INCLUDED ARE: FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRIS), HOP SEDGE (CAREX LUPULINA), GREEN BULRUSH (SCIRPUS ATROVIRENS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEFLAG (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), SQUARE STEMMED MONKEY FLOWER (MIMULUS RINGENS)

HYDROSEEDING NOTES

1. HYDROSEEDING MAY BE USED AS AN ALTERNATE METHOD OF SEEDING. THE APPLICATION OF LIMESTONE AS NECESSARY, FERTILIZER AND GRASS SEED MAY BE ACCOMPLISHED IN ONE OPERATION BY THE USE OF A SPRAYING MACHINE APPROVED BY THE LANDSCAPE ARCHITECT OR CIVIL ENGINEER. THE MATERIALS SHALL BE MIXED WITH WATER IN THE MACHINE AND SHALL CONFORM TO RELATIVE REQUIREMENTS OF SECTION 644 OF NH. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. (FOR MASSACHUSETTS PROJECTS PLUG IN – SECTION 765.65 OF MASS. DPW CURRENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES).

INVASIVE PLANT NOTES

1. EXISTING NON-NATIVE, INVASIVE PLANT SPECIES WILL BE IDENTIFIED, REMOVED, DESTROYED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE LATEST UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION METHODS OF DISPOSING NON-NATIVE INVASIVE PLANTS. SEE "MANAGE AND CONTROL INVASIVES" AND PROPERLY DISPOSE OF INVASIVE PLANTS".

PRICING & CONSTRUCTION DOCUMENT NOTES

1. CONTRACTOR WILL PRICE PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE PLANTINGS GRAPHICALLY SHOWN ON THESE DRAWINGS OR IN PLANT LIST, WHICHEVER IS GREATER. IN CASES OF DISCREPANCY BETWEEN PLAN AND LIST CLARIFY WITH LANDSCAPE ARCHITECT PRIOR TO PLACING PURCHASE ORDER AND AGAIN PRIOR TO PLANTING.
2. CONTRACTOR WILL VERIFY PRIOR TO PRICING IF SITE SOILS ARE VERY POORLY DRAINING OR IF LEDGE IS PRESENT. IF CONTRACTOR ENCOUNTERS VERY POORLY DRAINING SOILS (BATH TUB EFFECT) OR LEDGE THAT IMPACTS PROPOSED PLANTING PLAN, NOTIFY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE FOR DIRECTION PRIOR TO PRICING AND AGAIN PRIOR TO PERFORMING ANY WORK.
3. CONTRACTOR WILL STAKE OR PLACE ON GROUND ALL PROPOSED PLANT MATERIALS PER PLAN. CONTACT LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
4. COORDINATE WITH LANDSCAPE ARCHITECT'S CONTRACTED NUMBER OF SITE VISITS WHEN PLANNING FOR INSPECTION. NOTIFY LANDSCAPE ARCHITECT 72 HOURS MINIMUM IN ADVANCE OF REQUESTED SITE VISIT.
5. CONTRACTOR WILL DEVELOP A WRITTEN WATERING SCHEDULE AND WILL SUBMIT WATERING SCHEDULE TO OWNERS' REPRESENTATIVE. CONTRACTOR WILL WATER ALL NEW PLANTS INCLUDING LAWNS THAT ARE NOT "IRRIGATED" VIA A PERMANENT IRRIGATION SYSTEM FOR THE FIRST 12 MONTHS.

PORTSMOUTH NOTES

1. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNER'S WILL BE RESPONSIBLE FOR THE MAINTENANCE AND OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS INDICATED ON THESE PLANS.
2. ALL REQUIRED PLANT MATERIAL SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY.
3. ALL REQUIRED FENCES AND WALLS WILL BE MAINTAINED IN GOOD REPAIR.
4. THE PROPERTY OWNER WILL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.
5. ALL IMPROVEMENTS SHOWN ON THIS PLAN WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THIS PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES WILL BE MADE TO THIS PLAN WITHOUT THE WRITTEN APPROVAL OF THE PORTSMOUTH PLANNING BOARD OR PLANNING DIRECTOR.
6. THE LANDSCAPE PLAN WILL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
7. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
8. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=200'(11"x17")

SCALE: 1"=100'(22"x34") **APRIL 19, 2021**

HORIZONTAL SCALE 1"=100'
100 50 0 100

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1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

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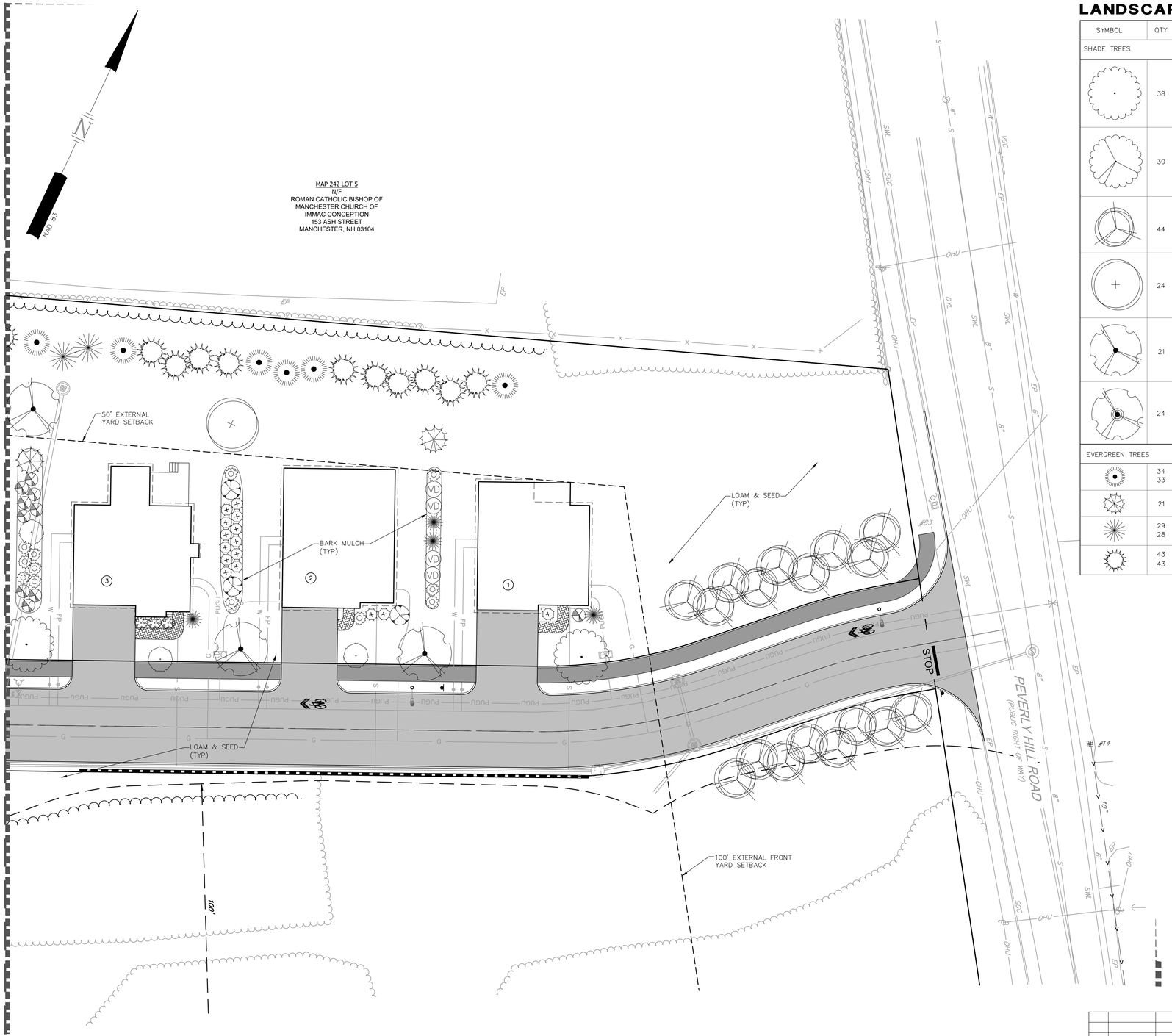

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
SHADE TREES				
	38	ACER RUBRUM 'OCTOBER GLORY' **OCTOBER GLORY RED MAPLE	3" TO 3 1/2" CAL.	B&B
	30	ACER SACCHARUM 'COMMEMORATION' **COMMEMORATION SUGAR MAPLE	3" TO 3 1/2" CAL.	B&B
	44	BETULA N. 'HERITAGE' *RIVER BIRCH	12' TO 14' CLUMP	B&B
	24	NYSSA SYLVATICA *BLACK GUM	2 1/2 TO 3" CAL.	B&B
	21	QUERCUS ALBA *WHITE OAK	3" TO 3 1/2" CAL.	B&B
	24	PLATANUS X A. 'EXCLAMATION' EXCLAMATION PLANETREE	3" TO 3 1/2" CAL.	B&B
EVERGREEN TREES				
	34 33	ABIES BALSAMAE *BALSAM FIR	6' TO 7' 7' TO 8'	B&B
	21	JUNIPERUS VIRGINIANA *EASTERN RED CEDAR	6' TO 7'	B&B
	29 28	PICEA GLAUCA *WHITE SPRUCE	6' TO 7' 7' TO 8'	B&B
	43 43	PINUS STROBUS *WHITE PINE	5' TO 6' 6' TO 7'	B&B

SMALL/FLOWERING TREES				
	45	CRATAEGUS CRUSGALLI INERMIS **THORNLESS COCKSPUR HAWTHORN	2" TO 2 1/2" CAL.	B&B
	23	PRUNUS VIRGINIANA 'SCHUBERT' *CANADA RED CHERRY	2" TO 2 1/2" CAL.	B&B
DECIDUOUS SHRUB				
	53	AMELANCHEIR CANADENSIS *SHADBLOW SERVICEBERRY	5' TO 6' CLUMP	B&B
	86	CLETHRA ALNIFOLIA 'COMPACTA' **COMPACT SUMMERSWEET	7 GAL.	CONT.
	50	CORNUS SERICEA 'ALLEMAN'S COMPACTA' **ALLEMAN'S COMPACT RED-OSIER DOGWOOD	3' TO 4'	CONT.
VD	42	VIBURNUM DENTATUM *ARROWWOOD VIBURNUM	4' TO 5'	B&B
VT	18	VIBURNUM TRILOBUM *AMERICAN CRANBERRY VIBURNUM	4' TO 5'	B&B
EVERGREEN SHRUB				
	145	ILEX GLABRA 'COMPACTA' **COMPACT INKBERRY	3 GAL.	CONT.
	160	JUNIPERUS C. 'PFITZERIANA COMPACTA' COMPACT PFITZER JUNIPER	3 GAL.	CONT.
	155	THUJA O. NIGRA *DARK AMERICAN ARBORVITAE	5' TO 6'	B&B

*NATIVE
** IMPROVED NATIVE

NOTES

1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
3. PLANT TYPES MAY VARY BASED ON AVAILABILITY AND SUPPLY. THIS LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY AND REPRESENTS THE INTENT, BUT PLANT SIZES, SPECIES, AND AMOUNTS MAY VARY.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40'

SCALE: 1"=20' **APRIL 19, 2021**

HORIZONTAL SCALE 1"=20'
20 10 0 20

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MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MATCHLINE SEE SHEET - C-48

MATCHLINE SEE SHEET - C-46

MATCHLINE SEE SHEET - C-50

LOAM & SEED (TYP)

BARK MULCH (TYP)

STOP

100'

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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47388.11	CK	JJM	CADFILE	47388-11_LANDSCAPE	

Jun 23, 2021 - 3:37pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Landscape.dwg

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40'

SCALE: 1"=20' **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_LANDSCAPE	C-48

Jun 23, 2021 - 3:37pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Landscape.dwg

MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

LOAM & SEED (TYP)

LOAM & SEED (TYP)

BARK MULCH (TYP)

LOAM & SEED (TYP)

BARK MULCH (TYP)

LOAM & SEED (TYP)

MATCHLINE SEE SHEET - C-52

MATCHLINE SEE SHEET - C-48

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_LANDSCAPE	C-49

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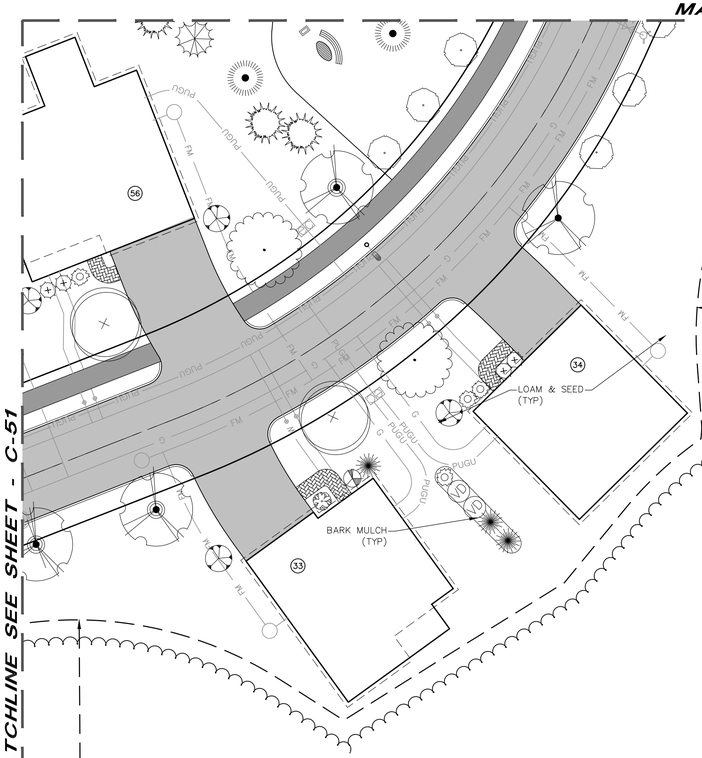
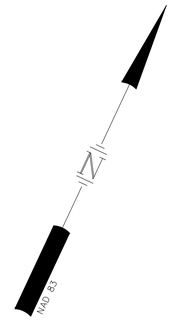
MATCHLINE SEE SHEET - C-47

MATCHLINE SEE SHEET - C-51





HORIZONTAL SCALE 1"=20'
20 10 0 20

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SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

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1"=40'

SCALE: 1"=20' **APRIL 19, 2021**

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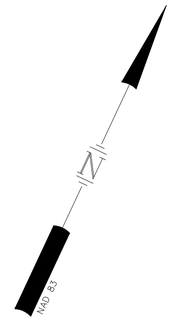
FILE	47388.11	DR	JSM	FB	–	C-50
		CK	JJM	CADFILE	47388-11_LANDSCAPE	

Jun 23, 2021 - 3:37pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Landscape.dwg

MATCHLINE SEE SHEET - C-48

MATCHLINE SEE SHEET - C-52

MATCHLINE SEE SHEET - C-50



HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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FILE	47388.11	DR	JSM	FB	–	C-51
		CK	JJM	CADFILE	47388-11_LANDSCAPE	

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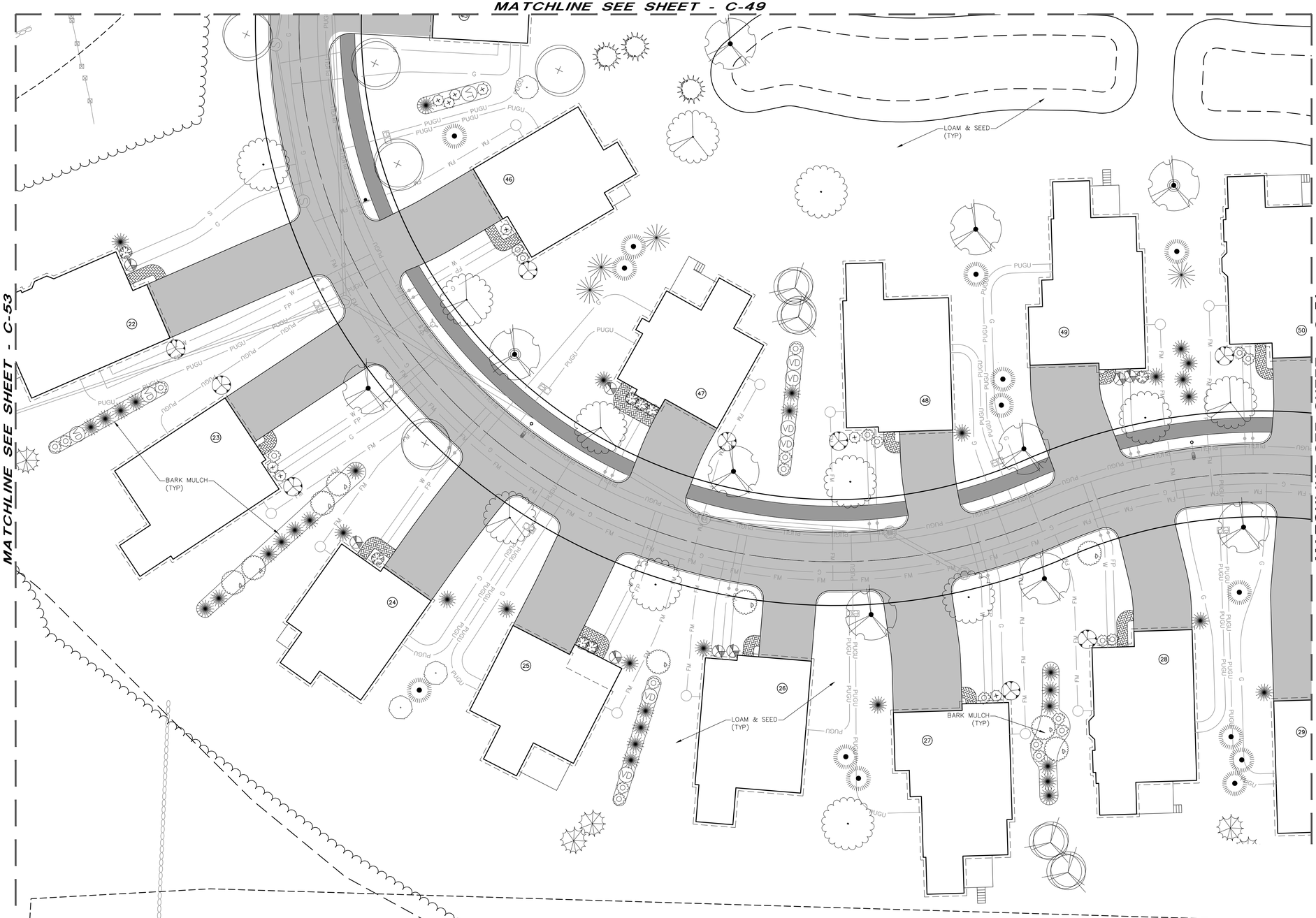
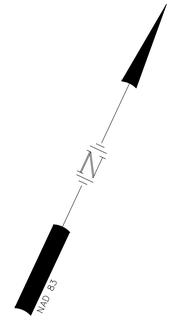
MATCHLINE SEE SHEET - C-49

MATCHLINE SEE SHEET - C-53

MATCHLINE SEE SHEET - C-51





SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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699.69'
S66°43'10"W

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1423
PORTSMOUTH, NH 03802
BCRD BK 4236 PG 40662

HORIZONTAL SCALE 1"=20'
20 10 0 20

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FILE		DR	JSM	FB	–	
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Jun 23, 2021 - 3:37pm
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MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH &
GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739

MATCHLINE SEE SHEET - C-54

MATCHLINE SEE SHEET - C-52

LOAM & SEED (TYP)

LOAM & SEED (TYP)

100'

100'

22

23

24

PUGU

S

G

W

FP

FM

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

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FILE	47388.11	DR	JSM	FB	–	C-53
		CK	JJM	CADFILE	47388-11_LANDSCAPE	

Jun 23, 2021 - 3:37pm
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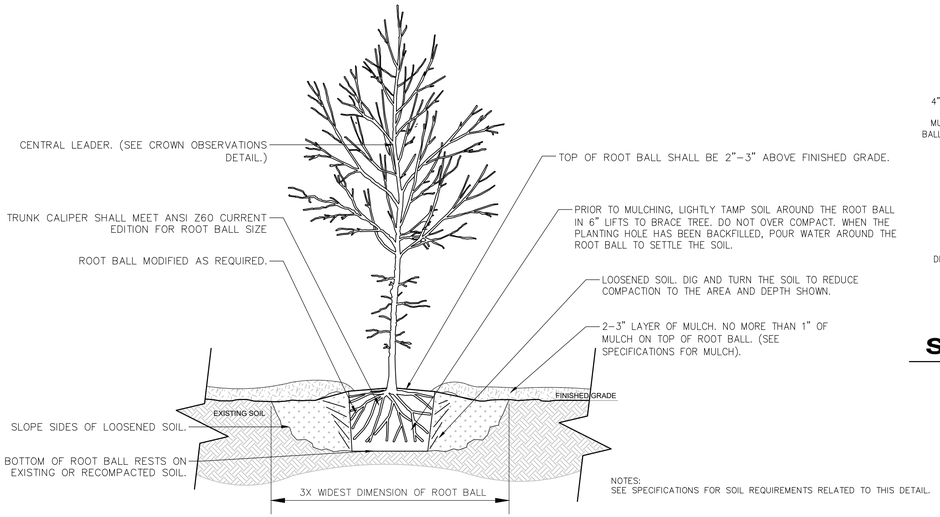
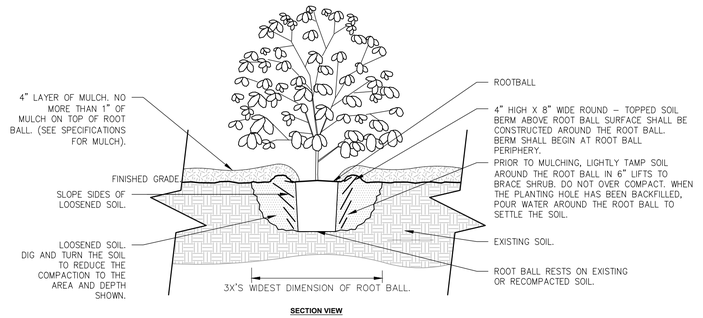


TREE WITH BERM

NOT TO SCALE

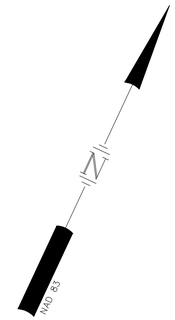


SHRUB PLANTING

NOT TO SCALE

TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LANDSCAPE PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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HORIZONTAL SCALE 1"=20'
20 10 0 20

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FILE		DR	JSM	FB	–	
	47388.11	CK	JJM	CADFILE	47388–11_LANDSCAPE	C–54

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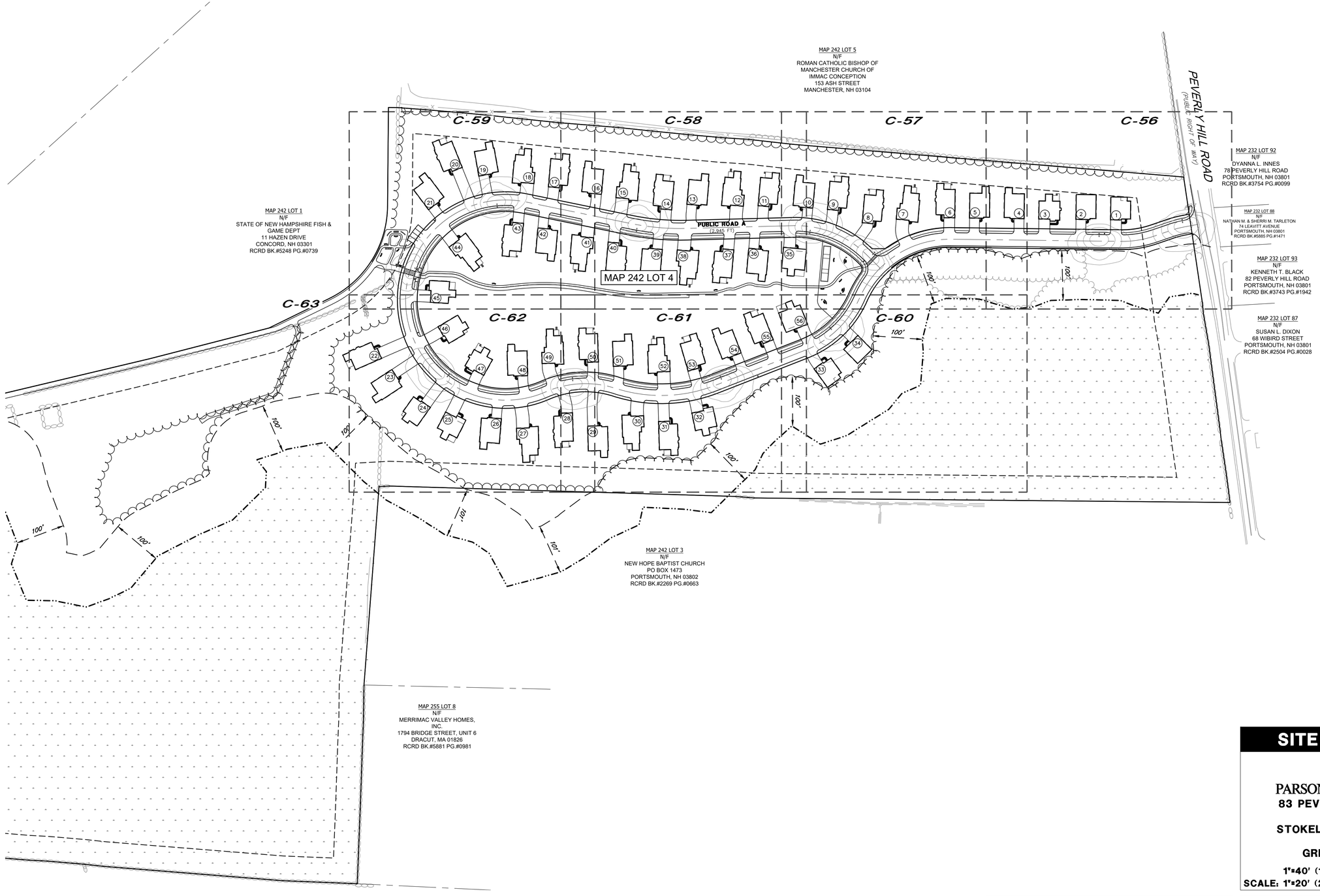

NOTES

1. SEE SHEET C-63 FOR LIGHTING DETAILS.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

OVERALL LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

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1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

HORIZONTAL SCALE 1"=100'

100 50 0 100

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FILE	DR	FB		
47388.11	JSM	–		C-55
	CK	CADFILE	47388-11_LIGHTING	
	JJM			

MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

MAP 232 LOT 92
N/F
DYANNA L. INNES
78 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
RCRD BK.#3754 PG.#0099

MAP 232 LOT 88
N/F
NATHAN M. & SHERRI M. TAR
74 LEAVITT AVENUE
PORTSMOUTH, NH 0380
RCRD BK.#5885 PG.#14

MATCHLINE SEE SHEET - C-57

PEVERLY HILL ROAD
(PUBLIC RIGHT OF WAY)

NAD 83

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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FILE	DR	JSM	FB	–	C-56
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	

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MAP 242 LOT 5
N/F
ROMAN CATHOLIC BISHOP OF
MANCHESTER CHURCH OF
IMMAC CONCEPTION
153 ASH STREET
MANCHESTER, NH 03104

NAD 83

MATCHLINE SEE SHEET - C-58

MATCHLINE SEE SHEET - C-56

MATCHLINE SEE SHEET - C-60

HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

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APRIL 19, 2021

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FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	C-57

Jun 23, 2021 - 2:24pm
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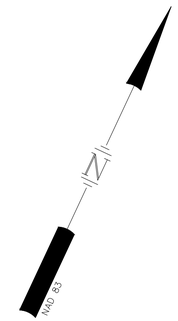

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

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SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

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HORIZONTAL SCALE 1"=20'
20 10 0 20

MATCHLINE SEE SHEET - C-61

REV.	DATE	DESCRIPTION	DR	CK
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FILE	DR	JSM	FB	–	C-58
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	

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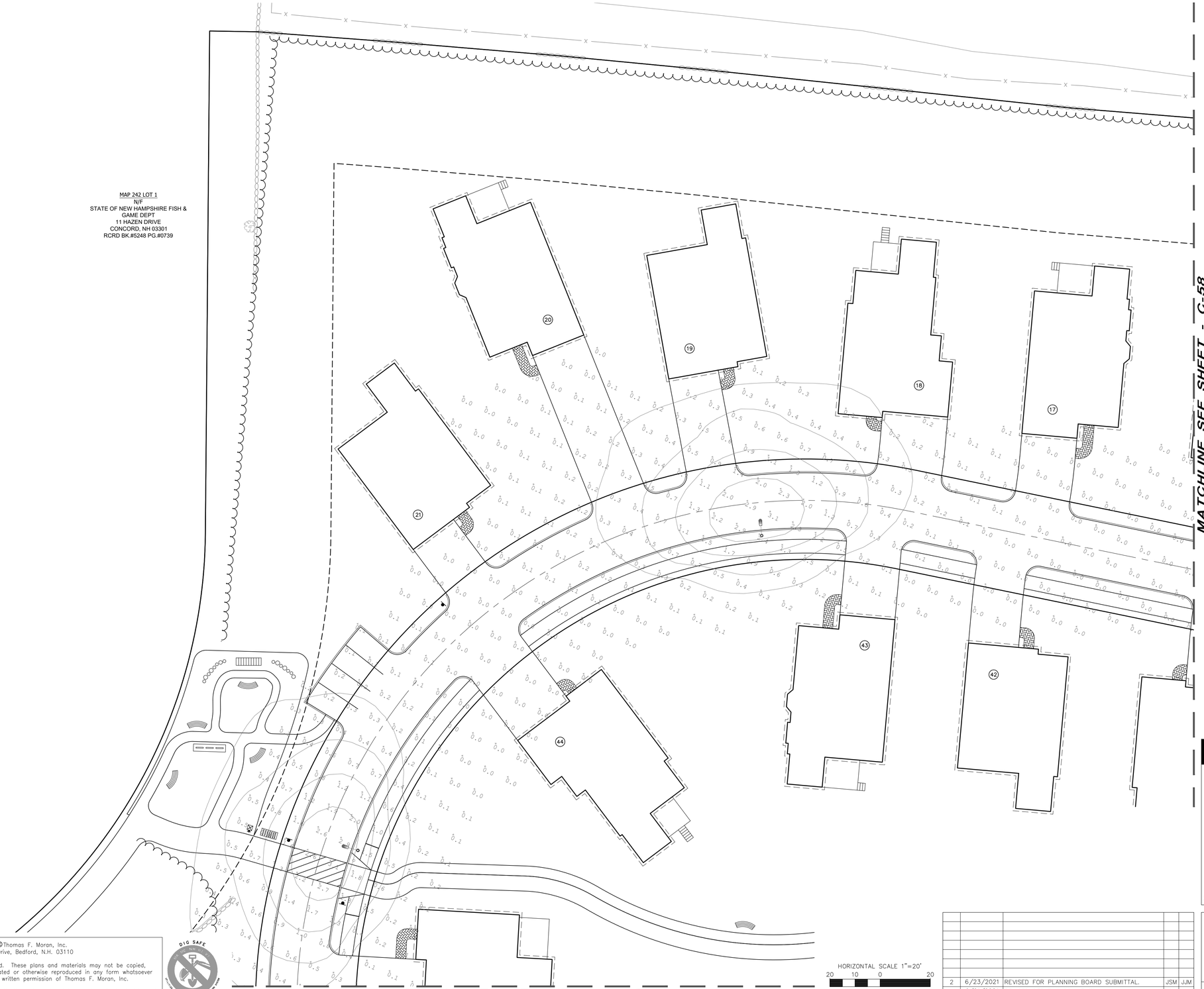
MAP 242 LOT 1
N/F
STATE OF NEW HAMPSHIRE FISH & GAME DEPT
11 HAZEN DRIVE
CONCORD, NH 03301
RCRD BK.#5248 PG.#0739



MATCHLINE SEE SHEET - C-58

MATCHLINE SEE SHEET - C-62

HORIZONTAL SCALE 1"=20'
20 10 0 20

NAD 83

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

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FILE	DR	JSM	FB	–	C-59
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	

Jun 23, 2021 - 2:24pm
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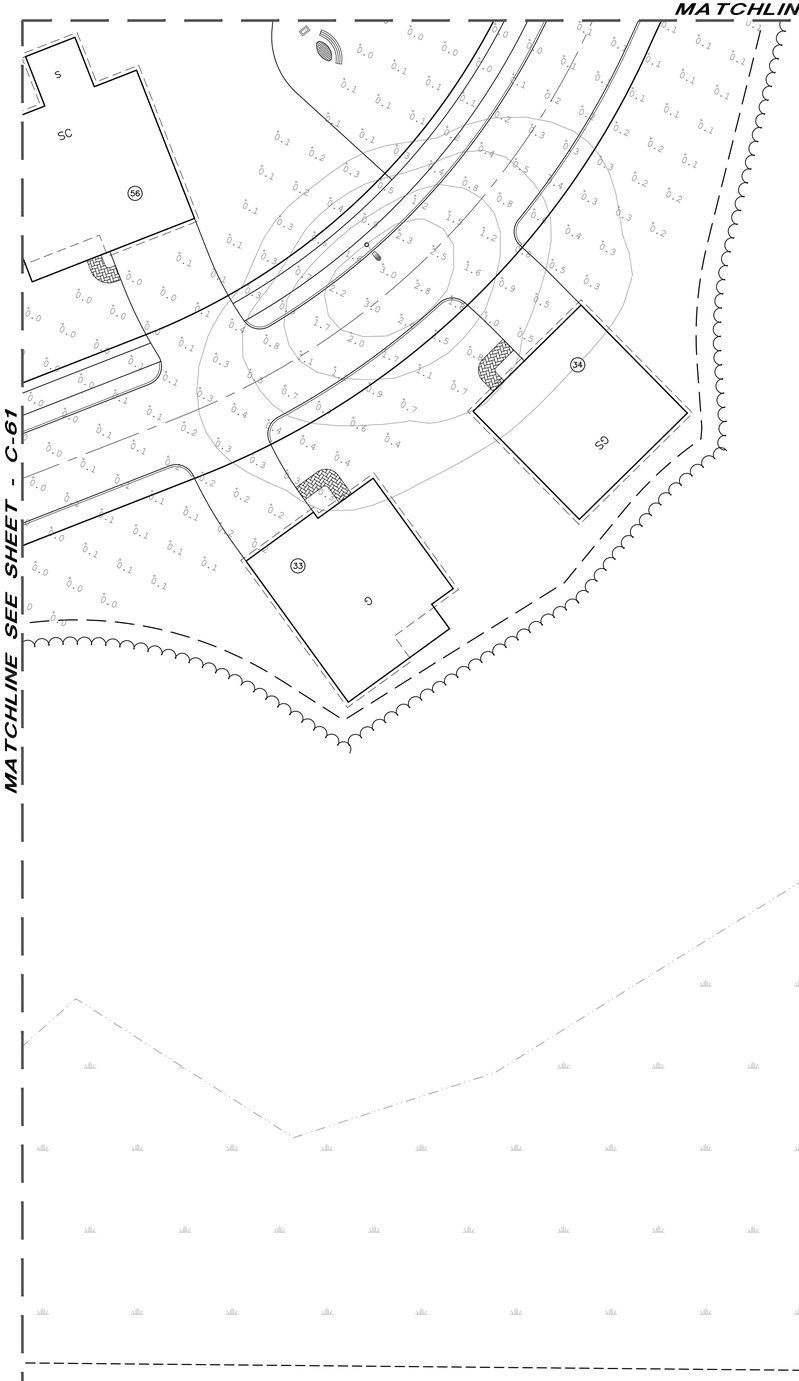
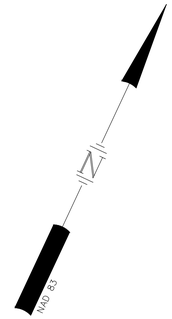
MATCHLINE SEE SHEET - C-57

MATCHLINE SEE SHEET - C-61





HORIZONTAL SCALE 1"=20'
20 10 0 20

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

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Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

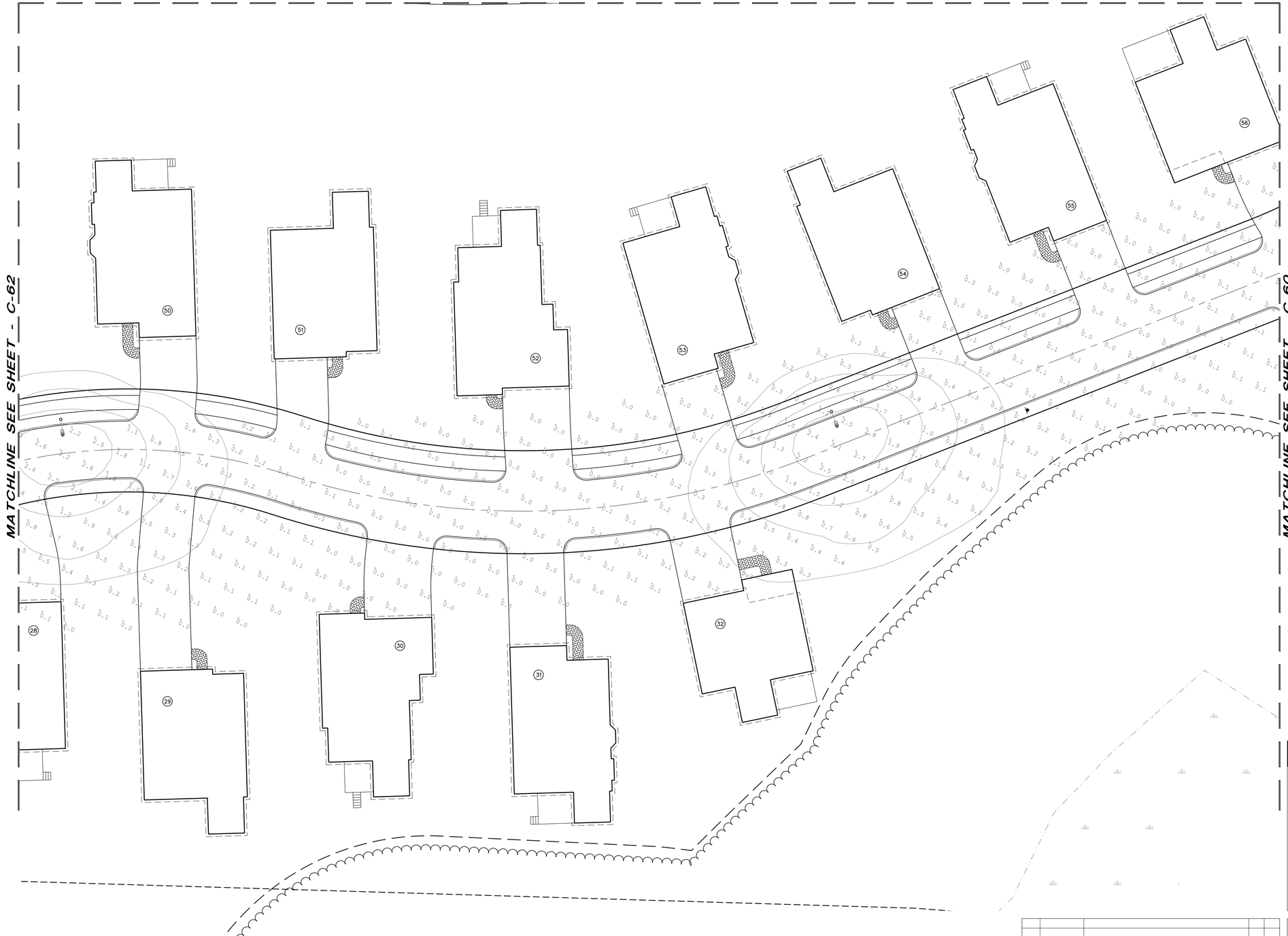
FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	C-60

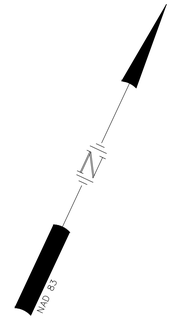
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

MATCHLINE SEE SHEET - C-58

MATCHLINE SEE SHEET - C-62

MATCHLINE SEE SHEET - C-60





SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34")

APRIL 19, 2021

HORIZONTAL SCALE 1"=20'

20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

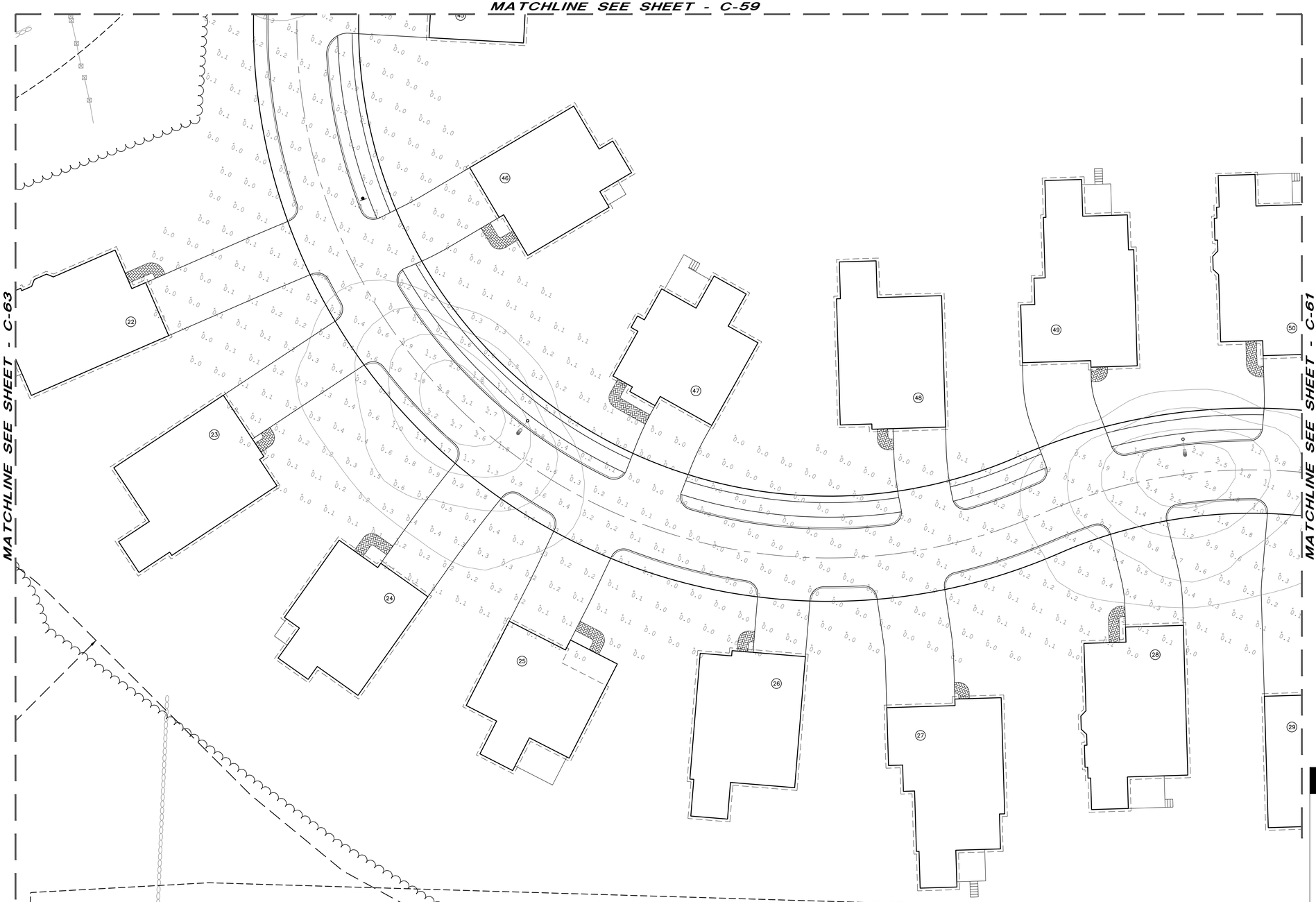
FILE	47388.11	DR	JSM	FB	–	C-61
		CK	JJM	CADFILE	47388-11_LIGHTING	

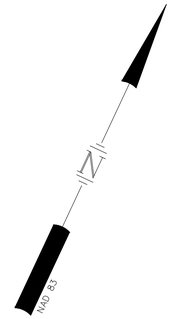
Jun 23, 2021 - 2:24pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Lighting.dwg

MATCHLINE SEE SHEET - C-59

MATCHLINE SEE SHEET - C-63

MATCHLINE SEE SHEET - C-61





SITE DEVELOPMENT PLANS

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APRIL 19, 2021

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

MAP 242 LOT 3
N/F
NEW HOPE BAPTIST CHURCH
PO BOX 1423
PORTSMOUTH, NH 03802
BOOK 6139 PG 2663

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
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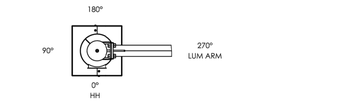
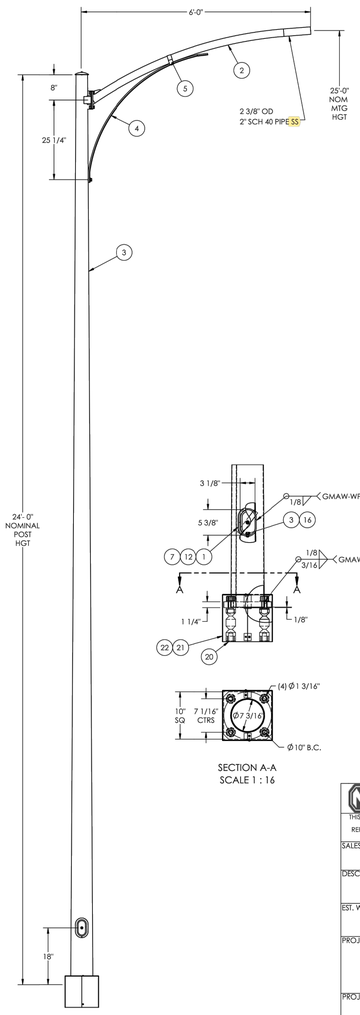
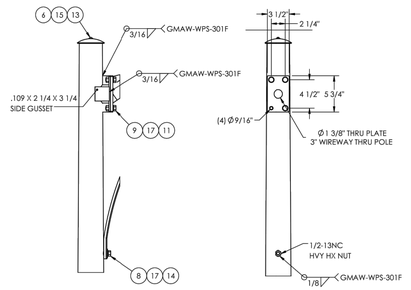
FILE	DR	JSM	FB	–	C-62
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	

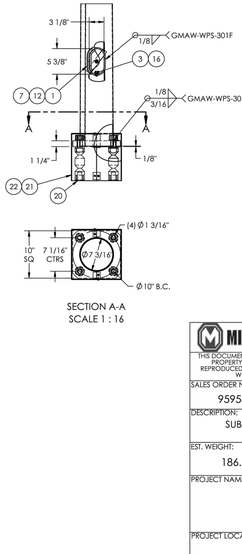
Jun 23, 2021 - 2:24pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Lighting.dwg

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	ADDED TRANSPO SKIRTS & COUPLINGS	8/31/2020	RK
B	WIND SPEED AS 90 MPH	9/15/2020	RK
C	REPLACED TRANSPO SKIRT WITH FULL BASE COVER; QTY WAS 2	11/2/2020	RK









SECTION A-A
SCALE 1 : 16

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1022512	M15 SS HH COVER	1		X
2	1045144	6' "SN" MASTARM	1		X
3	1045145	WLDMT POLE LIGHT RD .0721X24'0 (.0721X7.0)X(3.64X240)	1		X
4	40A191	SCROLL BRACE (SS)	1		X
5	40A778	SCROLL BRACE CLAMP wSet Screws	1		X
6	8801429-4.0	CAP CAP FITS 3.25 - 3.75 POLE DIA	1		X
7	9900037	LATCH FOR M15 (3" X 5")	1		
8	BOLTA1/2-13X5/8A	BOLTA1-2-13X5-8ABOLT HX HD 1-1-13NC X 5-8 F593C SS	1		
9	BOLTA1/2-13X1-1/4A	BOLT HX HD 1/2-13NC X 1-1/4 F593C SS	4		
10	BOLTA3/8-16X3/4A	BOLT HX HD 3-8-16NC X 3-4 F593C SS	1	X	
11	NUTHX1/2-13SS	NUT HX 1-2-13NC SS	4		
12	SCRWA5/16-18X2"SS	SCRWA HX SK FL HD 5-16-18NC X 2 SS	1		
13	SCRWN1/4-20X3"SS	SCRWSLTDRHDMACH 1-4-20NCX3 ASME B18.6.3 SS	1		
14	WASHFLAT1/2SS-003	WASHER FLAT 1/2 SS 1-3/8"OD(1.1TK)	1		
15	WASHFLAT1/4SS	WASHER FLAT 1/4 SS 5/8 OD ASME B18.22.1 SS	1		
16	WASHFLAT3/8BRASS-001	WASHFLAT3-8BRASS-001	2	X	
17	WASHLOCK1/2SS	WASHER LOCK 1/2 SS	5		
18	PT-1-17-FTU-017-FR	FIN COAT SEMI-GLOSS BLACK FREDA	REF		
19	PT-5-17-FTU-017-FR	FIN COAT SEMI-GLOSS BLACK FREDA	1		
20	TRANSPO 4100 W-HARDWARE	TRANSPO 4100 W/HRDWR NUT, 3 FLWSHRS (SET OF 4)	4		
21	1048574-2	BASE COVER WELDMENT	2		X
22	SCRWN#10-32X1/2SS	SCRW SLTDRDHDMACH #10-32NC X 1-2 SS	4		

MATERIAL SPECIFICATIONS

POST: ASTM A24 (TYPE 2011) GR 50
BASE PLATE: ASTM A240 (TYPE 304L) 25 PSI
MAST ARM:
MOUNTING PLATE:
LUMINAIRE ARM: ASTM A312 (TYPE 304L) 35,000 PSI
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: ASTM F1554 GR 55 *SIZE:* 1"

DESIGN CRITERIA

2013 AASHTO *STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.*

WINDS: 110 MPH *VORTEX SHED:* N/A
FATIGUE CAT: N/A *GALLOPING:* N/A
NATURAL WIND GUST: N/A *TRUCK GUST:* N/A

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.

WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (C.J.P.) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (P.J.P.) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT:
FINISH COAT: PAINT SEMI-GLOSS BLACK
COLOR: PT-1-17-FTU-017-FR
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.:
WEIGHT W/GALV.&PAINT:
WEIGHT W/PAINT: 157.0
SURFACE AREA: 12766.6
GAL. OF PAINT: 0.491023

MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395

SALES ORDER NO.:	QTY:	STATE:	SHEET
95953	3	NH	1 OF 1

DESCRIPTION:
SUB POLE LIGHT RD .0721X24'0/25'0
6' LUM

EST. WEIGHT:	DRAWING NO:
186.1	95953-1

PROJECT NAME:
CATE STREET RELOCATION
PORTSMOUTH, NH

PROJECT LOCATION:
NH

DWN BY: REBEKAH	DATE: 6/3/2020
CHK BY:	DATE:

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	Lum. Lumens
———	11	T3	SINGLE	GCM2-30H-MV-WW-3R-BK-850-PCR7-CR-CF-PTB-LLPC/ 24' MILLERBERND POLE	13283

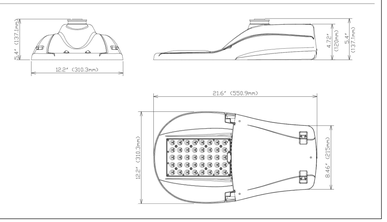
StatArea_1
ROADWAY
Illuminance (Fc)
Average = 0.61
Maximum = 3.2
Minimum = 0.0
Avg/Min Ratio = N.A.
Max/Min Ratio = N.A.

LEOTEK LITE-ON GROUP

GreenCobra™ Midsize LED Street Light
GCM H-Series Specification Data Sheet

Luminaire Data

Weight 10 lbs [4.6 kg]
EPA 0.44 ft²



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

LIGHTING PLAN

PARSON WOODS CONDOMINIUM LLC
83 PEVERLY HILL ROAD, PORTSMOUTH, NH
OWNED BY
STOKEL SB & NA TRUST, PHILIP J 25% INT
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: NTS **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
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1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
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Structural Engineers
Traffic Engineers
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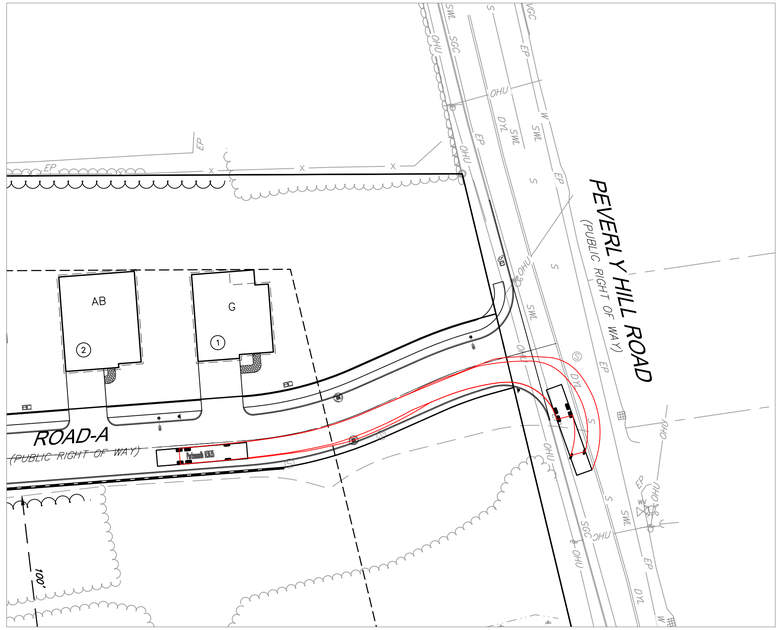
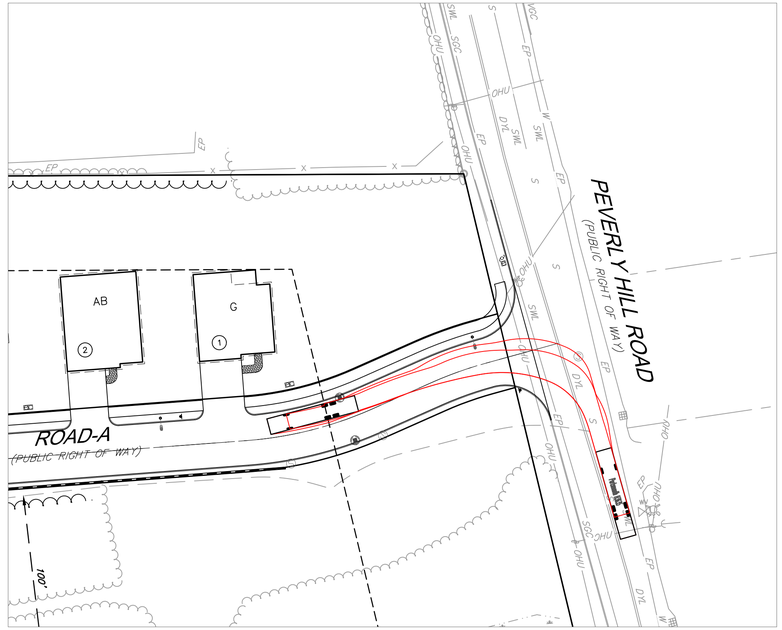
PROJECT	DR	JSM	FB	–	SHEET
47388.11	CK	JJM	CADFILE	47388-11_LIGHTING	C-63

DIG SAFE SAFE EXCAVATION REQUIRES MARKED LOCATIONS CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

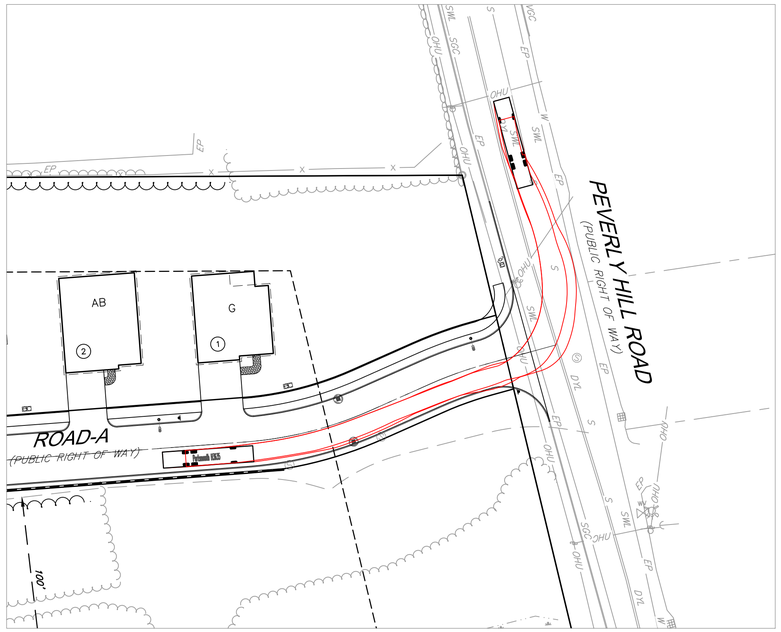
Jun 23, 2021 - 2:24pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_Lighting.dwg



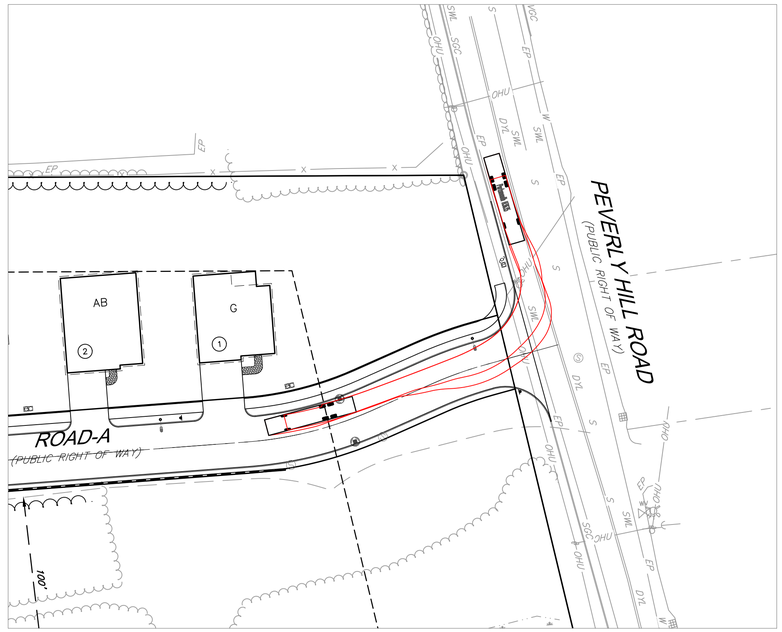
FIRE TUCK TURNING FROM ROAD-A SOUTHEAST ONTO PEVERLY HILL ROAD



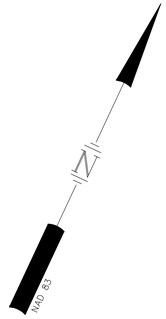
FIRE TUCK TURNING FROM PEVERLY HILL ROAD NORTHWEST ONTO ROAD-A



FIRE TUCK TURNING FROM ROAD-A NORTHEAST ONTO PEVERLY HILL ROAD



FIRE TUCK TURNING FROM ROAD-A SOUTHWEST ONTO PEVERLY HILL ROAD



PORTSMOUTH FIRE TRUCK
NTS

DIG SAFE
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HORIZONTAL SCALE 1"=40'
40 20 0 40

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STATE OF NEW HAMPSHIRE
JOHN J. McCAUSE
No. 14950
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

FIRE TRUCK MOVEMENT PLAN

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=80' (11"X17")
SCALE: 1"=40' (22"X34")

APRIL 19, 2021

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TFM
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Land Surveyors
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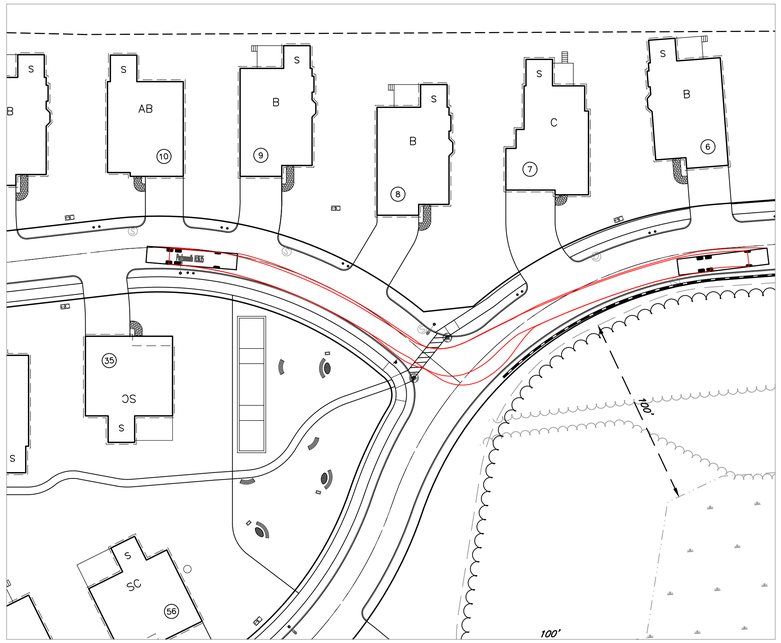
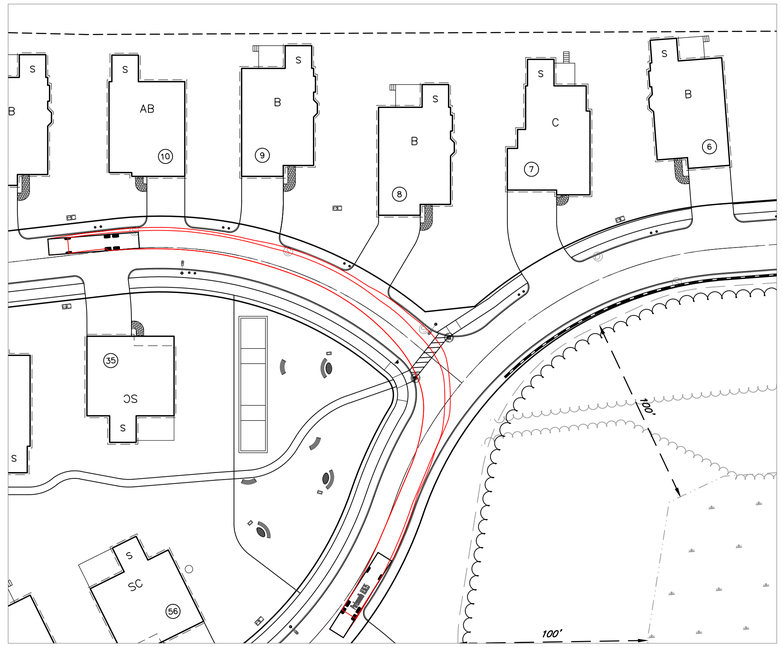
FILE	DR	JSM	FB	–	C-64
47388.11	CK	JJM	CADFILE	47388-11_TRUCKMOVEMENT	

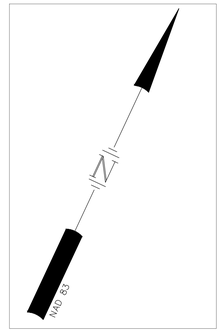
Jun 23, 2021 - 2:25pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_TruckMovement.dwg



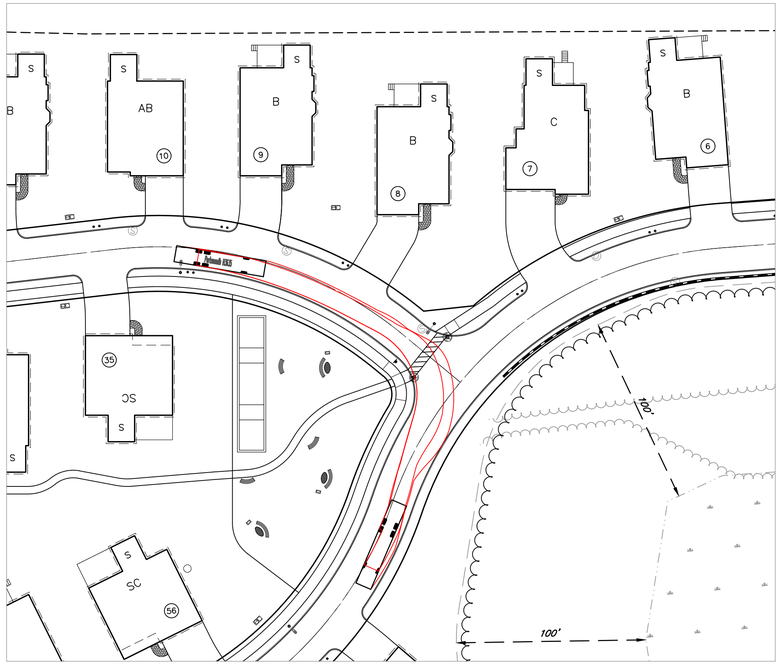
FIRE TUCK TURNING FROM ROAD-A SOUTHEAST ONTO ROAD-A



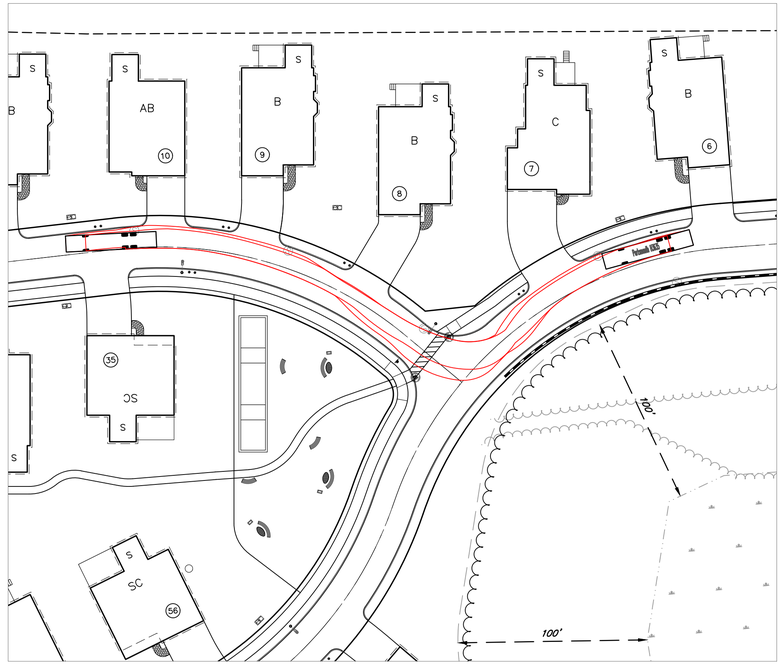
FIRE TUCK TURNING FROM ROAD-A NORTHWEST ONTO ROAD-A



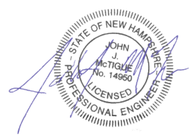
PORTSMOUTH FIRE TRUCK
NTS



FIRE TUCK TURNING FROM ROAD-A SOUTHWEST ONTO ROAD-A



FIRE TUCK TURNING FROM ROAD-A NORTHEAST ONTO ROAD-A



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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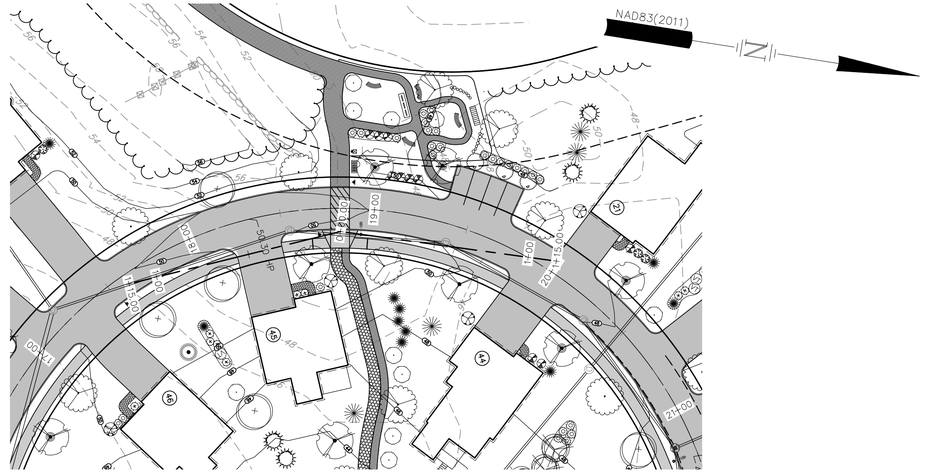
FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_TRUCKMOVEMENT	C-74

Jun 23, 2021 - 2:25pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_TruckMovement.dwg

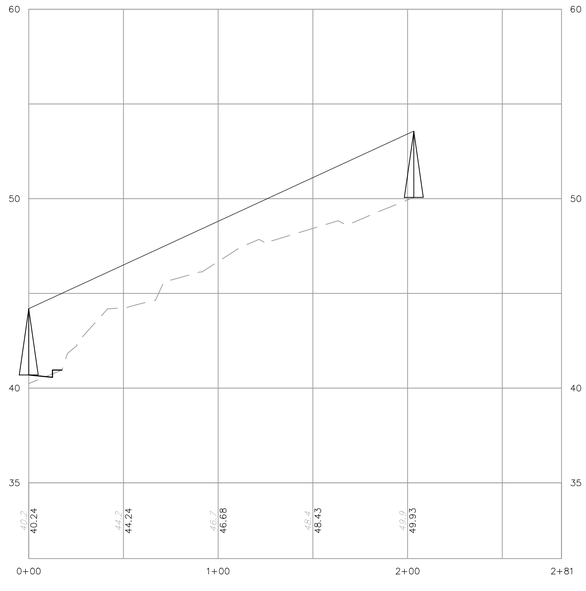
PEVERLY HILL ROAD INTERSECTION
SITE DISTANCE

HORIZONTAL SCALE 1"=40'
40 20 0 40

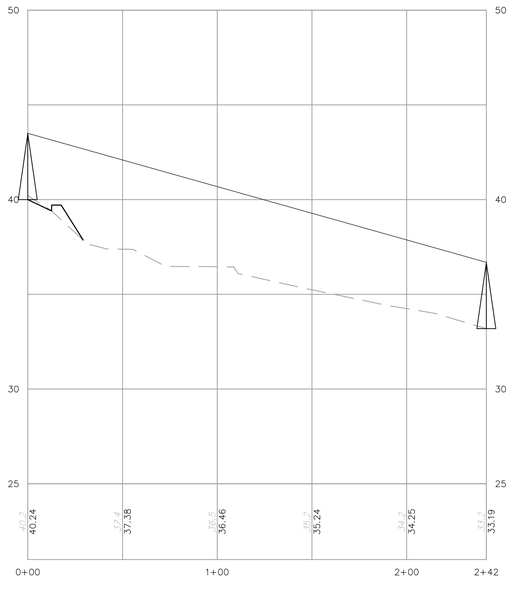


PEVERLY HILL ROAD INTERSECTION
SITE DISTANCE

HORIZONTAL SCALE 1"=40'
40 20 0 40

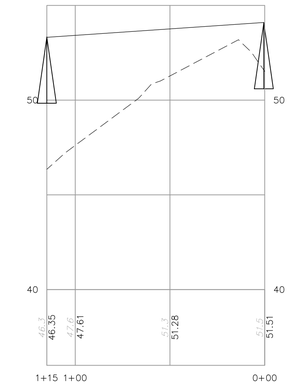


LOOKING LEFT (NORTH)
ONTO PEVERLY HILL ROAD

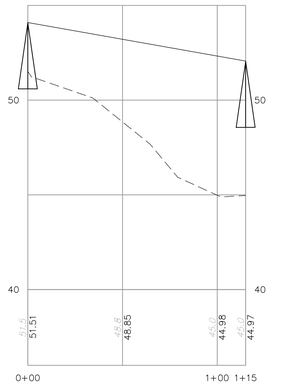


LOOKING RIGHT (SOUTH)
ONTO PEVERLY HILL ROAD

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4



FROM CROSSWALK, LOOKING LEFT



FROM CROSSWALK, LOOKING RIGHT

HORIZONTAL SCALE 1"=40'
40 20 0 40
VERTICAL SCALE 1"=4'
4 0 4

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

SITE DISTANCE PLAN & PROFILE

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

(11"X17")

SCALE: AS SHOWN (24"X34") **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388-11_SITEDISTANCE	C-66

DIG SAFE
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
JOHN J. MCTIGUE
No. 14950
LICENSED PROFESSIONAL ENGINEER

Jun 23, 2021 - 2:25pm
F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_SiteDistance.dwg

EASEMENTS AND RESTRICTIONS (E&R)

1. THE RIGHT TO USE SAID DRIVEWAY IN COMMON WITH PETER STOKEL AND HIS HEIRS FROM SAID GREENLAND ROAD, ALONG BY SAID CEMETERY, AND ALONG THE BOUNDARY BETWEEN THE LANDS OF SAID PETER AND STELLA TO SAID RAILROAD, AND SUBJECT TO SAID PETER'S RIGHT TO USE THE SAME IN COMMON. (SEE RCRD BK.#5066 PG.#1603).

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=50'
50 25 0 50

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED
PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

PEDESTRIAN & BIKE PATH

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=100'(11"X17")
SCALE: 1"=50' (22"X34")

APRIL 19, 2021

Seacoast Division
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Structural Engineers
Traffic Engineers
Land Surveyors
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FILE	DR	JSM	FB	–	C-67
47388.11	CK	JJM	CADFILE	47388-11_PATH	

Jun 23, 2021 - 3:41pm
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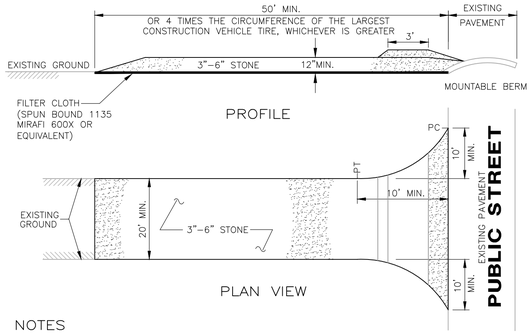
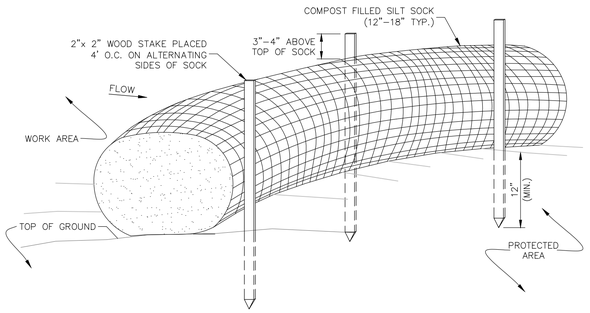


NOTES

1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

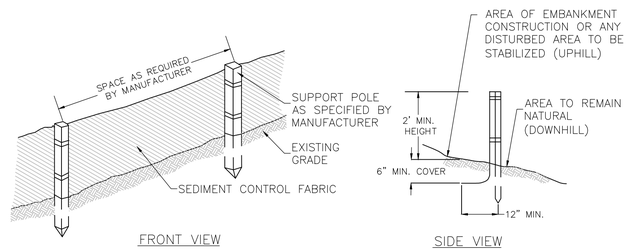


NOTES

1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT FENCE

NOT TO SCALE



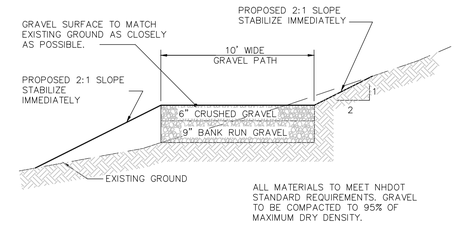
FRONT VIEW SIDE VIEW

NOTES

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR BEST MANAGEMENT PRACTICE FOR SILT FENCES, OF THE NEW HAMPSHIRE STORMWATER MANUAL, DECEMBER 2008.
2. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES.
3. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6–INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.
4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 16 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS.
6. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND TO A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED INTO EXISTING TREES.
7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
8. FILTER BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
9. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL; ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
10. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
11. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE–THIRD THE HEIGHT OF THE BARRIER.
12. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED, SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

SILT FENCE

NOT TO SCALE



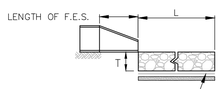
ALL MATERIALS TO MEET NHDOT STANDARD REQUIREMENTS. GRAVEL TO BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY.

GRAVEL PATH CROSS-SECTION (FOR DRAINAGE MAINTENANCE ACCESS)

NOT TO SCALE

MAINTENANCE:

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

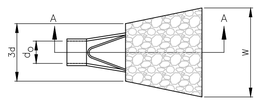


SECTION A–A

CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP. 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 12".
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. ADD ANIMAL SCREEN TO FLARED END SECTION OUTLET.

% OF WEIGHT SMALLER THAN THE GIVEN SIZE (INCHES)	SIZE OF STONE
100	4.50 TO 6.00
85	3.90 TO 5.40
50	3.00 TO 4.50
15	0.90 TO 1.50

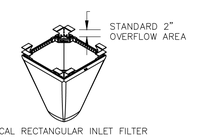


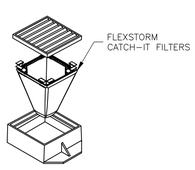
RIPRAP DIMENSIONS

LOCATION	FES01	FES02	FES03	FES04	FES05	FES06	FES07	FES08
d50 STONE SIZE (IN)								
L– LENGTH OF APRON (FT)								
W–WIDTH OF APRON (FT)								
T–DEPTH OF APRON (IN)								

RIP RAP AND FLARED END SECTION WITH OUTLET PROTECTION

NOT TO SCALE





NOTES:

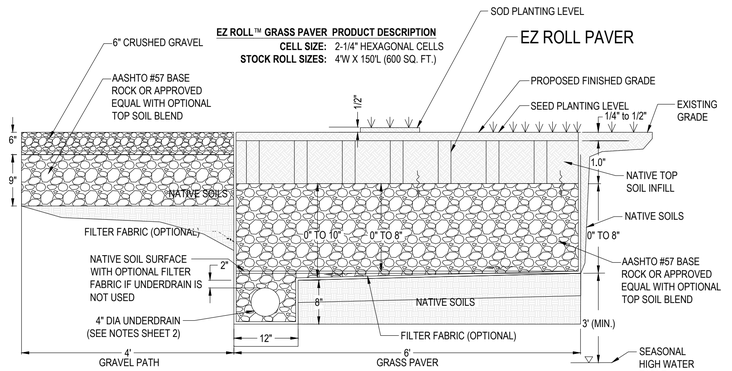
1. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
2. INSPECTION SHOULD OCCUR FOLLOWING ANY RAIN EVENT > ½".
3. EMPTY THE SEDIMENT BAG PER MANUFACTURER'S SPECIFICATIONS.
4. REMOVED CAKED ON SILT FROM SEDIMENT BAG AND FLUSH WITH MEDIUM SPRAY WITH OPTIMAL FILTRATION.
5. REPLACE BAG IF TORN OR PUNCTURED TO > ½" DIAMETER ON LOWER HALF OF BAG.

ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC. A DIVISION OF ADS, INC. WWW.INLETFILTERS.COM (866) 287–8655 INFO@INLETFILTERS.COM

INLET PROTECTION

NOT TO SCALE

EZ ROLL™ GRASS PAVER PRODUCT DESCRIPTION
CELL SIZE: 2-1/4" HEXAGONAL CELLS
STOCK ROLL SIZES: 4'W X 150'L (600 SQ. FT.)

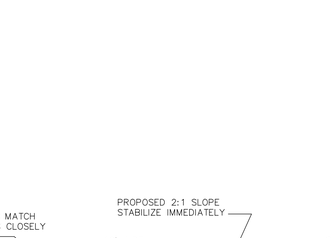


SECTION*

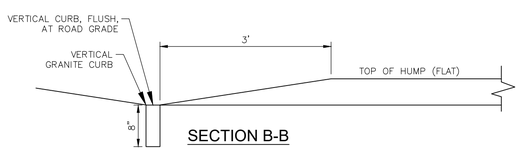
*SEE NOTES SHEET 2

GRASS PAVER PATH

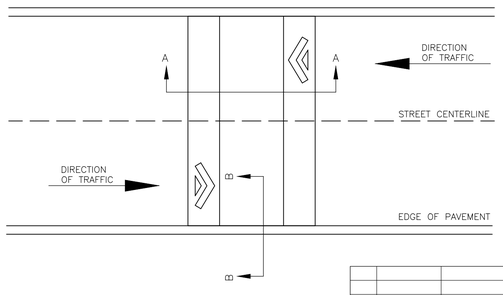
NOT TO SCALE

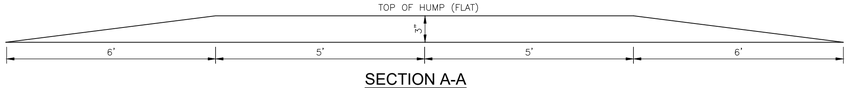


PLAN VIEW

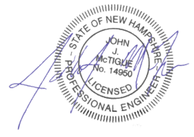


SECTION B-B





SECTION A-A



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: AS SHOWN **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
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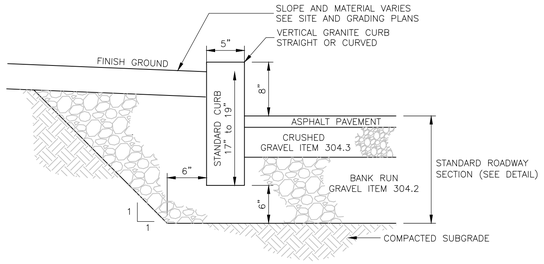
FILE	DR	JSM	FB	–	
47388.11	CK	JJM	CADFILE	47388–11_DETAILS	C–68

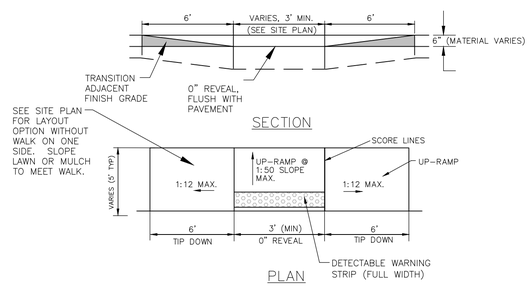


NOTES

1. MORTAR JOINTS AND OTHER INSTALLATION TO BE AS SPECIFIED IN NHDOT SECTION 609.
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. PROVIDE TRANSITIONS & RAMPS PER A.D.A.

VERTICAL GRANITE CURB

NOT TO SCALE

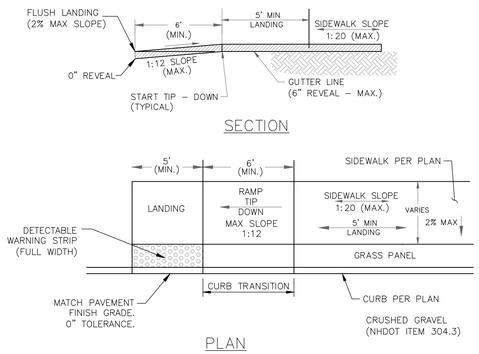


NOTE

1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICAN WITH DISABILITIES ACT, LATEST EDITION.

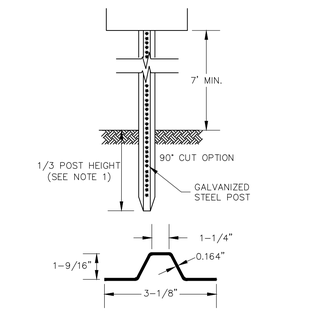
SIDEWALK TIP DOWN RAMP (TYPE D)

NOT TO SCALE



SIDEWALK TIP DOWN RAMP (TYPE E)

NOT TO SCALE

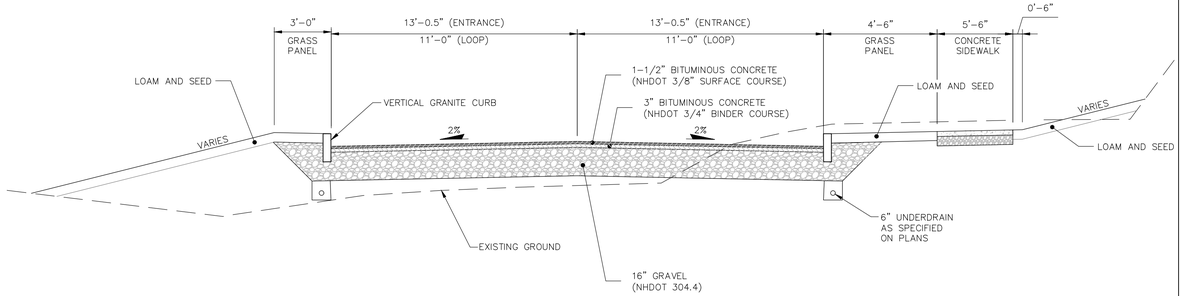


LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH 2 COATS OF AN APPROVED MEDIUM GREEN BAKED-ON OR AIR-DRIED PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTE:
1. WHERE LEDGE APPLICATION EXISTS, DRILL & GROUT TO A MINIMUM OF 2'.
2. ALL SIGNAGE SHALL FOLLOW THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS AND NHDOT STANDARDS.
3. SIGN, HARDWARE, AND INSTALLATION SHALL CONFORM TO THE LATEST NHDOT STANDARD SPECIFICATIONS.

SIGN POST

NOT TO SCALE

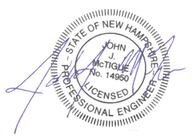


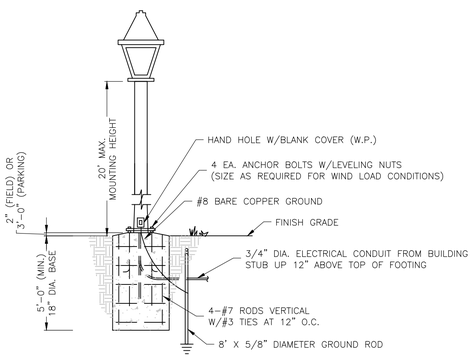
ROADWAY TYPCIAL SECTION

NOT TO SCALE

NOTES:

1. SEE GRADING & DRAINAGE PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
2. PROVIDE CLEAN BUTT TO EXISTING PAVEMENT- USE TACK COAT. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
3. REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
4. ALL ROADWAY TO CONFORM TO THE STREET DESIGN AND CONSTRUCTION REQUIREMENTS IN THE TOWN OF PORTSMOUTH, NH SUBDIVISION REGULATIONS.
5. BITUMINOUS CONCRETE SHALL BE COMPACTED TO AT LEAST 92.5% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D2041 OR AASHTO T209. PLACEMENT TEMPERATURES OF BITUMINOUS CONCRETE MIXES, IN GENERAL, RANGE BETWEEN 270 AND 310 DEGREES FAHRENHEIT.
6. PAVEMENT BASE COURSE AGGREGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.4 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
7. PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOF ROLLED AND COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
8. THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.



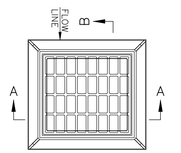


NOTES

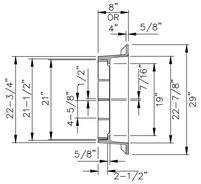
1. BASE SHOWN IS PROTOTYPICAL. VERIFY THAT LIGHT POLE BASE INSTALLED MEETS LIGHT POLE MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR.
2. WHERE LIGHT POLE BASES ARE PLACED IN AREAS NOT PROTECTED BY CURBING, A 3'-0" REVEAL OF BASE IS REQUIRED WITH REVEAL TO BE PAINTED SAFETY YELLOW. WHERE LIGHT POLE BASES ARE PLACED IN FIELD APPLICATIONS OR PROTECTED BY CURBING, THE BASE IS TO BE PLACED 2" ABOVE FINISHED GRADE.
3. BASE CONCRETE TO BE 4,000 PSI, SMOOTH FINISH.
4. POLES SHALL BE FACTORY CUT TO PROVIDE REQUIRED MOUNTING HEIGHTS.
5. PROPOSED ROADWAY LIGHTING SHALL BE DARK SKY FRIENDLY.

LIGHT POLE BASE

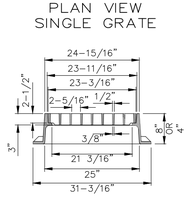
NOT TO SCALE



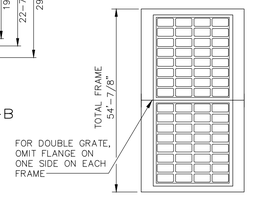
PLAN VIEW
SINGLE GRATE



SECTION B-B



SECTION A-A



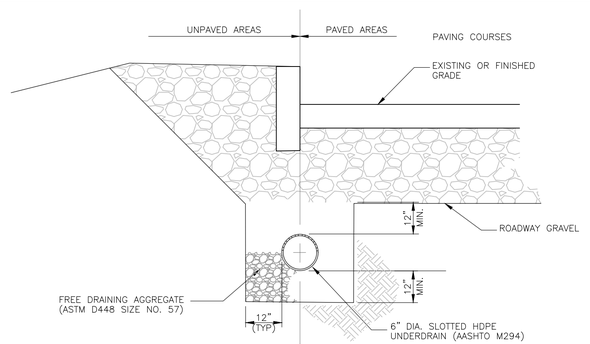
PLAN VIEW
DOUBLE GRATE
(IF APPLICABLE)

NOTES

1. FRAME AVAILABLE IN 8" OR 4" HEIGHTS.
2. FREE OPEN AREA = 2.55 S.F.
3. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.
4. USE NEENAH FOUNDRY R-3570-A GRATE & FRAME OR APPROVED EQUAL.

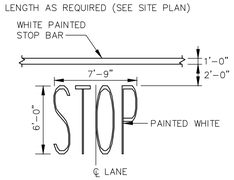
FRAME & GRATE (TYPE B)

NOT TO SCALE



UNDERDRAIN TRENCH DETAIL

NOT TO SCALE



NOTES

1. TRAFFIC PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER AND SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". APPLY TWO COATS.
2. SYMBOLS AND PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.

STOP BAR & LEGEND

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

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STOKEL SB & NA TRUST, PHILIP J 25% INT

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		CK	JJM	CADFILE	47388-11_DETAILS	

Jun 23, 2021 - 2:26pm
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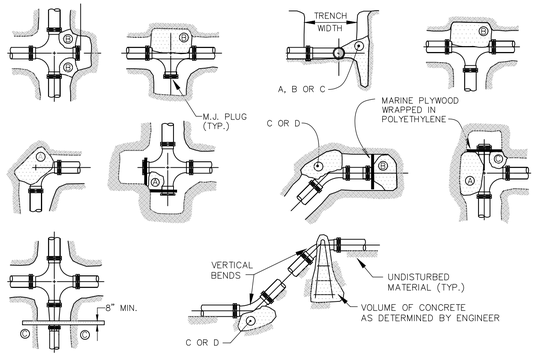


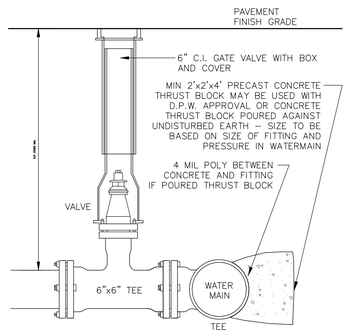
NOTES

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED. EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO PIPE JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE MECHANICAL JOINT PIPE IS USED, MECHANICAL JOINT PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY/TOWN ESTABLISHED RULES AND PROCEDURES.

TEST PRESSURE = 200psi

SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL						
REACTION TYPE		PIPE SIZE				
		4"	6"	8"	10"	12"
A	90°	0.89	2.19	3.82	11.14	17.24
B	180°	0.65	1.55	2.78	8.38	12.00
C	45°	0.48	1.19	2.12	6.02	9.32
D	22–1/2°	0.25	0.60	1.06	3.08	4.74
E	11–1/4°	0.13	0.30	0.54	1.54	2.38

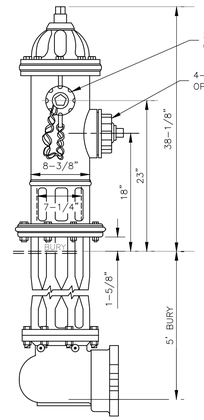
THRUST BLOCKS
NOT TO SCALE



NOTES:

1. VALVE TO OPEN RIGHT.

BURIED GATE VALVE
NOT TO SCALE

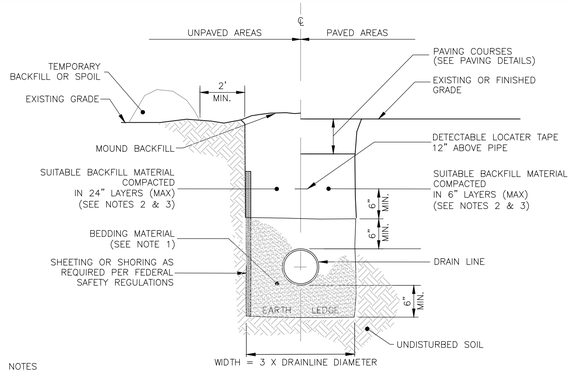


THREE–WAY HYDRANT KENNEDY
K–81A GUARDIAN
ELMIRA, N.Y.

SPECIFICATIONS

1. 150 PSI WORKING PRESSURE
2. 300 PSI TEST PRESSURE
3. HYDRANT DRAIN SHALL BE PLUGGED
4. DRY TOP DESIGN VALVE SHALL OPEN WHEN OPERATING NUT IS TURNED CLOCKWISE AND BE SO INDICATED ON HYDRANT
5. OPERATING NUT SHALL BE STANDARD AWWA PENTAGON OPERATING NUT WITH 1 1/2" POINT TO FLAT DIMENSION
6. THREADS SHALL BE NATIONAL STANDARD HOSE THREAD NOZZLES
7. HYDRANT TO OPEN RIGHT.

PORTSMOUTH FIRE HYDRANT
NOT TO SCALE



NOTES

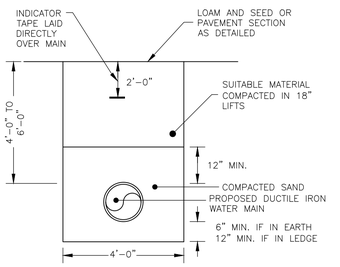
1. BEDDING – BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS. NORMAL PIPE BEDDING IS CRUSHED STONE TO THE HAUNCH OF THE PIPE AND SAND BEDDING 6" ABOVE THE CROWN. IF THE TOP OF THE PIPE IS LESS THAN 30" FROM FINISH GRADE, BED PIPE COMPLETELY IN STONE UP TO 6" ABOVE PIPE CROWN. UNDERDRAIN TO HAVE 4" MINIMUM OF STONE OVER PIPE OR AS NECESSARY TO BE IN CONTACT WITH GRAVEL LAYER OF SELECTS ABOVE.
2. COMPACTION – ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T99, METHOD C.
3. SUITABLE MATERIAL – IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6" IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
4. BASE COURSE AND PAVEMENT – SHALL MEET THE REQUIREMENT OF THE NHDOT LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DIVISION 300 AND 400 RESPECTIVELY.

TRENCH FOR DRAIN LINE
NOT TO SCALE

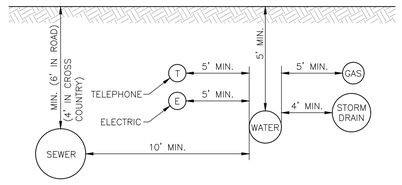
NOTES

1. ALL SECTIONS SHALL BE PRECAST CONCRETE NHDOT CLASS AA, 4,000 PSI.
2. ALL COMPONENTS OF CATCH BASINS SHALL MEET NHDOT SPECIFICATIONS.
3. ALL COMPONENTS SHALL BE DESIGNED FOR HS–20 LOADING.
4. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ANGLE OR SIZE OF PIPES AT THE STRUCTURE.
5. ALL CASTINGS SHALL BE MADE IN THE USA.

ECCENTRIC CATCH BASIN WITH HOODED OUTLET
NOT TO SCALE



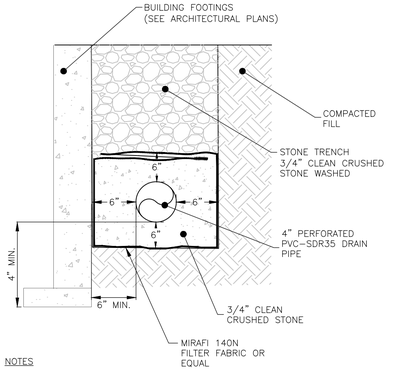
WATER MAIN TRENCH
NOT TO SCALE



NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO EXETER DPW TECHNICAL SPECIFICATIONS.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. GAS MAIN SHALL HAVE A TYPICAL DEPTH OF 3' FROM THE TOP OF PIPE TO FINISH GRADE
4. DETAIL REPRESENTS LATERAL SEPARATION ONLY UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY FOR DEPTHS FOR GAS, TELEPHONE, AND ELECTRIC.

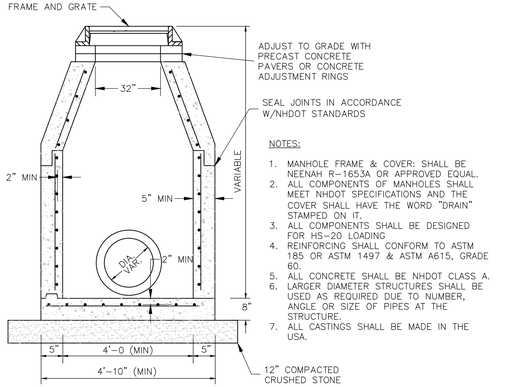
TYPICAL UTILITY LATERAL SEPARATION
NOT TO SCALE



NOTES

1. FOR MINIMUM DIMENSIONAL REQUIREMENT REFER TO THE GEOTECHNICAL REPORT PREPARED BY JOHN TURNER COUNSULTING, INC. ON JULY 3, 2013.

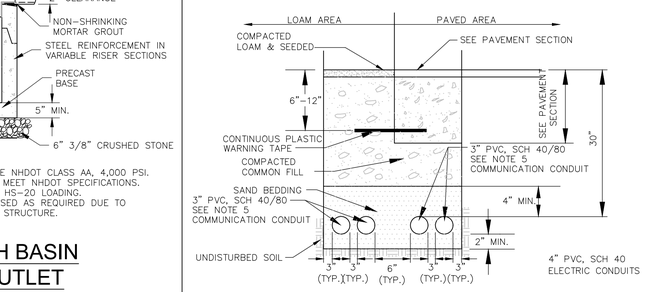
FOUNDATION DRAIN LINES
NOT TO SCALE



NOTES:

1. MANHOLE FRAME & COVER: SHALL BE NEENAH R–1653A OR APPROVED EQUAL.
2. ALL COMPONENTS OF MANHOLES SHALL MEET NHDOT SPECIFICATIONS AND THE COVER SHALL HAVE THE WORD "DRAIN" STAMPED ON IT.
3. ALL COMPONENTS SHALL BE DESIGNED FOR HS–20 LOADING
4. REINFORCING SHALL CONFORM TO ASTM 185 OR ASTM 1497 & ASTM A615, GRADE 60.
5. ALL CONCRETE SHALL BE NHDOT CLASS A.
6. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ANGLE OR SIZE OF PIPES AT THE STRUCTURE.
7. ALL CASTINGS SHALL BE MADE IN THE USA.

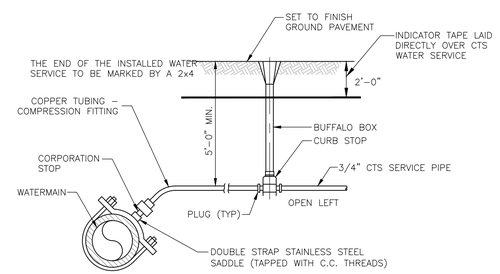
DRAIN MANHOLE
NOT TO SCALE



NOTES

1. ELECTRIC SERVICE INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES.
2. COMMUNICATION SERVICE INSTALLATION SHALL MEET ALL CONSTRUCTION REQUIREMENTS.
3. ACTUAL NUMBER OF CONDUITS TO BE DETERMINED BY RESPECTIVE COMPANIES.
4. VERIFY INSTALLATION REQUIREMENTS WITH RESPECTIVE COMPANIES.
5. SCHEDULE 80 CONDUIT TO BE USED UNDER TRAFFIC SITUATIONS (PRIMARY AND SECONDARY LINES).
6. ALL 90 DEGREE SWEEPS MUST BE STEEL AND THE FIRST 10' STICK OUT OF THE 90 MUST BE STEEL ON ALL PRIMARY CONDUIT RUNS

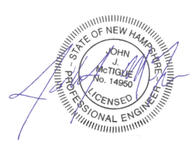
ELECTRIC/COMMUNICATIONS CONDUIT
NOT TO SCALE



WATER SERVICE CONNECTION
NOT TO SCALE

NOTES

1. CURB STOPS TO OPEN TO THE RICHT.



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

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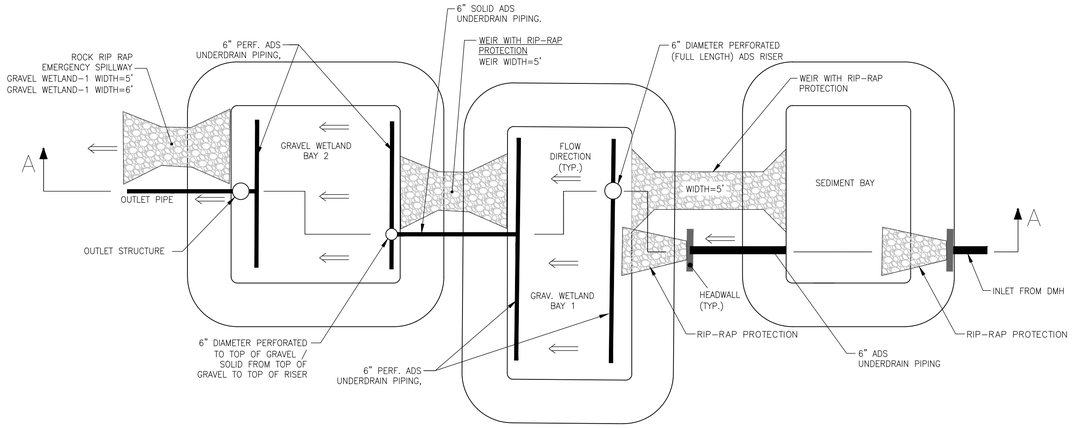
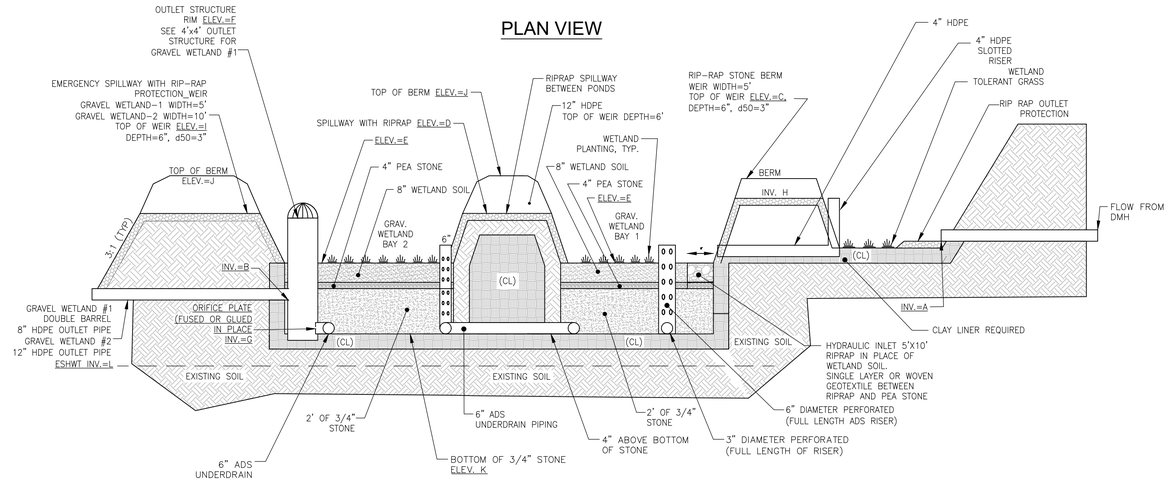


PLAN VIEW



SECTION A-A

ELEVATION TABLE	
INV. ID	GRAVEL WETLAND 1
A	37.85
B	34.41
C	38.25
D	37.75
E	35.00
F	37.00
G	UNDERDRAIN INV.=32.33 (1.75" ORIFICE INV=32.53)
I	37.75
J	38.25
K	32.00
L	33.00

INSPECTION AND MAINTENANCE.

FOREBAYS: INSPECT FOREBAYS FOR SEDIMENT ACCUMULATION TWICE PER YEAR MINIMUM AND REMOVE WHEN LEVEL REACHES 4 INCHES OR MORE. INSPECT FOR AND REMOVE ACCUMULATED DEBRIS TWICE PER YEAR MINIMUM. MOW FOREBAY SIDES AND BOTTOM WEEKLY TO PREVENT WOODY GROWTH AND PROMOTE GRASS GROWTH.

WETLANDS: INSPECT WETLANDS FOR AREAS OF DEAD OR STRESSED WETLAND GRASSES, REEDS, HERBACEOUS PLANTS, OR SHRUBS A MINIMUM OF TWICE PER YEAR AND REPLANT AS NECESSARY. MOW GRASSED SIDESLOPES ON A REGULAR BASIS TO KEEP HEIGHT OF VEGETATION BELOW 4 INCHES. INSPECT FOR AND REMOVE ACCUMULATED DEBRIS TWICE PER YEAR MINIMUM.

DESIGN LIFE: FOLLOWING THE MINIMAL MAINTENANCE PROCEDURES ABOVE, STUDIES CONDUCTED AT UNH INDICATE THE SYSTEM WILL CONTINUE TO DEVELOP INTO A HEALTHY DIVERSE WETLAND WITH NO QUANTIFIABLE DESIGN LIFE EXTENT.

NOTE:

1. GRAVEL WETLAND TO BE SEEDED WITH NEW ENGLAND WETMIX. APPLICATION RATE: 18 LBS PER ACRE OR 1 LB PER 2,500 S.F.

SUBSURFACE GRAVEL WETLAND MATERIAL LAYERS

THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1–0.01 FT/DAY = 3.5 X 10–5 CM/SEC TO 3.5 X 10–6 CM/SEC). THIS SOIL MAY BE MANUFACTURED USING A COMBINATION OF LOAM, SAND, AND SOME FINE SOILS BLENDED TO A HIGH PERCENT ORGANIC MATTER CONTENT SOIL (>15% ORGANIC MATTER). FINAL WETLAND SOIL MIX WITH CLAY CONTENT NOT TO EXCEED 15% THAT MAY RESULT IN DRYING AND CRACKING AND POTENTIAL MIGRATION OF FINES INTO THE SUBSURFACE GRAVEL LAYER. DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.

THE PROPOSED PARTICLE SIZE DISTRIBUTION (PSD) FOR WETLAND SOIL IS PROVIDED IN THE TABLE BELOW AND REFLECTS A POORLY DRAINED SOIL WITH A MEDIAN PARTICLE SIZE (D50) OF 0.15 MM AND IS A CLAY OR SILT LOAM IN THE USDA SOIL TEXTURAL TRIANGLE. THIS WETLAND SOIL MUST EXCLUDE ANY STICKS, ROOTS, STONES, ETC. THAT VIOLATE THE SUGGESTED PSD. ONSITE MATERIALS SHOULD BE EVALUATED BY THE CONSTRUCTION ENGINEER TO ENSURE APPLICABILITY.

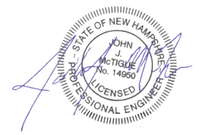
PARTICLE SIZE DISTRIBUTION

SIEVE SIZE (in./mm)	% PASSING BY WEIGHT	% PASSING TESTING TOLERANCE
0.5/12.5	100%	± 10.0%
#10/2.00	90–75%	± 5.0%
#100/0.15	40–50%	± 5.0%
#200/0.15	25–50%	± 5.0%

SEE UNHSC SUBSURFACE GRAVEL WETLAND DESIGN SPECIFICATIONS, JUNE 2016 FOR MORE DETAIL.

TYPICAL GRAVEL WETLAND

NOT TO SCALE



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BIORETENTION FILTER MEDIA MIXTURES			
COMPONENT MATERIAL	% OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	% BY WEIGHT PASSING STANDARD SIEVE
BIORETENTION FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50-55		
LOAMY SAND TOPSOIL WITH FINES AS INDICATED	20-30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH FINES AS INDICATED	20-30	200	<5

3/8" WASHED CRUSHED STONE*	
SIEVE SIZE	% PASSING BY WIGHT
1/2"	100
3/8"	95-100
#4	22-55
#8	0-10

*EQUIVALENT TO STANDARD WASHED STONE-SECTION 702 OF NHDOT STANDARD SPECIFICATIONS

3/4" WASHED CRUSHED STONE*	
SIEVE SIZE	% PASSING BY WIGHT
1"	100
3/4"	90-100
1/2"	15-55
#10	0-5

*EQUIVALENT TO STANDARD WASHED STONE-SECTION 702 OF NHDOT STANDARD SPECIFICATIONS

HYBRID BIORETENTION AREA MIX:

THE GRASS THAT IS PLANTED WITHIN A BIO-FILTRATION SYSTEM WITHIN THE BIO-MEDIA MUST CONSIST OF A COMBINATION OF WARM SEASON GRASS SEED AND COLD SEASON GRASS SEED IN ORDER FOR THE GRASS TO START GROWING FOR STABILIZATION AND CONTINUE GROWING IN THE SANDY WELL-DRAINED ENVIRONMENT. PLANTING SPECIFICATION WILL MEET REQUIREMENTS AS OUTLINED IN 'VEGETATION NEW HAMPSHIRE SAND AND GRAVEL PITS' MIX 1 (WARM SEASON GRASSES) (15 LBS/AC) AND INCLUDE ANNUAL AND PERENNIAL RYE GRASS SEED (15 LBS/AC); THE NEW ENGLAND NATIVE WARM SEASON GRASS MIX (23 LBS/AC) BY NEW ENGLAND WETLAND PLANTS, INC.; RAIN GARDEN MIX 180 (15 LBS/AC & 15 LBS/AC OF RYE)/RAIN GARDEN GRASS MIX 180 (20 LBS/AC & 10 LBS/AC OF RYE) BY ERNST CONSERVATION SEEDS, OR APPROVED EQUAL.

ENHANCED BIO-FILTRATION WITH INTERNAL STORAGE RESERVOIR (ISR):

1. THE INTERNAL STORAGE RESERVOIR (ISR) WILL PROVIDE A RETENTION TIME OF AT LEAST 24 HOURS IN THE SYSTEM TO ALLOW FOR SUFFICIENT TIME FOR DENITRIFICATION AND NITROGEN REDUCTION TO OCCUR PRIOR TO DISCHARGE, THE FILTER MEDIA HAS BEEN AUGMENTED WITH MATERIALS DESIGNED AND/OR KNOW TO BE EFFECTIVE AT CAPTURING PHOSPHOROUS. THE TOP TWELVE INCHES OF THE BIO-MEDIA WILL BE AMENDED WITH EITHER 5% BY VOLUME ELEMENTAL IRON FILINGS; 5% BY COLUME CONTECH IMBRIUM SORPTIVE MEDIA. ABS MATERIALS BIOMAX MEDIA. OR APPROVED EQUAL. OR 5% BY WEIGHT WATER TREATMENT RESIDUALS (WTR). THE COLUME OF THE ISR WILL EXCEED 25% OF THE WATER QUALITY VOLUME (WQV).

NOTES

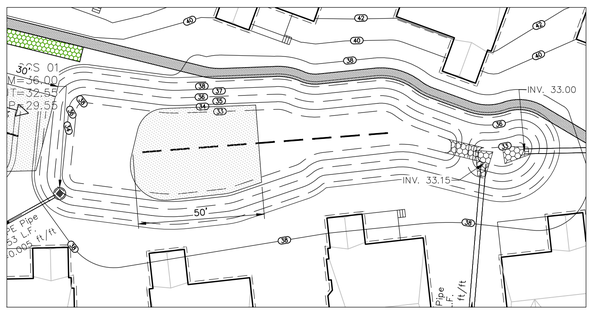
1. WHEN CONTRACTOR EXCAVATES BIORETENTION AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL BIORETENTION FILTER MEDIA SHALL BE AS SHOWN ABOVE. "BIO-MEDIA" MEANS BIORETENTION FILTER MEDIA.
3. DO NOT PLACE THE BIORETENTION SYSTEM 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 EXCAVATION) TO THE BIORETENTION 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 INFILTRATION COMPONENTS OF THE SYSTEM.
6. A PROFESSIONAL ENGINEER SHALL BE PRESENT DURING THE CONSTRUCTION OF THE RAIN GARDENS TO ENSURE THAT ALL OF THE CRITERIA ARE MET AND THAT A REPORT BE SUBMITTED TO NHDES WHEN CONSTRUCTION OF THE BIORETENTION AREAS ARE COMPLETED.

MAINTENANCE REQUIREMENTS

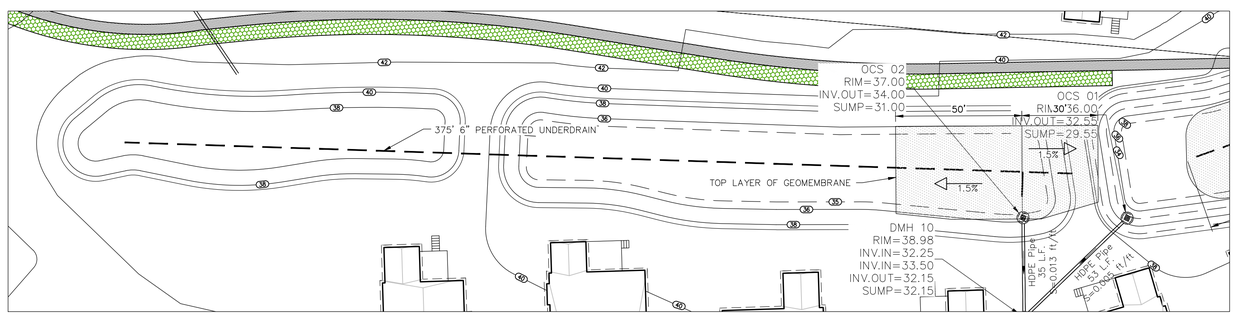
1. SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 25-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED SUCH INSPECTION.
2. PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
3. AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THAN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION. INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED OF SEDIMENTS OR RECONSTRUCTION OF FILTER MEDIA.
4. 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:

1. UNH STORMWATER CENTER
2. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS UHSC - WWW.UNH.EDU/UNHSC/NEWS/UNHSC-INNOVATIVE-BIORETENTION-TEMPLATE-POLLUTION-REDUCTIONS-GREATBAY-ESTUARY-WATERSHEDS

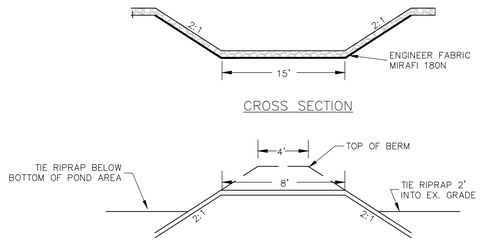


PLAN VIEW - BIORETENTION AREA #1 (WITH ISR)
NOT TO SCALE



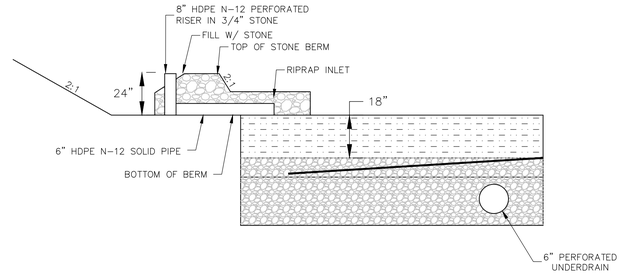
PLAN VIEW - BIORETENTION AREA #1 (WITH ISR)
NOT TO SCALE

ELEVATION TABLE		
INV.	BIO-01	BIO-02
	ELEV	ELEV
A	32.75	35.00
B	31.25	33.50
C	30.25	32.50
D	29.25	31.50
E	36.00	37.00
F	35.00	36.00
G	NA	NA
H	32.70	34.00
J	29.58	31.83

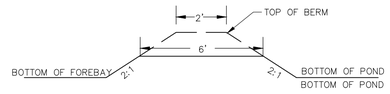


CROSS SECTION

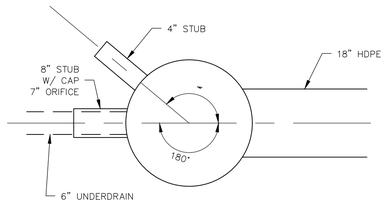
EMERGENCY SPILLWAY PROFILE
NOT TO SCALE



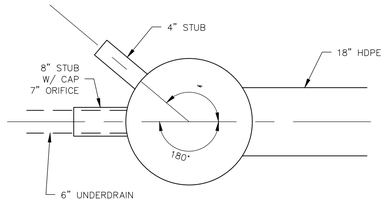
STONE BERM FOR FOREBAY
NOT TO SCALE



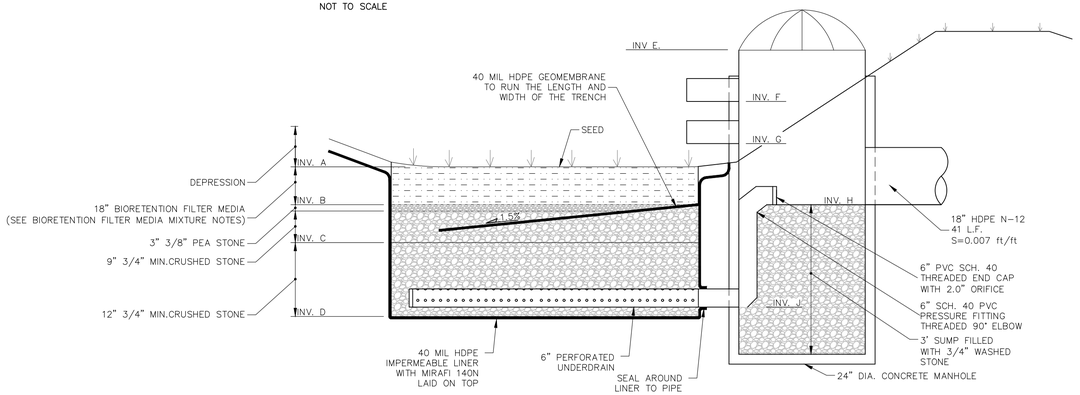
RIPRAP SEDIMENT FOREBAY SPILLWAY PROFILE
NOT TO SCALE



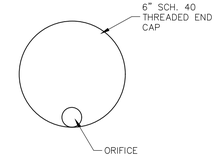
TOP VIEW - BIORETENTION AREA #1 (WITH ISR)
NOT TO SCALE



TOP VIEW - BIORETENTION AREA #2 (WITH ISR)
NOT TO SCALE



BIORETENTION AREA (WITH ISR)
NOT TO SCALE



CAP W/ CONTROL ORIFICE
NOT TO SCALE

LINER NOTES
ACCEPTABLE OPTIONS INCLUDE:
A. 6-12" IN CLAY SOIL (MINIMUM 15% PASSING #200 SIEVE AND A MAXIMUM PERMEABILITY OF $1X10^{-5}$ CM/S)
* A 40 MIL PVC LINER WITH SAND BEDDING AND NON-WOVEN GEOTEXTILE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: AS SHOWN **APRIL 19, 2021**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	47388.11	DR	JSM	FB	-	C-72
		CK	JJM	CADFILE	47388-11_DETAILS	

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Jun 23, 2021 - 2:27pm
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SEWER SERVICE NOTES

1. MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2. PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

      *PVC: POLY VINYL CHLORIDE
      *ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5. TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6. SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7. TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

   B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

   C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8. ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9. WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

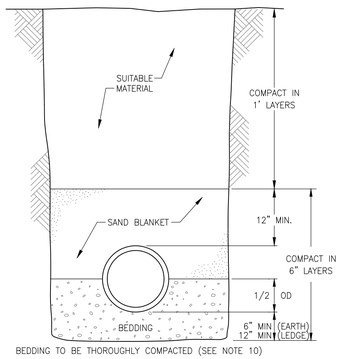
10. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

11. LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

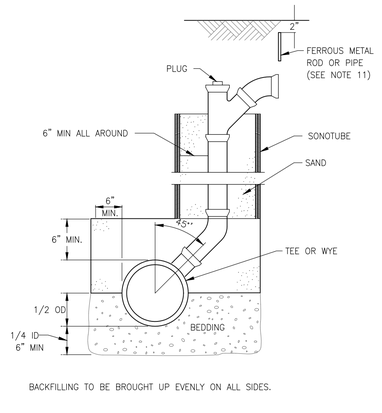
12. CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.



BEDDING TO BE THOROUGHLY COMPACTED (SEE NOTE 10)

TRENCH CROSS-SECTION

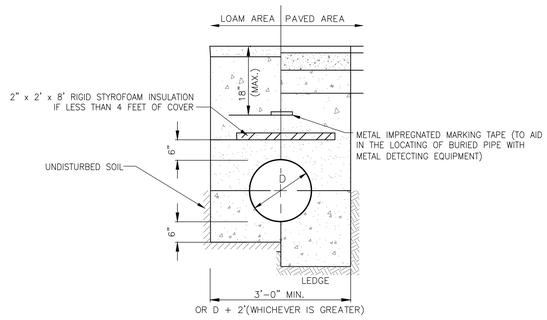
NOT TO SCALE



BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE 12)

NOT TO SCALE

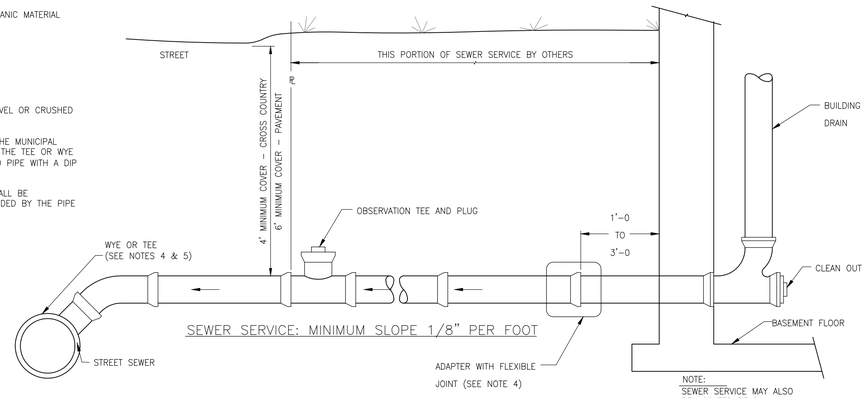


NOTES

1. GAPS BETWEEN SECTIONS OF INSULATION TO BE COVERED WITH 2" x 2' x 2' PIECE OF INSULATION CENTERED OVER GAP.

SEWER TRENCH WITH INSULATION

NOT TO SCALE



SEWER SERVICE DETAILS

NOT TO SCALE

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.

2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

   *PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.

4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C151/A21.51-02 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536-84 (2004) DUCTILE IRON CASTINGS.

   AWWA C151/A21.51-02 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

   JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.

7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.

   JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.

8. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

9. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

   ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

   LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

   ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

   UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

10. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE AND VISUALLY INSPECT USING LAMP TEST.

11. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS AND NO MORE THAN 90 DAYS FOLLOWING INSTALLATION.

12. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.

13. TRENCH CONSTUCTION SHALL CONFORM TO THE FOLLOWING:

   SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

   WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

   TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

   PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

   PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

   PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

   COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

   BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

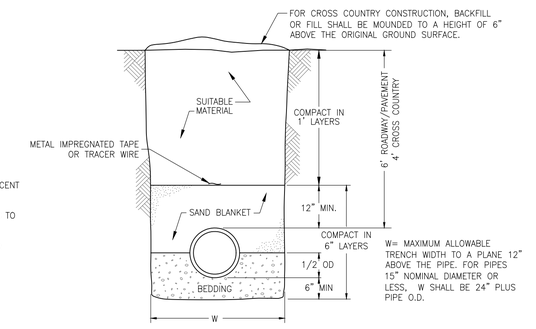
   TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

   BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

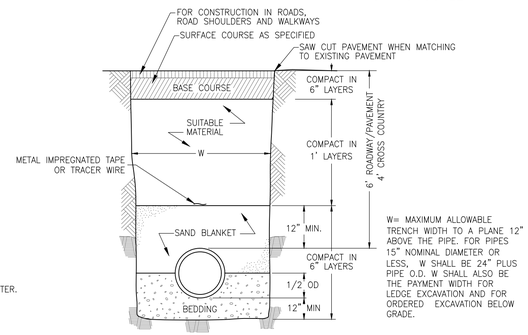
   WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

   TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.



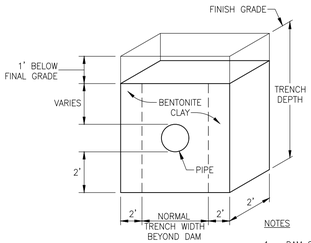
EARTH CONSTRUCTION

NOT TO SCALE



LEDGE CONSTRUCTION

NOT TO SCALE



INSTALL AT CENTER OF EACH GRAVITY PIPE RUN

NOTES

1. DAM SHALL BE LOCATED EVERY 300' OF SEWER PIPE RUN.
2. NO FITTING SHALL BE LOCATED WITHIN 4' OF DAM.

SEWER TRENCH DAM

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
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Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
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Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB		
47388.11	CK	JJM	CADFILE	Sewer Details.dwg	C-73

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F:\MSC Projects\47388 - Peverly Hill Rd - Portsmouth\47388-11 Green and Co - 83 Peverly Rd_Condo Project\Design\Production Drawings\47388-11_SewerDetails.dwg

GENERAL NOTES

1. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.

3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.

4. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.

5. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.

6. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.

7. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.

8. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

9. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:

   SIKAFLEX-12-SL

   SONNEBORN BUILING PRODUCTS-SONOLASTIC SL-1

10. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.

11. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.

    (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STARNDARD IN EFFECT WHEN THE TESTING IS PERFORMED.

    (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:

        1. THE INITIAL VACUUM GUAGE TEST PRESSURE SHALL BE 10 INCHES Hg.

        2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:

           A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.

           B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.

           C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.

    (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.

    (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.

    (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.

12. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.

13. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
    (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
    (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME

    CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".

14. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.

15. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.

16. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANNIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

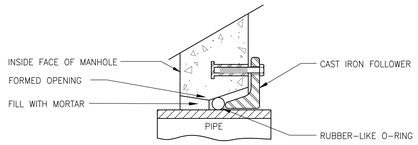
100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

17. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WIbHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.

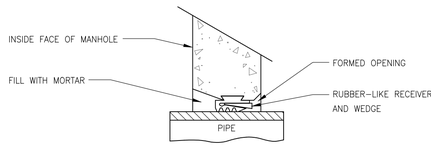
18. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.

19. INTERNAL STEPS ARE PROHIBITED PER EXETER DPW STANDARDS.

20. REFERENCE NHDES ENV-WQ 700 IN PLACE OF ASTM STANDARDS.



RES-SEAL
(OR ACCEPTABLE SUBSTITUTE)



PRESS-WEDGE II
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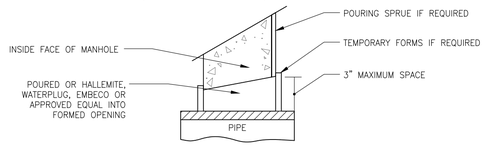
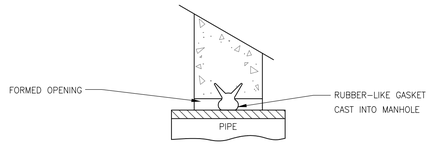
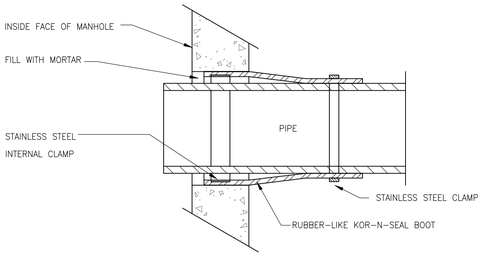


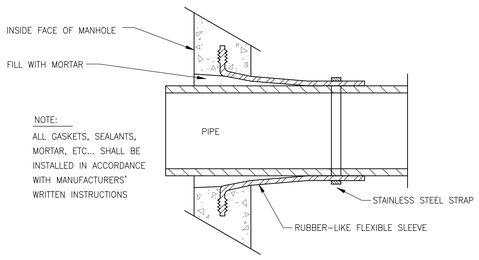
MORTARED JOINT
(OR ACCEPTABLE SUBSTITUTE)



A-LOK
(OR ACCEPTABLE SUBSTITUTE)



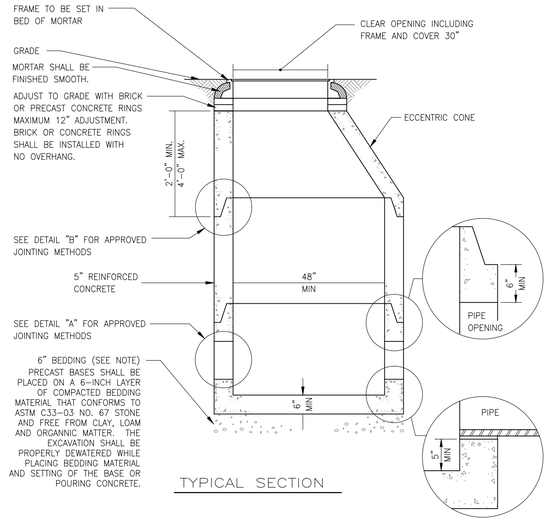
KOR-N-SEAL JOINT SLEEVE
(OR ACCEPTABLE SUBSTITUTE)



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

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
(OR ACCEPTABLE SUBSTITUTE)

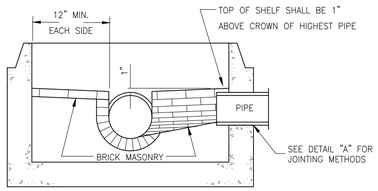
DETAIL "A" - PIPE TO MANHOLE JOINTS



TYPICAL SECTION

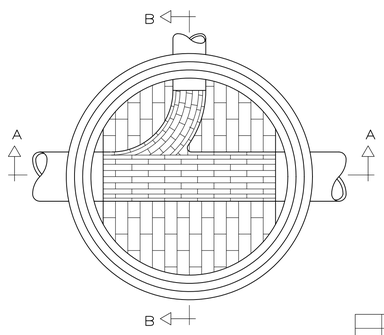
NOTES:

1. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE.
3. BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN.
4. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
5. NO STEPS ARE ALLOWED PER EXETER DPW STANDARDS.
6. BITUMINOUS COATING.



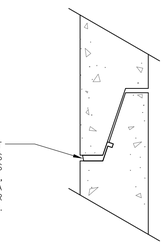
SECTION "B-B"

SECTION "A-A"



TYPICAL MANHOLE - PLAN VIEW

STANDARD MANHOLE

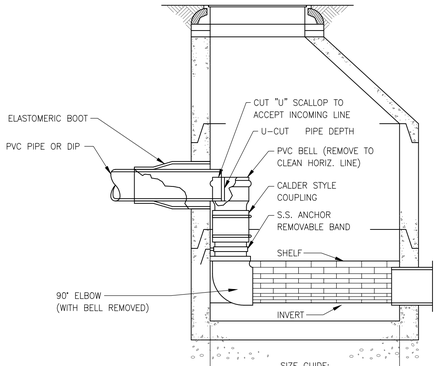


ELASTOMERIC SEALANT

NOTES:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

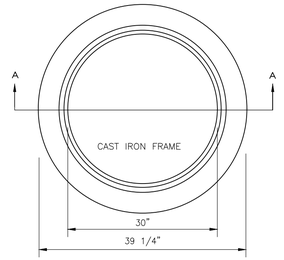
STATE OF NEW HAMPSHIRE APPROVED PRODUCTS
A) SIKAFLEX-12-SL
B) SONNEBORN BUILDING PRODUCTS SONOLASTIC SL-1

DETAIL "B" - HORIZONTAL JOINTS

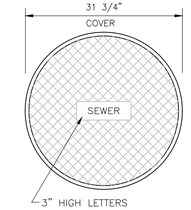


SIZE GUIDE:
1- 8" OR 10" DROP: 4'-0" DIA
2- 8" OR 10" DROP: 5'-0" DIA
1- 12" DROP: 5'-0" DIA
1- 15" DROP: 5'-0" DIA

INSIDE DROP MANHOLE

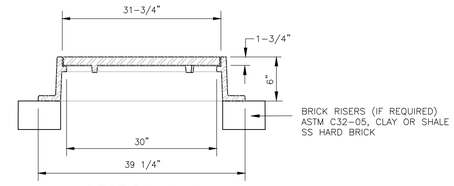


PLAN VIEW



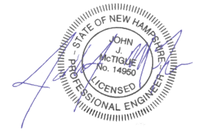
CAST IRON COVER
MIN. WEIGHT 265 LBS.
NEENAH R-1743 OR EQUAL

COVER



SECTION A-A

MANHOLE FRAME & COVER



SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

FILE	DR	JSM	FB	
47388.11	CK	JJM	CADFILE	Sewer Details.dwg

C-74

Jun 23, 2021 - 2:27pm
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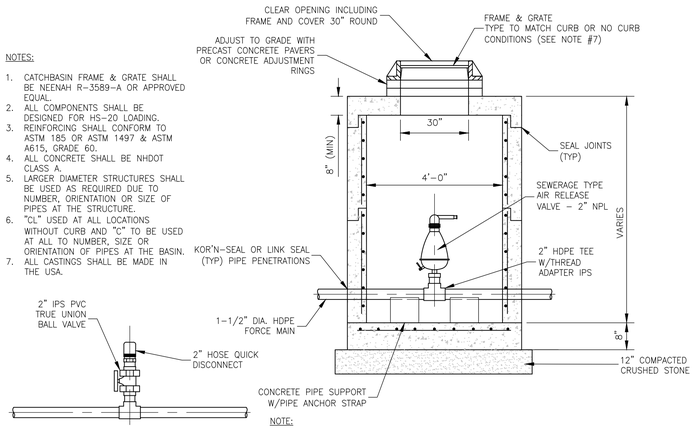


NOTES:

1. CATCHBASIN FRAME & GRATE SHALL BE NEENAH R-3589-A OR APPROVED EQUAL.
2. ALL COMPONENTS SHALL BE DESIGNED FOR HS-20 LOADING.
3. REINFORCING SHALL CONFORM TO ASTM 185 OR ASTM 1497 & ASTM A615, GRADE 60.
4. ALL CONCRETE SHALL BE NHDOT CLASS A.
5. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ORIENTATION OR SIZE OF PIPES AT THE STRUCTURE.
6. "CL" USED AT ALL LOCATIONS WITHOUT CURB AND "C" TO BE USED AT ALL TO NUMBER, SIZE OR ORIENTATION OF PIPES AT THE BASIN.
7. ALL CASTINGS SHALL BE MADE IN THE USA.

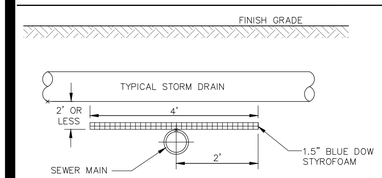
CLEANOUT

NOTE:

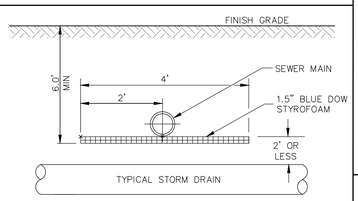
1. 2" TRUE UNION BALL VALVE TO BE USED IN PLACE OF 2" AIR/VACUUM VALVE FOR CLEANOUT MANHOLE.

E-ONE CLEANOUT AND AIR VACUUM DETAIL

NOT TO SCALE



CONDITION I



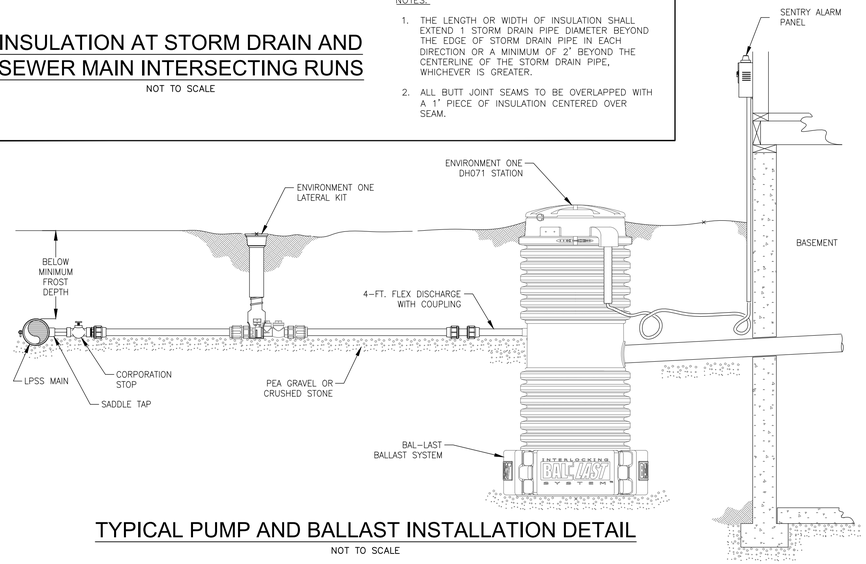
CONDITION II

NOTES:

1. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
2. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1" PIECE OF INSULATION CENTERED OVER SEAM.

INSULATION AT STORM DRAIN AND SEWER MAIN INTERSECTING RUNS

NOT TO SCALE

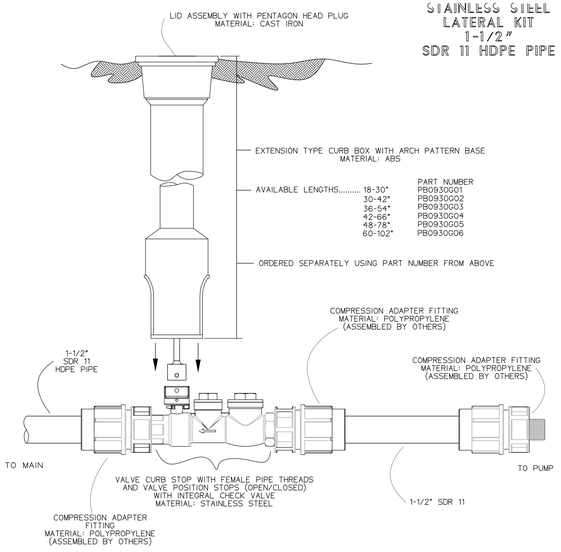


BAL-LAST 114C

TYPICAL PUMP AND BALLAST INSTALLATION DETAIL

NOT TO SCALE

DIG SAFE SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



STAINLESS STEEL LATERAL KIT
1-1/2" SDR 11 HDPE PIPE

NOTES:

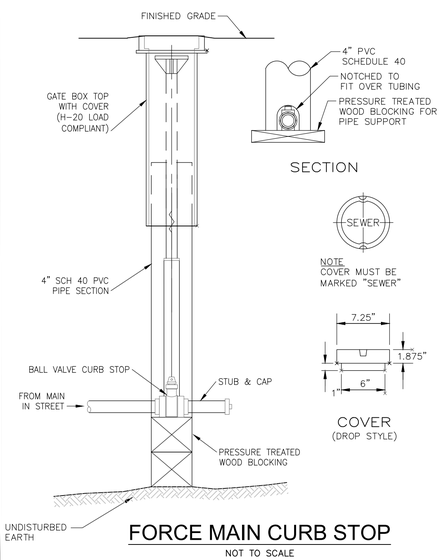
1. SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY, TO BE ASSEMBLED BY OTHERS
2. TO ASSEMBLE, APPLY A DOUBLE LAYER OF TEFLON TAPE, AND A LAYER OF PIPE DOPE (SUPPLIED BY OTHERS) TO THE THREADS ON THE PLASTIC FITTINGS AND INSTALL PER THE MANUFACTURER'S INSTRUCTIONS
   *FOR SS FITTING INTO SS THREAD, USE EITHER PIPE DOPE OR TEFLON TAPE, NOT BOTH
3. ASSEMBLY IS TO BE PRESSURE TESTED (BY OTHERS)
4. ASSEMBLY IS TO BE USED WITH SDR11 HDPE PIPE
5. TO ORDER SS LATERAL KIT, USE PART NUMBER NC0193G02
6. CURB BOX IS TO BE ORDERED SEPARATELY, SEE ABOVE

KIT PARTS ARE NOT ASSEMBLED

SGS	DN	11/02/11	B	3/16
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

NA0330P03



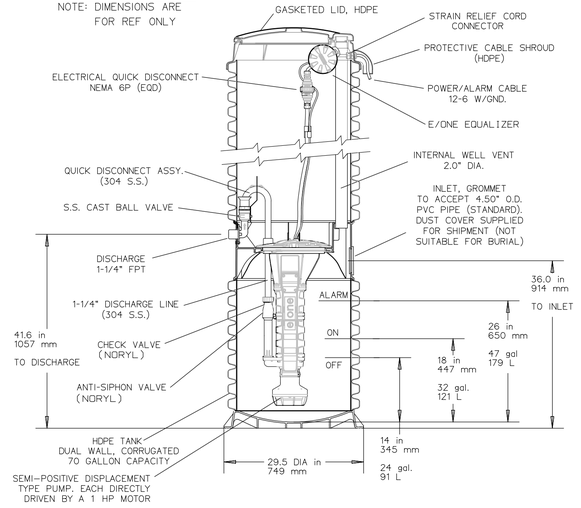
FORCE MAIN CURB STOP

NOT TO SCALE

FIELD JOINT REQUIRED FOR MODELS DH071-129 / DR071-129 & DH071-160 / DR071-160

NOTE: DIMENSIONS ARE FOR REF ONLY

OPTIONS : ☐ DH071 (HARD WIRED LEVEL CONTROLS) ☐ DR071 (WIRELESS LEVEL CONTROLS)



CONCRETE BALLAST MAY BE REQUIRED SEE INSTALLATION INSTRUCTION FOR DETAILS

E-ONE GRINDER PUMP

NOT TO SCALE

NOTES:

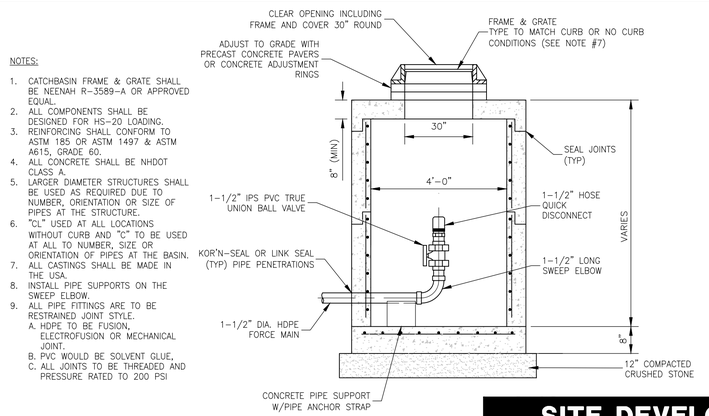
1. THE PUMP CORE CONTAINS BUILT IN CHECK AND ANTI-SIPHON VALVES. IN ADDITION, THERE IS A REDUNDANT UNILATERAL CHECK AND ISOLATION VALVE AT THE LOT LINE WITH THE STAINLESS STEEL ASSEMBLY.
2. THE STATION MONITOR CONTAINS A HIGH LEVEL ALARM. THE HIGH LEVEL ALARM IS RUN OFF A REDUNDANT RUN SWITCH THAT OVERRIDES THE RUN SWITCH IF IT SHOULD SEE A POWER FAILURE.
3. THE ALARM PANEL HAS THE OPTION TO CONNECT A PORTABLE GENERATOR WITH A 20 AMP, 240 VOLT SUPPLY. POWER TRANSFERS AUTOMATICALLY IF THE PUMP IS CALLING TO RUN.
4. THE PUMP IS RATED TO CONTINUOUS DUTY HEADS OF 185-FEET. THE SYSTEM AS DESIGNED WILL OPERATE AT 14.92 GPM AT 5.64-FEET TDH.
5. THE PUMP RATED TO 700 GPD.
6. THE TANK HAS A 70-GAL VOLUME AND ALLOWS FOR 43 GALLONS ABOVE THE "ON" LEVEL.
7. A BACKUP GENERATOR WILL BE PROVIDED THAT SHALL BE AMPLE ENOUGH TO SUPPLY POWER TO RUN THE GRINDER PUMP AND ALARM SYSTEM. THERE SHALL BE ENOUGH FUEL ON SITE TO RUN THE GENERATOR FOR A MINIMUM OF 6 HRS.
8. IN CASE OF A POWER FAILURE, A BATTERY BACKUP REMOTE SENTRY ALARM PANEL SHALL BE USED IN CONJUCTION WITH THE E-ONE PUMP SYSTEM.

AD	CH	10/20/10	D	
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

MODEL DH071 / DR071 DETAIL SHEET

NA0050P02



NOTES:

1. CATCHBASIN FRAME & GRATE SHALL BE NEENAH R-3589-A OR APPROVED EQUAL.
2. ALL COMPONENTS SHALL BE DESIGNED FOR HS-20 LOADING.
3. REINFORCING SHALL CONFORM TO ASTM 185 OR ASTM 1497 & ASTM A615, GRADE 60.
4. ALL CONCRETE SHALL BE NHDOT CLASS A.
5. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ORIENTATION OR SIZE OF PIPES AT THE STRUCTURE.
6. "CL" USED AT ALL LOCATIONS WITHOUT CURB AND "C" TO BE USED AT ALL TO NUMBER, SIZE OR ORIENTATION OF PIPES AT THE BASIN.
7. ALL CASTINGS SHALL BE MADE IN THE USA.
8. INSTALL PIPE SUPPORTS ON THE SWEEP ELBOW.
9. ALL PIPE FITTINGS ARE TO BE RESTRAINED JOINT STYLE.
   A. HDPE TO BE FUSION, ELECTROFUSION OR MECHANICAL JOINT.
   B. PVC WOULD BE SOLVENT GLUE,
   C. ALL JOINTS TO BE THREADED AND PRESSURE RATED TO 200 PSI

E-ONE TERMINAL FLUSHING MANHOLE

NOT TO SCALE

PRESSURE SEWER TESTING NOTES

1. FORCE MAINS AND PRESSURE SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTION 5 OF THE AWWA C600, "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES" STANDARD IN EFFECT WHEN THE TEST IS CONDUCTED, AVAILABLE AS NOTED IN APPENDIX D, AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

SITE DEVELOPMENT PLANS

TAX MAP 242 LOT 4

DETAILS

PARSON WOODS CONDOMINIUM LLC

83 PEVERLY HILL ROAD, PORTSMOUTH, NH

OWNED BY

STOKEL SB & NA TRUST, PHILIP J 25% INT

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=40' (11"X17")

SCALE: 1"=20' (22"X34") **APRIL 19, 2021**

REV.	DATE	DESCRIPTION	DR	CK
2	6/23/2021	REVISED FOR PLANNING BOARD SUBMITTAL.	JSM	JJM
1	6/21/2021	REVISED PER TAC COMMENTS.	JSM	JJM

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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www.tfmoran.com

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		CK	JJM	CADFILE	Sewer Details.dwg	