

CITY OF PORTSMOUTH NEW HAMPSHIRE

Building Permit Application Number 30387/89

SITE REVIEW APPLICATION

Case Number _____

Fee _____

Map 220 Lot 87-2/3 Zone SRB Wetlands: Inland N/A Coastal _____ Lot Area 53,579

Date of Approvals (Indicate if Pending)		
Conservation Commission _____	Conditional Use _____	Board of Adjustment <u>6/26/18</u>
Historic District Commission _____	Subdivision _____	Other _____

Street Address 64 & 74 EMERY ST.

Description of Project including all use(s) CONSTRUCTION OF ONE CONDEX STYLE BUILDING ON EACH LOT CONTAINING TWO 1500 SQ FT. CONDO UNITS.

Building(s) Footprint 26 X 80 Gross Floor Area 3000 X 2 #of Stories 2

of Dwelling Units 4 Number of Parking Spaces: Existing _____ Proposed 10

Print Information Below			
Property Owner's Name <u>HAPPY MOUNTAIN HOLDINGS LLC</u>			
Street Address <u>901 N MARKET SUITE 205</u> City/Town <u>WILMINGTON</u> State <u>DE</u> Zip <u>19801</u>			
<u>817-707-6901</u>	Cell Phone # _____	Fax # _____	Email Address <u>JEFF@BISHOP.ME</u>
Telephone # _____	Cell Phone # _____	Fax # _____	Email Address _____

Print Information Below			
Applicant's / Developer's Name <u>CANTHRON BUILDERS LLC</u>			
Street Address <u>27 SPINE ST.</u> City/Town <u>DOVER</u> State <u>NH</u> Zip <u>03820</u>			
<u>603-731-8156</u>	Cell Phone # _____	Fax # _____	Email Address <u>CCANTHRON@KW.COM</u>
Telephone # _____	Cell Phone # _____	Fax # _____	Email Address _____

Print Information Below (Include Additional Contact Information on Next Page)			
Check One: Owner's Attorney <input type="checkbox"/> Applicant's Attorney <input type="checkbox"/> Engineer <input checked="" type="checkbox"/> Surveyor <input type="checkbox"/> Other <input type="checkbox"/> If other, state relationship _____			
Representative's Name <u>ERIC WEINRIEB - ALMS ENGINEERING</u>			
Street Address <u>133 COURT ST.</u> City/Town <u>PORTSMOUTH</u> State <u>NH</u> Zip <u>03801</u>			
<u>603-433-2335</u>	Cell Phone # _____	Fax # _____	Email Address <u>ERIC@ALMS-ENG.COM</u>
Telephone # _____	Cell Phone # _____	Fax # _____	Email Address _____

I hereby apply for Site Review and acknowledge that I will comply with all the ordinances and any stipulations of the Site Review Committee of the City of Portsmouth in the development and construction of this project.

Owner's Signature [Signature] Print Owner's Name JEFF BISHOP Date 9/11/18

Applicant's/Developer's Signature [Signature] Print Applicant's/Developer's Name COREY CANTHRON Date 9/11/18

Print Information Below

Check One: Owner's Attorney Applicant's Attorney Engineer Surveyor Other If other, state relationship _____

Representative's Name _____

Street Address _____ City/Town _____ State _____ Zip _____

Telephone # _____ Cell Phone # _____ Fax # _____ Email Address _____

Print Information Below

Check One: Owner's Attorney Applicant's Attorney Engineer Surveyor Other If other, state relationship _____

Representative's Name _____

Street Address _____ City/Town _____ State _____ Zip _____

Telephone # _____ Cell Phone # _____ Fax # _____ Email Address _____

Print Information Below

Check One: Owner's Attorney Applicant's Attorney Engineer Surveyor Other If other, state relationship _____

Representative's Name _____

Street Address _____ City/Town _____ State _____ Zip _____

Telephone # _____ Cell Phone # _____ Fax # _____ Email Address _____

Attachments

The following materials must be submitted to the Planning Department along with the completed Application Form:

- Site Plan Application Checklist
- Ten (10) stamped and folded copies of the site plan – four (4) full-size (22" x 34") and six (6) reduced (11" x 17")
- Digital copy of any plans and/or exhibits (in PDF format)
- Application Fee
- Any required State or Federal Permits



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.

Name of Owner/Applicant: Happy Mountain Holdings LLC/Cawthron Builders LLC Date Submitted: 9/17/2018
 Phone Number: 603-731-8156 E-mail: ccawthron@kw.com
 Site Address: 64 & 74 Emery Street Map: 220 Lot: 87-2/87-3
 Zoning District: Single Residence B Lot area: 53579 sq. ft.

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Fully executed and signed Application form. (2.5.2.3)	Application Package	N/A
<input checked="" type="checkbox"/>	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)	Application Package	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Statement that lists and describes "green" building components and systems. (2.5.3.1A)	Application Package	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. (2.5.3.1B)	Construction Set	N/A
<input checked="" type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. (2.5.3.1C)	Site Plan C-1	N/A
<input checked="" type="checkbox"/>	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. (2.5.3.1D)	Application Package	N/A

Site Plan Review Application Required Information

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	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)	Site Plan EC-1	N/A
<input checked="" type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. (2.5.3.1F)	Cover Sheet	N/A
<input checked="" type="checkbox"/>	List of reference plans. (2.5.3.1G)	Site Plan EC-1	N/A
<input checked="" type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. (2.5.3.1H)	Utility Plan C-3 Notes #9-#12	N/A

Site Plan Specifications

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	Plans shall be drawn to scale. (2.5.4.1D)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Plans shall be prepared and stamped by a NH licensed civil engineer. (2.5.4.1D)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist. (2.5.4.1E)	N/A	N/A
<input checked="" type="checkbox"/>	Title (name of development project), north point, scale, legend. (2.5.4.2A)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Date plans first submitted, date and explanation of revisions. (2.5.4.2B)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	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 WAIVER REQUESTED	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)	Waiver Requested	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)	Waiver Requested	N/A

Site Plan Specifications – Required Exhibits and Data

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
	1. Existing Conditions: (2.5.4.3A)		
<input checked="" type="checkbox"/>	a. Surveyed plan of site showing existing natural and built features;	EC-1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	b. Zoning boundaries;	EC-1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	c. Dimensional Regulations;	EC-1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	d. Wetland delineation, wetland function and value assessment;	No Wetlands	<input type="checkbox"/>
<input checked="" type="checkbox"/>	e. SFHA, 100-year flood elevation line and BFE data.	N/A	<input type="checkbox"/>
	2. Buildings and Structures: (2.5.4.3B)		
<input checked="" type="checkbox"/>	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	Construction Set	<input type="checkbox"/>
<input checked="" type="checkbox"/>	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	Construction Set	<input type="checkbox"/>
<input checked="" type="checkbox"/>	c. Total Floor Area;	Construction Set	<input type="checkbox"/>
<input checked="" type="checkbox"/>	d. Number of Usable Floors;	Construction Set	<input type="checkbox"/>
<input checked="" type="checkbox"/>	e. Gross floor area by floor and use.	Construction Set	<input type="checkbox"/>
	3. Access and Circulation: (2.5.4.3C)		
<input checked="" type="checkbox"/>	a. Location/width of access ways within site;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	b. Location of curbing, right of ways, edge of pavement and sidewalks;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	c. Location, type, size and design of traffic signing (pavement markings);		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	d. Names/layout of existing abutting streets;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	e. Driveway curb cuts for abutting prop. and public roads;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	f. If subdivision; Names of all roads, right of way lines and easements noted;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).		<input checked="" type="checkbox"/>
	4. Parking and Loading: (2.5.4.3D)		
<input checked="" type="checkbox"/>	a. Location of off street parking/loading areas, landscaped areas/buffers;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	b. Parking Calculations (# required and the # provided).		<input checked="" type="checkbox"/>
	5. Water Infrastructure: (2.5.4.3E)		
<input checked="" type="checkbox"/>	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	Utility Plan C-3	<input type="checkbox"/>
<input checked="" type="checkbox"/>	b. Location of wells and monitoring wells (include protective radii).	N/A	<input type="checkbox"/>
	6. Sewer Infrastructure: (2.5.4.3F)		
<input checked="" type="checkbox"/>	a. Size, type and location of sanitary sewage facilities & Engineering data.	Utility Plan C-3	<input type="checkbox"/>
	7. Utilities: (2.5.4.3G)		
<input checked="" type="checkbox"/>	a. The size, type and location of all above & below ground utilities;	Utility Plan C-3	<input type="checkbox"/>
<input checked="" type="checkbox"/>	b. Size type and location of generator pads, transformers and other fixtures.	Utility Plan C-3	<input type="checkbox"/>

Site Plan Specifications – Required Exhibits and Data

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	8. Solid Waste Facilities: (2.5.4.3H)		
<input checked="" type="checkbox"/>	a. The size, type and location of solid waste facilities.	C-1 Note #17	<input type="checkbox"/>
	9. Storm water Management: (2.5.4.3I)		
<input checked="" type="checkbox"/>	a. The location, elevation and layout of all storm-water drainage.	Grading Plan C-2	<input type="checkbox"/>
	10. Outdoor Lighting: (2.5.4.3J)		
<input checked="" type="checkbox"/>	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and;		<input checked="" type="checkbox"/>
	b. photometric plan.		
<input checked="" type="checkbox"/>	11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)		<input checked="" type="checkbox"/>
	12. Landscaping: (2.5.4.3K)		
<input checked="" type="checkbox"/>	a. Identify all undisturbed area, existing vegetation and that which is to be retained;		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	b. Location of any irrigation system and water source.		<input checked="" type="checkbox"/>
	13. Contours and Elevation: (2.5.4.3L)		
<input checked="" type="checkbox"/>	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	Grading Plan C-2	<input type="checkbox"/>
	14. Open Space: (2.5.4.3M)		
<input checked="" type="checkbox"/>	a. Type, extent and location of all existing/proposed open space.	Site Plan C-1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)	Application Package	<input type="checkbox"/>
<input checked="" type="checkbox"/>	16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)	C-1 Note #22	<input type="checkbox"/>
<input checked="" type="checkbox"/>	17. Character/Civic District (All following information shall be included): (2.5.4.3Q)	N/A	<input type="checkbox"/>
	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			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. <i>(Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application) (3.2.1-2)</i>	N/A	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	Grading Plan C-2	<input type="checkbox"/>
<input checked="" type="checkbox"/>	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)	N/A	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Indicate where measures to minimize impervious surfaces have been implemented. (7.4.3)	No Other Practical Alternative	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Calculation of the maximum effective impervious surface as a percentage of the site. (7.4.3.2)	Site Plan C-1	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Stormwater Management and Erosion Control Plan. <i>(Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application) (7.4.4.1)</i>	Grading Plan C-2 and Application Package	<input type="checkbox"/>

Final Site Plan Approval Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. (2.5.3.2A)	Site Plan C-1 and Application Package	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> a. Application Package b. Domestic Water c. N/A d. N/A e. N/A f. C-2 Grading Plan g. N/A h. N/A 	<input type="checkbox"/>

Final Site Plan Approval Required Information

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	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)	Application Package	<input type="checkbox"/>
<input checked="" type="checkbox"/>	A list of any required state and federal permit applications required for the project and the status of same. (2.5.3.2E)	N/A	<input type="checkbox"/>

Applicant's Signature: Cary Cantu Date: 9/17/18



HAPPY MOUNTAIN HOLDINGS LLC

“Statement of Green Building Components and Systems”

64 & 74 Emery Street
Portsmouth, NH

SECTION 2.5.3.1A

The Condominium units will be constructed using quality building products and will be certified under the Energy Star Home Program. Building products and techniques are as follows:

- Energy Star Certified exterior doors and windows
- James Hardie Fiber Cement Siding
- York Energy Star Certified 90+% AFUE Gas Furnaces
- Programmable Thermostats
- Code Compliant Energy Star Insulating for Climate Zone 5
- Energy Star Certified Appliances
- LED Lighting and Energy Star Light Bulbs
- Low Flow toilets and faucets
- LID Elements including rain gardens for Stormwater Management
- Avoiding large ledge outcrop to minimize site work disturbance area with shared impervious driveway.



Electric Service Support Center PO
Box 330
Manchester, NH 03105
1-800-362-7764

07/31/2018

Corey Cawthron
750 Lafayette Rd. Suite 201
Portsmouth, NH 03801

Re: 64 Emery Street
Portsmouth, NH 03801

Dear Corey:

Eversource Energy agrees to provide electric service to the above site in accordance with the Tariff for Electric Service on file with the New Hampshire Public Utilities Commission (NHPUC), subject to the applicable NHPUC rules and regulations, as well as Eversource's "Requirements for Electric Service Connections".

Please keep in mind that all requirements for providing electric service, such as, but not limited to, contracts, licenses, fees, payments, easements and inspections must be provided to Eversource prior to the construction of the electric facilities.

Should you have any questions or concerns, please call us at 1-800-362-7764

Sincerely,

Tom Eger
Electric Service Support Center
PO Box 330
Manchester, NH 03105-9989



Electric Service Support Center PO
Box 330
Manchester, NH 03105
1-800-362-7764

07/31/2018

Corey Cawthron
750 Lafayette Rd. Suite 201
Portsmouth, NH 03801

Re: 74 Emery Street
Portsmouth, NH 03801

Dear Corey:

Eversource Energy agrees to provide electric service to the above site in accordance with the Tariff for Electric Service on file with the New Hampshire Public Utilities Commission (NHPUC), subject to the applicable NHPUC rules and regulations, as well as Eversource's "Requirements for Electric Service Connections".

Please keep in mind that all requirements for providing electric service, such as, but not limited to, contracts, licenses, fees, payments, easements and inspections must be provided to Eversource prior to the construction of the electric facilities.

Should you have any questions or concerns, please call us at 1-800-362-7764

Sincerely,

Tom Eger
Electric Service Support Center
PO Box 330
Manchester, NH 03105-9989



September 14, 2018

Corey Cawthron
Happy Mountain Holdings LLC
91 N Market St
Wilmington DE 19801

RE: Natural Gas Availability to 64 & 74 Emery St Portsmouth

Dear Corey

Unitil's natural gas division has reviewed the requested site for natural gas service.

Unitil hereby confirms natural gas service will be available to 64 & 74 Emery St Portsmouth. Installation is pending an authorized installation agreement with Happy Mountain Holdings LLC and street opening approval from the City of Portsmouth DPW

Let me know if you have any questions. You can email me at oliver@unitil.com. My phone number is 603-294-5174.

Sincerely,

Janet Oliver
Business Development Representative



September 14, 2018, 2018

RE: "Will Serve Letter for 64 and 74 Emery St. Portsmouth, NH.

Dear Mr. Cawthron,

Consolidated Communications has agreed to provide communications service to these locations subject to the Tariffs and terms of NHPUC No. 83, section 2.

Please note that a payment may be required from the customer requesting service as described in NH PUC Tariff No. 83, section 2.1.3.

You may review these documents at:

http://www.puc.nh.gov/Regulatory/Tariffs/FairPoint_83/FairPointLST.HTM

Subsequent to the customer responsibilities being satisfied, FairPoint will proceed with construction of the services requested.

Should you have any questions, please feel free to contact me at 603-427-5525

Joseph P. Considine
Engineer
Consolidated Communications



Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

WAIVER REQUESTS
Assessor's Map 220
Lot 87-2 (74 Emery Street)
&
Lot 87-3 (64 Emery Street)
Altus Project P4916
September 17, 2018

On behalf of Happy Mountain Holdings, LLC, Altus Engineering, Inc. request the following waivers from the City of Portsmouth, New Hampshire Site Plan Review Regulations.

Section 2.5.4 2 (E) A Note shall be provided on the plan stating, "All conditions on this plan shall remain in effect in perpetuity pursuant to the requirements of the site plan regulations."

Section 2.5.4 3 (C) Access and circulation

Section 2.5.4 3 (D) Parking and loading

Section 2.5.4 3 (J) Outdoor lighting

Section 2.5.4.3 (K) Landscaping

Section 3.4 Curbing (A) where access ways and driveways meet public streets

Section 5.2 Sidewalk and Pedestrian Pathways

Section 5.3 Bicycle Facilities

Section 6.1 Landscaping and Screening Standards.

Section 2.13.3 Recording Notes

Section 2.13.4 Landscaping requirements

This project is unique in the fact that it is the development of two duplex homes on two abutting lots. Because four residential housing units are proposed, the project falls under the criteria for Site Plan Review Regulations. As such, the duplex homes do not require loading, outdoor lighting, curbing at the entrance, bicycle racks and other types of development features that normally are depicted on commercial site developments. We have combined all of the waiver requests with a single explanation.

As discussed at the TAC Workshop, it is understood that the general intent of the Technical Advisory Committee's Review and the concerns that would be of interest to the Planning Board include the design of the stormwater management system and the utility service design. The plans submitted for review and approval demonstrate that there will be no adverse impacts to abutting properties from runoff from the site. A detailed utility service design plan is included in

Waiver Requests
Emery Street
September 2018
Page 2

the plan set.

To require that all conditions on the plan to remain in effect in perpetuity is an overly burdensome requirement for the homes. This would require the homeowners to file an amendment to the Site Plans to install a shed, light post, swing set or any other feature that is normally constructed on a duplex lot without requiring Site Plan Approval. To require the Site Plan to be recorded is an excessive requirement for this development.

Wde/4916 waiver



City of Portsmouth Driveway Permit

Public Works Department
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 427-1530

Permit Number:
32320

Date of Issue:
September 11, 2018

Site Address: 74 Emery Street Portsmouth, NH 03801
Main Address: 74 EMERY ST Portsmouth NH 03801
Property Owner: HAPPY MOUNTAIN HOLDINGS LLC

Applicant's Name: Corey Cawthron
Phone: 6037318156
Email: ccawthron@kw.com

Description of Work: Shared driveway servicing 64 & 74 Emery Street with one access point from public street.

New Drive: true

Existing Drive:

City Staff Remarks & Comments:

PERMIT HOLDER has read this permit, permit application, DPW Driveway Rules & Procedures, conditions and comments, and agrees to perform the work authorized. The cost of all work shall be borne by the applicant / property owner.

An **EXCAVATION PERMIT** is required if cutting into any public way or public right-of-way.
A **FLAGGING PERMIT** is required if any action would hinder free passage of vehicles on any street or right-of-way.
Permits are issued by DPW. Applications can be found online: <http://www.cityofportsmouth.com/publicworks/permits-applications>

Call **DIG SAFE** at 811 for every project.

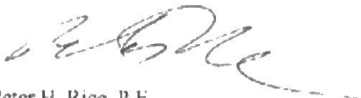
The City of Portsmouth reserves the right to deny any permits when:

- Proposed driveway does not conform to the requirements of the Portsmouth Zoning Ordinance;
- Proposed driveway does not conform to the Driveway Specifications that are part of this permitting process; or
- Proposed driveway would present an unreasonable safety risk to the public.

The Permit Card Shall Be Posted and Visible from the Street During Driveway Construction.

Contact Dave Desfosses @ (603) 766-1411 / djdesfosses@cityofportsmouth.com for a FINAL INSPECTION when work is completed.

Department Director:


Peter H. Rice, P.E.
Director of Public Works

This is an e-permit.





CITY OF PORTSMOUTH

Community Development Department
(603) 610-7281

Planning Department
(603) 610-7216

PLANNING DEPARTMENT

June 29, 2018

Happy Mountain Holdings LLC
901 N. Market St, Ste. 705
Wilmington, Delaware 19801

Re: Property at 64 & 74 Emery Street, Permit #30387
Assessor Plan 220, Lot 87-2&3

Dear Applicant:

The Board of Adjustment at its reconvened meeting on June 26, 2018 completed its consideration of your application described as follows:

Application:

Case 6-7

Petitioner: Happy Mountain Holdings LLC
Property: 64 and 74 Emery Street
Assessor Plan: Map 220, Lots 87-2 and 87-3
Zoning District: Single Residence B
Description: Build a two-family dwelling on two lots
Requests: Variances and/or Special Exceptions necessary to grant the required relief from the Zoning Ordinance including the following variances:
1. from Section 10.440, Use #1.30 to allow a two family dwelling on each of two lots where a two family dwelling on a lot is not allowed; and
2. from Section 10.521 to allow a lot area per dwelling unit for Lot 220-87-3 (64 Emery Street) of 10,616±s.f. where 15,000 s.f. is required.

Action:

The Board voted to **grant** the petition as presented and advertised.

Review Criteria:

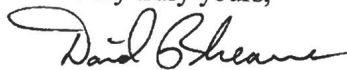
The petition was granted for the following reasons:

- Granting the variances will not be contrary to the public interest and the spirit of the ordinance will be observed as the essential character of the neighborhood will not be altered, nor will the health, safety or welfare of the public be threatened. The project will fit appropriately within this neighborhood which is a mixture of commercial and residential uses.
- Substantial justice will be done as the loss to the applicant if the petition were denied and strict adherence to the ordinance enforced would not be outweighed by any gain to the general public.
- The value of surrounding properties will not be diminished. Most of the surrounding properties are either commercial, places of assembly or other residential properties, all of which will sustain their values.
- Literal enforcement of the ordinance would result in unnecessary hardship due to the special conditions of the property. These include the proximity of the properties to the highway and the bypass as well as its location in a single residence zone while surrounded on three sides by commercial uses or places of assembly. Due to the special conditions, there is no fair and substantial relationship between the purposes of the ordinance provision limiting a lot to a single residence and their specific application to these properties. A residential use in a residential zone is a reasonable use.

As provided for in NH RSA Chapter 677, the Board's decision may be appealed 30 days after the vote. Any action taken by the applicant pursuant to the Board's decision during this appeal period shall be at the applicant's risk. Please contact the Planning Department for more details about the appeals process. Construction drawings or sketches must be reviewed and approved by the Building Inspector prior to the issuance of a building permit. Approvals by other land use boards may also be required prior to the issuance of a building permit.

The minutes and tape recording of the meeting may be reviewed in the Planning Department.

Very truly yours,



David Rheame, Chairman
Board of Adjustment

mek

c: Robert Marsilia, Chief Building Inspector
Roseann Maurice-Lentz, City Assessor
Douglas W. Macdonald, Esq.

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that **HAPPY MOUNTAIN HOLDINGS, LLC**, a Delaware limited liability company with a business address at Delaware Corporate Service, Inc., 901 N. Market St., Suite 705, Wilmington, County of New Castle, Delaware, 19801, grant to _____, with WARRANTY COVENANTS, the following:

A certain parcel or tract of land situated in the City of Portsmouth, County of Rockingham, State of New Hampshire, located on the northwesterly side of Emery Street, (f/k/a Central Avenue), being Proposed Map 220, Lot 103, (also known as 64 Emery Street), shown on a plan by Civil Consultants and Altus Engineering, Inc., dated September 27, 2013, entitled "PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI - PHASE 2 - MYRTLE AVENUE & CENTRAL AVENUE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE", recorded at the Rockingham County Registry of Deeds on June 23, 2014 as Plan D-38286 and being more particularly described as follows:

BEGINNING at a point in the northwesterly line of Central Avenue at the southeasterly corner of the parcel herein described, marked by a set 5/8" diameter rebar;

thence N 35°56'34" W, 32.91 feet to a set 5/8" diameter rebar;

thence N 35°56'34" W, 22.09 feet to a set 5/8" diameter rebar;

thence N 35°56'34" W, 166.58 feet to a set 5/8" diameter rebar;

thence N 35°56'34" W, 57.58 feet to a 5/8" diameter rebar set;

thence N 71°18'39" E, 153.74 feet to a found 1" diameter, 3" tall iron pipe in a stone wall;

thence S 10°47'38" E, along said stone wall, 8.02 feet to a found a 5/8" diameter rebar;

thence S 12°42'58" E, along said stone wall, 47.31 feet to a set 5/8" diameter rebar;

thence S 12°42'58" E, along said stone wall, 40.33 feet to a found 3/8" diameter drill hole;

thence S 14°25'35" E, along said stone wall, 51.02 feet to a 5/8" diameter rebar set in the northwesterly line of Central Avenue;

thence S 28°23'29" W, by the northwesterly line of Central Avenue, 100.00 feet to the POINT OF BEGINNING;

containing 21,232 square feet;

Subject to an easement as granted by Ethel B. Anderson to New Hampshire Gas & Electric Company as described in easement deed recorded at book 1137, page 357 of the Rockingham County Registry of Deeds.

Subject to an easement as granted by Aldolph F. Anderson to Portsmouth Power Company as described in easement deed recorded at book 836, page 116 of the Rockingham County Registry of Deeds.

Subject to an easement as granted by Marshall H. and Dorothy A. Chalk to New Hampshire Electric Company as described in easement deed recorded at book 1520, page 412 of the Rockingham County Registry of Deeds.

Subject to a Declaration of Easement Imposed by Catherine T. Moretti, for a Subdivision Located at Myrtle Avenue and Central Avenue, recorded at book 5539, page 730 of the Rockingham County Registry of Deeds.

Subject to all other restrictions, rights, easements, rights-of-way, and anything else as shown on said above described plan.

Meaning and intending to describe and convey the premises conveyed to the Grantor herein by fiduciary Deed dated April 16,, 2018 and recorded at the Rockingham County Registry of Deeds at Book 5905, Page 2549.

IN WITNESS WHEREOF, I have executed this deed on this this ____ day of _____, 201_.

Witness:

**HAPPY MOUNTAIN
HOLDINGS, LLC,**

By:
Its: _____, Duly Authorized

**STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, SS:**

This instrument was acknowledged before me on this _____ day of _____, 201____,
by _____ in his capacity as _____ of Happy Mountain Holdings, LLC.

NOTARY PUBLIC

Name:

My Commission Expires:

MAIL TO pd

Return to: City of Portsmouth
Legal Department
Planning Division
City Hall - 1 Jenkins Ave.
Portsmouth, NH 03801

**DECLARATION OF EASEMENT IMPOSED BY CATHERINE T. MORETTI,
FOR A SUBDIVISION LOCATED AT MYRTLE AVENUE AND CENTRAL AVENUE AS
SHOWN ON THE SUBDIVISION PLAN ENTITLED "PROPOSED DIVISION OF LAND
OF CATHERINE T. MORETTI PHASE 2 - MYRTLE AVENUE & CENTRAL AVENUE
PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE"**

THIS DECLARATION is made by CATHERINE T. MORETTI, with a mailing address of 9 Prince Lane, Raymond, NH 03077, (hereinafter "Declarant") and is made for the benefit of Lot 104 as shown on a plan of land entitled "Proposed Division of Land of Catherine T. Moretti Phase 2 - Myrtle Avenue & Central Avenue Portsmouth, Rockingham County, New Hampshire", dated June 10, 2014 and prepared by Civil Consultants and Altus Engineering, Inc. (hereinafter "Subdivision Plan") to be recorded herewith in the Rockingham County Registry of Deeds. D - 38286

Acceptance of a deed by any person of either Lot 103 or Lot 104 shall constitute acceptance of these easements, regardless of whether said deed is expressly made subject thereto.

1. **COMMON ACCESS EASEMENT.** Lot 103 is hereby burdened by, and Lot 104 is hereby benefited by, a common access easement on Lot 103 for access from Central Avenue to each respective lot over the area shown on the Subdivision Plan as "Proposed Driveway Easement Appurtenant to Lot 104 4,219 S.F." (hereinafter "Common Access Easement Area"). The owners of Lot 103 and Lot 104 shall equally share in the ongoing costs and maintenance of and repair to said Common Access Easement Area, including the cost of snow removal. Repairs and maintenance of the Common Access Easement Area shall be performed from time to time by agreement of the then owners of Lot 103 and Lot 104. There shall be no parking upon or the obstruction of the Common Access Easement Area by any person entitled to use the same.

2. **SEWER & WATER LINE EASEMENT.** Lot 103 is hereby burdened by and Lot 104 is hereby benefited by, a sewer and water line easements on Lot 103 in the area depicted on the Subdivision Plan as "Proposed Sewer and Water Line Easement Appurtenant to Lot 104 2,072 S.F." (hereinafter "Sewer & Water Line Easement Area"). The owner of Lot 104 is hereby granted an easement over Lot 103, in the Sewer & Water Line Easement Area, for the installation, maintenance and repair of underground water and sewer lines.

3. **ENFORCEMENT.** Enforcement of these Declarations of Easements shall be by a proceeding at law or in equity against any person or persons violating or attempting to violate any easement, either to restrain violation of, or to recover damages, and failure by any owner to

022140

2014 JUN 23 PM 3:08

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

enforce any easement or other rights listed herein shall in no event be deemed a waiver of a right to do so thereafter.

4. **AMENDMENT, MODIFICATION OR TERMINATION.** This Declaration of Easements may only be amended, modified or terminated by an instrument signed by the then owners of both Lot 103 and Lot 104 and the Planning Director for the City of Portsmouth (or similar official authorized by the City Manager).

5. **TITLE REFERENCE.** Being a portion of the lands of Grantor described in a deed dated April 28, 2005 and recorded at the Rockingham County Registry of Deeds in Book 4471, Page 2618, being Lot 2 shown on a plan by Civil Consultants and Altus Engineering, Inc., dated April 2, 2013, entitled "PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI, 261 MYRTLE AVENUE, PORTSMOUTH, ROCKINGHAM, NEW HAMPSHIRE", recorded at the Rockingham County Registry of Deeds as Plan D-37764.

Executed this 10 day of June, 2014.

Signature: Catherine T. Moretti
Catherine T. Moretti

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

The foregoing instrument was acknowledged before me this 10th day of June
2014 by the above-named Catherine T. Moretti.

[Signature]
Notary Public / Justice of the Peace

Print Name: Samantha L. Garland

Commission Expires: 10/2016

SAMANTHA L. GARLAND
Notary Public, State of New Hampshire
My Commission Expires Aug. 10, 2016





Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

HAPPY MOUNTAIN HOLDINGS, LCC

64 & 74 EMERY STREET
Portsmouth, NH

PRELIMINARY OPINION OF SITEWORK COST

DATE: 14-Sep-18
PROJECT: 4916

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
SITWORK DEMOLITION				
MOBILIZATION	1	LS	\$2,000.00	\$2,000.00
CLEARING AND GRUBBING				
TREE AND VEGETATION REMOVAL	1	LS	\$3,000.00	\$3,000.00
SEWER SERVICE				
LOW PRESSURE FORCE MAIN	300	LF	\$34.00	\$10,200
WATER SERVICE				
2-INCH FIRE SUPPRESSION WATER SERVICES	420	LF	\$36.00	\$15,120
1-INCH DOMESTIC WATER SERVICES	830	LF	\$32.00	\$26,560
WATER TAPS AND CURB STOPS	4	EA	\$500.00	\$2,000
GAS SERVICE				
GAS SERVICES	335	LF	\$26.00	\$8,710
ELECTRIC/PHONE/CABLE SERVICES				
UNDERGROUND ELECTRIC AND TELE-COMMUNICATION CONDUITS	260	LF	\$30.00	\$7,800
TRANSFORMER AND PAD	1	EA	\$4,000.00	\$4,000
STORM DRAINAGE SYSTEM				
EROSION CONTROL RIPRAP AND DRIP EDGE	1	LS	\$1,000.00	\$1,000
SEDIMENT AND EROSION CONTROL				
TEMPORARY EROSION CONTROL	1	LS	\$1,500.00	\$1,500
AGGREGATE BASE COURSES				
12" GRAVEL (NHDOT 304.2)	312	CY	\$18.00	\$5,616
6" CRUSHED GRAVEL (NHDOT 304.3)	156	CY	\$22.00	\$3,432
CUTS AND FILLS	250	CY	\$12.00	\$3,000
HOT BITUMINOUS PAVEMENT				
2.5" BASE COURSE	112	TONS	\$85.00	\$9,520
1.5" WEARING COURSE	68	TONS	\$85.00	\$5,780
LANDSCAPING				
LOAM AND SEED - TURF ESTABLISHMENT	1	LS	\$6,000.00	\$6,000
LIGHTING				
NIC				
SUBTOTAL				\$115,238
TOTAL:				\$115,238

EXCLUSIONS:

ITEMS EXCLUDED FROM THIS ESTIMATE INCLUDE, BUT ARE NOT LIMITED TO, THOSE ITEMS SPECIFIED ABOVE AS BEING NOT INCLUDED IN THIS ESTIMATE AND THE FOLLOWING:
LEDGE REMOVAL, TAPPING FEES, INSPECTIONS, UTILITY SERVICE FEES

ISSUED FOR: TAC

ISSUE DATE: SEPTEMBER 14, 2018

REVISIONS	NO.	DESCRIPTION	BY	DATE
	0	INITIAL SUBMISSION	EDW	09/14/18

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 4916 SITE.DWG

SCALE:
11"x17": 1" = 40'
22"x 34": 1" = 20'

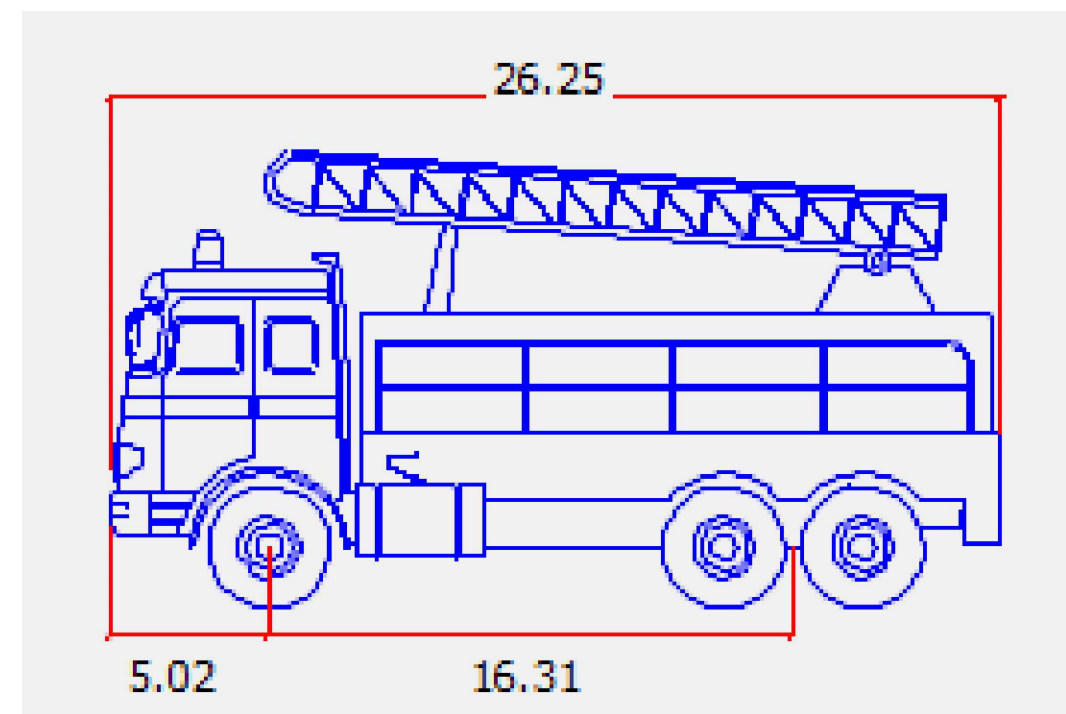
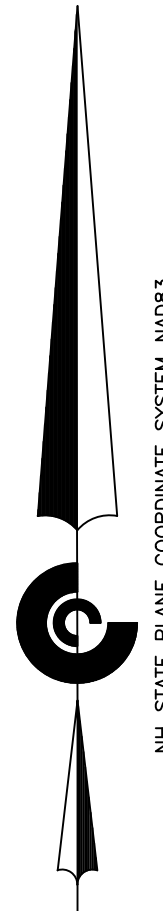
APPLICANT/OWNER:
HAPPY MOUNTAIN HOLDINGS, LLC
901 N. MARKET STREET
SUITE 705
WILMINGTON, DE 19801

PROJECT:
RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL
220-87-2
74 EMERY STREET
&
ASSESSOR'S PARCEL
220-87-3
64 EMERY STREET
PORTSMOUTH,
NEW HAMPSHIRE

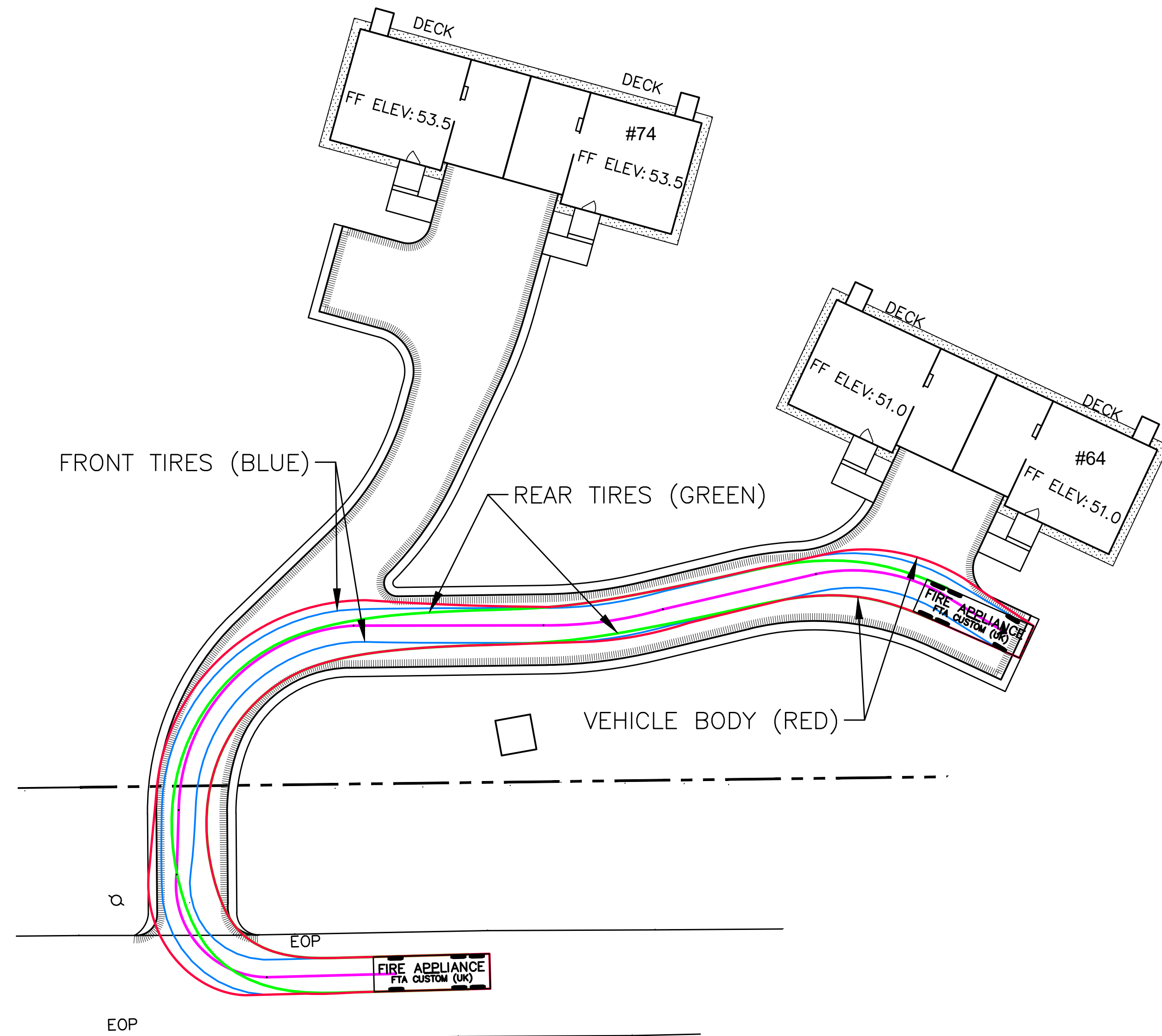
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AUTOTURN
64 EMERY ST

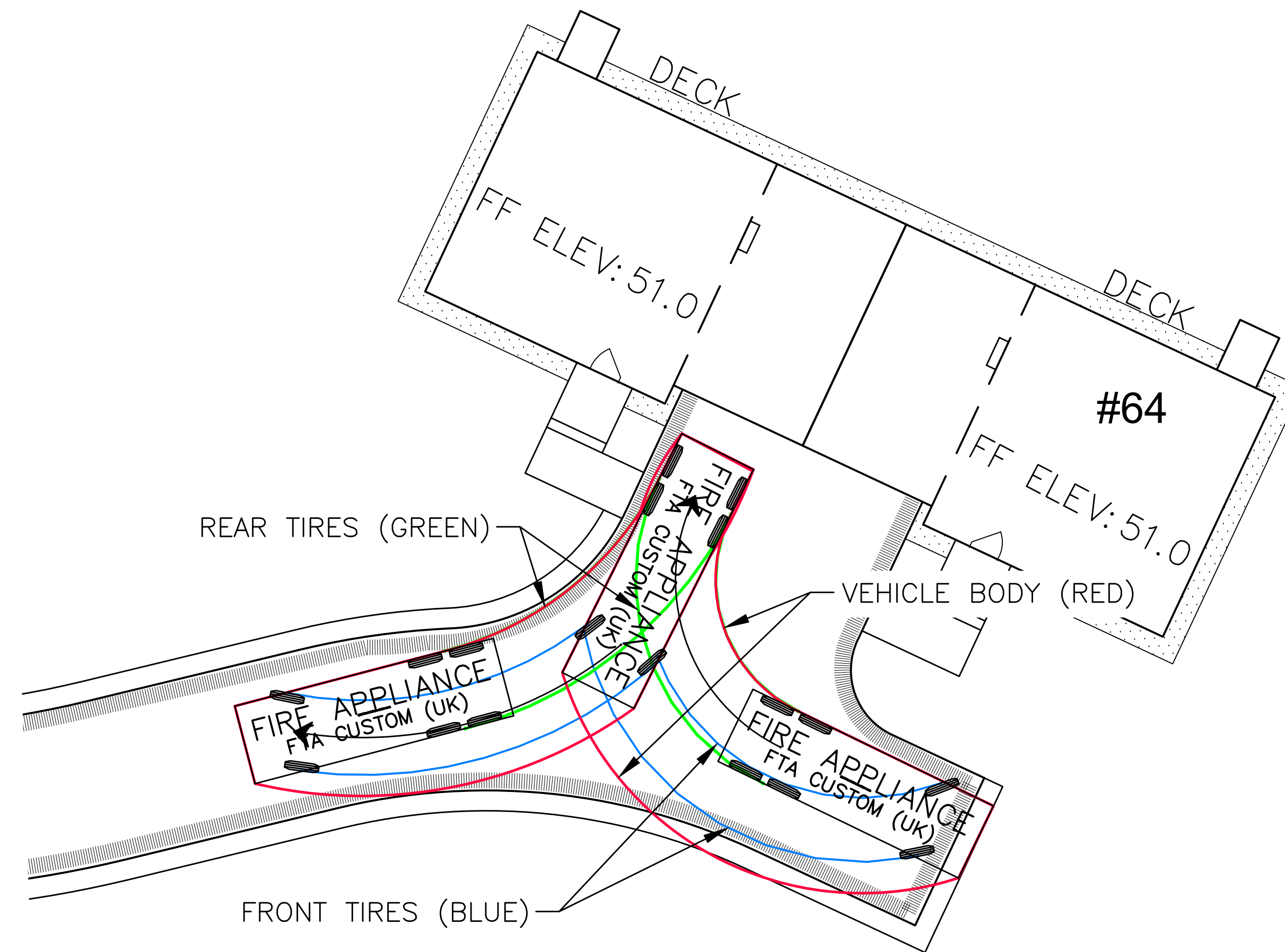
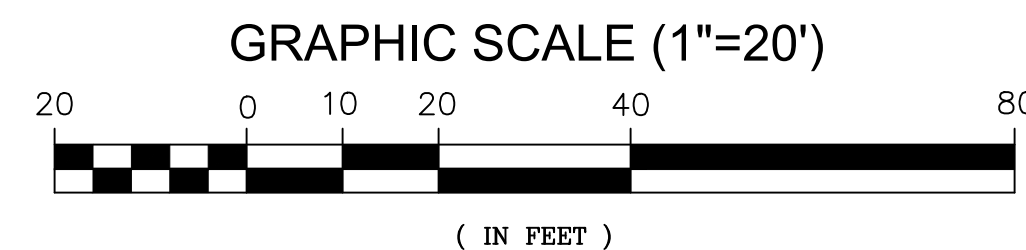
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AT - 1



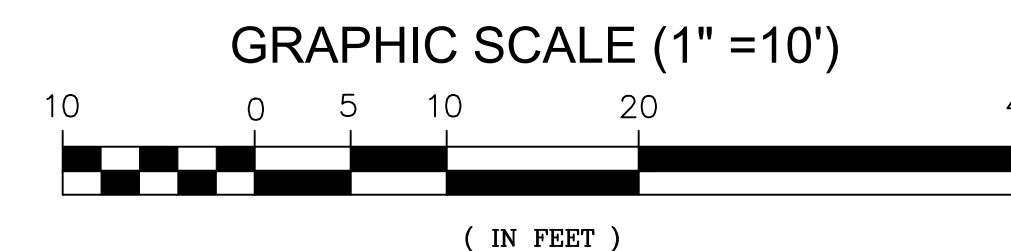
FIRE APPLIANCE TRUCK DIMENSIONS



TURN MOVEMENT #1
Entrance from Emery St.



TURN MOVEMENT #2
3Pt Turn - Reverse and Exit



ISSUED FOR: **TAC**
ISSUE DATE: **SEPTEMBER 14, 2018**

REVISIONS	NO.	DESCRIPTION	BY	DATE
	0	INITIAL SUBMISSION	EDW	09/14/18

DRAWN BY: CDB
APPROVED BY: EDW
DRAWING FILE: 4916 SITE.DWG

SCALE:
11"x17": 1" = 40'
22"x 34": 1" = 20'

APPLICANT/OWNER:
HAPPY MOUNTAIN HOLDINGS, LLC

901 N. MARKET STREET
SUITE 705
WILMINGTON, DE 19801

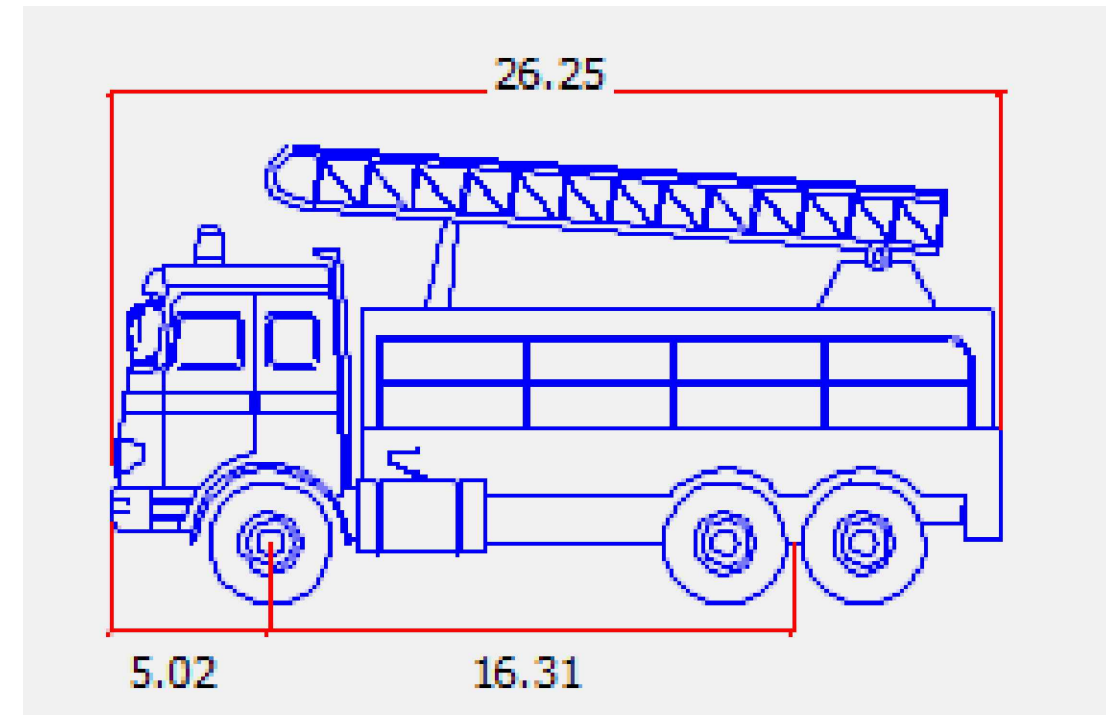
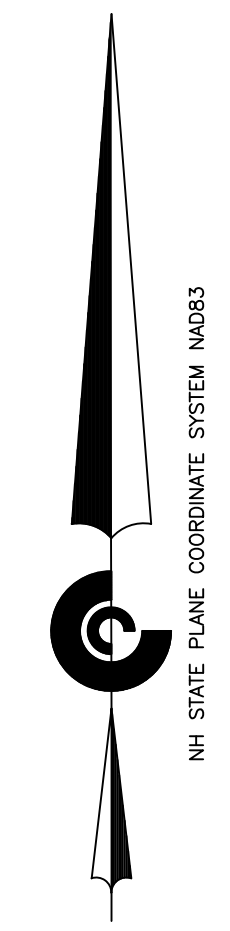
PROJECT:
RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL
220-87-2
74 EMERY STREET
&
ASSESSOR'S PARCEL
220-87-3
64 EMERY STREET

PORTSMOUTH,
NEW HAMPSHIRE

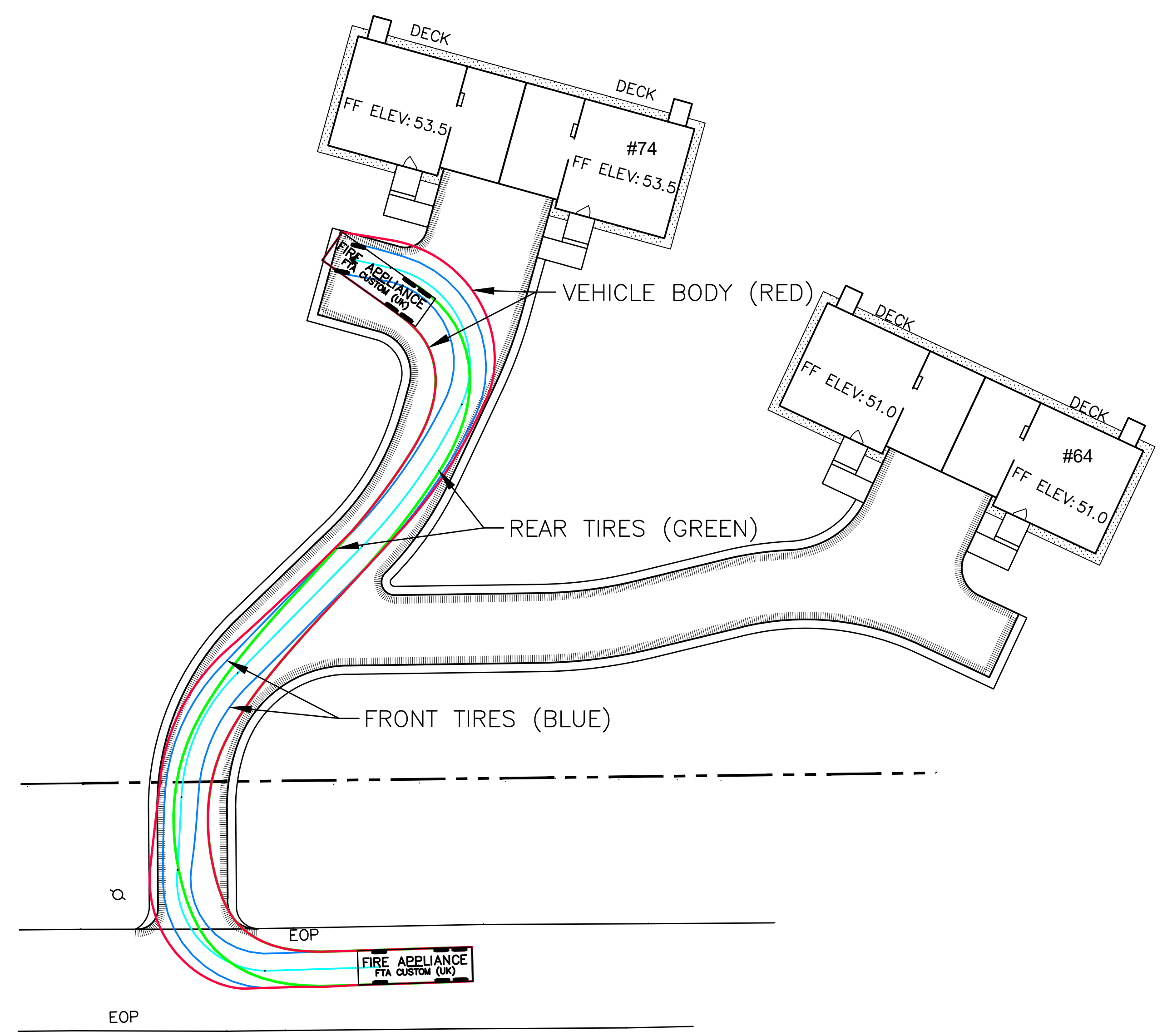
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AUTOTURN
74 EMERY ST

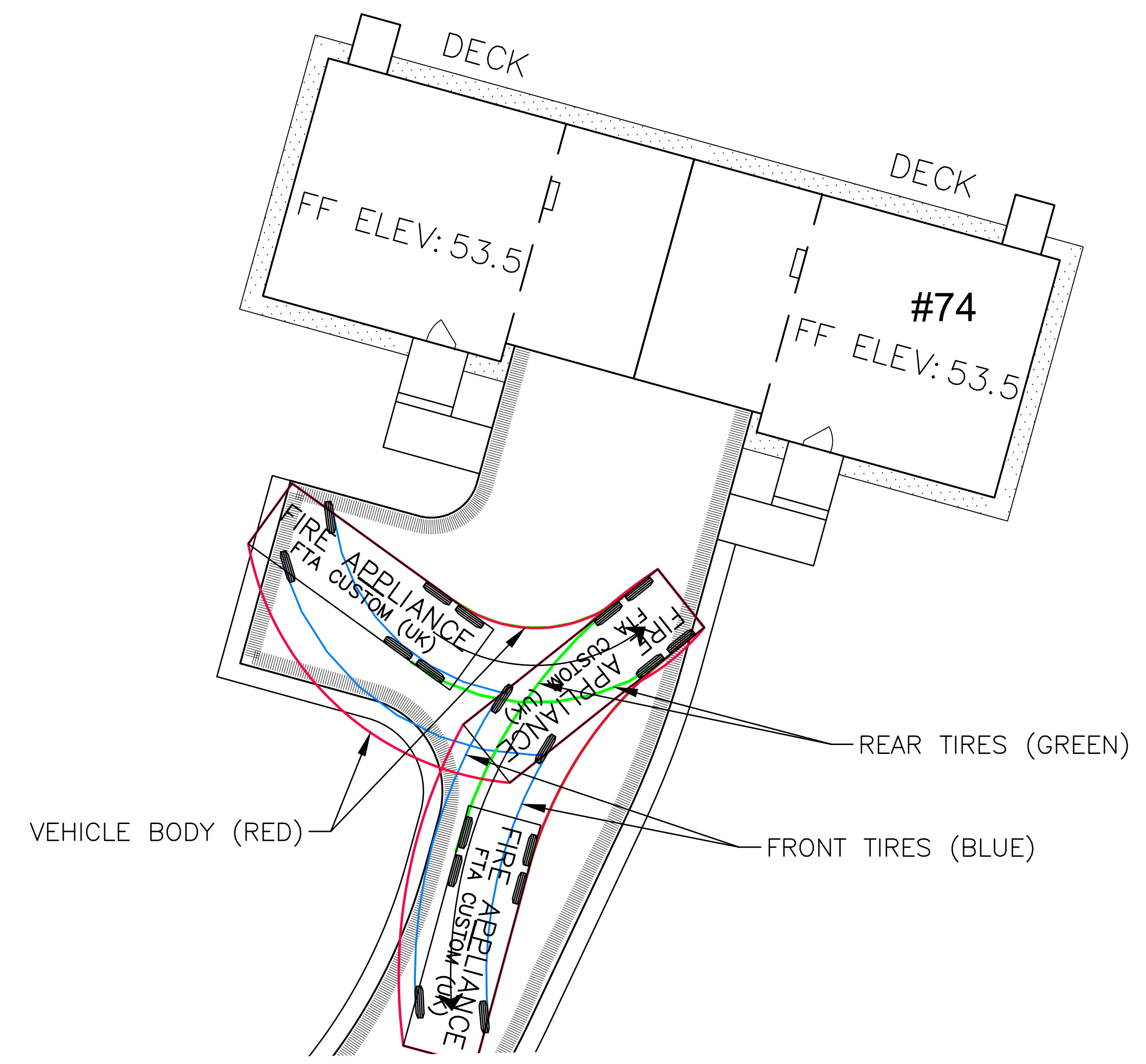
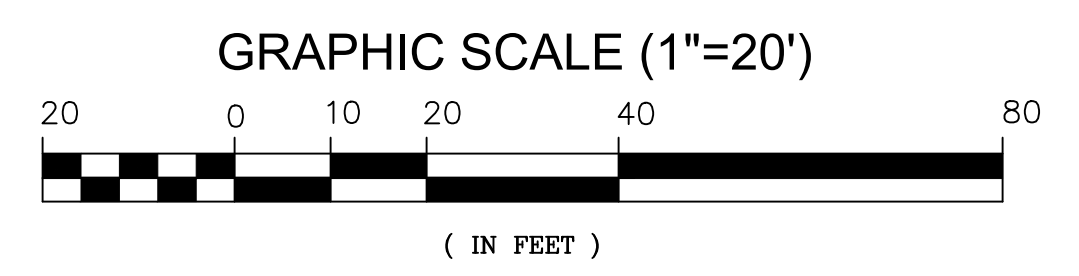
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AT - 2



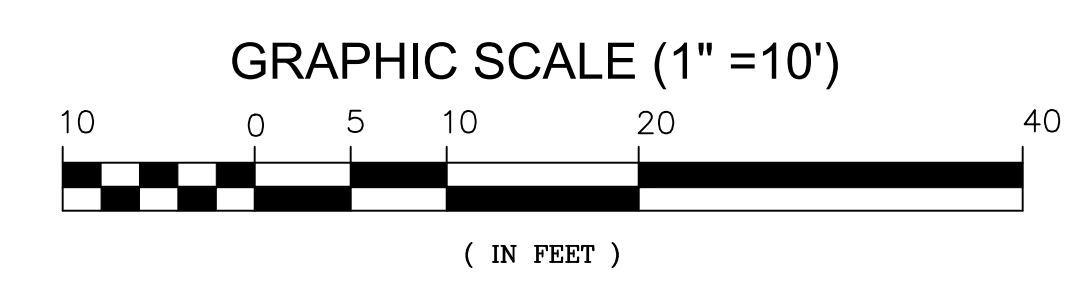
FIRE APPLIANCE TRUCK DIMENSIONS



TURN MOVEMENT #1
Entrance from Emery St.



TURN MOVEMENT #2
3Pt Turn - Reverse and Exit



Residential Development Plans

Assessor's Parcel 220-87-2
 74 EMERY STREET
 &
 Assessor's Parcel 220-87-3
 64 EMERY STREET
 Portsmouth, New Hampshire

APPROVED BY THE PORTSMOUTH PLANNING BOARD	
CHAIRMAN	DATE

Issued:

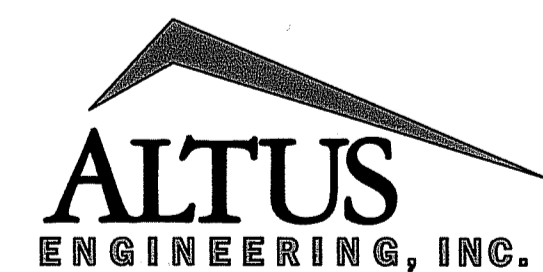
SEPTEMBER 14, 2018

TAC Submission

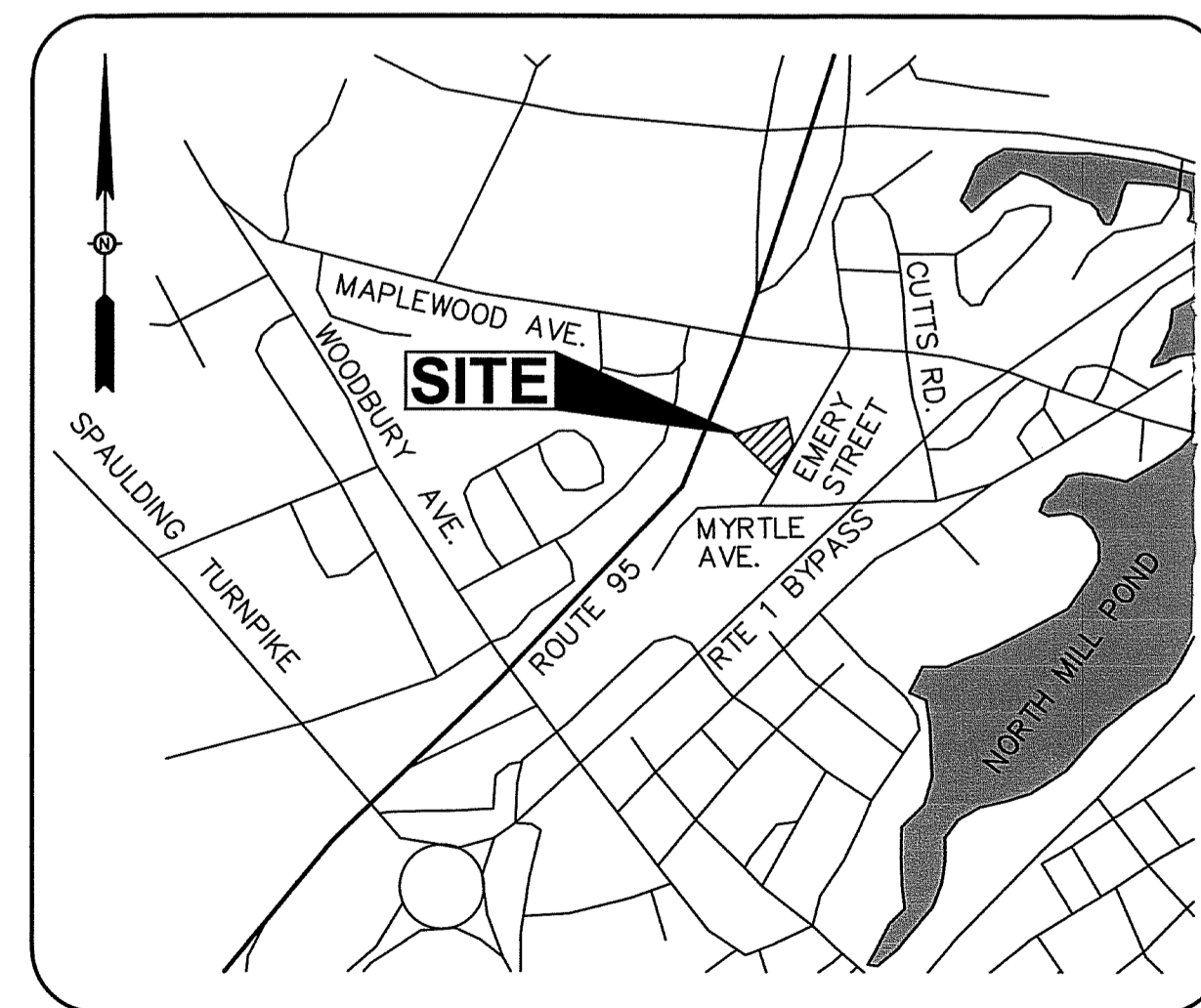
Owner/Applicant:

HAPPY MOUNTAIN HOLDINGS, LLC
 901 N. MARKET STREET
 SUITE 705
 WILMINGTON, DE 19801

Civil Engineer:



133 COURT STREET PORTSMOUTH, NH 03801
 (603) 433-2335 www.ALTUS-ENG.com



LOCUS MAP
 1" = 1,000 FEET +/-

Sheet Index

Title	Sheet No.:	Rev.	Date
Existing Conditions Plan (by Civil Consultants, Inc.)	EC-1	0	09/27/13
Site Plan	C-1	1	09/14/18
Grading Plan	C-2	0	09/14/18
Utilities Plan	C-3	0	09/14/18
General Notes & Sitework Details	C-4	1	09/14/18
Sitework Details	C-5	0	09/14/18

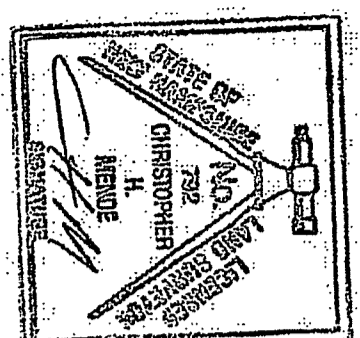
REFERENCE PLANS:

1) PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI, 261 MYRTLE AVENUE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE, DATED APRIL 2, 2013, BY CIVIL CONSULTANTS AND ALTUS ENGINEERING, INC., RECORDED AT THE ROCKINGHAM COUNTY REGISTER OF DEEDS AS PLAN D-5776A.
 2) SEE PLAN REFERENCES 1-13 ON ABOVE REFERENCED PLAN.

CERTIFICATION:

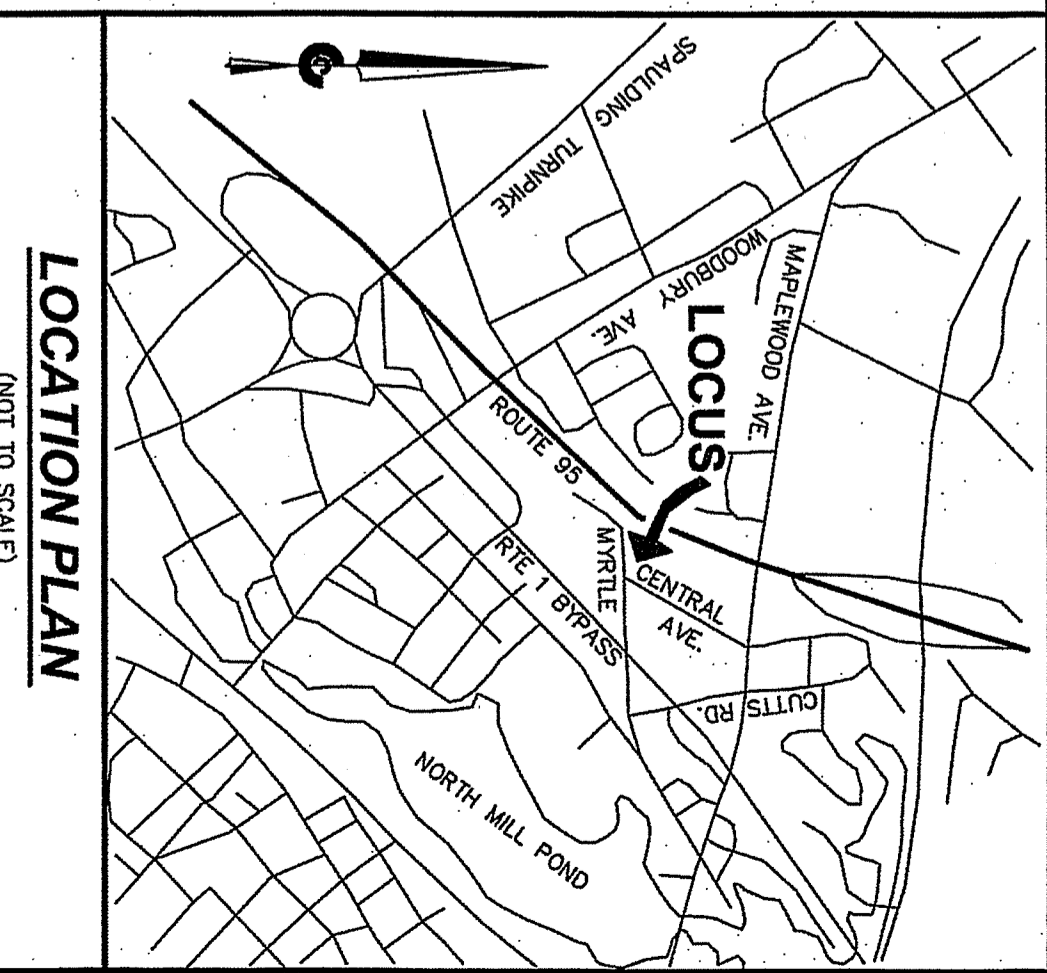
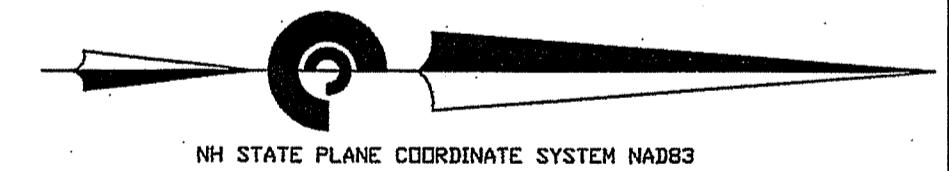
THIS SURVEY WAS PERFORMED UNDER THE REGULATION OF THE BOARD OF SURVEYING AND MAPPING ENGINEERS AND THE NEW HAMPSHIRE BOARD OF LICENSURE FOR LAND SURVEYORS ON JANUARY 1, 2009 FOR A STANDARD PROPERTY SURVEY, URBAN CLASSIFICATION. (SEE NOTES HEREIN)

CATHERINE T. MORETTI, ENGINEER
 NEW HAMPSHIRE LICENSED LAND SURVEYOR #792
 CIVIL CONSULTANTS SOUTH BERWICK, MAINE 03908
 SEPTEMBER 27, 2013
 DATE



NOTES:

- CIVIL CONSULTANTS DID NOT SEARCH FOR A LAYOUT FOR MYRTLE AVENUE. THE ROAD LINE AS SHOWN IS BASED ON THE DEEDS AND PLANS REFERENCED HEREIN. SEE NOTES AND PLAN REFERENCES HEREIN REGARDING THE ROAD LINES FOR ROUTE 95 AND CENTRAL AVENUE. ALL ARE PUBLIC ROADS.
- RECORDS RESEARCH FOR THIS SURVEY WAS LIMITED TO THE PERIOD FROM 1839 TO JANUARY 21, 2013.
- UTILITY INFORMATION OBTAINED HEREIN IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DETECTED WERE NOT NECESSARILY REPRESENTED AT EXISTING UTILITIES PRIOR TO CONSTRUCTION OR EXCAVATION. NO INVESTIGATION FOR UNDERGROUND UTILITIES WAS CONDUCTED. SEE EASEMENT DEEDS RELATING TO ELECTRIC POWER LINES REFERENCED HEREIN.
- THE FIELD SURVEY WAS CONDUCTED ON JANUARY 23 AND 28, 2013 USING AN ELECTRONIC TOTAL STATION AND PRECISE SURVEY-GRADE GPS EQUIPMENT. TRAVERSE MIS-CLOSURE WAS BETTER THAN 1:15,000.
- BEARINGS, DISTANCES AND COORDINATES AS SHOWN ARE BASED ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM, NAD83. COORDINATES OF SURVEY CONTROL POINTS WERE DERIVED BY PRECISE GPS OBSERVATIONS PROCESSED ON THE NGS GPS WEBSITE USING THE FOLLOWING BASE STATIONS: 980303 (WAS 145698 892), 980304 (WAS 145698 892), 980305 (WAS 145698 892) AND 20020000. UNITS ARE U.S. SURVEY FEET. TO SCALE GRID DISTANCES TO GROUND DISTANCES, MULTIPLY BY AN AVERAGE COMBINED SCALE FACTOR OF 0.999969991.
- ALL ELEVATIONS FOR THIS PROJECT ARE BASED ON NAVD83 DERIVED FROM THE SAME GPS SURVEY OBSERVATIONS (SEE NOTE 5 ABOVE). SEE BENCH MARKS HEREIN.



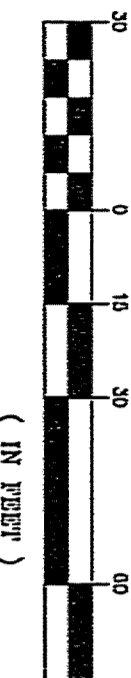
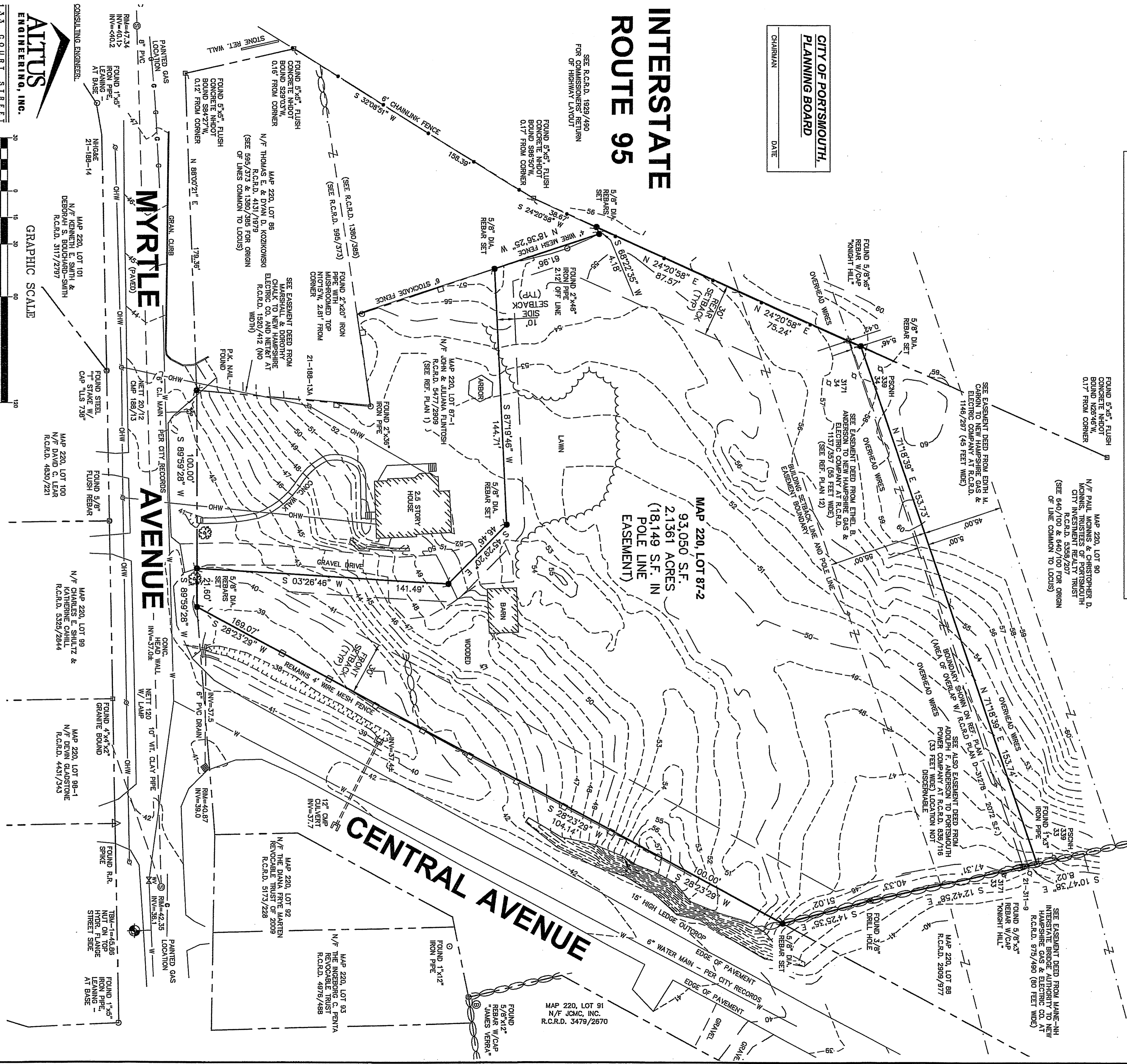
LEGEND:

▲	FOUND RAILROAD SPIKE	CONC.	CONCRETE
○	SET 5/8" DIA. REBAR W/ CAP	OHW	OVERHEAD WIRE
○	FOUND IRON PIPE	DEED BOOK/PAGE	1252/725
○	FOUND REBAR OR IRON ROD	R.C.R.D.	ROCKINGHAM REGISTRY OF DEEDS
○	FOUND BOUND AS NOTED	PARCELS IN SAME OWNERSHIP	
○	SEWER MAN HOLE	DECIDUOUS TREE	
○	UTILITY POLE	LOCAL PARCEL BOUNDARY	
○	CATCH BASIN	EASEMENT BOUNDARY	
○	INVERT ELEVATION	PROPOSED LOT BOUNDARY	
○	CURB STOP VALVE		
○	WATER GATE		
○	FIRE HYDRANT		
○	RET. WALL		

**CITY OF PORTSMOUTH,
 PLANNING BOARD**

CHAIRMAN _____ DATE _____

**INTERSTATE
 ROUTE 95**



**ALTUS
 ENGINEERING, INC.**

133 COURT STREET
 PORTSMOUTH, NH 03801
 W.W.ALTUS@A-E-ENG.COM

NO.	REVISIONS	DATE
1		
2		
3		
4		
5		
6		
7		
8		

DRAWN CHM	DATE
DATE	SEPTEMBER 27, 2013
CHECKED WPP	
APPROVED CHM	
SCALE	1"=30'
FIELD BOOK	
INT.	
DATE	SEPTEMBER 27, 2013

CIVIL CONSULTANTS	CIVIL CONSULTANTS
P.O. Box 100 South Berwick Maine 03908 207-394-2660 dmc@ccivil.com	ENGINEERS Planners Surveyors P.O. Box 100 South Berwick Maine 03908 207-394-2660 dmc@ccivil.com

THIS SHEET NOT PREPARED FOR RECORDING

TAX MAP 220, LOT 87-2

**PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI
 PHASE 2 - MYRTLE AVENUE & CENTRAL AVENUE
 PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE**

PREPARED FOR:
 CATHERINE T. MORETTI
 MAILING ADDRESS: 261 MYRTLE AVENUE, PORTSMOUTH, NEW HAMPSHIRE 03801
 FILE: J:\VAA\2013\131010\CARLSON\DRAWING\PHASE2-EXISTING-CONDITIONS-09-21-2013.DWG

SHEET NUMBER:
EC1

EXISTING CONDITIONS
 SHEET 1 OF 1
 PROJ # 13-101.01

ZONING RELIEF

PORTSMOUTH ZONING BOARD OF ADJUSTMENT ON JUNE 26, 2018 GRANTED:

1. A VARIANCE FROM SECTION 10.4.4, USE #1.30 TO ALLOW A TWO FAMILY DWELLING ON EACH OF TWO LOTS WHERE A TWO FAMILY DWELLING IS NOT ALLOWED;
2. SECTION 10.5.21 TO ALLOW A LOT AREA PER DWELLING UNIT FOR LOT 220-87-3 (64 EMERY STREET) OF 10,616± WHERE 15,000 SF IS REQUIRED.

WAIVERS

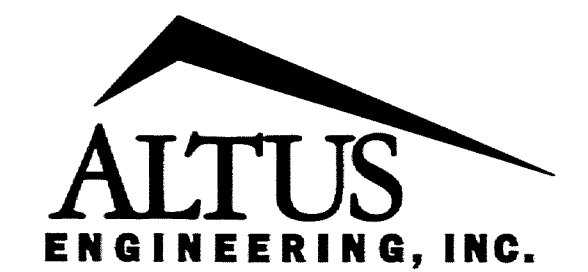
SECTION 2.5.4 2 (E)
A NOTE SHALL BE PROVIDED ON THE SITE PLAN STATING: "ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS."

- SECTION 2.5.4 3 (C) ACCESS AND CIRCULATION
- SECTION 2.5.4 3 (D) PARKING AND LOADING
- SECTION 2.5.4 3 (J) OUTDOOR LIGHTING
- SECTION 3.4 CURBING (A)
WHERE ACCESS WAYS AND DRIVEWAYS MEET PUBLIC STREETS
- SECTION 5.2 SIDEWALK AND PEDESTRIAN PATHWAYS
- SECTION 5.3 BICYCLE FACILITIES
- SECTION 6.1 LANDSCAPING AND SCREENING STANDARDS
- SECTION 2.13.3 RECORDING NOTES
- SECTION 2.13.4 LANDSCAPING REQUIREMENTS

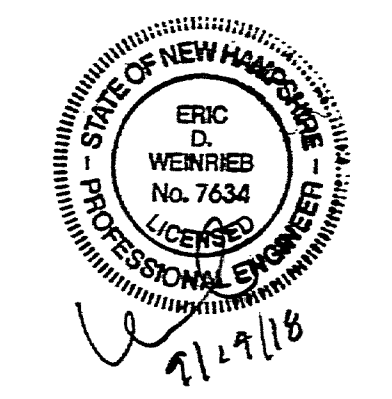
ZONING SUMMARY

ZONE: SRB (SINGLE RESIDENCE B)

DIMENSIONAL REQUIREMENTS	REQUIRED	PROVIDED	
		ASSESSOR'S PARCEL 220-87-2	ASSESSOR'S PARCEL 220-87-3
MIN. LOT AREA:	15,000 S.F.	32,427 SF	21,232 S.F.
MIN. STREET FRONTAGE:	100'	104'±	100'
MIN. LOT DEPTH:	100'	224'±	146'±
FRONT SETBACK:	30'	125'±	56'±
SIDE SETBACK:	10'	14'±	14'±
REAR SETBACK:	30'	75'±	57'±
MAX. HEIGHT:	35'	<35'	<35'
MAX. BUILDING COVERAGE:	20%	8.2%±	12.5%±
MIN. OPEN SPACE:	40%	71%±	74%±



133 COURT STREET PORTSMOUTH, NH 03801
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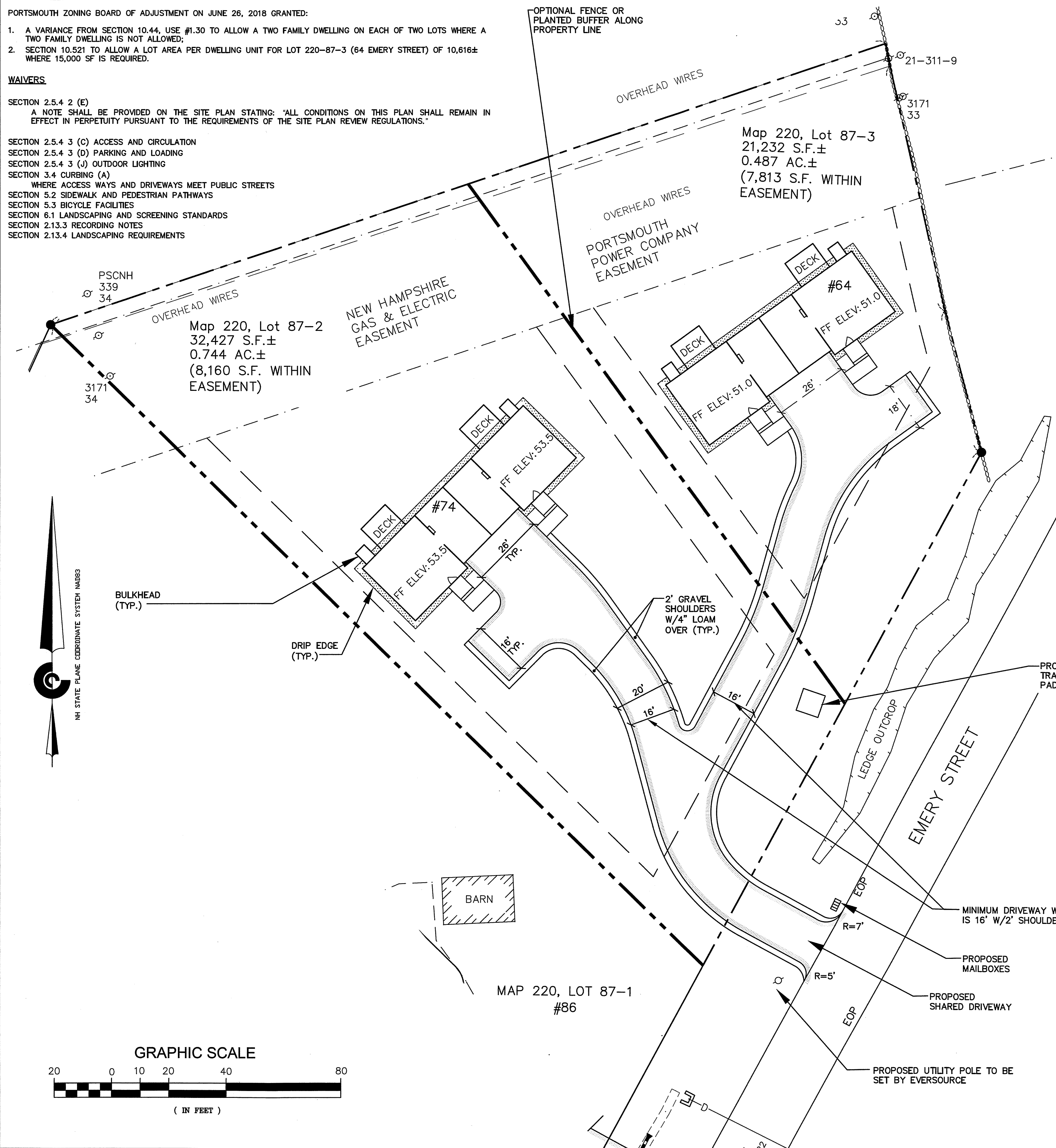
REVISIONS	NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	08/07/18	
1	PER TAC COMMENTS	EDW	09/14/18	

DWELLING DENSITY PER LOT:
LOT 220-87-2: 16,213.5 SF/DWELLING UNIT
LOT 220-87-3: 10,616 SF/DWELLING UNIT

APPROVED BY THE PORTSMOUTH PLANNING BOARD
CHAIRMAN _____ DATE _____

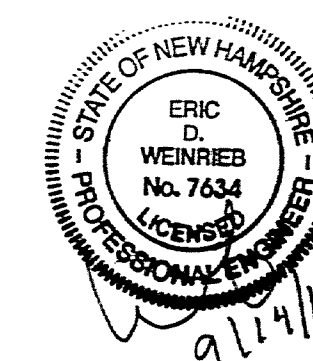
SITE NOTES

1. THE INTENT OF THIS PLAN SET IS TO PROVIDE THE NECESSARY INFORMATION FOR THE REVIEW, PERMITTING AND DEVELOPMENT OF TWO RESIDENTIAL DUPLEXES ON TWO ADJACENT LOTS. THESE PLANS PROVIDE DETAILED INFORMATION FOR THE SITE LAYOUT, GRADING, UTILITIES, STORMWATER MANAGEMENT, AND LANDSCAPE IMPROVEMENTS.
2. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE, LOCAL AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED. THE LANDOWNER (CITY OF PORTSMOUTH) AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH LOCAL, STATE AND FEDERAL WETLAND PERMITTING REQUIREMENTS INCLUDING PROTECTION OF NATURAL RESOURCES AND THEIR BUFFERS.
3. CONTRACTOR SHALL CALL DIG SAFE AT 1 (800) DIG-SAFE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO COMMENCING CONSTRUCTION.
4. CONTRACTOR SHALL NOTIFY CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SEDIMENT AND EROSION CONTROL ITEMS TO PREVENT SEDIMENT FROM CONSTRUCTION ACTIVITIES FROM LEAVING THE SITE. CONTROLS SHALL BE INSPECTED ON A REGULAR BASIS AND AFTER ALL RAIN EVENTS OF 0.25 INCHES OR GREATER. ANY DEFICIENCIES IN THE CONTROLS SHALL BE ADDRESSED IMMEDIATELY AND BROUGHT TO THE ATTENTION OF THE OWNER. ALL STORM DRAINS WITHIN OR ADJACENT TO THE WORK AREA, WITH THE POTENTIAL TO RECEIVE RUNOFF FROM EXPOSED CONSTRUCTION AREAS, SHALL RECEIVE STORM DRAIN INLET PROTECTION.
6. CONTRACTOR SHALL PREVENT TRACKING OF DIRT ONTO ANY PUBLIC OR PRIVATE ROADWAYS. IF TRACKING OF DIRT FROM CONSTRUCTION VEHICLES IS PRESENT ON THE OPEN STREETS, CONTRACTOR WILL BE REQUIRED TO SWEEP THE ROADWAY AT NO ADDITIONAL EXPENSE TO THE OWNER.
7. SEE DETAIL SHEET FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
8. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
9. DRIVEWAY TO BE A MINIMUM OF 16' WIDE WITH 2' SHOULDERS. SHOULDERS SHALL BE PLOWED.
10. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH & NHDOT'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
11. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH RS-1 IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
12. THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
13. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
14. AREA OF DISTURBANCE IS UNDER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT IS NOT REQUIRED.
15. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. ANY AND ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF BOTH THE ARCHITECT AND CIVIL ENGINEER FOR RESOLUTION.
16. ALL DRAINAGE 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 TO THE STORMWATER MANAGEMENT ASPECTS OF THIS DEVELOPMENT SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
17. TRASH AND RECYCLING SHALL BE STORED INSIDE THE HOMES.
18. STREET ADDRESSES FOR EACH UNIT SHALL BE DETERMINED BY FIRE DEPARTMENT & PORTSMOUTH DPW.
19. BICYCLE RACKS WILL NOT BE PROVIDED.
20. PARKING REQUIREMENTS
EACH UNIT WILL HAVE A SINGLE SPACE IN THE GARAGE AND SPACE STACKED BEHIND THE GARAGE. ONE ADDITIONAL SPACE PER LOT IS PROVIDED FOR A TOTAL OF 10 SPACES FOR 4 RESIDENTIAL UNITS.
21. COMMERCIAL OUTDOOR LIGHTING WILL NOT BE PROVIDED. OUTDOOR LIGHTING WILL BE LIMITED TO BUILDING MOUNTED LIGHTS AT ENTRIES AND POTENTIALLY RESIDENTIAL SCALED LIGHTS ALONG THE DRIVEWAY. ALL LIGHTS WILL BE DARK SKY FRIENDLY.
22. SNOW STORAGE IS NOT DEPICTED ON THE PLANS. IT WILL BE STORED ALONG THE EDGE OF THE DRIVEWAY ON PRIVATE PROPERTY AND IN LOCATIONS AS NOT TO IMPEDE SITE DISTANCE AT THE DRIVEWAY.
23. THERE ARE NO WETLANDS ON THE PROPERTY OR WITHIN 100- FEET OF ANY PROPOSED SITE DISTURBANCES.
24. NO BURNING SHALL BE PERMITTED PER LOCAL REGULATIONS.
25. HAZARDOUS MATERIALS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
26. SHOULD GROUNDWATER BE ENCOUNTERED DURING SITEWORK EXCAVATION, BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO ENSURE SEDIMENT LADEN WATER IS NOT DISCHARGED INTO THE CITY DRAINAGE SYSTEM. CONTRACTOR SHALL USE SILT BAGS OR OTHER APPROVED DPW DEVICES.
27. SALT STORAGE FOR DEICING SHALL BE LOCATED INDOORS.
28. PERIMETER FOUNDATION DRAINS IF PROVIDED MAY REQUIRE PUMPING TO DAYLIGHT.



P.4916

SHEET NUMBER: C-1



ISSUED FOR: TAC

ISSUE DATE: SEPTEMBER 14, 2018

REVISIONS	NO.	DESCRIPTION	BY	DATE
	0	INITIAL SUBMISSION	EDW	08/07/18
	1	PER TAC COMMENTS	EDW	09/14/18

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4916 SITE.DWG

SCALE: 11"x17": 1" = 40'
22"x 34": 1" = 20'

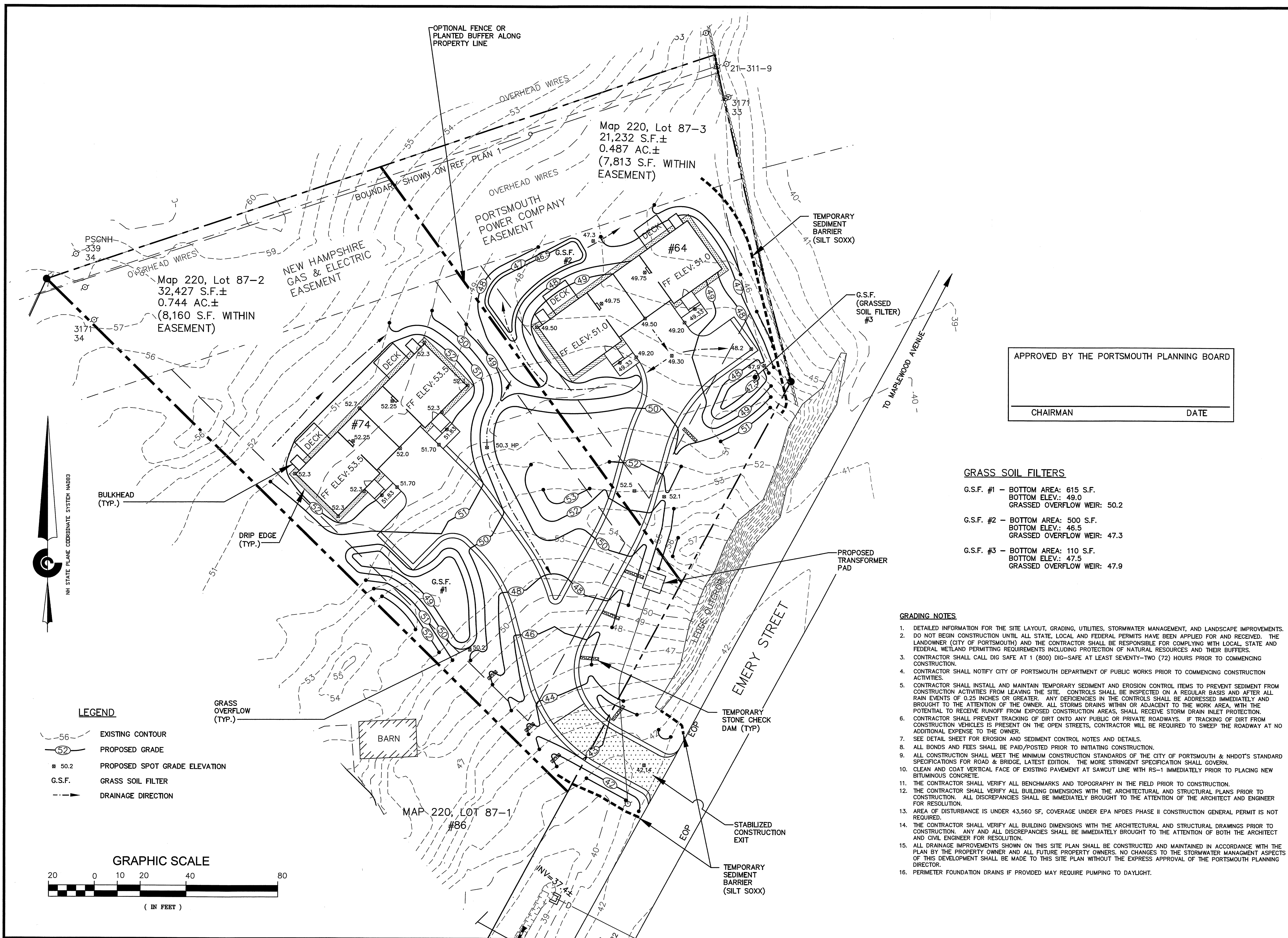
APPLICANT/OWNER: HAPPY MOUNTAIN HOLDINGS, LLC

901 N. MARKET STREET
SUITE 705
WILMINGTON, DE 19801

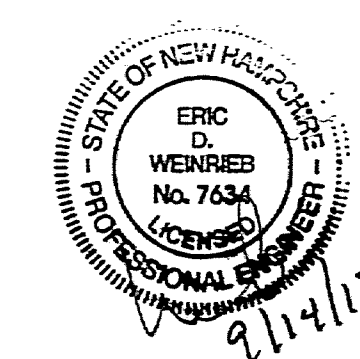
PROJECT: RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL 220-87-2
74 EMERY STREET &
ASSESSOR'S PARCEL 220-87-3
64 EMERY STREET
PORTSMOUTH, NEW HAMPSHIRE

TITLE: GRADING PLAN

SHEET NUMBER: C-2



P4916



ISSUED FOR: TAC
ISSUE DATE: SEPTEMBER 14, 2018

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	08/07/18
1	PER TAC COMMENTS	EDW	09/14/18

DRAWN BY: RLH
APPROVED BY: EDW
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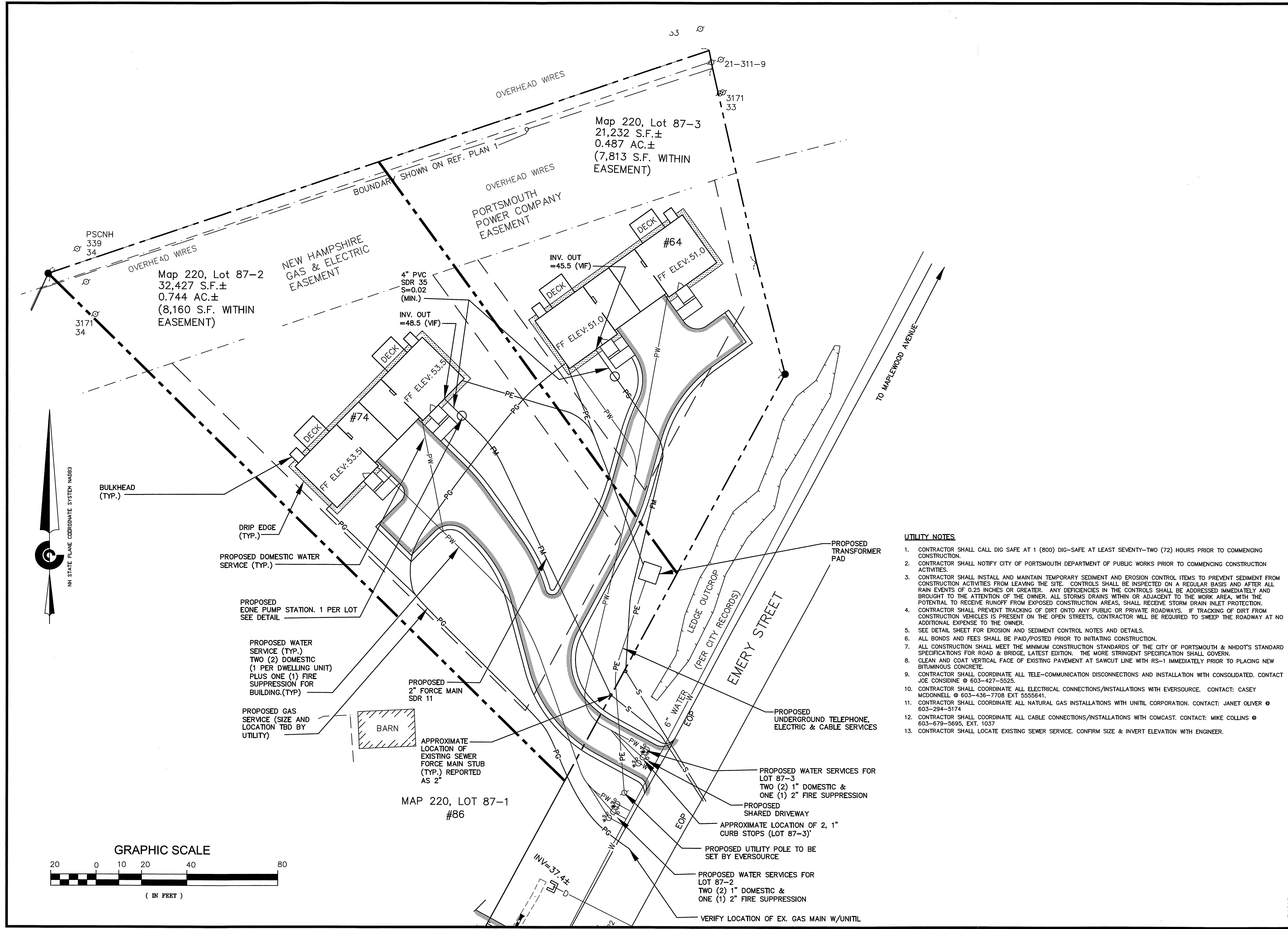
SCALE:
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22"x 34": 1" = 20'

APPLICANT/OWNER:
HAPPY MOUNTAIN HOLDINGS, LLC
901 N. MARKET STREET SUITE 705
WILMINGTON, DE 19801

PROJECT:
RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL 220-87-2
74 EMERY STREET & ASSESSOR'S PARCEL 220-87-3
64 EMERY STREET
PORTSMOUTH, NEW HAMPSHIRE

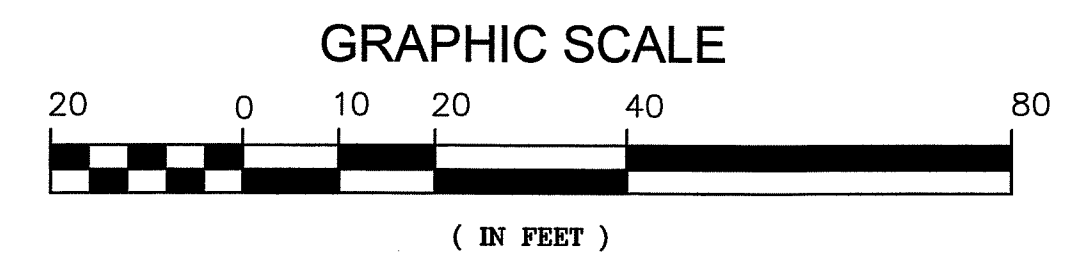
TITLE:
UTILITIES PLAN

SHEET NUMBER:
C - 3

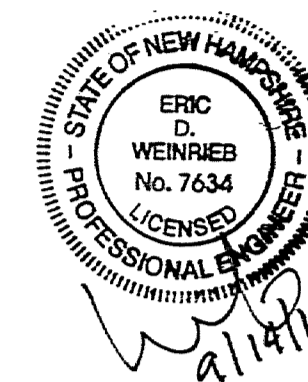


UTILITY NOTES

- CONTRACTOR SHALL CALL DIG SAFE AT 1 (800) DIG-SAFE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SEDIMENT AND EROSION CONTROL ITEMS TO PREVENT SEDIMENT FROM CONSTRUCTION ACTIVITIES FROM LEAVING THE SITE. CONTROLS SHALL BE INSPECTED ON A REGULAR BASIS AND AFTER ALL RAIN EVENTS OF 0.25 INCHES OR GREATER. ANY DEFICIENCIES IN THE CONTROLS SHALL BE ADDRESSED IMMEDIATELY AND BROUGHT TO THE ATTENTION OF THE OWNER. ALL STORMS DRAINS WITHIN OR ADJACENT TO THE WORK AREA, WITH THE POTENTIAL TO RECEIVE RUNOFF FROM EXPOSED CONSTRUCTION AREAS, SHALL RECEIVE STORM DRAIN INLET PROTECTION.
- CONTRACTOR SHALL PREVENT TRACKING OF DIRT ONTO ANY PUBLIC OR PRIVATE ROADWAYS. IF TRACKING OF DIRT FROM CONSTRUCTION VEHICLES IS PRESENT ON THE OPEN STREETS, CONTRACTOR WILL BE REQUIRED TO SWEEP THE ROADWAY AT NO ADDITIONAL EXPENSE TO THE OWNER.
- SEE DETAIL SHEET FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
- ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
- ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH & NHDOT'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
- CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH RS-1 IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
- CONTRACTOR SHALL COORDINATE ALL TELE-COMMUNICATION DISCONNECTIONS AND INSTALLATION WITH CONSOLIDATED. CONTACT JOE CONSIDINE @ 603-427-5525.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL CONNECTIONS/INSTALLATIONS WITH EVERSOURCE. CONTACT: CASEY MCDONNELL @ 603-436-7708 EXT 5555641.
- CONTRACTOR SHALL COORDINATE ALL NATURAL GAS INSTALLATIONS WITH UNITIL CORPORATION. CONTACT: JANET OLIVER @ 603-294-5174
- CONTRACTOR SHALL COORDINATE ALL CABLE CONNECTIONS/INSTALLATIONS WITH COMCAST. CONTACT: MIKE COLLINS @ 603-679-5695, EXT. 1037
- CONTRACTOR SHALL LOCATE EXISTING SEWER SERVICE. CONFIRM SIZE & INVERT ELEVATION WITH ENGINEER.

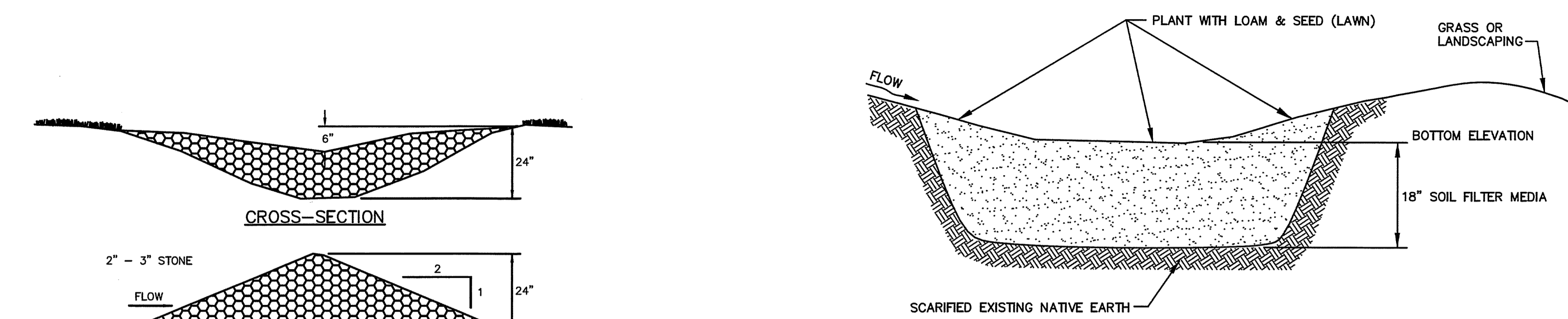


P-4916

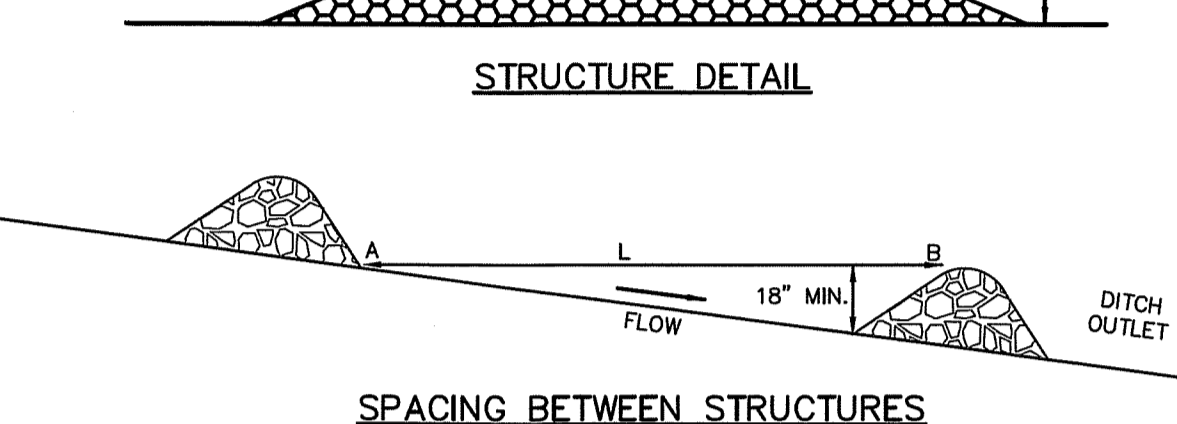


GRADING & DRAINAGE NOTES

- UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBMS) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- DEWATERING ACTIVITIES SHALL BE DONE IN ACCORDANCE WITH EPA AND NHDES REGULATIONS.
- PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
- IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
- ALL DRAINAGE PIPE SHALL BE ADS N-12 OR EQUAL APPROVED BY THE ENGINEER.
- ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- UNLESS OTHERWISE SPECIFIED, ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE A MINIMUM OF SIX (6") INCHES OF LOAM, LIMESTONE, FERTILIZER, SEED, AND HAY MULCH USING APPROPRIATE SOIL STABILIZATION TECHNIQUES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS, DRAINAGE AND OTHER UTILITY STRUCTURES MAY NOT BE DRAWN TO SCALE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING AND LOCATION OF ALL STRUCTURES AND IS DIRECTED TO RESOLVE ANY POTENTIAL DISCREPANCY WITH THE ENGINEER PRIOR TO CONSTRUCTION.



FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Filter Media			
ASTM C-33 concrete sand	30		
Loamy sand topsoil, with fines as indicated	70	200	15 to 25



- L = DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION
- CHECK DAM SHALL BE CONSTRUCTED OF 2" TO 3" STONE WITH COMPLETE COVERAGE OF DITCH OR SWALE TO INSURE THAT THE CENTER OF THE STRUCTURE IS LOWER THAN THE EDGES.

MAINTENANCE

TEMPORARY GRADE STABILIZATION STRUCTURES SHOULD BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED STORMS. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHOULD BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED, AND MULCHED. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND THE STRUCTURES. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE.

CONSTRUCTION SPECIFICATIONS

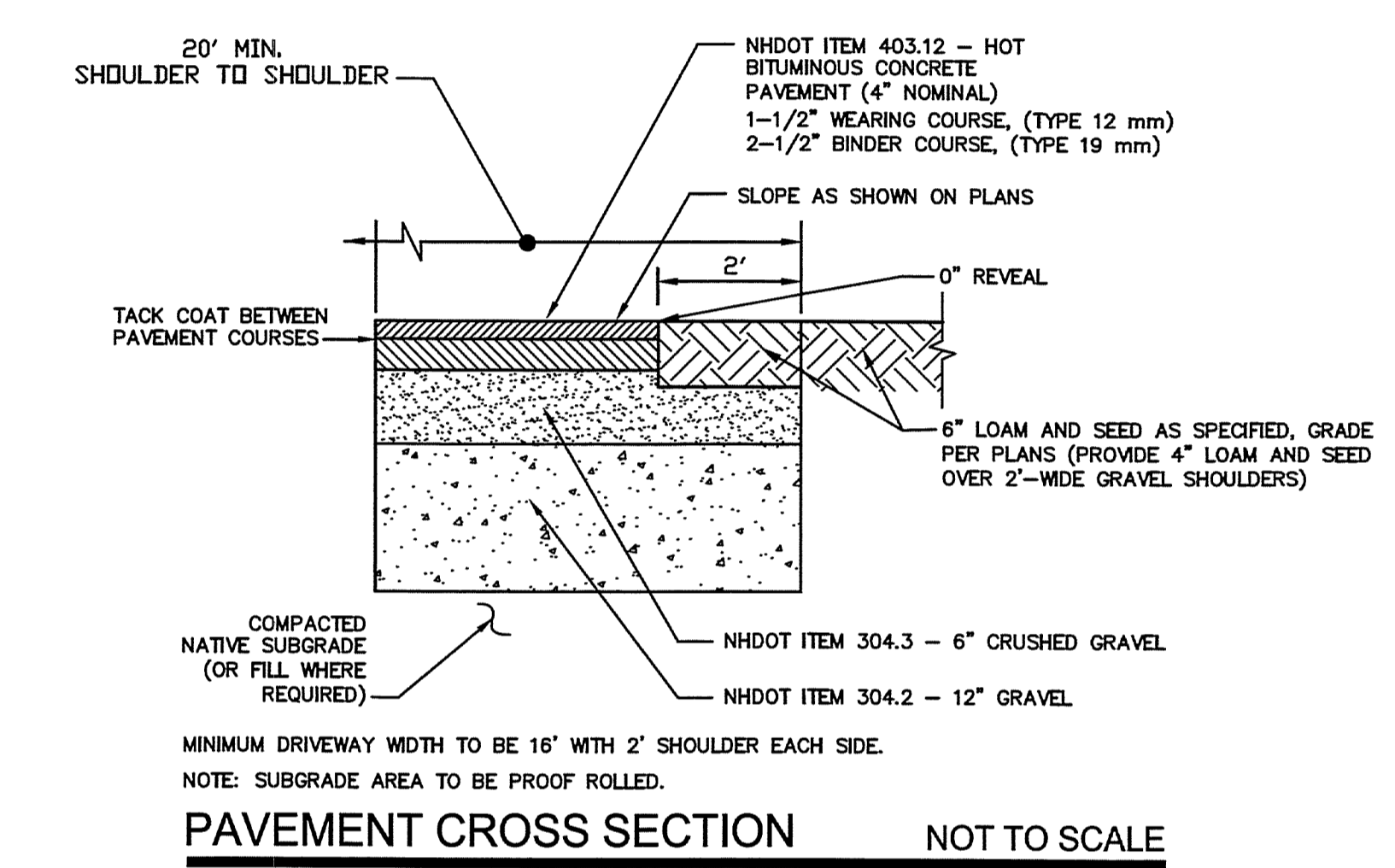
- STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION AND AIR AND WATER POLLUTION WILL BE MINIMIZED.
- SEEDING, FERTILIZING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPROPRIATE VEGETATIVE BMP.
- STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.

NOTES

- CONTRACTOR SHALL EXCAVATE THE POND AREA TO SUBGRADE AND DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
- SOIL FILTER MEDIA SHALL BE PER THE DESIGN FILTER MIXTURE. IF AN ALTERNATIVE MIXTURE IS PROPOSED, IT SHALL BE APPROVED BY THE DESIGN ENGINEER.
- DO NOT PLACE THE POND INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE POND AREA DURING ANY STAGE OF CONSTRUCTION.
- DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

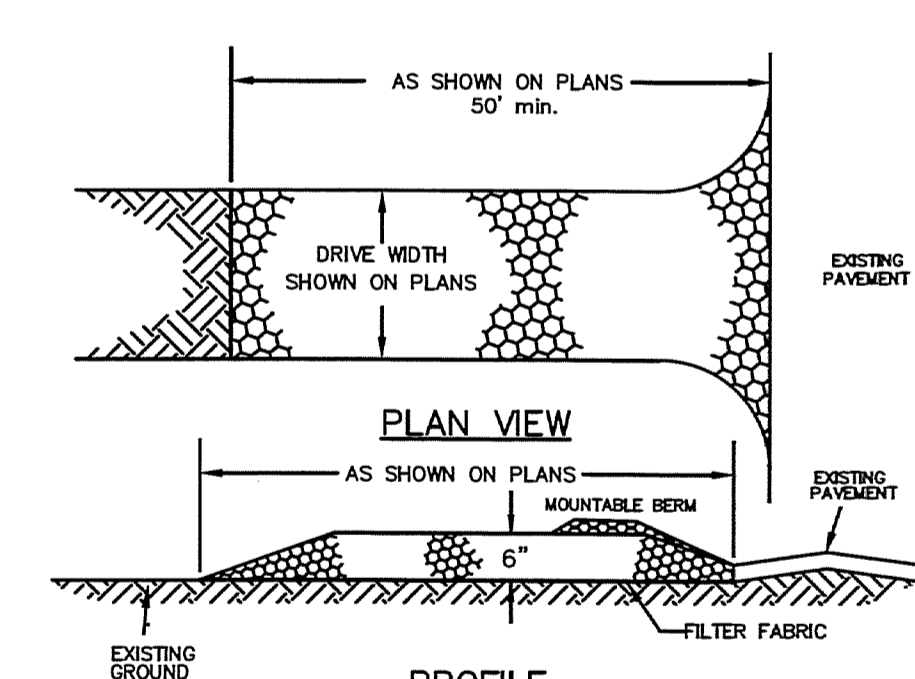
- PONDS SHOULD BE INSPECTED ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF POND DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.



PAVEMENT CROSS SECTION NOT TO SCALE

STONE CHECK DAM NOT TO SCALE

GRASS SOIL FILTER NOT TO SCALE

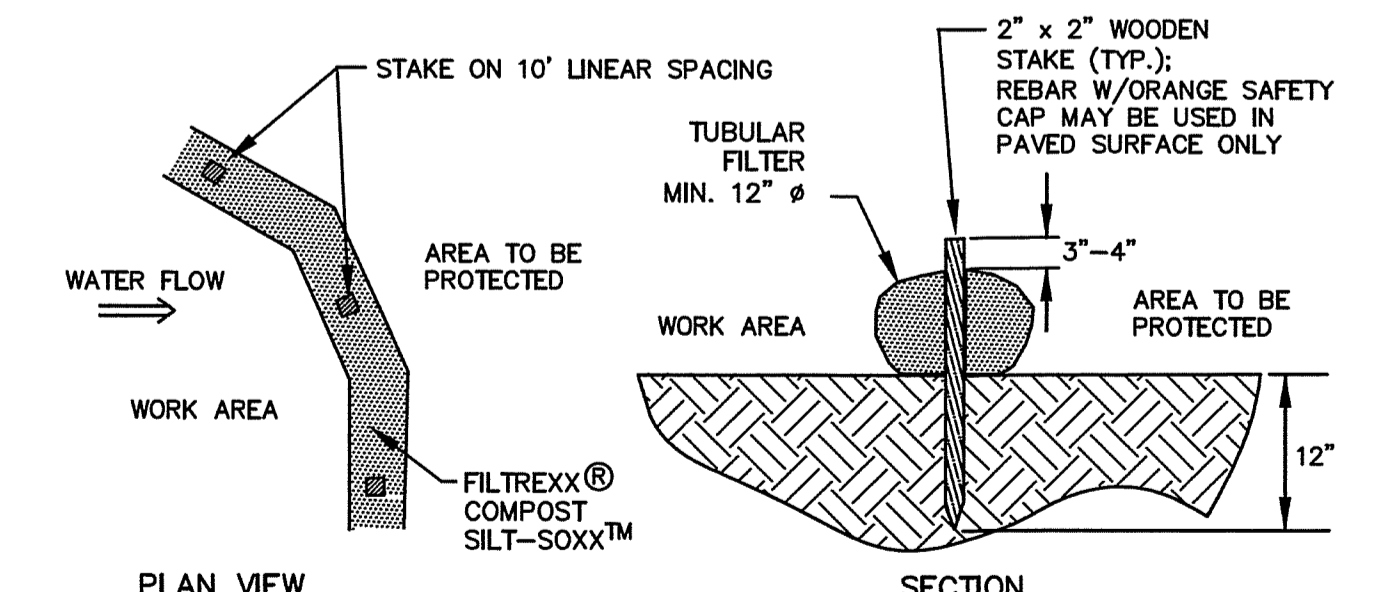


SIEVE SIZE	% PASSING
2 inch	100
1 1/2 inch	90-100
1 inch	20-55
3/4 inch	0-15
3/8 inch	0-5

CONSTRUCTION SPECIFICATIONS

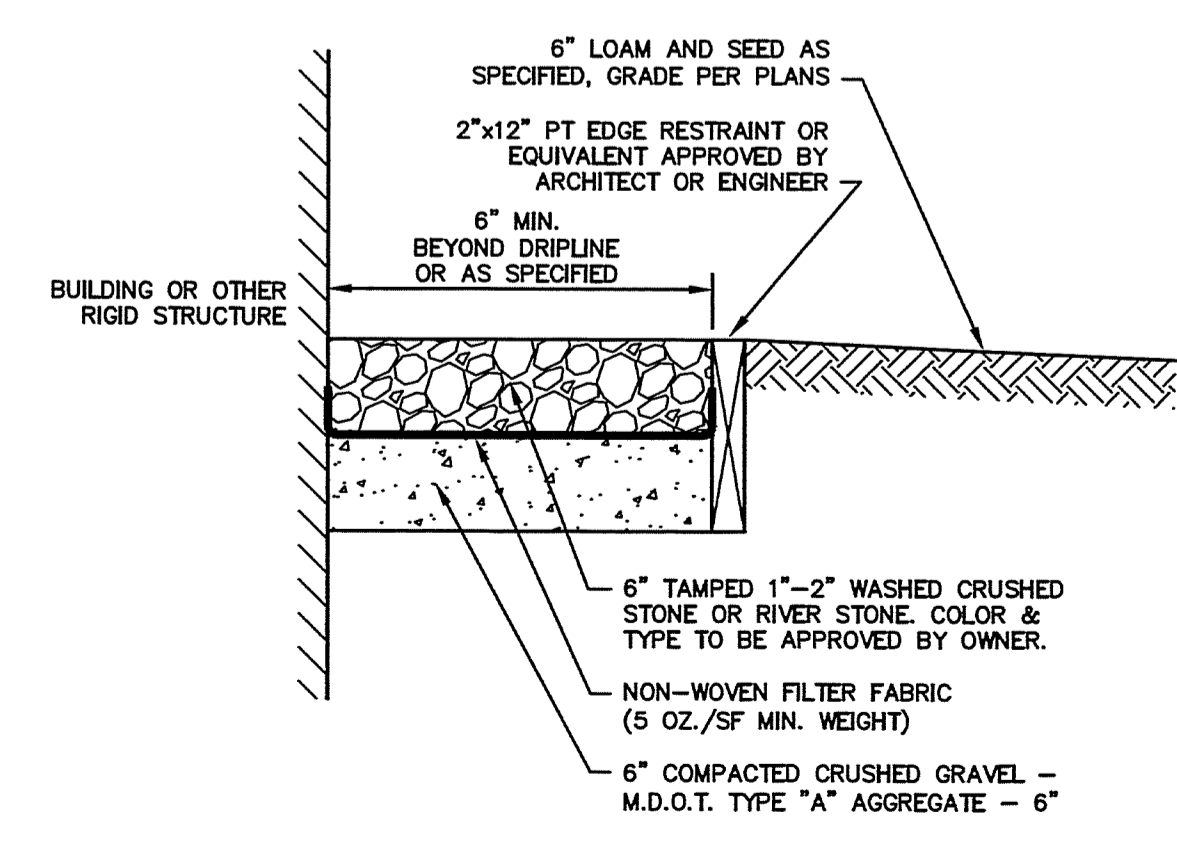
- STONE SIZE - NHDOT STANDARD STONE SIZE #4 - SECTION 703 OF NHDOT STANDARD.
- LENGTH - DETAILED ON PLANS (50 FOOT MINIMUM).
- THICKNESS - SIX (6) INCHES (MINIMUM).
- WIDTH - FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
- FILTER FABRIC - MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
- SURFACE WATER CONTROL - ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE INTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS-OF-WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE ENGINEER.

STABILIZED CONSTRUCTION EXIT NOT TO SCALE



- NOTES:**
- SILT-SOXX OR APPROVED EQUAL SHALL BE USED FOR TUBULAR SEDIMENT BARRIERS.
 - ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
 - COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
 - ALL SEDIMENT TRAPPED BY BARRIER SHALL BE DISPOSED OF PROPERLY.
 - STUMPS GRINDINGS MAY BE SUBSTITUTED W/PRIOR APPROVAL FROM ENGINEER.

SILT SOXX BARRIER NOT TO SCALE



STONE DRIP EDGE NOT TO SCALE

ISSUED FOR: TAC APPROVAL

ISSUE DATE: SEPTEMBER 14, 2018

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DRAWN BY: RLH
APPROVED BY: EDW
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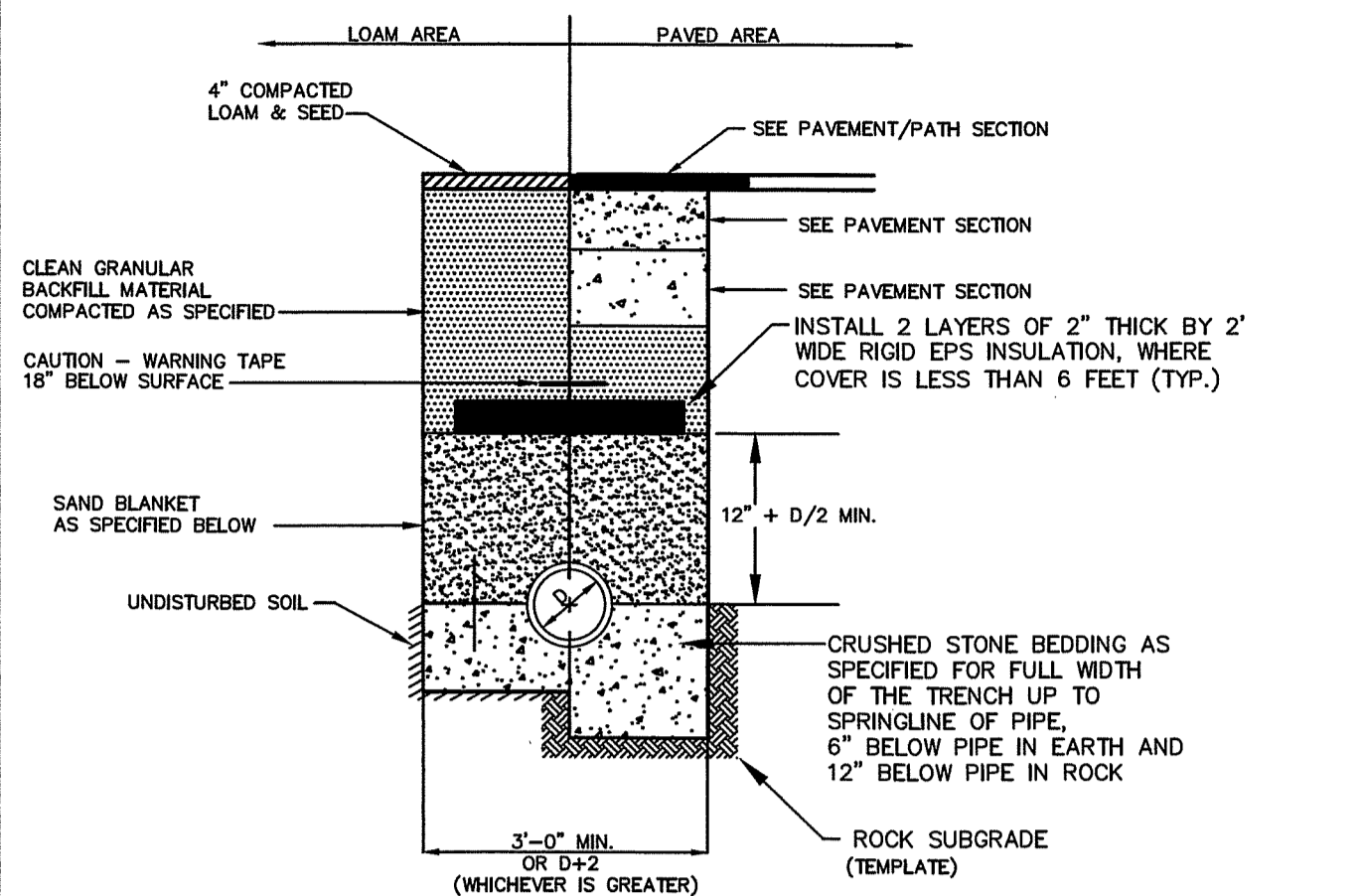
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APPLICANT/OWNER:
HAPPY MOUNTAIN HOLDINGS, LLC
901 N. MARKET STREET SUITE 705 WILMINGTON, DE 19801

PROJECT:
RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL 220-87-2
74 EMERY STREET & ASSESSOR'S PARCEL 220-87-3
64 EMERY STREET
PORTSMOUTH, NEW HAMPSHIRE

TITLE:
GENERAL NOTES & SITEWORK DETAILS

SHEET NUMBER:
C - 4

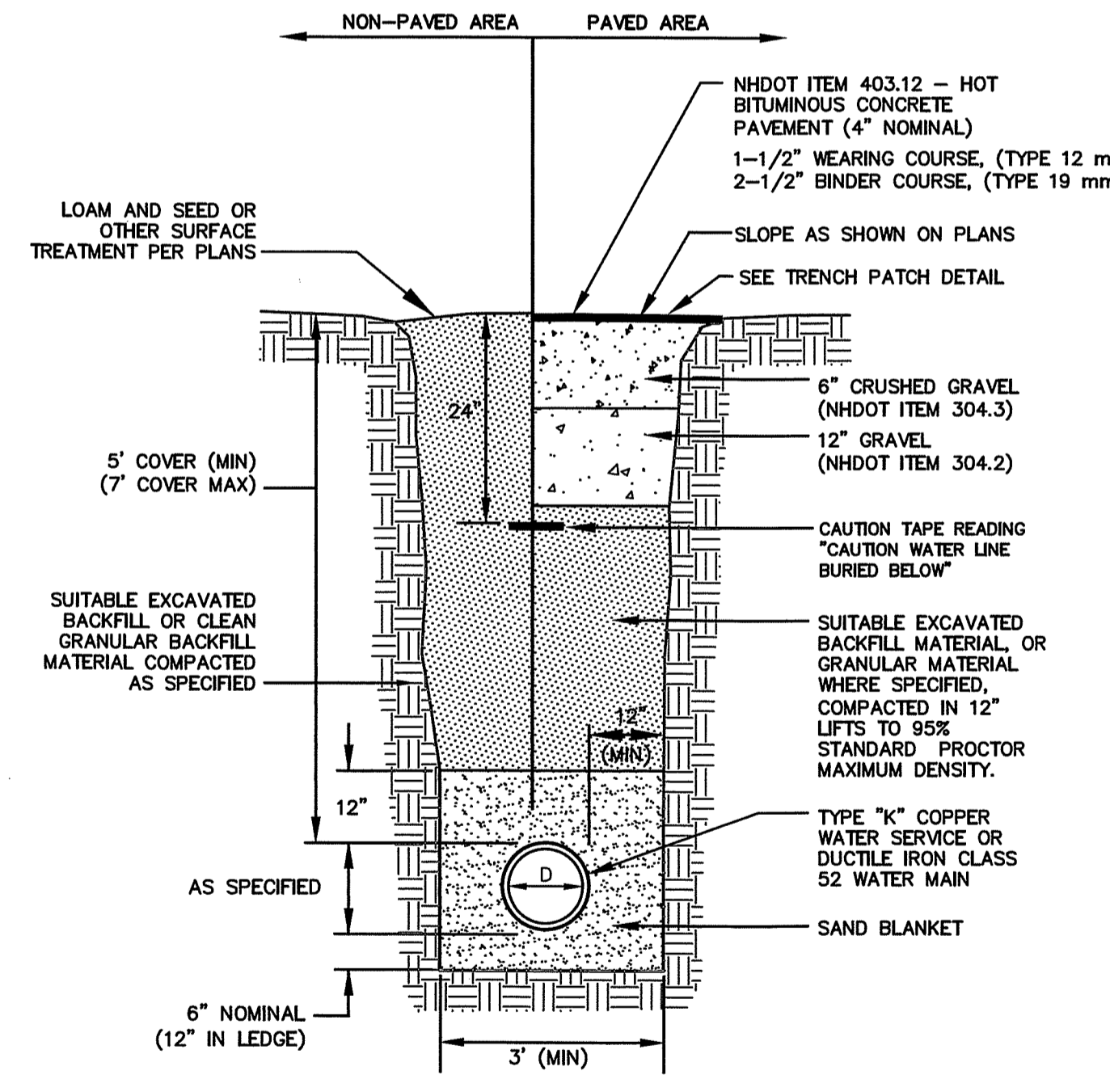


BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

SAND BLANKET		CRUSHED STONE BEDDING *	
SIEVE SIZE	% FINER BY WEIGHT	SIEVE SIZE	% PASSING BY WEIGHT
1/2"	90 - 100	1"	100
200	0 - 15	3/4"	90 - 100
		3/8"	20 - 55
		# 4	0 - 10
		# 8	0 - 5

* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

SEWER TRENCH SECTION NOT TO SCALE



SAND BLANKET/BARRIER	
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 - 100
200	0 - 15

- NOTES:**
- BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
 - WATER MAINS SHALL BE POLY WRAPPED.
 - WATER MAINS SHALL HAVE 3 WEDGES PER JOINT.

WATER MAIN TRENCH NOT TO SCALE

STANDARD TRENCH NOTES:

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN OF THE DRAWING.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33, STONE SIZE NO. 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
- SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90 - 100% PASSES 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
- 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: ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
- BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
- W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATION REQUIREMENTS FOR CLASS A (3000#) CONCRETE AS FOLLOWS:
 CEMENT: 6.0 BAGS PER CUBIC YARD
 WATER: 5.75 GALLONS PER BAG CEMENT
 MAXIMUM SIZE OF AGGREGATE: 1 INCH
 CONCRETE ENCASEMENT IS NOT ALLOWED FOR PVC PIPE.
- CONCRETE FULL ENCASEMENT: IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
- NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE TEN FEET (10') SEPARATION BETWEEN WATER AND SEWER. REFER TO CITY'S STANDARD SPECIFICATIONS FOR METHODS OF PROTECTION IN AREAS THAT CANNOT MEET THESE REQUIREMENTS.

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.

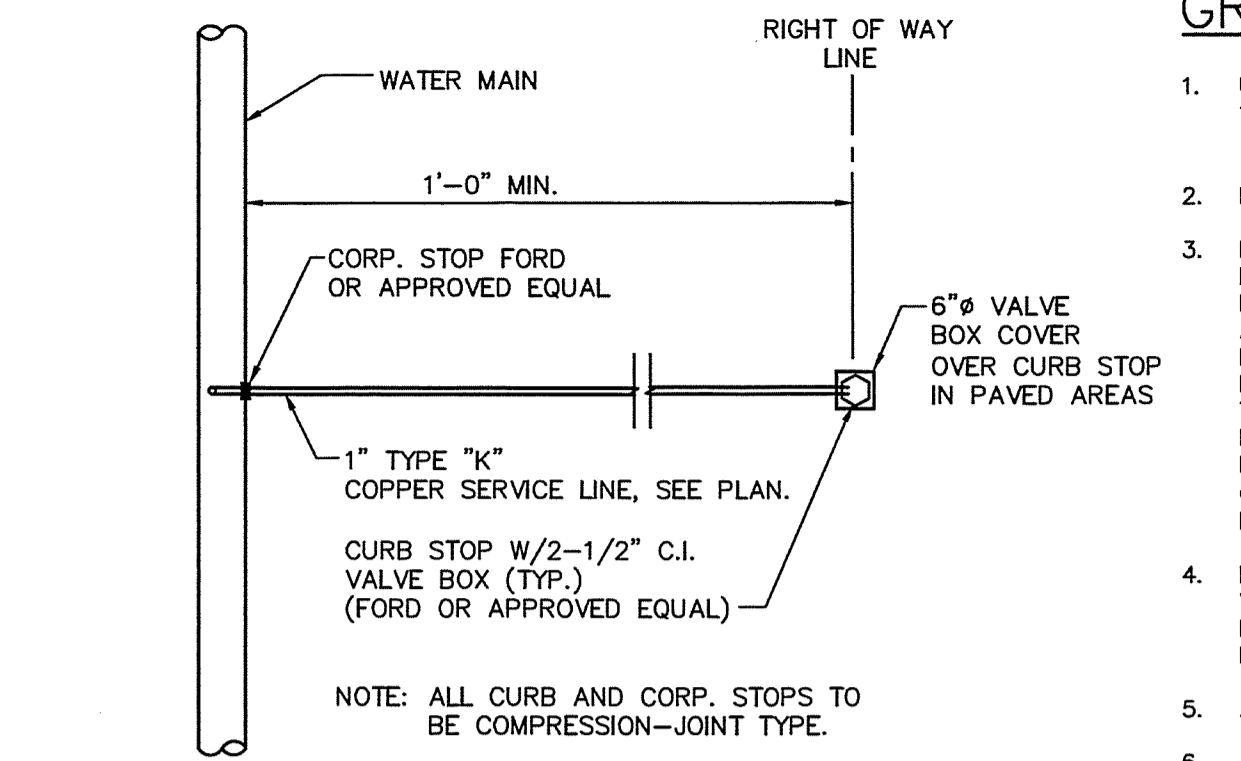
Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

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

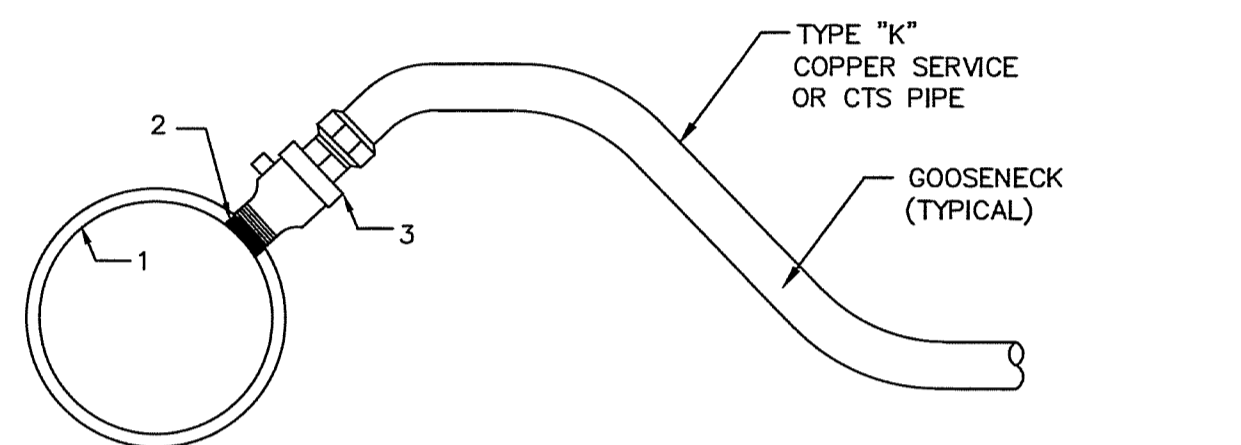
NA0050P01 Rev C

SEWER PUMP STATION (E-ONE) DETAILS NOT TO SCALE



WATER SERVICE CONNECTION TYPICAL

- NOTES:**
- REPORTED 6"
 - REPORTED 6" x 1" OR 2" TAP. (PER PLANS)
 - CORPORATION STOP, FORD OR APPROVED EQUAL TO BE INSTALLED.



SERVICE TO MAIN CONNECTION DETAIL NOT TO SCALE

GRADING & DRAINAGE NOTES

- UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBMS) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- DEWATERING ACTIVITIES SHALL BE DONE IN ACCORDANCE WITH EPA AND NHDES REGULATIONS.
- PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
- IF SUITABLE. EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
- ALL DRAINAGE PIPE SHALL BE ADS N-12 OR EQUAL APPROVED BY THE ENGINEER.
- ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- UNLESS OTHERWISE SPECIFIED, ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE A MINIMUM OF SIX (6") INCHES OF LOAM, LIMESTONE, FERTILIZER, SEED, AND HAY MULCH USING APPROPRIATE SOIL STABILIZATION TECHNIQUES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS, DRAINAGE AND OTHER UTILITY STRUCTURES MAY NOT BE DRAWN TO SCALE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING AND LOCATION OF ALL STRUCTURES AND IS DIRECTED TO RESOLVE ANY POTENTIAL DISCREPANCY WITH THE ENGINEER PRIOR TO CONSTRUCTION.

STAINLESS STEEL LATERAL KIT
 1-1/4" SDR 11 HDPE PIPE

NOTES:

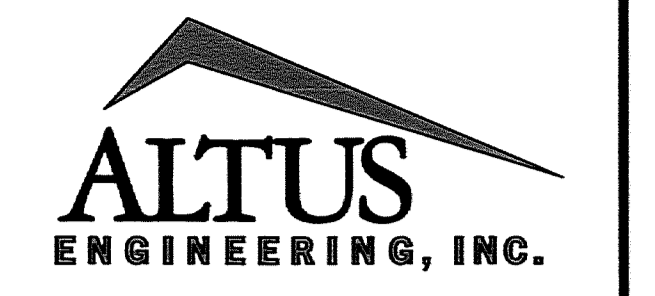
- SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY, TO BE ASSEMBLED BY CONTRACTOR
- TO ASSEMBLE, APPLY A DOUBLE LAYER OF TEFLON TAPE, AND A LAYER OF PIPE DOPE (SUPPLIED BY OTHERS) TO THE THREADS ON THE PLASTIC FITTINGS AND INSTALL PER THE MANUFACTURER'S INSTRUCTIONS
- ASSEMBLY IS TO BE PRESSURE TESTED
- ASSEMBLY IS TO BE USED WITH SDR11 HDPE PIPE TO ORDER SS LATERAL KIT, USE PART NUMBER NC0193G01 CURB BOX IS TO BE ORDERED SEPARATELY. SEE ABOVE

KIT PARTS ARE NOT ASSEMBLED

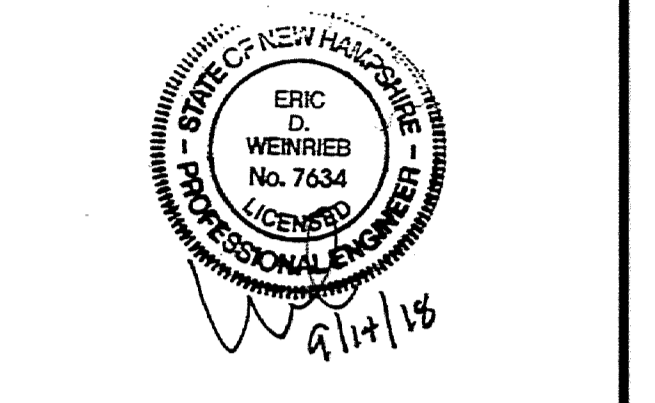
eone SEWER SYSTEMS
 STAINLESS STEEL LATERAL KIT
 1-1/4" SDR 11 HDPE PIPE

STAINLESS STEEL LATERAL KIT
 - 1 1/4" SDR 11 HDPE PIPE

NOT TO SCALE



133 COURT STREET PORTSMOUTH, NH 03801
 (603) 433-2335 www.ALTUS-ENG.com



ISSUED FOR: TAC APPROVAL

ISSUE DATE: SEPTEMBER 14, 2018

REVISIONS	NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION		EDW	09/14/18

DRAWN BY: _____ RLH
 APPROVED BY: _____ EDW
 DRAWING FILE: 4916 DETAILS.DWG

SCALE: 22" x 34": N.T.S.

APPLICANT/OWNER: HAPPY MOUNTAIN HOLDINGS, LLC
 901 N. MARKET STREET SUITE 705 WILMINGTON, DE 19801

PROJECT: RESIDENTIAL DEVELOPMENT
 ASSESSOR'S PARCEL 220-87-2
 74 EMERY STREET & ASSESSOR'S PARCEL 220-87-3
 64 EMERY STREET
 PORTSMOUTH, NEW HAMPSHIRE

TITLE: SITEWORK DETAILS

SHEET NUMBER: C - 5

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
 - ④ 2x6 wood stud wall, 16" oc
 - ⑤ 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

- Dimensions are to face of stud, unless noted otherwise.
- Closets are 24" clear inside, unless dimensioned otherwise.

Square Footages

- Sq ft numbers are interior to room for use in calculating finishes.
- Cabinets and fixtures not subtracted.
- Add for doorways when floor finishes run through.

Notes

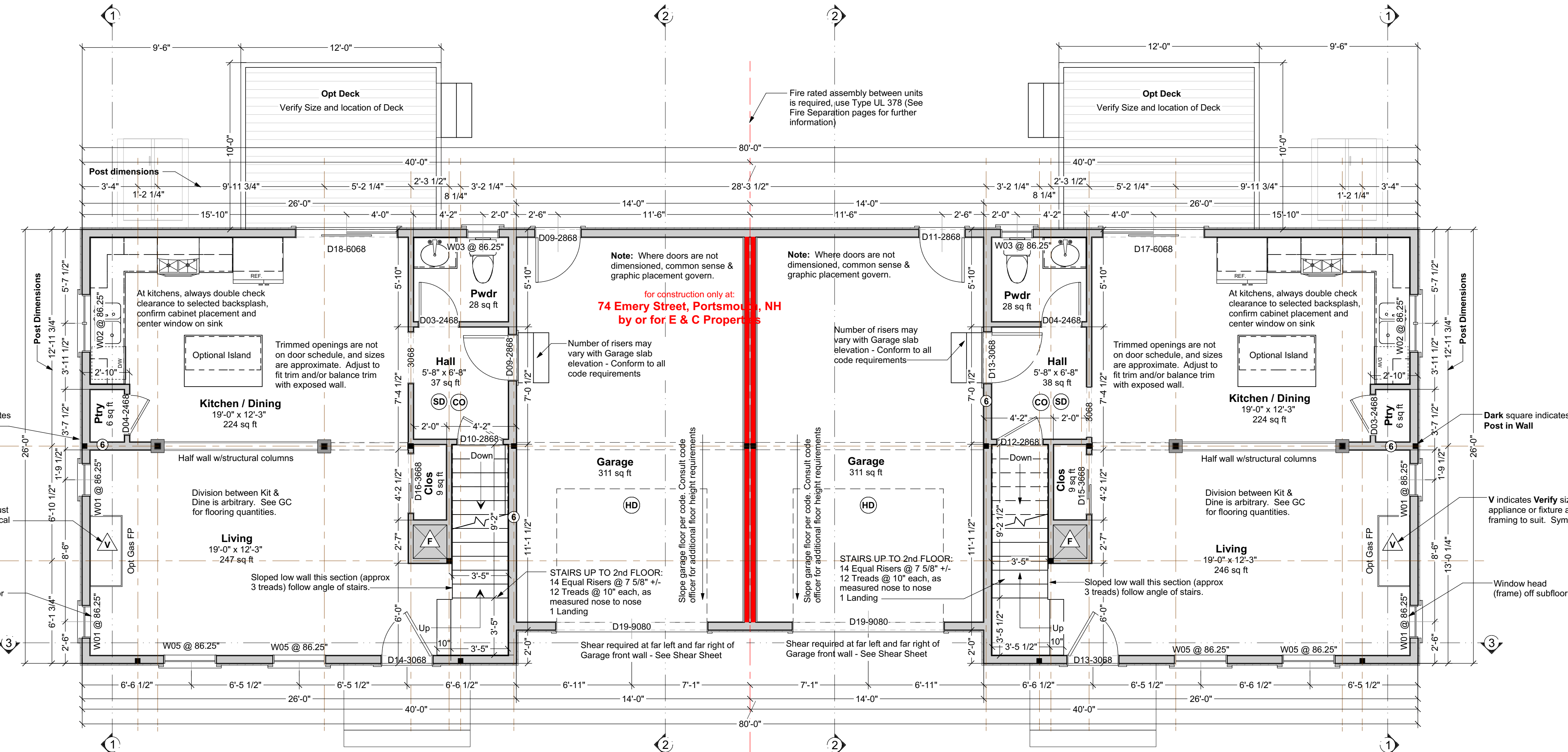
- Exterior walls 2x6 wood stud @ 16" oc. Provide insulation & vapor barrier conforming to state or local codes. Interior sheathing 1/2" gypsum board. Provide 1/2" exterior rated sheathing, house wrap with drainage plane and siding. Provide step flashing at walls adjacent to roof planes.
- Interior walls 2x4 wood stud @ 16" oc, unless noted otherwise.
- 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.
- 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)
- Provide smoke detectors where shown, where required by code and where required by local authorities.
- 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.
- Compliance with code requirements for room 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.
- Shear is only called out where Continuous Portal Frame will not suffice. See Section R602.10.4 (Pages 173 - 179) of the IRC 2009.

Pesto Classic Duplex

NOTE: Plans Must Be Printed in Color.



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.



First Floor Plan



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 its 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.

Garages to conform to all code requirements, including but not limited to:

- Provide gypsum board at walls and/or ceilings per code for separation of garage from living areas.
- Provide fire rated and/or self closing doors per code for separation of garage from living areas.
- Protect duct and other penetrations per code for separation of garage from living areas.

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 its 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



Living Area this Floor: 676 sq ft
 Condo Living Area This Unit: 625 SF
 8ft Finished Ceiling Height

NUMBER	QTY	FLOOR	SIZE	WIDTH	HEIGHT	TYPE	COMMENTS
D01	1	2	2268 L IN	26"	80"	HINGED	
D02	1	2	2268 R IN	26"	80"	HINGED	
D03	2	1	2468 L IN	28"	80"	HINGED	
D04	2	1	2468 R IN	28"	80"	HINGED	
D05	4	2	2468 L IN	28"	80"	HINGED	
D06	4	2	2468 R IN	28"	80"	HINGED	
D07	5	2	2868 L IN	32"	80"	HINGED	
D08	5	2	2868 R IN	32"	80"	HINGED	
D09	2	1	2868 R EX	32"	80"	HINGED	
D10	1	1	2868 R IN	32"	80"	HINGED	
D11	1	1	2868 L EX	32"	80"	HINGED	
D12	1	1	2868 L IN	32"	80"	HINGED	
D13	2	1	3068 L EX	36"	80"	HINGED	
D14	1	1	3068 R EX	36"	80"	HINGED	
D15	1	1	3668 L IN	42"	80"	SLIDER	
D16	1	1	3668 R IN	42"	80"	SLIDER	
D17	1	1	6068 R EX	72"	80"	SLIDER	
D18	1	1	6068 L EX	72"	80"	SLIDER	
D19	2	1	9080	108"	96"	GARAGE	

NUMBER	QTY	WIDTH	HEIGHT	R/O	EGRESS	TEMPERED	DESCRIPTION	MANUFACTURER	COMMENTS
W01	8	23 1/2"	23 1/2"	24"x24"			AWNING		
W02	2	41 1/2"	41 1/2"	42"x42"			DBL CASEMENT-LHL/RHR		
W03	2	23 1/2"	47 1/2"	24"x48"			DOUBLE HUNG		
W04	4	23 1/2"	47 1/2"	24"x48"		YES	DOUBLE HUNG		
W05	4	38"	61 1/2"	38 1/2"x62"			DOUBLE HUNG		
W06	2	38"	61 1/2"	38 1/2"x62"	YES		DOUBLE HUNG		
W07	4	76"	61 1/2"	76 1/2"x62"			2X DH		

\\adfskiskation\AFA_Staff\Access\Home_Designs\Bobby_Collection\Savory_Cottages\Pesto_182\182.224_Pesto_Duplex\CD_182\224.v2.2254_Pesto Classic Duplex - 74 Emery Street Layout

Door & Window Notes

- Rated Doors:** Provide fire rated and/or self-closing doors where required by local codes or local authorities
- Trimmed Openings:** Trimmed openings not shown on schedule. See Plan.
- 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.
- 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 preferences.
- 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.
- Basement Windows:** Add basement windows as required to meet state or local code requirements, including but not limited to egress and light/ventilation.
- Skylights:** Skylights are not shown on this schedule, but may be required. Consult builder and/or see floor plan.
- 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

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 "inset" 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:

- Room sizes (Section R304)
- Ceiling Height (Section R305)
- Floor space & ceiling height at Toilet, Bath and Shower Spaces (Section R307)
- Hallway widths (Section R311.6)
- Door types & sizes (Section R311.2)
- Floor space in front of doors (Section R311.3)
- 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.
- Stairway headroom (Section R311.7.2)
- Stair treads and risers (Section R311.7.5)
- Landings for stairways (Section R311.7.6)
- 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.
- 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 sized according to the manufacturer's tables for loads and spans, or sizes will have been calculating using manufacturer's published materials properties.
- 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 74 Emery Street, Portsmouth, NH by or for E & C Properties. 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/owner's responsibilities.

Permissible uses of these drawings:

- All activities associated with construction at the listed address.
- 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.asp>

Not Permitted:

- 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.
- 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".

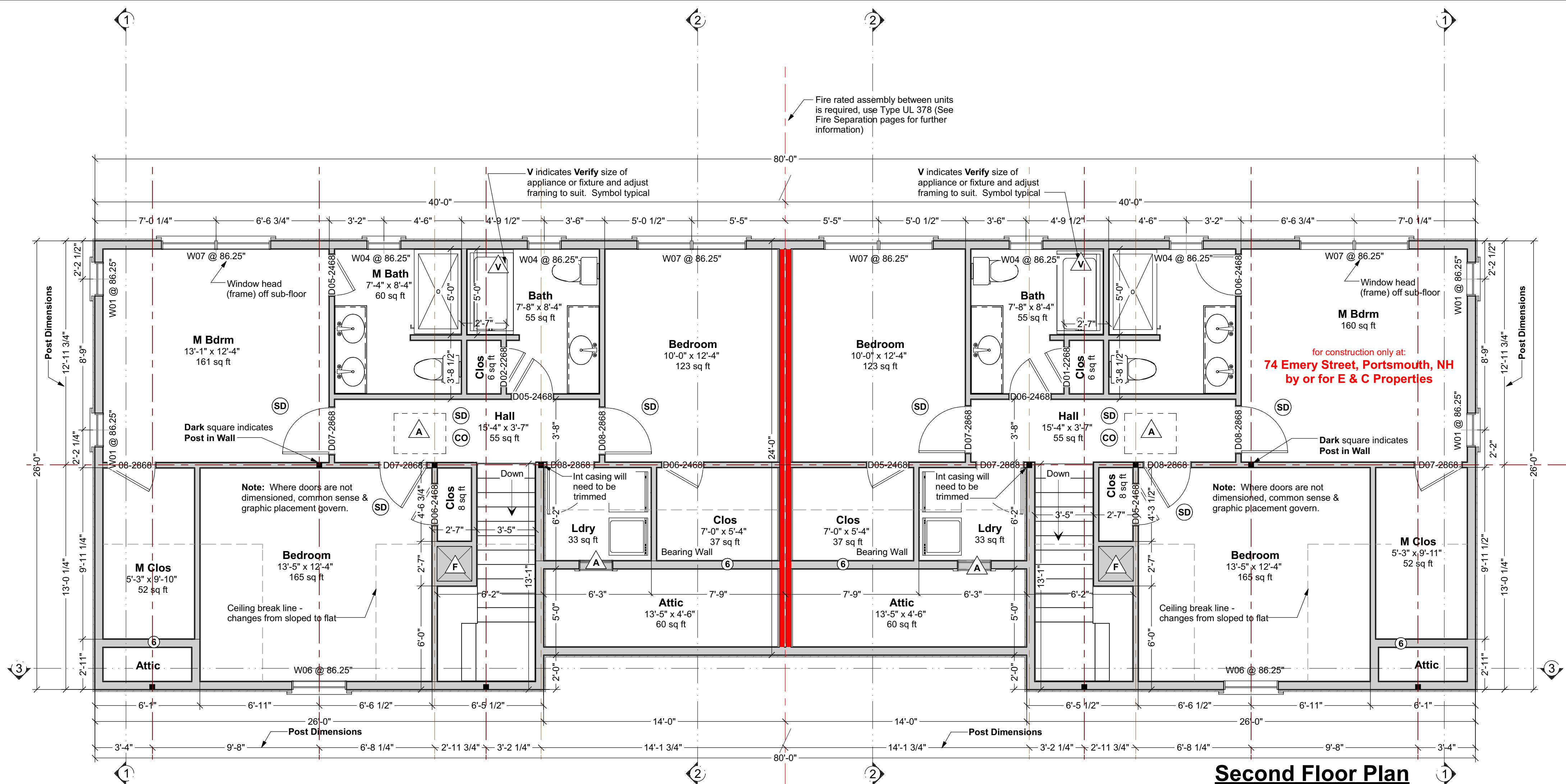
We can provide drawings suitable for use in obtaining design or zoning approvals without incurring the expense of a full set of construction drawings. Contact us for more information.

Artform Home Plans 18-1-20

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.asp>

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 603.431.9559
 AFHP Design # 182.224.v2
 © 2008-2018 Art Form Architecture, Inc.
Pesto Classic Duplex
 74 Emery Street
 Portsmouth, NH
 1
 1/4"=1'-0" unless noted otherwise / Print @ 1:1
 PDF created on: 9/12/2018, drawn by: JCB
 Issued for Construction
 R1: 9.12.18 - Condo Living Area

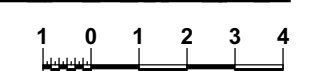


Second Floor Plan



Living Area this Floor: 935 sq ft
 Condo Living Area This Unit: 864 SF
 8ft Finished Ceiling Height

Second Floor Plan

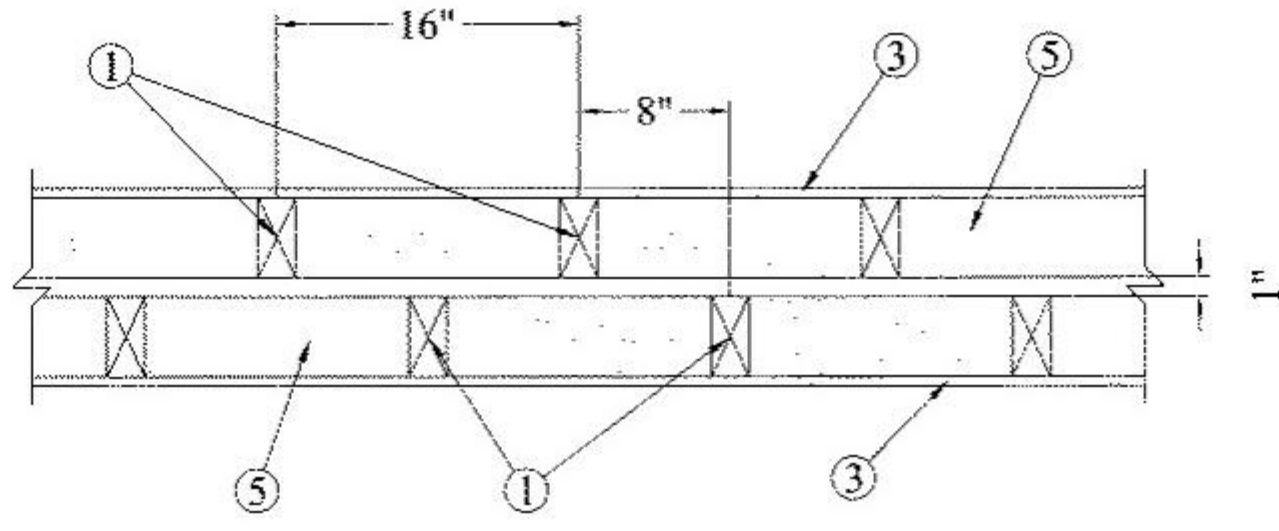


Living Area this Floor: 935 sq ft
 Condo Living Area This Unit: 864 SF
 8ft Finished Ceiling Height

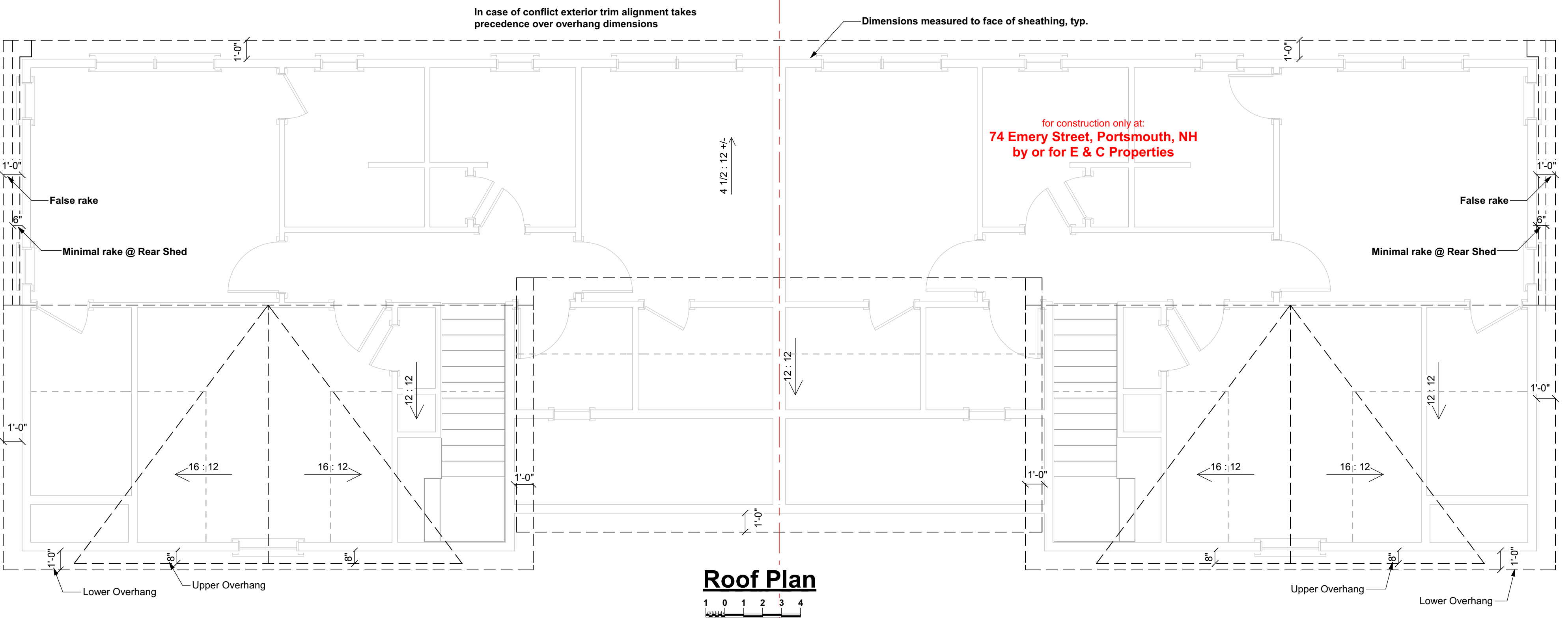
Design No. U378
Bearing Wall Rating — 1 1/2 Hr or 2 Hr (See Item 3)
 Finish Rating — See Items 3

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

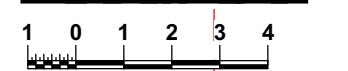
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



- Wood Studs** — Double row of nominal 2 x 4 in. studs, spaced 16 in. OC and cross-braced at mid-height. Opposite rows spaced 1 in. apart, staggered 8 in. OC and joined at the top and bottom with bearing plates.
 - Bearing Plates** — (not shown) Nominal 2 x 4 in. Two layers on top and one layer on bottom for each row of studs.
 - Wallboard, Gypson*** — For 1-1/2 Hr Rating — Finish rating is 20 minutes. One layer of 5/8 in. thick wallboard, 4 ft wide. Applied vertically and nailed to studs and bearing plates 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diameter and 1/4 in. diameter head. Vertical joints centered over studs. As an alternative, No. 6 bugle head drywall screws, 1-7/8 in. long may be substituted for the 6d cement coated nails. For 2 Hr Rating (Not Shown) — Finish rating is 31 minutes. Two layers of 5/8 in. thick wallboard, 4 ft wide. Inner layer applied vertically and nailed to studs and bearing plates 6 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diameter and 1/4 in. diameter head, with first nail starting 3 in. from all edges. Outer layer applied vertically and nailed to studs and bearing plates 6 in. OC with 8d cement coated nails, 2-3/8 in. long, 0.113 in. shank diameter and 9/32 in. diameter head, with first nail starting 4 in. from all edges. Vertical joints centered over studs. All joints in face layers staggered with joints in base layers.
UNITED STATES GYPSOM CO — Type C
 - Joints and Nailheads** — (Not shown) — Wallboard joints taped and both joints and nailheads covered with joint compound.
 - Loose Fill Materials** — Blown-in fiberglass loose-fill insulation material. The insulation is blown into the wall cavity to completely fill the enclosed 8 in. cavity in accordance with the application instructions supplied with the product. The minimum average overall density is 2.6 lb/ft³ dry blown, with no individual density less than 2.2 lb/ft³ dry blown.
OWENS CORNING — ProPink-Complete or ProPink L77
 - Retention Fabric** — (Not shown) — ProPink Complete or ProPink L77 non-woven fibrous fabric material attached with staples to the outer face of one row of studs to facilitate the installation of the insulation.
- * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Roof Plan



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Structural General Notes:

- 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.
- Builder shall maintain a safe worksite, including but not limited to, provision of temporary supports where appropriate and adherence to applicable safety standards.
- Design is based on the snow load listed on the framing plans, 90 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

- No footing shall be poured on loose or unsuitable soils, in water or on frozen ground.
- All exterior footings to conform to all applicable code requirements for frost protection.
- All concrete shall have a minimum compressive strength of at least 3000 PSI at 28 days.
- 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

- All structural wood shall be identified by a grade mark or certificate of inspection by a recognized inspection agency.
- Structural wood shall be Spruce-Pine-Fir (SPF) #2 or better.
- 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.
- 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.
- All floor joists shall have bridging installed at mid-span or at 8'-0" oc maximum.
- Floor systems are designed for performance with subfloor glued and screwed.
- At posts, provide solid framing/blocking to supports below. Provide minimum 1 1/2" bearing length for all beams and headers, unless noted otherwise.
- 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.
- 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 6x6 for heights above that.
- Wherever beams are noted as Flush framed, install joist hangers at all joists, sized appropriately for the members being connected.
- Support the lower end of roof beams via minimum 2" horizontal bearing on a post, ledger or via an appropriately sized and configured hanger.
- Where multiple beams are supported on one post, provide min 2" bearing for each, via either appropriately sized post cap or additional post(s).
- Hangers, post caps, ties and other connectors shall be as manufactured by Simpson Strong Tie, as designed to meet the members shown, and shall be installed per manufacturer's instructions.

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.

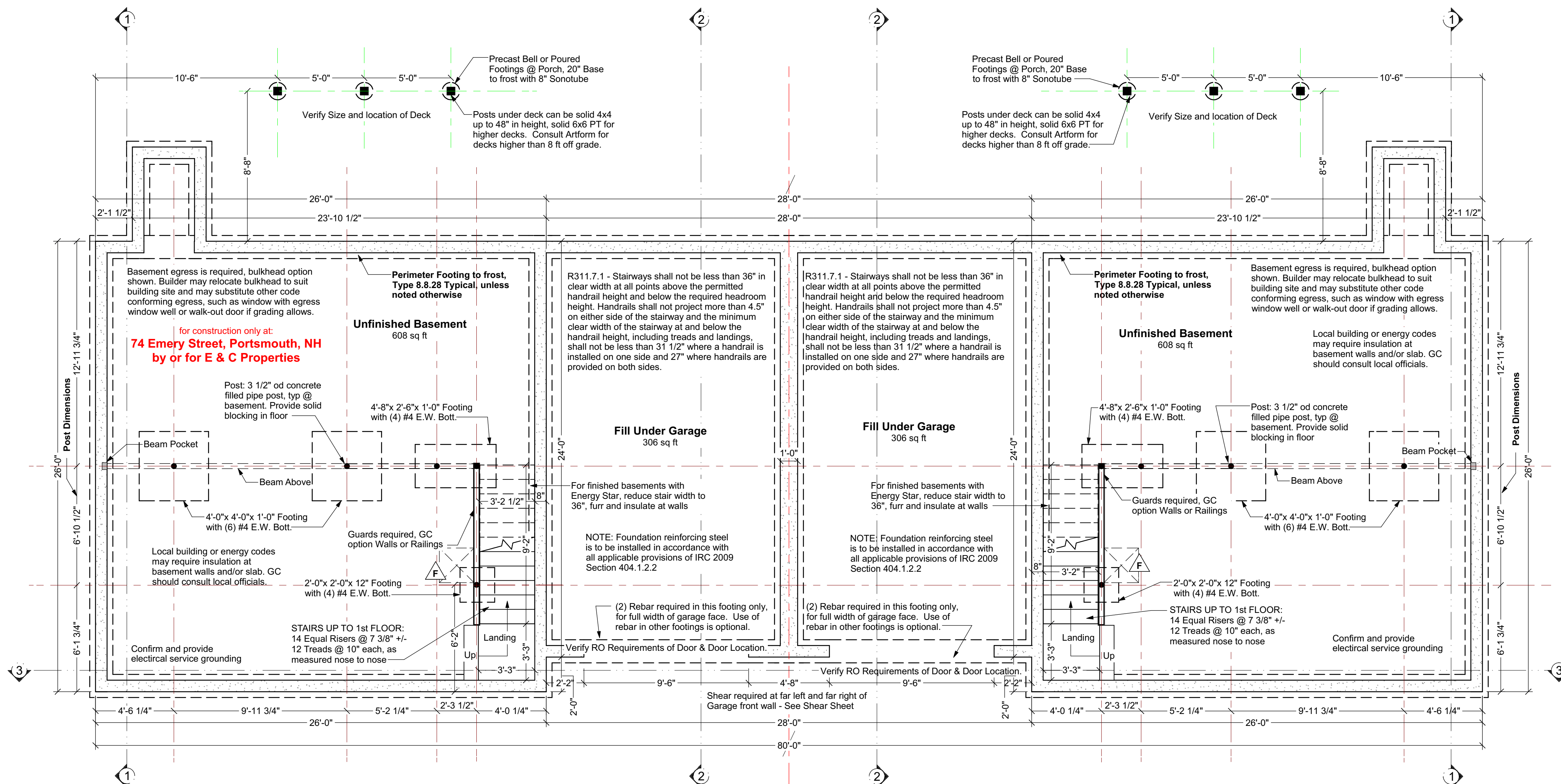
TYPICAL PERIMETER FOOTING:

- 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.
 - Select column for snow load shown on the structural plans.
 - Select soil bearing pressure based on soil type and/or consultation with code officer.
 - 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)

Footing Size	up to 28 ft plan depth			
	8 ft nominal basement height			
Type 8.8.28	8" foundation wall			
	Full basement plus 2 stories			
Soil PSI	Snow Load			
	50	60	70	80
	3,000	16" x 8"	18" x 8"	20" x 8"
	2,000	18" x 8"	22" x 8"	24" x 8"
1,500	22" x 8"	24" x 8"	24" x 8"	24" x 8"



Foundation Plan

Structure designed for Snow Load of 50 PSF
 Ceiling Height may vary: 8ft forms

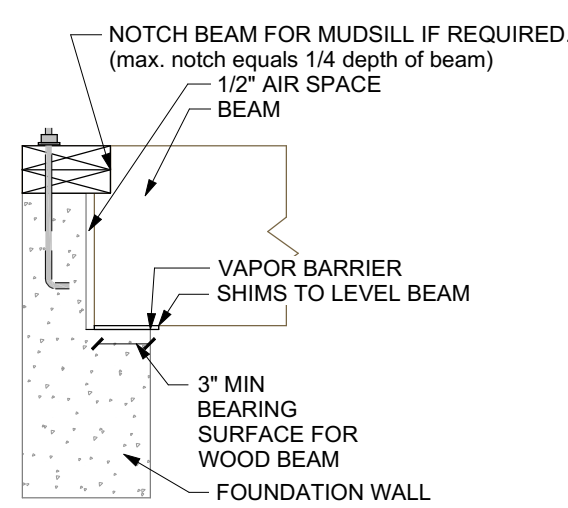
Foundation Plan

Structure designed for Snow Load of 50 PSF
 Ceiling Height may vary: 8ft forms

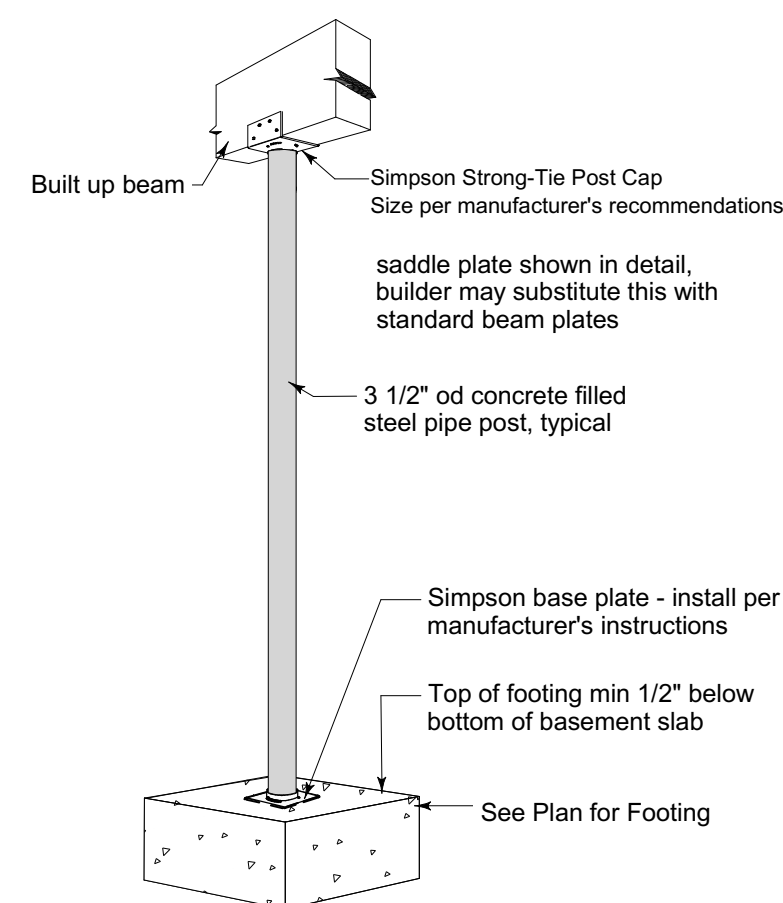
Foundation Contractor Check List

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/plb penetrations
 - Confirmed sizes and locations of beams w/GC, added or adjusted beam pockets



Beam Pocket
 Scale 1/2"=1'-0"



Typical Basement Post
 Not to Scale

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 @ 38	6 @ 35	
	8	6 @ 41	6 @ 35	6 @ 26	

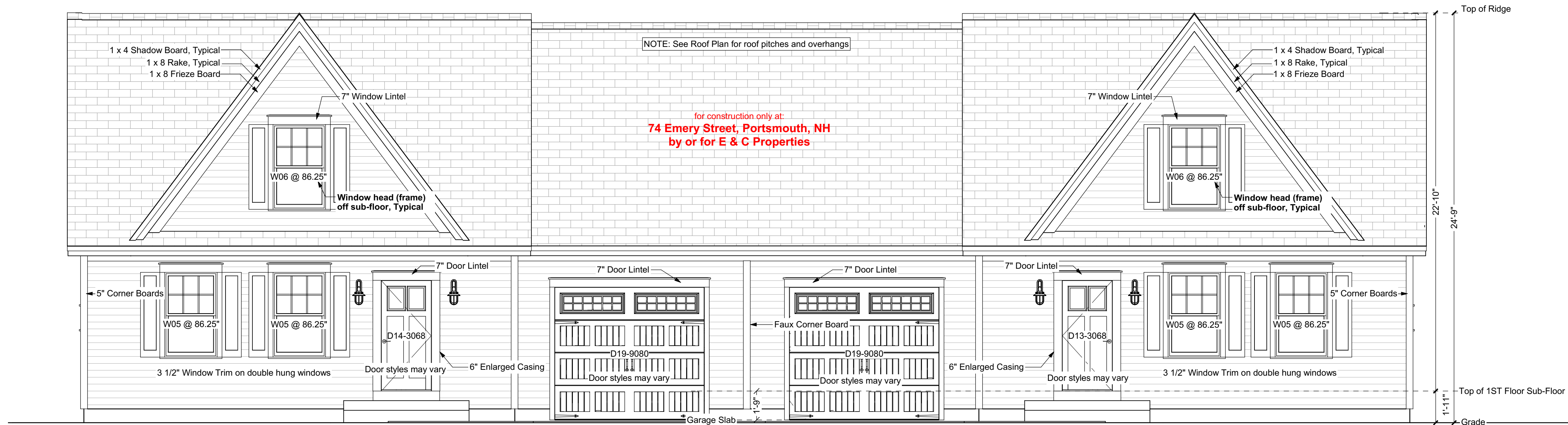
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9/12/2018 9:10:48 AM
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9/12/2018 9:10:48 AM



Front Elevation

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.

Not shown - number of steps may vary - handrail may be required per code.

Front Elevation



Rear Elevation

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.

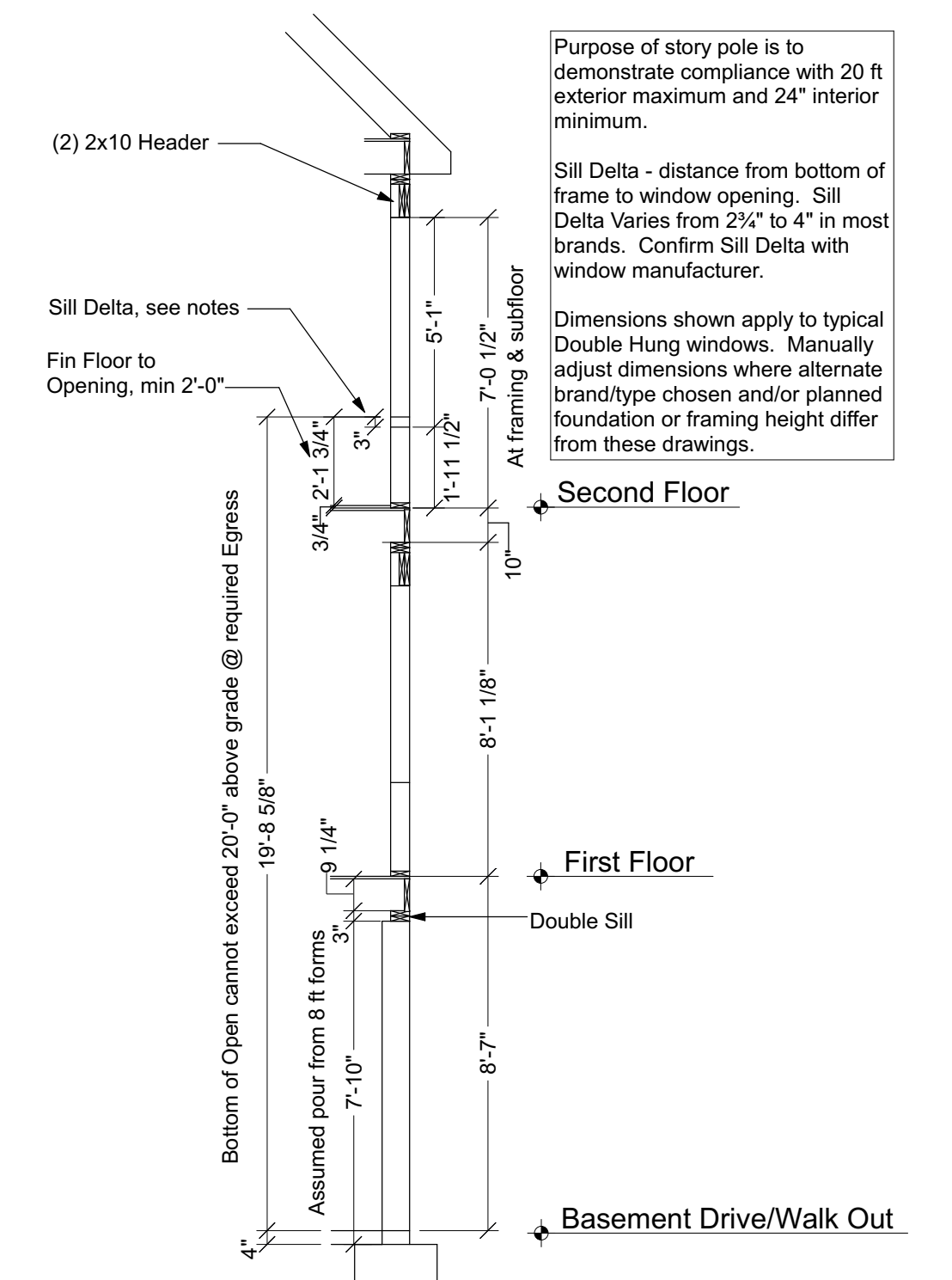
Posts under deck can be solid 4x4 up to 48" in height, solid 6x6 PT for higher decks. Consult Artform for decks higher than 8 ft off grade.

Foundation steps and terrain walls may be added to suit grade

Foundation steps and terrain walls may be added to suit grade

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.



Window Story Pole

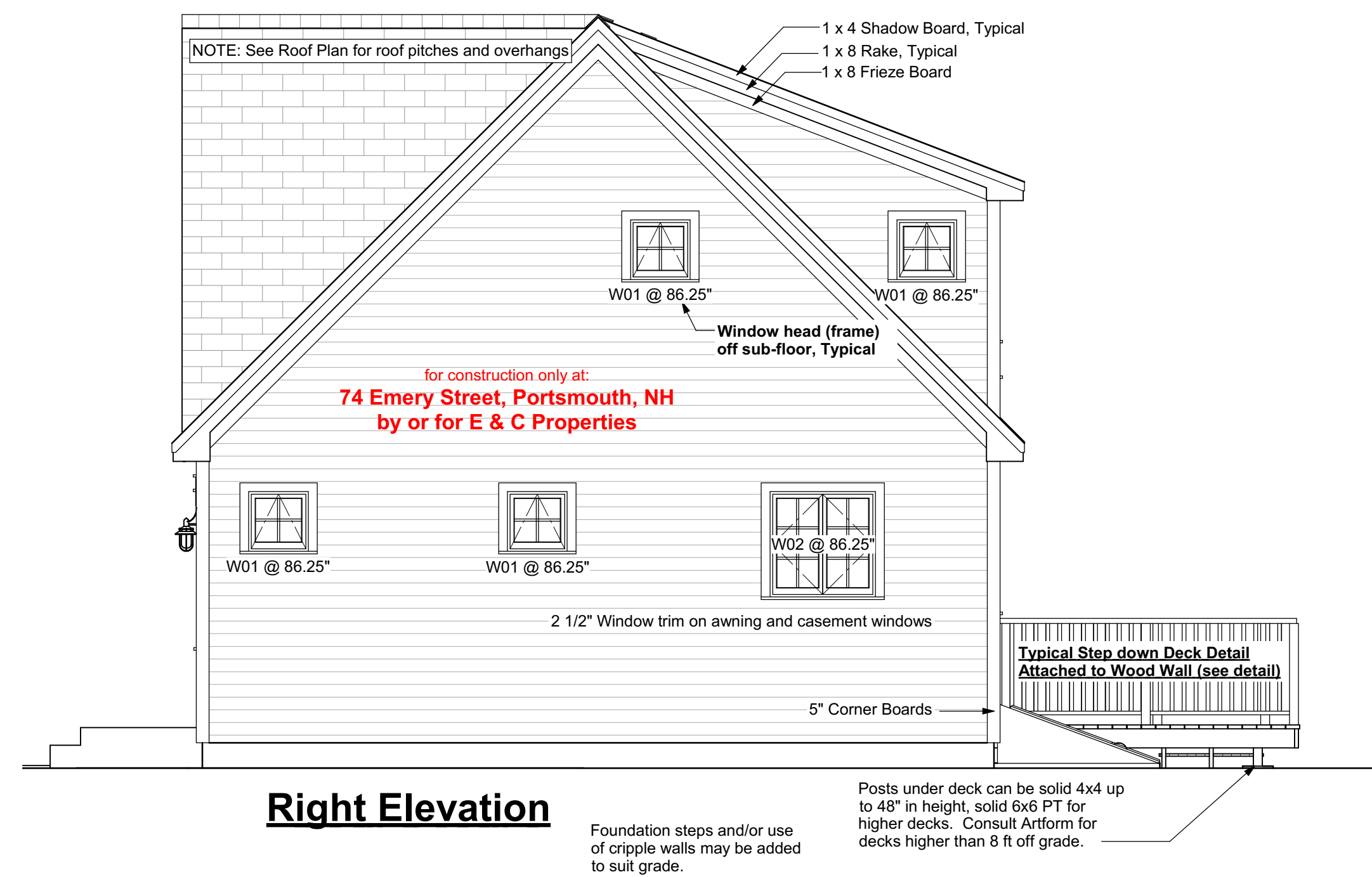
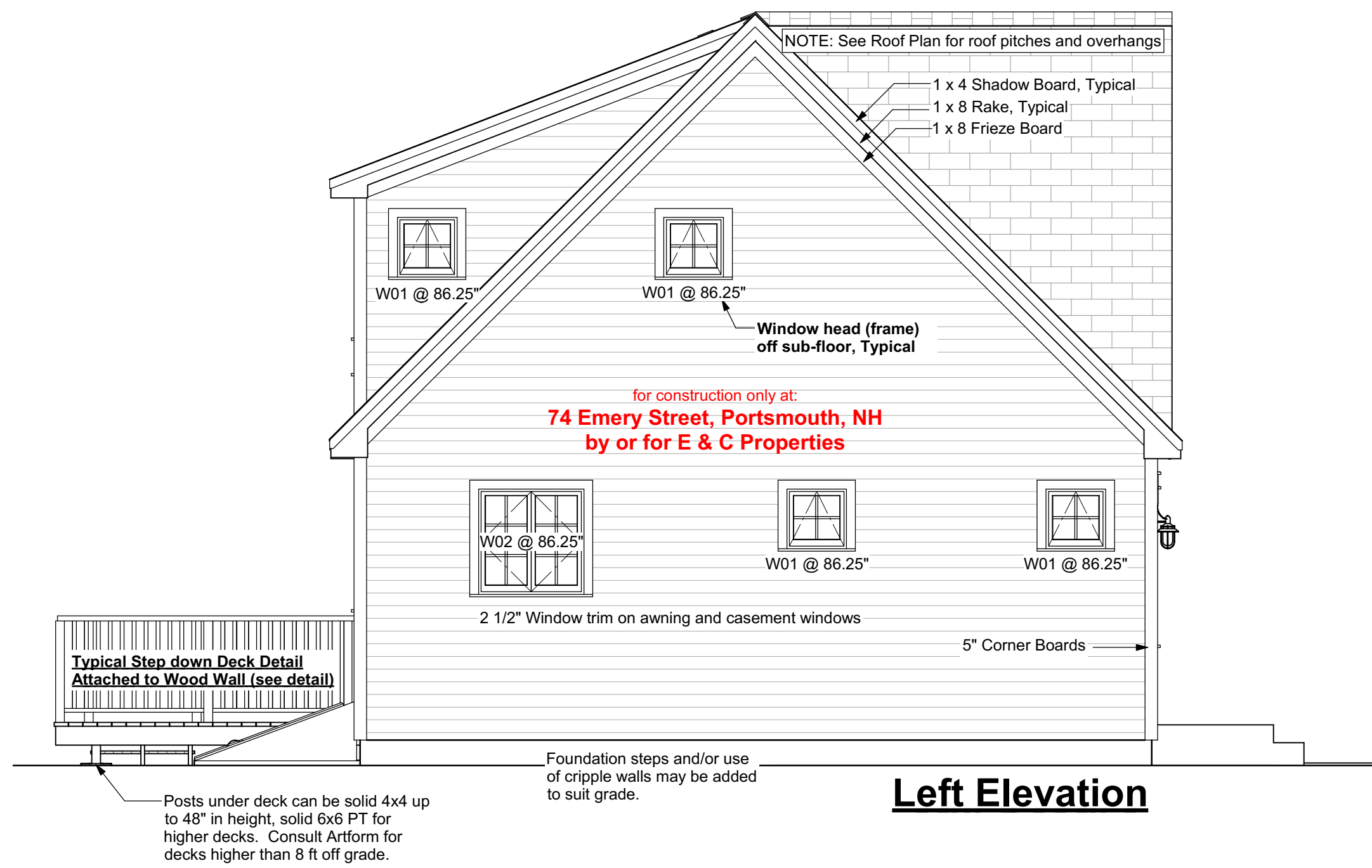
Scale 1/2"=1'-0"

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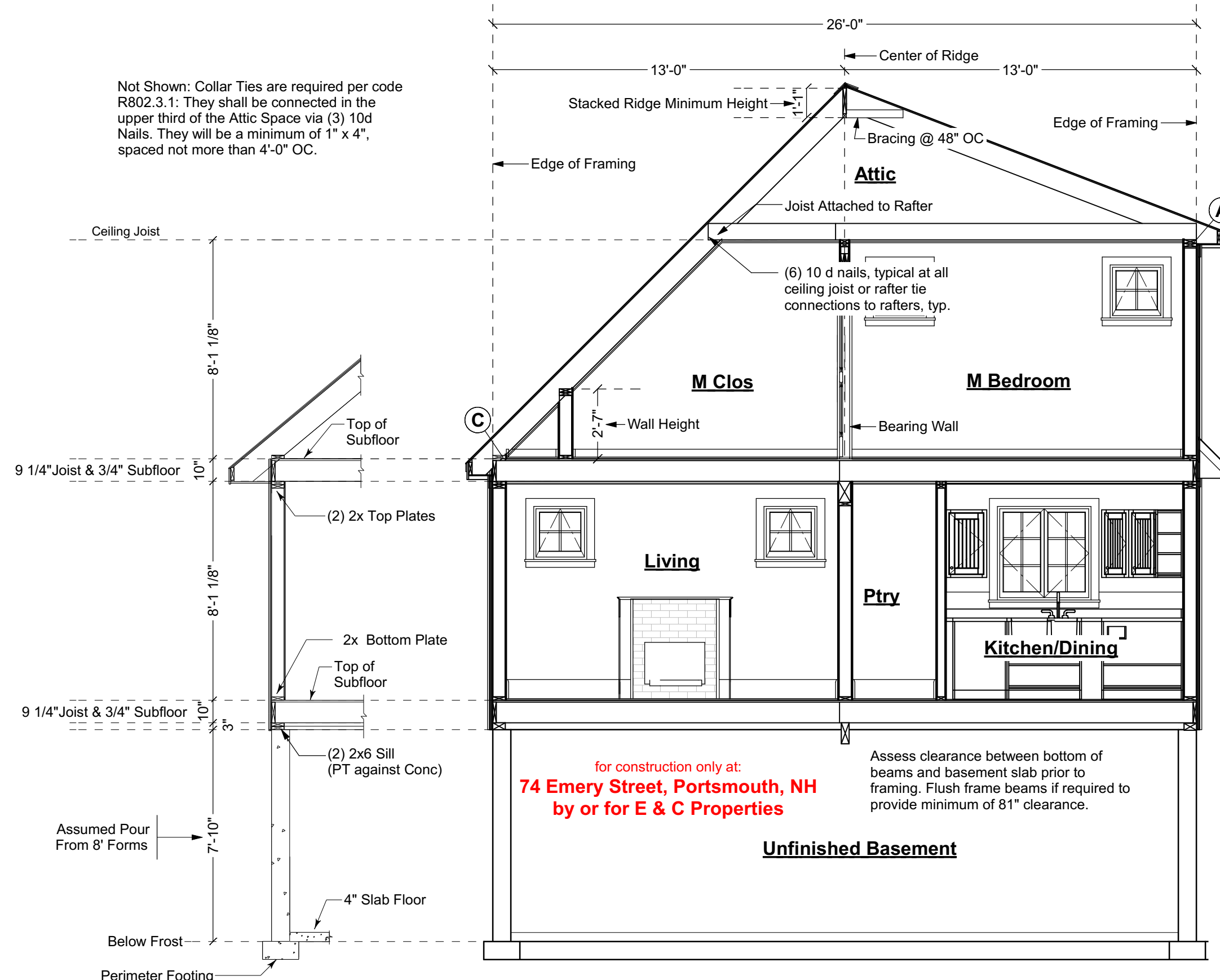
Follow manufacturer's instructions both for installation of joist hangers to joist and to beam. The illustration below, by Simpson Strong Tie, is provided as a courtesy. Consult their full manual for acceptable fastener sizes and other important instructions.

SHORT NAILS Do not use short (1 1/2") nails for double shear nailing.

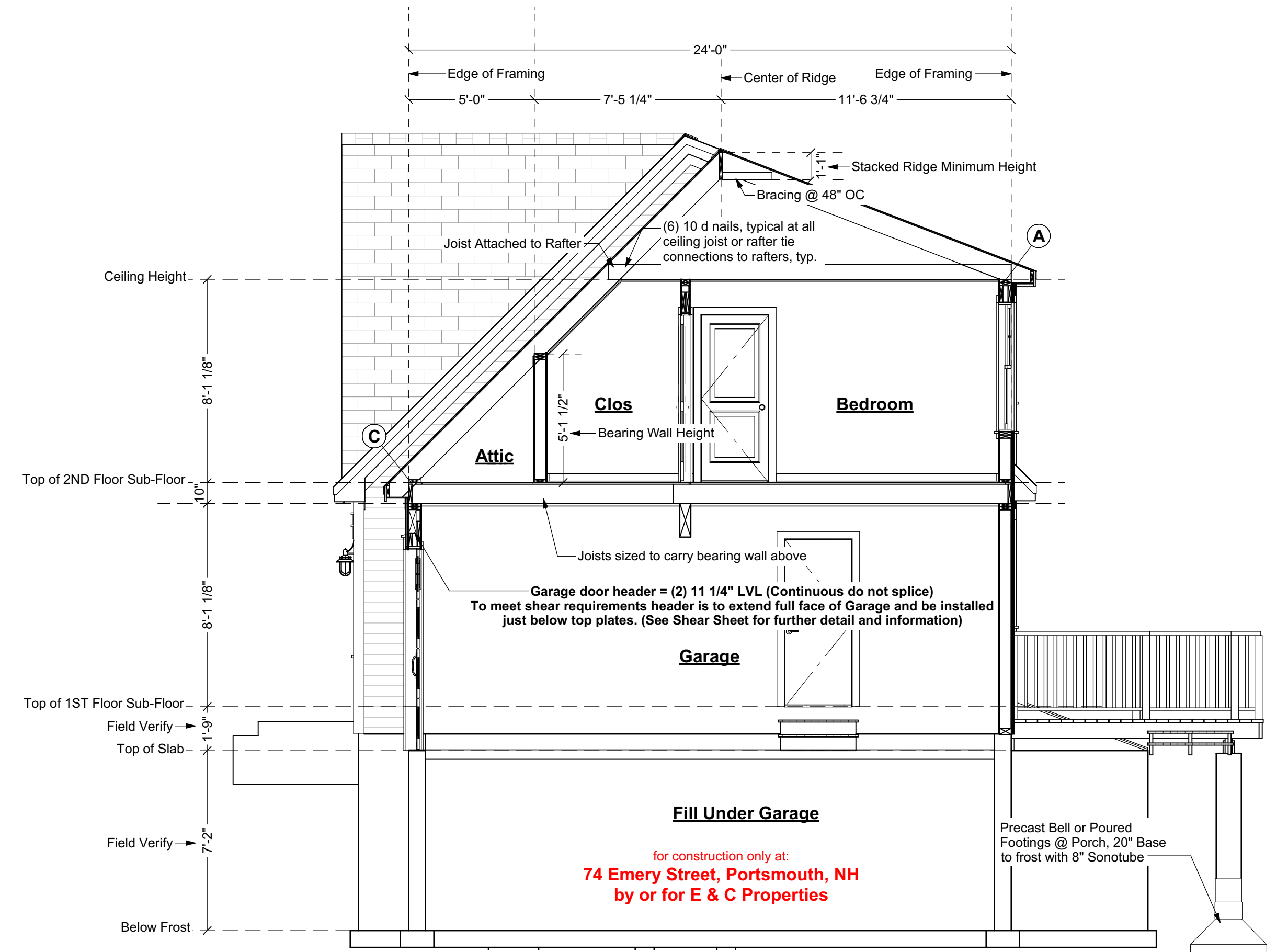


Double shear nailing should use full length common nails. Shorter nails may not be used as double shear nails.

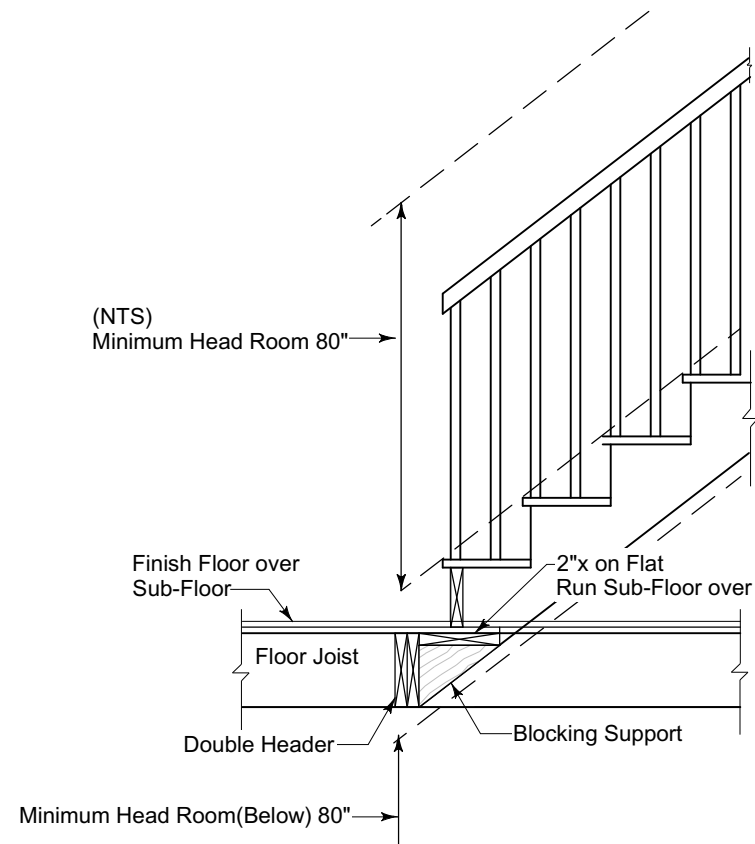
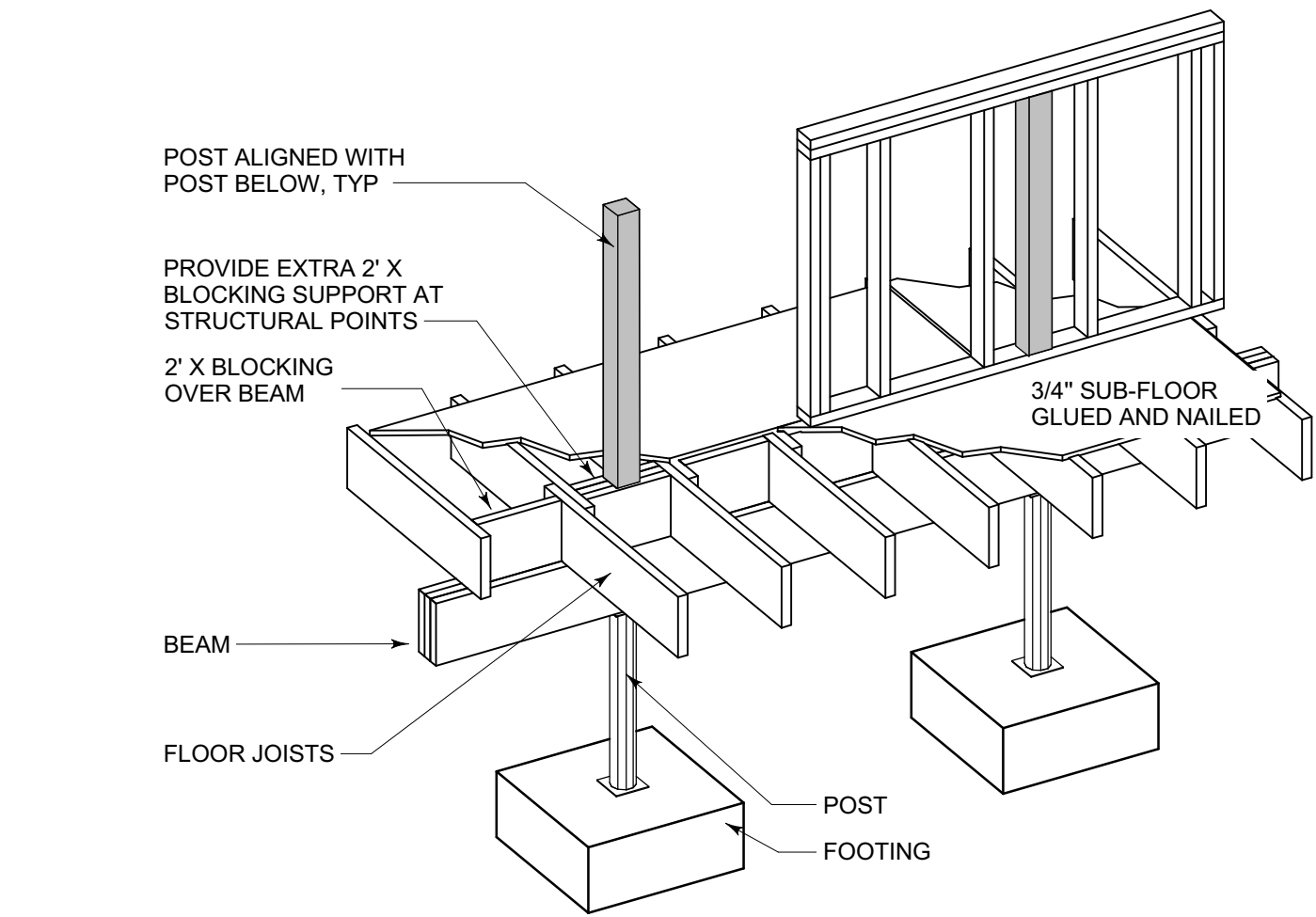
Not Shown: Collar Ties are required per code R802.3.1. They shall be connected in the upper third of the Attic Space via (3) 10d Nails. They will be a minimum of 1" x 4", spaced not more than 4'-0" OC.



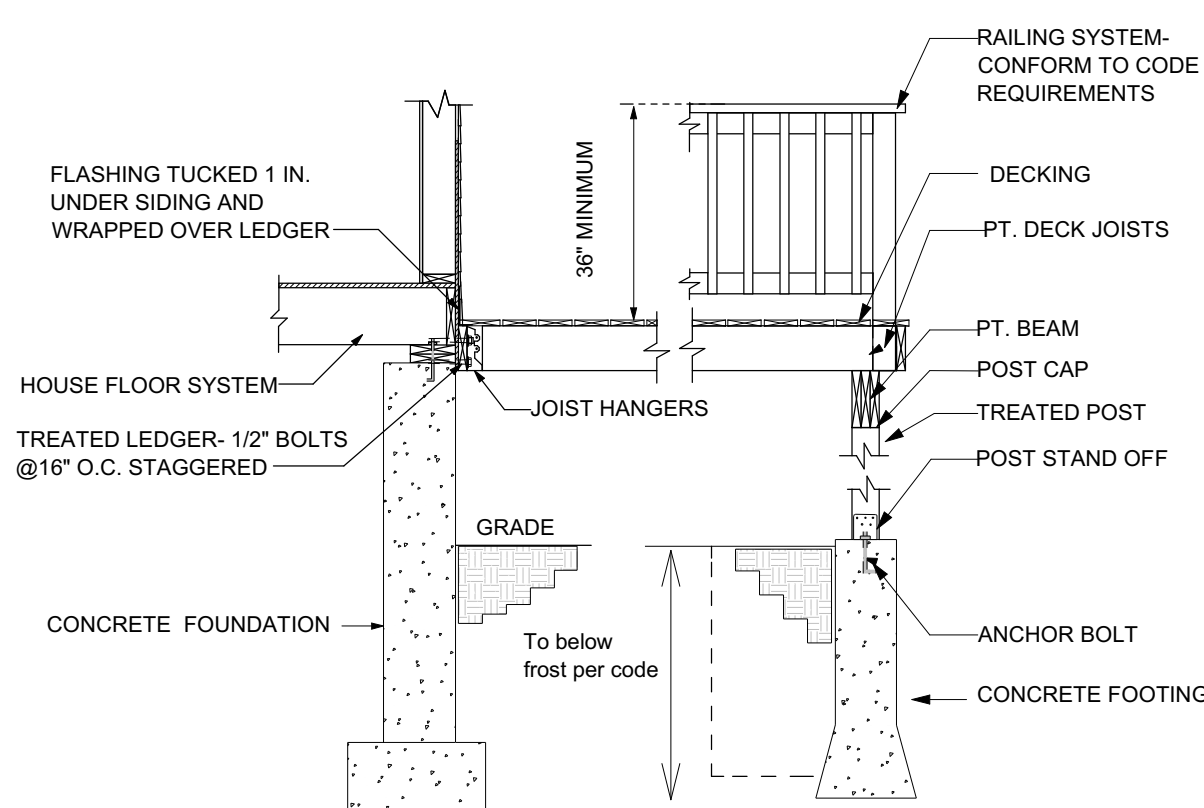
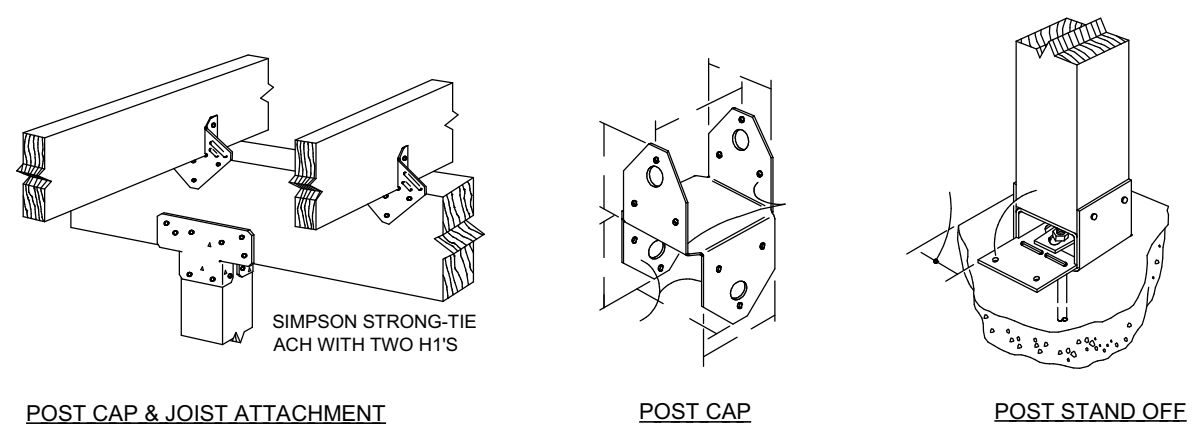
1 Cross Section @ Kitchen



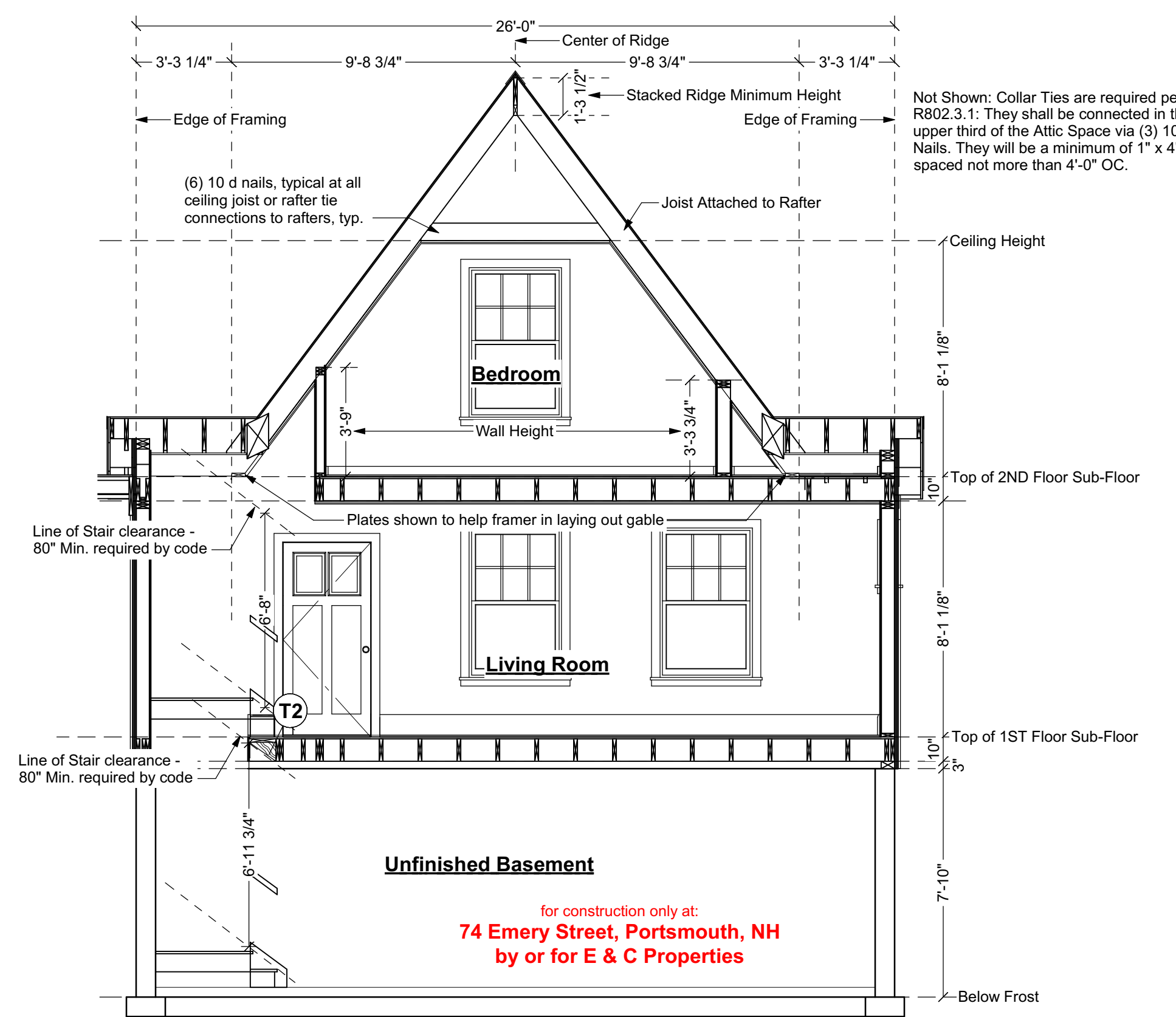
2 Cross Section @ Garage



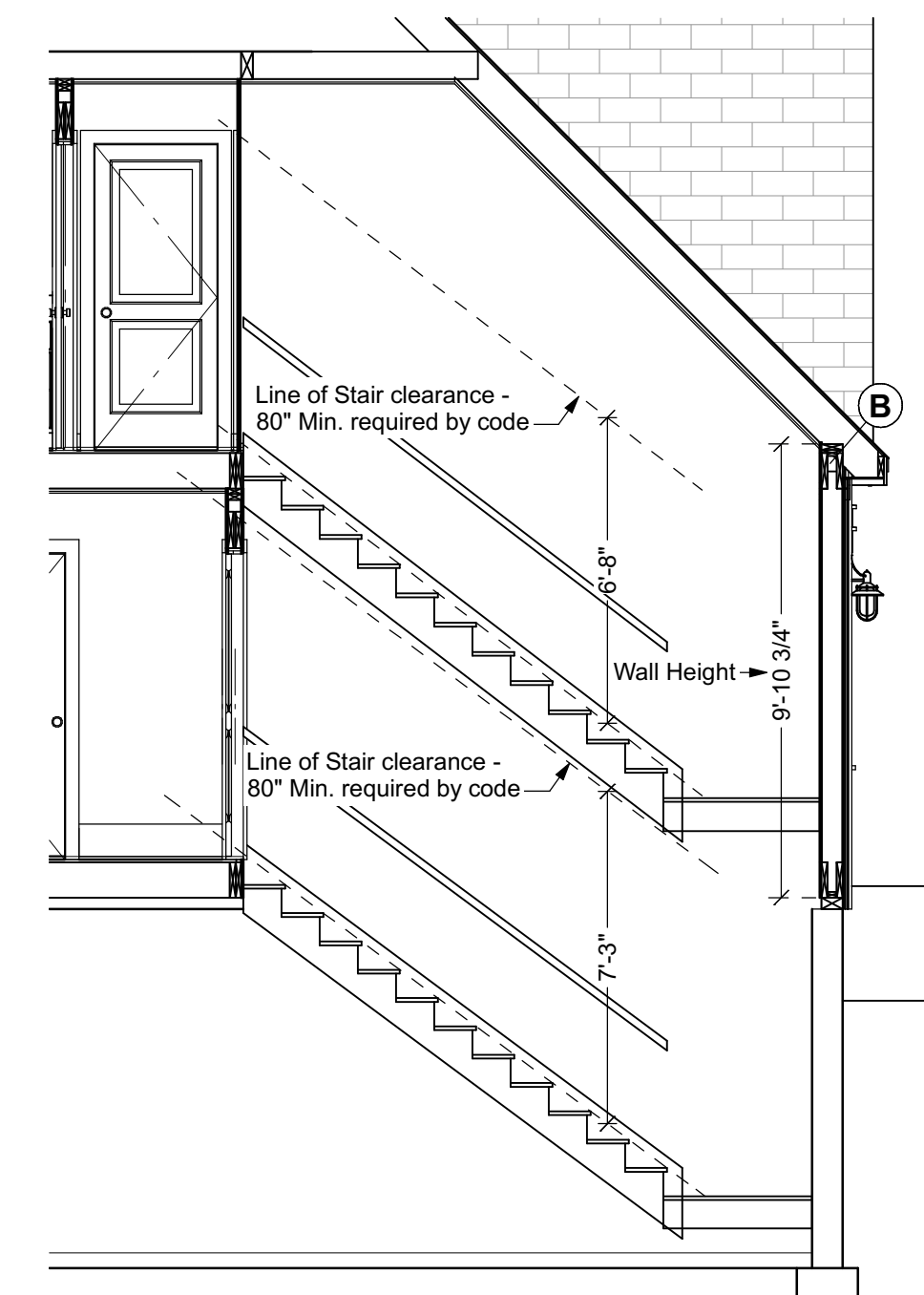
T2
1/2" = 1"



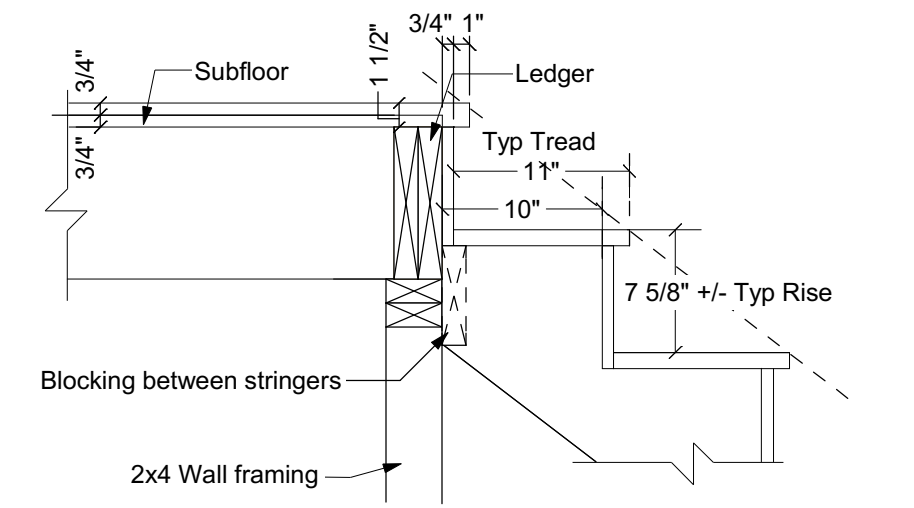
Typical Deck
Not to Scale



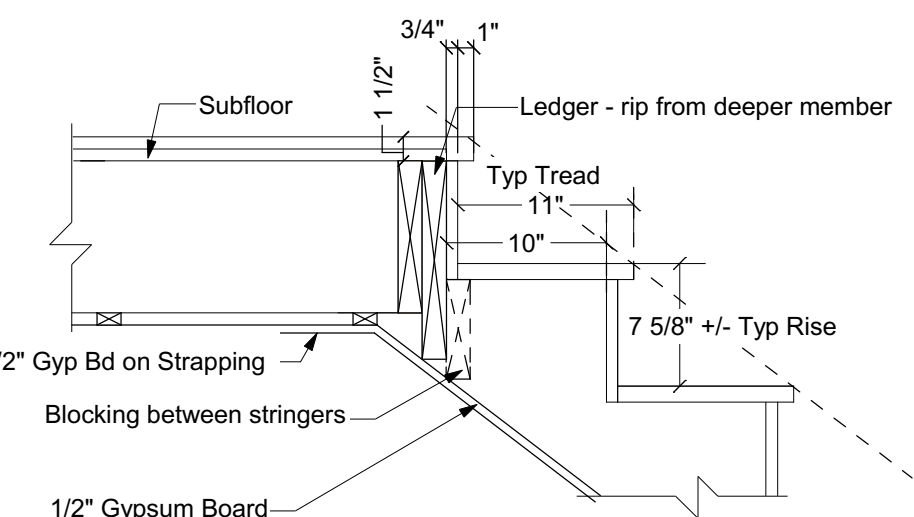
3 Cross Section @ Front Gable



Line of Stair Clearance (Lower)



Detail shows assumptions used for framing plan RO. Framers may adjust to suit different head support methods.
Top of Carriage (B)
Scale: 1" = 1'-0"

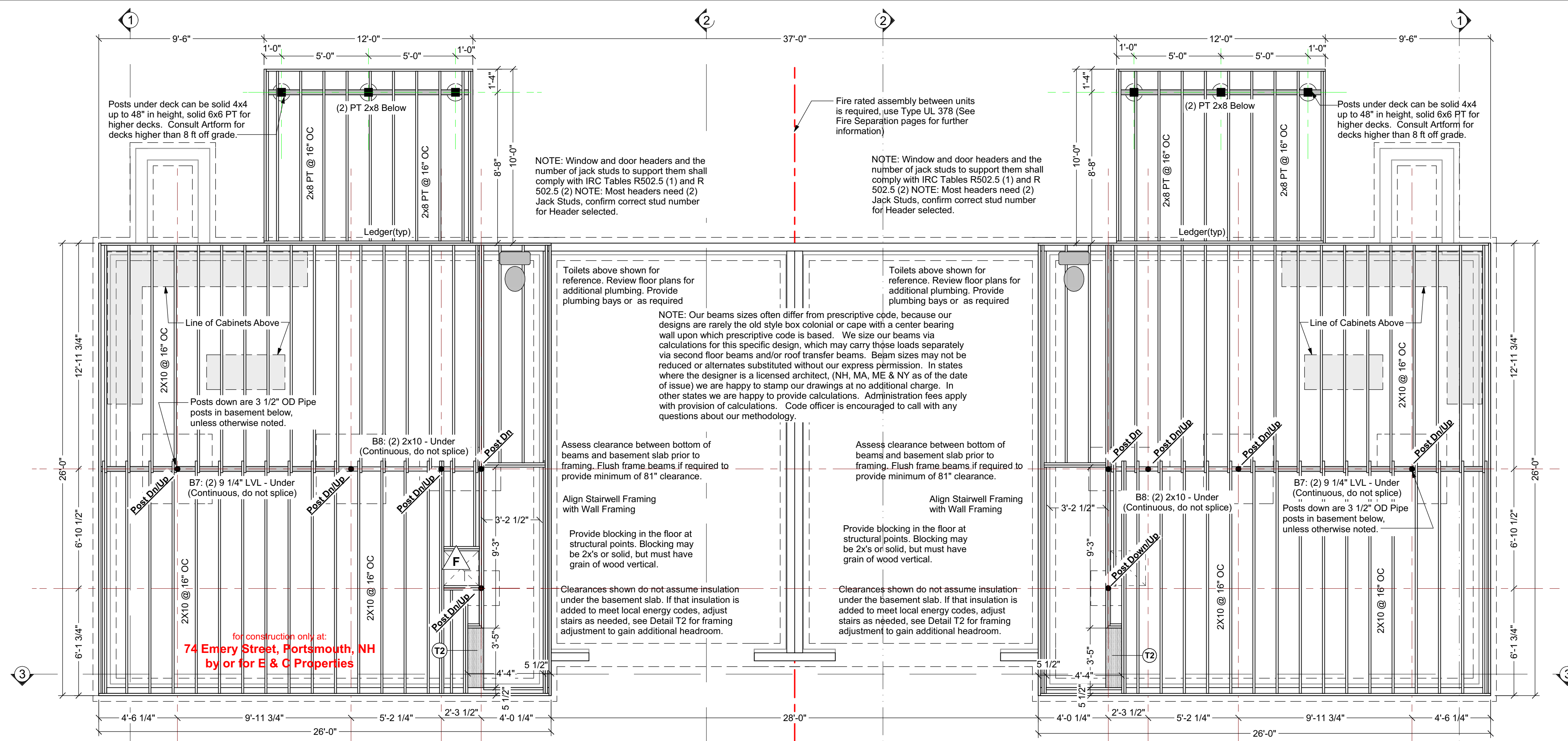


Detail shows assumptions used for framing plan RO. Framers may adjust to suit different head support methods.
Top of Carriage (C)
Scale: 1" = 1'-0"

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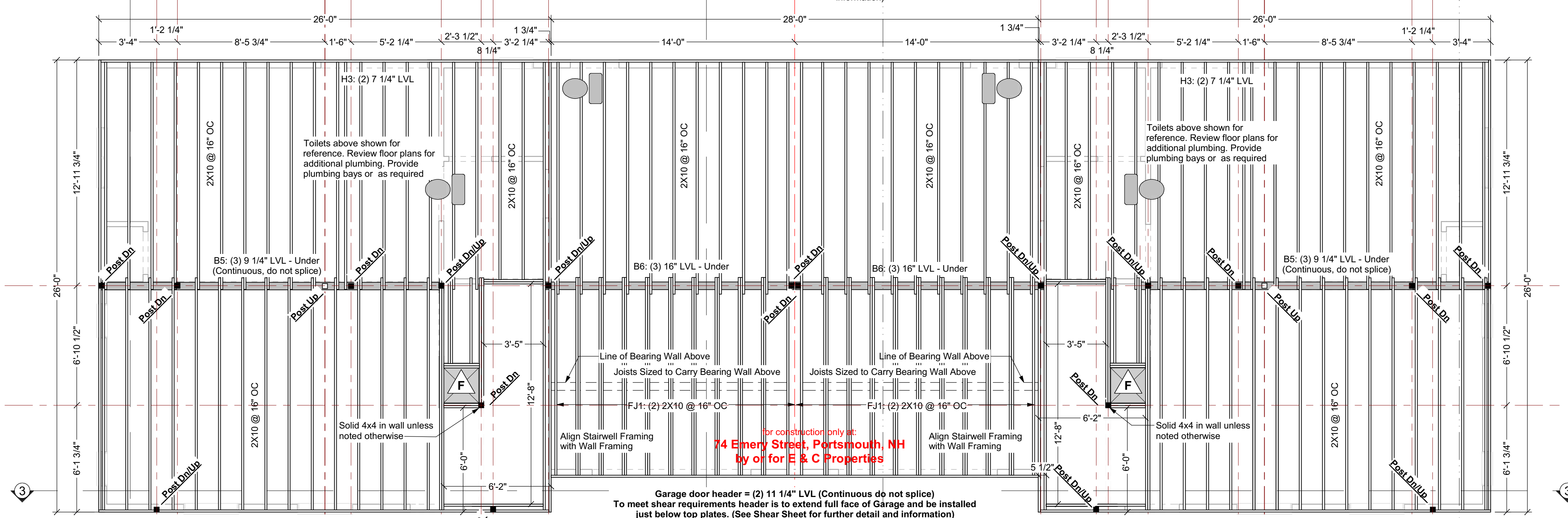


First Floor Framing

Structure designed for Snow Load of 50 PSF

First Floor Framing

Structure designed for Snow Load of 50 PSF



Second Floor Framing

Structure designed for Snow Load of 50 PSF

Second Floor Framing

Structure designed for Snow Load of 50 PSF

- Built-up Beams:**
Unless otherwise noted, connect multiple 1 3/4\"/>
 - (2) 9 1/4\"/>
 - Flush framed
 - (2) rows 3 3/8\"/>
 - (2) rows SDS 1/4x3 1/2 @ 24\"/> oc
 - Framed under (2) rows 10d nails @ 24\"/> oc
 - (2) 11 1/4\"/>
 - Flush framed
 - (2) rows 3 3/8\"/>
 - (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\"/>
 - (3) rows SDS 1/4x3 1/2 @ 19.2\"/> oc
 - Framed under (2) rows 10d nails @ 24\"/> oc
 - (3) 9 1/4\"/>
 - Flush framed
 - (2) rows 3 3/8\"/>
 - (2) rows SDS 1/4x3 1/2 @ 19.2\"/> oc
 - Framed under (2) rows 10d nails @ 24\"/> oc
 - (3) 11 1/4\"/>
 - Flush framed
 - (2) rows 3 3/8\"/>
 - (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\"/>
 - (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\"/>
 - (3) rows SDS 1/4x3 1/2 @ 16\"/> oc
 - Framed under (2) rows 10d nails @ 24\"/> oc
 - (4) 9 1/4\"/>
 - Flush framed
 - (2) rows 5\"/>
 - (2) rows SDS 1/4x6 @ 16\"/> oc
 - Framed under (2) rows 10d nails @ 24\"/> oc
 - (4) 11 1/4\"/>
 - Flush framed
 - (2) rows 5\"/>
 - (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\"/>
 - (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 LVLs where specified.

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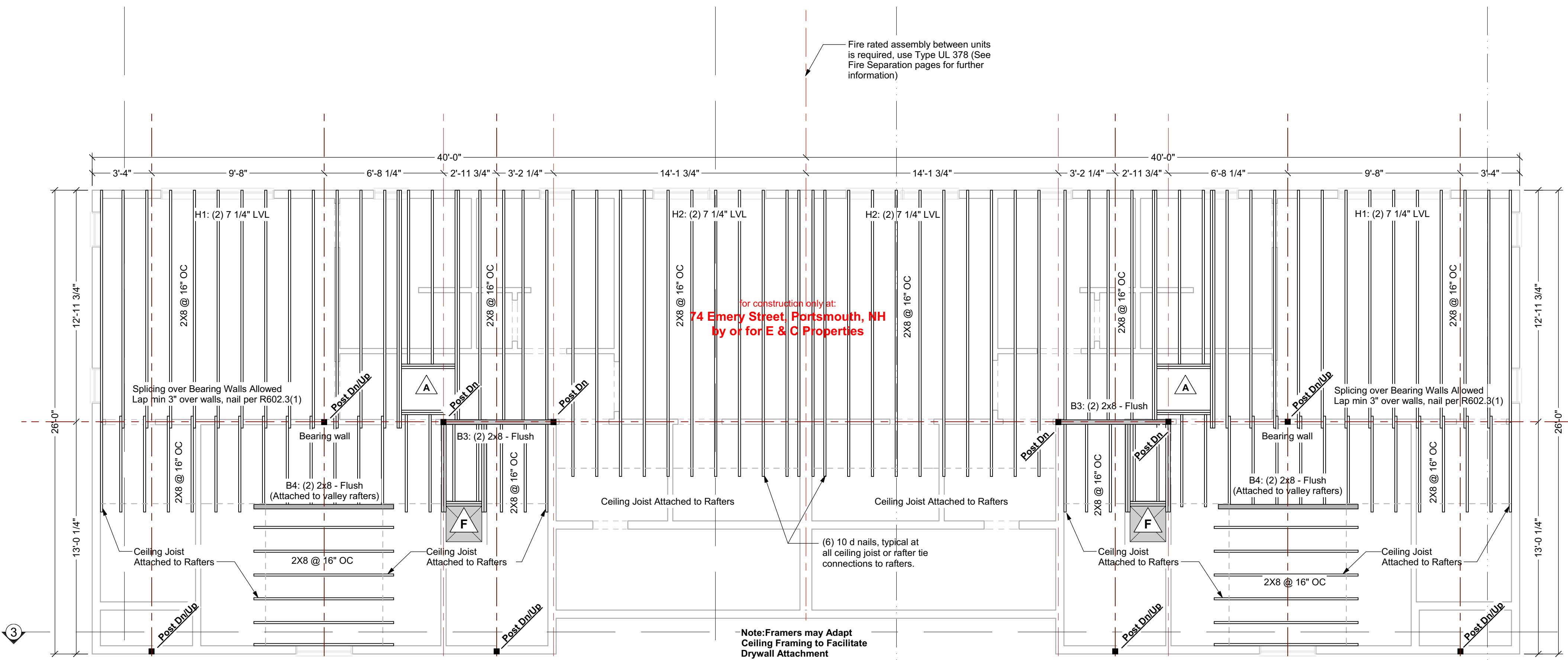
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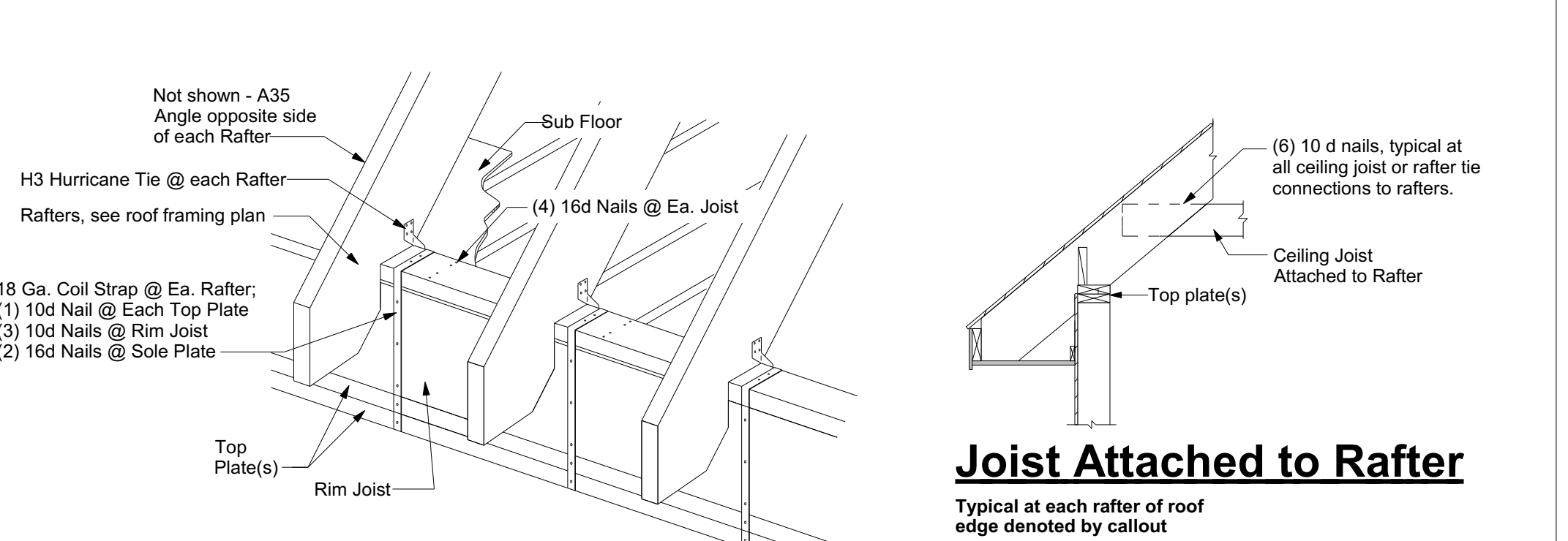
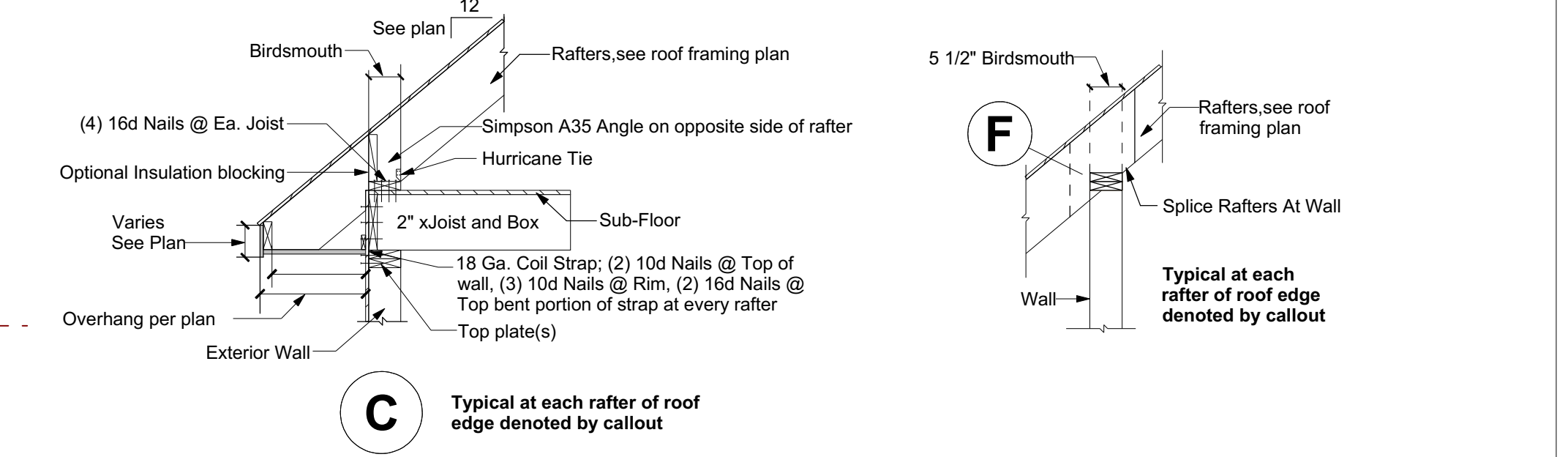
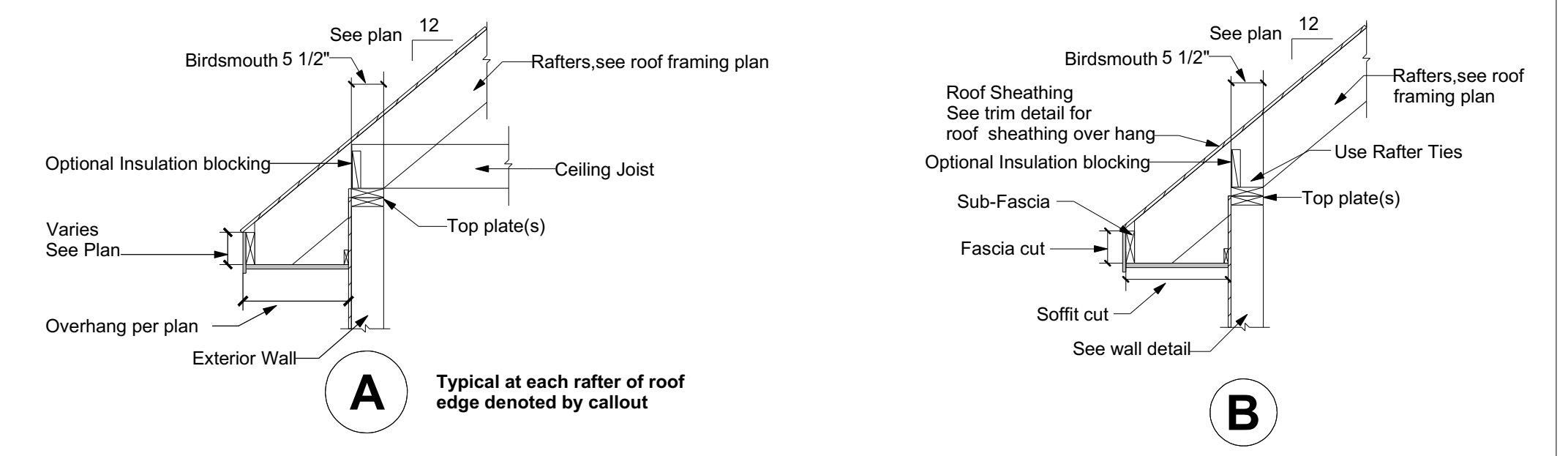


Ceiling Framing

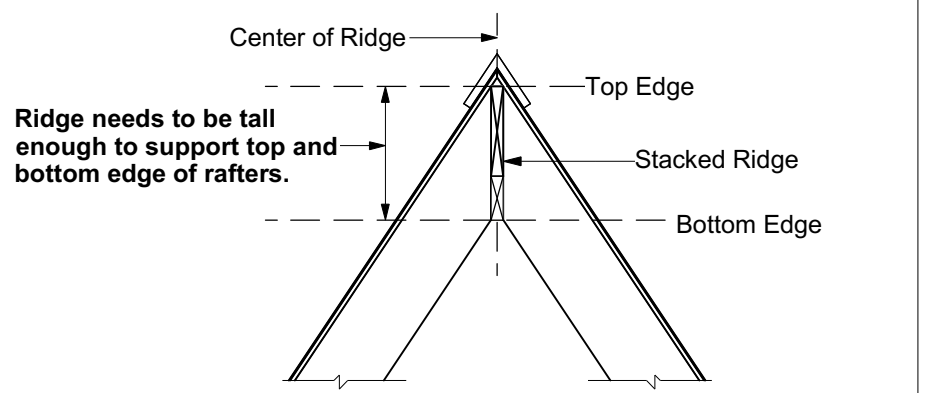
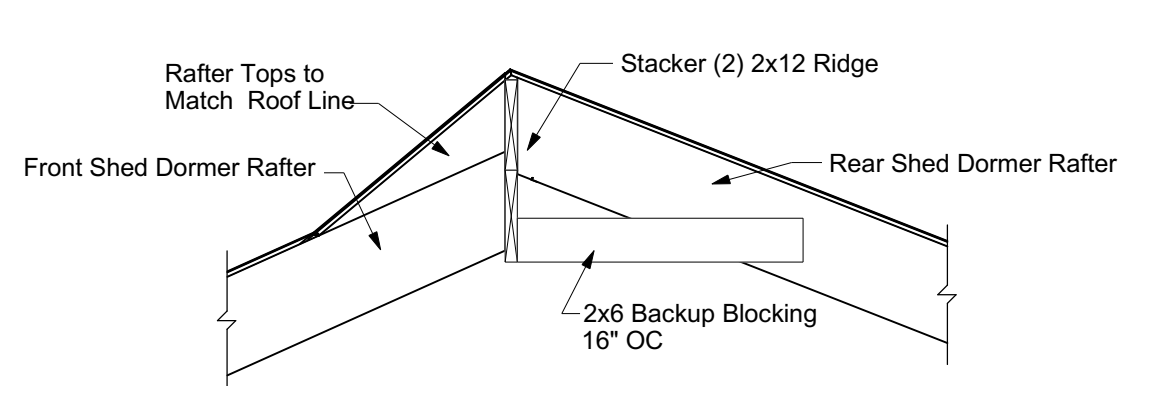
Structure designed for Snow Load of 50 PSF

Ceiling Framing

Structure designed for Snow Load of 50 PSF



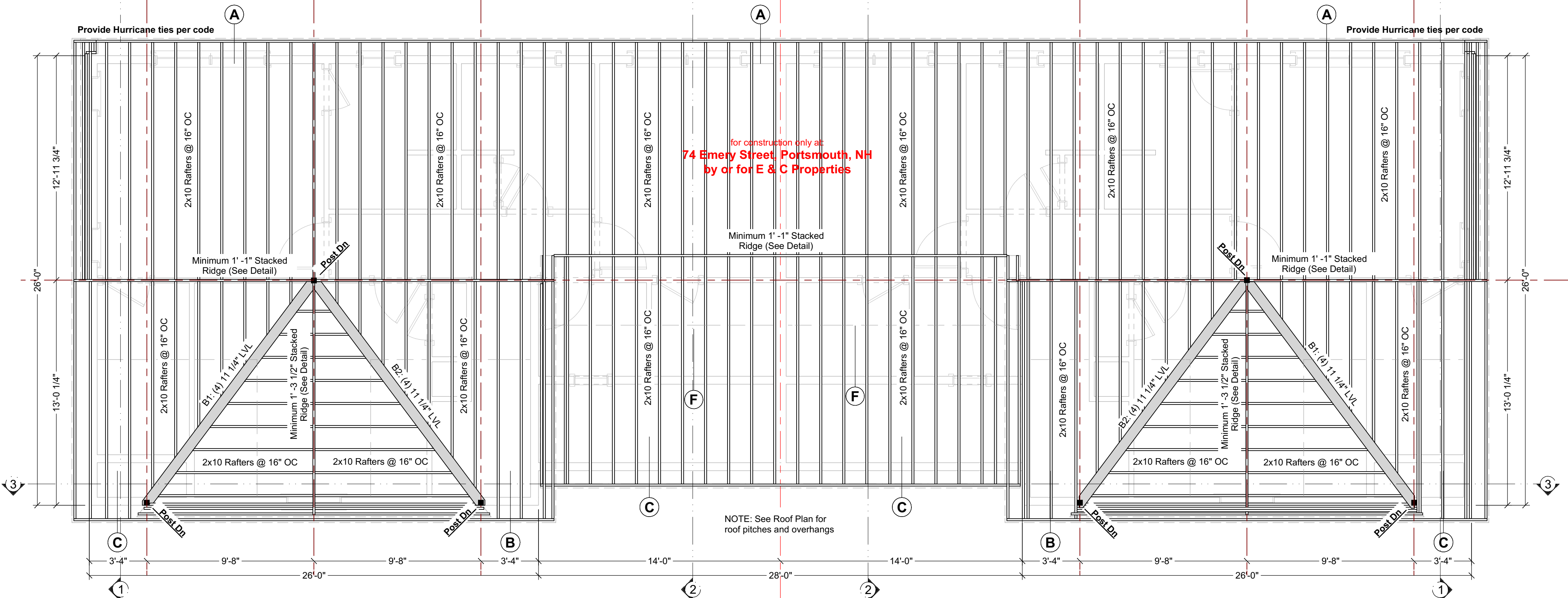
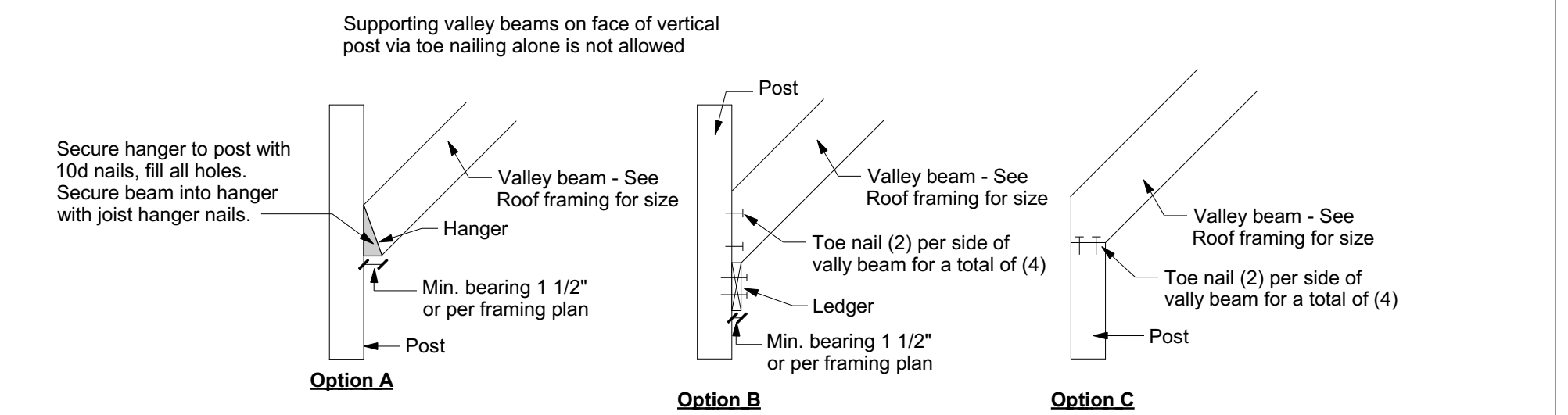
Perspective View of Detail C



Dormer Stacked Ridge Detail

scale: 1/2" = 1'-0"

Stacked Ridge Detail



Roof Framing

Structure designed for Snow Load of 50 PSF

Roof Framing

Structure designed for Snow Load of 50 PSF

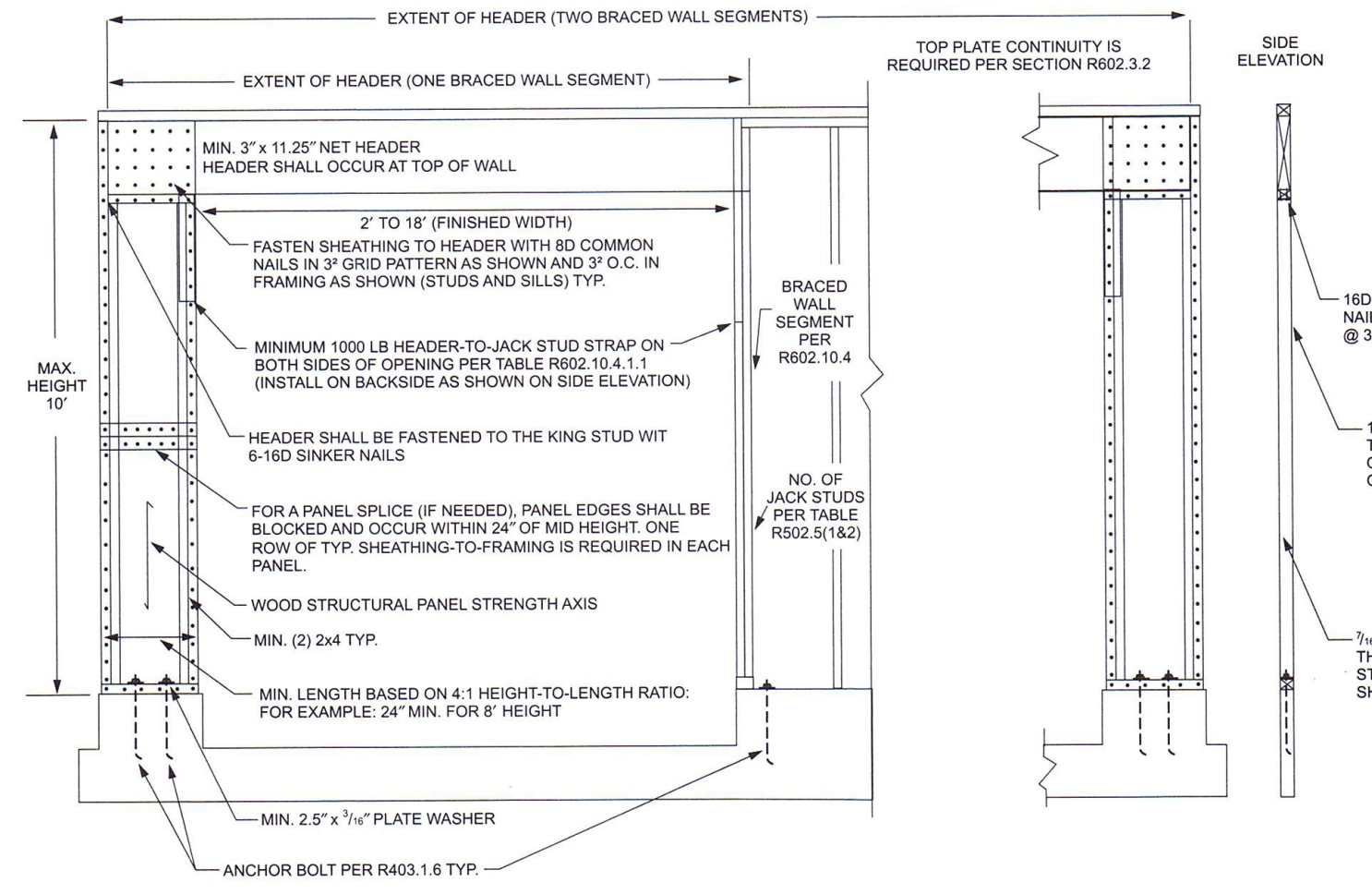
Your use of these drawings constitutes an acceptance of responsibility as outlined in "Dear Code Officer" on the first page of these drawings, and on our web site: <http://www.artformhomeplans.com/TermsConditions.a5w>

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 # 182.224 v2 © 2008-2018 Art Form Architecture, Inc.	603.431.9559
Pesto Classic Duplex 74 Emery Street Portsmouth, NH	8
1/4"=1'-0" unless noted otherwise / Print @ 1:1 PDF created on: 9/12/2018, drawn by: ACJ	Issued for: Construction
R1: 9.12.18 - Condo Living Area	

**TABLE R602.10.4.1
CONTINUOUS SHEATHING METHODS**

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
CS-WSP	Wood structural panel	1/8"		6d common (2" x 0.113") nails at 6" spacing (panel edges) and at 12" spacing (intermediate supports) or 16 ga. x 1 1/2" staples at 3" spacing (panel edges) and 6" spacing (intermediate supports)



Shear Wall Details

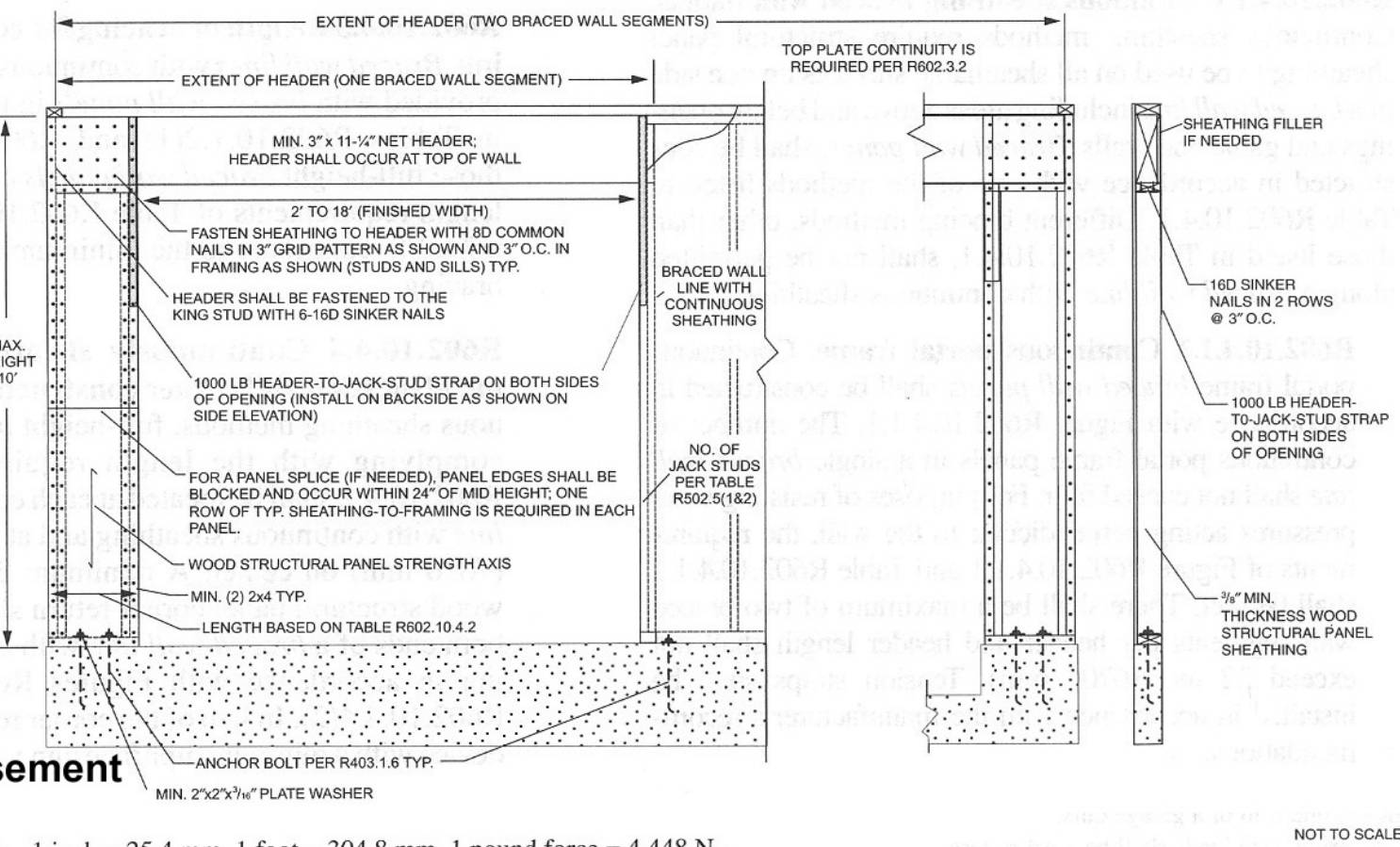
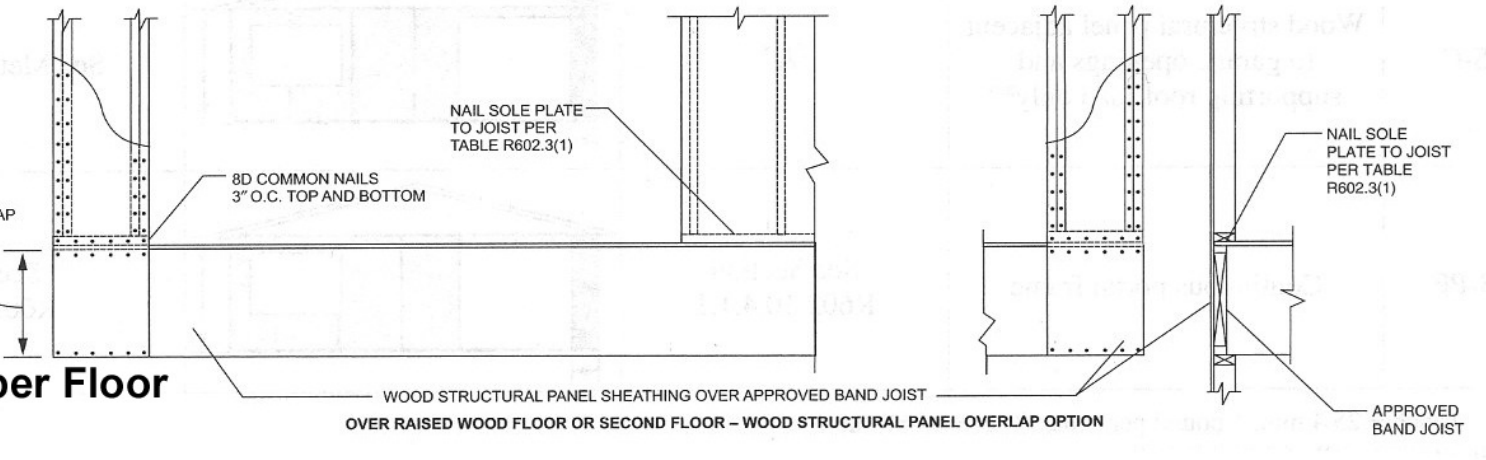
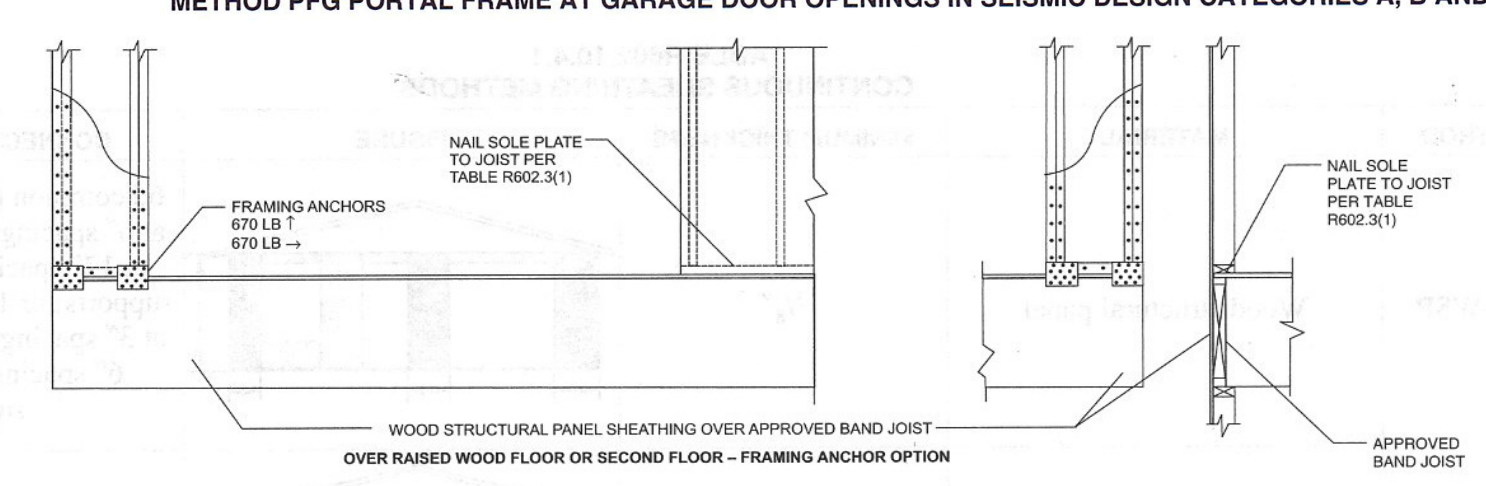
Not to Scale

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. Untreated 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]

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

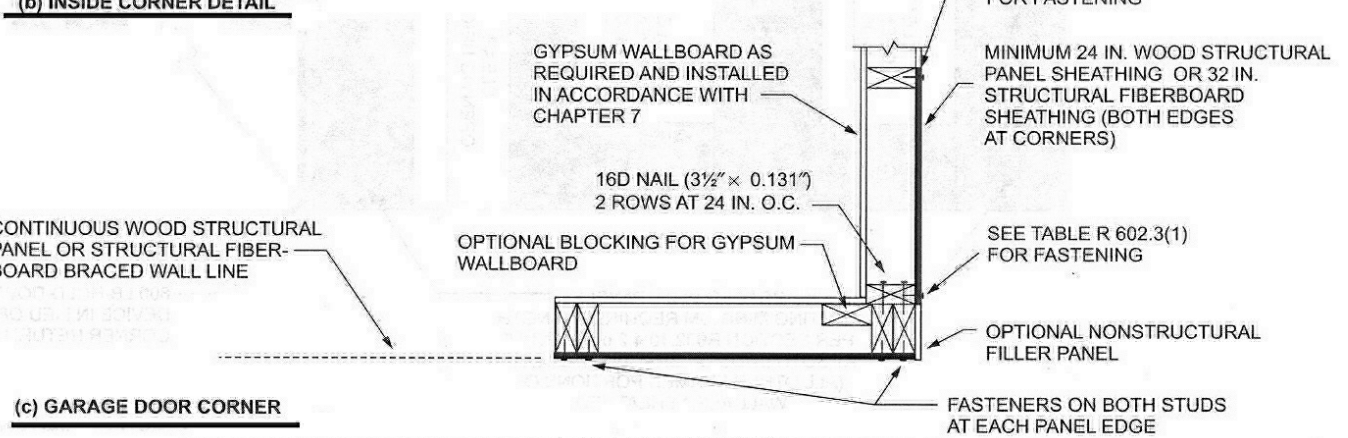
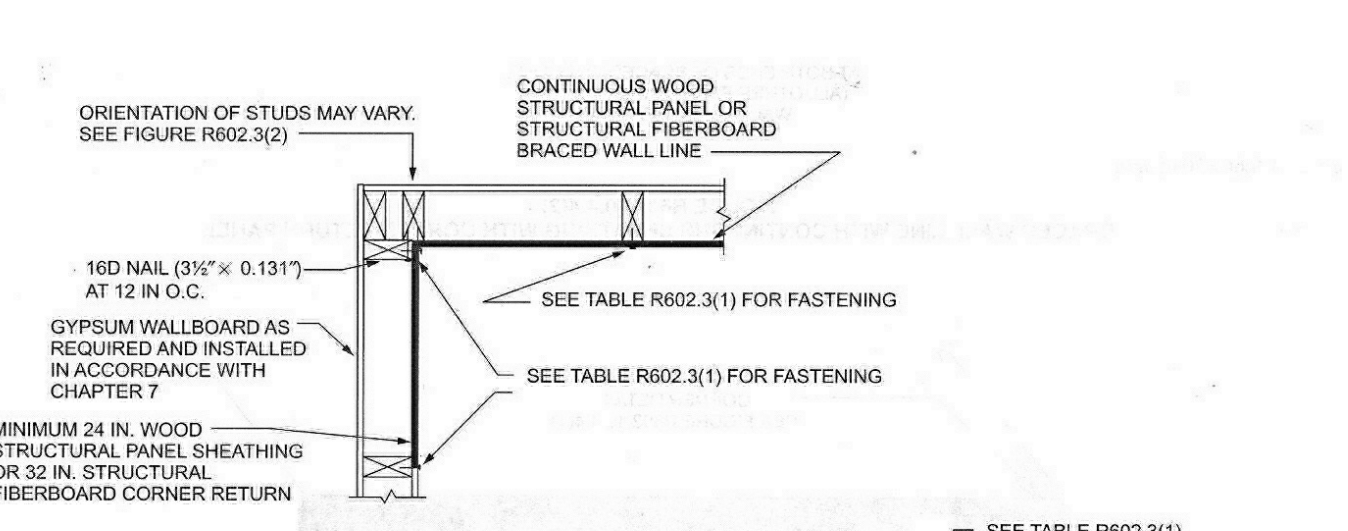
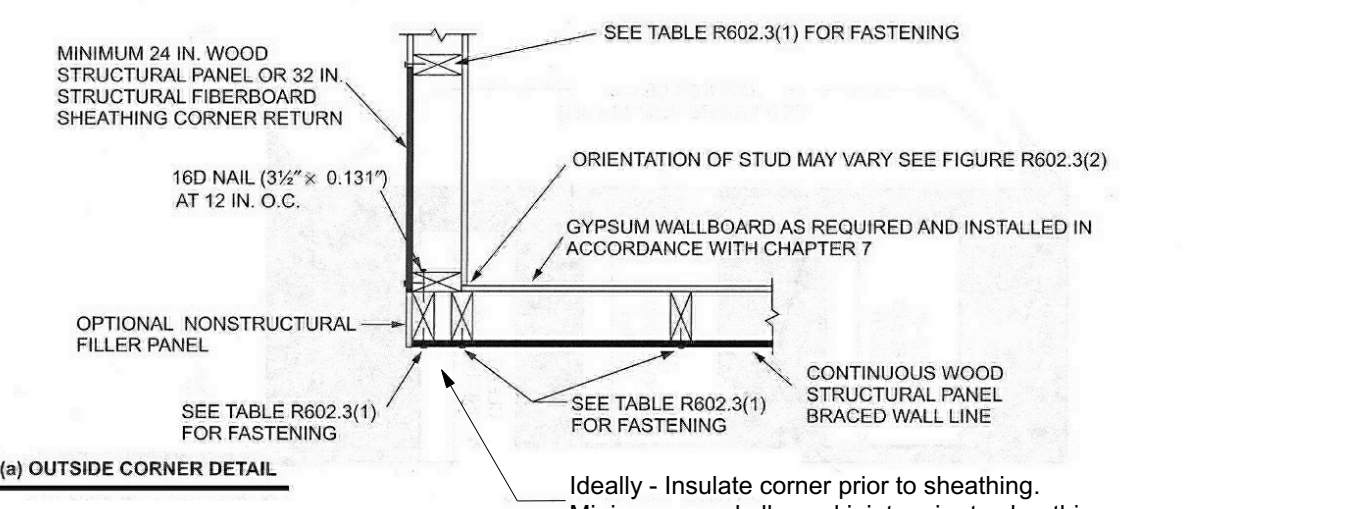
**FIGURE R602.10.3.4
METHOD PFG PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C**



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

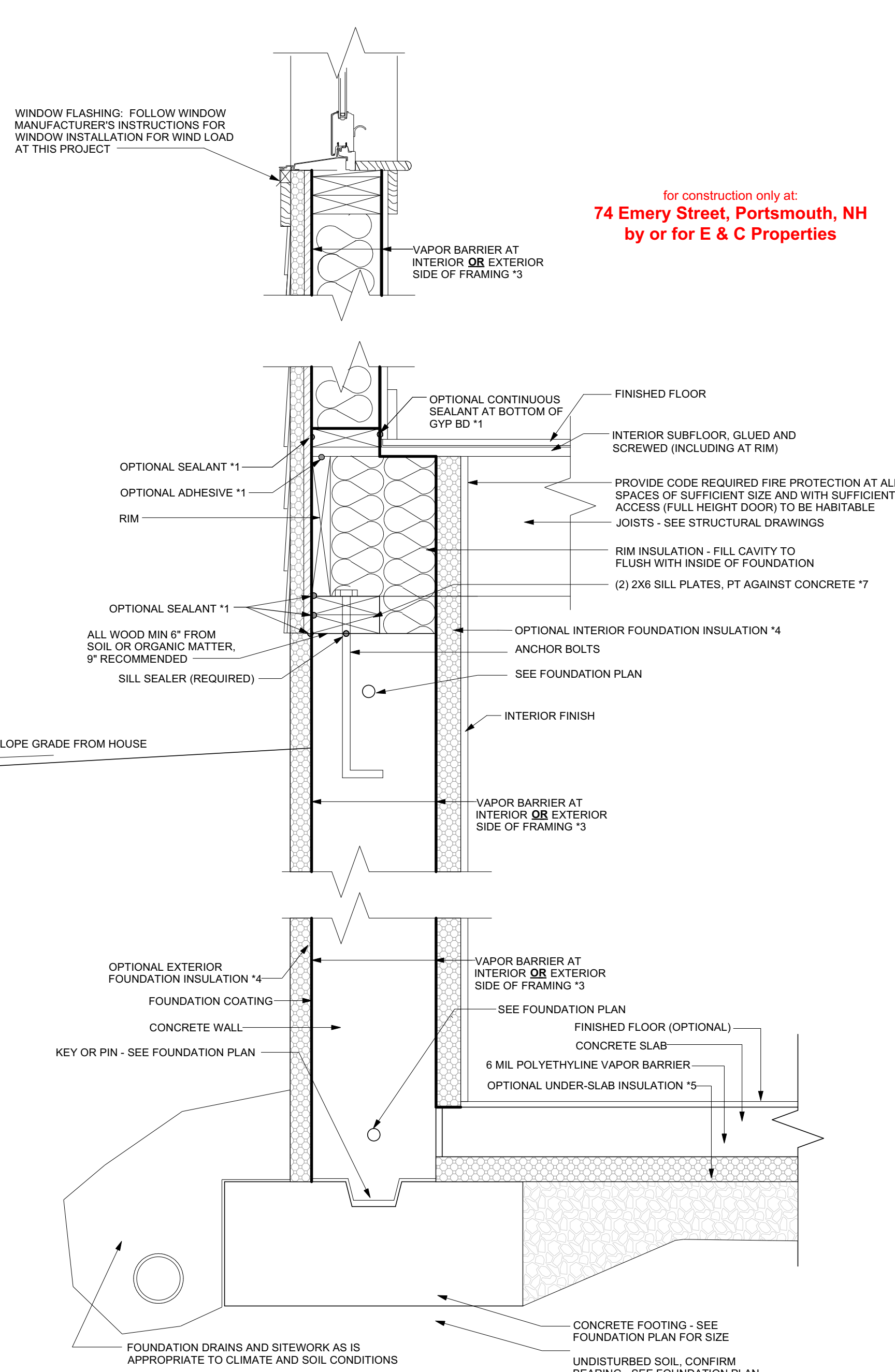
**FIGURE R602.10.4.1.1
METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION**

2009 INTERNATIONAL RESIDENTIAL CODE®

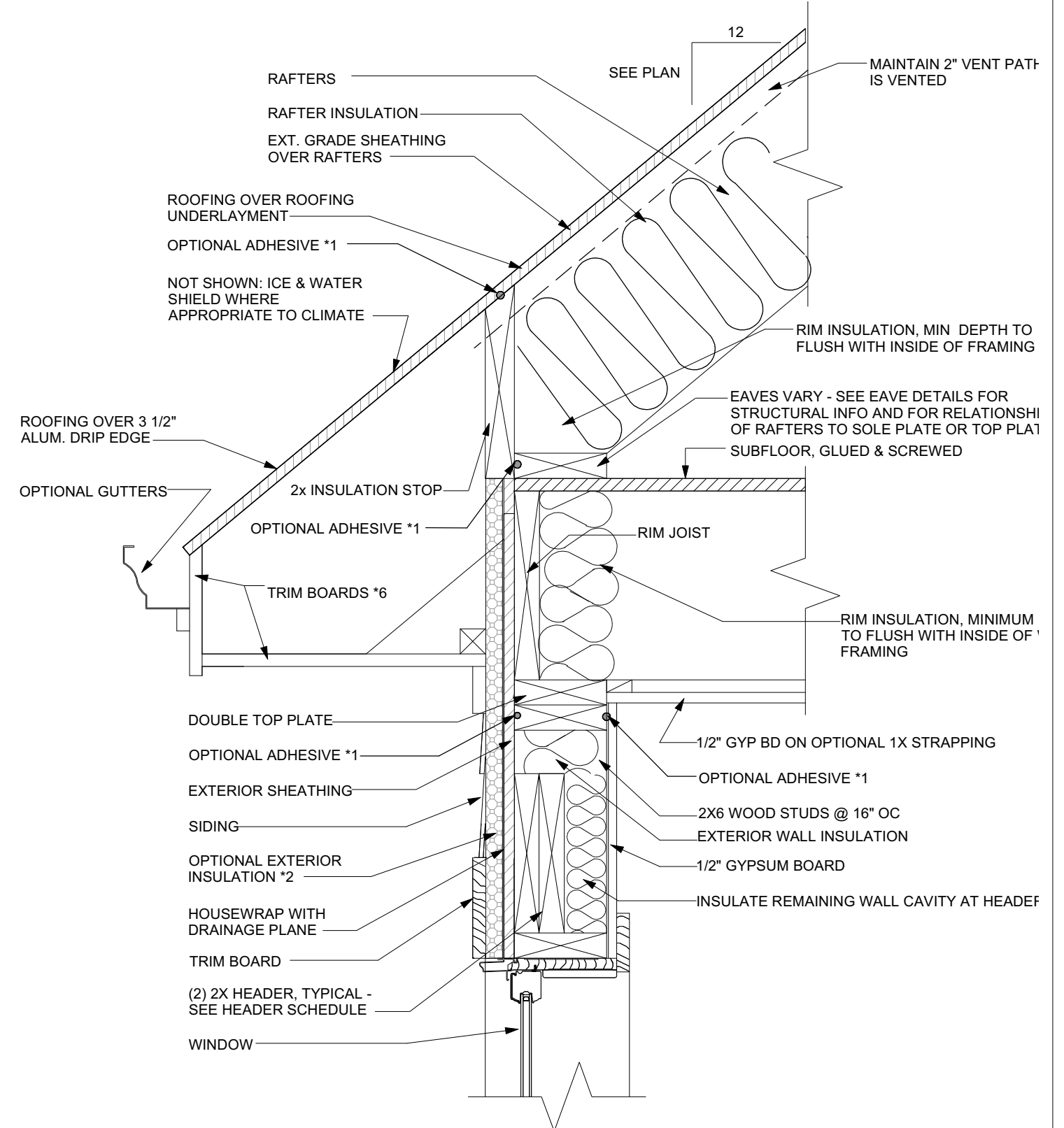


**FIGURE R602.10.4.1(1)
TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING**

2009 INTERNATIONAL RESIDENTIAL CODE®



Thermal and Moisture ONLY
1 1/2" = 1'-0"



NOTES:

RESPONSIBILITY FOR THERMAL AND MOISTURE DESIGN LIES WITH THE BUILDER AND/OR HOMEOWNER. IF THESE DETAILS, IN COMBINATION WITH BUILDER-PROVIDED SPECIFICATIONS AND MANUFACTURER'S CUT SHEETS ARE INSUFFICIENT FOR PERMITTING, CONTACT ARTFORM HOME PLANS @ 603-431-9559 TO HAVE DETAILS ADJUSTED PER YOUR MARK-UP.

NOTE THAT SPRAY FOAM INSULATION PERFORMS THE SAME FUNCTION AS THE OPTIONAL SEALANTS SHOWN HERE.

*1. OPTIONAL SEALANTS AND ADHESIVES ARE RECOMMENDED FOR ADVANCED ENERGY PERFORMANCE.

*2. OPTIONAL EXTERIOR INSULATION IS RECOMMENDED FOR ADVANCED ENERGY PERFORMANCE.

*3. PROVIDE VAPOR BARRIER APPROPRIATE TO CLIMATE AND TO SELECTED INSULATION. LOCATE VAPOR BARRIER WITHIN WALL ASSEMBLY AS IS APPROPRIATE TO CLIMATE. BUILDER TO PROVIDE SPECIFIC MATERIAL CHOICES ON SEPARATE SPECIFICATIONS SHEET.

*4. OPTIONAL FOUNDATION INSULATION IS RECOMMENDED FOR ADVANCED ENERGY PERFORMANCE. IF EXTERIOR INSULATION IS SELECTED PROVIDE PROTECTION FROM WEATHER DAMAGE, INSECTS, ETC AS IS APPROPRIATE TO CLIMATE AND BUILDING SITE. IF INTERIOR FOUNDATION INSULATION IS CHOSEN, PROVIDE FIRE PROTECTION WHERE APPROPRIATE.

*5. OPTIONAL UNDERSLAB INSULATION IS RECOMMENDED FOR ADVANCED ENERGY PERFORMANCE. COORDINATE HEIGHTS WITH MECHANICAL FOUNDATION AND FRAMING TO ENSURE CLEARANCE WHERE BASEMENT SPACE IS HABITABLE.

*6. FINISHING OF EAVES MAY VARY - SEE PROJECT DETAILS.

*7. DOUBLE SILL PLATE IS OPTIONAL IF BASEMENT IS NOT HABITABLE. DOUBLE SILL IS INTEGRAL PART OF DESIGN WHERE BASEMENT IS HABITABLE. PARTICULARLY IF UNDER SLAB INSULATION IS INSTALLED. DESIGN ASSUMES 8 FOOT FORMS ACHIEVING 7'-10" POUR.

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>

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Two Residential Duplexes

64 & 74 Emery Street

Portsmouth, NH

Assessor's Map 220, Lots 87-2 & 87-3

DRAINAGE STUDY

SEPTEMBER 2018

Prepared For:

HAPPY MOUNTAIN HOLDINGS, LLC

901 N. MARKET STREET

SUITE 705

WILMINGTON, DE 19801

C/O:

Corey Cawthron

750 Lafayette Road

Portsmouth, NH 03801

Prepared By:

ALTUS ENGINEERING, INC.

133 Court Street

Portsmouth, NH 03801

Phone: (603) 433-2335



DRAINAGE STUDY

EXECUTIVE SUMMARY

Happy Mountain Holdings, LLC and Corey Cawthron are planning to develop two residential lots that have recently been approved by the Board of Adjustment to allow each to have a duplex housing. The project involves just lot development as the utility services are available in the public right-of-way. There are no wetlands on the lot or within 100-feet of the lot lines. The lots are encumbered with a utility easement at the rear of the site. No site improvements are proposed in the easement. However, it is expected that the homeowners will mow and maintain the easement areas. The two lots that will be developed are:

Assessor's Parcel	Lot Area
220-87-2	32,427 SF
2220-87-3	21,232 SF

The two lots are 53,659 square feet in size (1.23 acres) and are predominantly wooded lots. The lots were created in 2013. At that time, the City approved the development with a shared driveway and utility cross easements to allow Lot 87-3 to be developed without impacting the ledge outcrop in the Emery Street right-of-way. The two lots are approved developable lots that could be developed with up to 60% impervious area based on zoning regulations, which would allow over 30,000 sf of impervious area. The proposed development will provide approximately 12,000 sf of combined impervious areas as well as three stormwater management ponds to reduce peak flows and provide stormwater treatment.

The proposed project will include the two duplexes, a shared driveway, new utility services and associated site improvements, including; site grading, drainage improvements, and utility service connections. Stormwater ponds will be constructed on each of the two residential lots to manage the storm water flow and provide treatment. The ponds will consist of a depressed lawn area with a loamy-sand material that will promote infiltration, drainage, and provide treatment.

DRAINAGE ANALYSIS

This drainage study is intended to show that the proposed development will manage and treat the stormwater to improve the existing site conditions and minimize impacts from the development. The project was analyzed to compare the ½", 2, 10, 25, and 50 year storm events. As a conservative design approach, which exceeds the city Site Plan Review Regulations, Altus has designed the site following the NHDES Alteration of Terrain rainfall criteria by adding 15-percent to the 24-hour rainfall precipitation for each storm event modeled.

The pre-development subcatchments were modeled and input into HydroCAD for analysis. The "Pre-Development Watershed Plan" illustrates the subcatchments that were modeled for the existing stormwater system. The existing site drains towards the Emery Street right-of-way with a high point near the proposed driveway that directs a portion of the flow to the south towards Myrtle Ave and a portion of the flow to the north towards Maplewood Avenue .

The “Post-Development Watershed Plan” illustrates the proposed stormwater management system. The original subcatchments have been divided into smaller areas to emulate the proposed grading and stormwater management system proposed for construction. The post-development conditions were analyzed at the same primary discharge points examined in the pre-development modeling.

The following Stormwater Modelling Summary compares pre-development and post-development peak rates of runoff for all analyzed storm events:

Stormwater Modeling Summary

The Stormwater Modeling Summary Table below shows the results for the peak flow rates for stormwater discharge for the ½” Inch, 2 year, 10 year, 25 year, and 50 year storm events:

**Stormwater Modeling Summary Table
(Pre vs. Post-Development Stormwater Peak Runoff Rates)**

	1/2”- Storm (3.22 inch)	2-Yr Storm (3.22 inch)	10-Yr Storm (4.89 inch)	25-Yr Storm (6.20 inch)	50-Yr Storm (7.43 inch)
POA #1					
Pre	0.00	0.27	1.46	2.82	4.28
Post	0.00	0.31	1.24	2.03	4.38
Change	0.0	+0.04	-0.22	-0.79	+0.10
POA #2					
Pre	0.00	0.05	0.26	0.49	0.72
Post	0.00	0.18	0.37	1.21	2.48
Change	0.0	+0.13	+0.11	+0.72	+1.76
Net Change	0.0	+0.17	-0.11	-0.07	+1.86

As the Stormwater Modeling Summaries demonstrate, the proposed project will manage the stormwater runoff to mitigate impacts to the surrounding areas. The peak flow rates are managed to replicate the existing conditions, with a variance of 0.2 cfs +/- for the 1/2” storm through the 25 year storm event, which is the design intent for low impact development.

CONCLUSION

The proposed project will not have an adverse effect on abutting properties and infrastructure as a result of stormwater runoff. Appropriate steps will be taken to properly mitigate erosion and sedimentation during construction through the use of temporary Best Management Practices for sediment and erosion control. The site will manage peak runoff rates and provide treatment of stormwater.

Methodology

The drainage study was completed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. Reservoir routing was performed with the Dynamic Storage Indication method which automates the calculation of Tailwater conditions. A Type III 24-hour rainfall distribution was utilized in analyzing the data for the 2, 10, 25, and 50 year 24-hour storm events using rainfall data obtained from the Northeast Regional Climate Center (NRCC) Extreme Precipitation Tables. As a conservative measure, 15-percent has been added to each rainfall to mimic the requirements of NHDES Alteration of Terrain Permitting requirements. Site topography, existing features, proposed site improvements, proposed grading, drainage and erosion control measures are shown on the accompanying plans. Recommended erosion control measures are based upon the December 2008 edition of the "New Hampshire Stormwater Manual Volumes 1 through 3" prepared by NHDES and Comprehensive Environmental, Inc. as amended.

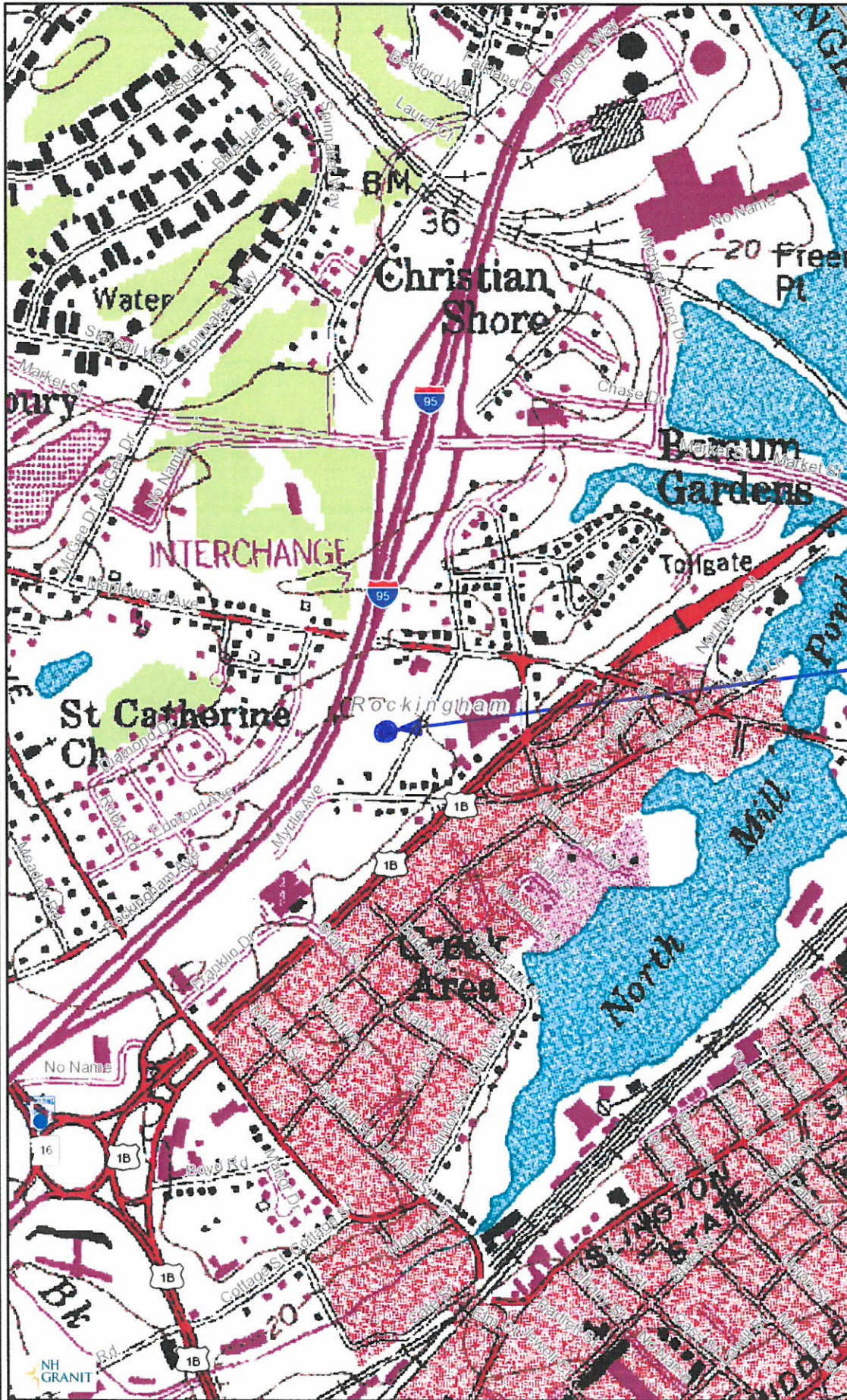
Stormwater Modeling Disclaimer

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

APPENDIX

- A. Site Maps
 - a. USGS Map
 - b. Aerial Image
- B. HydroCAD Modeling Results
 - a. Extreme Precipitation Table
 - b. Pre-Development (2, 10, 25, & 50 Year Storms)
 - c. Post Development (2, 10, 25, & 50 Year Storms)
- C. Web Soil Survey
- D. Plans
 - Project Site Plans (Separate Submittal)
 - Pre-Development Watershed Plan
 - Post-Development Watershed Plan

Map by NH GRANIT



Legend

- State
- County
- City/Town

PROJECT
LOCATION

Map Scale

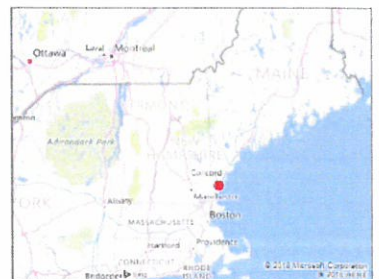
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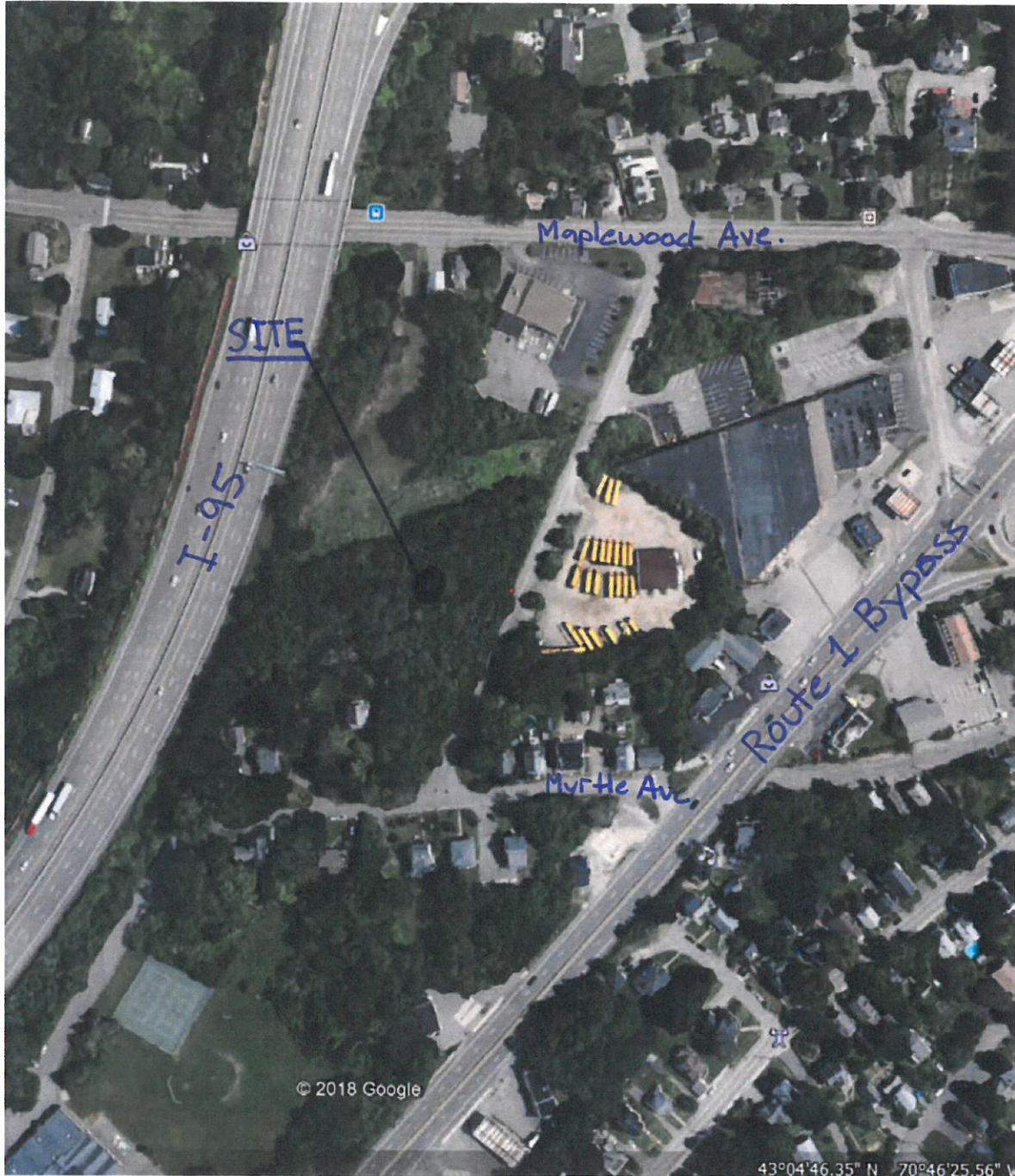


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Map Generated: 9/14/2018

Notes





AERIAL PHOTOGRAPH

LOTS 87-2 AND 87-3

Soil Map—Rockingham County, New Hampshire
(P4916)


















Soil Map may not be valid at this scale.

Map Scale: 1:1,550 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Spheroid: 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
-  Soil 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 19, Sep 11, 2017

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 26, 2016

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
799	Urban land-Canton complex, 3 to 15 percent slopes	12,8	100,0%
Totals for Area of Interest		12,8	100,0%

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	70.763 degrees West
Latitude	43.072 degrees North
Elevation	0 feet
Date/Time	Mon, 30 Jul 2018 11:50:36 -0400

Extreme Precipitation Estimates

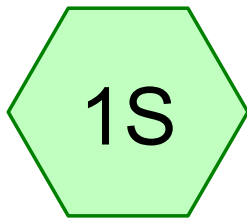
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1yr	0.26	0.40	0.50	0.65	0.81	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.66		2.35	2.81	3.22	3.94	4.55	1yr
2yr	0.32	0.50	0.62	0.81	1.02	1.30	2yr	0.88	1.18	1.52	1.94	2.49	3.21	3.69	2.84	3.43	3.94	4.68	5.33	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.89	2.43	3.14	4.07		3.60	4.40	5.04	5.94	6.70	5yr
10yr	0.41	0.65	0.82	1.12	1.45	1.89	10yr	1.25	1.73	2.23	2.89	3.75	4.87	5.60	4.31	5.32	6.09	7.11	7.98	10yr
25yr	0.48	0.76	0.97	1.34	1.77	2.34	25yr	1.53	2.14	2.78	3.63	4.74	6.17	7.10	5.46	6.83	7.80	9.03	10.05	25yr
50yr	0.54	0.86	1.10	1.54	2.07	2.76	50yr	1.79	2.53	3.29	4.32	5.66	7.39	8.50	6.54	8.25	9.42	10.81	11.98	50yr
100yr	0.60	0.97	1.25	1.77	2.42	3.26	100yr	2.09	2.98	3.90	5.16	6.77	8.85	10.18	7.83	9.98	11.38	12.96	14.27	100yr
200yr	0.67	1.10	1.43	2.05	2.82	3.83	200yr	2.44	3.52	4.62	6.13	8.08	10.61		9.39	12.07	13.76	15.55	17.02	200yr
500yr	0.80	1.31	1.71	2.48	3.48	4.76	500yr	3.00	4.38	5.76	7.70	10.22	13.48		11.93	15.52	17.67	19.78	21.49	500yr

Lower Confidence Limits

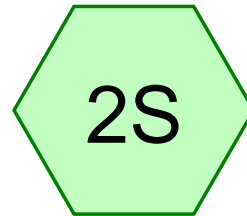
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1yr	0.23	0.36	0.44	0.59	0.72	0.88	1yr	0.63	0.86	0.92	1.33	1.68	2.24	2.49	1yr	1.98	2.40	2.87	3.18	3.90	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.37	1.82	2.34	3.06	3.45	2yr	2.71	3.32	3.82	4.55	5.08	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.12	2.73	3.79	4.19	5yr	3.35	4.03	4.72	5.53	6.24	5yr
10yr	0.39	0.59	0.73	1.03	1.33	1.60	10yr	1.14	1.56	1.80	2.39	3.06	4.37	4.86	10yr	3.87	4.67	5.44	6.41	7.20	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.75	3.53	4.72	5.89	25yr	4.18	5.66	6.65	7.79	8.68	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.17	50yr	1.52	2.12	2.35	3.07	3.93	5.33	6.80	50yr	4.72	6.54	7.72	9.04	10.02	50yr
100yr	0.54	0.81	1.01	1.47	2.01	2.47	100yr	1.73	2.41	2.63	3.41	4.35	6.00	7.85	100yr	5.31	7.55	8.98	10.51	11.56	100yr
200yr	0.59	0.89	1.13	1.63	2.28	2.81	200yr	1.96	2.75	2.93	3.78	4.79	6.72	9.06	200yr	5.95	8.71	10.42	12.22	13.37	200yr
500yr	0.68	1.02	1.31	1.90	2.71	3.36	500yr	2.34	3.29	3.41	4.31	5.45	7.82	10.94	500yr	6.92	10.52	12.69	14.96	16.19	500yr

Upper Confidence Limits

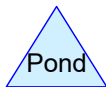
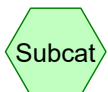
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	1yr	0.77	1.06	1.26	1.74	2.21	2.98	3.16	1yr	2.64	3.04	3.58	4.37	5.04	1yr
2yr	0.34	0.52	0.64	0.86	1.07	1.27	2yr	0.92	1.24	1.48	1.96	2.51	3.42	3.70	2yr	3.03	3.56	4.09	4.84	5.63	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	4.34	4.96	5yr	3.84	4.77	5.38	6.37	7.16	5yr
10yr	0.47	0.72	0.89	1.25	1.61	1.98	10yr	1.39	1.93	2.28	3.11	3.95	5.34	6.20	10yr	4.72	5.96	6.82	7.84	8.75	10yr
25yr	0.58	0.88	1.09	1.56	2.05	2.57	25yr	1.77	2.51	2.95	4.07	5.15	7.78	8.34	25yr	6.88	8.02	9.15	10.34	11.41	25yr
50yr	0.67	1.02	1.27	1.83	2.46	3.13	50yr	2.12	3.06	3.60	5.00	6.32	9.74	10.46	50yr	8.62	10.06	11.44	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	6.16	7.76	12.18	13.10	100yr	10.78	12.60	14.31	15.69	17.09	100yr
200yr	0.92	1.39	1.76	2.55	3.56	4.65	200yr	3.07	4.55	5.34	7.58	9.54	15.28	16.44	200yr	13.53	15.81	17.92	19.35	20.92	200yr
500yr	1.15	1.71	2.19	3.19	4.53	6.04	500yr	3.91	5.90	6.93	10.02	12.56	20.65	22.20	500yr	18.27	21.34	24.13	25.51	27.34	500yr



POA #1



POA #2



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.634	48	Brush, Good, HSG B (1S)
1.629	55	Woods, Good, HSG B (1S, 2S)
2.263	53	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.263	HSG B	1S, 2S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.263		TOTAL AREA

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.634	0.000	0.000	0.000	0.634	Brush, Good	1S
0.000	1.629	0.000	0.000	0.000	1.629	Woods, Good	1S, 2S
0.000	2.263	0.000	0.000	0.000	2.263	TOTAL	
						AREA	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: POA #1

Runoff Area=88,216 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=425' Tc=21.5 min CN=53 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: POA #2

Runoff Area=10,360 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.1000 '/' Tc=10.5 min CN=55 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 2.263 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: POA #1

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

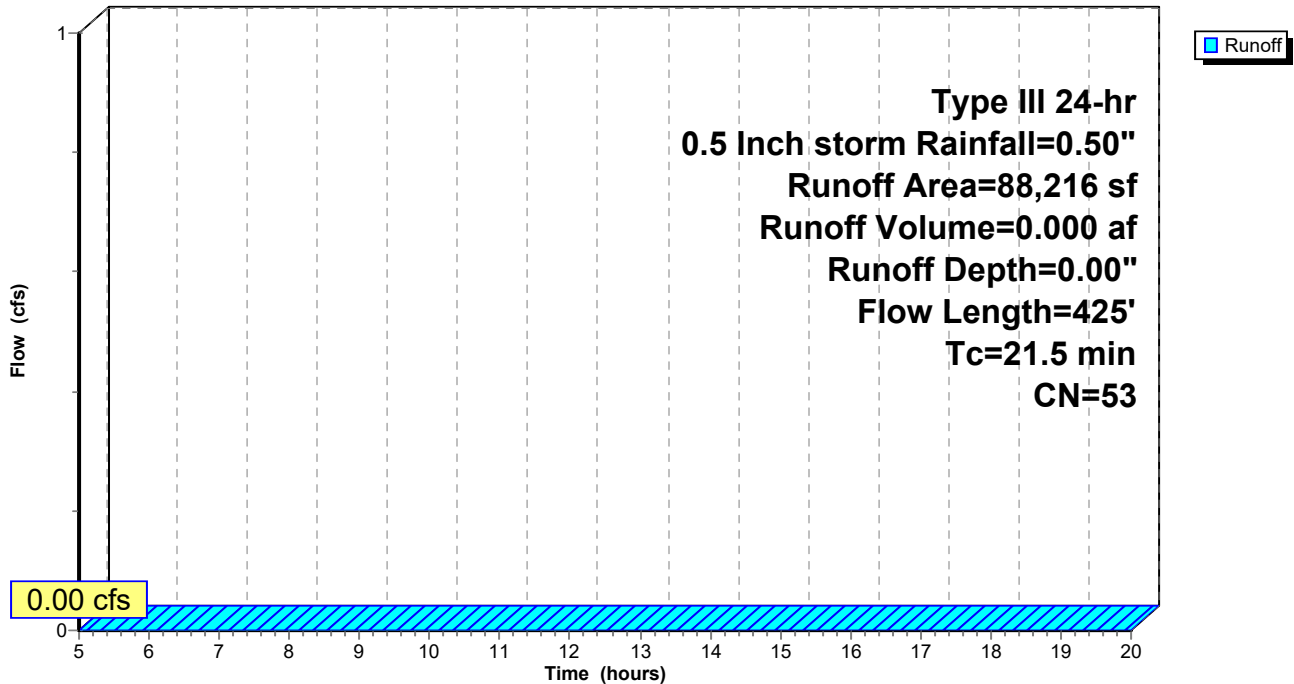
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
27,600	48	Brush, Good, HSG B
60,616	55	Woods, Good, HSG B
88,216	53	Weighted Average
88,216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
6.3	325	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	425	Total			

Subcatchment 1S: POA #1

Hydrograph



Summary for Subcatchment 2S: POA #2

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

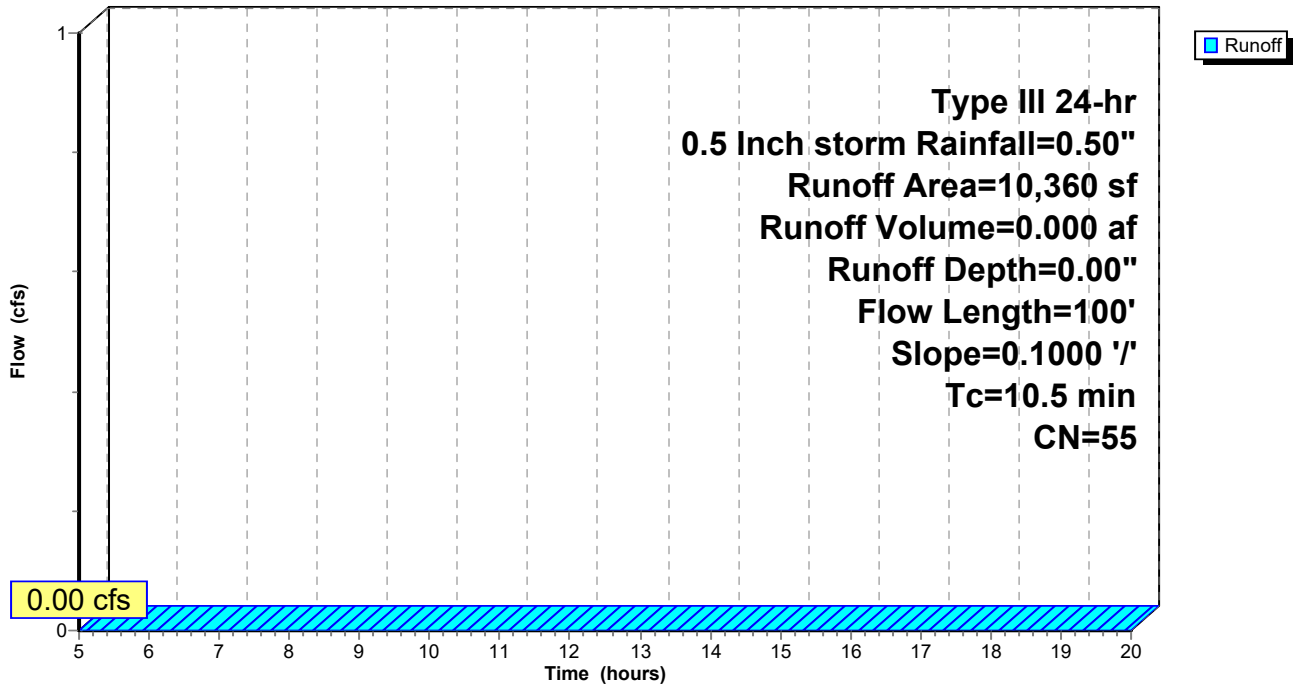
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
10,360	55	Woods, Good, HSG B
10,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1000	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"

Subcatchment 2S: POA #2

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: POA #1

Runoff Area=88,216 sf 0.00% Impervious Runoff Depth>0.29"
Flow Length=425' Tc=21.5 min CN=53 Runoff=0.27 cfs 0.048 af

Subcatchment 2S: POA #2

Runoff Area=10,360 sf 0.00% Impervious Runoff Depth>0.35"
Flow Length=100' Slope=0.1000 '/' Tc=10.5 min CN=55 Runoff=0.05 cfs 0.007 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.055 af Average Runoff Depth = 0.29"
100.00% Pervious = 2.263 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: POA #1

Runoff = 0.27 cfs @ 12.53 hrs, Volume= 0.048 af, Depth> 0.29"

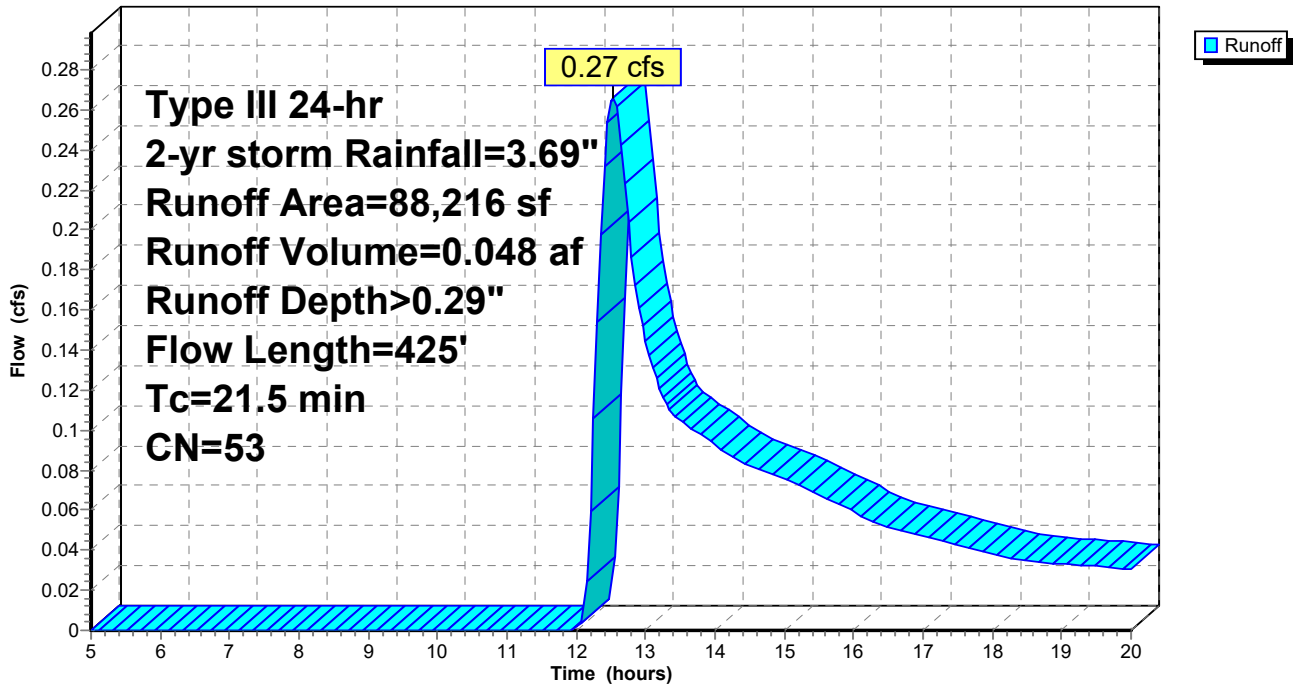
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
27,600	48	Brush, Good, HSG B
60,616	55	Woods, Good, HSG B
88,216	53	Weighted Average
88,216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
6.3	325	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	425	Total			

Subcatchment 1S: POA #1

Hydrograph



Summary for Subcatchment 2S: POA #2

Runoff = 0.05 cfs @ 12.28 hrs, Volume= 0.007 af, Depth> 0.35"

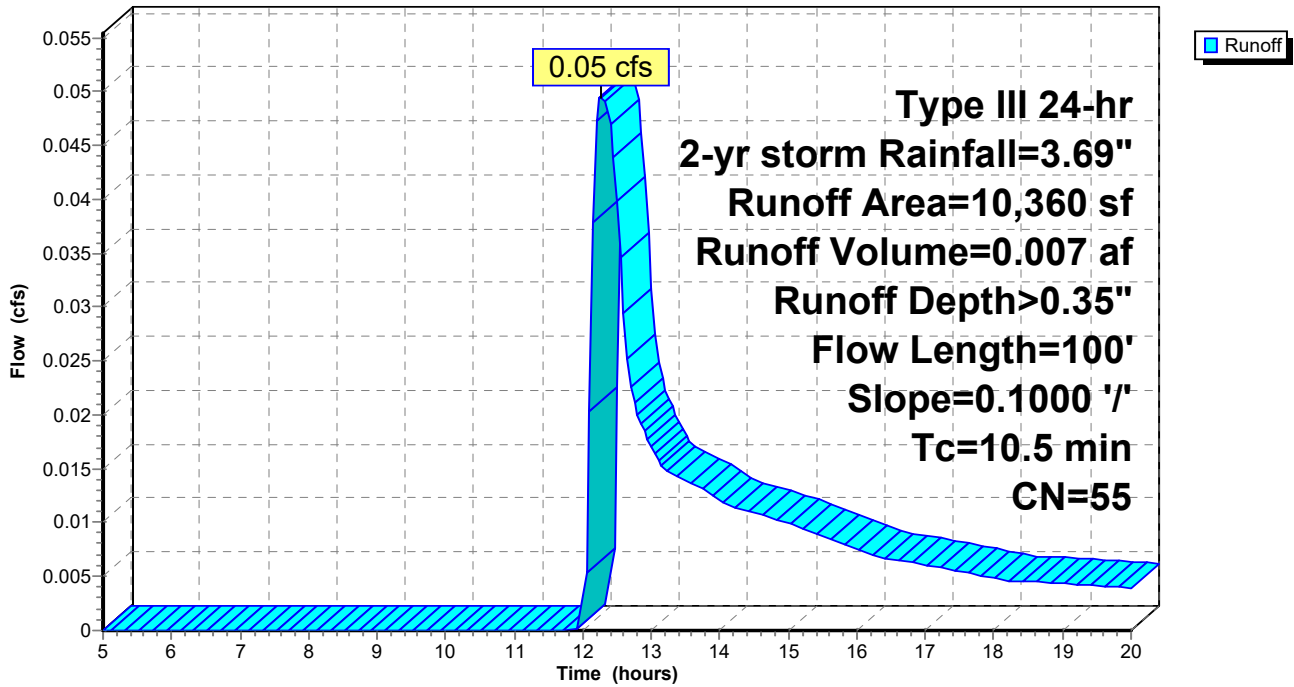
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
10,360	55	Woods, Good, HSG B
10,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1000	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"

Subcatchment 2S: POA #2

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: POA #1

Runoff Area=88,216 sf 0.00% Impervious Runoff Depth>1.02"
Flow Length=425' Tc=21.5 min CN=53 Runoff=1.46 cfs 0.172 af

Subcatchment 2S: POA #2

Runoff Area=10,360 sf 0.00% Impervious Runoff Depth>1.16"
Flow Length=100' Slope=0.1000 '/' Tc=10.5 min CN=55 Runoff=0.26 cfs 0.023 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.195 af Average Runoff Depth = 1.04"
100.00% Pervious = 2.263 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: POA #1

Runoff = 1.46 cfs @ 12.36 hrs, Volume= 0.172 af, Depth> 1.02"

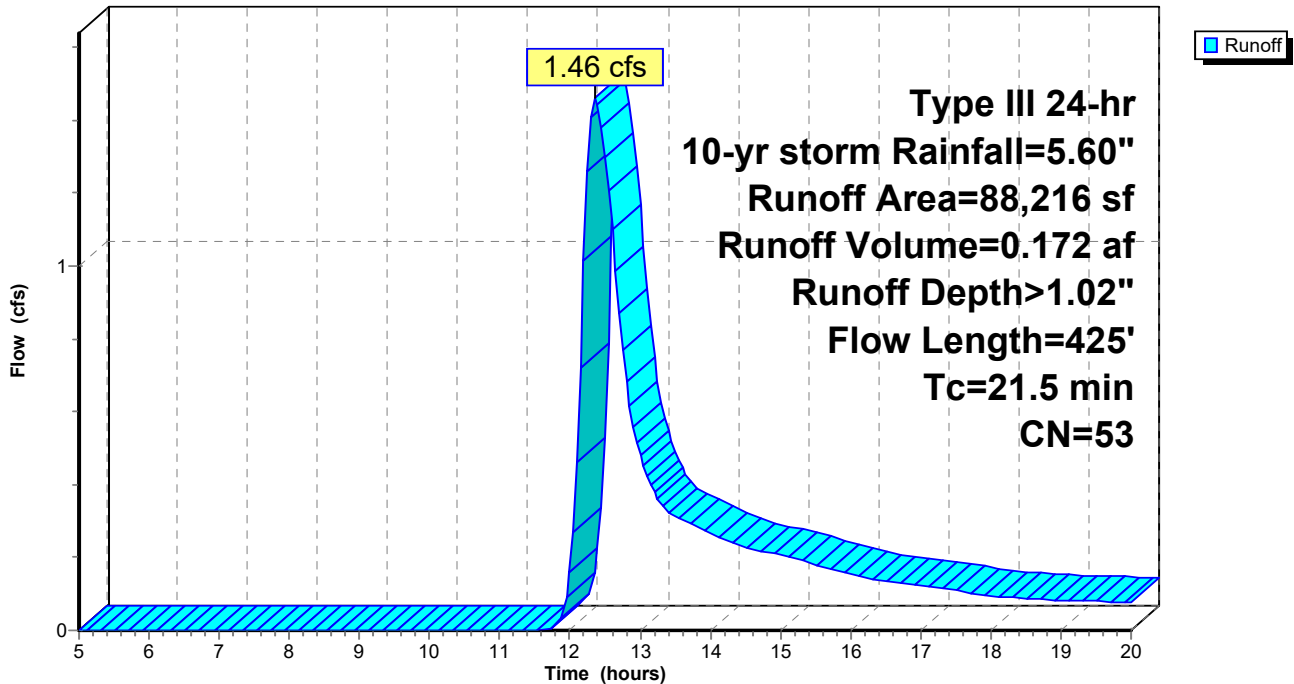
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
27,600	48	Brush, Good, HSG B
60,616	55	Woods, Good, HSG B
88,216	53	Weighted Average
88,216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
6.3	325	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	425	Total			

Subcatchment 1S: POA #1

Hydrograph



Summary for Subcatchment 2S: POA #2

Runoff = 0.26 cfs @ 12.17 hrs, Volume= 0.023 af, Depth> 1.16"

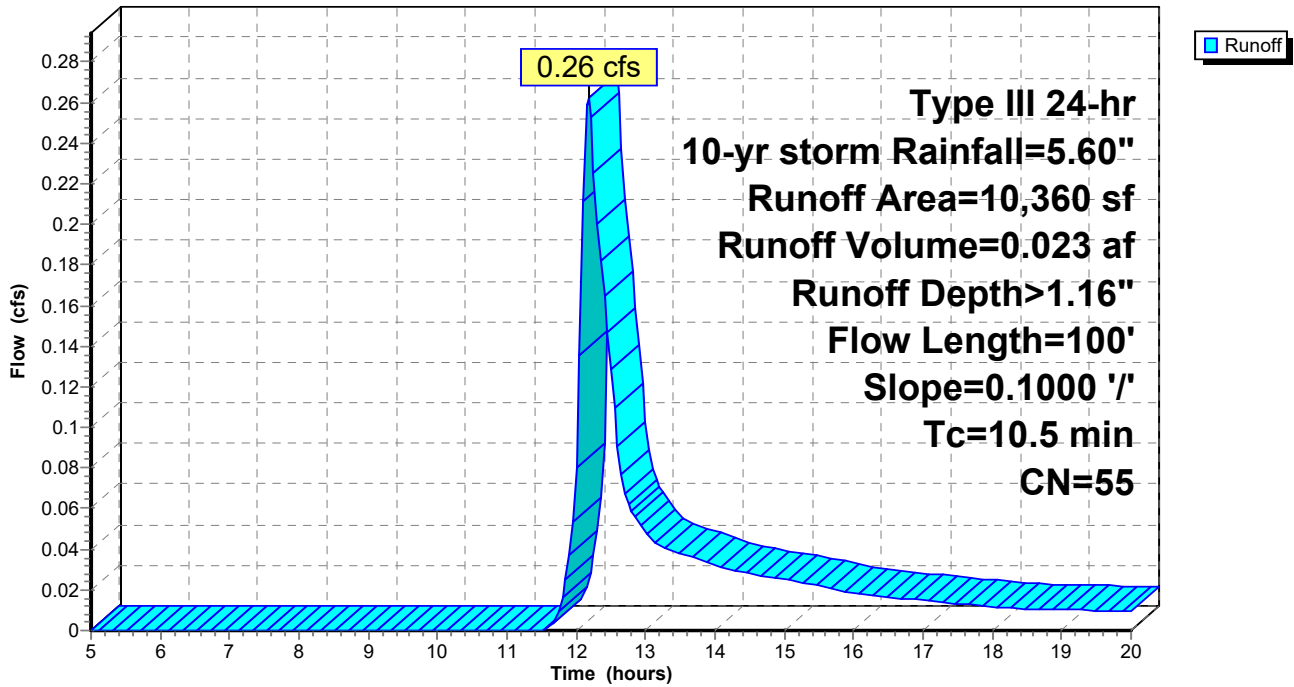
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
10,360	55	Woods, Good, HSG B
10,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1000	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"

Subcatchment 2S: POA #2

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: POA #1

Runoff Area=88,216 sf 0.00% Impervious Runoff Depth>1.80"
Flow Length=425' Tc=21.5 min CN=53 Runoff=2.82 cfs 0.303 af

Subcatchment 2S: POA #2

Runoff Area=10,360 sf 0.00% Impervious Runoff Depth>1.99"
Flow Length=100' Slope=0.1000 '/' Tc=10.5 min CN=55 Runoff=0.49 cfs 0.039 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.343 af Average Runoff Depth = 1.82"
100.00% Pervious = 2.263 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: POA #1

Runoff = 2.82 cfs @ 12.33 hrs, Volume= 0.303 af, Depth> 1.80"

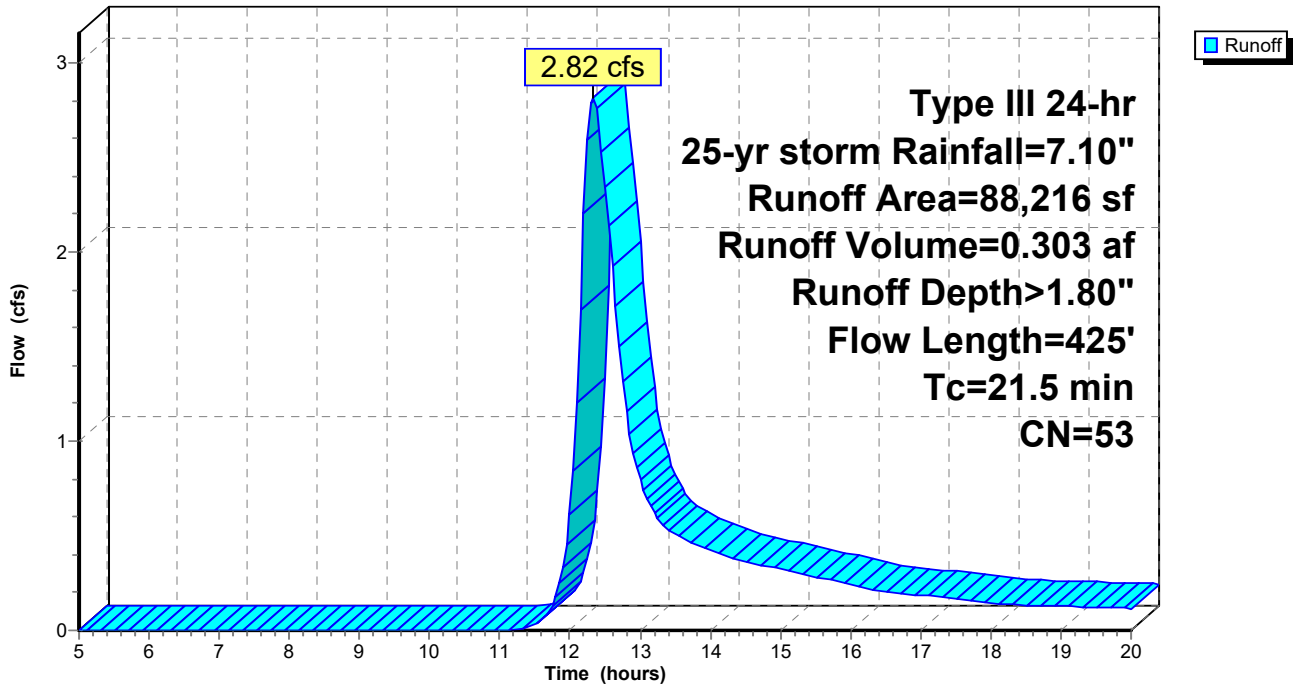
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
27,600	48	Brush, Good, HSG B
60,616	55	Woods, Good, HSG B
88,216	53	Weighted Average
88,216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
6.3	325	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	425	Total			

Subcatchment 1S: POA #1

Hydrograph



Summary for Subcatchment 2S: POA #2

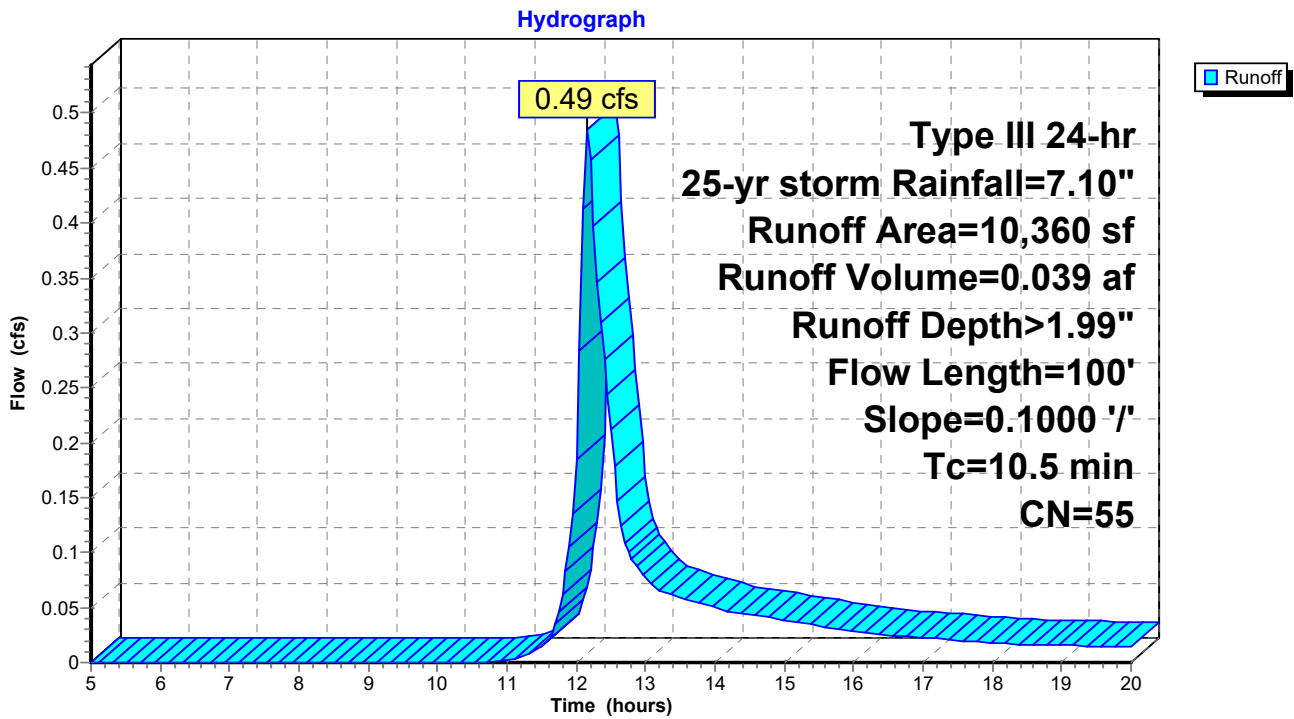
Runoff = 0.49 cfs @ 12.16 hrs, Volume= 0.039 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
10,360	55	Woods, Good, HSG B
10,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1000	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"

Subcatchment 2S: POA #2



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: POA #1

Runoff Area=88,216 sf 0.00% Impervious Runoff Depth>2.63"
Flow Length=425' Tc=21.5 min CN=53 Runoff=4.28 cfs 0.445 af

Subcatchment 2S: POA #2

Runoff Area=10,360 sf 0.00% Impervious Runoff Depth>2.87"
Flow Length=100' Slope=0.1000 '/' Tc=10.5 min CN=55 Runoff=0.72 cfs 0.057 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.501 af Average Runoff Depth = 2.66"
100.00% Pervious = 2.263 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: POA #1

Runoff = 4.28 cfs @ 12.32 hrs, Volume= 0.445 af, Depth> 2.63"

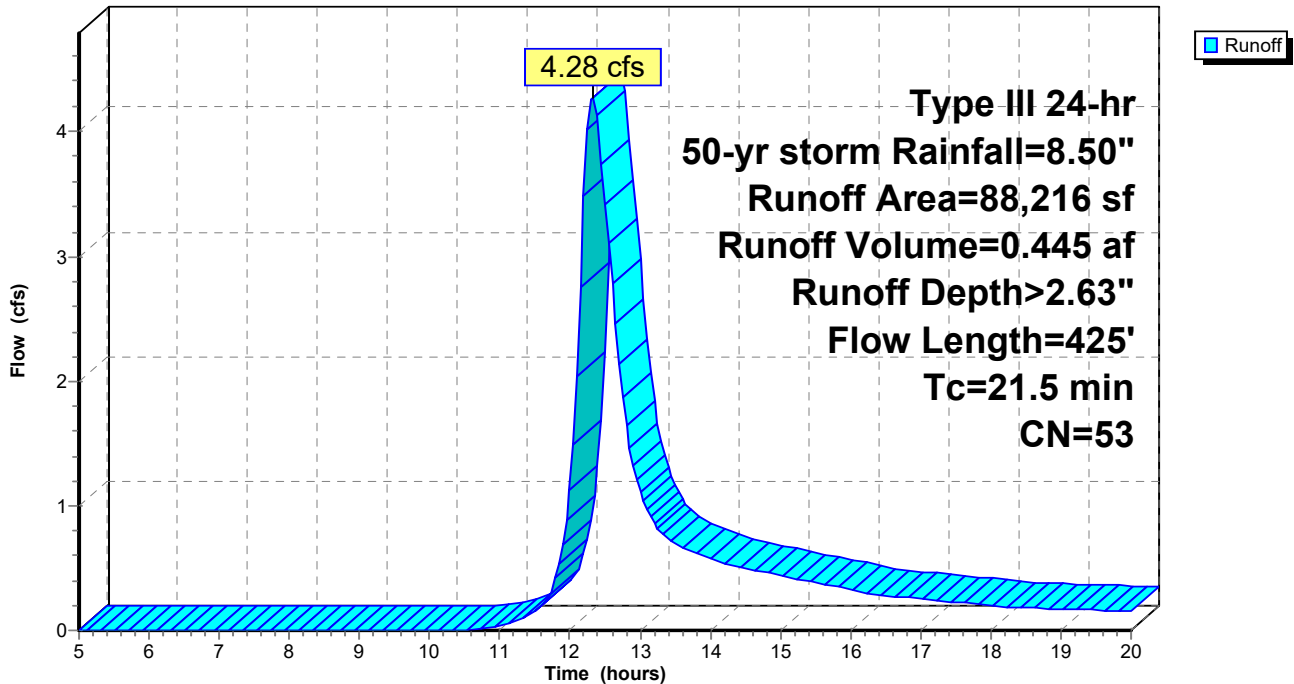
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Description
27,600	48	Brush, Good, HSG B
60,616	55	Woods, Good, HSG B
88,216	53	Weighted Average
88,216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
6.3	325	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	425	Total			

Subcatchment 1S: POA #1

Hydrograph



Summary for Subcatchment 2S: POA #2

Runoff = 0.72 cfs @ 12.16 hrs, Volume= 0.057 af, Depth> 2.87"

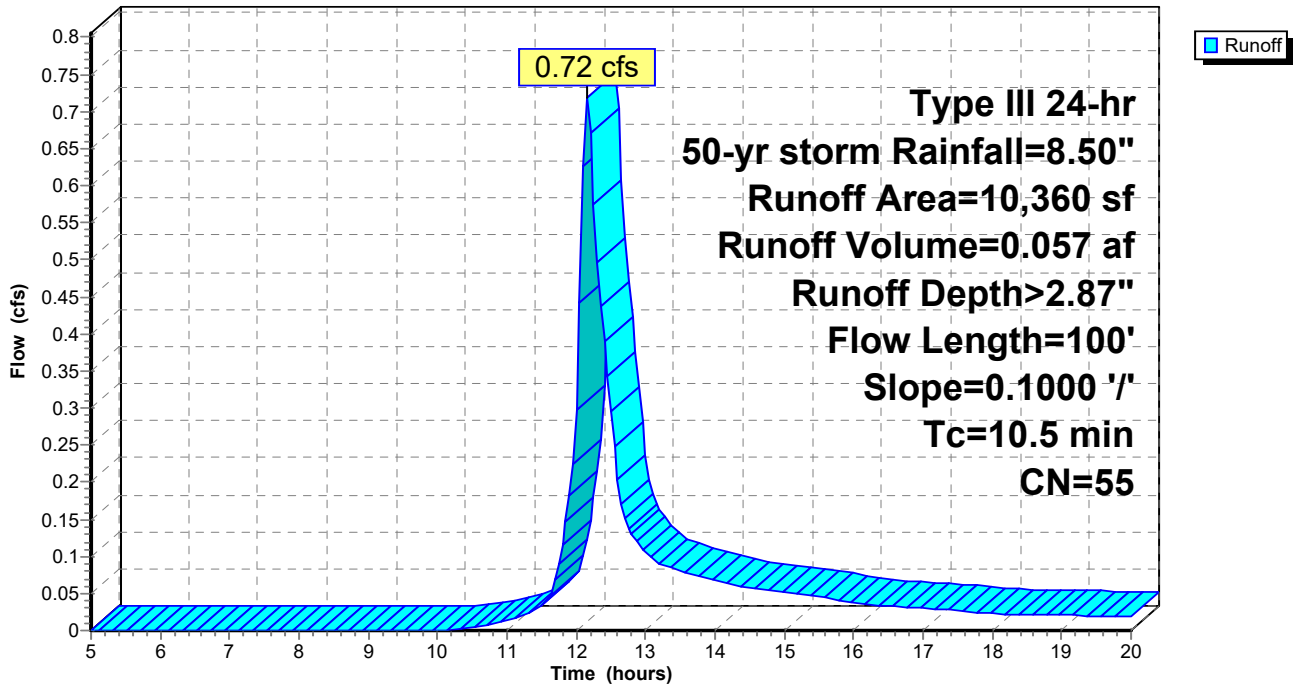
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr storm Rainfall=8.50"

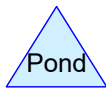
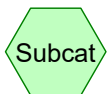
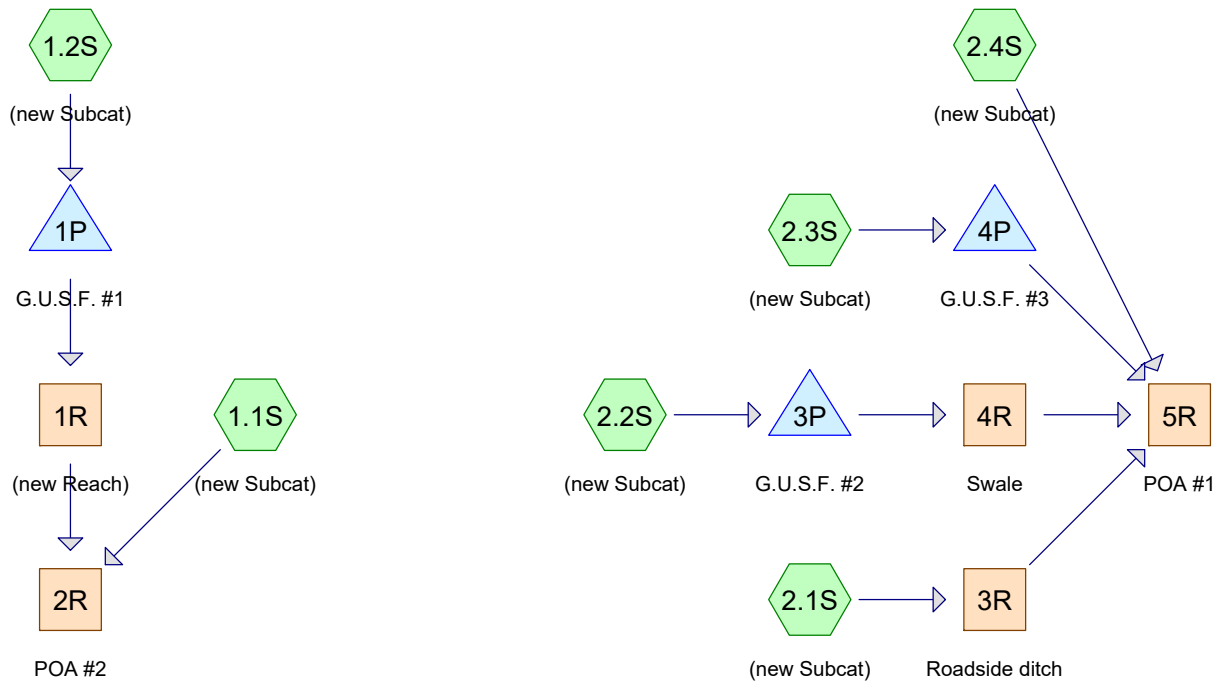
Area (sf)	CN	Description
10,360	55	Woods, Good, HSG B
10,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1000	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"

Subcatchment 2S: POA #2

Hydrograph





Routing Diagram for 4916 post
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.423	61	>75% Grass cover, Good, HSG B (1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S)
0.634	48	Brush, Good, HSG B (1.2S, 2.2S, 2.4S)
0.177	98	Paved parking, HSG B (1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S)
0.025	98	Roofs, HSG B (1.2S, 2.2S, 2.4S)
0.066	98	Unconnected roofs, HSG B (1.2S, 2.2S, 2.4S)
0.938	55	Woods, Good, HSG B (1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S)
2.263	59	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.263	HSG B	1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.263		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.423	0.000	0.000	0.000	0.423	>75% Grass cover, Good	1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S
0.000	0.634	0.000	0.000	0.000	0.634	Brush, Good	1.2S, 2.2S, 2.4S
0.000	0.177	0.000	0.000	0.000	0.177	Paved parking	1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S
0.000	0.025	0.000	0.000	0.000	0.025	Roofs	1.2S, 2.2S, 2.4S
0.000	0.066	0.000	0.000	0.000	0.066	Unconnected roofs	1.2S, 2.2S, 2.4S
0.000	0.938	0.000	0.000	0.000	0.938	Woods, Good	1.1S, 1.2S, 2.1S, 2.2S, 2.3S, 2.4S
0.000	2.263	0.000	0.000	0.000	2.263	TOTAL AREA	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1.1S: (new Subcat) Runoff Area=4,731 sf 40.33% Impervious Runoff Depth=0.00"
 Flow Length=130' Slope=0.0750 '/' Tc=6.0 min CN=75 Runoff=0.00 cfs 0.000 af

Subcatchment 1.2S: (new Subcat) Runoff Area=41,050 sf 2.04% Impervious Runoff Depth=0.00"
 Flow Length=230' Tc=18.1 min CN=55 Runoff=0.00 cfs 0.000 af

Subcatchment 2.1S: (new Subcat) Runoff Area=8,038 sf 39.40% Impervious Runoff Depth=0.00"
 Flow Length=85' Tc=6.0 min CN=75 Runoff=0.00 cfs 0.000 af

Subcatchment 2.2S: (new Subcat) Runoff Area=18,932 sf 17.08% Impervious Runoff Depth=0.00"
 Flow Length=190' Tc=11.9 min UI Adjusted CN=60 Runoff=0.00 cfs 0.000 af

Subcatchment 2.3S: (new Subcat) Runoff Area=3,654 sf 32.62% Impervious Runoff Depth=0.00"
 Flow Length=65' Tc=6.0 min CN=72 Runoff=0.00 cfs 0.000 af

Subcatchment 2.4S: (new Subcat) Runoff Area=22,171 sf 6.02% Impervious Runoff Depth=0.00"
 Flow Length=160' Tc=10.4 min UI Adjusted CN=52 Runoff=0.00 cfs 0.000 af

Reach 1R: (new Reach) Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=100.0' S=0.1020 '/' Capacity=6.31 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: POA #2 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: Roadside ditch Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=160.0' S=0.0125 '/' Capacity=2.21 cfs Outflow=0.00 cfs 0.000 af

Reach 4R: Swale Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=85.0' S=0.0624 '/' Capacity=4.93 cfs Outflow=0.00 cfs 0.000 af

Reach 5R: POA #1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=0.00 cfs 0.000 af

Pond 1P: G.U.S.F. #1 Peak Elev=46.17' Storage=0 cf Inflow=0.00 cfs 0.000 af
 Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 3P: G.U.S.F. #2 Peak Elev=44.17' Storage=0 cf Inflow=0.00 cfs 0.000 af
 Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 4P: G.U.S.F. #3 Peak Elev=45.17' Storage=0 cf Inflow=0.00 cfs 0.000 af
 Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
88.16% Pervious = 1.995 ac 11.84% Impervious = 0.268 ac

Summary for Subcatchment 1.1S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

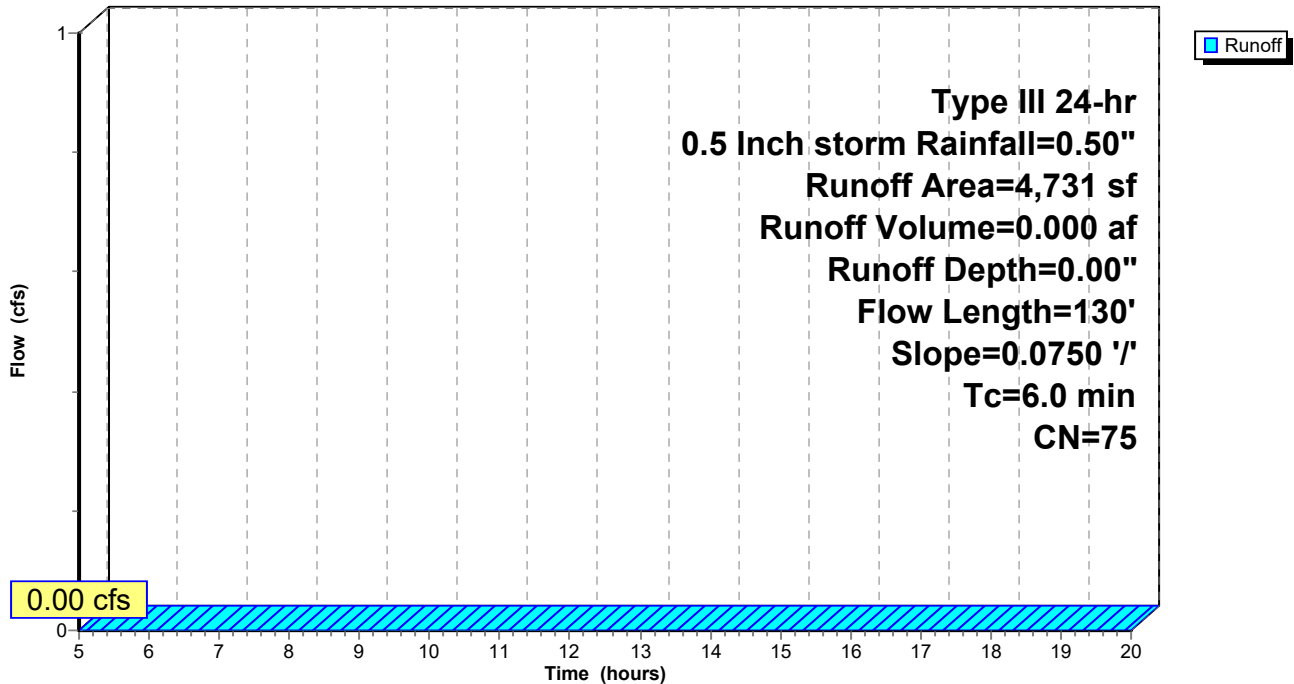
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
1,908	98	Paved parking, HSG B
2,223	61	>75% Grass cover, Good, HSG B
600	55	Woods, Good, HSG B
4,731	75	Weighted Average
2,823		59.67% Pervious Area
1,908		40.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	130	0.0750	4.11		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.5	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 1.2S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

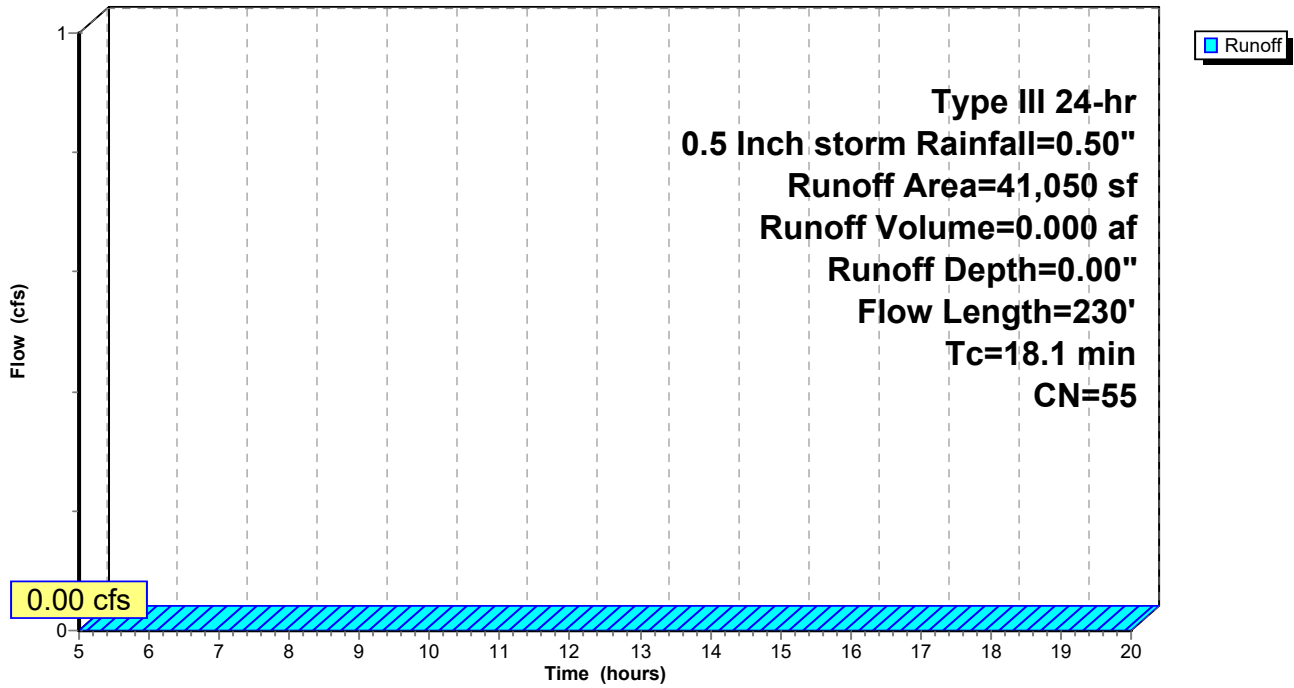
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
138	98	Roofs, HSG B
214	98	Unconnected roofs, HSG B
486	98	Paved parking, HSG B
3,131	61	>75% Grass cover, Good, HSG B
4,903	48	Brush, Good, HSG B
32,178	55	Woods, Good, HSG B
41,050	55	Weighted Average
40,212		97.96% Pervious Area
838		2.04% Impervious Area
214		25.54% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
2.7	100	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	30	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
18.1	230	Total			

Subcatchment 1.2S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.1S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

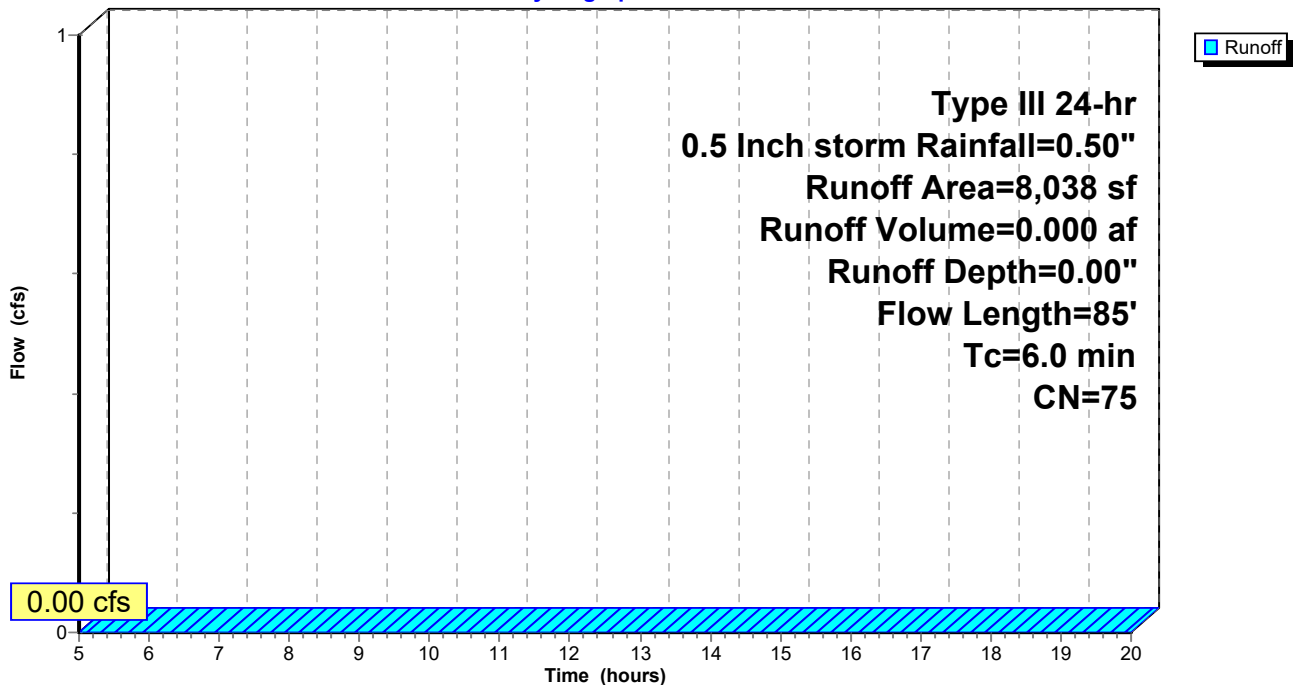
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
3,167	98	Paved parking, HSG B
3,639	61	>75% Grass cover, Good, HSG B
1,232	55	Woods, Good, HSG B
8,038	75	Weighted Average
4,871		60.60% Pervious Area
3,167		39.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.2000	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.2	35	0.0600	3.67		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.8	85	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.2S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

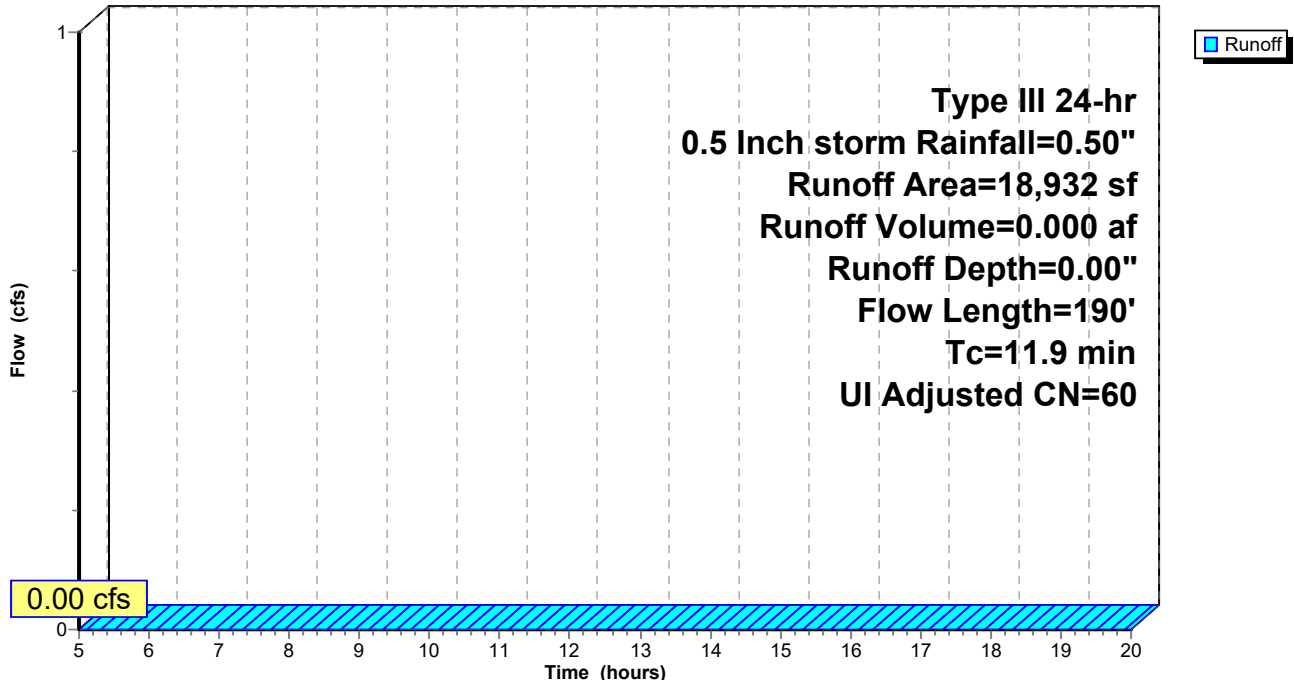
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Adj	Description
626	98		Roofs, HSG B
1,794	98		Unconnected roofs, HSG B
814	98		Paved parking, HSG B
5,900	61		>75% Grass cover, Good, HSG B
4,945	48		Brush, Good, HSG B
4,853	55		Woods, Good, HSG B
18,932	62	60	Weighted Average, UI Adjusted
15,698			82.92% Pervious Area
3,234			17.08% Impervious Area
1,794			55.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0800	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.4	90	0.0500	3.35		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	190	Total			

Subcatchment 2.2S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.3S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

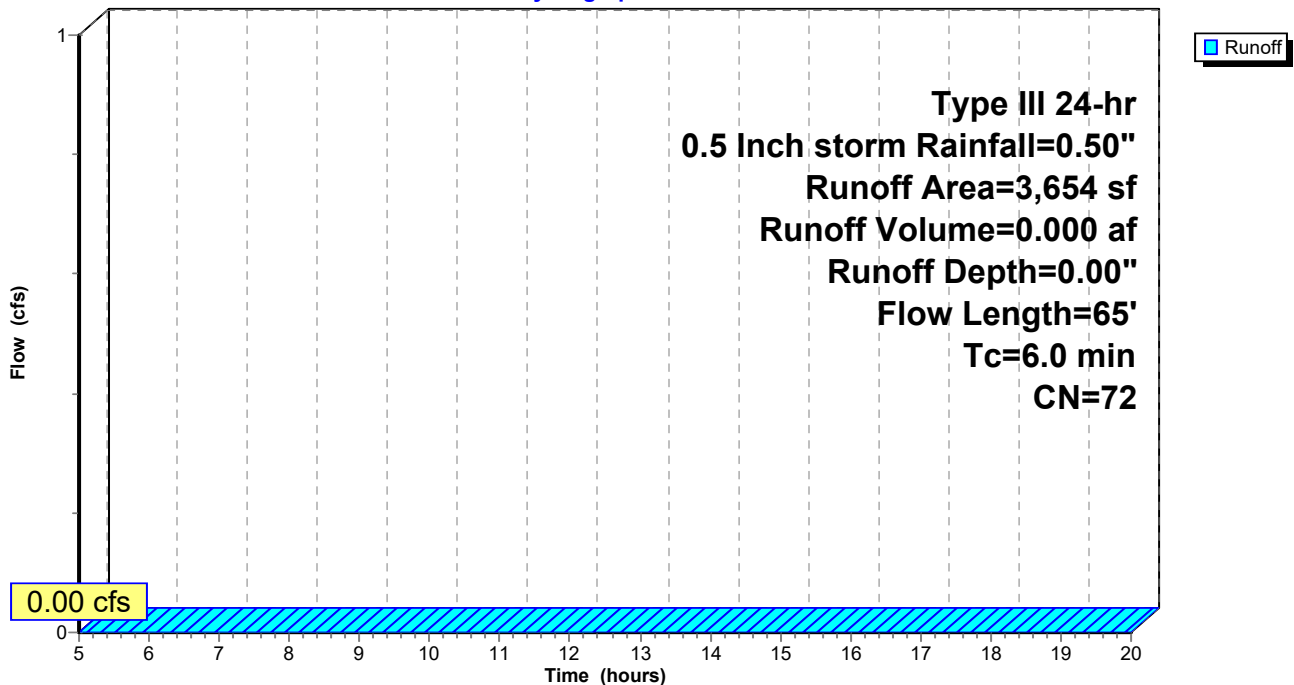
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Description
1,192	98	Paved parking, HSG B
1,622	61	>75% Grass cover, Good, HSG B
840	55	Woods, Good, HSG B
3,654	72	Weighted Average
2,462		67.38% Pervious Area
1,192		32.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	40	0.1500	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.1	25	0.1800	6.36		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.4	65	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.3S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.4S: (new Subcat)

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

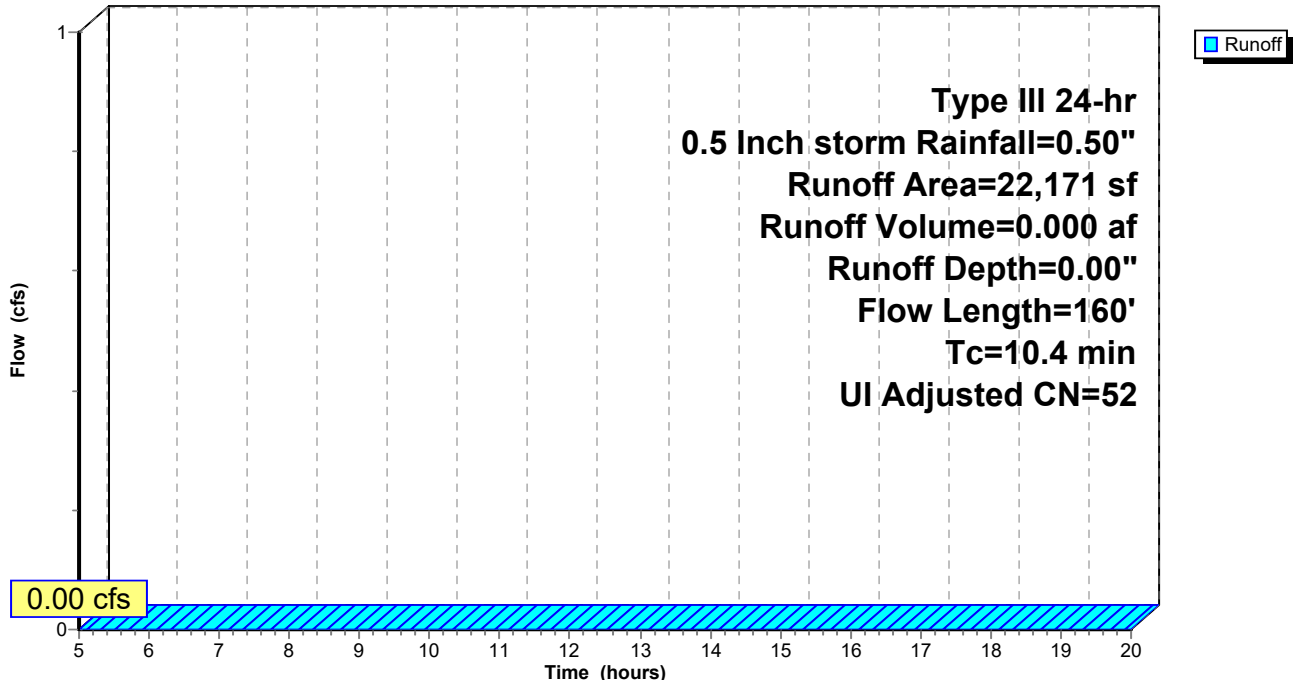
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 0.5 Inch storm Rainfall=0.50"

Area (sf)	CN	Adj	Description
317	98		Roofs, HSG B
872	98		Unconnected roofs, HSG B
145	98		Paved parking, HSG B
1,928	61		>75% Grass cover, Good, HSG B
17,752	48		Brush, Good, HSG B
1,157	55		Woods, Good, HSG B
22,171	53	52	Weighted Average, UI Adjusted
20,837			93.98% Pervious Area
1,334			6.02% Impervious Area
872			65.37% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	80	0.0875	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
1.1	80	0.0625	1.25		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	160	Total			

Subcatchment 2.4S: (new Subcat)

Hydrograph



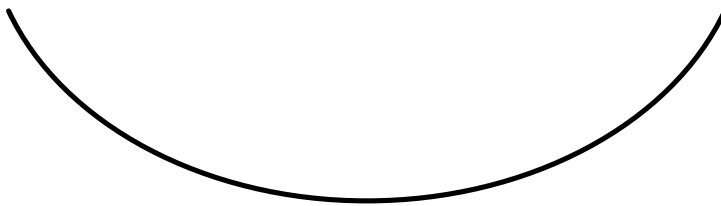
Summary for Reach 1R: (new Reach)

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

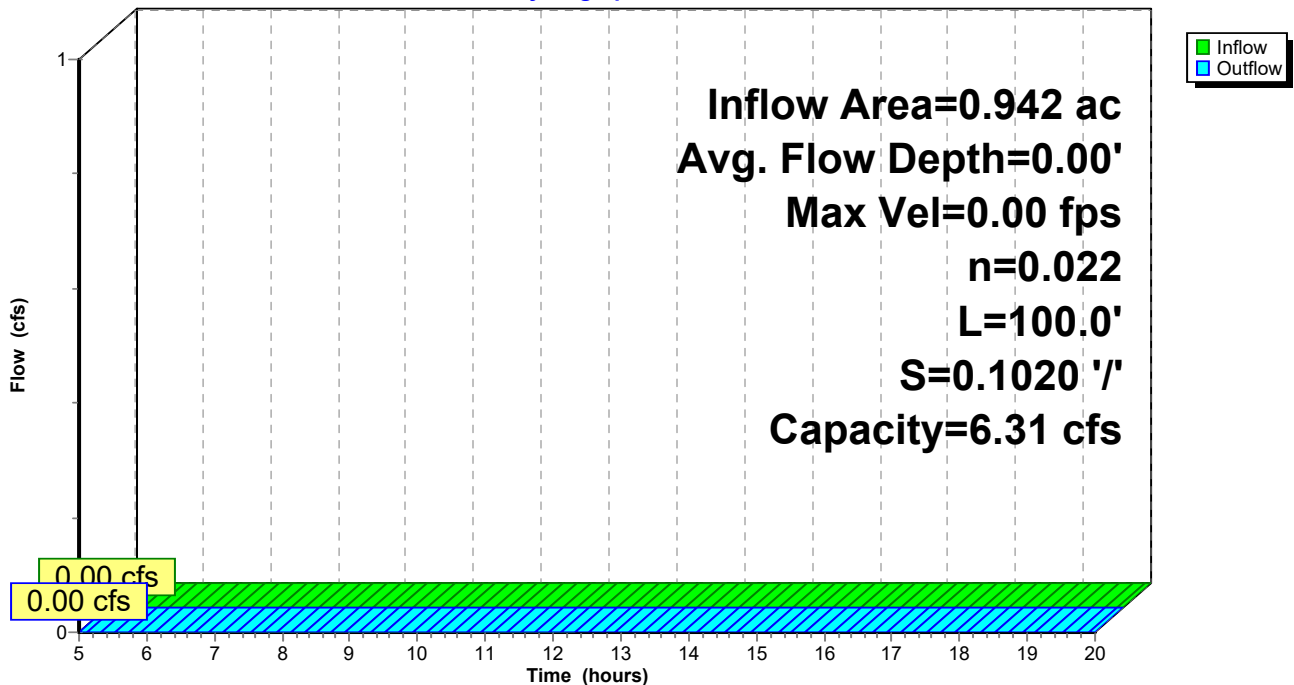
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.31 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 100.0' Slope= 0.1020 '/'
 Inlet Invert= 50.20', Outlet Invert= 40.00'



Reach 1R: (new Reach)

Hydrograph



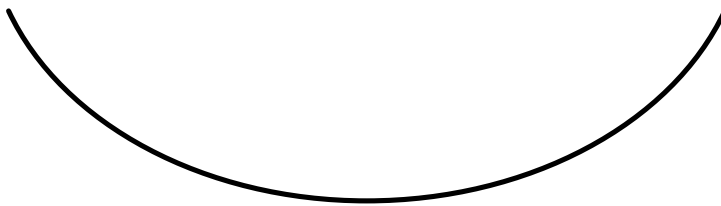
Summary for Reach 2R: POA #2

Inflow Area = 1.051 ac, 6.00% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

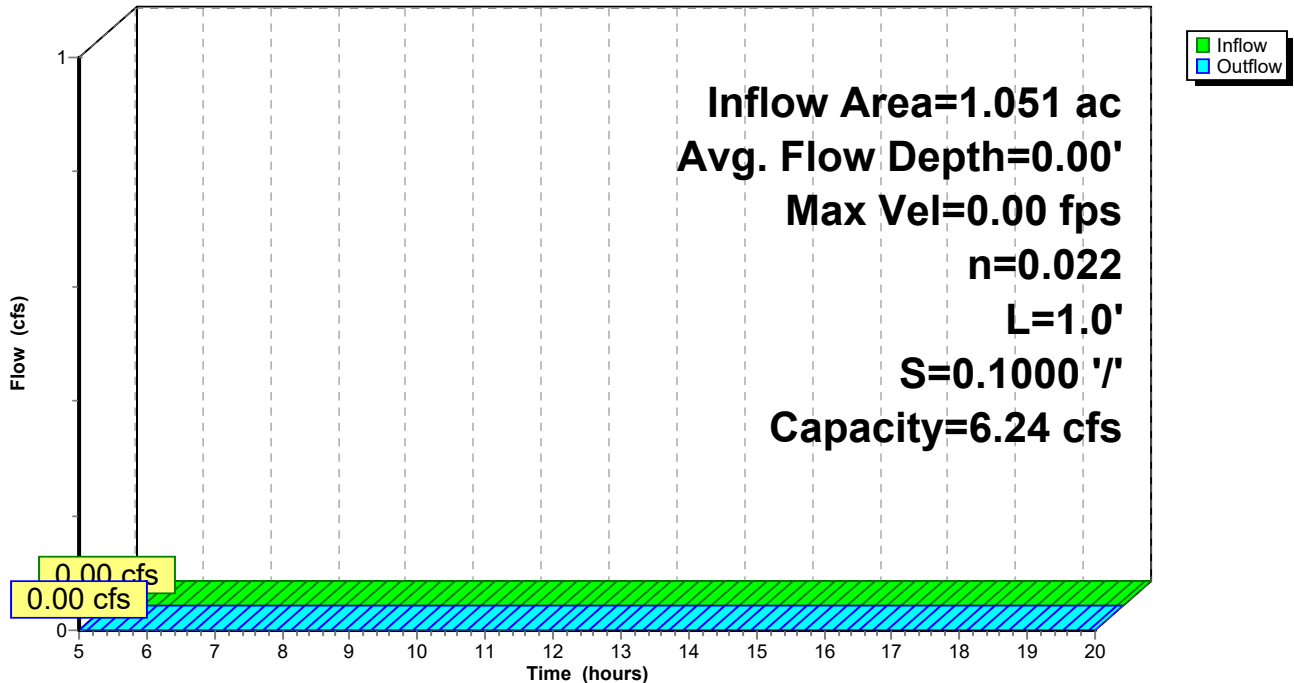
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 2R: POA #2

Hydrograph



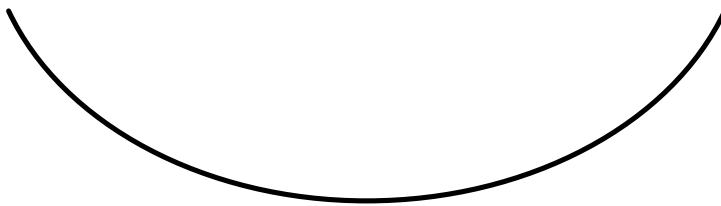
Summary for Reach 3R: Roadside ditch

Inflow Area = 0.185 ac, 39.40% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

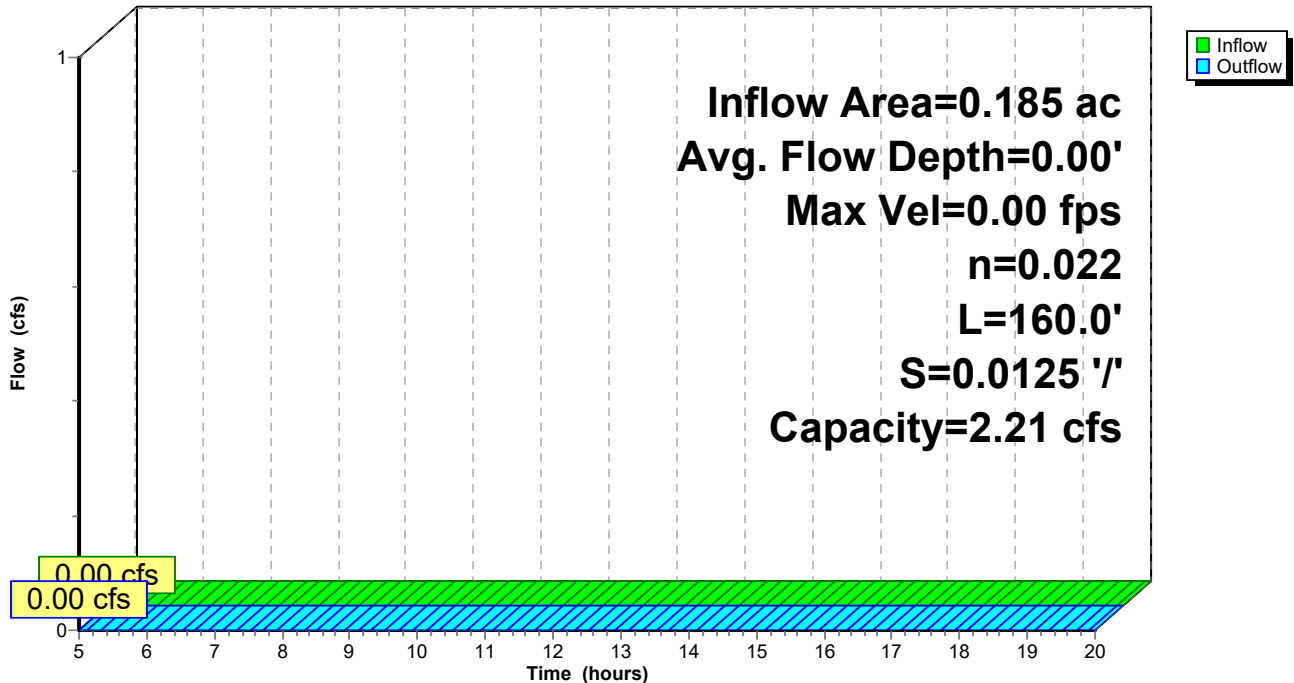
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 2.21 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 160.0' Slope= 0.0125 '/'
 Inlet Invert= 42.00', Outlet Invert= 40.00'



Reach 3R: Roadside ditch

Hydrograph



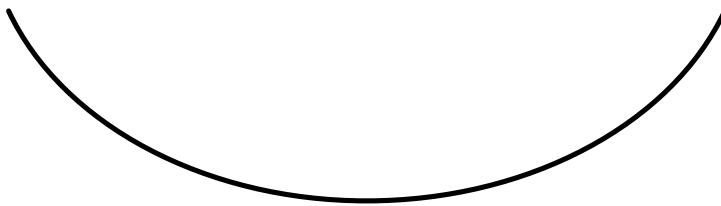
Summary for Reach 4R: Swale

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

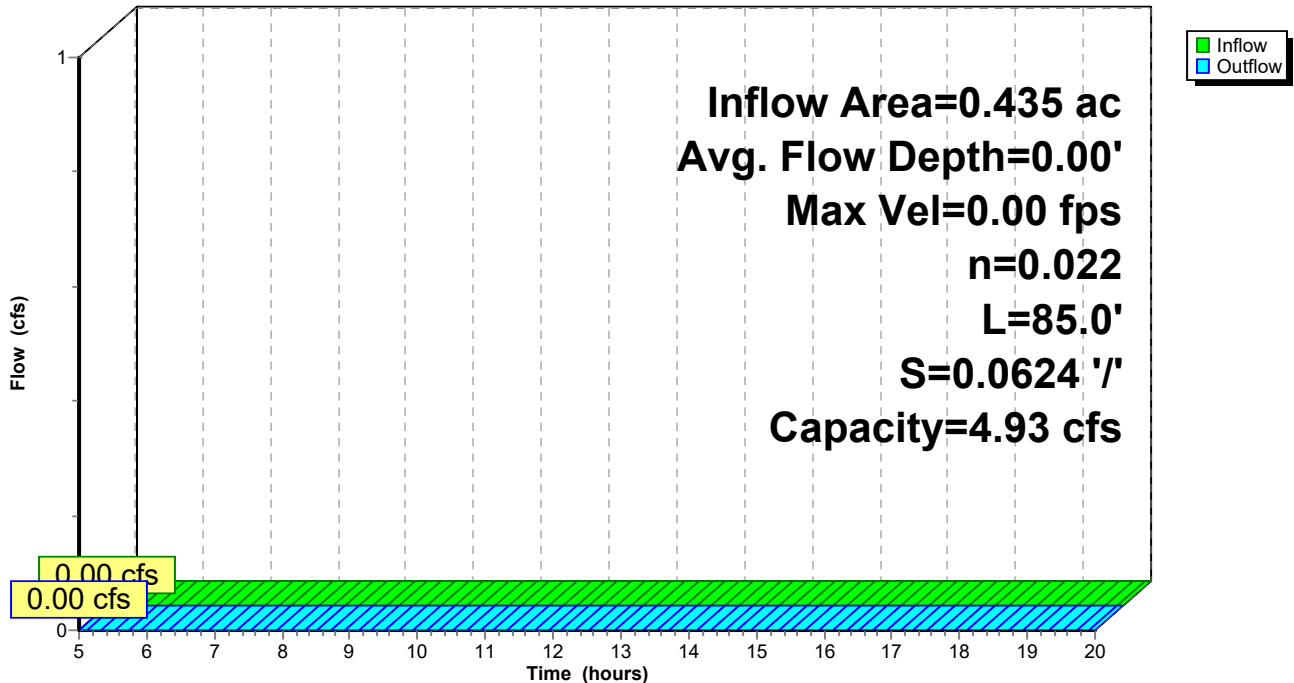
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 4.93 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 85.0' Slope= 0.0624 '/'
 Inlet Invert= 47.30', Outlet Invert= 42.00'



Reach 4R: Swale

Hydrograph



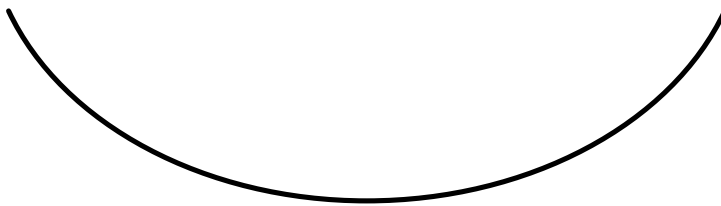
Summary for Reach 5R: POA #1

Inflow Area = 1.212 ac, 16.91% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

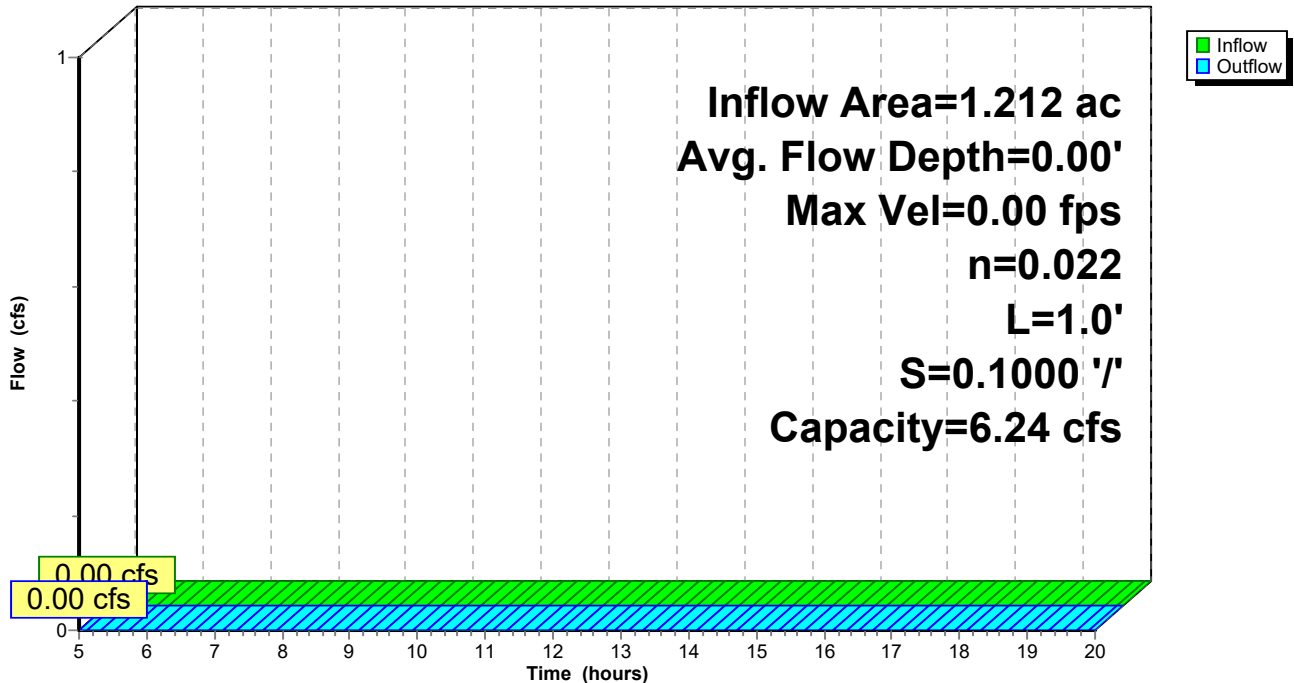
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 5R: POA #1

Hydrograph



Summary for Pond 1P: G.U.S.F. #1

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.17' @ 5.00 hrs Surf.Area= 615 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	46.17'	2,152 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.17	615	0.0	0	0
47.17	615	40.0	246	246
48.67	615	20.0	185	431
49.00	615	100.0	203	633
50.00	1,115	100.0	865	1,498
50.50	1,500	100.0	654	2,152

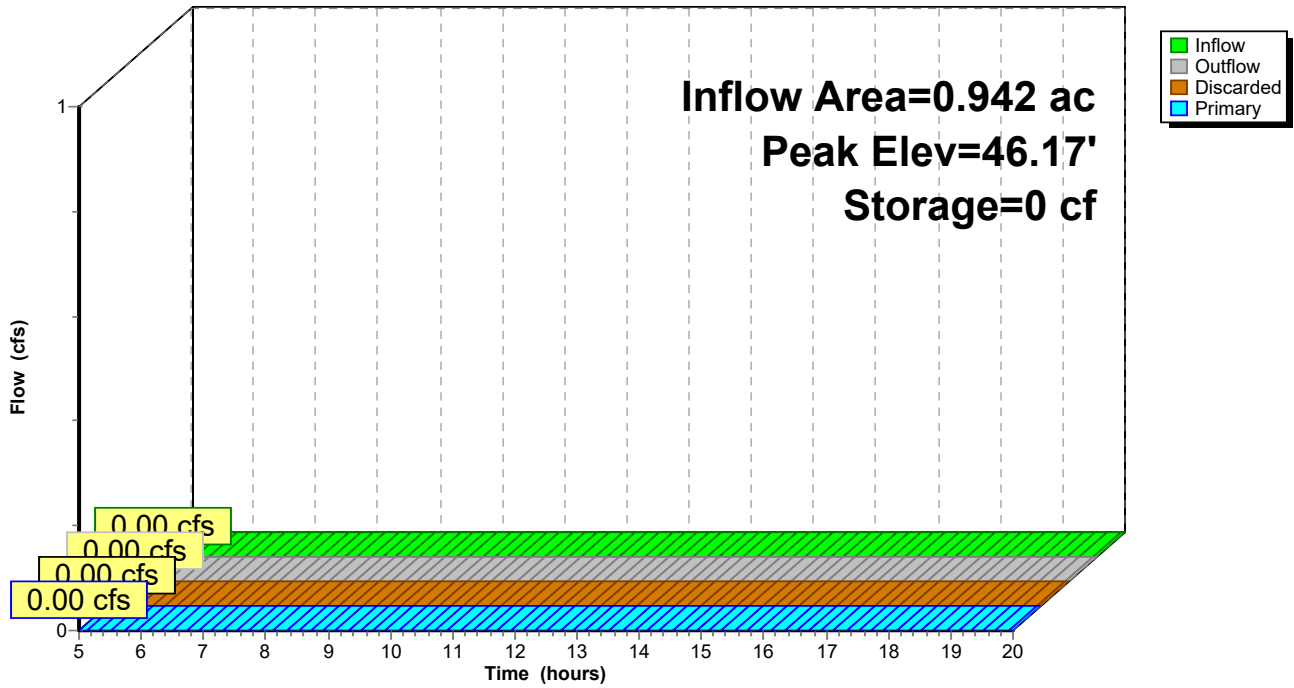
Device	Routing	Invert	Outlet Devices										
#1	Discarded	46.17'	0.060 in/hr Exfiltration over Surface area										
#2	Primary	50.20'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir										
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00										
			2.50 3.00 3.50 4.00 4.50 5.00 5.50										
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64										
			2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74										

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=46.17' (Free Discharge)
 ↑1=Exfiltration (Passes 0.00 cfs of 0.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=46.17' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: G.U.S.F. #1

Hydrograph



Summary for Pond 3P: G.U.S.F. #2

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.17' @ 5.00 hrs Surf.Area= 500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	44.17'	1,138 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.17	500	0.0	0	0
44.67	500	40.0	100	100
46.17	500	20.0	150	250
46.50	500	100.0	165	415
47.00	697	100.0	299	714
47.50	1,000	100.0	424	1,138

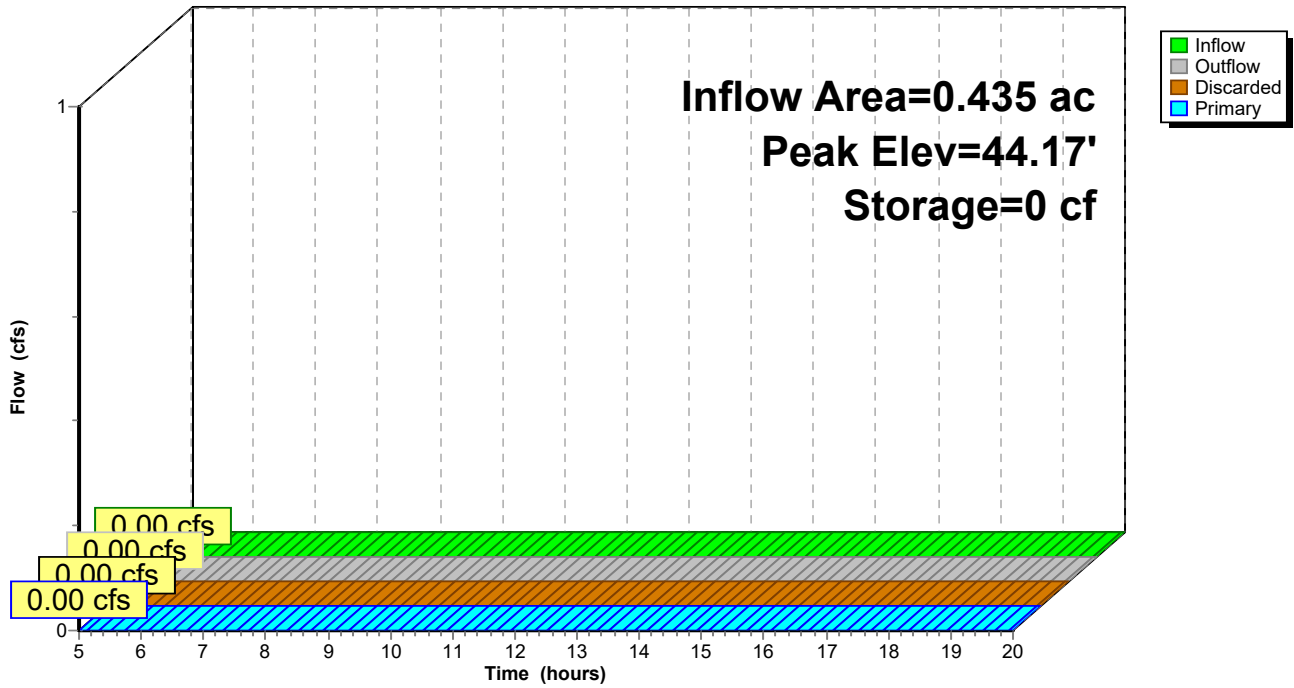
Device	Routing	Invert	Outlet Devices
#1	Discarded	44.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.30'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=44.17' (Free Discharge)
 ↑1=Exfiltration (Passes 0.00 cfs of 0.01 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=44.17' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: G.U.S.F. #2

Hydrograph



Summary for Pond 4P: G.U.S.F. #3

Inflow Area = 0.084 ac, 32.62% Impervious, Inflow Depth = 0.00" for 0.5 Inch storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.17' @ 5.00 hrs Surf.Area= 110 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.17'	372 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.17	110	0.0	0	0
45.67	110	40.0	22	22
47.17	110	20.0	33	55
47.50	110	100.0	36	91
48.00	302	100.0	103	194
48.50	410	100.0	178	372

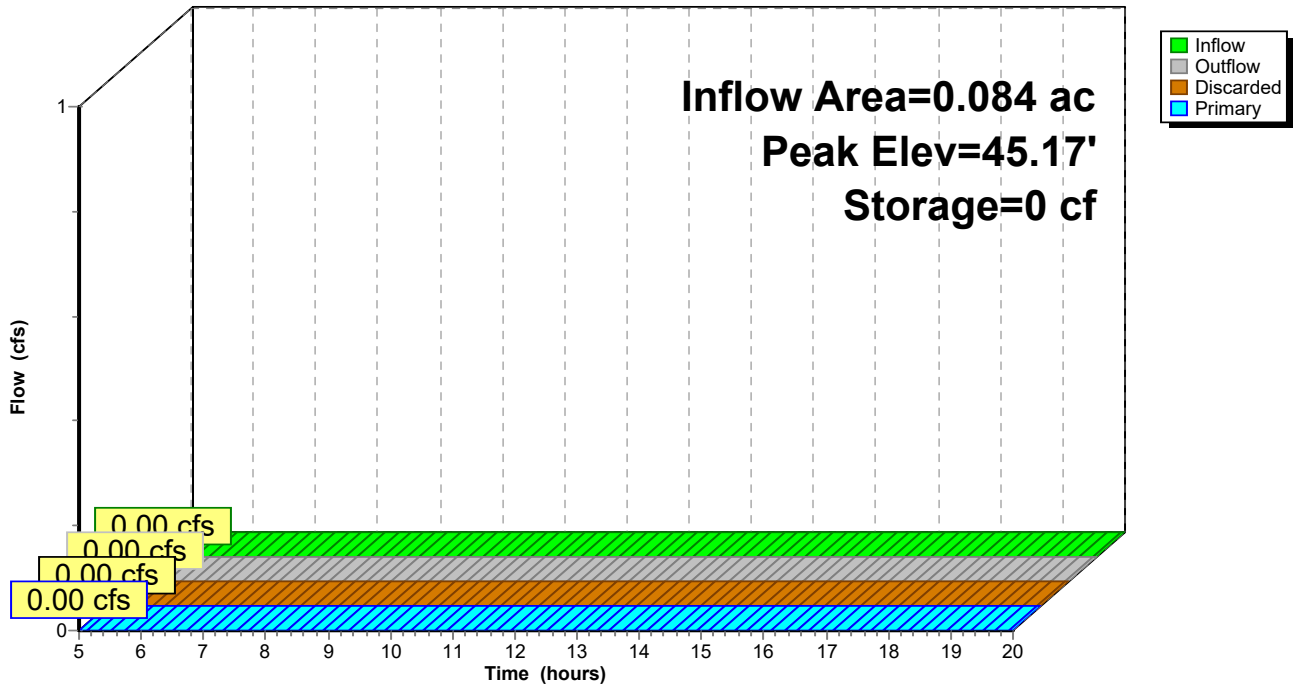
Device	Routing	Invert	Outlet Devices
#1	Discarded	45.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.90'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=45.17' (Free Discharge)
 ↑1=Exfiltration (Passes 0.00 cfs of 0.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=45.17' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: G.U.S.F. #3

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1.1S: (new Subcat) Runoff Area=4,731 sf 40.33% Impervious Runoff Depth>1.32"
 Flow Length=130' Slope=0.0750 '/' Tc=6.0 min CN=75 Runoff=0.18 cfs 0.012 af

Subcatchment 1.2S: (new Subcat) Runoff Area=41,050 sf 2.04% Impervious Runoff Depth>0.35"
 Flow Length=230' Tc=18.1 min CN=55 Runoff=0.18 cfs 0.028 af

Subcatchment 2.1S: (new Subcat) Runoff Area=8,038 sf 39.40% Impervious Runoff Depth>1.32"
 Flow Length=85' Tc=6.0 min CN=75 Runoff=0.30 cfs 0.020 af

Subcatchment 2.2S: (new Subcat) Runoff Area=18,932 sf 17.08% Impervious Runoff Depth>0.54"
 Flow Length=190' Tc=11.9 min UI Adjusted CN=60 Runoff=0.18 cfs 0.020 af

Subcatchment 2.3S: (new Subcat) Runoff Area=3,654 sf 32.62% Impervious Runoff Depth>1.14"
 Flow Length=65' Tc=6.0 min CN=72 Runoff=0.12 cfs 0.008 af

Subcatchment 2.4S: (new Subcat) Runoff Area=22,171 sf 6.02% Impervious Runoff Depth>0.26"
 Flow Length=160' Tc=10.4 min UI Adjusted CN=52 Runoff=0.06 cfs 0.011 af

Reach 1R: (new Reach) Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=100.0' S=0.1020 '/' Capacity=6.31 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: POA #2 Avg. Flow Depth=0.09' Max Vel=3.28 fps Inflow=0.18 cfs 0.012 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=0.18 cfs 0.012 af

Reach 3R: Roadside ditch Avg. Flow Depth=0.19' Max Vel=1.84 fps Inflow=0.30 cfs 0.020 af
 n=0.022 L=160.0' S=0.0125 '/' Capacity=2.21 cfs Outflow=0.28 cfs 0.020 af

Reach 4R: Swale Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
 n=0.022 L=85.0' S=0.0624 '/' Capacity=4.93 cfs Outflow=0.00 cfs 0.000 af

Reach 5R: POA #1 Avg. Flow Depth=0.12' Max Vel=3.87 fps Inflow=0.31 cfs 0.033 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=0.31 cfs 0.033 af

Pond 1P: G.U.S.F. #1 Peak Elev=49.62' Storage=1,173 cf Inflow=0.18 cfs 0.028 af
 Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

Pond 3P: G.U.S.F. #2 Peak Elev=46.84' Storage=621 cf Inflow=0.18 cfs 0.020 af
 Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af

Pond 4P: G.U.S.F. #3 Peak Elev=47.91' Storage=175 cf Inflow=0.12 cfs 0.008 af
 Discarded=0.00 cfs 0.002 af Primary=0.01 cfs 0.002 af Outflow=0.02 cfs 0.004 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.098 af Average Runoff Depth = 0.52"
88.16% Pervious = 1.995 ac 11.84% Impervious = 0.268 ac

Summary for Subcatchment 1.1S: (new Subcat)

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.012 af, Depth> 1.32"

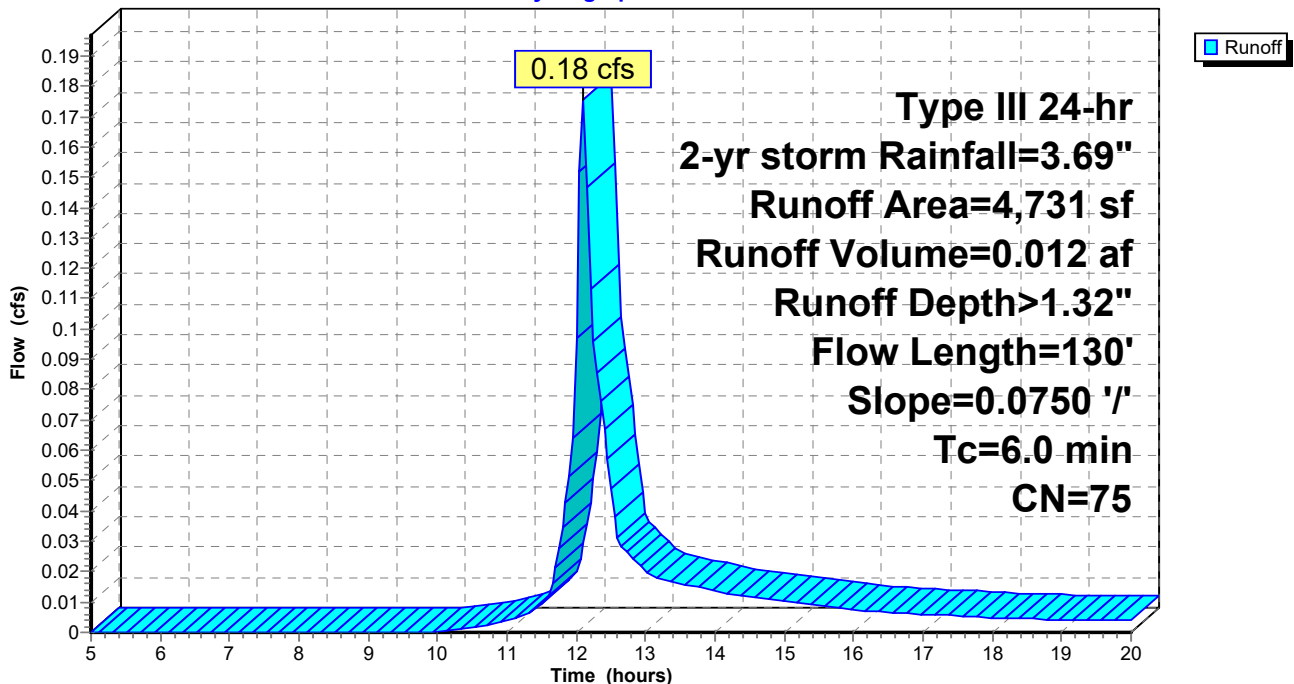
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
1,908	98	Paved parking, HSG B
2,223	61	>75% Grass cover, Good, HSG B
600	55	Woods, Good, HSG B
4,731	75	Weighted Average
2,823		59.67% Pervious Area
1,908		40.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	130	0.0750	4.11		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.5	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 1.2S: (new Subcat)

Runoff = 0.18 cfs @ 12.43 hrs, Volume= 0.028 af, Depth> 0.35"

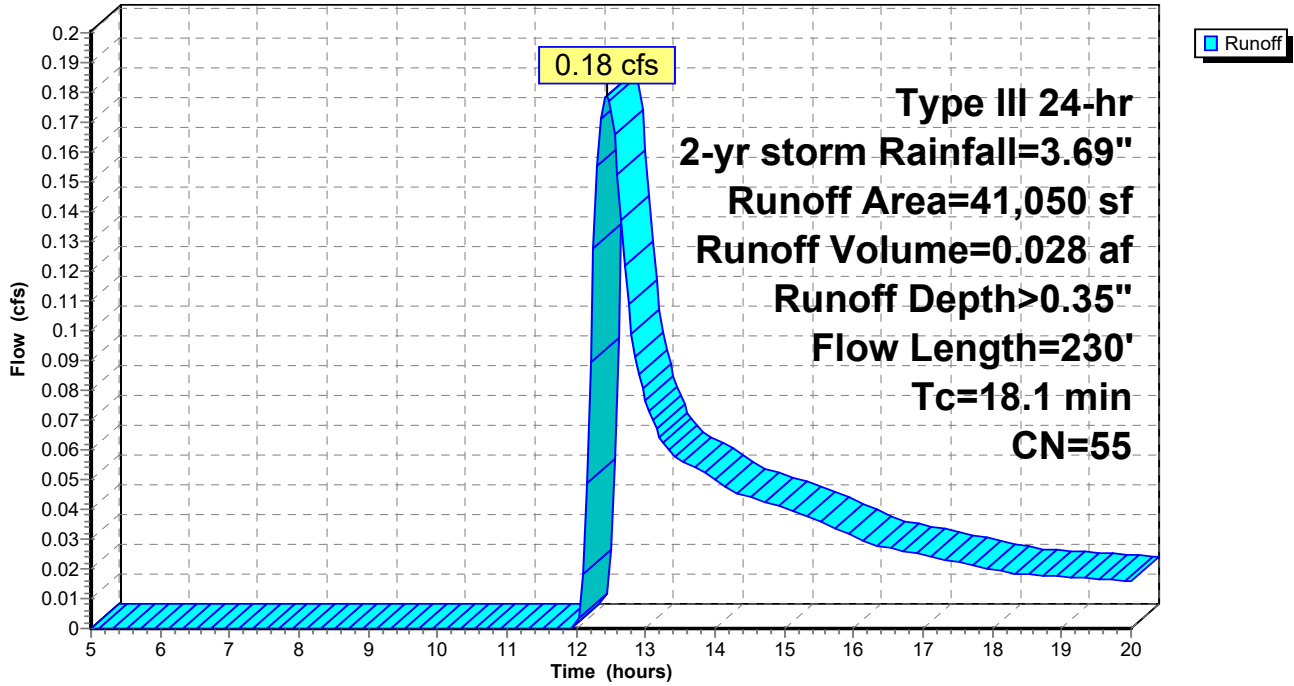
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
138	98	Roofs, HSG B
214	98	Unconnected roofs, HSG B
486	98	Paved parking, HSG B
3,131	61	>75% Grass cover, Good, HSG B
4,903	48	Brush, Good, HSG B
32,178	55	Woods, Good, HSG B
41,050	55	Weighted Average
40,212		97.96% Pervious Area
838		2.04% Impervious Area
214		25.54% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
2.7	100	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	30	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
18.1	230	Total			

Subcatchment 1.2S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.1S: (new Subcat)

Runoff = 0.30 cfs @ 12.10 hrs, Volume= 0.020 af, Depth> 1.32"

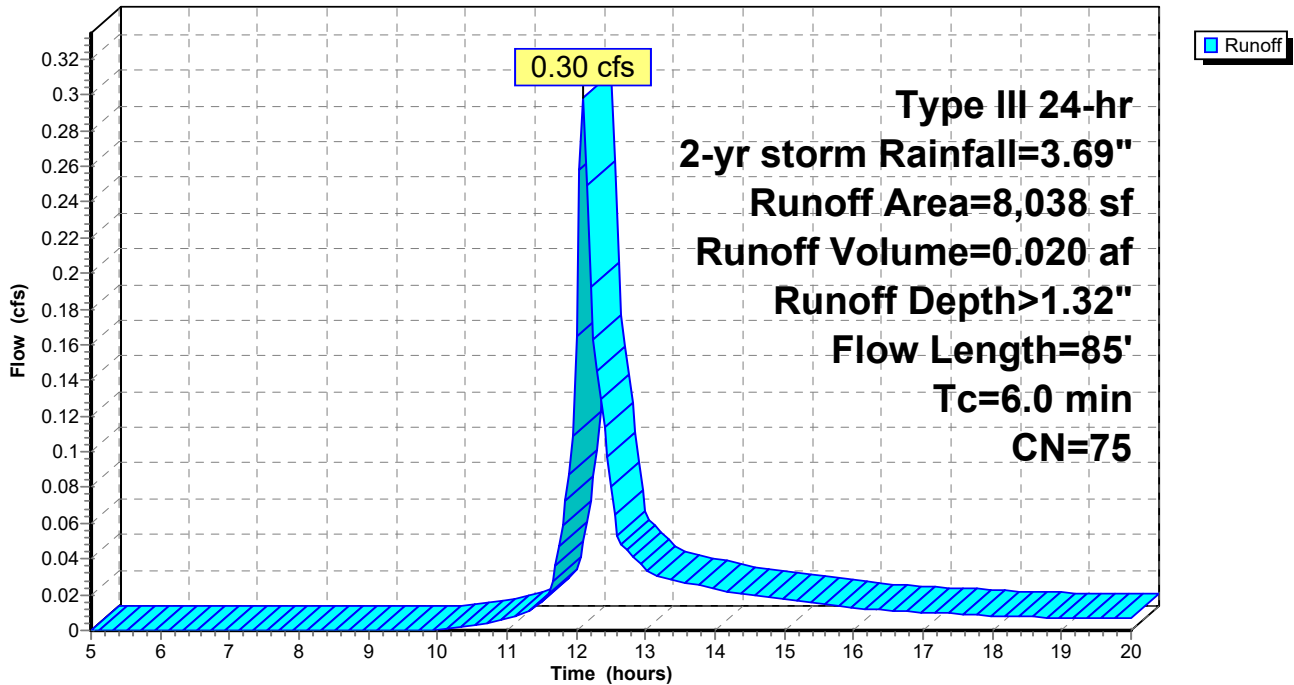
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
3,167	98	Paved parking, HSG B
3,639	61	>75% Grass cover, Good, HSG B
1,232	55	Woods, Good, HSG B
8,038	75	Weighted Average
4,871		60.60% Pervious Area
3,167		39.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.2000	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.2	35	0.0600	3.67		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.8	85	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.2S: (new Subcat)

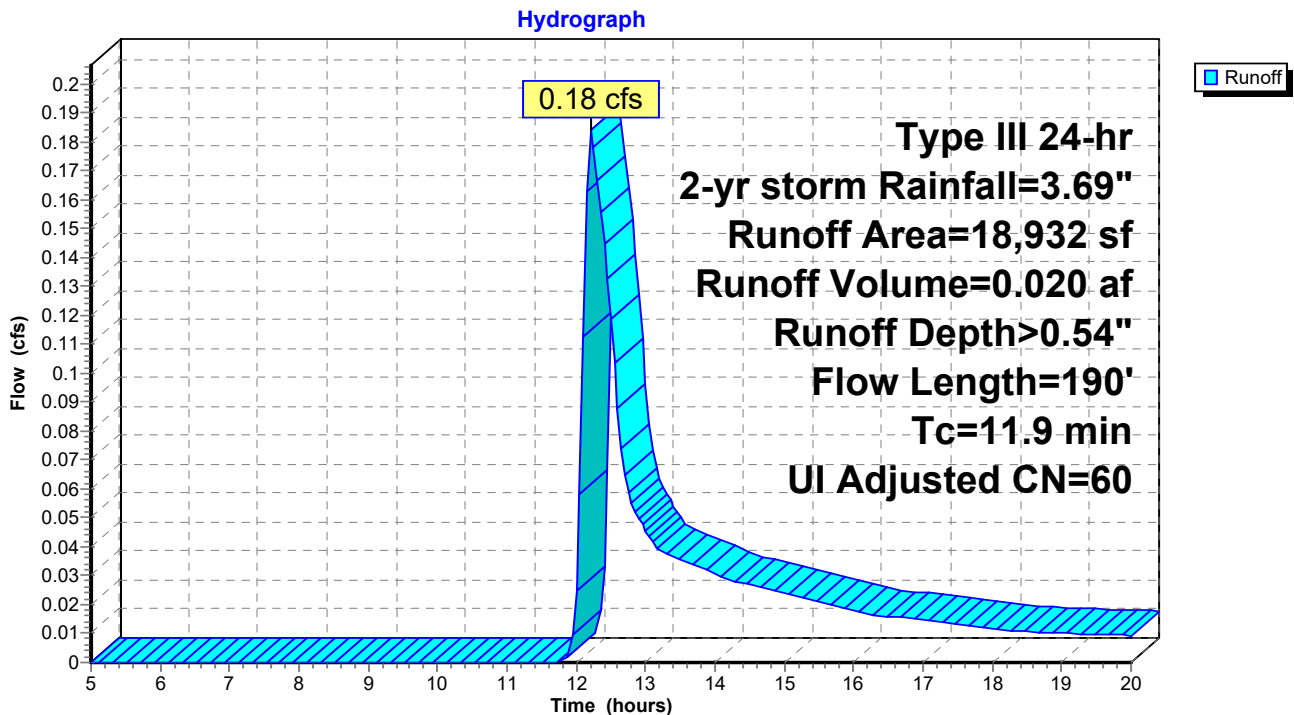
Runoff = 0.18 cfs @ 12.21 hrs, Volume= 0.020 af, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Adj	Description
626	98		Roofs, HSG B
1,794	98		Unconnected roofs, HSG B
814	98		Paved parking, HSG B
5,900	61		>75% Grass cover, Good, HSG B
4,945	48		Brush, Good, HSG B
4,853	55		Woods, Good, HSG B
18,932	62	60	Weighted Average, UI Adjusted
15,698			82.92% Pervious Area
3,234			17.08% Impervious Area
1,794			55.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0800	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.4	90	0.0500	3.35		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	190	Total			

Subcatchment 2.2S: (new Subcat)



Summary for Subcatchment 2.3S: (new Subcat)

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.008 af, Depth> 1.14"

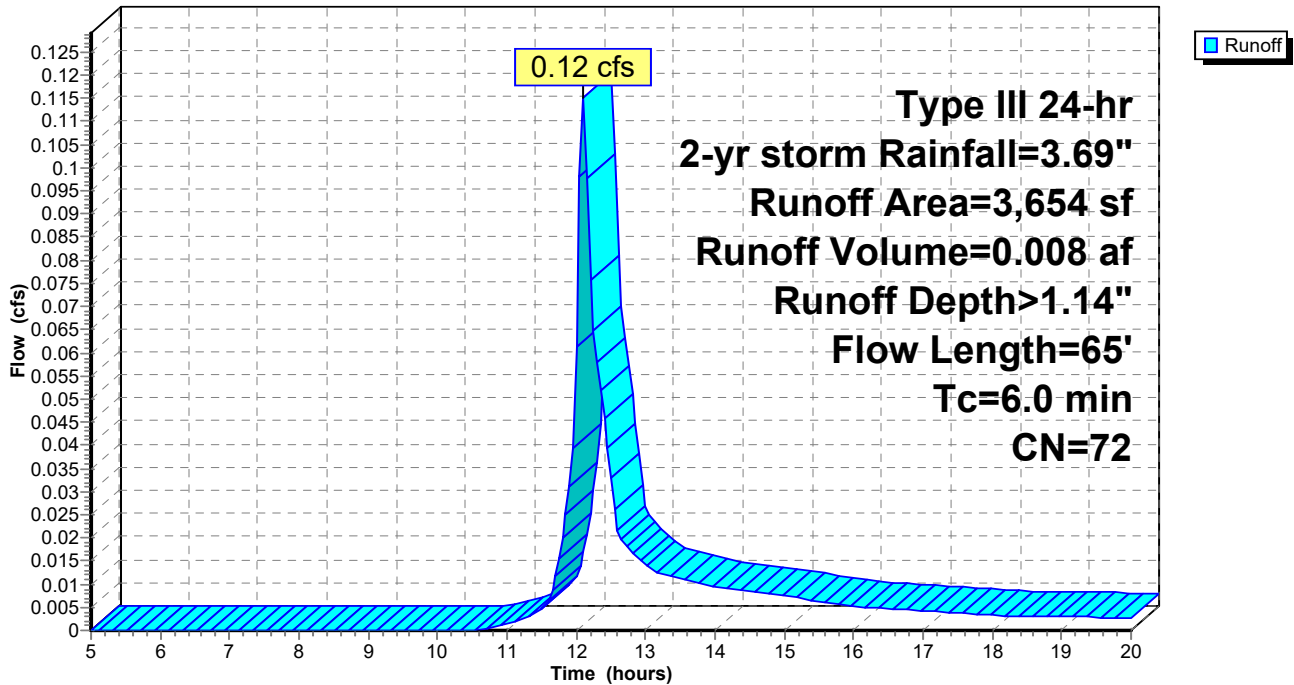
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Description
1,192	98	Paved parking, HSG B
1,622	61	>75% Grass cover, Good, HSG B
840	55	Woods, Good, HSG B
3,654	72	Weighted Average
2,462		67.38% Pervious Area
1,192		32.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	40	0.1500	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.1	25	0.1800	6.36		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.4	65	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.3S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.4S: (new Subcat)

Runoff = 0.06 cfs @ 12.39 hrs, Volume= 0.011 af, Depth> 0.26"

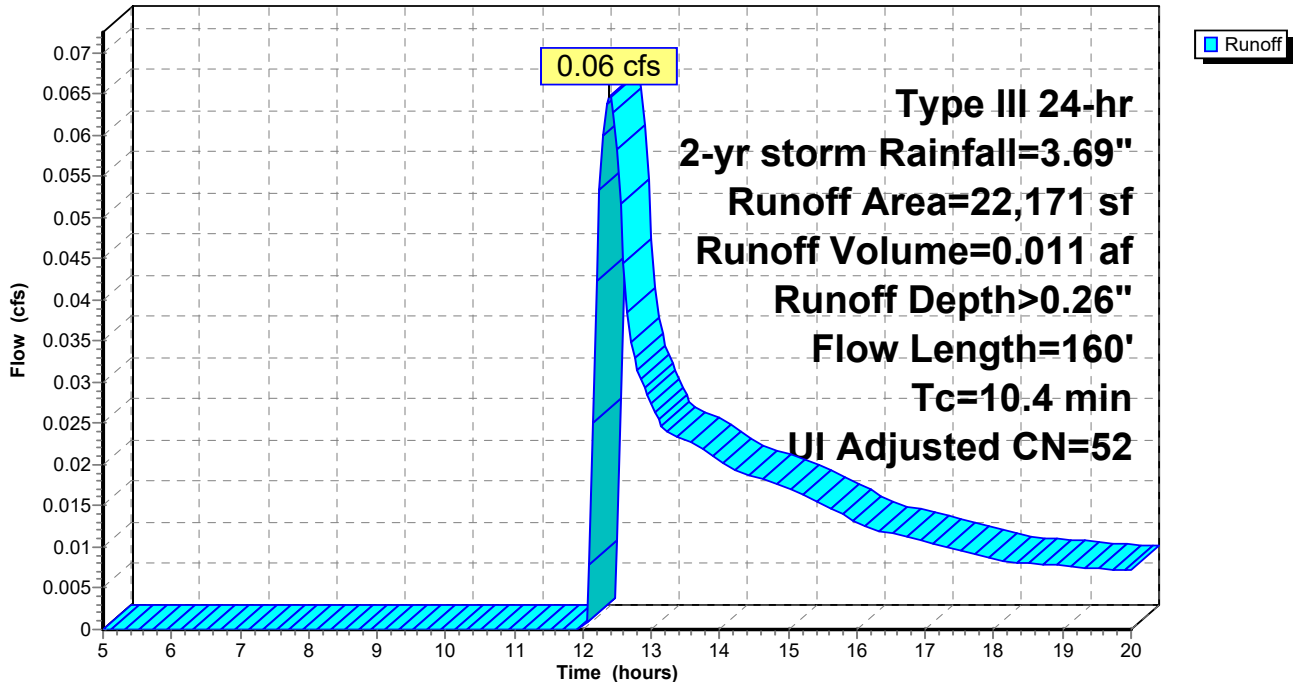
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr storm Rainfall=3.69"

Area (sf)	CN	Adj	Description
317	98		Roofs, HSG B
872	98		Unconnected roofs, HSG B
145	98		Paved parking, HSG B
1,928	61		>75% Grass cover, Good, HSG B
17,752	48		Brush, Good, HSG B
1,157	55		Woods, Good, HSG B
22,171	53	52	Weighted Average, UI Adjusted
20,837			93.98% Pervious Area
1,334			6.02% Impervious Area
872			65.37% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	80	0.0875	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
1.1	80	0.0625	1.25		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	160	Total			

Subcatchment 2.4S: (new Subcat)

Hydrograph



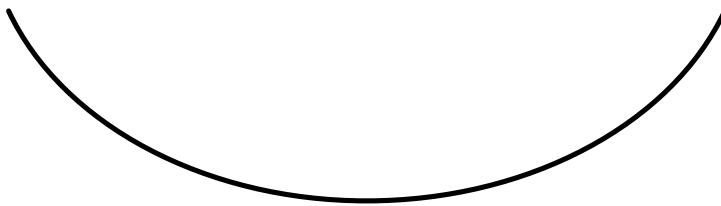
Summary for Reach 1R: (new Reach)

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth = 0.00" for 2-yr storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

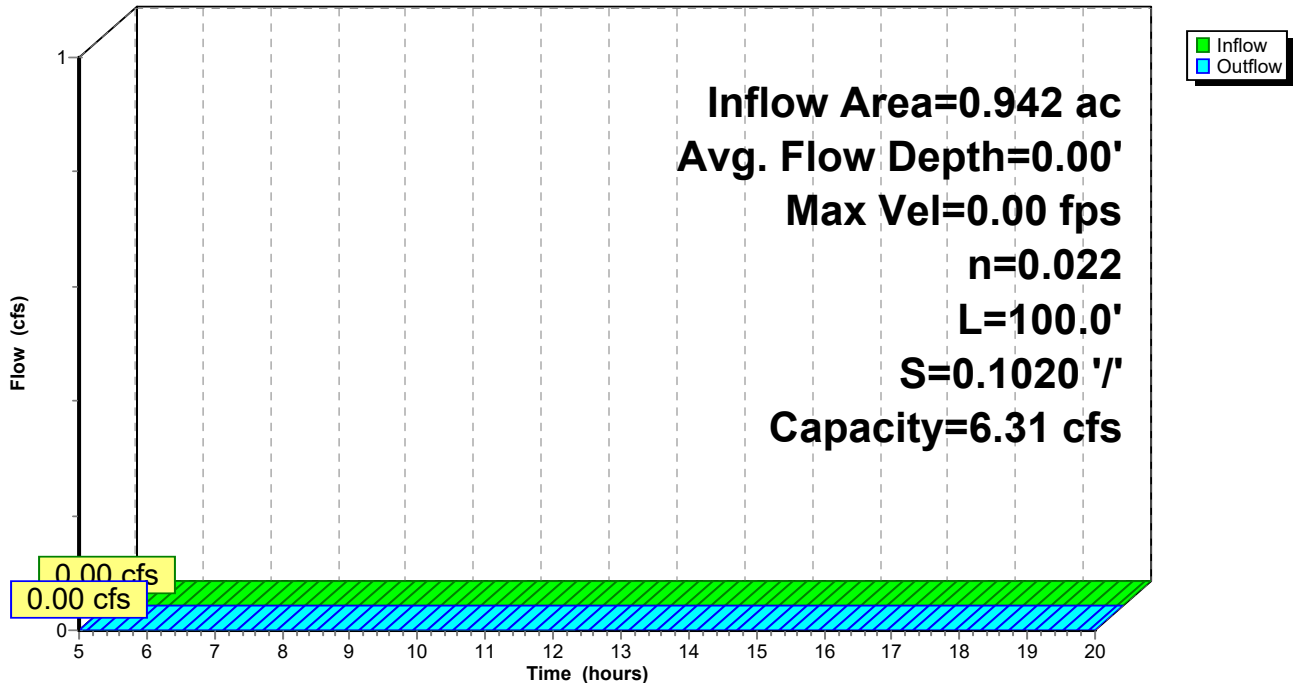
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.31 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 100.0' Slope= 0.1020 '/'
 Inlet Invert= 50.20', Outlet Invert= 40.00'



Reach 1R: (new Reach)

Hydrograph



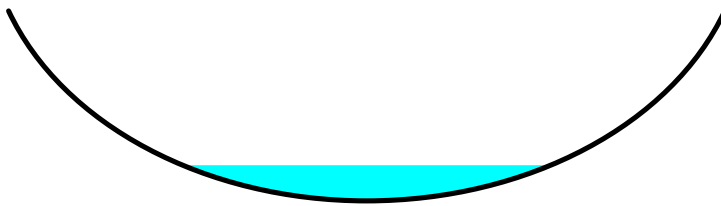
Summary for Reach 2R: POA #2

Inflow Area = 1.051 ac, 6.00% Impervious, Inflow Depth > 0.14" for 2-yr storm event
 Inflow = 0.18 cfs @ 12.10 hrs, Volume= 0.012 af
 Outflow = 0.18 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.28 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 1.34 fps, Avg. Travel Time= 0.0 min

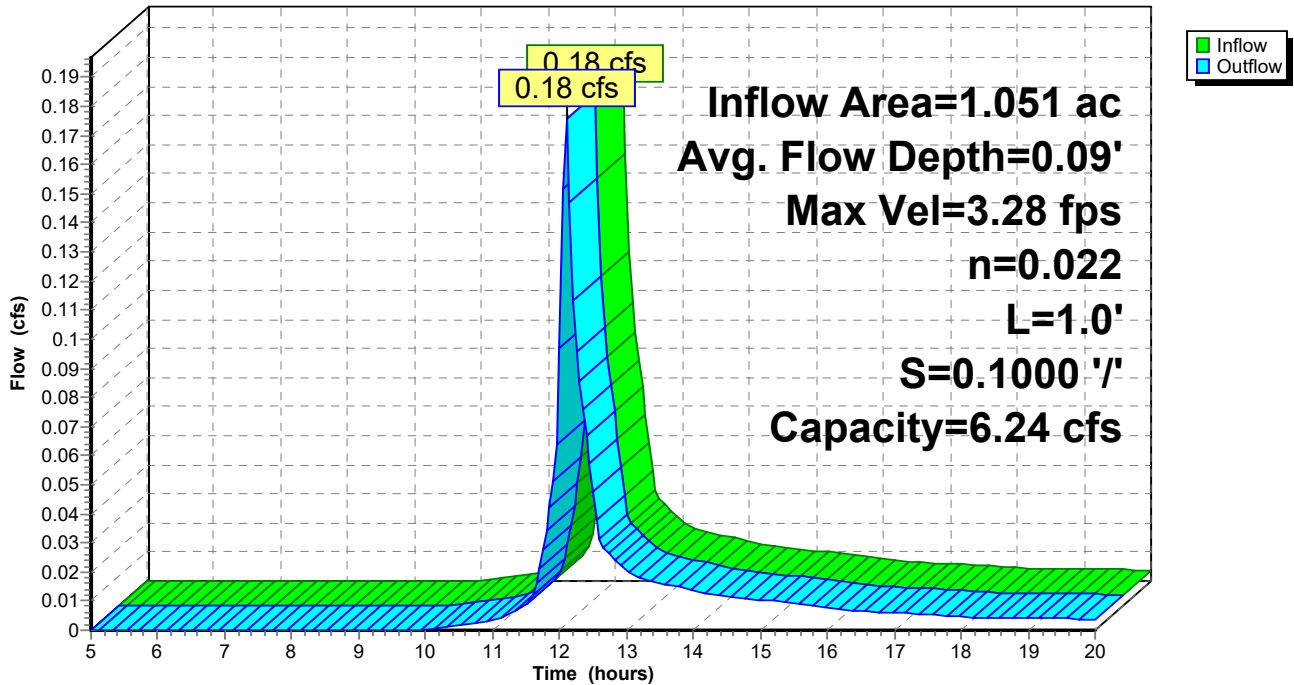
Peak Storage= 0 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.09'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 2R: POA #2

Hydrograph



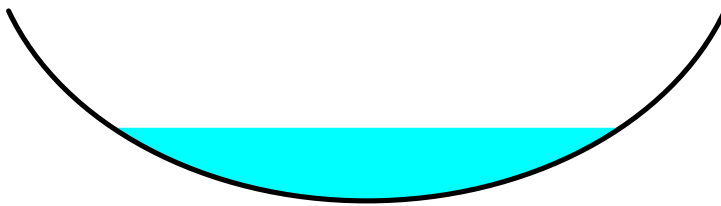
Summary for Reach 3R: Roadside ditch

Inflow Area = 0.185 ac, 39.40% Impervious, Inflow Depth > 1.32" for 2-yr storm event
 Inflow = 0.30 cfs @ 12.10 hrs, Volume= 0.020 af
 Outflow = 0.28 cfs @ 12.14 hrs, Volume= 0.020 af, Atten= 6%, Lag= 2.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.84 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 3.5 min

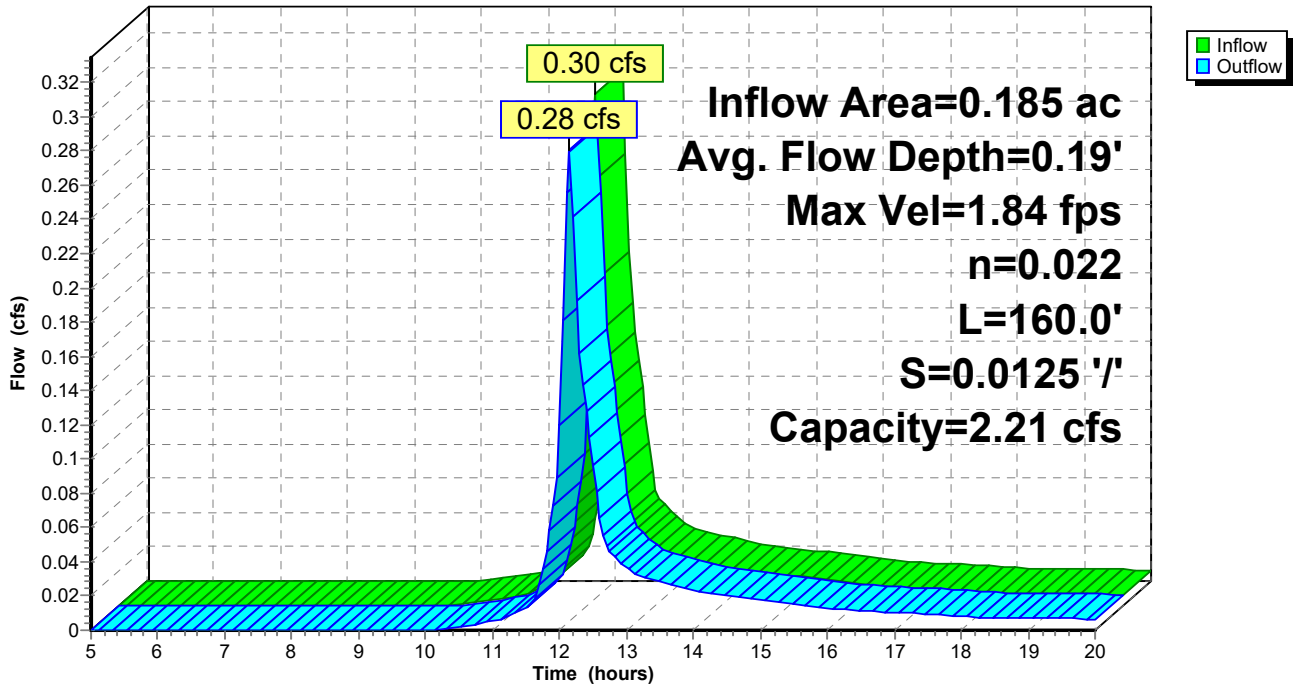
Peak Storage= 25 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.19'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 2.21 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 160.0' Slope= 0.0125 '/'
 Inlet Invert= 42.00', Outlet Invert= 40.00'



Reach 3R: Roadside ditch

Hydrograph



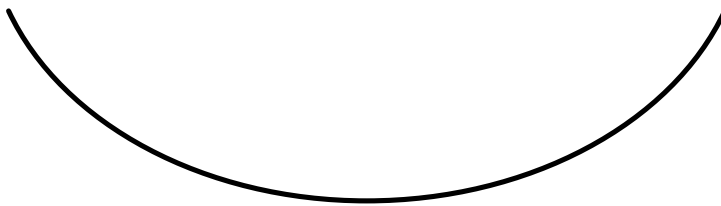
Summary for Reach 4R: Swale

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth = 0.00" for 2-yr storm event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

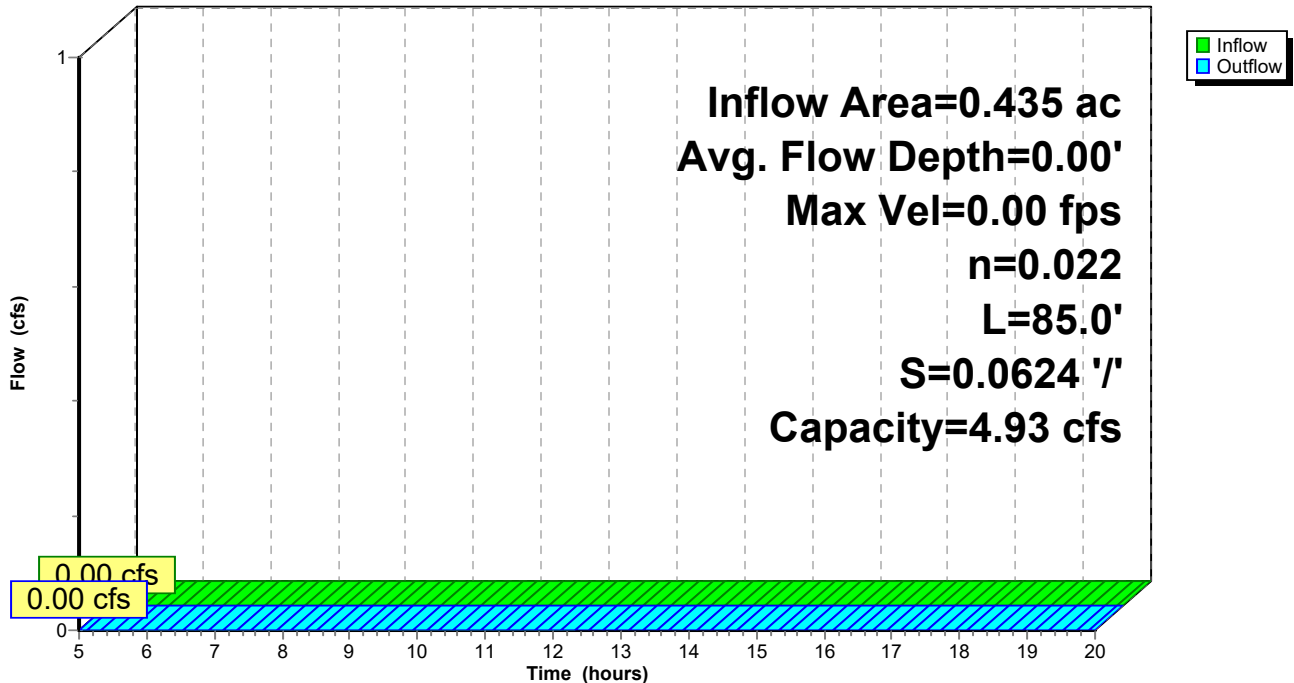
Peak Storage= 0 cf @ 5.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 4.93 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 85.0' Slope= 0.0624 '/'
 Inlet Invert= 47.30', Outlet Invert= 42.00'



Reach 4R: Swale

Hydrograph



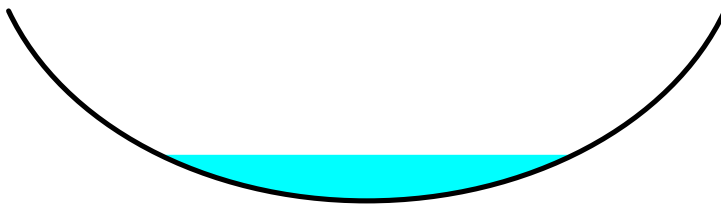
Summary for Reach 5R: POA #1

Inflow Area = 1.212 ac, 16.91% Impervious, Inflow Depth > 0.33" for 2-yr storm event
 Inflow = 0.31 cfs @ 12.16 hrs, Volume= 0.033 af
 Outflow = 0.31 cfs @ 12.16 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.87 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 1.87 fps, Avg. Travel Time= 0.0 min

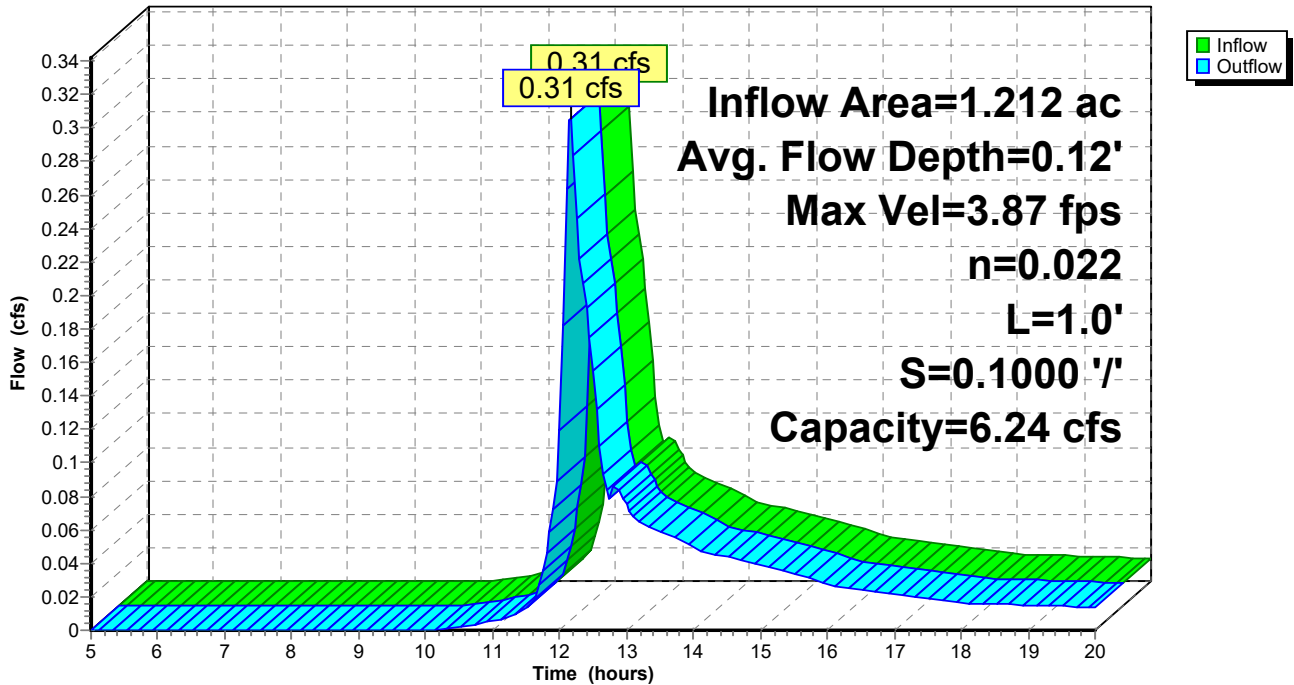
Peak Storage= 0 cf @ 12.16 hrs
 Average Depth at Peak Storage= 0.12'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 5R: POA #1

Hydrograph



Summary for Pond 1P: G.U.S.F. #1

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 0.35" for 2-yr storm event
 Inflow = 0.18 cfs @ 12.43 hrs, Volume= 0.028 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af, Atten= 99%, Lag= 454.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.62' @ 20.00 hrs Surf.Area= 927 sf Storage= 1,173 cf

Plug-Flow detention time= 254.1 min calculated for 0.001 af (2% of inflow)
 Center-of-Mass det. time= 108.4 min (984.4 - 876.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	46.17'	2,152 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.17	615	0.0	0	0
47.17	615	40.0	246	246
48.67	615	20.0	185	431
49.00	615	100.0	203	633
50.00	1,115	100.0	865	1,498
50.50	1,500	100.0	654	2,152

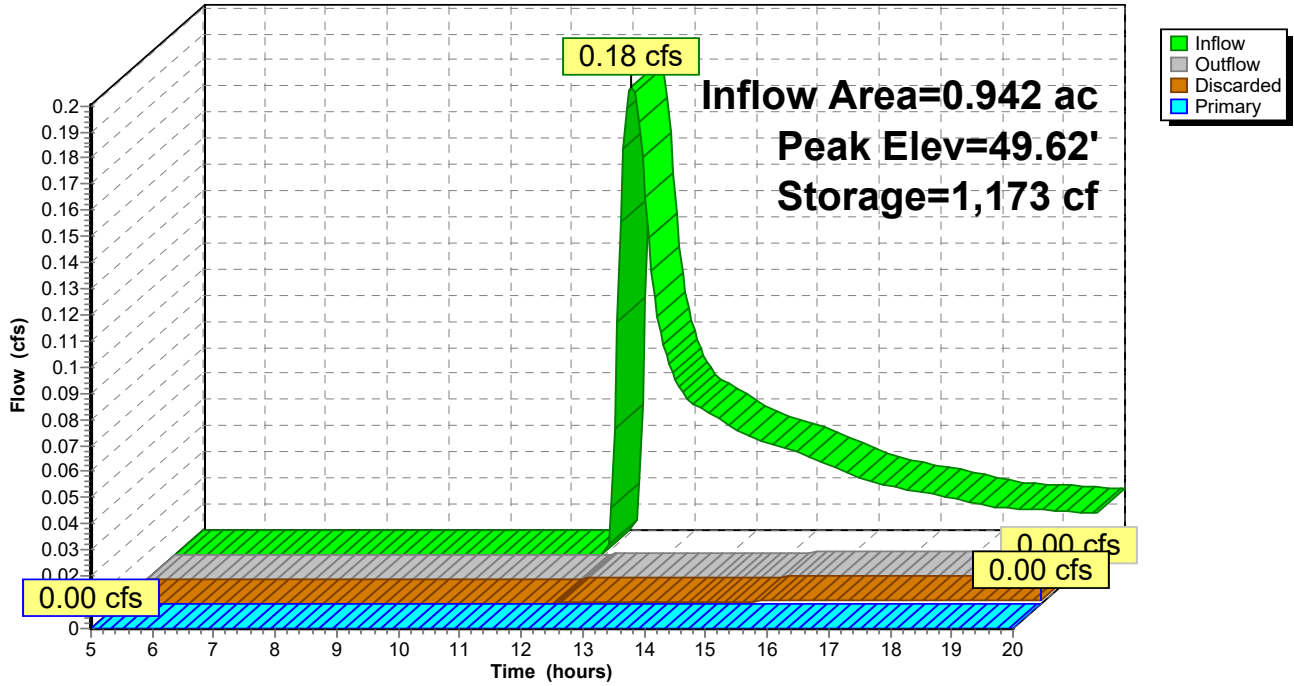
Device	Routing	Invert	Outlet Devices
#1	Discarded	46.17'	0.060 in/hr Exfiltration over Surface area
#2	Primary	50.20'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 20.00 hrs HW=49.62' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=46.17' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: G.U.S.F. #1

Hydrograph



Summary for Pond 3P: G.U.S.F. #2

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 0.54" for 2-yr storm event
 Inflow = 0.18 cfs @ 12.21 hrs, Volume= 0.020 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.005 af, Atten= 95%, Lag= 467.1 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.005 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.84' @ 20.00 hrs Surf.Area= 636 sf Storage= 621 cf

Plug-Flow detention time= 236.6 min calculated for 0.005 af (27% of inflow)
 Center-of-Mass det. time= 119.9 min (972.3 - 852.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	44.17'	1,138 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.17	500	0.0	0	0
44.67	500	40.0	100	100
46.17	500	20.0	150	250
46.50	500	100.0	165	415
47.00	697	100.0	299	714
47.50	1,000	100.0	424	1,138

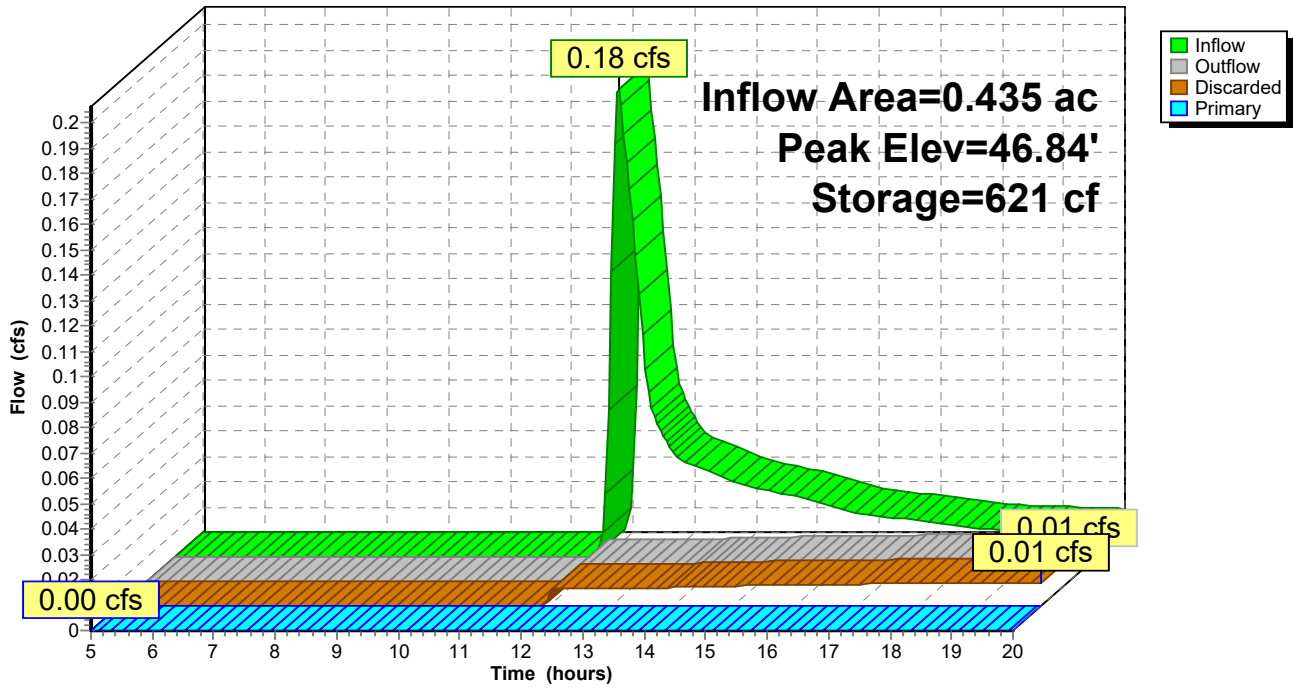
Device	Routing	Invert	Outlet Devices										
#1	Discarded	44.17'	0.600 in/hr Exfiltration over Surface area										
#2	Primary	47.30'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir										
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00										
			2.50 3.00 3.50 4.00 4.50 5.00 5.50										
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64										
			2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74										

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=46.84' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=44.17' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: G.U.S.F. #2

Hydrograph



Summary for Pond 4P: G.U.S.F. #3

Inflow Area = 0.084 ac, 32.62% Impervious, Inflow Depth > 1.14" for 2-yr storm event
 Inflow = 0.12 cfs @ 12.10 hrs, Volume= 0.008 af
 Outflow = 0.02 cfs @ 12.87 hrs, Volume= 0.004 af, Atten= 86%, Lag= 46.0 min
 Discarded = 0.00 cfs @ 12.87 hrs, Volume= 0.002 af
 Primary = 0.01 cfs @ 12.87 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.91' @ 12.87 hrs Surf.Area= 267 sf Storage= 175 cf

Plug-Flow detention time= 182.5 min calculated for 0.004 af (51% of inflow)
 Center-of-Mass det. time= 94.5 min (910.9 - 816.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.17'	372 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.17	110	0.0	0	0
45.67	110	40.0	22	22
47.17	110	20.0	33	55
47.50	110	100.0	36	91
48.00	302	100.0	103	194
48.50	410	100.0	178	372

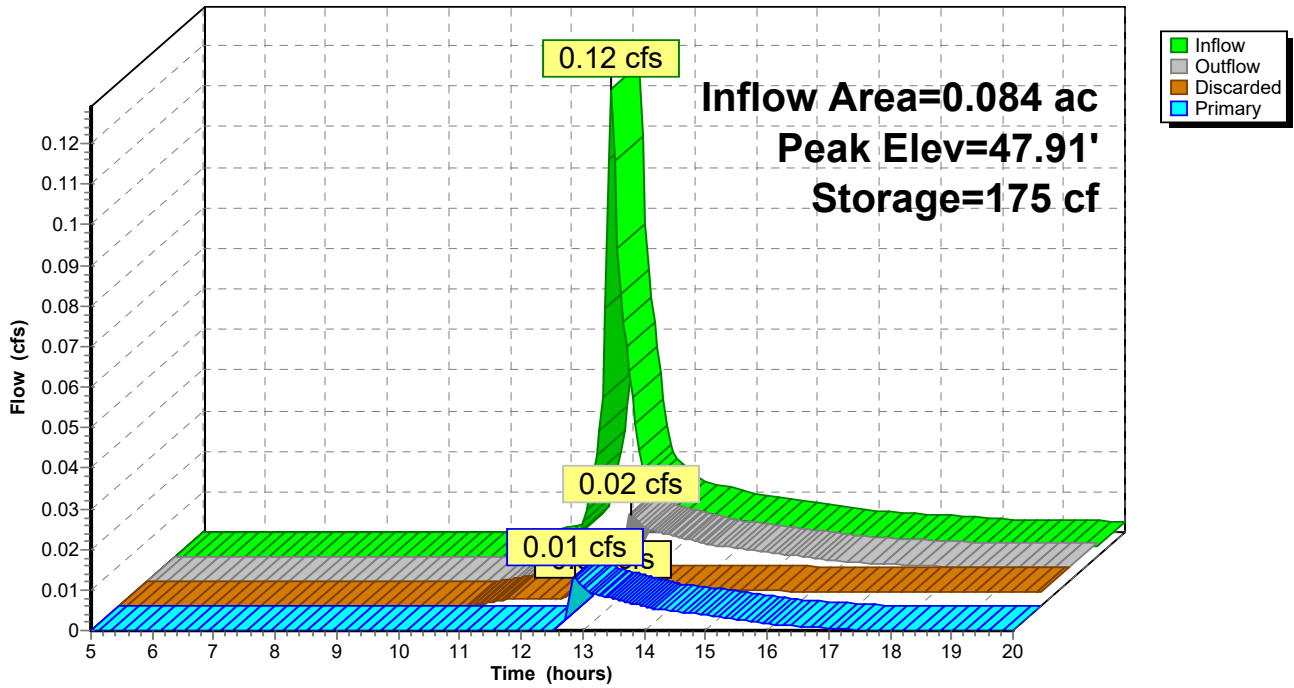
Device	Routing	Invert	Outlet Devices
#1	Discarded	45.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.90'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.87 hrs HW=47.91' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.01 cfs @ 12.87 hrs HW=47.91' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.01 cfs @ 0.21 fps)

Pond 4P: G.U.S.F. #3

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1.1S: (new Subcat) Runoff Area=4,731 sf 40.33% Impervious Runoff Depth>2.74"
 Flow Length=130' Slope=0.0750 '/' Tc=6.0 min CN=75 Runoff=0.37 cfs 0.025 af

Subcatchment 1.2S: (new Subcat) Runoff Area=41,050 sf 2.04% Impervious Runoff Depth>1.15"
 Flow Length=230' Tc=18.1 min CN=55 Runoff=0.85 cfs 0.091 af

Subcatchment 2.1S: (new Subcat) Runoff Area=8,038 sf 39.40% Impervious Runoff Depth>2.74"
 Flow Length=85' Tc=6.0 min CN=75 Runoff=0.62 cfs 0.042 af

Subcatchment 2.2S: (new Subcat) Runoff Area=18,932 sf 17.08% Impervious Runoff Depth>1.51"
 Flow Length=190' Tc=11.9 min UI Adjusted CN=60 Runoff=0.64 cfs 0.055 af

Subcatchment 2.3S: (new Subcat) Runoff Area=3,654 sf 32.62% Impervious Runoff Depth>2.47"
 Flow Length=65' Tc=6.0 min CN=72 Runoff=0.26 cfs 0.017 af

Subcatchment 2.4S: (new Subcat) Runoff Area=22,171 sf 6.02% Impervious Runoff Depth>0.96"
 Flow Length=160' Tc=10.4 min UI Adjusted CN=52 Runoff=0.43 cfs 0.041 af

Reach 1R: (new Reach) Avg. Flow Depth=0.10' Max Vel=3.40 fps Inflow=0.19 cfs 0.049 af
 n=0.022 L=100.0' S=0.1020 '/' Capacity=6.31 cfs Outflow=0.19 cfs 0.048 af

Reach 2R: POA #2 Avg. Flow Depth=0.13' Max Vel=4.09 fps Inflow=0.37 cfs 0.073 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=0.37 cfs 0.073 af

Reach 3R: Roadside ditch Avg. Flow Depth=0.27' Max Vel=2.30 fps Inflow=0.62 cfs 0.042 af
 n=0.022 L=160.0' S=0.0125 '/' Capacity=2.21 cfs Outflow=0.59 cfs 0.042 af

Reach 4R: Swale Avg. Flow Depth=0.10' Max Vel=2.77 fps Inflow=0.17 cfs 0.024 af
 n=0.022 L=85.0' S=0.0624 '/' Capacity=4.93 cfs Outflow=0.17 cfs 0.024 af

Reach 5R: POA #1 Avg. Flow Depth=0.23' Max Vel=5.88 fps Inflow=1.24 cfs 0.117 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=1.24 cfs 0.117 af

Pond 1P: G.U.S.F. #1 Peak Elev=50.27' Storage=1,854 cf Inflow=0.85 cfs 0.091 af
 Discarded=0.00 cfs 0.001 af Primary=0.19 cfs 0.049 af Outflow=0.19 cfs 0.050 af

Pond 3P: G.U.S.F. #2 Peak Elev=47.37' Storage=1,027 cf Inflow=0.64 cfs 0.055 af
 Discarded=0.01 cfs 0.008 af Primary=0.17 cfs 0.024 af Outflow=0.19 cfs 0.032 af

Pond 4P: G.U.S.F. #3 Peak Elev=47.98' Storage=191 cf Inflow=0.26 cfs 0.017 af
 Discarded=0.00 cfs 0.003 af Primary=0.24 cfs 0.011 af Outflow=0.25 cfs 0.013 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.270 af Average Runoff Depth = 1.43"
88.16% Pervious = 1.995 ac 11.84% Impervious = 0.268 ac

Summary for Subcatchment 1.1S: (new Subcat)

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 2.74"

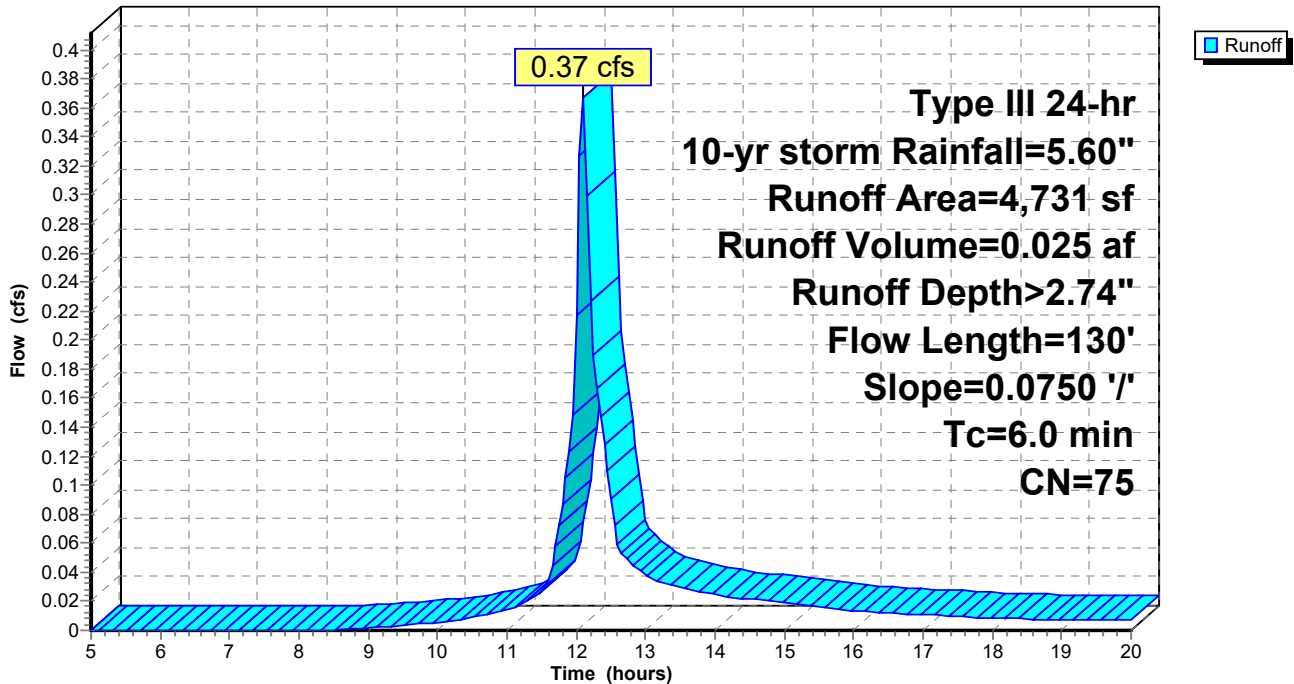
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
1,908	98	Paved parking, HSG B
2,223	61	>75% Grass cover, Good, HSG B
600	55	Woods, Good, HSG B
4,731	75	Weighted Average
2,823		59.67% Pervious Area
1,908		40.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	130	0.0750	4.11		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.5	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 1.2S: (new Subcat)

Runoff = 0.85 cfs @ 12.29 hrs, Volume= 0.091 af, Depth> 1.15"

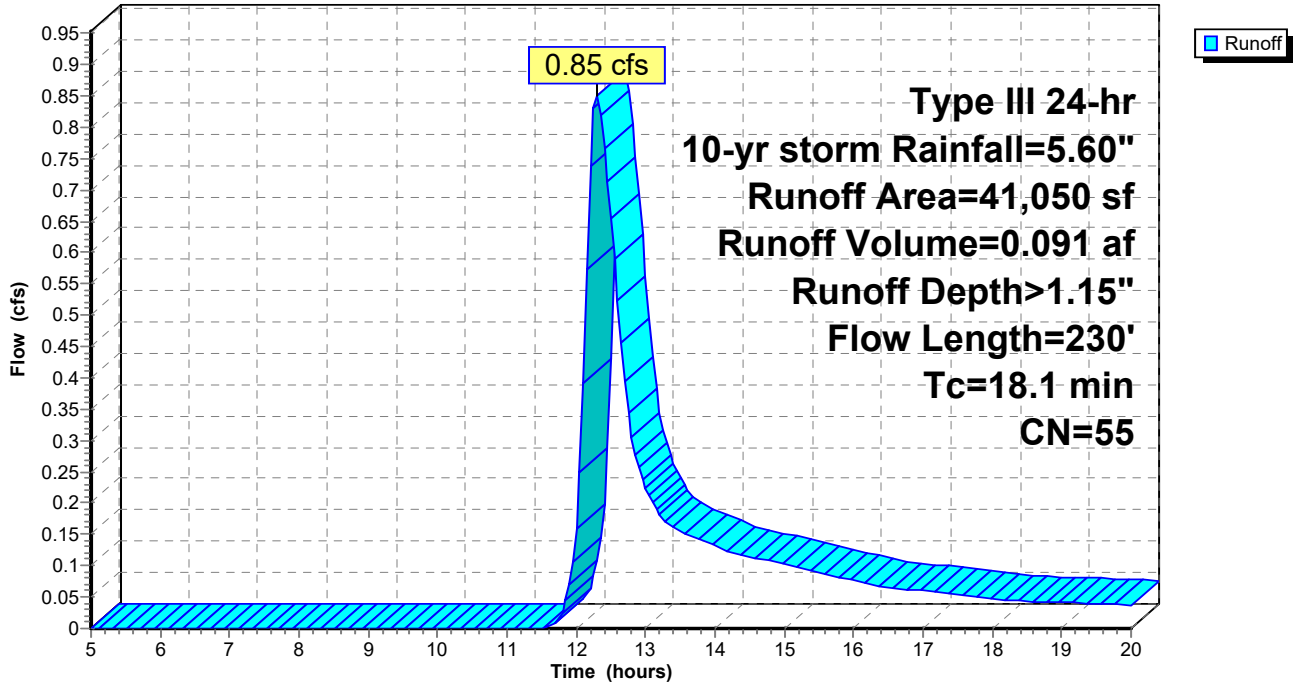
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
138	98	Roofs, HSG B
214	98	Unconnected roofs, HSG B
486	98	Paved parking, HSG B
3,131	61	>75% Grass cover, Good, HSG B
4,903	48	Brush, Good, HSG B
32,178	55	Woods, Good, HSG B
41,050	55	Weighted Average
40,212		97.96% Pervious Area
838		2.04% Impervious Area
214		25.54% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
2.7	100	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	30	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
18.1	230	Total			

Subcatchment 1.2S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.1S: (new Subcat)

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.042 af, Depth> 2.74"

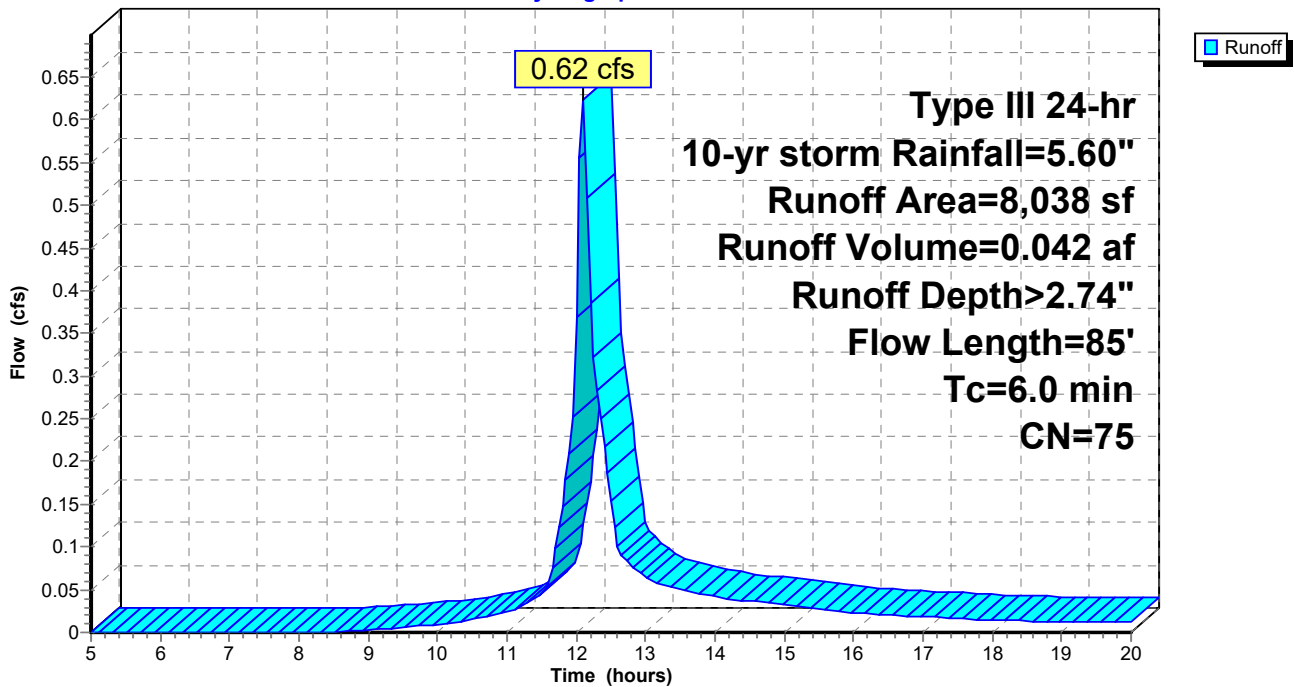
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
3,167	98	Paved parking, HSG B
3,639	61	>75% Grass cover, Good, HSG B
1,232	55	Woods, Good, HSG B
8,038	75	Weighted Average
4,871		60.60% Pervious Area
3,167		39.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.2000	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.2	35	0.0600	3.67		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.8	85	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.2S: (new Subcat)

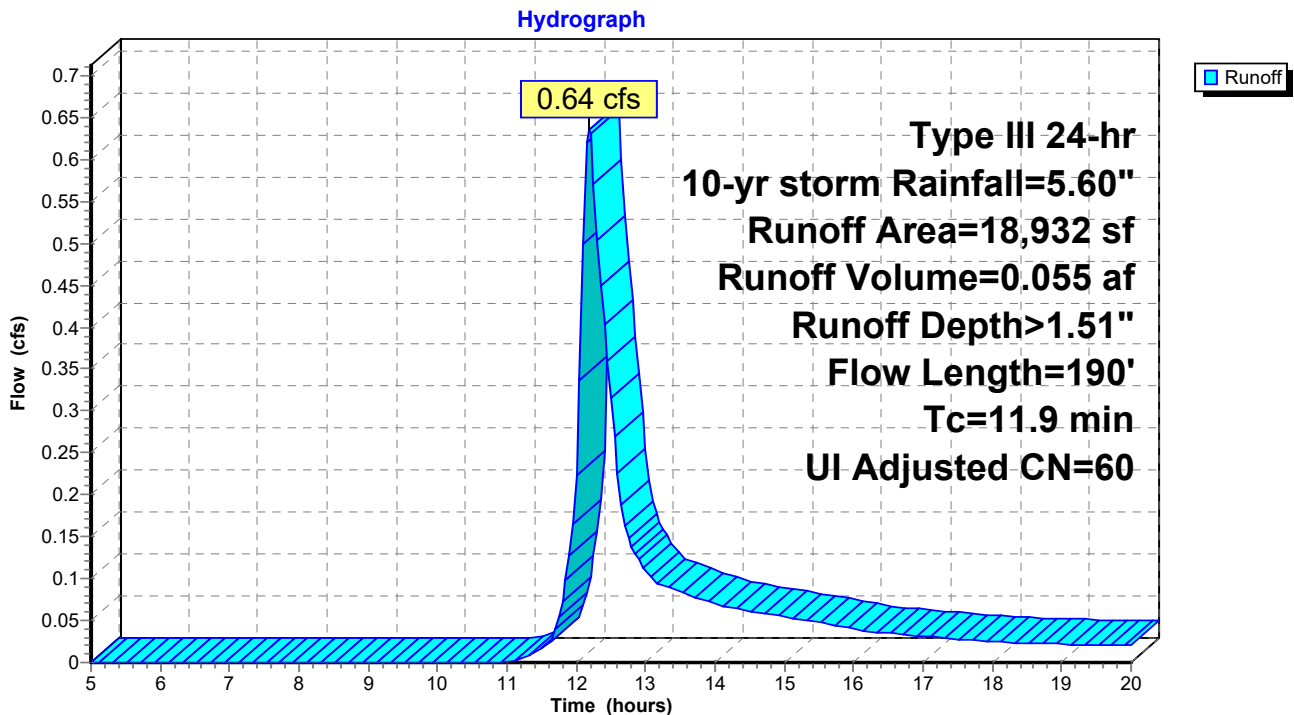
Runoff = 0.64 cfs @ 12.18 hrs, Volume= 0.055 af, Depth> 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Adj	Description
626	98		Roofs, HSG B
1,794	98		Unconnected roofs, HSG B
814	98		Paved parking, HSG B
5,900	61		>75% Grass cover, Good, HSG B
4,945	48		Brush, Good, HSG B
4,853	55		Woods, Good, HSG B
18,932	62	60	Weighted Average, UI Adjusted
15,698			82.92% Pervious Area
3,234			17.08% Impervious Area
1,794			55.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0800	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.4	90	0.0500	3.35		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	190	Total			

Subcatchment 2.2S: (new Subcat)



Summary for Subcatchment 2.3S: (new Subcat)

Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 2.47"

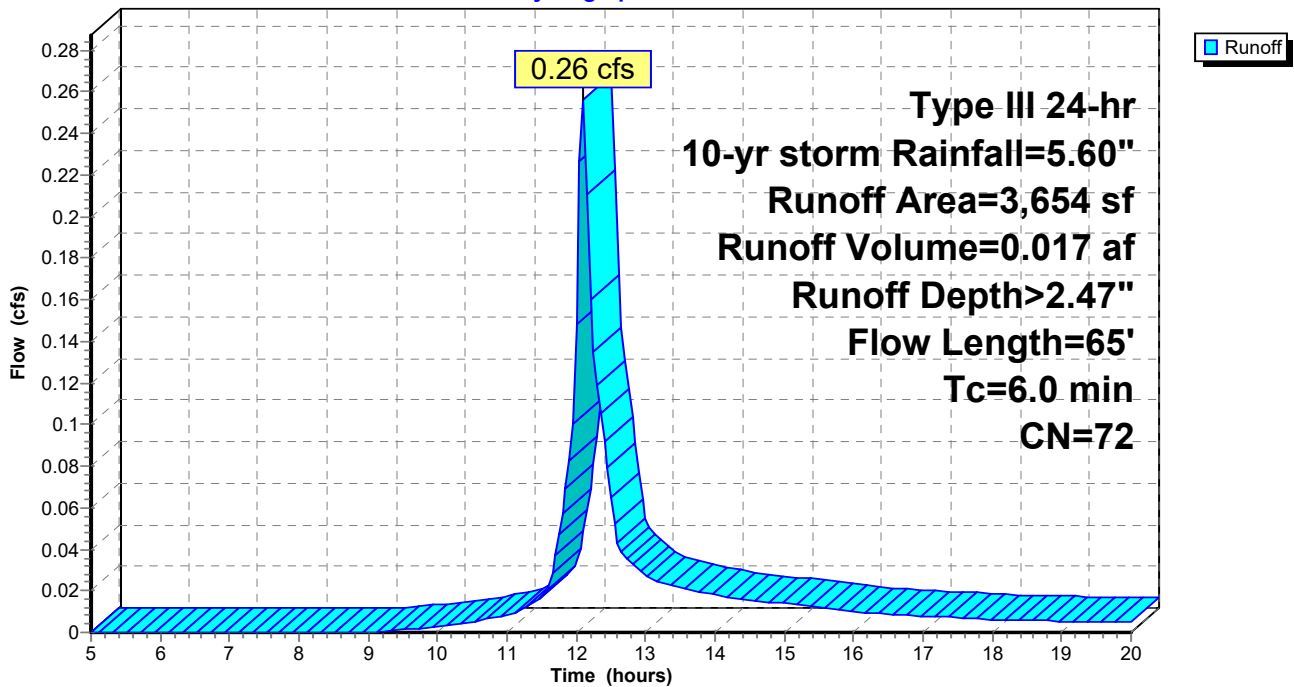
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Description
1,192	98	Paved parking, HSG B
1,622	61	>75% Grass cover, Good, HSG B
840	55	Woods, Good, HSG B
3,654	72	Weighted Average
2,462		67.38% Pervious Area
1,192		32.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	40	0.1500	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.1	25	0.1800	6.36		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.4	65	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.3S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.4S: (new Subcat)

Runoff = 0.43 cfs @ 12.18 hrs, Volume= 0.041 af, Depth> 0.96"

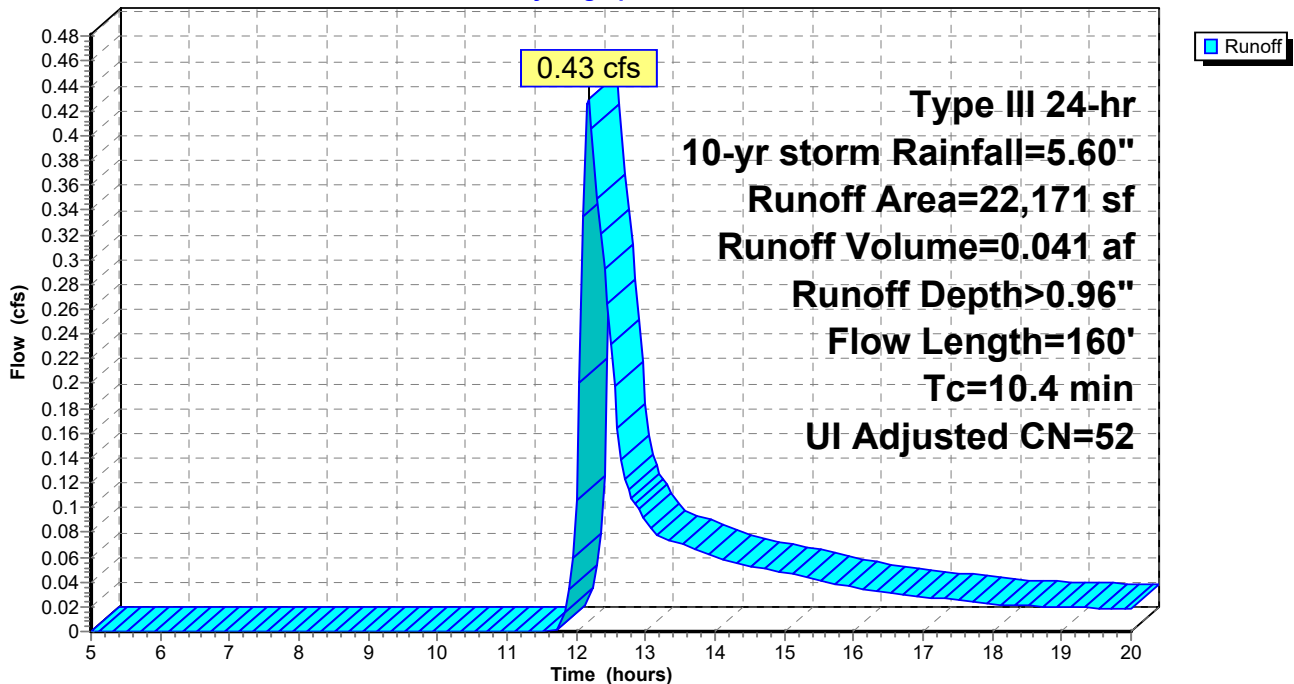
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr storm Rainfall=5.60"

Area (sf)	CN	Adj	Description
317	98		Roofs, HSG B
872	98		Unconnected roofs, HSG B
145	98		Paved parking, HSG B
1,928	61		>75% Grass cover, Good, HSG B
17,752	48		Brush, Good, HSG B
1,157	55		Woods, Good, HSG B
22,171	53	52	Weighted Average, UI Adjusted
20,837			93.98% Pervious Area
1,334			6.02% Impervious Area
872			65.37% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	80	0.0875	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
1.1	80	0.0625	1.25		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	160	Total			

Subcatchment 2.4S: (new Subcat)

Hydrograph



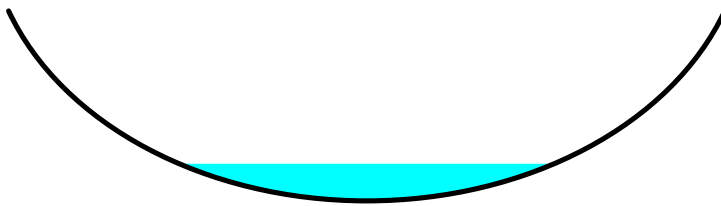
Summary for Reach 1R: (new Reach)

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 0.62" for 10-yr storm event
 Inflow = 0.19 cfs @ 13.14 hrs, Volume= 0.049 af
 Outflow = 0.19 cfs @ 13.15 hrs, Volume= 0.048 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.40 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 2.56 fps, Avg. Travel Time= 0.7 min

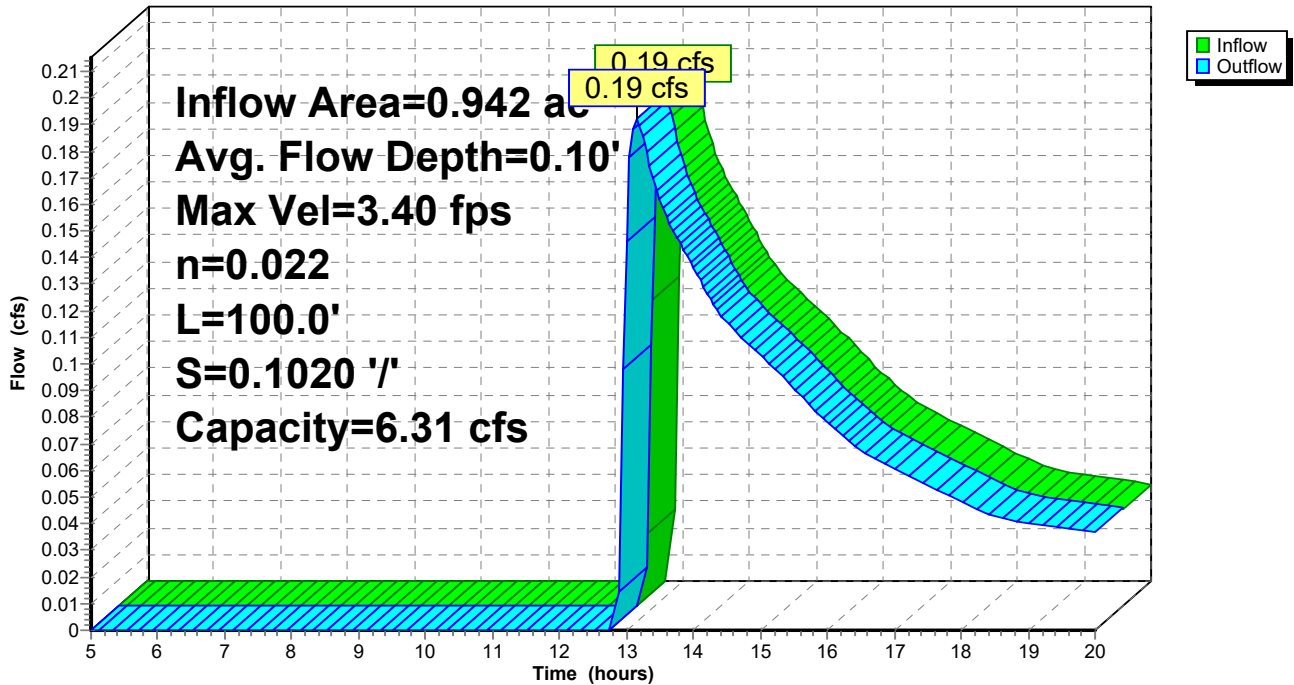
Peak Storage= 6 cf @ 13.15 hrs
 Average Depth at Peak Storage= 0.10'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.31 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 100.0' Slope= 0.1020 '/'
 Inlet Invert= 50.20', Outlet Invert= 40.00'



Reach 1R: (new Reach)

Hydrograph



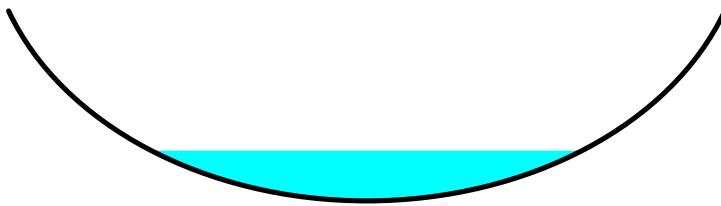
Summary for Reach 2R: POA #2

Inflow Area = 1.051 ac, 6.00% Impervious, Inflow Depth > 0.84" for 10-yr storm event
 Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.073 af
 Outflow = 0.37 cfs @ 12.09 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.09 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.26 fps, Avg. Travel Time= 0.0 min

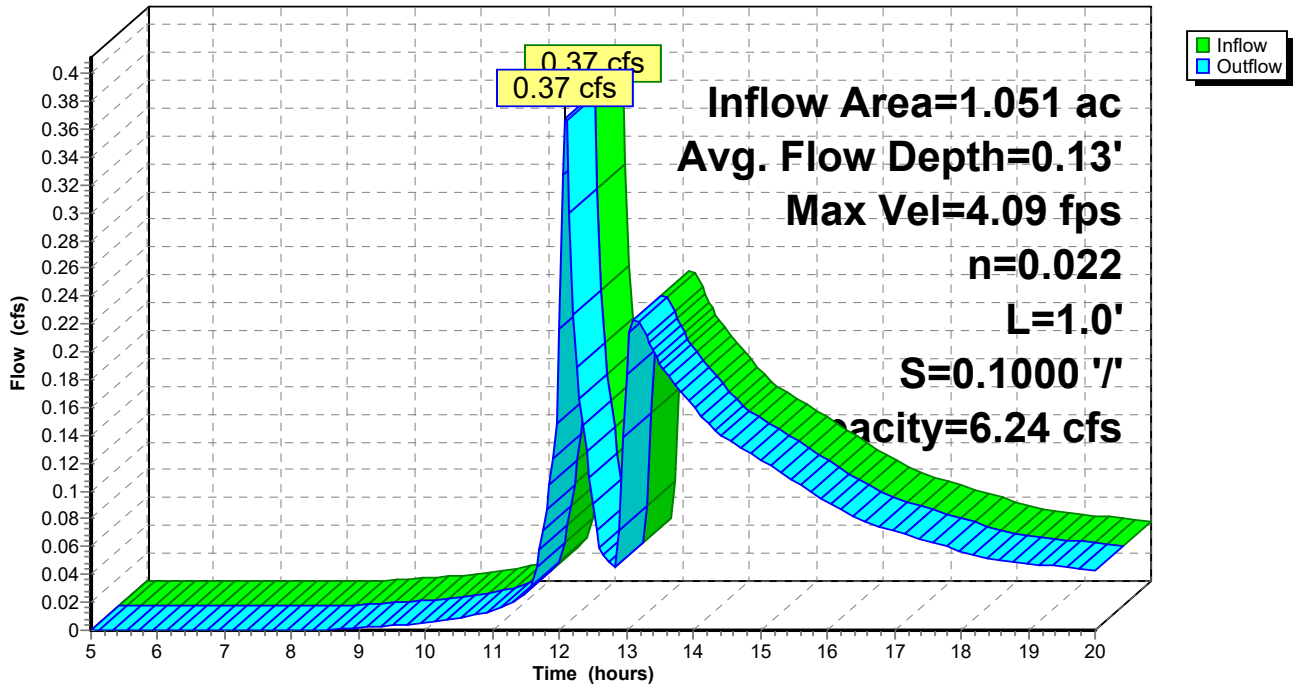
Peak Storage= 0 cf @ 12.09 hrs
 Average Depth at Peak Storage= 0.13'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 2R: POA #2

Hydrograph



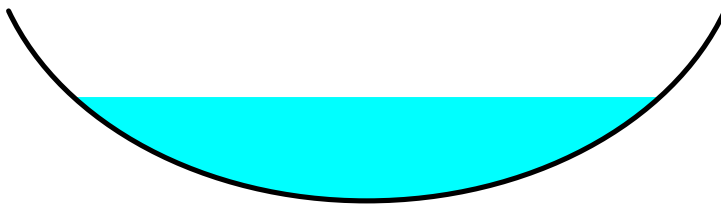
Summary for Reach 3R: Roadside ditch

Inflow Area = 0.185 ac, 39.40% Impervious, Inflow Depth > 2.74" for 10-yr storm event
 Inflow = 0.62 cfs @ 12.09 hrs, Volume= 0.042 af
 Outflow = 0.59 cfs @ 12.13 hrs, Volume= 0.042 af, Atten= 6%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.30 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 0.88 fps, Avg. Travel Time= 3.0 min

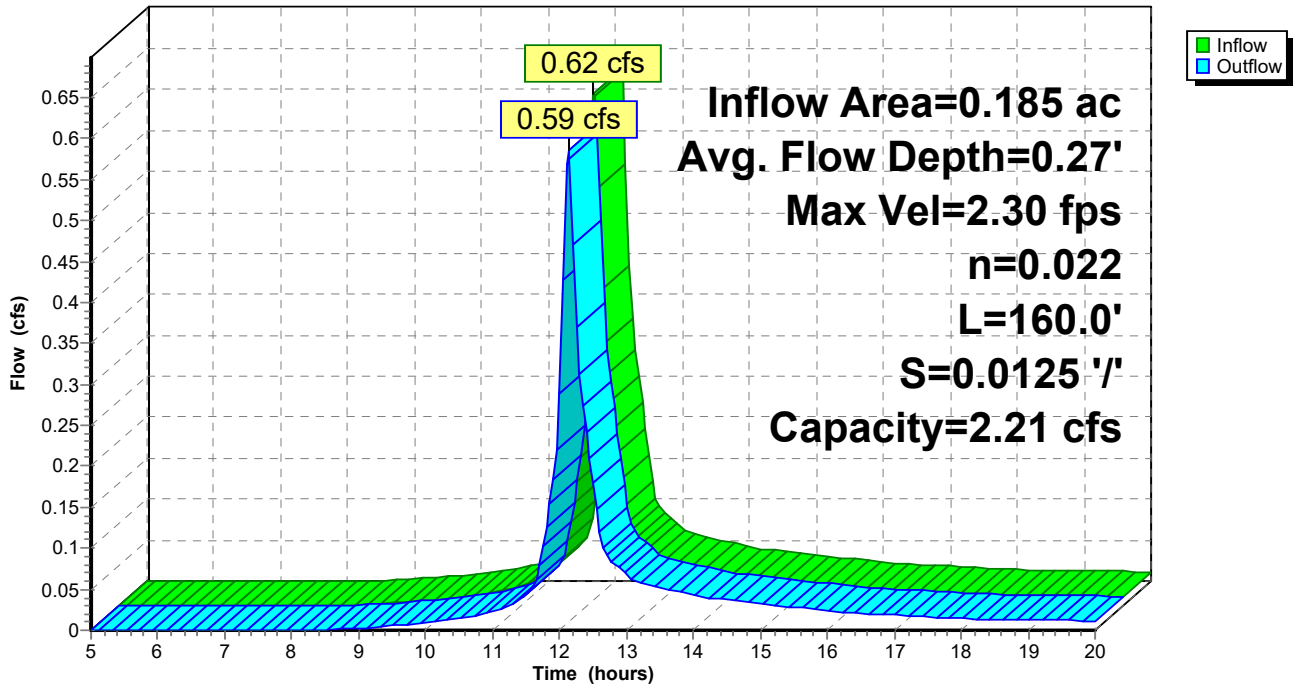
Peak Storage= 43 cf @ 12.11 hrs
 Average Depth at Peak Storage= 0.27'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 2.21 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 160.0' Slope= 0.0125 '/'
 Inlet Invert= 42.00', Outlet Invert= 40.00'



Reach 3R: Roadside ditch

Hydrograph



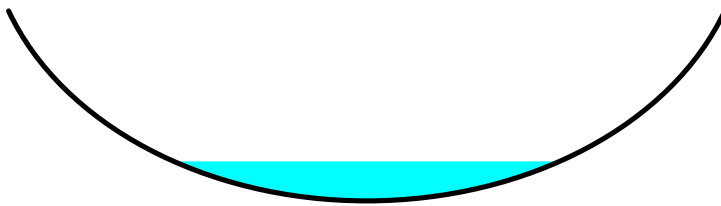
Summary for Reach 4R: Swale

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 0.66" for 10-yr storm event
 Inflow = 0.17 cfs @ 12.67 hrs, Volume= 0.024 af
 Outflow = 0.17 cfs @ 12.68 hrs, Volume= 0.024 af, Atten= 3%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.77 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 1.64 fps, Avg. Travel Time= 0.9 min

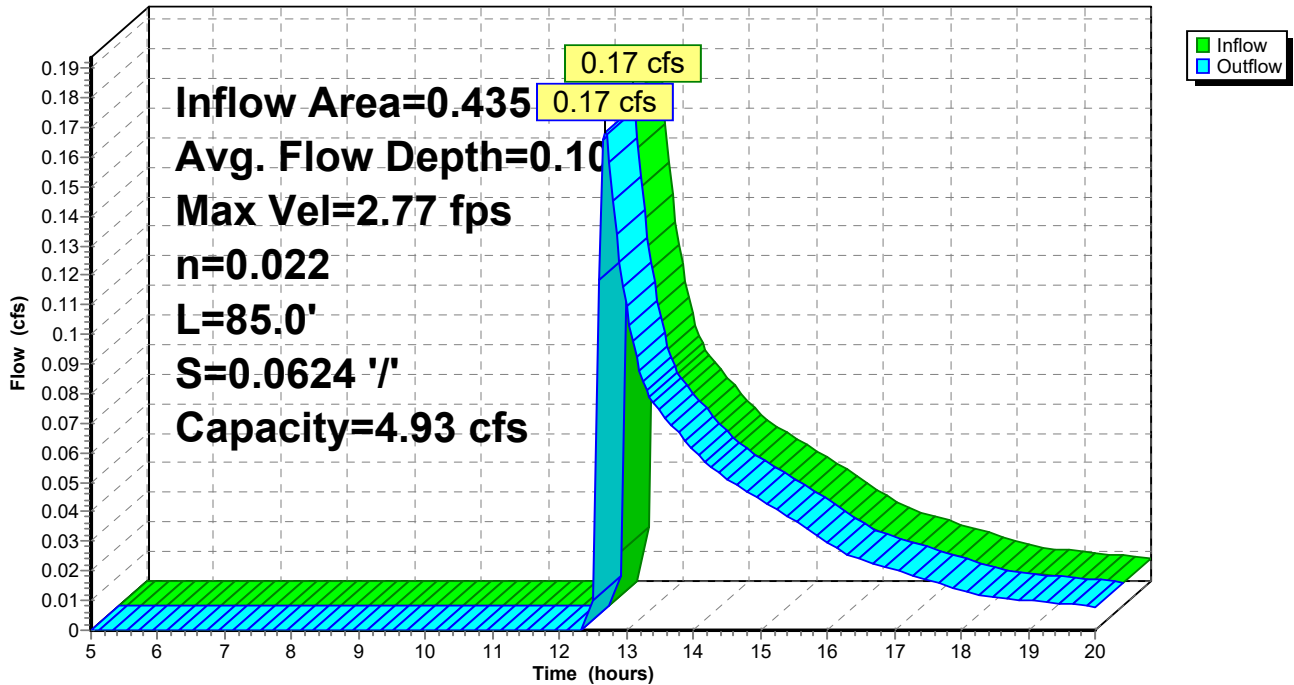
Peak Storage= 5 cf @ 12.67 hrs
 Average Depth at Peak Storage= 0.10'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 4.93 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 85.0' Slope= 0.0624 '/'
 Inlet Invert= 47.30', Outlet Invert= 42.00'



Reach 4R: Swale

Hydrograph



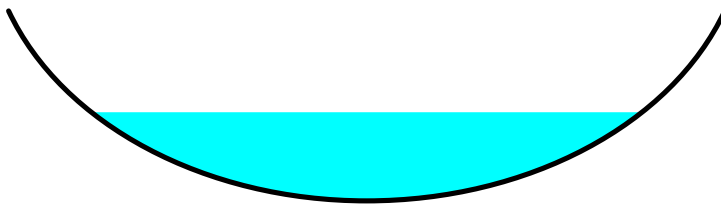
Summary for Reach 5R: POA #1

Inflow Area = 1.212 ac, 16.91% Impervious, Inflow Depth > 1.16" for 10-yr storm event
 Inflow = 1.24 cfs @ 12.15 hrs, Volume= 0.117 af
 Outflow = 1.24 cfs @ 12.15 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.88 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.49 fps, Avg. Travel Time= 0.0 min

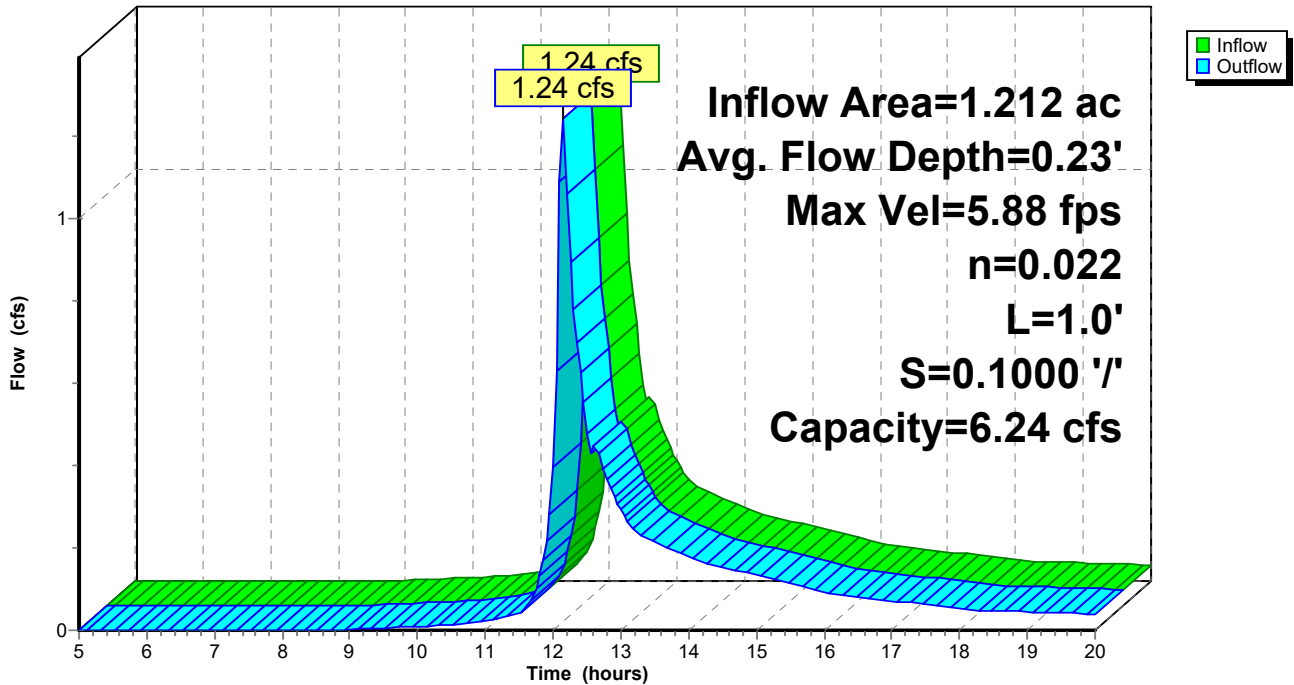
Peak Storage= 0 cf @ 12.15 hrs
 Average Depth at Peak Storage= 0.23'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 5R: POA #1

Hydrograph



Summary for Pond 1P: G.U.S.F. #1

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 1.15" for 10-yr storm event
 Inflow = 0.85 cfs @ 12.29 hrs, Volume= 0.091 af
 Outflow = 0.19 cfs @ 13.14 hrs, Volume= 0.050 af, Atten= 77%, Lag= 50.5 min
 Discarded = 0.00 cfs @ 13.14 hrs, Volume= 0.001 af
 Primary = 0.19 cfs @ 13.14 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.27' @ 13.14 hrs Surf.Area= 1,324 sf Storage= 1,854 cf

Plug-Flow detention time= 177.1 min calculated for 0.050 af (55% of inflow)
 Center-of-Mass det. time= 86.2 min (928.5 - 842.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	46.17'	2,152 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.17	615	0.0	0	0
47.17	615	40.0	246	246
48.67	615	20.0	185	431
49.00	615	100.0	203	633
50.00	1,115	100.0	865	1,498
50.50	1,500	100.0	654	2,152

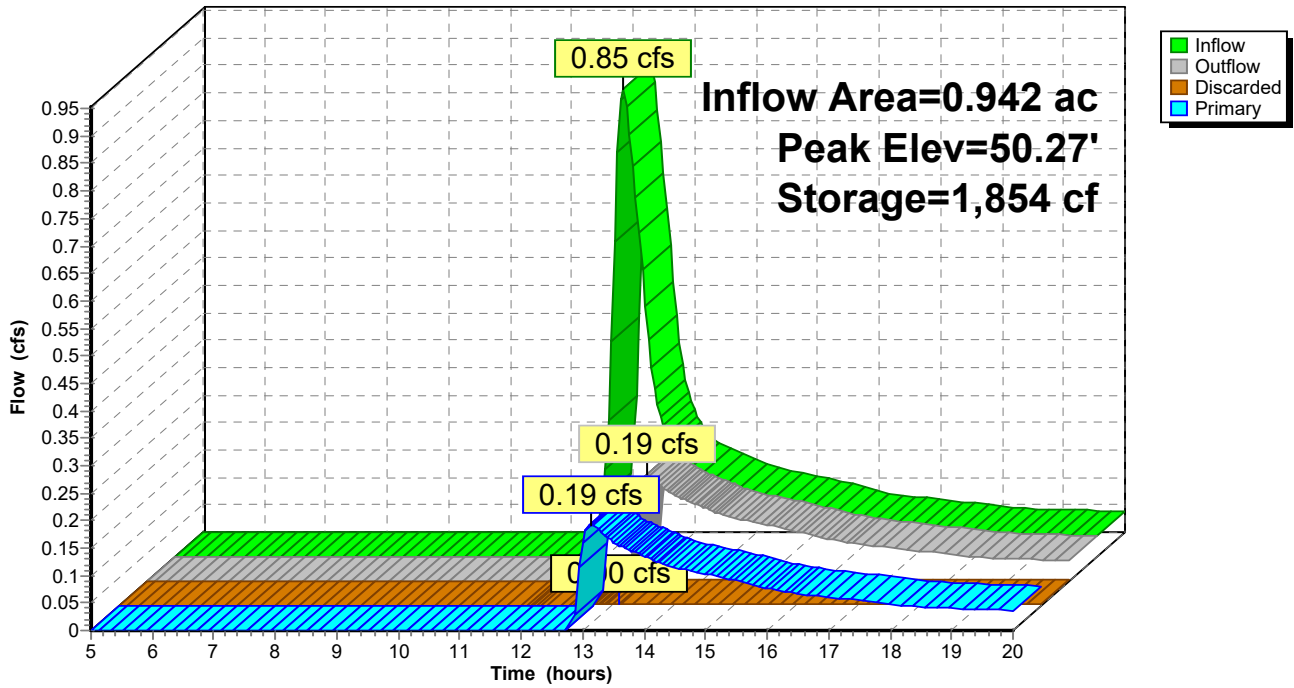
Device	Routing	Invert	Outlet Devices
#1	Discarded	46.17'	0.060 in/hr Exfiltration over Surface area
#2	Primary	50.20'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 13.14 hrs HW=50.27' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.19 cfs @ 13.14 hrs HW=50.27' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.19 cfs @ 0.65 fps)

Pond 1P: G.U.S.F. #1

Hydrograph



Summary for Pond 3P: G.U.S.F. #2

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 1.51" for 10-yr storm event
 Inflow = 0.64 cfs @ 12.18 hrs, Volume= 0.055 af
 Outflow = 0.19 cfs @ 12.67 hrs, Volume= 0.032 af, Atten= 71%, Lag= 29.1 min
 Discarded = 0.01 cfs @ 12.67 hrs, Volume= 0.008 af
 Primary = 0.17 cfs @ 12.67 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.37' @ 12.67 hrs Surf.Area= 920 sf Storage= 1,027 cf

Plug-Flow detention time= 153.0 min calculated for 0.032 af (59% of inflow)
 Center-of-Mass det. time= 69.8 min (896.5 - 826.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	44.17'	1,138 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.17	500	0.0	0	0
44.67	500	40.0	100	100
46.17	500	20.0	150	250
46.50	500	100.0	165	415
47.00	697	100.0	299	714
47.50	1,000	100.0	424	1,138

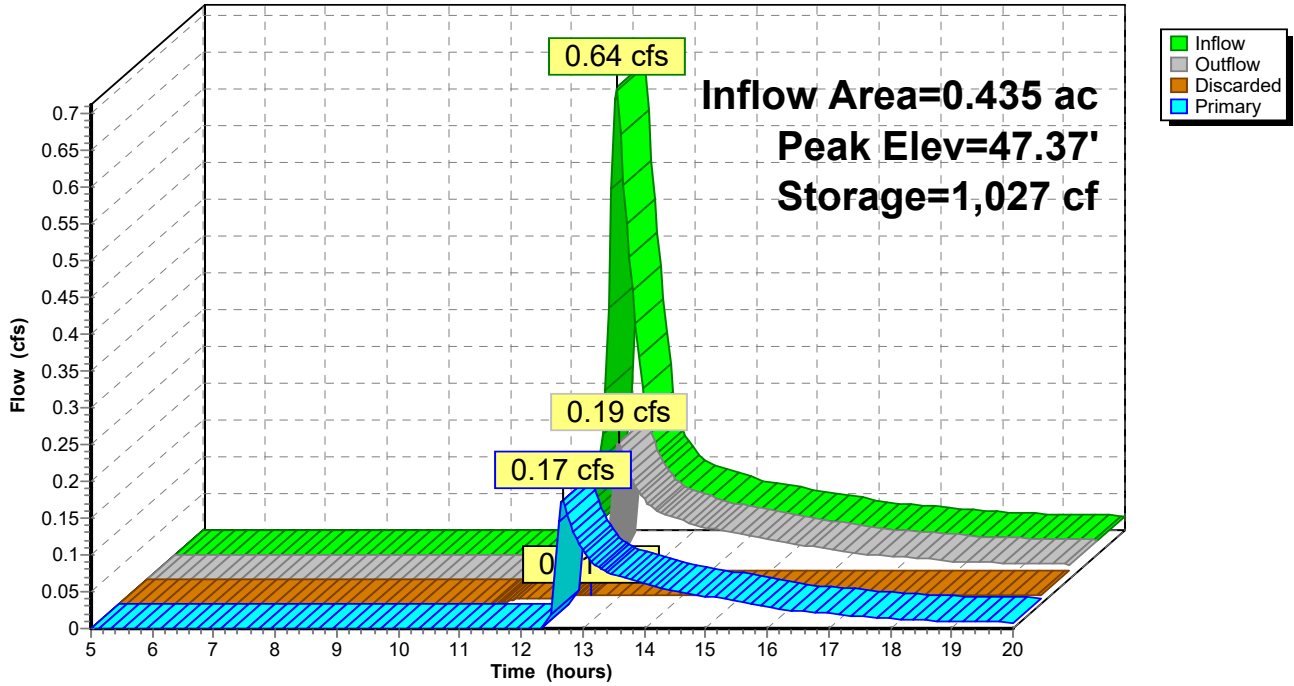
Device	Routing	Invert	Outlet Devices
#1	Discarded	44.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.30'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.01 cfs @ 12.67 hrs HW=47.37' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.17 cfs @ 12.67 hrs HW=47.37' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.17 cfs @ 0.63 fps)

Pond 3P: G.U.S.F. #2

Hydrograph



Summary for Pond 4P: G.U.S.F. #3

Inflow Area = 0.084 ac, 32.62% Impervious, Inflow Depth > 2.47" for 10-yr storm event
 Inflow = 0.26 cfs @ 12.09 hrs, Volume= 0.017 af
 Outflow = 0.25 cfs @ 12.15 hrs, Volume= 0.013 af, Atten= 4%, Lag= 3.1 min
 Discarded = 0.00 cfs @ 12.15 hrs, Volume= 0.003 af
 Primary = 0.24 cfs @ 12.15 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.98' @ 12.15 hrs Surf.Area= 296 sf Storage= 191 cf

Plug-Flow detention time= 88.9 min calculated for 0.013 af (77% of inflow)
 Center-of-Mass det. time= 30.1 min (829.2 - 799.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.17'	372 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.17	110	0.0	0	0
45.67	110	40.0	22	22
47.17	110	20.0	33	55
47.50	110	100.0	36	91
48.00	302	100.0	103	194
48.50	410	100.0	178	372

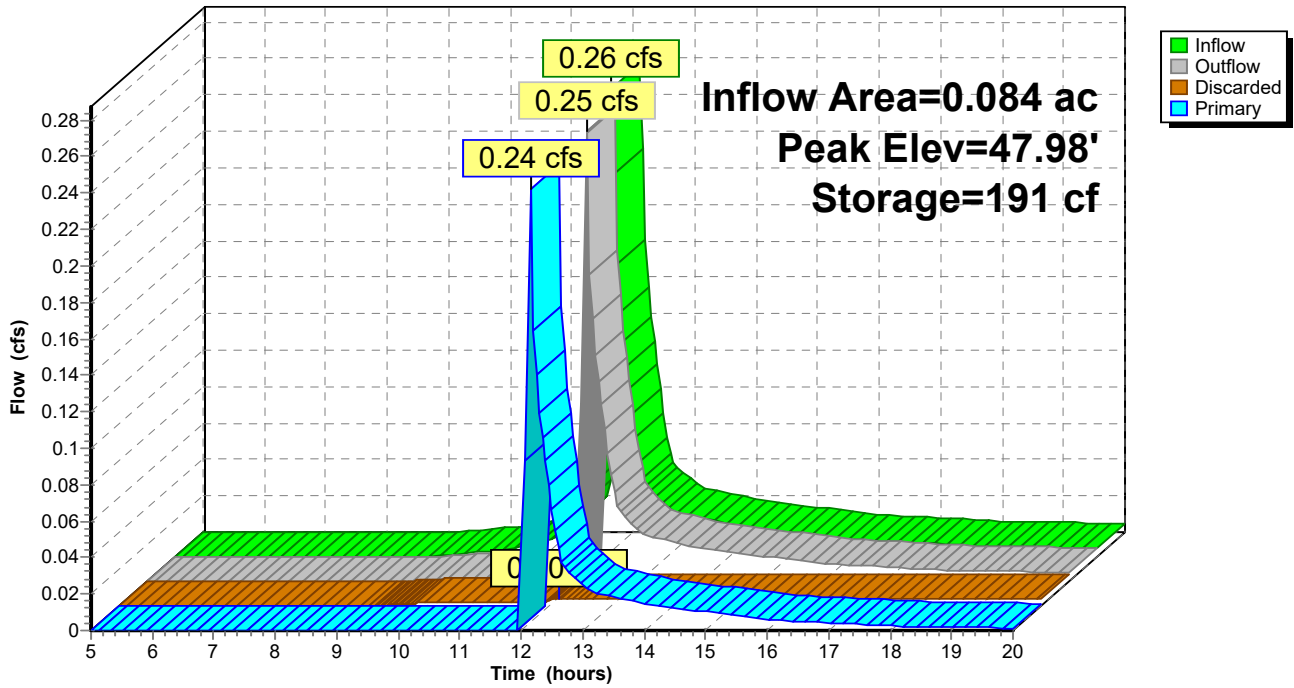
Device	Routing	Invert	Outlet Devices
#1	Discarded	45.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.90'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.15 hrs HW=47.98' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.23 cfs @ 12.15 hrs HW=47.98' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.23 cfs @ 0.70 fps)

Pond 4P: G.U.S.F. #3

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1.1S: (new Subcat) Runoff Area=4,731 sf 40.33% Impervious Runoff Depth>3.96"
 Flow Length=130' Slope=0.0750 '/ Tc=6.0 min CN=75 Runoff=0.53 cfs 0.036 af

Subcatchment 1.2S: (new Subcat) Runoff Area=41,050 sf 2.04% Impervious Runoff Depth>1.98"
 Flow Length=230' Tc=18.1 min CN=55 Runoff=1.58 cfs 0.155 af

Subcatchment 2.1S: (new Subcat) Runoff Area=8,038 sf 39.40% Impervious Runoff Depth>3.96"
 Flow Length=85' Tc=6.0 min CN=75 Runoff=0.90 cfs 0.061 af

Subcatchment 2.2S: (new Subcat) Runoff Area=18,932 sf 17.08% Impervious Runoff Depth>2.45"
 Flow Length=190' Tc=11.9 min UI Adjusted CN=60 Runoff=1.08 cfs 0.089 af

Subcatchment 2.3S: (new Subcat) Runoff Area=3,654 sf 32.62% Impervious Runoff Depth>3.65"
 Flow Length=65' Tc=6.0 min CN=72 Runoff=0.38 cfs 0.026 af

Subcatchment 2.4S: (new Subcat) Runoff Area=22,171 sf 6.02% Impervious Runoff Depth>1.72"
 Flow Length=160' Tc=10.4 min UI Adjusted CN=52 Runoff=0.88 cfs 0.073 af

Reach 1R: (new Reach) Avg. Flow Depth=0.22' Max Vel=5.72 fps Inflow=1.12 cfs 0.113 af
 n=0.022 L=100.0' S=0.1020 '/ Capacity=6.31 cfs Outflow=1.11 cfs 0.113 af

Reach 2R: POA #2 Avg. Flow Depth=0.23' Max Vel=5.83 fps Inflow=1.21 cfs 0.149 af
 n=0.022 L=1.0' S=0.1000 '/ Capacity=6.24 cfs Outflow=1.21 cfs 0.149 af

Reach 3R: Roadside ditch Avg. Flow Depth=0.32' Max Vel=2.55 fps Inflow=0.90 cfs 0.061 af
 n=0.022 L=160.0' S=0.0125 '/ Capacity=2.21 cfs Outflow=0.85 cfs 0.061 af

Reach 4R: Swale Avg. Flow Depth=0.21' Max Vel=4.33 fps Inflow=0.80 cfs 0.057 af
 n=0.022 L=85.0' S=0.0624 '/ Capacity=4.93 cfs Outflow=0.75 cfs 0.057 af

Reach 5R: POA #1 Avg. Flow Depth=0.29' Max Vel=6.78 fps Inflow=2.03 cfs 0.210 af
 n=0.022 L=1.0' S=0.1000 '/ Capacity=6.24 cfs Outflow=2.03 cfs 0.210 af

Pond 1P: G.U.S.F. #1 Peak Elev=50.44' Storage=2,068 cf Inflow=1.58 cfs 0.155 af
 Discarded=0.00 cfs 0.001 af Primary=1.12 cfs 0.113 af Outflow=1.12 cfs 0.114 af

Pond 3P: G.U.S.F. #2 Peak Elev=47.49' Storage=1,129 cf Inflow=1.08 cfs 0.089 af
 Discarded=0.01 cfs 0.009 af Primary=0.80 cfs 0.057 af Outflow=0.81 cfs 0.066 af

Pond 4P: G.U.S.F. #3 Peak Elev=48.01' Storage=198 cf Inflow=0.38 cfs 0.026 af
 Discarded=0.00 cfs 0.003 af Primary=0.36 cfs 0.019 af Outflow=0.37 cfs 0.022 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.439 af Average Runoff Depth = 2.33"
88.16% Pervious = 1.995 ac 11.84% Impervious = 0.268 ac

Summary for Subcatchment 1.1S: (new Subcat)

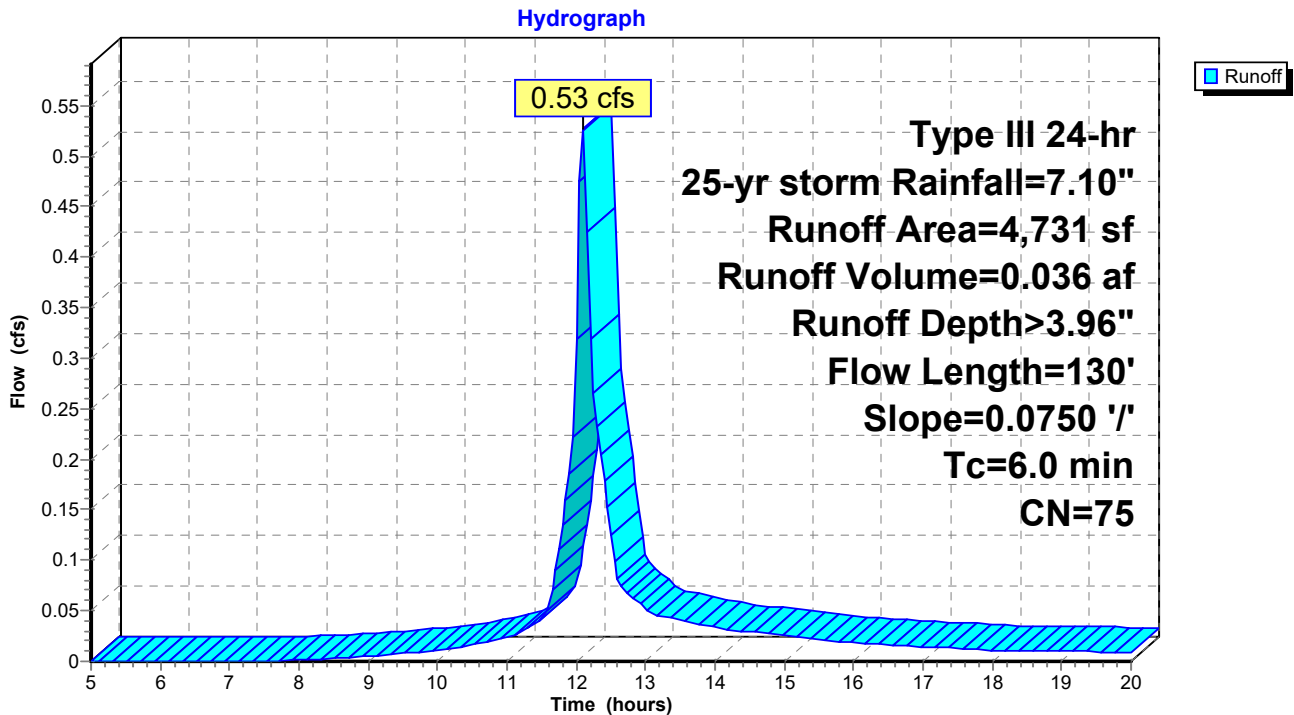
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
1,908	98	Paved parking, HSG B
2,223	61	>75% Grass cover, Good, HSG B
600	55	Woods, Good, HSG B
4,731	75	Weighted Average
2,823		59.67% Pervious Area
1,908		40.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	130	0.0750	4.11		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.5	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1.1S: (new Subcat)



Summary for Subcatchment 1.2S: (new Subcat)

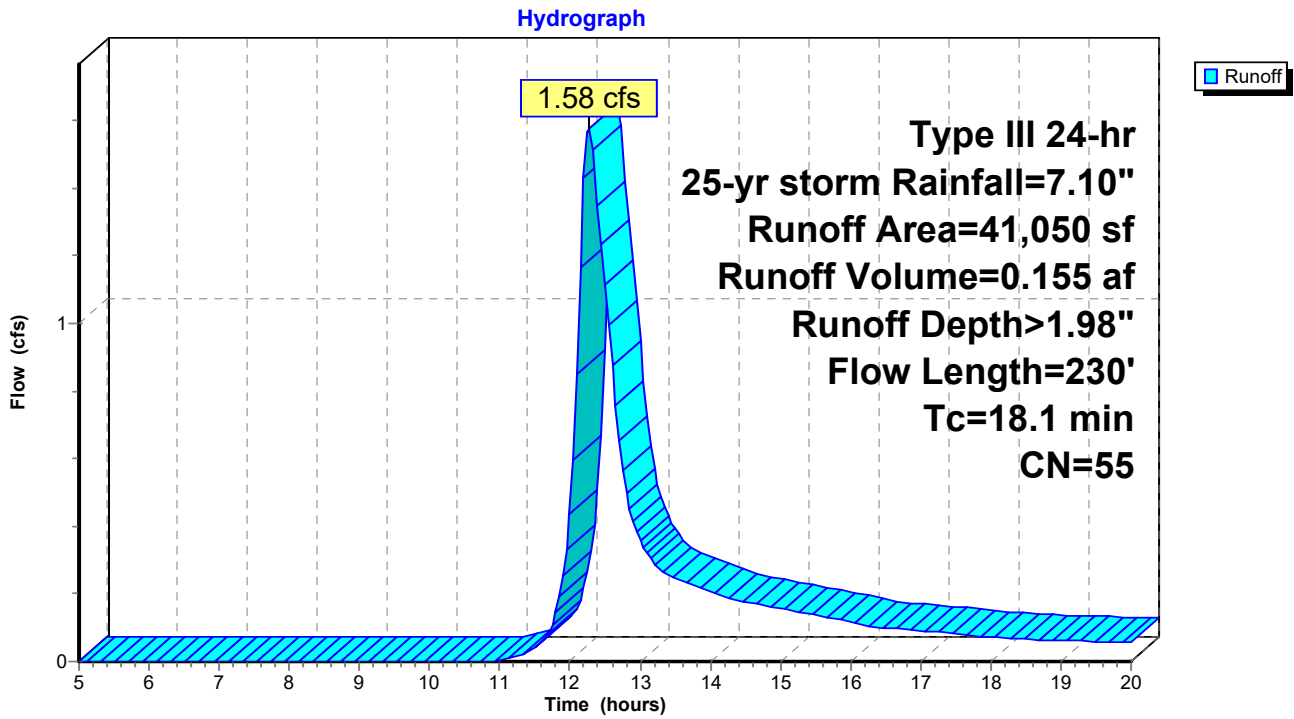
Runoff = 1.58 cfs @ 12.27 hrs, Volume= 0.155 af, Depth> 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
138	98	Roofs, HSG B
214	98	Unconnected roofs, HSG B
486	98	Paved parking, HSG B
3,131	61	>75% Grass cover, Good, HSG B
4,903	48	Brush, Good, HSG B
32,178	55	Woods, Good, HSG B
41,050	55	Weighted Average
40,212		97.96% Pervious Area
838		2.04% Impervious Area
214		25.54% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
2.7	100	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	30	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
18.1	230	Total			

Subcatchment 1.2S: (new Subcat)



Summary for Subcatchment 2.1S: (new Subcat)

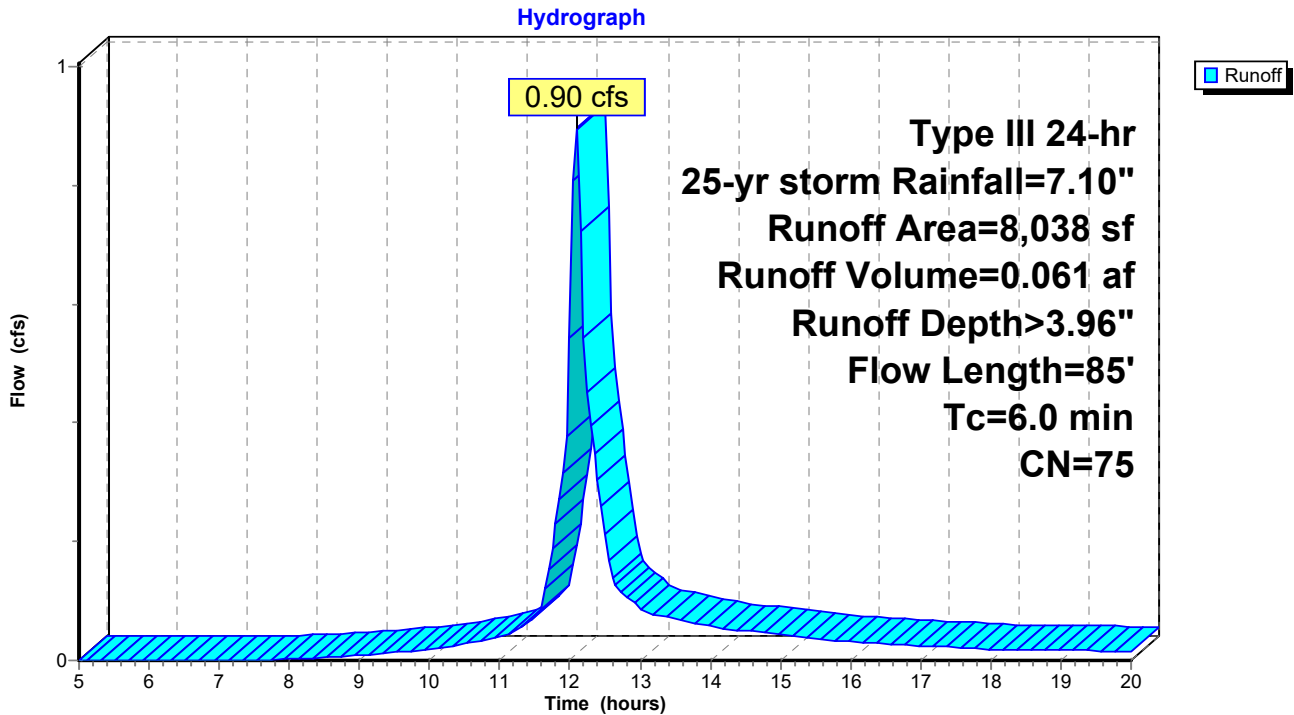
Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
3,167	98	Paved parking, HSG B
3,639	61	>75% Grass cover, Good, HSG B
1,232	55	Woods, Good, HSG B
8,038	75	Weighted Average
4,871		60.60% Pervious Area
3,167		39.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.2000	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.2	35	0.0600	3.67		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.8	85	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.1S: (new Subcat)



Summary for Subcatchment 2.2S: (new Subcat)

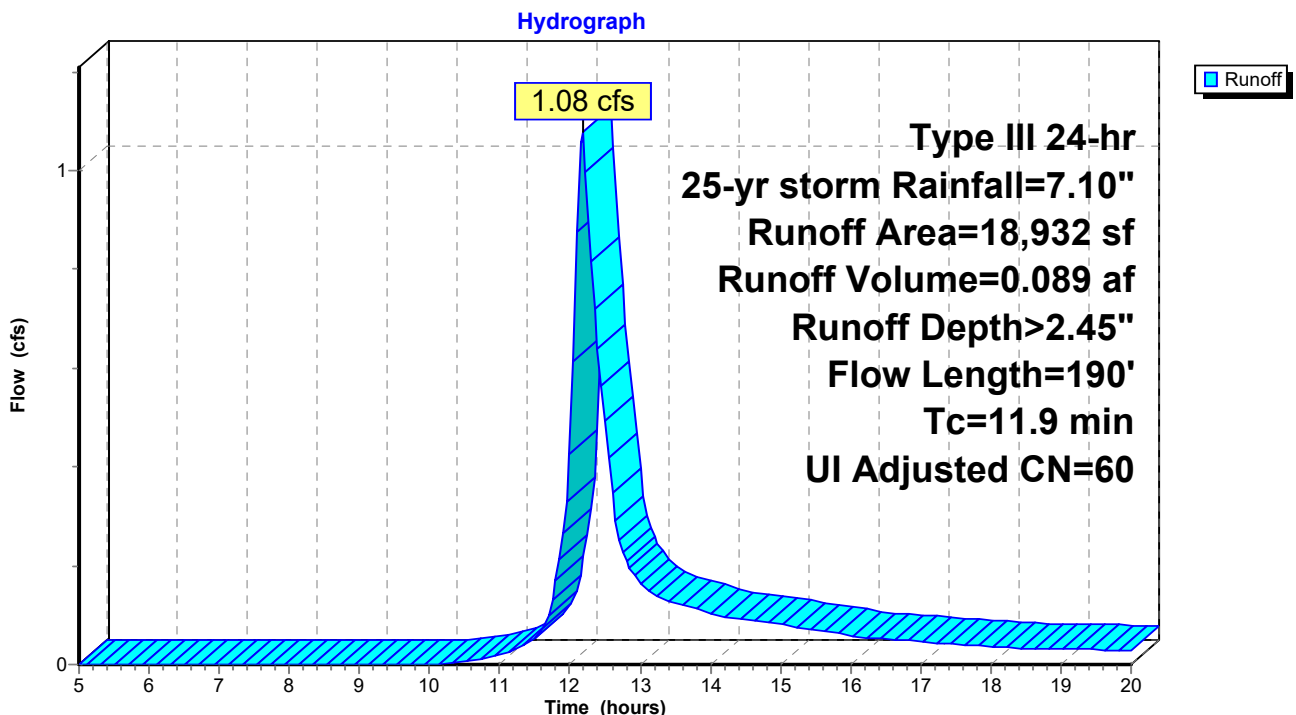
Runoff = 1.08 cfs @ 12.17 hrs, Volume= 0.089 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Adj	Description
626	98		Roofs, HSG B
1,794	98		Unconnected roofs, HSG B
814	98		Paved parking, HSG B
5,900	61		>75% Grass cover, Good, HSG B
4,945	48		Brush, Good, HSG B
4,853	55		Woods, Good, HSG B
18,932	62	60	Weighted Average, UI Adjusted
15,698			82.92% Pervious Area
3,234			17.08% Impervious Area
1,794			55.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0800	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.4	90	0.0500	3.35		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	190	Total			

Subcatchment 2.2S: (new Subcat)



Summary for Subcatchment 2.3S: (new Subcat)

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 3.65"

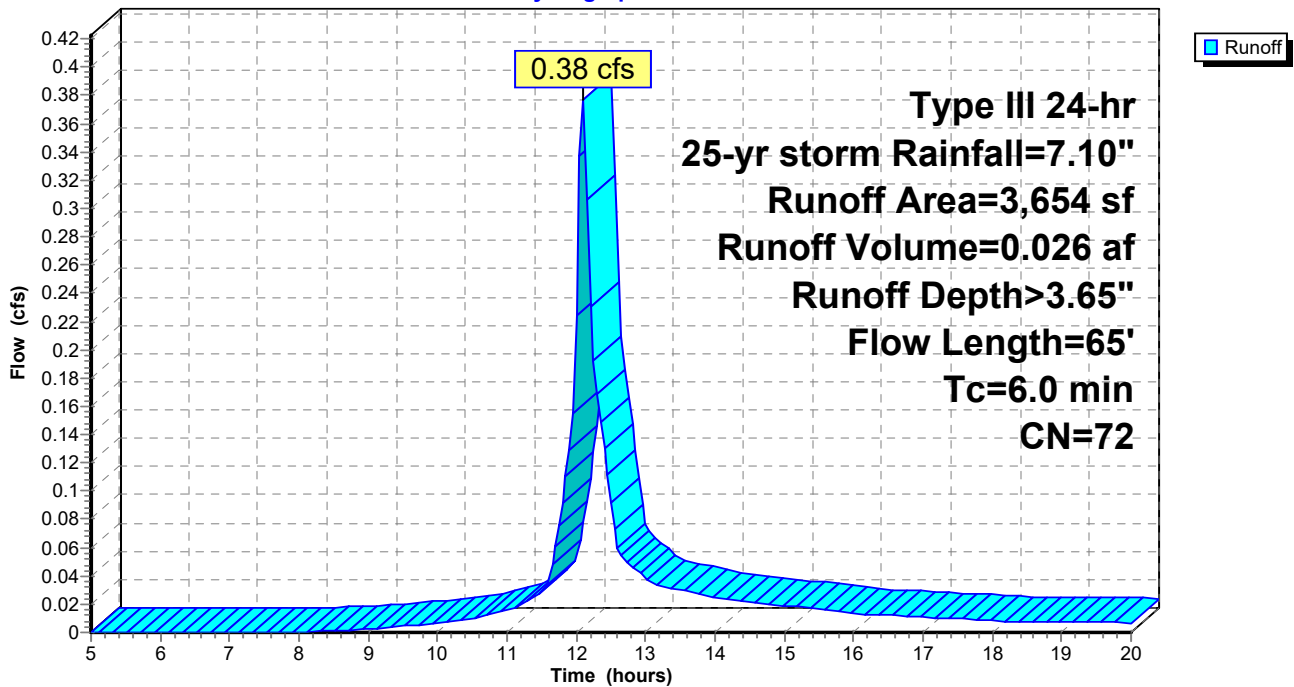
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Description
1,192	98	Paved parking, HSG B
1,622	61	>75% Grass cover, Good, HSG B
840	55	Woods, Good, HSG B
3,654	72	Weighted Average
2,462		67.38% Pervious Area
1,192		32.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	40	0.1500	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.1	25	0.1800	6.36		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.4	65	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.3S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.4S: (new Subcat)

Runoff = 0.88 cfs @ 12.16 hrs, Volume= 0.073 af, Depth> 1.72"

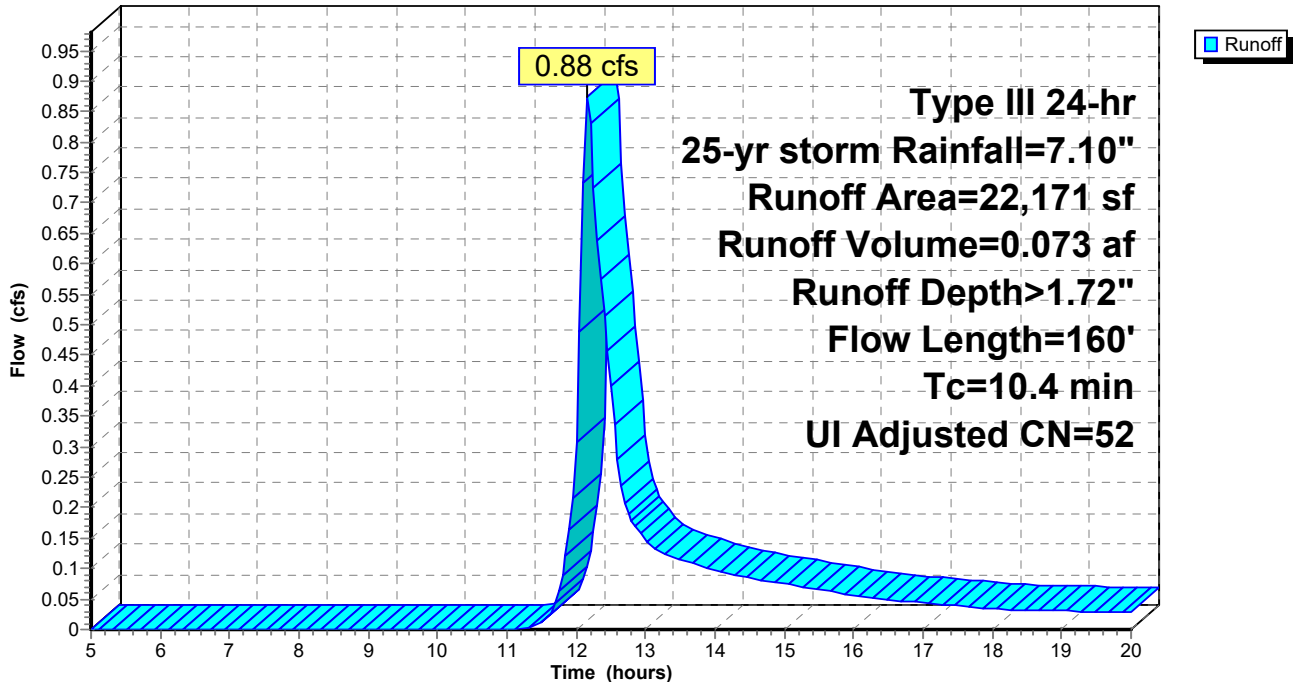
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr storm Rainfall=7.10"

Area (sf)	CN	Adj	Description
317	98		Roofs, HSG B
872	98		Unconnected roofs, HSG B
145	98		Paved parking, HSG B
1,928	61		>75% Grass cover, Good, HSG B
17,752	48		Brush, Good, HSG B
1,157	55		Woods, Good, HSG B
22,171	53	52	Weighted Average, UI Adjusted
20,837			93.98% Pervious Area
1,334			6.02% Impervious Area
872			65.37% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	80	0.0875	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
1.1	80	0.0625	1.25		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	160	Total			

Subcatchment 2.4S: (new Subcat)

Hydrograph



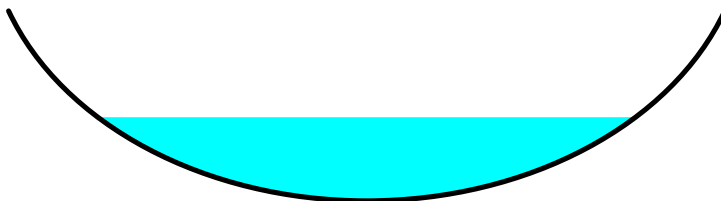
Summary for Reach 1R: (new Reach)

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 1.44" for 25-yr storm event
 Inflow = 1.12 cfs @ 12.51 hrs, Volume= 0.113 af
 Outflow = 1.11 cfs @ 12.53 hrs, Volume= 0.113 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.72 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 3.07 fps, Avg. Travel Time= 0.5 min

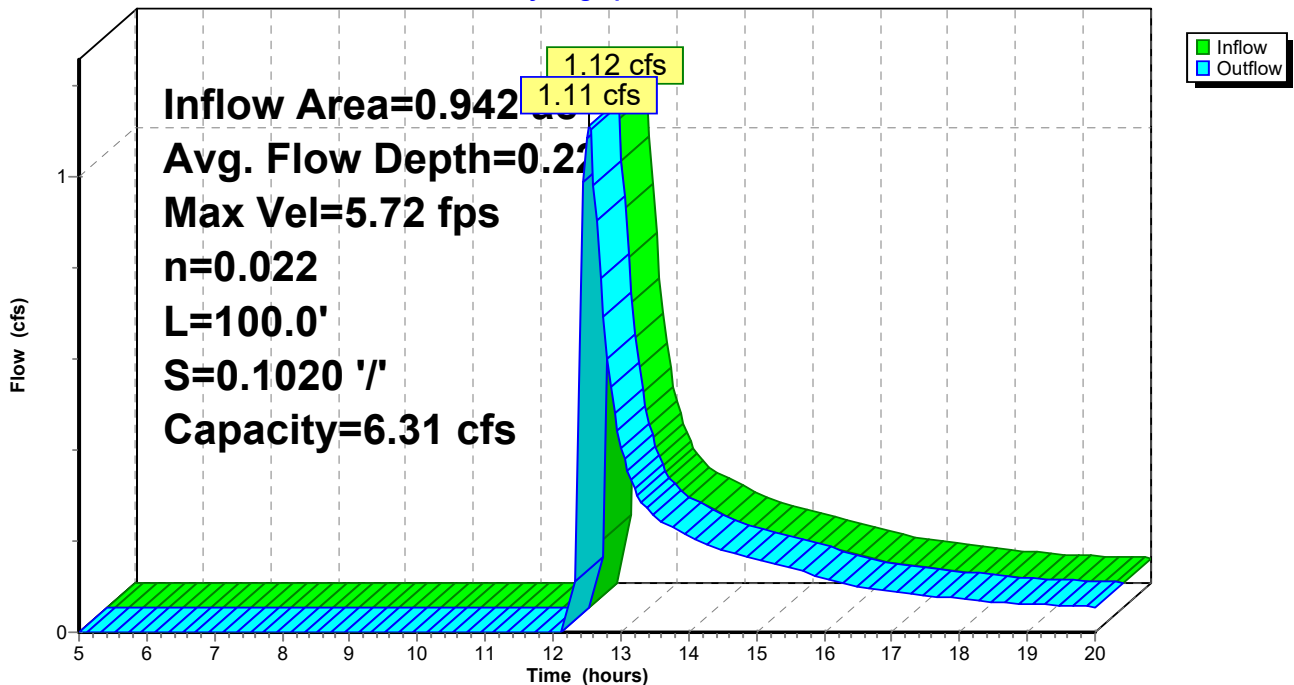
Peak Storage= 19 cf @ 12.53 hrs
 Average Depth at Peak Storage= 0.22'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.31 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 100.0' Slope= 0.1020 '/'
 Inlet Invert= 50.20', Outlet Invert= 40.00'



Reach 1R: (new Reach)

Hydrograph



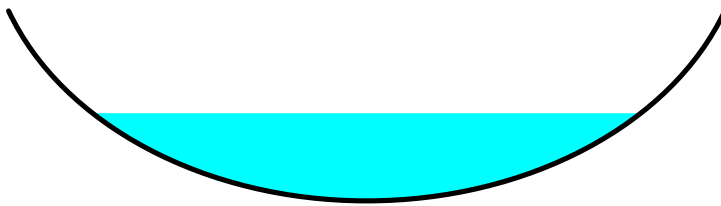
Summary for Reach 2R: POA #2

Inflow Area = 1.051 ac, 6.00% Impervious, Inflow Depth > 1.70" for 25-yr storm event
 Inflow = 1.21 cfs @ 12.52 hrs, Volume= 0.149 af
 Outflow = 1.21 cfs @ 12.52 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.83 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.56 fps, Avg. Travel Time= 0.0 min

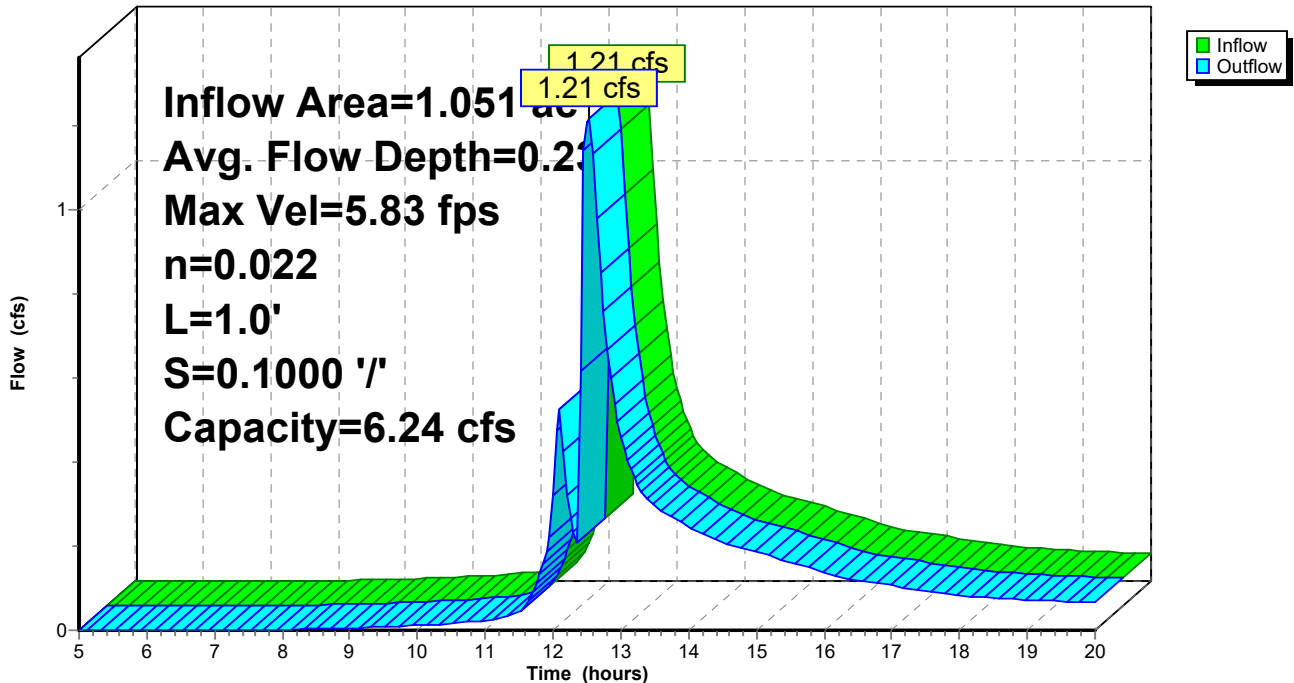
Peak Storage= 0 cf @ 12.52 hrs
 Average Depth at Peak Storage= 0.23'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 2R: POA #2

Hydrograph



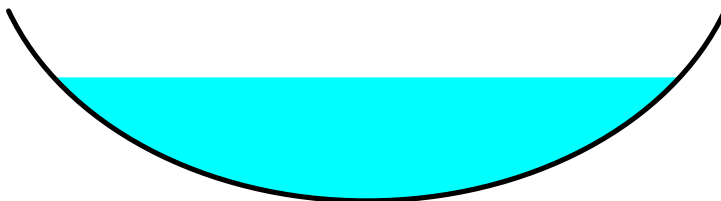
Summary for Reach 3R: Roadside ditch

Inflow Area = 0.185 ac, 39.40% Impervious, Inflow Depth > 3.96" for 25-yr storm event
 Inflow = 0.90 cfs @ 12.09 hrs, Volume= 0.061 af
 Outflow = 0.85 cfs @ 12.12 hrs, Volume= 0.061 af, Atten= 5%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.55 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 0.95 fps, Avg. Travel Time= 2.8 min

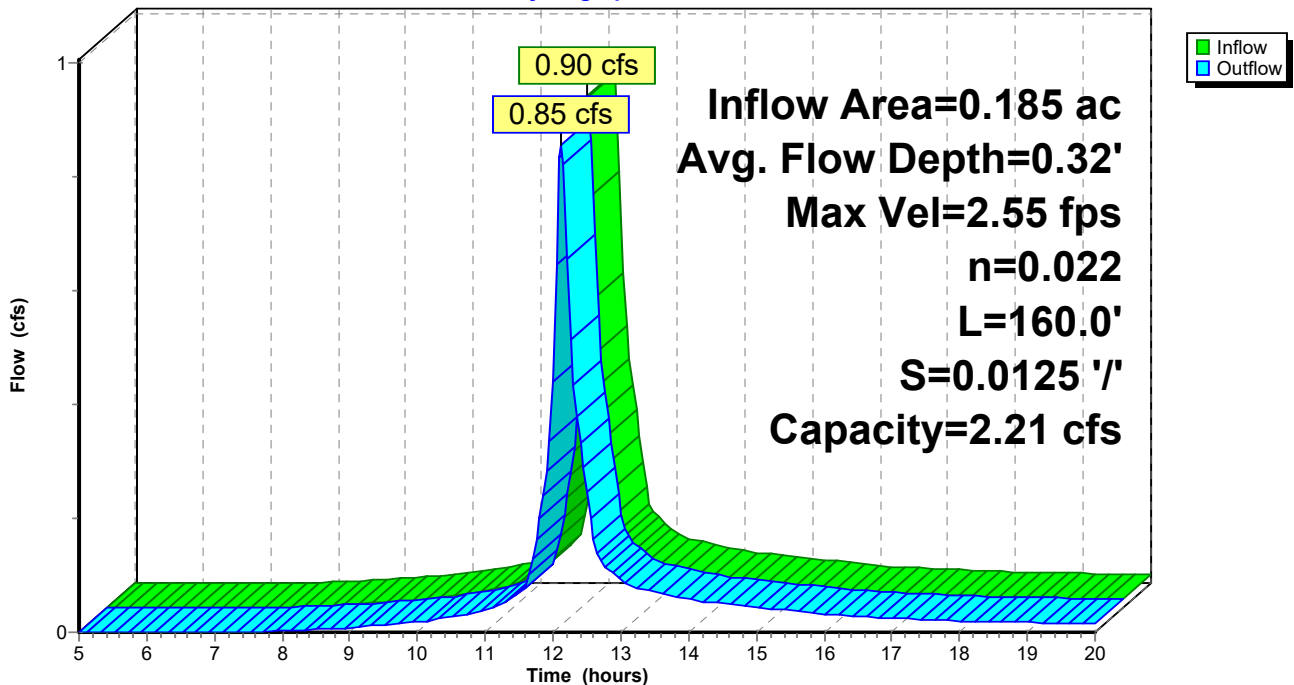
Peak Storage= 56 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.32'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 2.21 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 160.0' Slope= 0.0125 '/'
 Inlet Invert= 42.00', Outlet Invert= 40.00'



Reach 3R: Roadside ditch

Hydrograph



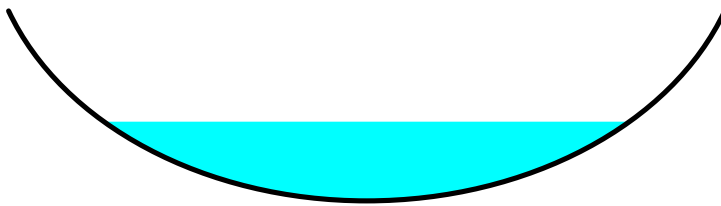
Summary for Reach 4R: Swale

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 1.58" for 25-yr storm event
 Inflow = 0.80 cfs @ 12.32 hrs, Volume= 0.057 af
 Outflow = 0.75 cfs @ 12.34 hrs, Volume= 0.057 af, Atten= 6%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.33 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 2.02 fps, Avg. Travel Time= 0.7 min

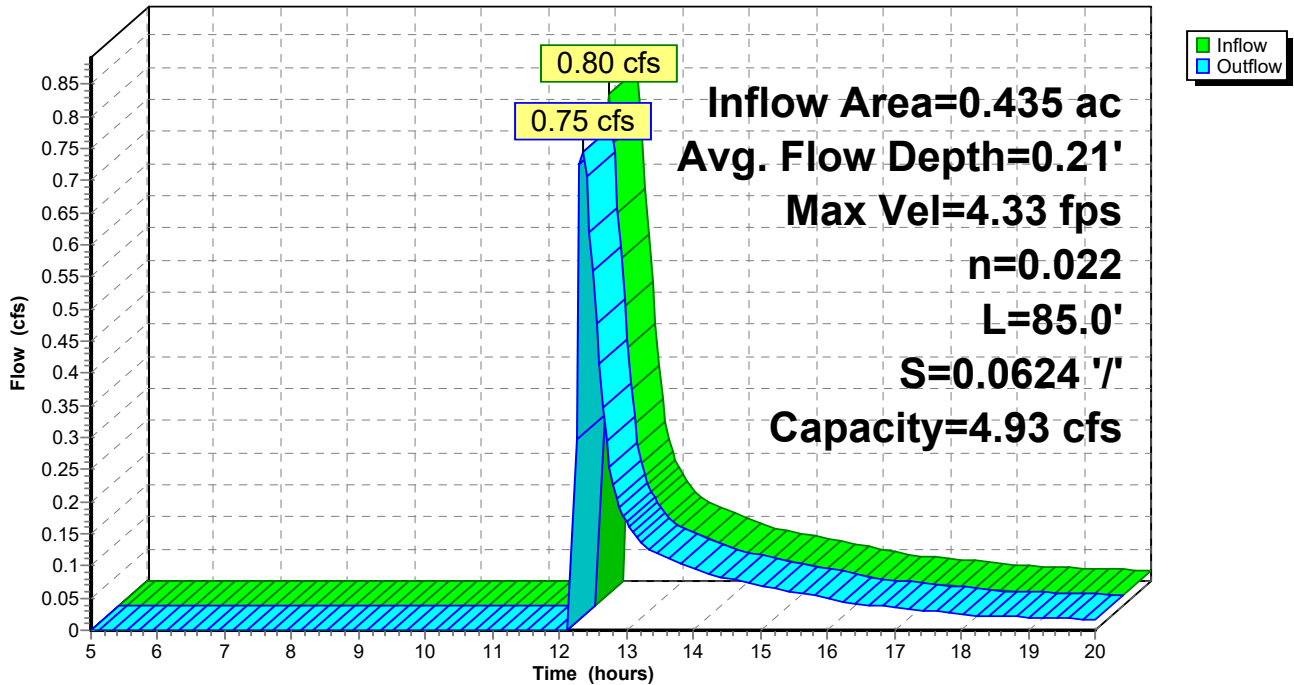
Peak Storage= 16 cf @ 12.32 hrs
 Average Depth at Peak Storage= 0.21'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 4.93 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 85.0' Slope= 0.0624 '/'
 Inlet Invert= 47.30', Outlet Invert= 42.00'



Reach 4R: Swale

Hydrograph



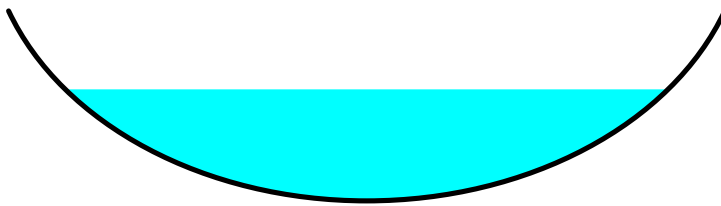
Summary for Reach 5R: POA #1

Inflow Area = 1.212 ac, 16.91% Impervious, Inflow Depth > 2.07" for 25-yr storm event
 Inflow = 2.03 cfs @ 12.14 hrs, Volume= 0.210 af
 Outflow = 2.03 cfs @ 12.14 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 6.78 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.77 fps, Avg. Travel Time= 0.0 min

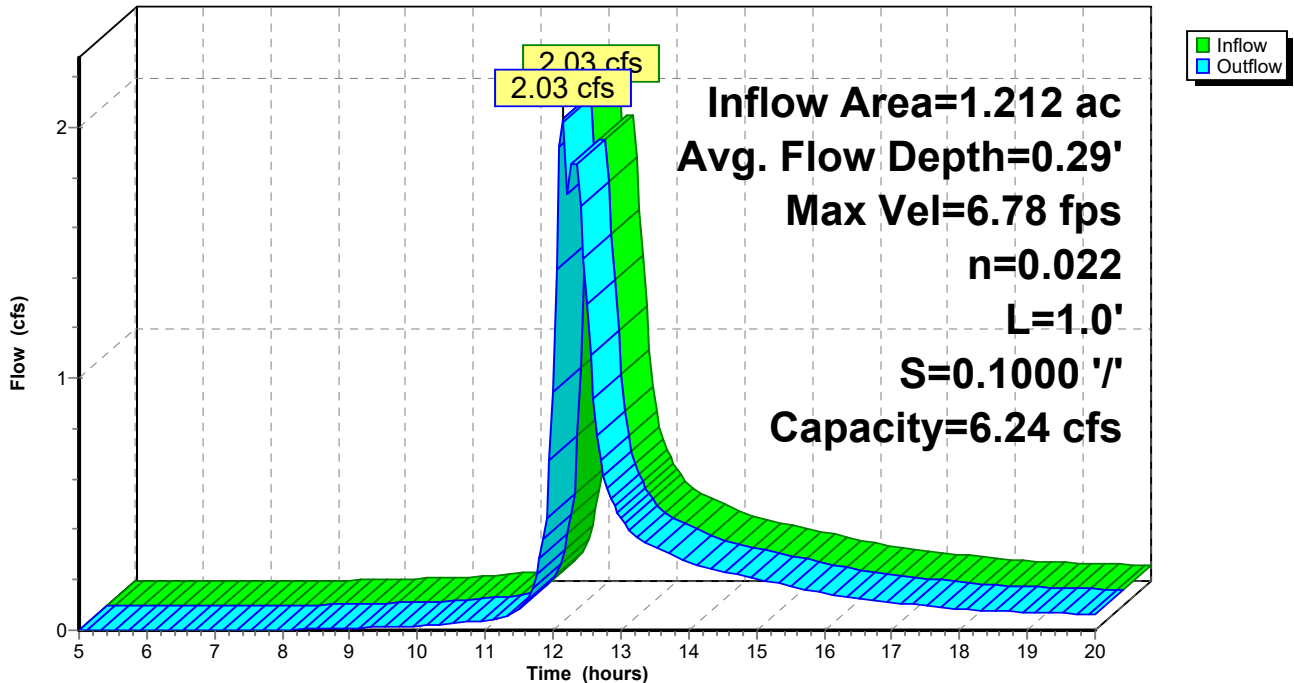
Peak Storage= 0 cf @ 12.14 hrs
 Average Depth at Peak Storage= 0.29'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 5R: POA #1

Hydrograph



Summary for Pond 1P: G.U.S.F. #1

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 1.98" for 25-yr storm event
 Inflow = 1.58 cfs @ 12.27 hrs, Volume= 0.155 af
 Outflow = 1.12 cfs @ 12.51 hrs, Volume= 0.114 af, Atten= 29%, Lag= 14.2 min
 Discarded = 0.00 cfs @ 12.51 hrs, Volume= 0.001 af
 Primary = 1.12 cfs @ 12.51 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.44' @ 12.51 hrs Surf.Area= 1,450 sf Storage= 2,068 cf

Plug-Flow detention time= 104.8 min calculated for 0.114 af (73% of inflow)
 Center-of-Mass det. time= 40.8 min (870.5 - 829.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	46.17'	2,152 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.17	615	0.0	0	0
47.17	615	40.0	246	246
48.67	615	20.0	185	431
49.00	615	100.0	203	633
50.00	1,115	100.0	865	1,498
50.50	1,500	100.0	654	2,152

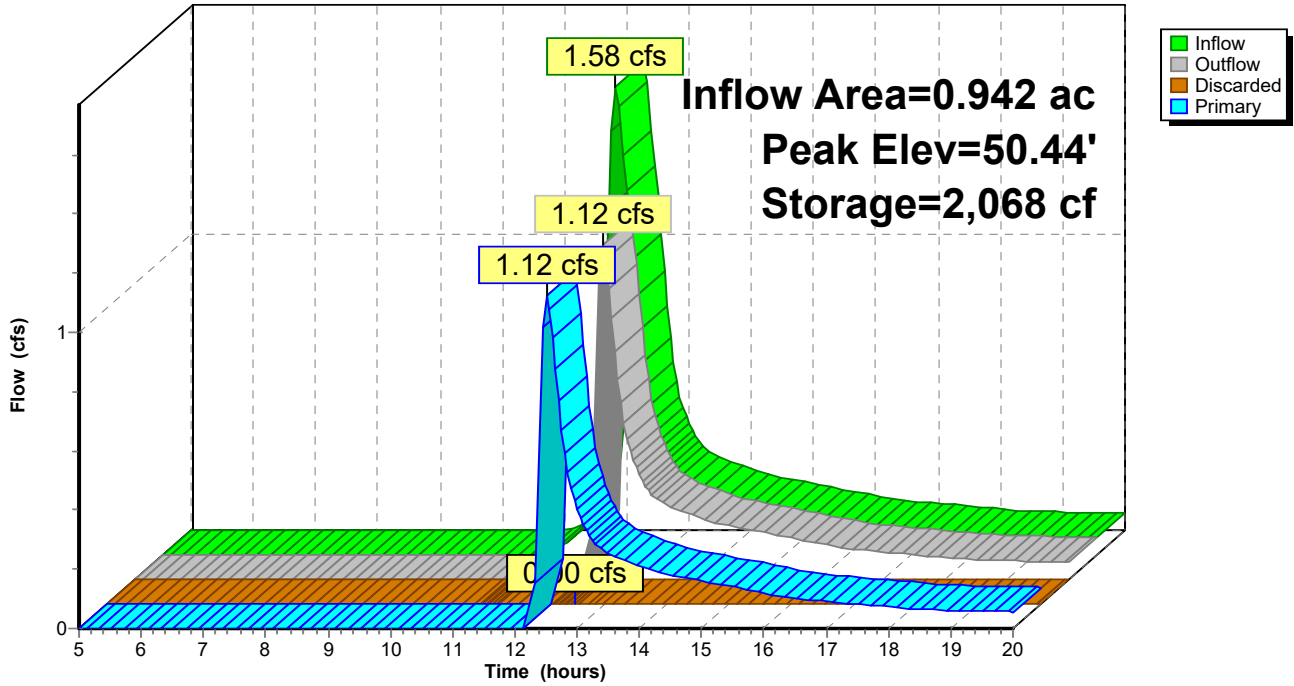
Device	Routing	Invert	Outlet Devices
#1	Discarded	46.17'	0.060 in/hr Exfiltration over Surface area
#2	Primary	50.20'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.51 hrs HW=50.43' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.11 cfs @ 12.51 hrs HW=50.43' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 1.11 cfs @ 1.18 fps)

Pond 1P: G.U.S.F. #1

Hydrograph



Summary for Pond 3P: G.U.S.F. #2

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 2.45" for 25-yr storm event
 Inflow = 1.08 cfs @ 12.17 hrs, Volume= 0.089 af
 Outflow = 0.81 cfs @ 12.32 hrs, Volume= 0.066 af, Atten= 25%, Lag= 9.0 min
 Discarded = 0.01 cfs @ 12.32 hrs, Volume= 0.009 af
 Primary = 0.80 cfs @ 12.32 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.49' @ 12.32 hrs Surf.Area= 993 sf Storage= 1,129 cf

Plug-Flow detention time= 99.2 min calculated for 0.066 af (75% of inflow)
 Center-of-Mass det. time= 36.5 min (852.4 - 815.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	44.17'	1,138 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.17	500	0.0	0	0
44.67	500	40.0	100	100
46.17	500	20.0	150	250
46.50	500	100.0	165	415
47.00	697	100.0	299	714
47.50	1,000	100.0	424	1,138

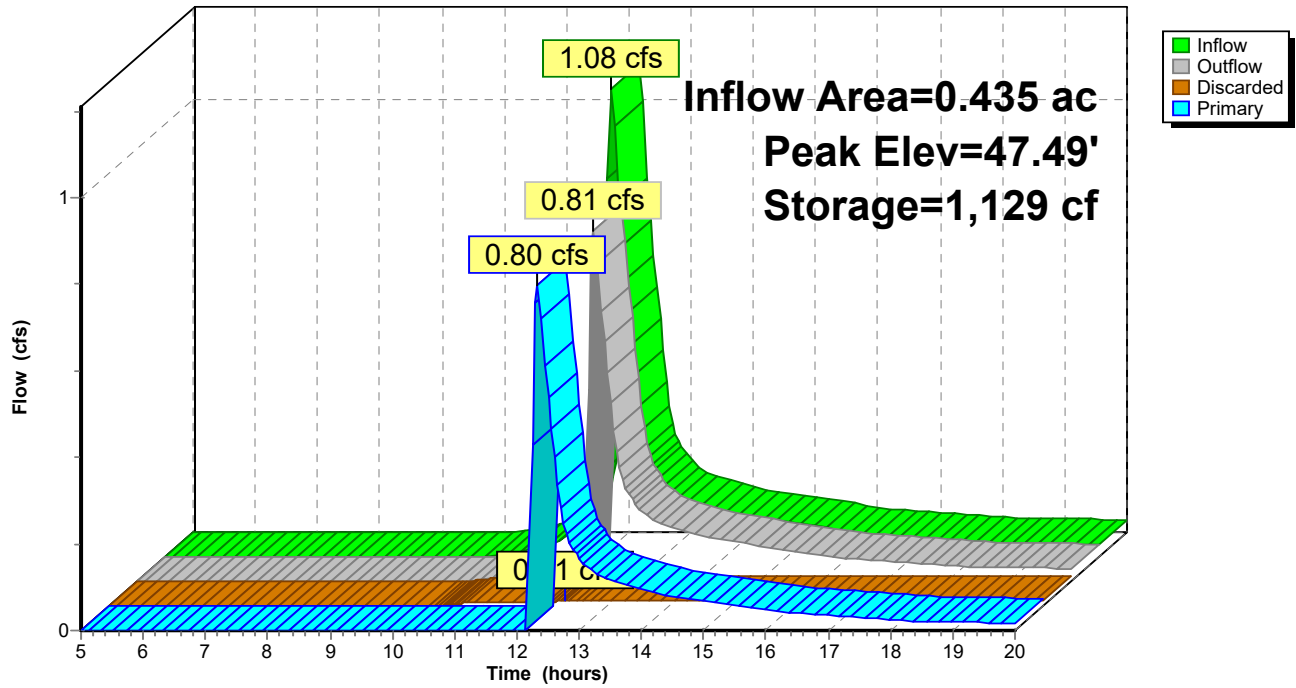
Device	Routing	Invert	Outlet Devices
#1	Discarded	44.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.30'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.01 cfs @ 12.32 hrs HW=47.48' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.75 cfs @ 12.32 hrs HW=47.48' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.75 cfs @ 1.04 fps)

Pond 3P: G.U.S.F. #2

Hydrograph



Summary for Pond 4P: G.U.S.F. #3

Inflow Area = 0.084 ac, 32.62% Impervious, Inflow Depth > 3.65" for 25-yr storm event
 Inflow = 0.38 cfs @ 12.09 hrs, Volume= 0.026 af
 Outflow = 0.37 cfs @ 12.11 hrs, Volume= 0.022 af, Atten= 3%, Lag= 1.0 min
 Discarded = 0.00 cfs @ 12.11 hrs, Volume= 0.003 af
 Primary = 0.36 cfs @ 12.11 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.01' @ 12.11 hrs Surf.Area= 304 sf Storage= 198 cf

Plug-Flow detention time= 67.4 min calculated for 0.022 af (84% of inflow)
 Center-of-Mass det. time= 22.1 min (812.3 - 790.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.17'	372 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.17	110	0.0	0	0
45.67	110	40.0	22	22
47.17	110	20.0	33	55
47.50	110	100.0	36	91
48.00	302	100.0	103	194
48.50	410	100.0	178	372

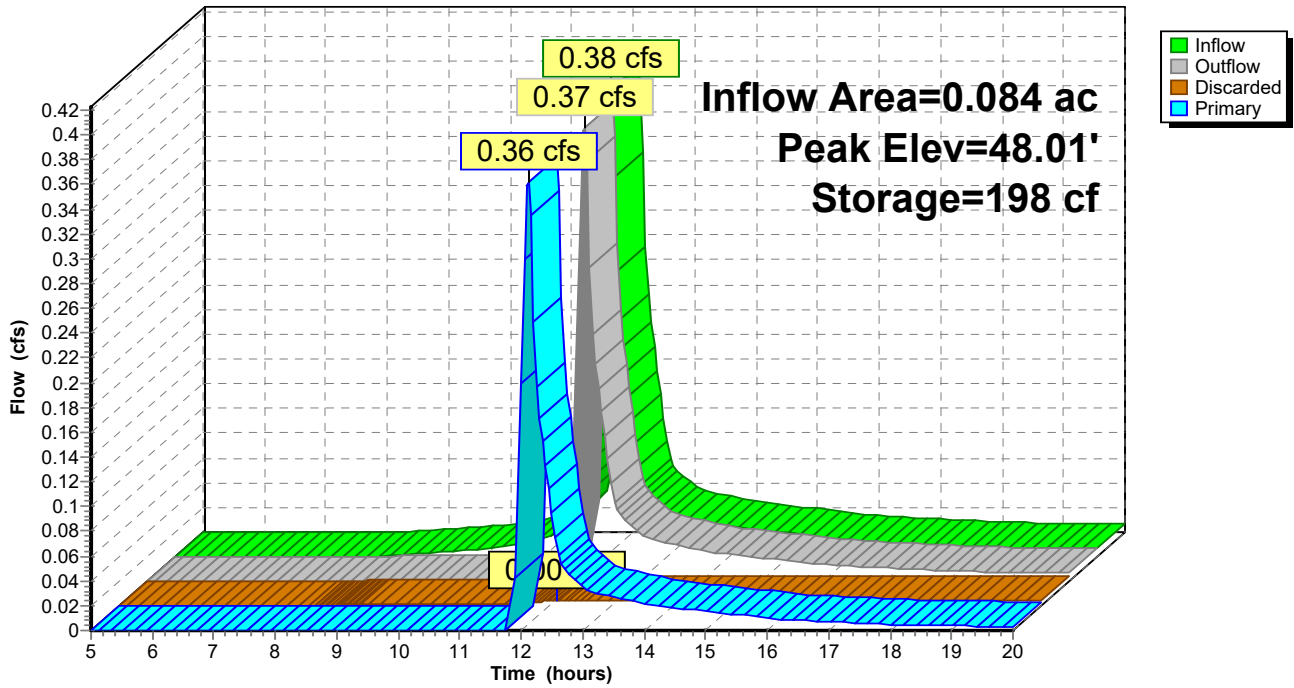
Device	Routing	Invert	Outlet Devices
#1	Discarded	45.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.90'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.11 hrs HW=48.01' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.35 cfs @ 12.11 hrs HW=48.01' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.35 cfs @ 0.80 fps)

Pond 4P: G.U.S.F. #3

Hydrograph



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1.1S: (new Subcat) Runoff Area=4,731 sf 40.33% Impervious Runoff Depth>5.16"
 Flow Length=130' Slope=0.0750 '/' Tc=6.0 min CN=75 Runoff=0.68 cfs 0.047 af

Subcatchment 1.2S: (new Subcat) Runoff Area=41,050 sf 2.04% Impervious Runoff Depth>2.86"
 Flow Length=230' Tc=18.1 min CN=55 Runoff=2.33 cfs 0.224 af

Subcatchment 2.1S: (new Subcat) Runoff Area=8,038 sf 39.40% Impervious Runoff Depth>5.16"
 Flow Length=85' Tc=6.0 min CN=75 Runoff=1.16 cfs 0.079 af

Subcatchment 2.2S: (new Subcat) Runoff Area=18,932 sf 17.08% Impervious Runoff Depth>3.42"
 Flow Length=190' Tc=11.9 min UI Adjusted CN=60 Runoff=1.53 cfs 0.124 af

Subcatchment 2.3S: (new Subcat) Runoff Area=3,654 sf 32.62% Impervious Runoff Depth>4.81"
 Flow Length=65' Tc=6.0 min CN=72 Runoff=0.49 cfs 0.034 af

Subcatchment 2.4S: (new Subcat) Runoff Area=22,171 sf 6.02% Impervious Runoff Depth>2.54"
 Flow Length=160' Tc=10.4 min UI Adjusted CN=52 Runoff=1.35 cfs 0.108 af

Reach 1R: (new Reach) Avg. Flow Depth=0.32' Max Vel=7.02 fps Inflow=2.40 cfs 0.181 af
 n=0.022 L=100.0' S=0.1020 '/' Capacity=6.31 cfs Outflow=2.21 cfs 0.181 af

Reach 2R: POA #2 Avg. Flow Depth=0.32' Max Vel=7.18 fps Inflow=2.48 cfs 0.228 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=2.48 cfs 0.228 af

Reach 3R: Roadside ditch Avg. Flow Depth=0.37' Max Vel=2.75 fps Inflow=1.16 cfs 0.079 af
 n=0.022 L=160.0' S=0.0125 '/' Capacity=2.21 cfs Outflow=1.10 cfs 0.079 af

Reach 4R: Swale Avg. Flow Depth=0.33' Max Vel=5.77 fps Inflow=2.09 cfs 0.092 af
 n=0.022 L=85.0' S=0.0624 '/' Capacity=4.93 cfs Outflow=1.96 cfs 0.092 af

Reach 5R: POA #1 Avg. Flow Depth=0.42' Max Vel=8.47 fps Inflow=4.38 cfs 0.305 af
 n=0.022 L=1.0' S=0.1000 '/' Capacity=6.24 cfs Outflow=4.38 cfs 0.305 af

Pond 1P: G.U.S.F. #1 Peak Elev=50.59' Storage=2,152 cf Inflow=2.33 cfs 0.224 af
 Discarded=0.00 cfs 0.001 af Primary=2.40 cfs 0.181 af Outflow=2.40 cfs 0.183 af

Pond 3P: G.U.S.F. #2 Peak Elev=47.65' Storage=1,138 cf Inflow=1.53 cfs 0.124 af
 Discarded=0.01 cfs 0.010 af Primary=2.09 cfs 0.092 af Outflow=2.10 cfs 0.101 af

Pond 4P: G.U.S.F. #3 Peak Elev=48.03' Storage=206 cf Inflow=0.49 cfs 0.034 af
 Discarded=0.00 cfs 0.003 af Primary=0.48 cfs 0.026 af Outflow=0.48 cfs 0.030 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.615 af Average Runoff Depth = 3.26"
88.16% Pervious = 1.995 ac 11.84% Impervious = 0.268 ac

Summary for Subcatchment 1.1S: (new Subcat)

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.047 af, Depth> 5.16"

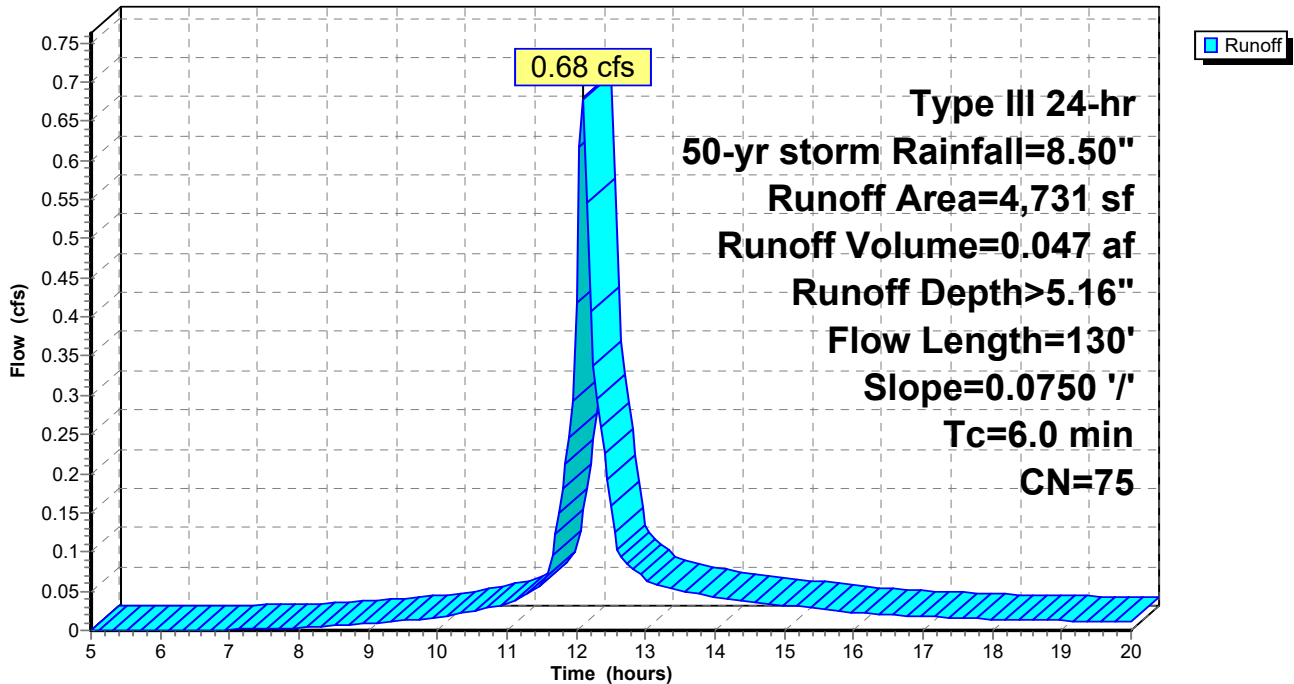
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Description
1,908	98	Paved parking, HSG B
2,223	61	>75% Grass cover, Good, HSG B
600	55	Woods, Good, HSG B
4,731	75	Weighted Average
2,823		59.67% Pervious Area
1,908		40.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	130	0.0750	4.11		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.5	130	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1.1S: (new Subcat)

Hydrograph



Summary for Subcatchment 1.2S: (new Subcat)

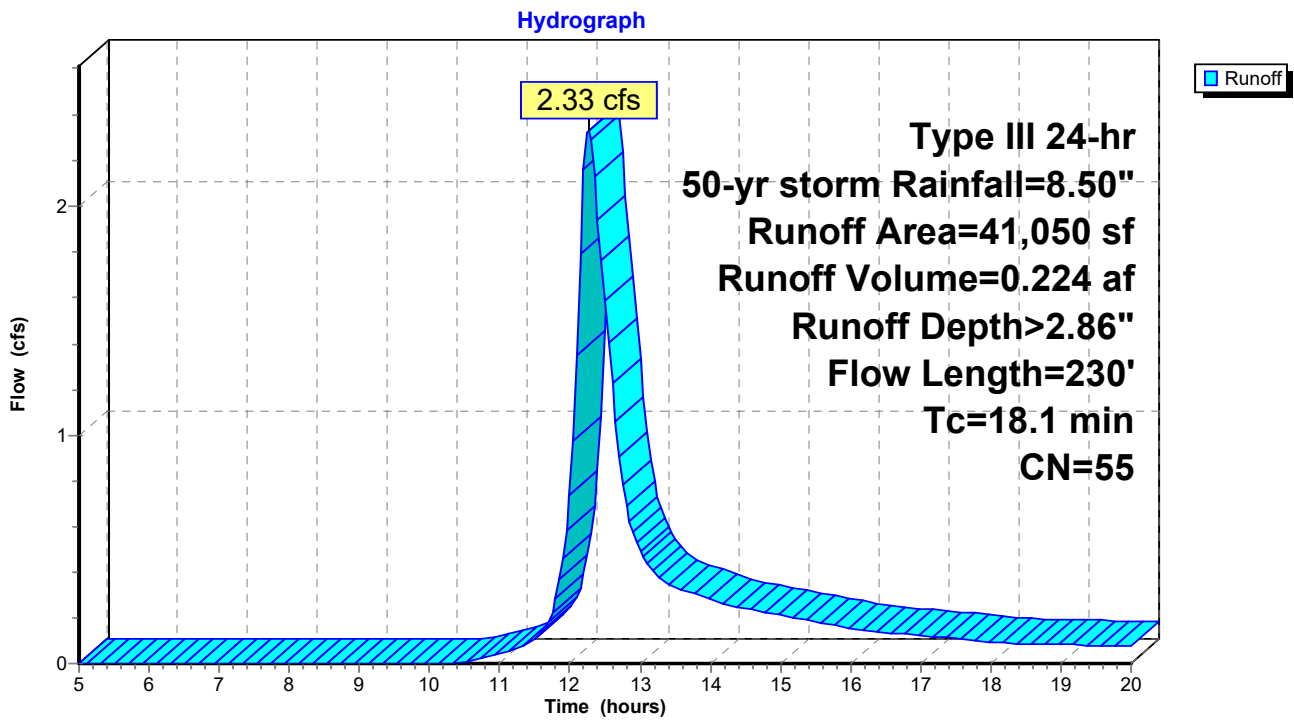
Runoff = 2.33 cfs @ 12.27 hrs, Volume= 0.224 af, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Description
138	98	Roofs, HSG B
214	98	Unconnected roofs, HSG B
486	98	Paved parking, HSG B
3,131	61	>75% Grass cover, Good, HSG B
4,903	48	Brush, Good, HSG B
32,178	55	Woods, Good, HSG B
41,050	55	Weighted Average
40,212		97.96% Pervious Area
838		2.04% Impervious Area
214		25.54% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
2.7	100	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	30	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
18.1	230	Total			

Subcatchment 1.2S: (new Subcat)



Summary for Subcatchment 2.1S: (new Subcat)

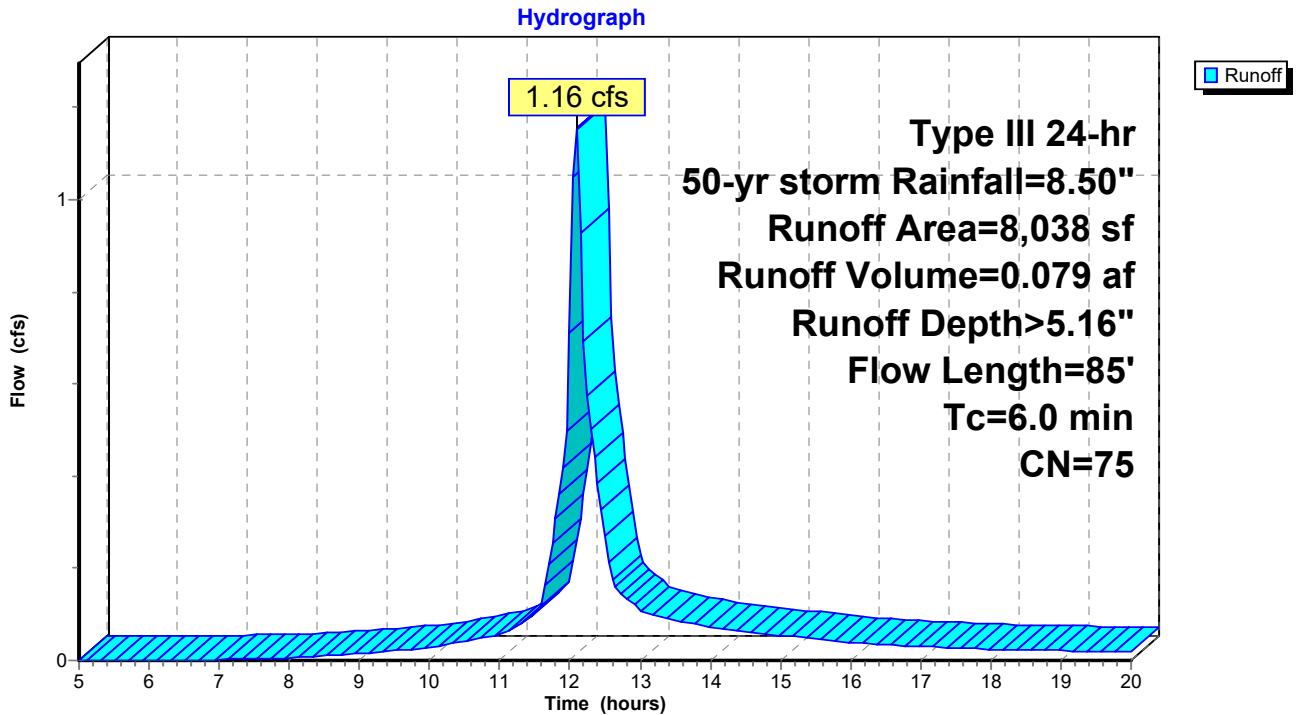
Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.079 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Description
3,167	98	Paved parking, HSG B
3,639	61	>75% Grass cover, Good, HSG B
1,232	55	Woods, Good, HSG B
8,038	75	Weighted Average
4,871		60.60% Pervious Area
3,167		39.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.2000	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.2	35	0.0600	3.67		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.8	85	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.1S: (new Subcat)



Summary for Subcatchment 2.2S: (new Subcat)

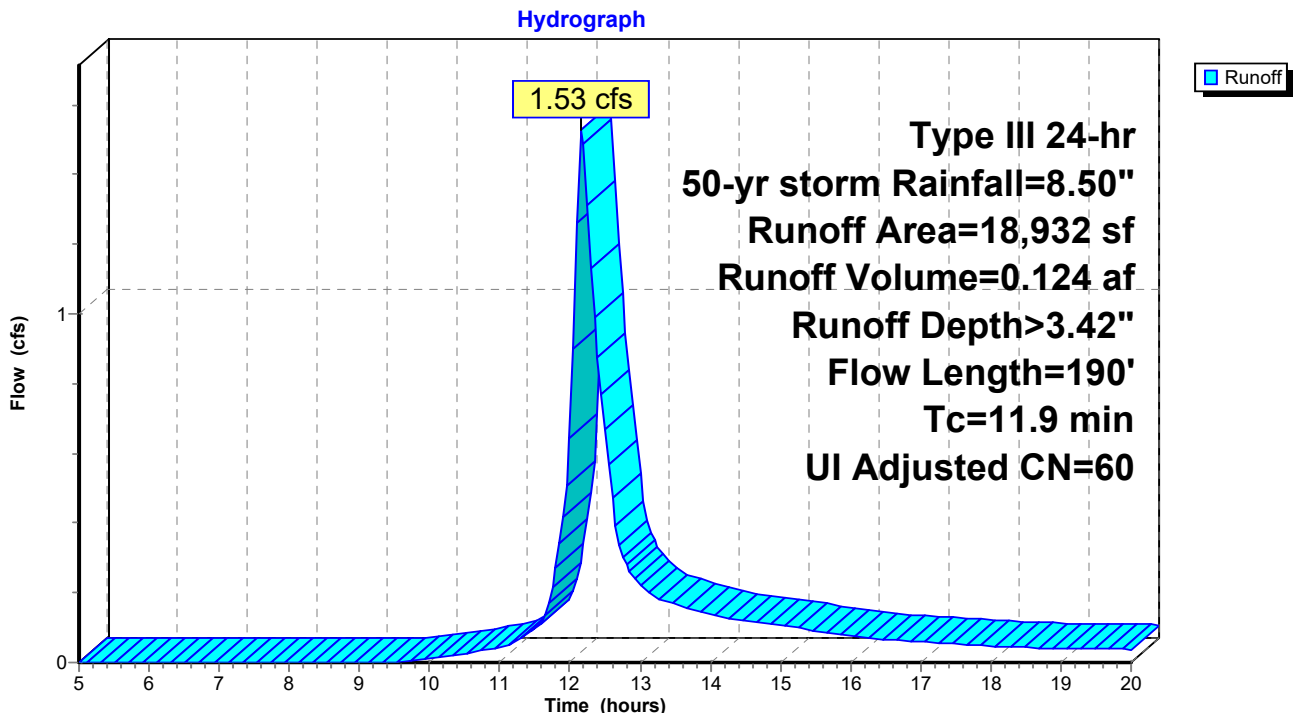
Runoff = 1.53 cfs @ 12.17 hrs, Volume= 0.124 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Adj	Description
626	98		Roofs, HSG B
1,794	98		Unconnected roofs, HSG B
814	98		Paved parking, HSG B
5,900	61		>75% Grass cover, Good, HSG B
4,945	48		Brush, Good, HSG B
4,853	55		Woods, Good, HSG B
18,932	62	60	Weighted Average, UI Adjusted
15,698			82.92% Pervious Area
3,234			17.08% Impervious Area
1,794			55.47% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0800	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.4	90	0.0500	3.35		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	190	Total			

Subcatchment 2.2S: (new Subcat)



Summary for Subcatchment 2.3S: (new Subcat)

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.034 af, Depth> 4.81"

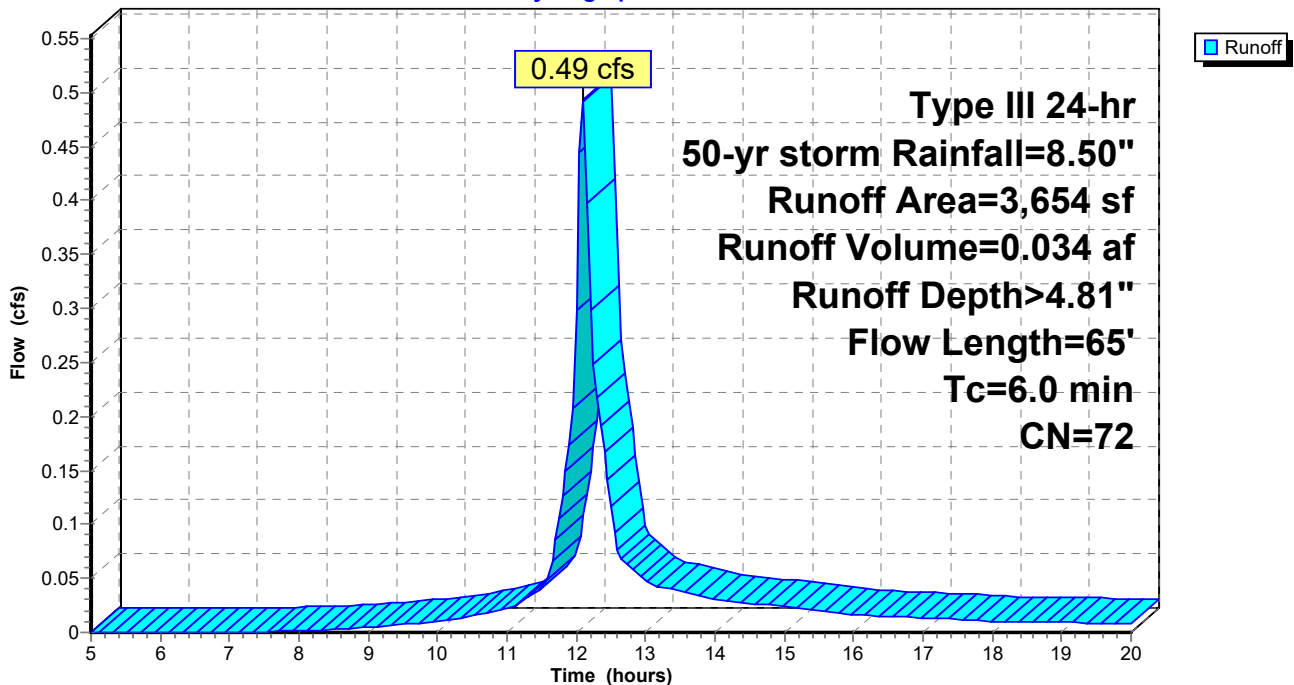
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Description
1,192	98	Paved parking, HSG B
1,622	61	>75% Grass cover, Good, HSG B
840	55	Woods, Good, HSG B
3,654	72	Weighted Average
2,462		67.38% Pervious Area
1,192		32.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	40	0.1500	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
0.1	25	0.1800	6.36		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.4	65	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2.3S: (new Subcat)

Hydrograph



Summary for Subcatchment 2.4S: (new Subcat)

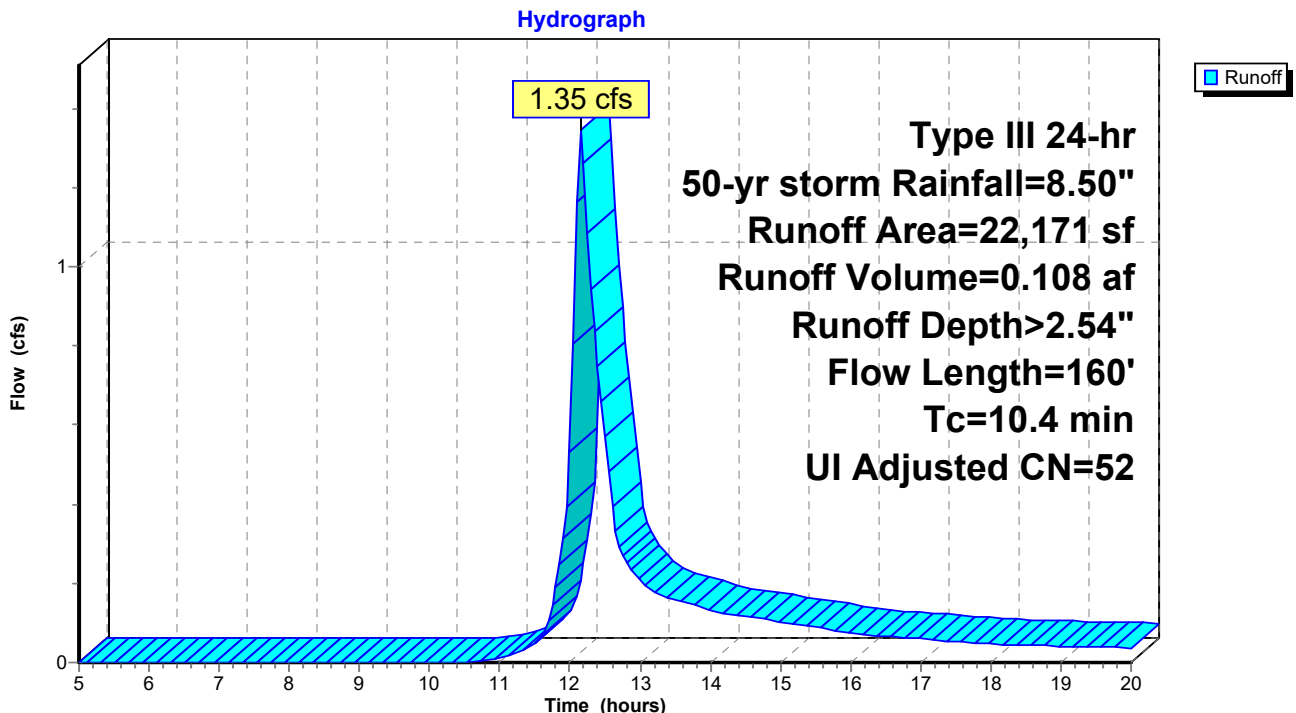
Runoff = 1.35 cfs @ 12.16 hrs, Volume= 0.108 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr storm Rainfall=8.50"

Area (sf)	CN	Adj	Description
317	98		Roofs, HSG B
872	98		Unconnected roofs, HSG B
145	98		Paved parking, HSG B
1,928	61		>75% Grass cover, Good, HSG B
17,752	48		Brush, Good, HSG B
1,157	55		Woods, Good, HSG B
22,171	53	52	Weighted Average, UI Adjusted
20,837			93.98% Pervious Area
1,334			6.02% Impervious Area
872			65.37% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	80	0.0875	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.69"
1.1	80	0.0625	1.25		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	160	Total			

Subcatchment 2.4S: (new Subcat)



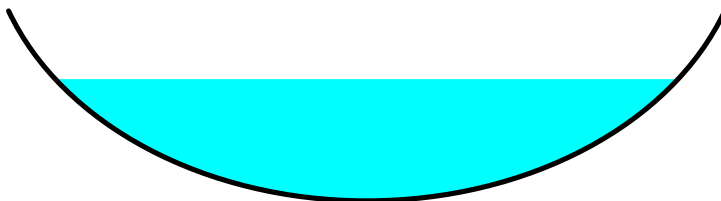
Summary for Reach 1R: (new Reach)

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 2.31" for 50-yr storm event
 Inflow = 2.40 cfs @ 12.32 hrs, Volume= 0.181 af
 Outflow = 2.21 cfs @ 12.34 hrs, Volume= 0.181 af, Atten= 8%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 7.02 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 3.45 fps, Avg. Travel Time= 0.5 min

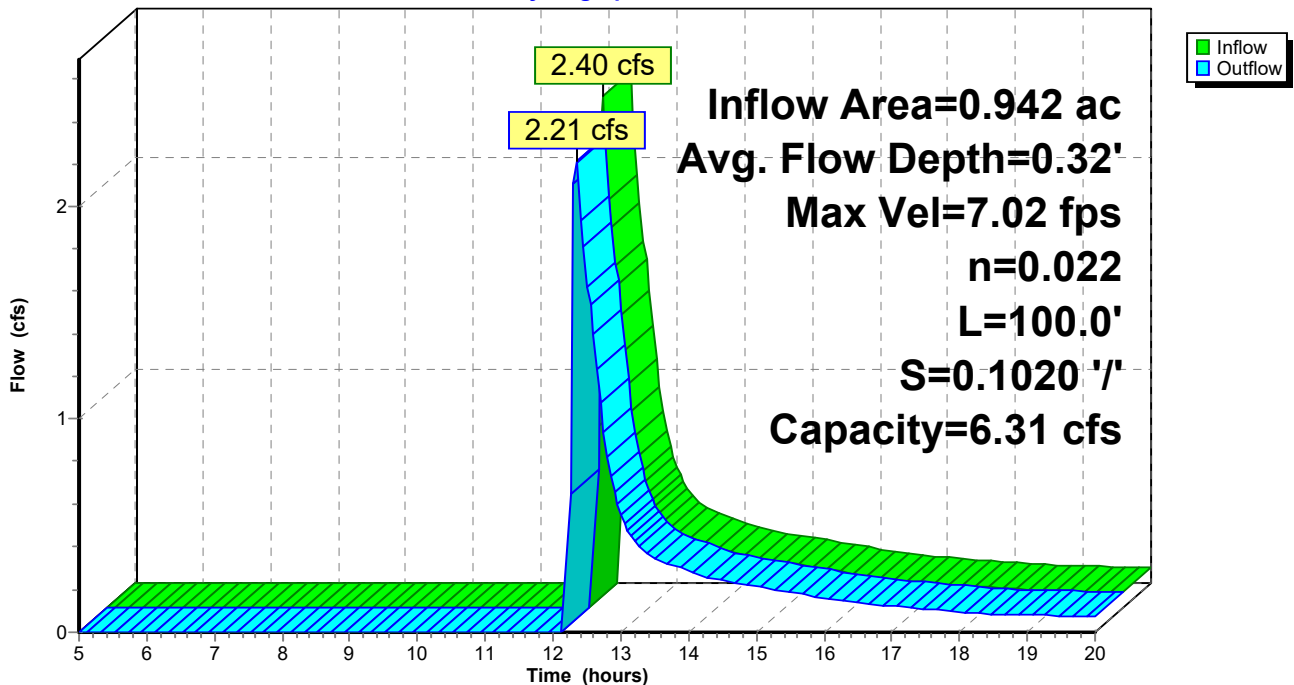
Peak Storage= 34 cf @ 12.32 hrs
 Average Depth at Peak Storage= 0.32'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.31 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 100.0' Slope= 0.1020 '/'
 Inlet Invert= 50.20', Outlet Invert= 40.00'



Reach 1R: (new Reach)

Hydrograph



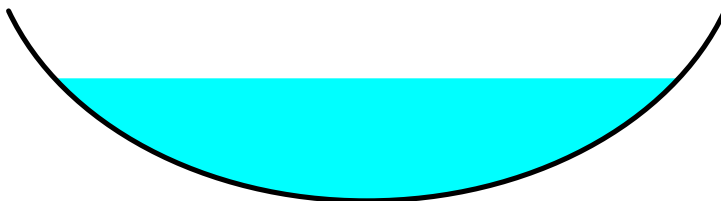
Summary for Reach 2R: POA #2

Inflow Area = 1.051 ac, 6.00% Impervious, Inflow Depth > 2.60" for 50-yr storm event
 Inflow = 2.48 cfs @ 12.33 hrs, Volume= 0.228 af
 Outflow = 2.48 cfs @ 12.33 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 7.18 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.74 fps, Avg. Travel Time= 0.0 min

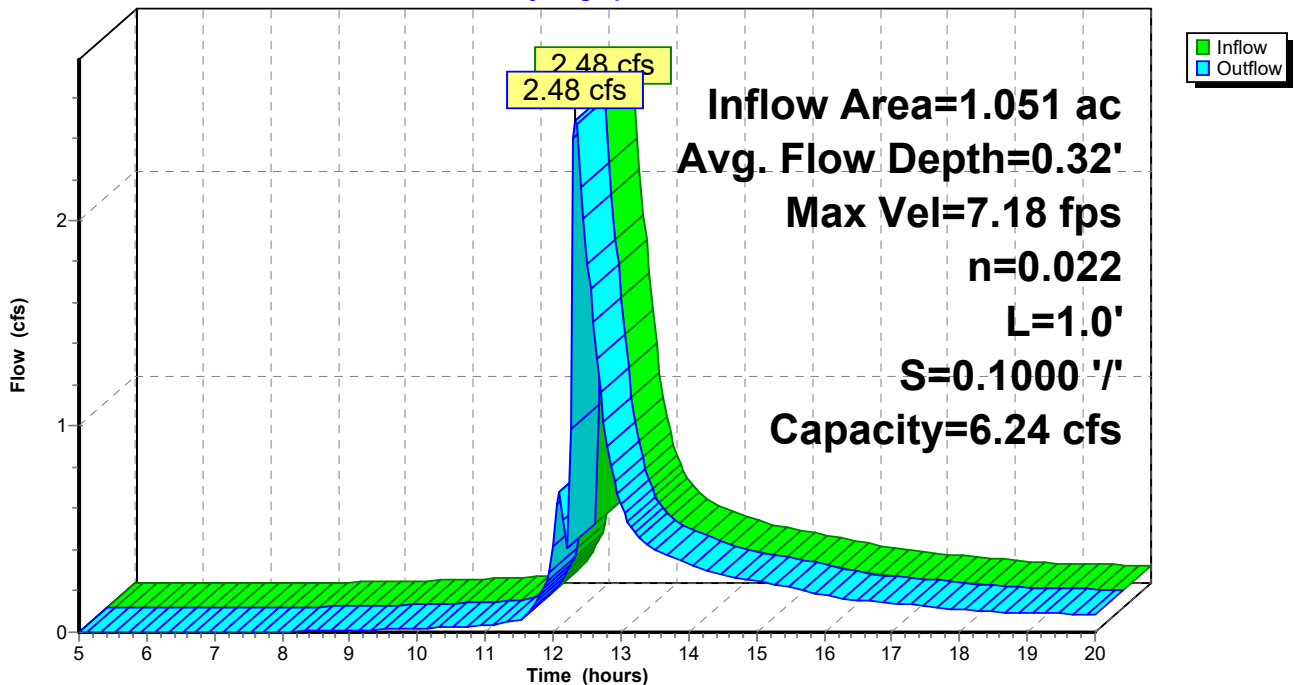
Peak Storage= 0 cf @ 12.33 hrs
 Average Depth at Peak Storage= 0.32'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 2R: POA #2

Hydrograph



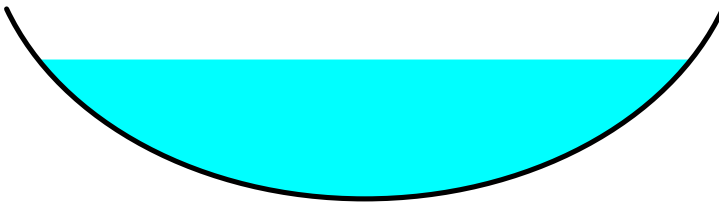
Summary for Reach 3R: Roadside ditch

Inflow Area = 0.185 ac, 39.40% Impervious, Inflow Depth > 5.16" for 50-yr storm event
 Inflow = 1.16 cfs @ 12.09 hrs, Volume= 0.079 af
 Outflow = 1.10 cfs @ 12.12 hrs, Volume= 0.079 af, Atten= 4%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.75 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.7 min

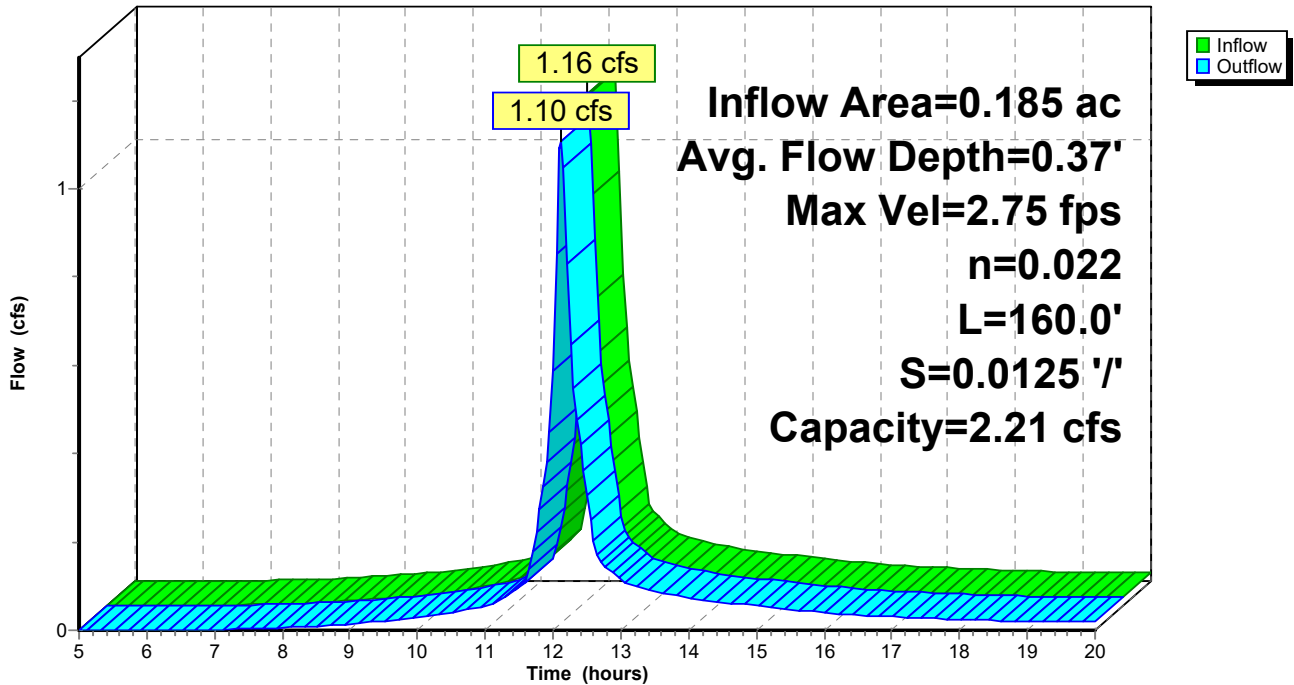
Peak Storage= 67 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 2.21 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 160.0' Slope= 0.0125 '/'
 Inlet Invert= 42.00', Outlet Invert= 40.00'



Reach 3R: Roadside ditch

Hydrograph



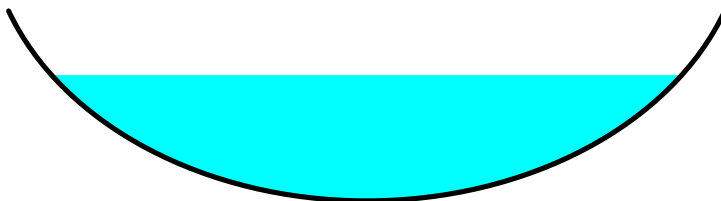
Summary for Reach 4R: Swale

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 2.53" for 50-yr storm event
 Inflow = 2.09 cfs @ 12.20 hrs, Volume= 0.092 af
 Outflow = 1.96 cfs @ 12.20 hrs, Volume= 0.092 af, Atten= 6%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.77 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.27 fps, Avg. Travel Time= 0.6 min

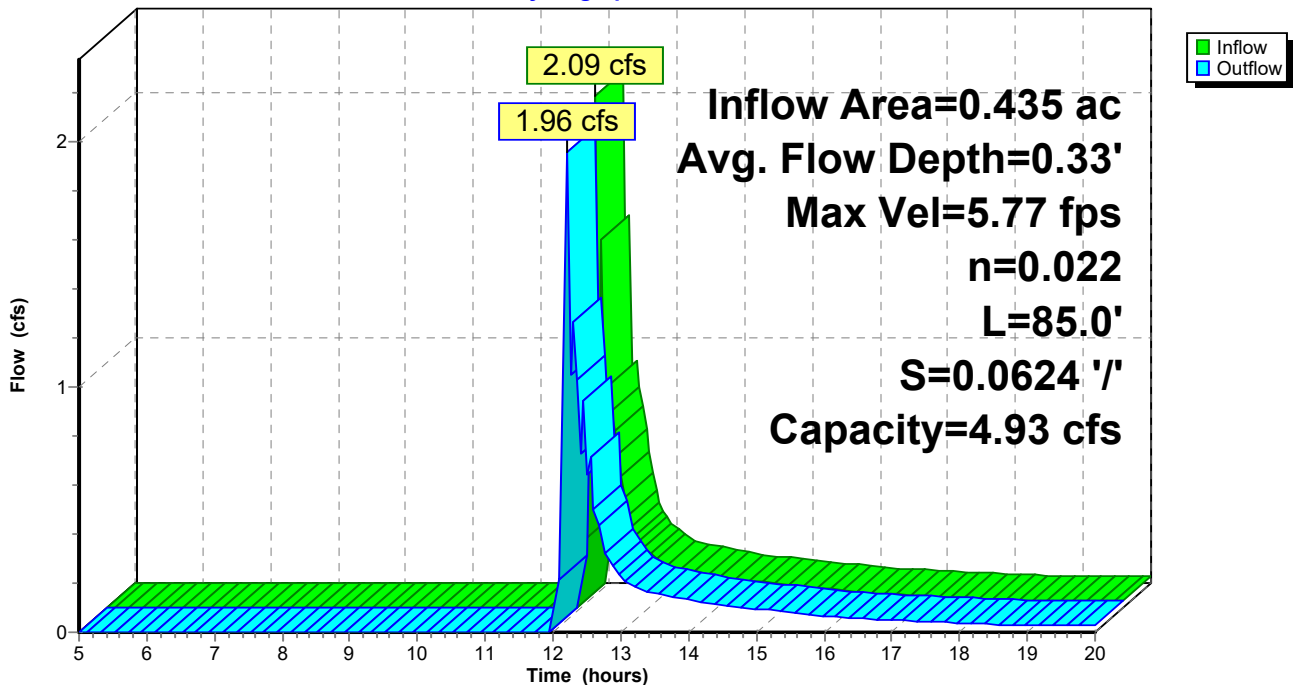
Peak Storage= 30 cf @ 12.20 hrs
 Average Depth at Peak Storage= 0.33'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 4.93 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 85.0' Slope= 0.0624 '/'
 Inlet Invert= 47.30', Outlet Invert= 42.00'



Reach 4R: Swale

Hydrograph



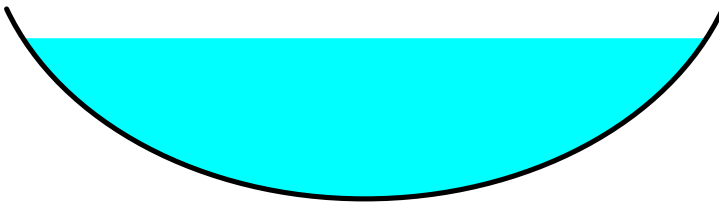
Summary for Reach 5R: POA #1

Inflow Area = 1.212 ac, 16.91% Impervious, Inflow Depth > 3.02" for 50-yr storm event
 Inflow = 4.38 cfs @ 12.20 hrs, Volume= 0.305 af
 Outflow = 4.38 cfs @ 12.20 hrs, Volume= 0.305 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 8.47 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 2.97 fps, Avg. Travel Time= 0.0 min

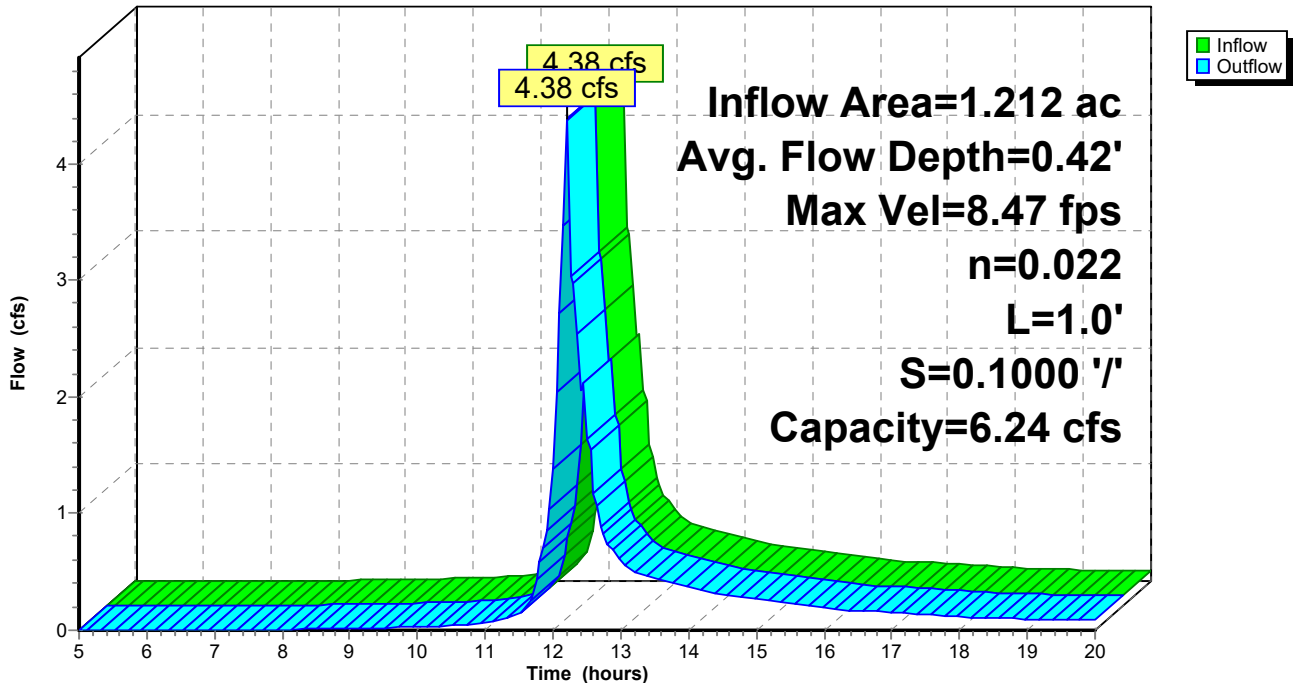
Peak Storage= 1 cf @ 12.19 hrs
 Average Depth at Peak Storage= 0.42'
 Bank-Full Depth= 0.50' Flow Area= 0.7 sf, Capacity= 6.24 cfs

2.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 1.0' Slope= 0.1000 '/'
 Inlet Invert= 40.00', Outlet Invert= 39.90'



Reach 5R: POA #1

Hydrograph



Summary for Pond 1P: G.U.S.F. #1

Inflow Area = 0.942 ac, 2.04% Impervious, Inflow Depth > 2.86" for 50-yr storm event
 Inflow = 2.33 cfs @ 12.27 hrs, Volume= 0.224 af
 Outflow = 2.40 cfs @ 12.32 hrs, Volume= 0.183 af, Atten= 0%, Lag= 3.3 min
 Discarded = 0.00 cfs @ 12.30 hrs, Volume= 0.001 af
 Primary = 2.40 cfs @ 12.32 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.59' @ 12.32 hrs Surf.Area= 1,500 sf Storage= 2,152 cf

Plug-Flow detention time= 76.7 min calculated for 0.182 af (81% of inflow)
 Center-of-Mass det. time= 27.1 min (848.7 - 821.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	46.17'	2,152 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.17	615	0.0	0	0
47.17	615	40.0	246	246
48.67	615	20.0	185	431
49.00	615	100.0	203	633
50.00	1,115	100.0	865	1,498
50.50	1,500	100.0	654	2,152

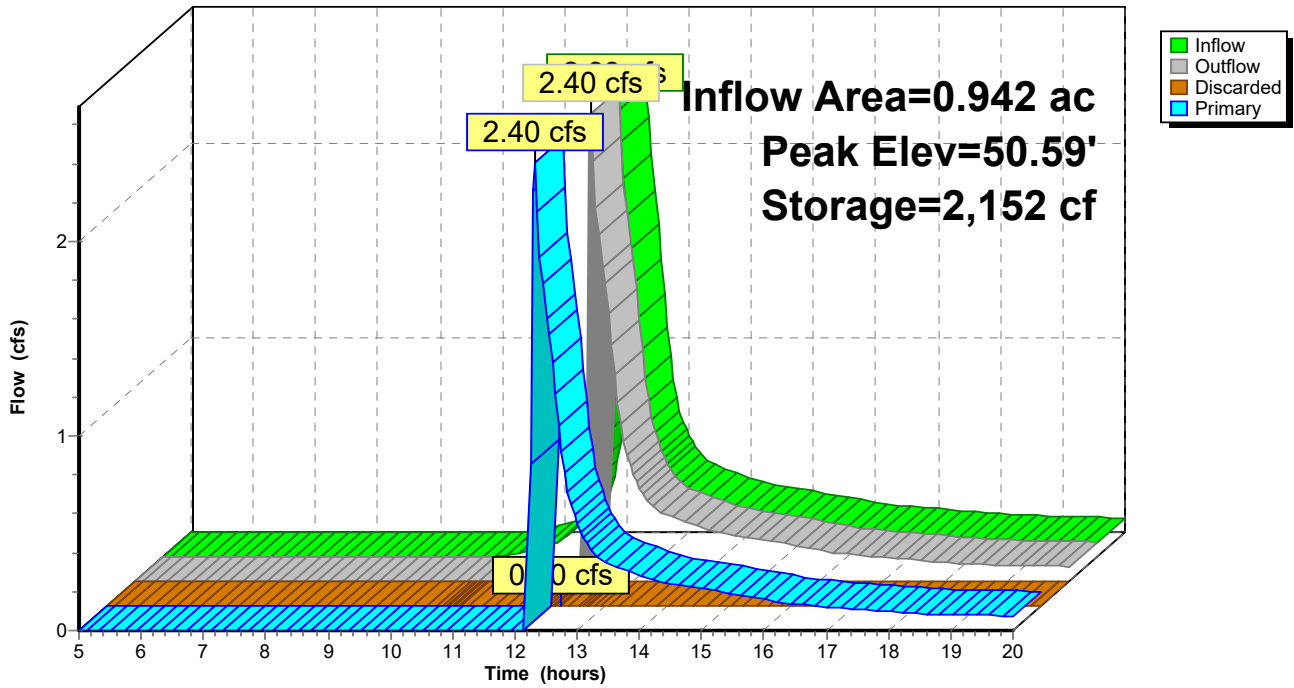
Device	Routing	Invert	Outlet Devices
#1	Discarded	46.17'	0.060 in/hr Exfiltration over Surface area
#2	Primary	50.20'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.30 hrs HW=50.57' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=2.21 cfs @ 12.32 hrs HW=50.56' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 2.21 cfs @ 1.52 fps)

Pond 1P: G.U.S.F. #1

Hydrograph



Summary for Pond 3P: G.U.S.F. #2

Inflow Area = 0.435 ac, 17.08% Impervious, Inflow Depth > 3.42" for 50-yr storm event
 Inflow = 1.53 cfs @ 12.17 hrs, Volume= 0.124 af
 Outflow = 2.10 cfs @ 12.20 hrs, Volume= 0.101 af, Atten= 0%, Lag= 1.7 min
 Discarded = 0.01 cfs @ 12.20 hrs, Volume= 0.010 af
 Primary = 2.09 cfs @ 12.20 hrs, Volume= 0.092 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.65' @ 12.20 hrs Surf.Area= 1,000 sf Storage= 1,138 cf

Plug-Flow detention time= 75.8 min calculated for 0.101 af (82% of inflow)
 Center-of-Mass det. time= 25.8 min (834.2 - 808.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	44.17'	1,138 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.17	500	0.0	0	0
44.67	500	40.0	100	100
46.17	500	20.0	150	250
46.50	500	100.0	165	415
47.00	697	100.0	299	714
47.50	1,000	100.0	424	1,138

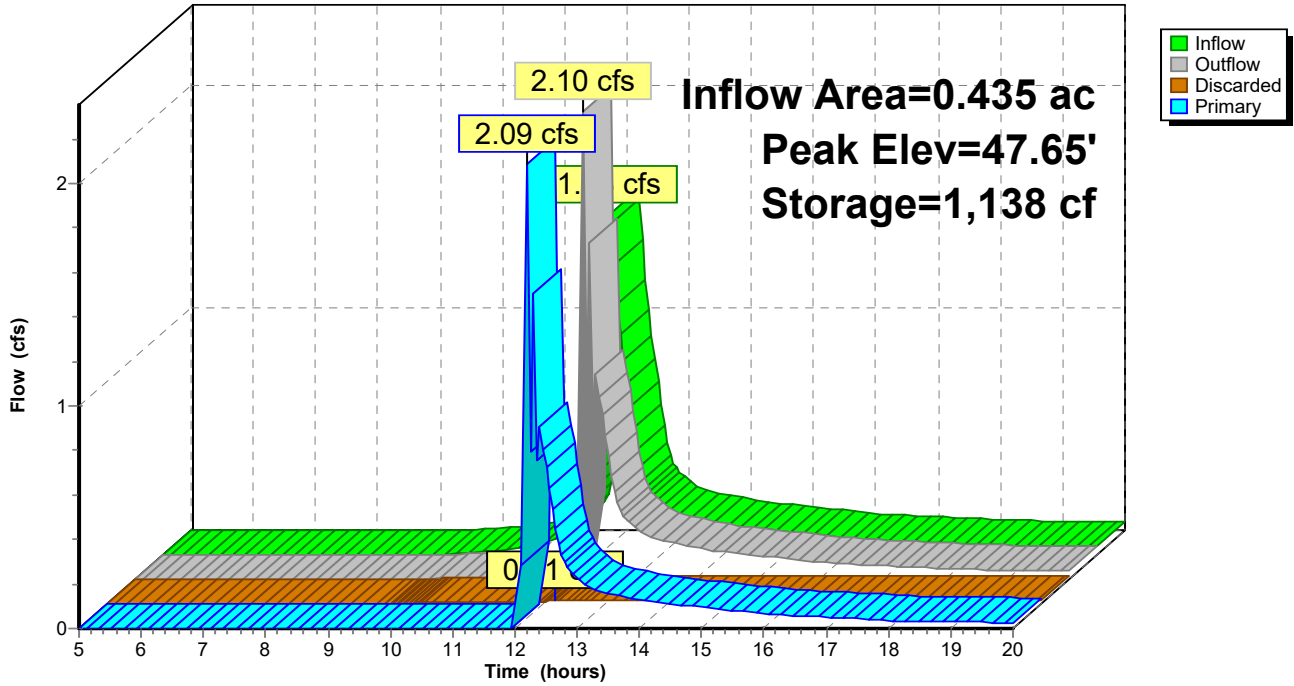
Device	Routing	Invert	Outlet Devices
#1	Discarded	44.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.30'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.01 cfs @ 12.20 hrs HW=47.65' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.07 cfs @ 12.20 hrs HW=47.65' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 2.07 cfs @ 1.48 fps)

Pond 3P: G.U.S.F. #2

Hydrograph



Summary for Pond 4P: G.U.S.F. #3

Inflow Area = 0.084 ac, 32.62% Impervious, Inflow Depth > 4.81" for 50-yr storm event
 Inflow = 0.49 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.48 cfs @ 12.11 hrs, Volume= 0.030 af, Atten= 3%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 12.11 hrs, Volume= 0.003 af
 Primary = 0.48 cfs @ 12.11 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.03' @ 12.11 hrs Surf.Area= 309 sf Storage= 206 cf

Plug-Flow detention time= 55.9 min calculated for 0.029 af (88% of inflow)
 Center-of-Mass det. time= 19.3 min (803.2 - 783.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.17'	372 cf	Custom Stage Data (Prismatic) Listed below	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.17	110	0.0	0	0
45.67	110	40.0	22	22
47.17	110	20.0	33	55
47.50	110	100.0	36	91
48.00	302	100.0	103	194
48.50	410	100.0	178	372

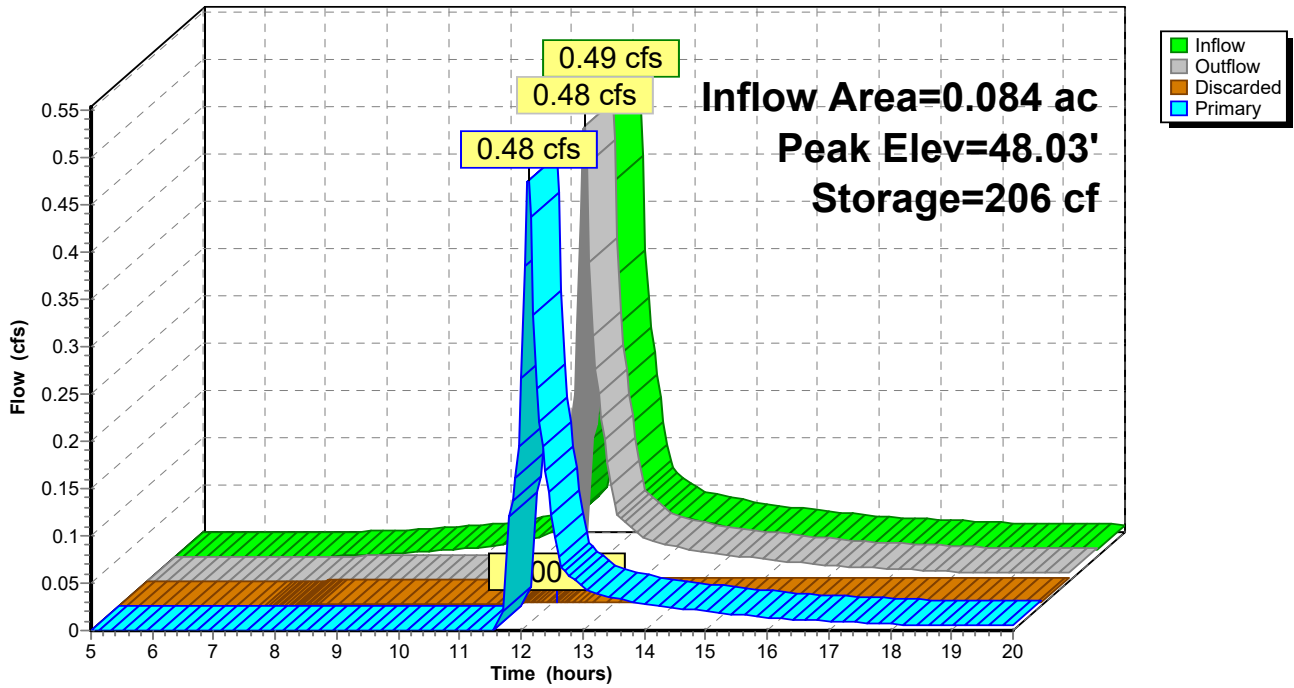
Device	Routing	Invert	Outlet Devices
#1	Discarded	45.17'	0.600 in/hr Exfiltration over Surface area
#2	Primary	47.90'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Discarded OutFlow Max=0.00 cfs @ 12.11 hrs HW=48.03' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.47 cfs @ 12.11 hrs HW=48.03' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.47 cfs @ 0.88 fps)

Pond 4P: G.U.S.F. #3

Hydrograph



ISSUED FOR:

TAC

ISSUE DATE:

SEPTEMBER 14, 2018

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	08/07/18
1	PER TAC COMMENTS	EDW	09/14/18

DRAWN BY: _____ RLH

APPROVED BY: _____ EDW

DRAWING FILE: _____ 4916 SITE.DWG

SCALE:

11"x17": 1" = 40'
22"x 34": 1" = 20'

APPLICANT/OWNER:

HAPPY MOUNTAIN HOLDINGS, LLC

901 N. MARKET STREET
SUITE 705
WILMINGTON, DE 19801

PROJECT:

RESIDENTIAL
DEVELOPMENT
ASSESSOR'S PARCEL
220-87-2
74 EMBRY STREET
&
ASSESSOR'S PARCEL
220-87-3
64 EMBRY STREET
PORTSMOUTH,
NEW HAMPSHIRE

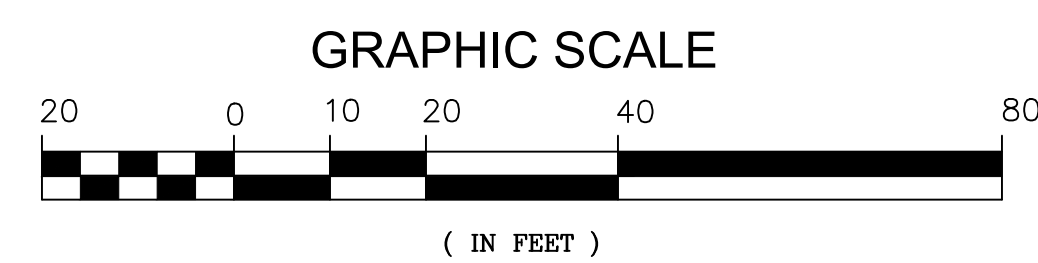
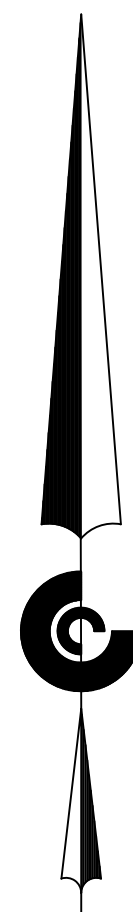
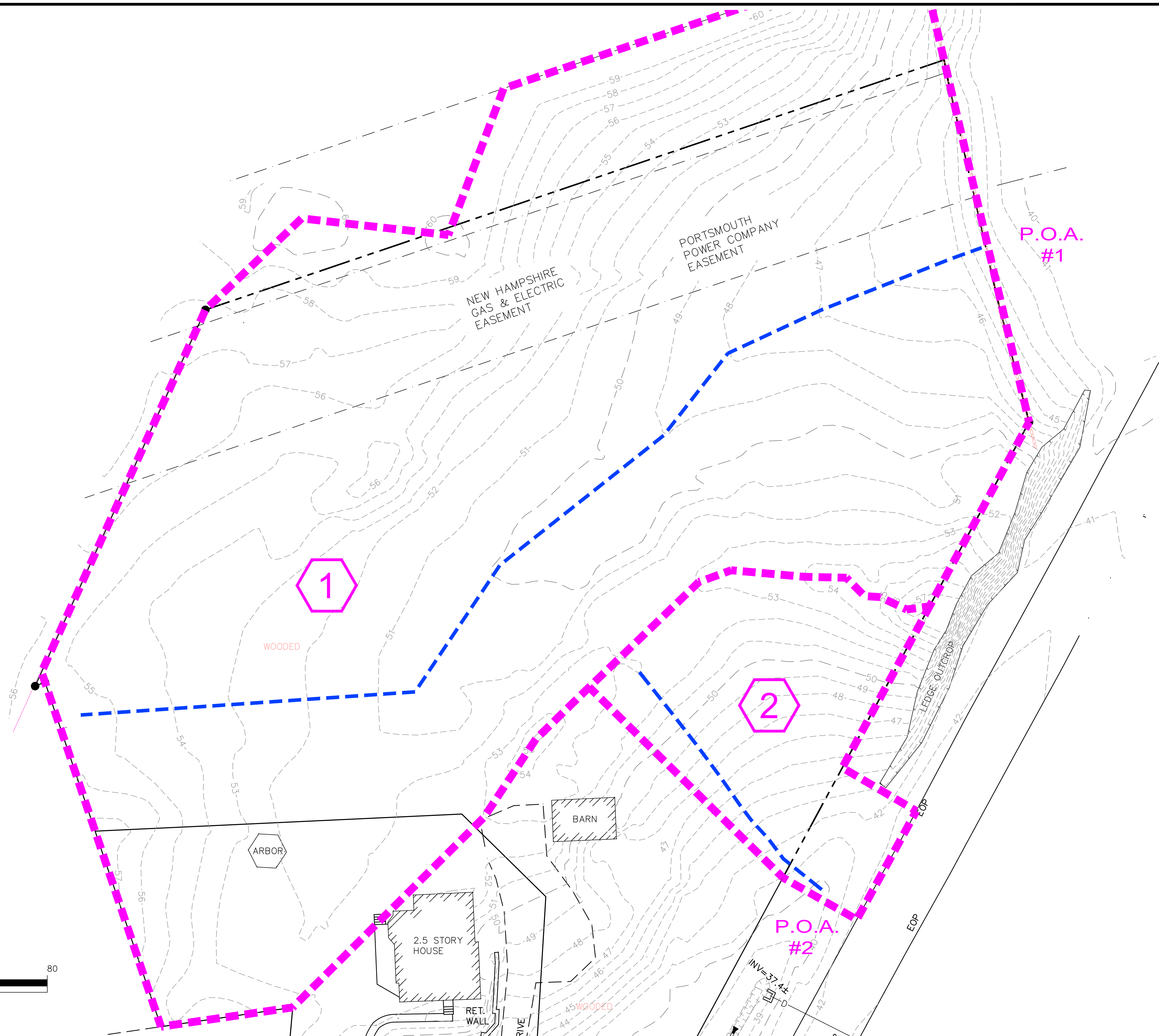
TITLE:

PRE-
DEVELOPMENT
WATERSHED
PLAN

SHEET NUMBER:

DS - 1

P4916



ISSUED FOR: TAC
ISSUE DATE: SEPTEMBER 14, 2018

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	08/07/18
1	PER TAC COMMENTS	EDW	09/14/18

DRAWN BY: _____ RLH
APPROVED BY: _____ EDW
DRAWING FILE: 4916 SITE.DWG

SCALE:
11"x17": 1" = 40'
22"x 34": 1" = 20'

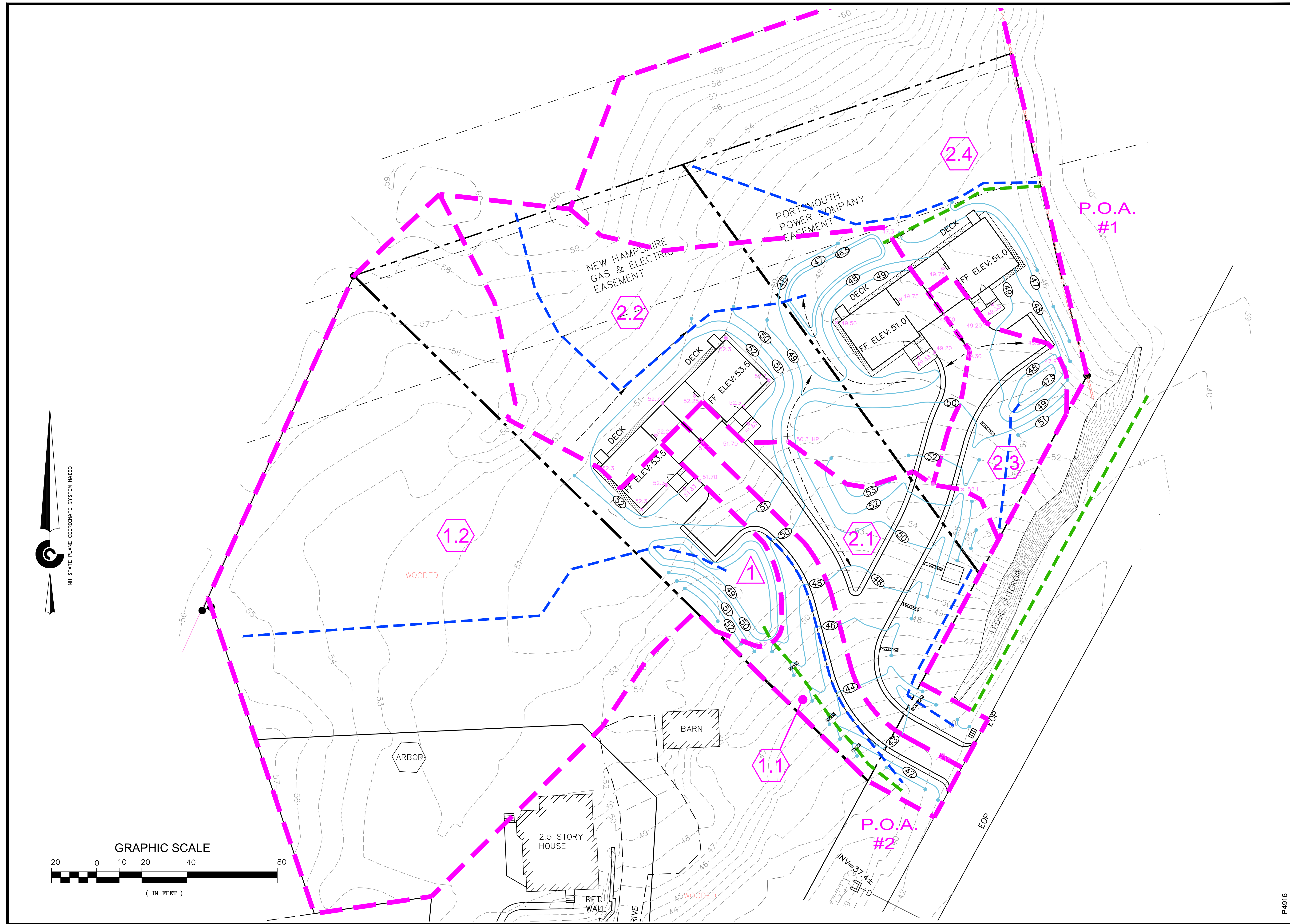
APPLICANT/OWNER:
HAPPY MOUNTAIN HOLDINGS, LLC
901 N. MARKET STREET
SUITE 705
WILMINGTON, DE 19801

PROJECT:
RESIDENTIAL DEVELOPMENT
ASSESSOR'S PARCEL 220-87-2
74 EMBRY STREET &
ASSESSOR'S PARCEL 220-87-3
64 EMBRY STREET
PORTSMOUTH, NEW HAMPSHIRE

TITLE:
POST-DEVELOPMENT WATERSHED PLAN

SHEET NUMBER:
DS - 2

P4916



NH STATE PLANE COORDINATE SYSTEM NAD83



**Civil
Site Planning
Environmental
Engineering**

133 Court Street
Portsmouth, NH
03801-4413

HAPPY MOUNTAIN HOLDINGS, LCC

64 & 74 EMERY STREET
Portsmouth, NH

PRELIMINARY OPINION OF SITEWORK COST

DATE: 14-Sep-18
PROJECT: 4916

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
SITework DEMOLITION				
MOBILIZATION	1	LS	\$2,000.00	\$2,000.00
CLEARING AND GRUBBING				
TREE AND VEGETATION REMOVAL	1	LS	\$3,000.00	\$3,000.00
SEWER SERVICE				
LOW PRESSURE FORCE MAIN	300	LF	\$34.00	\$10,200
WATER SERVICE				
2-INCH FIRE SUPPRESSION WATER SERVICES	420	LF	\$36.00	\$15,120
1-INCH DOMESTIC WATER SERVICES	830	LF	\$32.00	\$26,560
WATER TAPS AND CURB STOPS	4	EA	\$500.00	\$2,000
GAS SERVICE				
GAS SERVICES	335	LF	\$26.00	\$8,710
ELECTRIC/PHONE/CABLE SERVICES				
UNDERGROUND ELECTRIC AND TELE-COMMUNICATION CONDUITS	260	LF	\$30.00	\$7,800
TRANSFORMER AND PAD	1	EA	\$4,000.00	\$4,000
STORM DRAINAGE SYSTEM				
EROSION CONTROL RIPRAP AND DRIP EDGE	1	LS	\$1,000.00	\$1,000
SEDIMENT AND EROSION CONTROL				
TEMPORARY EROSION CONTROL	1	LS	\$1,500.00	\$1,500
AGGREGATE BASE COURSES				
12" GRAVEL (NHDOT 304.2)	312	CY	\$18.00	\$5,616
6" CRUSHED GRAVEL (NHDOT 304.3)	156	CY	\$22.00	\$3,432
CUTS AND FILLS	250	CY	\$12.00	\$3,000
HOT BITUMINOUS PAVEMENT				
2.5" BASE COURSE	112	TONS	\$85.00	\$9,520
1.5" WEARING COURSE	68	TONS	\$85.00	\$5,780
LANDSCAPING				
LOAM AND SEED - TURF ESTABLISHMENT	1	LS	\$6,000.00	\$6,000
LIGHTING				
NIC				
SUBTOTAL				\$115,238
TOTAL:				\$115,238

EXCLUSIONS:
ITEMS EXCLUDED FROM THIS ESTIMATE INCLUDE, BUT ARE NOT LIMITED TO, THOSE ITEMS SPECIFIED ABOVE
AS BEING NOT INCLUDED IN THIS ESTIMATE AND THE FOLLOWING:
LEDGE REMOVAL, TAPPING FEES, INSPECTIONS, UTILITY SERVICE FEES



**Civil
Site Planning
Environmental
Engineering**

133 Court Street
Portsmouth, NH
03801-4413

WAIVER REQUESTS
Assessor's Map 220
Lot 87-2 (74 Emery Street)
&
Lot 87-3 (64 Emery Street)
Altus Project P4916
September 17, 2018

On behalf of Happy Mountain Holdings, LLC, Altus Engineering, Inc. request the following waivers from the City of Portsmouth, New Hampshire Site Plan Review Regulations.

Section 2.5.4 2 (E) A Note shall be provided on the plan stating, "All conditions on this plan shall remain in effect in perpetuity pursuant to the requirements of the site plan regulations."

Section 2.5.4 3 (C) Access and circulation

Section 2.5.4 3 (D) Parking and loading

Section 2.5.4 3 (J) Outdoor lighting

Section 2.5.4.3 (K) Landscaping

Section 3.4 Curbing (A) where access ways and driveways meet public streets

Section 5.2 Sidewalk and Pedestrian Pathways

Section 5.3 Bicycle Facilities

Section 6.1 Landscaping and Screening Standards.

Section 2.13.3 Recording Notes

Section 2.13.4 Landscaping requirements

This project is unique in the fact that it is the development of two duplex homes on two abutting lots. Because four residential housing units are proposed, the project falls under the criteria for Site Plan Review Regulations. As such, the duplex homes do not require loading, outdoor lighting, curbing at the entrance, bicycle racks and other types of development features that normally are depicted on commercial site developments. We have combined all of the waiver requests with a single explanation.

As discussed at the TAC Workshop, it is understood that the general intent of the Technical Advisory Committee's Review and the concerns that would be of interest to the Planning Board include the design of the stormwater management system and the utility service design. The plans submitted for review and approval demonstrate that there will be no adverse impacts to abutting properties from runoff from the site. A detailed utility service design plan is included in

the plan set.

To require that all conditions on the plan to remain in effect in perpetuity is an overly burdensome requirement for the homes. This would require the homeowners to file an amendment to the Site Plans to install a shed, light post, swing set or any other feature that is normally constructed on a duplex lot without requiring Site Plan Approval. To require the Site Plan to be recorded is an excessive requirement for this development.

Wde/4916 waiver