ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

January 29, 2025

Peter Britz, Planning and Sustainability Director
City of Portsmouth Municipal Complex
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Application for Conditional Use Permit
Assessor's Map 207, Lots 63, 68 & 69
56 Ridges Court
Altus Project No. 5639

Dear Peter,

On behalf of Annemarie (Annie) and Michael Rainboth, Trustees of the Rainboth Revocable Trust of 2010, Altus Engineering, LLC (Altus) and the design team are pleased to submit an application for a Conditional Use Permit and wish to be heard at the February 12th Conservation Commission meeting. Annie and Michael own the property located at 56 Ridges Court. They currently live a few houses away on the corner of Ridges Court and New Castle Avenue. They intend to renovate and expand the existing home.

The entire neighborhood was constructed prior to City wetland buffer regulations. Portions of the lot are within the NHDES 100-foot tidal buffer and the 250-foot Shoreland Buffer. No improvements are proposed within 100 feet of the highest observable tide line. A permit from the NHDES Shoreland program will be required.

The existing garage and shed will be razed. A garage addition with living space above is proposed along with a new shed. The structures will be further from the resource area than the existing buildings. Stormwater management improvements are proposed to enhance the wetland buffer.

Lots 68 and 69 are vacant and contiguous to the development area. The Rainboth's propose to merge the lots to prevent future landowners from attempting to develop the area.

Enclosed for the Commission's consideration please find the following:

- Letter of Authorization
- Conditional Use Permit Narrative
- Wetland Buffer Function and Values Assessment (Noel)

- Drainage computations and Stormwater O&M manual
- Project Site Plans

Please feel free to call or email me directly should you have any questions or need any additional information.

Sincerely,

ALTUS ENGINEERING, LLC

Enclosures

eCopy: Annie and Mike Rainboth
Joseph Noel, Wetlands Scientist
Amy Dutton

wde/5639.00 cup cvr ltr.docx

Letter of Authorization

I, Annemarie Rainboth and Michael Rainboth, Trustees of The Rainboth Revocable Trust of 2010, owner of the property located at 56 Ridges Court, Portsmouth, NH, hereby authorize Altus Engineering, LLC of Portsmouth, NH to represent us as the Owner and Applicant in all matters concerning the engineering and related permitting on Portsmouth Tax Map 207, Lots 63, 68, and 69, Portsmouth, New Hampshire. This authorization shall include any signatures required for Federal, State and Municipal permit applications.

[signature] 1/8/2025

Signature Annemarie Rainboth Date

Sophia Howe [signature] 1/8/2025

Witness Print Name Date

[signature] 1/8/2025

Signature Michael Rainboth Date

Sophia Howe [signature] 1/8/2025

Witness Print Name Date

Letter of Authorization

I, Annemarie Rainboth and Michael Rainboth, Trustees of The Rainboth Revocable Trust of 2010, owner of the property located at 56 Ridges Court, Portsmouth, NH, hereby authorize Altus Engineering, LLC of Portsmouth, NH to represent us as the Owner and Applicant in all matters concerning the engineering and related permitting on Portsmouth Tax Map 207, Lots 63, 68, and 69, Portsmouth, New Hampshire. This authorization shall include any signatures required for Federal, State and Municipal permit applications.

Signature Annemarie Rainboth Date 1/8/2025

Witness Print Name Sophia Howe Date Sophia Howe 1/8/2025

Signature Michael Rainboth Date 1/8/2025

Witness Print Name Sophia Howe Date Sophia Howe 1/8/2025

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133 Court Street
Portsmouth, NH
03801-4413

CONDITIONAL USE PERMIT APPLICATION
56 RIDGES COURT
NARRATIVE
January 29, 2025

On behalf of the Applicant, Annemarie (Annie) and Michael Rainboth and the Rainboth Revocable Trust of 2010, Altus Engineering, LLC (Altus) respectfully submits a Wetlands Conditional Use Permit application for the expansion of a single-family residence at 56 Ridges Court. Annie and Mike propose to retain, renovate, and expand the 100-year-old home and raze the existing outbuildings.

The home is sited on Tax Map 207, Lot 63. Two additional vacant parcels, Tax Map 207 Lots 68 and 69, are contiguous to the Rainboth's future home. The vacant lots appear to have frontage on a paper street. For the basis of our computations, should the application be approved, the parcels will be consolidated.

The southeast corner of the parcel lies within the 100-foot tidal buffer. We are proposing to avoid impacting the tidal buffer. The southeastern portion of the lot is a freshwater wetland. The 100-foot buffer from the wetland encompasses a significant portion of the lot, making redevelopment of any sort nearly impossible without a Conditional Use Permit. The majority of the on-site wetland is maintained as lawn.

The house was constructed prior to City wetland buffer regulations and before most zoning ordinances were enacted. Based on the topography adjacent to the existing driveway, it appears that portions of the lot were regraded and filled.

The existing garage is over 80-feet from Ridges Court requiring a long driveway and turnaround area. The expanded home will be sited close to the street, reducing the driveway substantially.

The built infrastructure will be sited further from the resource area than the current buildings and pavement. Stormwater management treatment will be provided where none currently exists. The Rainboth's are good stewards of the land and want to keep the back yard lawn as a maintained lawn. They are committed to avoiding the use of herbicides, pesticides, and fertilizers in the wetlands and across their whole property.

In accordance with Article 10 Environmental Protection Standards Section 10.1010 Wetland Protect, the redevelopment will require a Conditional Use Permit from the Planning Board. The project does not require any additional relief from the City of Portsmouth Zoning Ordinance.

Per Section 10.1017.50 for criteria for approval of a Conditional Use Permit, Altus offers the following:

(1) The land is reasonably suited to the use, activity, or alteration.

The property is within the SRB Zoning District, a residential zone. All of the abutting properties are residential. The parcel has been used as a single-family residence for nearly 100-years and will continue to do so. The minimum lot size in the zoning district is 15,000 SF. The existing lot is 20,585 SF in area. Consolidated, the lot will exceed 30,000 SF, enough land to subdivide land into two parcels.

The existing home is served by municipal water supply and is connected to the municipal sewage collection system. Commercial use of the property is not allowed. As such, the only viable use of the property is a single-family residence.

(2) There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity, or alteration.

Consolidated, the 30,962 SF parcel exceeds the minimum lot size for the zoning district. Only 3,550 SF of the lot is not within the wetland buffer and the majority of that area is within the front and side yard setbacks which are not buildable by right or are sited in the rear of the lot requiring a long access drive across the buffer for access. Only 725 SF of the lot exclusive of the existing building is viable for development without obtaining a variance or conditional use permit.

Thus, there is very little viable building envelope that meets both the zoning setbacks and is outside the wetland buffer area. The development proposed is sited as far from the resource area as reasonably possible. The Rainboth's are taking advantage of retaining the existing home and expanding it. Due to the layout of the existing structure and the desire to have a two bay garage, the addition needs to be attached to the rear of the home and then will extend south to provide access to the garage.

(3) There will be no adverse impact on the wetland functional values of the site or surrounding properties;

The majority of the on-site wetland system is maintained as lawn and has been for several decades.

Along the property line, the wetland transitions to a natural environment with scrub growth. The wetland/lawn encompasses 6,100 SF. No impacts or changes

are proposed to this area. The lawn functions as a stormwater filter, natural detention, and moderates the velocity of runoff discharging from the neighborhood.

Currently upgradient of the wetland is the house, garage/shed, and large paved driveway. The existing expansive driveway is within 32-feet of the wetlands. The building and pavement will be moved further from the wetland. The proposed deck, which will be permeable beneath, will be 49.5-feet from the wetland. Drip edges will be installed on the west side of the building to promote infiltration, reduce the rate of runoff, and provide treatment. Runoff from the east and north side of the building will be captured in gutters and will be directed to the infiltration system beneath the deck. Runoff from the new driveway will be routed across the lawn through a swale that will treat, reduce the velocity, and reduce runoff temperature before discharge into the wetland.

Stormwater quantity will be enhanced and volume and peak rate of runoff discharging from the site will be reduced.

The site effective impervious area will be slightly reduced in both the wetland buffer and the entire lot, as we are taking advantage of the area beneath the deck to provide groundwater recharge and infiltration.

(4) Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals; and

The entire redevelopment project will be within areas that have previously been altered. Five trees and shrubs within the buffer will be removed. To offset the removal, 5 new wetland tolerant trees will be planted.

(5) The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this Section.

The proposed project will impact approximately 8,800 SF of land area within the wetland buffer. All of the impacts will be within previously developed areas that are either lawn, building, or driveway. The design approach avoids impacting natural areas. The house addition is placed as close to the front lot line as reasonably possible and remain compliant with the zoning ordinance and provide natural flow of the interior of the existing house to the addition and garage, while providing adequate space for parking in the driveway for visitors as Ridges Court is narrow and has limited opportunities for street parking.

(6) Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.

In lieu of restoring the wetland to the natural state and providing a natural buffer, the Rainboth's are offering to consolidate Lots 68 and 69, which are each assessed

in excess of $400,000 as individual building lots. This concession negates any potential for future development of those lots as single-family residences. It is our opinion that eliminating the potential for development provides a greater long-term benefit to the adjacent wetland than restoring the buffer.

5639-a cup narrative.docx

JOSEPH W. NOEL
P.O. BOX 174
SOUTH BERWICK, MAINE 03908
(207) 384-5587

*CERTIFIED SOIL SCIENTIST * WETLAND SCIENTIST * LICENSED SITE EVALUATOR*

January 22, 2025

Mr. Eric Weinrieb, P.E.
Altus Engineering
133 Court Street
Portsmouth, New Hampshire 03801

RE: 56 Ridges Court, Portsmouth, New Hampshire, JWN #23-142

Dear Eric:

Per your request, the following information is provided to assist you in the Conditional Use Permit Application requirements. Specifically, Section 10.101722(3) of the City Of Portsmouth, New Hampshire Zoning Ordinance.

The wetland delineation was conducted on December 21, 2023 (both tidal and freshwater wetlands). The delineation was conducted in accordance with the U.S. Army Corps of Engineers document *Corps of Engineers Wetlands Delineation Manual,* (1987) along with the required *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region,* (Version 2, January 2012). The wetland boundary was located by North Easterly Surveying. Mr. Marc Jacobs, Wetland Scientist #010, reviewed and confirmed the wetland delineation on February 20, 2024. The attached FEMA 100 year flood and extended flood hazard map from the town GIS database for the properties more closely represents the existing wetland system compared to other available resource maps.

The proposed project will not encroach into the 100 foot buffer of the tidal system (refer to photo of adjacent off-site tidal system). The freshwater wetland where buffer encroachment will occur is approximately an acre in size and would classify as a wet meadow with poorly drained soils. The portion of the delineated wetland on the subject properties is essentially a mowed lawn with some scattered sedges within the yard(s) and one large willow (*Salix sp.*). A few scattered willows were noted in the wetland off-site as well. An on-site was conducted on January 16, 2025 to collect data on the plants within the more natural portion of the wetland that was within the paper road. This area had been recently cut and there was not enough vegetation left to classify most of the herbaceous layer (refer to photo – the more snow covered areas are maintained paths within the wetland). Adjacent to the property line of 56 Ridges Court the <u>few</u> shrubs that were observed included: common buttonbush (*Cephalanthus occidentalis*), rambler rose (*Rosa multiflora*), glossy false buckthorn (*Frangula alnus*), European buckthorn (*Rhamnus cathartica*), and honeysuckle (*Lonicera sp.*). On the property, the only invasive plant was some

bittersweet (*Celastrus sp.)* that was growing in the garden with the planted blackberries (*Rubus sp.)*. Per Altus Engineering "Site Preparation Plan" they plan to remove miscellaneous garden area features where the bittersweet is growing. The bittersweet should be carefully removed and properly disposed of. A request from the Natural Heritage Bureau (NHB) was conducted and no rare species or exemplary natural communities were documented on the property (refer to attachment). There was a NHB record nearby but the NHB determined the proposed project will not impact the NHB record (detailed information on the NHB record was not supplied). During the wetland flagging of the tidal wetland, Jesuits-bark (*Iva frutescens*) that is a state listed "Threatened" species was observed by the undersigned. These shrubs are off-site and will not be impacted by the proposed development.

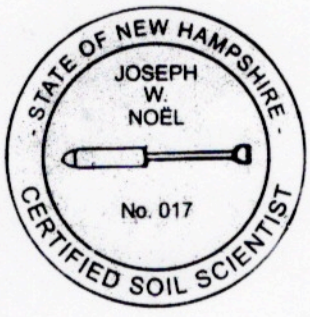
A formal functions and values assessment is not required per Section 10.1017.22 of the City Of Portsmouth, New Hampshire Zoning Ordinance. Using professional judgement, the performance of the functions and values would be low due to: relatively small wetland size (1+/- acre), wetland is disturbed/routinely cut so vegetation is not diverse, subtle ditching within the wetland lowers the ability to store and slowly release water, and existing buffers around the wetland are developed with residential homes. This wet meadow is still of importance due to the nearby downstream tidal wetland system. Refer to Altus Engineering stormwater plan for details on protecting the wet meadow system from increased runoff, etc.

The proposed redevelopment of the property will reduce the driveway size, relocated the garage and the attached garden shed further from the wet meadow. There will be a proposed addition, new deck, etc. Refer to Altus Engineering plans for details on the existing versus proposed plans for the property. The impervious surface will increase with the proposed redevelopment of the property (refer to Altus Engineering plans for existing and proposed impervious surface area, and proposed effective impervious area figures). Per Altus Engineering, the compensation proposed is to consolidate Lot 68 & 69 with Lot 63. Plantings are discussed by Altus Engineering to offset the removal of trees and shrubs in the uplands. The actual plantings and locations will be determined by a landscape designer.

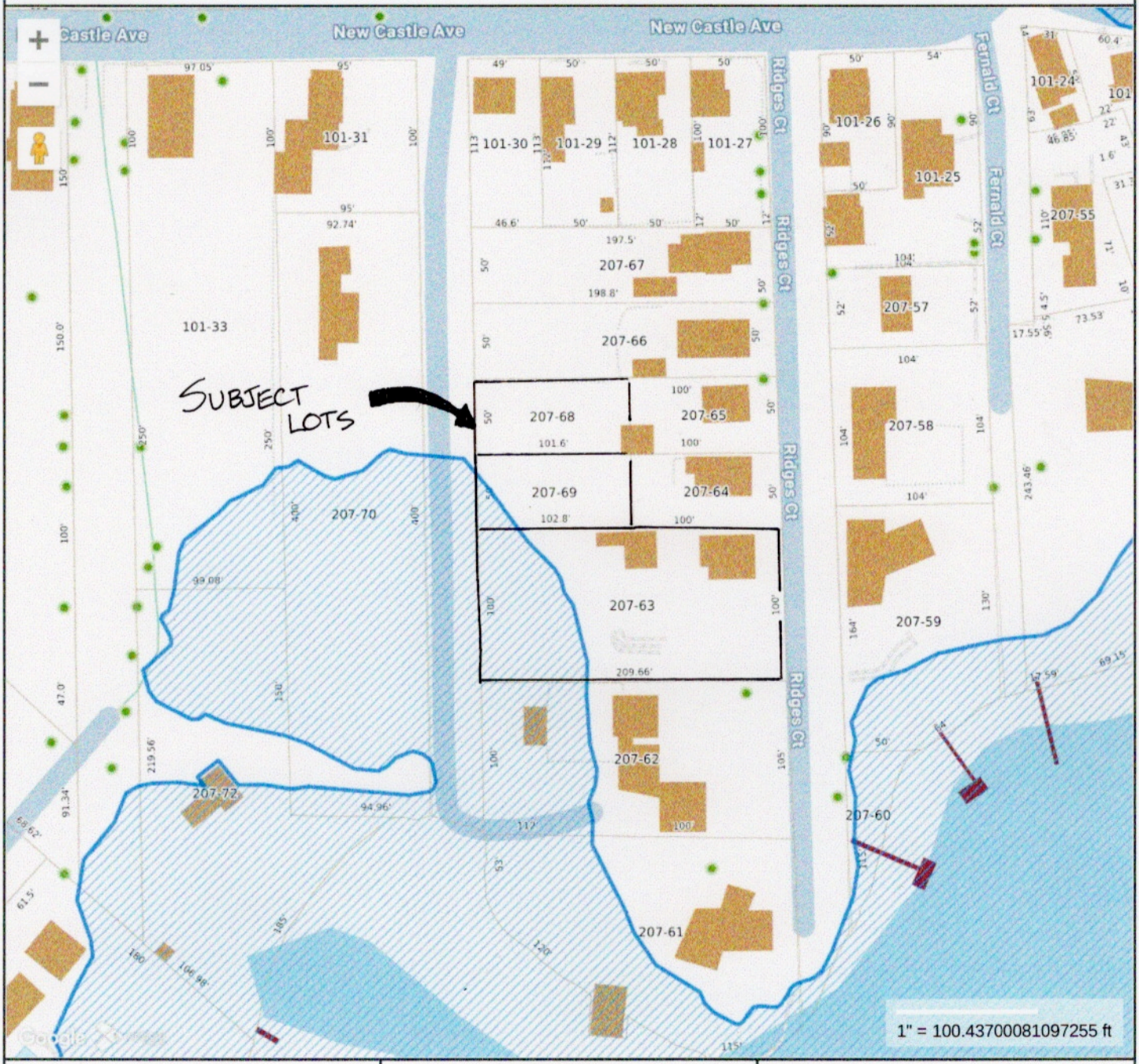
I hope this information is sufficient in the review of the proposed project. Please feel free to call with any questions.

Sincerely,

Joseph W. Noel
NH Certified Wetland Scientist #086
NH Certified Soil Scientist #017



56 Ridges Court - FEMA 100 year flood & Extended flood hazard area GIS layer



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 09/26/2024

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

PHOTOS
56 Ridges Court – Portsmouth, New Hampshire
(Photos taken by Joseph W. Noel on January 17, 2025)

Freshwater wetland system that was recently cut with berm in background and snow-covered maintained paths.

A view of the tidal wetland system with Canada geese taken from berm.

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

To: Eric Weinrieb, Altus Engineering, Inc.
133 Court Street

Portsmouth, NH 03801

From: NH Natural Heritage Bureau
Date: 1/22/2025 (valid until 1/22/2026)
Re: Review by NH Natural Heritage Bureau of request submitted 1/6/2025
Permits: MUNICIPAL POR - Local Review, NHDES - Shoreland Standard Permit

NHB ID: **NHB25-0048**

Applicant: Trustees of Rainboth Revocable Trust of 2010

Location: Portsmouth
56 Ridges Court

Project Description: Proposed addition to the house, deck, and shed.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 1/6/2025 5:30:44 PM, and cannot be used for any other project.

Based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

MAP OF PROJECT BOUNDARIES FOR: **NHB25-0048**

NHB25-0048

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

DRAINAGE ANALYSIS

FOR

Trustees of Rainboth Revocable Trust of 2010

56 Ridges Court
Portsmouth, NH

Tax Map 207 Lots 63, 68, and 69

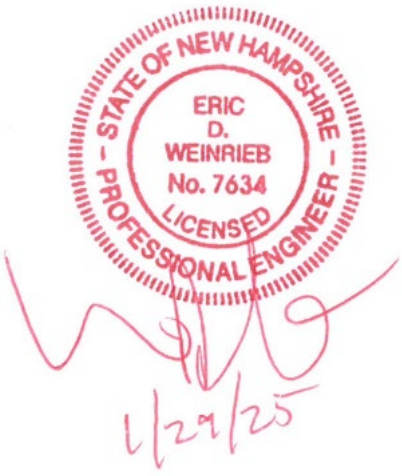
January 29, 2025

Prepared For:

Annmarie and Micheal Rainboth
Trustees of Rainboth Revocable Trust of 2010
122 New Castle Avenue
Portsmouth, NH 03801

Prepared By:

ALTUS ENGINEERING
133 Court Street
Portsmouth, NH 03801
Phone: (603) 433-2335



ALTUS ENGINEERING

Altus Project 5639

Table of Contents

ALTUS ENGINEERING

Section 1

Narrative

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PROJECT DESCRIPTION

The Trustees of the Rainboth Revocable Trust of 2010 are proposing to construct an addition to the existing home, a new driveway and a shed located at 56 Ridges Court Portsmouth, New Hampshire. The 0.71-acre property is identified as Tax Map 207, Lots 63, 68, and 69 and is located in the Single Residence-B District. The site is currently developed as a single-family residence. Access to the development site is via a driveway coming off Ridges Court.

The proposed project will construct a new addition, driveway, and shed. The house is serviced by municipal water and sewer. The proposed stormwater management system includes stone drip edges, a stone infiltration basin, and vegetative swales. These will mitigate and improve the storm water quality leaving the property.

Site Soils/Wetlands

Based off data from the USDA National Resources Conservation Service Web Soil Survey, the site sits on 799 Urban land-Canton complex soils. Altus recognizes these soils as HSG B and C except for the wetland which we categorized as HSG D based on poor infiltration capacity. Joseph W. Noel, Wetland Scientist, completed an on-site inspection on December 21, 2023, and identified a freshwater wetland greater than 10,000 square feet. This finding was confirmed by Wetlands Scientist, Marc Jacobs.

Pre-Development (Existing Conditions)

The site currently features a single-family home with a deck, detached shed, and paved driveway. Stormwater is collected in gutters around the home and is conveyed towards the wetland. The site generally slopes in a westerly direction towards the delineated wetland. Hydrology is characterized by two existing sub-catchments as delineated on the accompanying "Pre-Development Watershed Plan". Site runoff was analyzed at two points of analysis (POA). POA #1 is on the northern border of the property and POA #2 is in the southwest corner of the property under the wetland.

Post-Development (Proposed Conditions)

The site plan features the addition to the existing house as well as the new driveway and proposed shed.

The post-development conditions were analyzed at the same discharge point as the pre-development conditions. The post-development watersheds are delineated on the accompanying "Post-Development Watershed Plan". Modifications to the delineated areas and associated ground cover were made to sub-catchments to account for the improvements to the property. As shown on the attached Post-Development Watershed Plan, the site was divided into seven post-development sub-catchment areas. The same points of analysis in the Pre-Development model were used for comparison of the Pre- and Post-development conditions.

The Post-Development Watershed Plan illustrates the proposed stormwater management system. 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.

CALCULATION METHODS

The drainage study was completed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. Reservoir routing was performed with the Dynamic Storage Indication method with automated 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 provided by the Northeast Regional Climate Center (NRCC). 15% was added to each storm event's rainfall data as required in the city or Portsmouth site plan review regulations. A time span of 0 to 24 hours was analyzed at 0.01-hour increments. Infiltration rates are based on the K_{sat} Values for New Hampshire soils.

Drainage Analysis

A complete summary of the drainage model is included in the appendix of this report. The following table compares pre- and post-development peak rates at the Points of Analysis identified on the plans for the 2, 10, 25 and 50-year storm events:

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

	2-Yr Storm (3.69 inch)	**10-Yr Storm (5.59 inch)**	**25-Yr Storm (7.10 inch)**	**50-Yr Storm (8.50 inch)**
POA #1				
Pre	0.04	0.10	0.16	0.22
Post	0.04	0.10	0.16	0.22
Change	**0.00**	**0.00**	**0.00**	**0.00**
POA #2				
Pre	1.39	2.75	3.88	4.94
Post	1.25	2.47	3.49	4.93
Change	**-0.14**	**-0.28**	**-0.39**	**-0.01**

As the above table demonstrates, the proposed peak rates of runoff at the point of analysis will be decreased or unchanged from the existing conditions for all analyzed storm events.

CONCLUSION

This proposed site redevelopment of property located at 56 Ridges Court Portsmouth, New Hampshire will have no adverse effect on abutting properties as a result of stormwater runoff or siltation. Post-construction peak rates of runoff from the site will be lower than or the same as the existing conditions for all analyzed storm events. The new stormwater management system will also provide appropriate treatment to runoff from the proposed on-site impervious surfaces. Appropriate steps will be taken to properly mitigate erosion and sedimentation using temporary and permanent Best Management Practices for sediment and erosion control.

Disclaimer

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

Section 2

Aerial Photo and USGS Map

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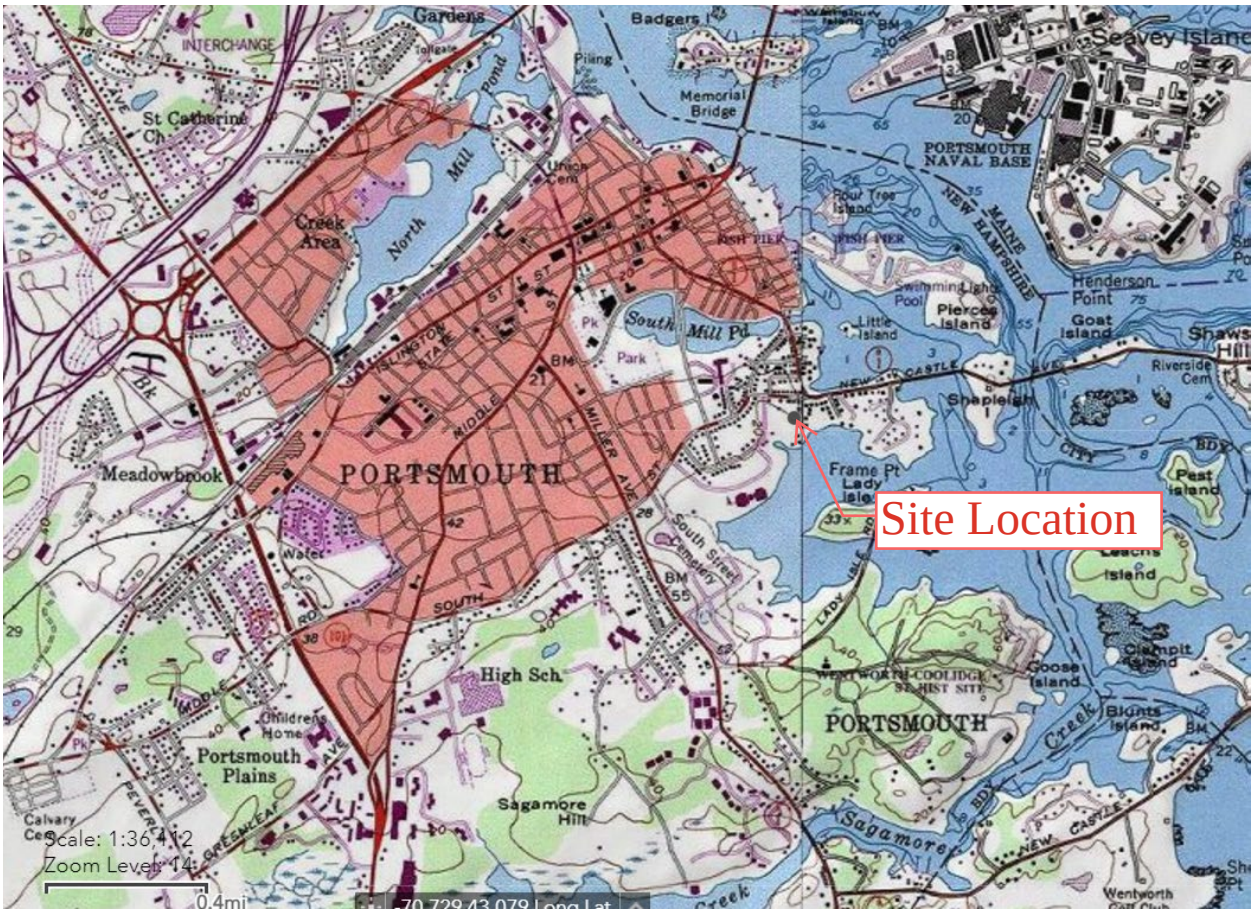
Site Location
Ridges Ct
Fernald Ct
207-67
207-66
207-68
207-65
207-69
207-64
207-70
207-63
207-62
207-57
207-59
207-60
101-25


Site Location
PORTSMOUTH
PORTSMOUTH NAVAL BASE
Seavey Island
Badgers Island
Memorial Bridge
Creek Area
North Mill Pond
South Mill Pd
Meadowbrook
Portsmouth Plains
High Sch
Sagamore Hill
Sagamore Creek
Frame Pt
Lady Isle
Shapleigh
Pierces Island
Little Island
Four Tree Island
Henderson Point
Goat Island
Riverside Cem
Pest Island
Leachs Island
Clampit Island
Goose Island
Blunts Island
Wentworth
Scale: 1:36,112
Zoom Level: 14
0.4mi

Section 3

Drainage Calculations

Pre-Development
2-Year, 24-Hour Summary
10-Year, 24-Hour Complete
25-Year, 24-Hour Summary
50-Year, 24-Hour Summary

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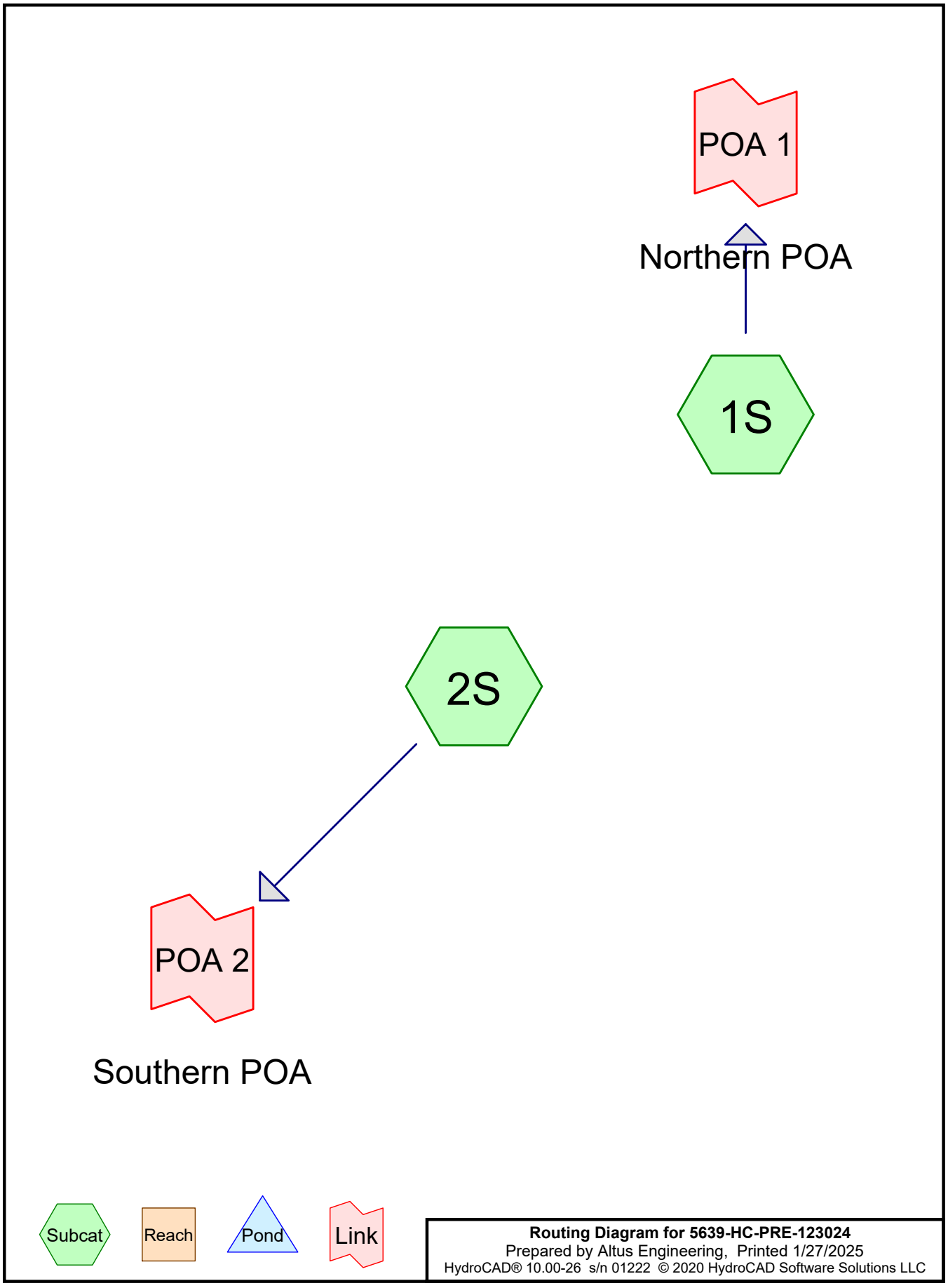


Routing Diagram for 5639-HC-PRE-123024
Prepared by Altus Engineering, Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>0.85"
Tc=6.0 min CN=65 Runoff=0.04 cfs 0.003 af

Subcatchment 2S: Runoff Area=34,047 sf 16.59% Impervious Runoff Depth>1.64"
Flow Length=248' Tc=8.0 min CN=78 Runoff=1.39 cfs 0.107 af

Link POA 1: Northern POA Inflow=0.04 cfs 0.003 af
Primary=0.04 cfs 0.003 af

Link POA 2: Southern POA Inflow=1.39 cfs 0.107 af
Primary=1.39 cfs 0.107 af

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>3.18"
Tc=6.0 min CN=65 Runoff=0.16 cfs 0.012 af

Subcatchment 2S: Runoff Area=34,047 sf 16.59% Impervious Runoff Depth>4.56"
Flow Length=248' Tc=8.0 min CN=78 Runoff=3.88 cfs 0.297 af

Link POA 1: Northern POA Inflow=0.16 cfs 0.012 af
Primary=0.16 cfs 0.012 af

Link POA 2: Southern POA Inflow=3.88 cfs 0.297 af
Primary=3.88 cfs 0.297 af

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>4.30"
Tc=6.0 min CN=65 Runoff=0.22 cfs 0.016 af

Subcatchment 2S: Runoff Area=34,047 sf 16.59% Impervious Runoff Depth>5.85"
Flow Length=248' Tc=8.0 min CN=78 Runoff=4.94 cfs 0.381 af

Link POA 1: Northern POA Inflow=0.22 cfs 0.016 af
Primary=0.22 cfs 0.016 af

Link POA 2: Southern POA Inflow=4.94 cfs 0.381 af
Primary=4.94 cfs 0.381 af

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.033	61	>75% Grass cover, Good, HSG B (2S)
0.346	74	>75% Grass cover, Good, HSG C (2S)
0.181	80	>75% Grass cover, Good, HSG D (2S)
0.111	65	Brush, Good, HSG C (1S, 2S)
0.024	73	Brush, Good, HSG D (2S)
0.042	98	Paved parking, HSG B (2S)
0.043	98	Paved parking, HSG C (2S)
0.041	98	Roofs, HSG B (2S)
0.004	98	Roofs, HSG C (2S)
0.825	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.115	HSG B	2S
0.505	HSG C	1S, 2S
0.205	HSG D	2S
0.000	Other	
0.825		**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	0.033	0.346	0.181	0.000	0.561	>75% Grass cover, Good	2S
0.000	0.000	0.111	0.024	0.000	0.135	Brush, Good	1S, 2S
0.000	0.042	0.043	0.000	0.000	0.085	Paved parking	2S
0.000	0.041	0.004	0.000	0.000	0.045	Roofs	2S
0.000	**0.115**	**0.505**	**0.205**	**0.000**	**0.825**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>2.05"
Tc=6.0 min CN=65 Runoff=0.10 cfs 0.007 af

Subcatchment 2S: Runoff Area=34,047 sf 16.59% Impervious Runoff Depth>3.21"
Flow Length=248' Tc=8.0 min CN=78 Runoff=2.75 cfs 0.209 af

Link POA 1: Northern POA Inflow=0.10 cfs 0.007 af
Primary=0.10 cfs 0.007 af

Link POA 2: Southern POA Inflow=2.75 cfs 0.209 af
Primary=2.75 cfs 0.209 af

Total Runoff Area = 0.825 ac Runoff Volume = 0.217 af Average Runoff Depth = 3.15"
84.29% Pervious = 0.696 ac 15.71% Impervious = 0.130 ac

Summary for Subcatchment 1S:

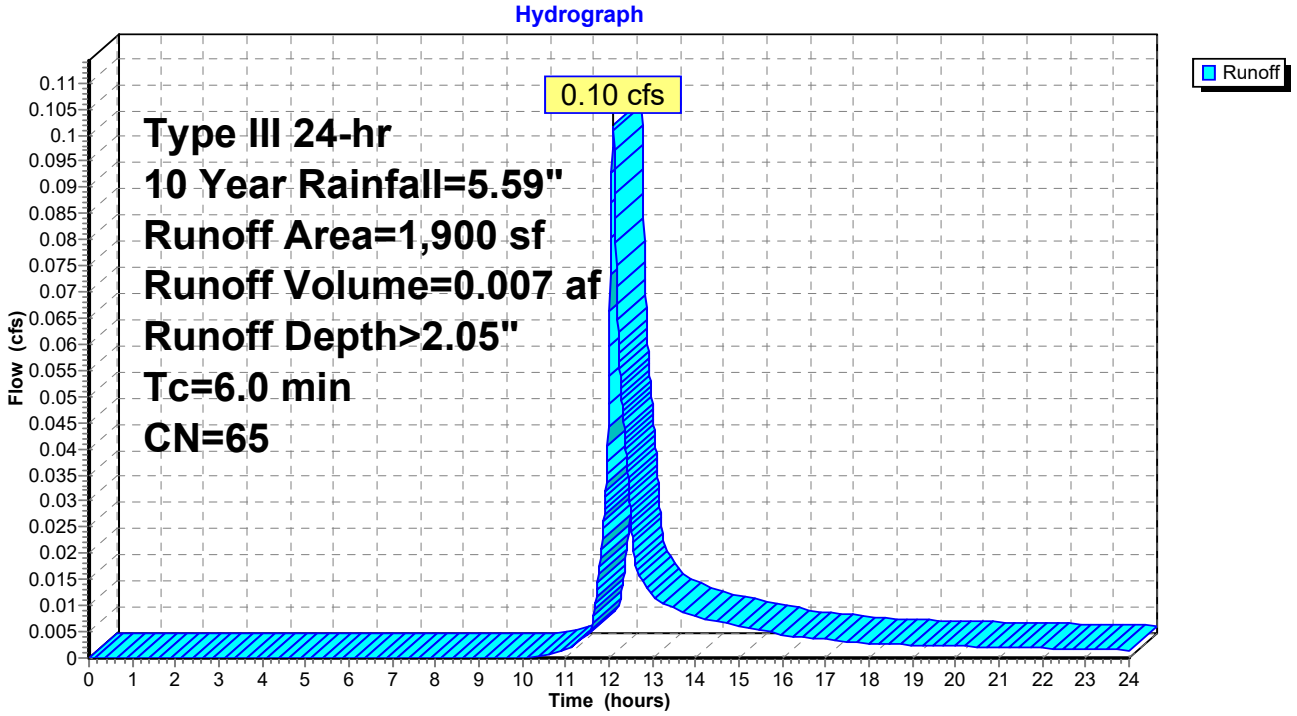
Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
1,900	65	Brush, Good, HSG C
1,900		100.00% Pervious Area

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

Subcatchment 1S:



Summary for Subcatchment 2S:

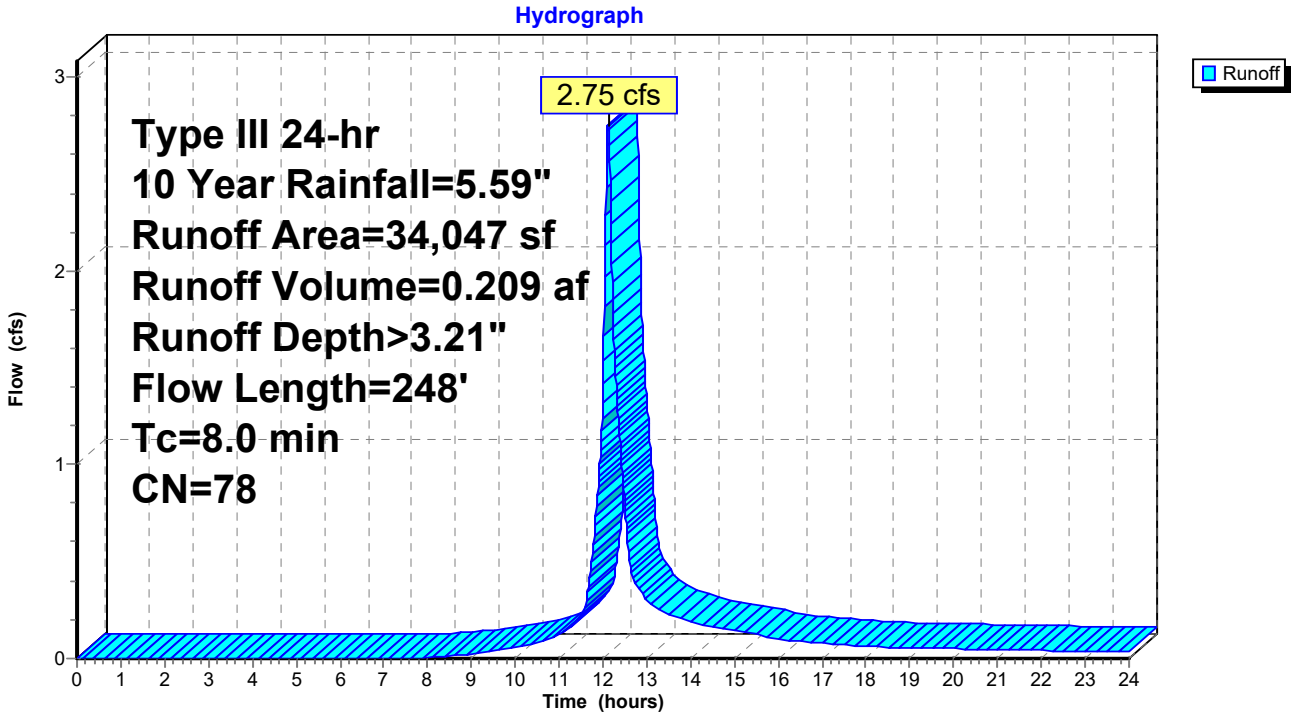
Runoff = 2.75 cfs @ 12.11 hrs, Volume= 0.209 af, Depth> 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
1,767	98	Roofs, HSG B
195	98	Roofs, HSG C
1,811	98	Paved parking, HSG B
1,876	98	Paved parking, HSG C
1,445	61	>75% Grass cover, Good, HSG B
15,077	74	>75% Grass cover, Good, HSG C
2,942	65	Brush, Good, HSG C
7,899	80	>75% Grass cover, Good, HSG D
1,035	73	Brush, Good, HSG D
34,047	78	Weighted Average
28,398		83.41% Pervious Area
5,649		16.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0800	0.16		**Sheet Flow, Brush, HSG C** n= 0.300 P2= 3.69"
0.6	106	0.0377	2.91		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.2	92	0.0100	0.70		**Shallow Concentrated Flow, Brush, HSG D** Short Grass Pasture Kv= 7.0 fps
8.0	248	Total			

Subcatchment 2S:

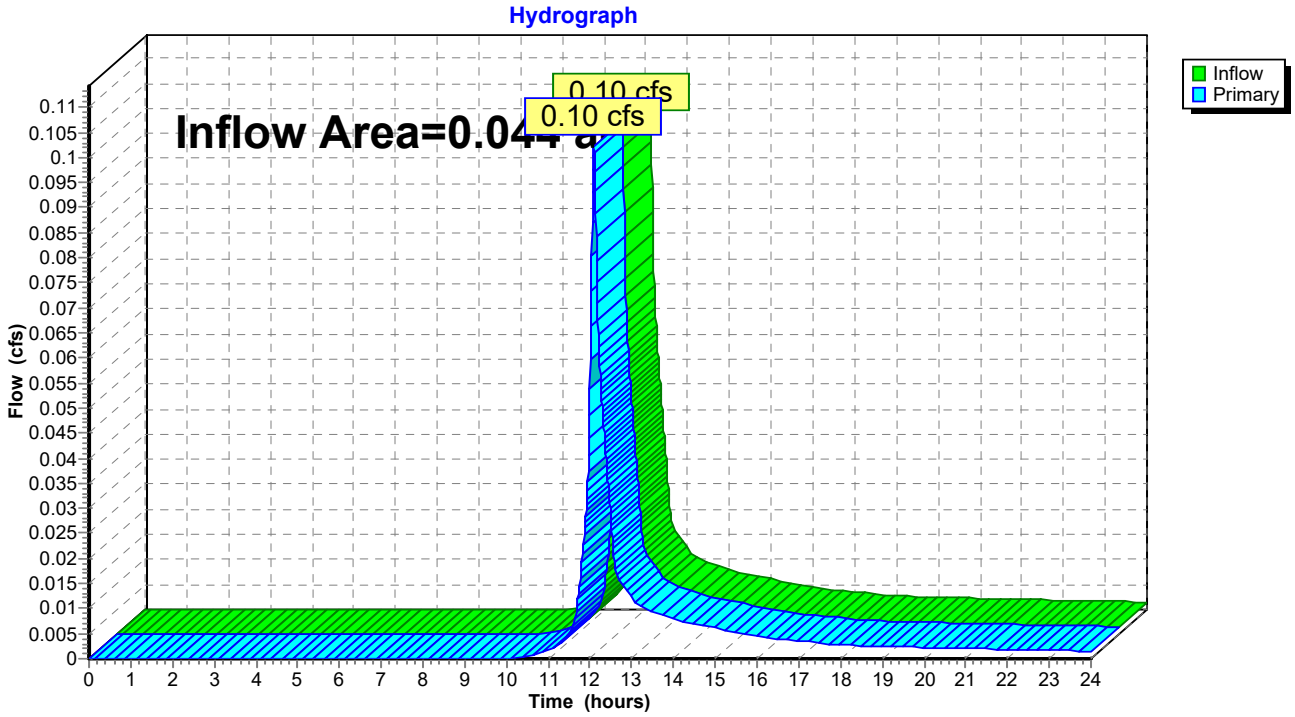


Summary for Link POA 1: Northern POA

Inflow Area = 0.044 ac, 0.00% Impervious, Inflow Depth > 2.05" for 10 Year event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POA 1: Northern POA

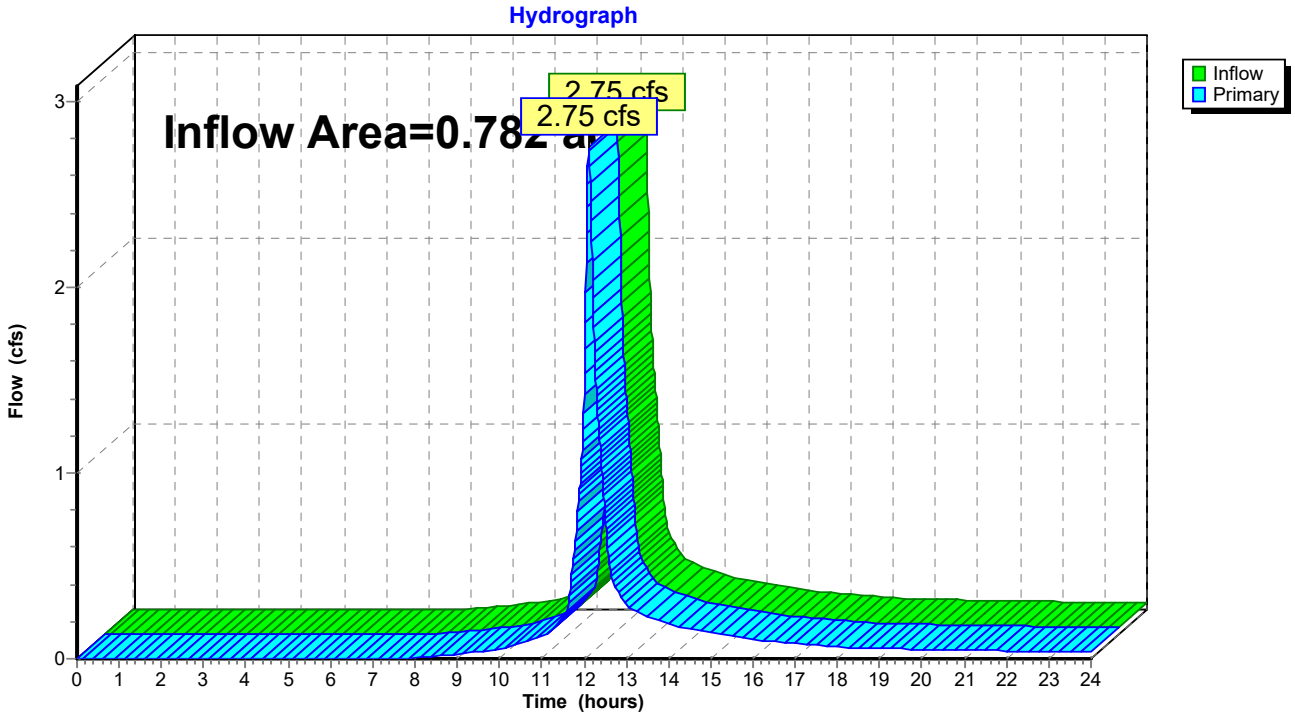


Summary for Link POA 2: Southern POA

Inflow Area = 0.782 ac, 16.59% Impervious, Inflow Depth > 3.21" for 10 Year event
Inflow = 2.75 cfs @ 12.11 hrs, Volume= 0.209 af
Primary = 2.75 cfs @ 12.11 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POA 2: Southern POA



Section 4

Drainage Calculations

Post-Development
2-Year, 24-Hour Summary
10-Year, 24-Hour Complete
25-Year, 24-Hour Summary
50-Year, 24-Hour Summary

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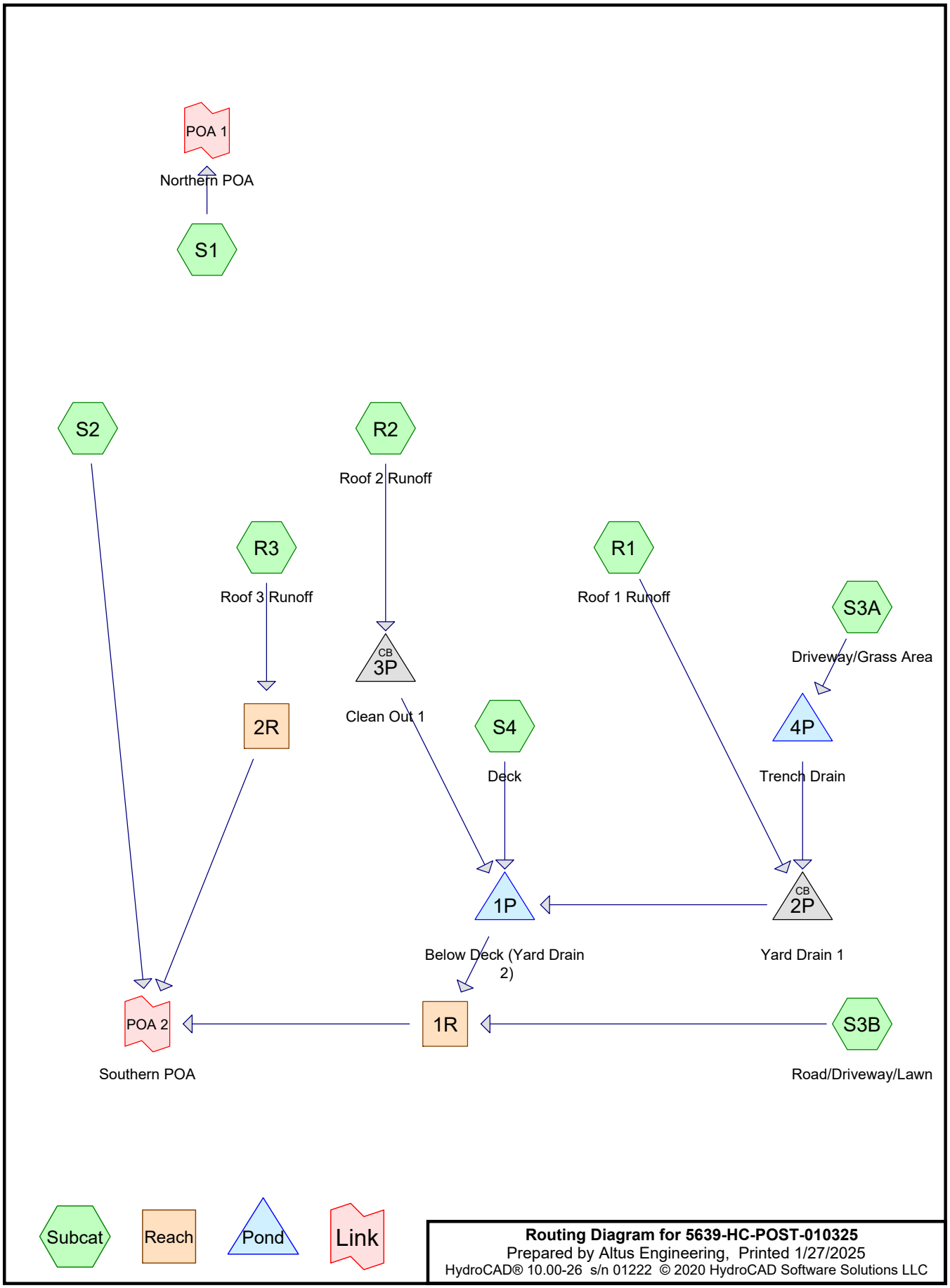


Routing Diagram for 5639-HC-POST-010325
Prepared by Altus Engineering, Printed 1/27/2025

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment R1: Roof 1 Runoff Runoff Area=1,149 sf 100.00% Impervious Runoff Depth>3.45"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.008 af

Subcatchment R2: Roof 2 Runoff Runoff Area=307 sf 100.00% Impervious Runoff Depth>3.45"
Tc=6.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment R3: Roof 3 Runoff Runoff Area=476 sf 100.00% Impervious Runoff Depth>3.45"
Tc=6.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment S1: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>0.85"
Tc=6.0 min CN=65 Runoff=0.04 cfs 0.003 af

Subcatchment S2: Runoff Area=26,434 sf 2.23% Impervious Runoff Depth>1.44"
Flow Length=248' Tc=8.0 min CN=75 Runoff=0.93 cfs 0.073 af

Subcatchment S3A: Driveway/Grass Area Runoff Area=1,111 sf 65.35% Impervious Runoff Depth>2.18"
Tc=6.0 min CN=85 Runoff=0.07 cfs 0.005 af

Subcatchment S3B: Road/Driveway/Lawn Runoff Area=3,576 sf 67.28% Impervious Runoff Depth>2.62"
Tc=6.0 min CN=90 Runoff=0.25 cfs 0.018 af

Subcatchment S4: Deck Runoff Area=985 sf 15.74% Impervious Runoff Depth>2.72"
Tc=6.0 min CN=91 Runoff=0.07 cfs 0.005 af

Reach 1R: Avg. Flow Depth=0.06' Max Vel=1.28 fps Inflow=0.25 cfs 0.018 af
n=0.022 L=177.0' S=0.0169 '/' Capacity=10.11 cfs Outflow=0.24 cfs 0.018 af

Reach 2R: Avg. Flow Depth=0.02' Max Vel=0.11 fps Inflow=0.04 cfs 0.003 af
n=0.150 L=177.0' S=0.0282 '/' Capacity=6.48 cfs Outflow=0.02 cfs 0.003 af

Pond 1P: Below Deck (Yard Drain 2) Peak Elev=10.23' Storage=176 cf Inflow=0.26 cfs 0.019 af
Discarded=0.06 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.019 af

Pond 2P: Yard Drain 1 Peak Elev=10.23' Inflow=0.16 cfs 0.012 af
6.0" Round Culvert n=0.010 L=50.0' S=0.0020 '/' Outflow=0.16 cfs 0.012 af

Pond 3P: Clean Out 1 Peak Elev=12.09' Inflow=0.03 cfs 0.002 af
6.0" Round Culvert n=0.010 L=70.0' S=0.0214 '/' Outflow=0.03 cfs 0.002 af

Pond 4P: Trench Drain Peak Elev=10.83' Storage=0.000 af Inflow=0.07 cfs 0.005 af
6.0" Round Culvert n=0.010 L=10.0' S=0.0580 '/' Outflow=0.07 cfs 0.005 af

Link POA 1: Northern POA Inflow=0.04 cfs 0.003 af
Primary=0.04 cfs 0.003 af

Link POA 2: Southern POA Inflow=1.19 cfs 0.094 af
Primary=1.19 cfs 0.094 af

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment R1: Roof 1 Runoff Runoff Area=1,149 sf 100.00% Impervious Runoff Depth>6.86"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment R2: Roof 2 Runoff Runoff Area=307 sf 100.00% Impervious Runoff Depth>6.86"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment R3: Roof 3 Runoff Runoff Area=476 sf 100.00% Impervious Runoff Depth>6.86"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment S1: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>3.18"
Tc=6.0 min CN=65 Runoff=0.16 cfs 0.012 af

Subcatchment S2: Runoff Area=26,434 sf 2.23% Impervious Runoff Depth>4.23"
Flow Length=248' Tc=8.0 min CN=75 Runoff=2.81 cfs 0.214 af

Subcatchment S3A: Driveway/Grass Area Runoff Area=1,111 sf 65.35% Impervious Runoff Depth>5.34"
Tc=6.0 min CN=85 Runoff=0.16 cfs 0.011 af

Subcatchment S3B: Road/Driveway/Lawn Runoff Area=3,576 sf 67.28% Impervious Runoff Depth>5.92"
Tc=6.0 min CN=90 Runoff=0.54 cfs 0.040 af

Subcatchment S4: Deck Runoff Area=985 sf 15.74% Impervious Runoff Depth>6.03"
Tc=6.0 min CN=91 Runoff=0.15 cfs 0.011 af

Reach 1R: Avg. Flow Depth=0.11' Max Vel=1.89 fps Inflow=0.74 cfs 0.046 af
n=0.022 L=177.0' S=0.0169 '/' Capacity=10.11 cfs Outflow=0.69 cfs 0.046 af

Reach 2R: Avg. Flow Depth=0.03' Max Vel=0.15 fps Inflow=0.08 cfs 0.006 af
n=0.150 L=177.0' S=0.0282 '/' Capacity=6.48 cfs Outflow=0.05 cfs 0.006 af

Pond 1P: Below Deck (Yard Drain 2) Peak Elev=10.72' Storage=353 cf Inflow=0.54 cfs 0.042 af
Discarded=0.06 cfs 0.036 af Primary=0.33 cfs 0.006 af Outflow=0.40 cfs 0.042 af

Pond 2P: Yard Drain 1 Peak Elev=10.83' Inflow=0.34 cfs 0.026 af
6.0" Round Culvert n=0.010 L=50.0' S=0.0020 '/' Outflow=0.34 cfs 0.026 af

Pond 3P: Clean Out 1 Peak Elev=12.13' Inflow=0.05 cfs 0.004 af
6.0" Round Culvert n=0.010 L=70.0' S=0.0214 '/' Outflow=0.05 cfs 0.004 af

Pond 4P: Trench Drain Peak Elev=10.94' Storage=0.000 af Inflow=0.16 cfs 0.011 af
6.0" Round Culvert n=0.010 L=10.0' S=0.0580 '/' Outflow=0.16 cfs 0.011 af

Link POA 1: Northern POA Inflow=0.16 cfs 0.012 af
Primary=0.16 cfs 0.012 af

Link POA 2: Southern POA Inflow=3.37 cfs 0.266 af
Primary=3.37 cfs 0.266 af

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment R1: Roof 1 Runoff Runoff Area=1,149 sf 100.00% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment R2: Roof 2 Runoff Runoff Area=307 sf 100.00% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment R3: Roof 3 Runoff Runoff Area=476 sf 100.00% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.008 af

Subcatchment S1: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>4.30"
Tc=6.0 min CN=65 Runoff=0.22 cfs 0.016 af

Subcatchment S2: Runoff Area=26,434 sf 2.23% Impervious Runoff Depth>5.49"
Flow Length=248' Tc=8.0 min CN=75 Runoff=3.63 cfs 0.277 af

Subcatchment S3A: Driveway/Grass Area Runoff Area=1,111 sf 65.35% Impervious Runoff Depth>6.69"
Tc=6.0 min CN=85 Runoff=0.19 cfs 0.014 af

Subcatchment S3B: Road/Driveway/Lawn Runoff Area=3,576 sf 67.28% Impervious Runoff Depth>7.29"
Tc=6.0 min CN=90 Runoff=0.65 cfs 0.050 af

Subcatchment S4: Deck Runoff Area=985 sf 15.74% Impervious Runoff Depth>7.41"
Tc=6.0 min CN=91 Runoff=0.18 cfs 0.014 af

Reach 1R: Avg. Flow Depth=0.15' Max Vel=2.23 fps Inflow=1.18 cfs 0.060 af
n=0.022 L=177.0' S=0.0169 '/' Capacity=10.11 cfs Outflow=1.13 cfs 0.060 af

Reach 2R: Avg. Flow Depth=0.03' Max Vel=0.17 fps Inflow=0.09 cfs 0.008 af
n=0.150 L=177.0' S=0.0282 '/' Capacity=6.48 cfs Outflow=0.06 cfs 0.007 af

Pond 1P: Below Deck (Yard Drain 2) Peak Elev=10.73' Storage=361 cf Inflow=0.64 cfs 0.051 af
Discarded=0.06 cfs 0.041 af Primary=0.56 cfs 0.010 af Outflow=0.62 cfs 0.051 af

Pond 2P: Yard Drain 1 Peak Elev=10.99' Inflow=0.41 cfs 0.032 af
6.0" Round Culvert n=0.010 L=50.0' S=0.0020 '/' Outflow=0.41 cfs 0.032 af

Pond 3P: Clean Out 1 Peak Elev=12.14' Inflow=0.06 cfs 0.005 af
6.0" Round Culvert n=0.010 L=70.0' S=0.0214 '/' Outflow=0.06 cfs 0.005 af

Pond 4P: Trench Drain Peak Elev=11.06' Storage=0.000 af Inflow=0.19 cfs 0.014 af
6.0" Round Culvert n=0.010 L=10.0' S=0.0580 '/' Outflow=0.19 cfs 0.014 af

Link POA 1: Northern POA Inflow=0.22 cfs 0.016 af
Primary=0.22 cfs 0.016 af

Link POA 2: Southern POA Inflow=4.79 cfs 0.345 af
Primary=4.79 cfs 0.345 af

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.023	61	>75% Grass cover, Good, HSG B (S2, S3A, S3B)
0.342	74	>75% Grass cover, Good, HSG C (S2, S3B)
0.181	80	>75% Grass cover, Good, HSG D (S2)
0.102	65	Brush, Good, HSG C (S1, S2)
0.024	73	Brush, Good, HSG D (S2)
0.019	90	Deck, HSG C (S4)
0.052	98	Paved parking, HSG B (R1, S3A, S3B)
0.021	98	Paved parking, HSG C (S2, S3B)
0.039	98	Roofs, HSG B (R1, R2, S3B)
0.022	98	Roofs, HSG C (R3, S2, S4)
0.825	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.114	HSG B	R1, R2, S2, S3A, S3B
0.506	HSG C	R3, S1, S2, S3B, S4
0.205	HSG D	S2
0.000	Other	
0.825		**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	0.023	0.342	0.181	0.000	0.547	>75% Grass cover, Good	S2, S3A, S3B
0.000	0.000	0.102	0.024	0.000	0.126	Brush, Good	S1, S2
0.000	0.000	0.019	0.000	0.000	0.019	Deck	S4
0.000	0.052	0.021	0.000	0.000	0.073	Paved parking	R1, S2, S3A, S3B
0.000	0.039	0.022	0.000	0.000	0.060	Roofs	R1, R2, R3, S2, S3B, S4
0.000	**0.114**	**0.506**	**0.205**	**0.000**	**0.825**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment R1: Roof 1 Runoff Runoff Area=1,149 sf 100.00% Impervious Runoff Depth>5.35"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.012 af

Subcatchment R2: Roof 2 Runoff Runoff Area=307 sf 100.00% Impervious Runoff Depth>5.35"
Tc=6.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment R3: Roof 3 Runoff Runoff Area=476 sf 100.00% Impervious Runoff Depth>5.35"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment S1: Runoff Area=1,900 sf 0.00% Impervious Runoff Depth>2.05"
Tc=6.0 min CN=65 Runoff=0.10 cfs 0.007 af

Subcatchment S2: Runoff Area=26,434 sf 2.23% Impervious Runoff Depth>2.93"
Flow Length=248' Tc=8.0 min CN=75 Runoff=1.95 cfs 0.148 af

Subcatchment S3A: Driveway/Grass Area Runoff Area=1,111 sf 65.35% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=85 Runoff=0.12 cfs 0.008 af

Subcatchment S3B: Road/Driveway/Lawn Runoff Area=3,576 sf 67.28% Impervious Runoff Depth>4.44"
Tc=6.0 min CN=90 Runoff=0.41 cfs 0.030 af

Subcatchment S4: Deck Runoff Area=985 sf 15.74% Impervious Runoff Depth>4.55"
Tc=6.0 min CN=91 Runoff=0.11 cfs 0.009 af

Reach 1R: Avg. Flow Depth=0.08' Max Vel=1.54 fps Inflow=0.41 cfs 0.032 af
n=0.022 L=177.0' S=0.0169 '/' Capacity=10.11 cfs Outflow=0.40 cfs 0.032 af

Reach 2R: Avg. Flow Depth=0.02' Max Vel=0.14 fps Inflow=0.06 cfs 0.005 af
n=0.150 L=177.0' S=0.0282 '/' Capacity=6.48 cfs Outflow=0.03 cfs 0.005 af

Pond 1P: Below Deck (Yard Drain 2) Peak Elev=10.71' Storage=341 cf Inflow=0.41 cfs 0.032 af
Discarded=0.06 cfs 0.030 af Primary=0.09 cfs 0.001 af Outflow=0.15 cfs 0.032 af

Pond 2P: Yard Drain 1 Peak Elev=10.73' Inflow=0.26 cfs 0.020 af
6.0" Round Culvert n=0.010 L=50.0' S=0.0020 '/' Outflow=0.26 cfs 0.020 af

Pond 3P: Clean Out 1 Peak Elev=12.11' Inflow=0.04 cfs 0.003 af
6.0" Round Culvert n=0.010 L=70.0' S=0.0214 '/' Outflow=0.04 cfs 0.003 af

Pond 4P: Trench Drain Peak Elev=10.88' Storage=0.000 af Inflow=0.12 cfs 0.008 af
6.0" Round Culvert n=0.010 L=10.0' S=0.0580 '/' Outflow=0.12 cfs 0.008 af

Link POA 1: Northern POA Inflow=0.10 cfs 0.007 af
Primary=0.10 cfs 0.007 af

Link POA 2: Southern POA Inflow=2.37 cfs 0.185 af
Primary=2.37 cfs 0.185 af

Total Runoff Area = 0.825 ac Runoff Volume = 0.223 af Average Runoff Depth = 3.24"
83.84% Pervious = 0.692 ac 16.16% Impervious = 0.133 ac

Summary for Subcatchment R1: Roof 1 Runoff

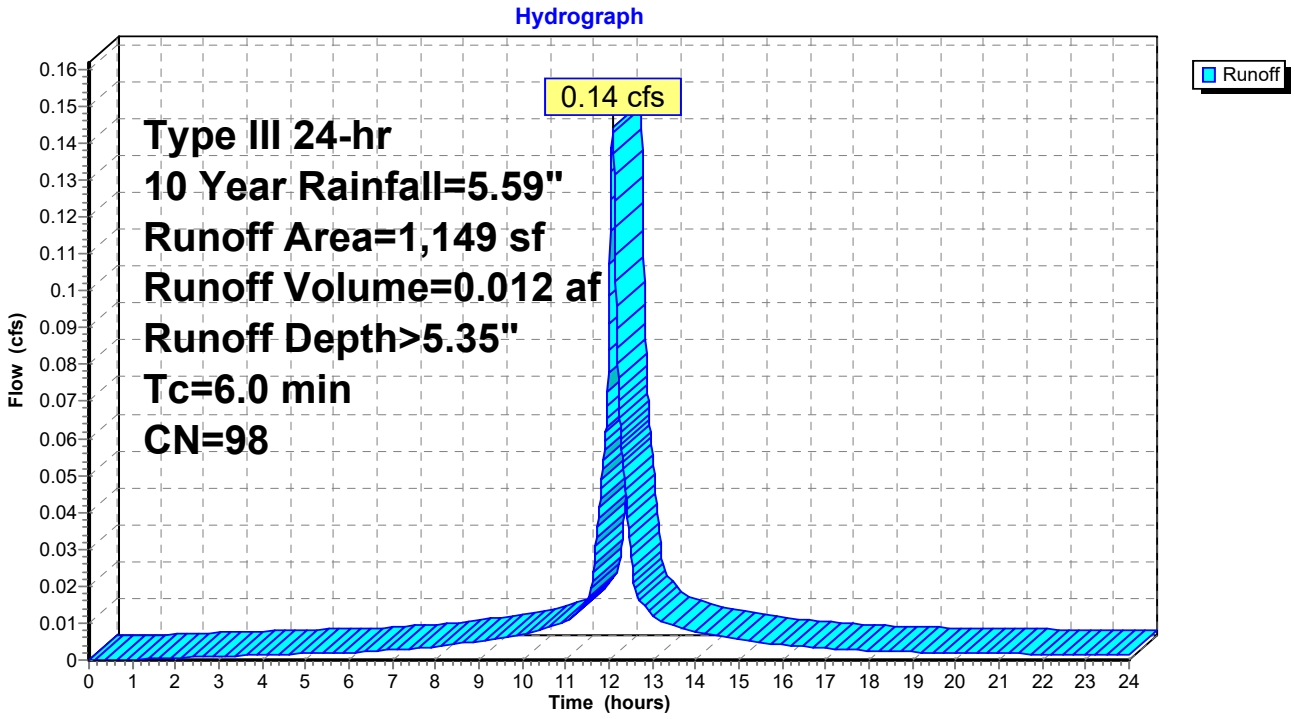
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
1,071	98	Roofs, HSG B
78	98	Paved parking, HSG B
1,149	98	Weighted Average
1,149		100.00% Impervious Area

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

Subcatchment R1: Roof 1 Runoff



Summary for Subcatchment R2: Roof 2 Runoff

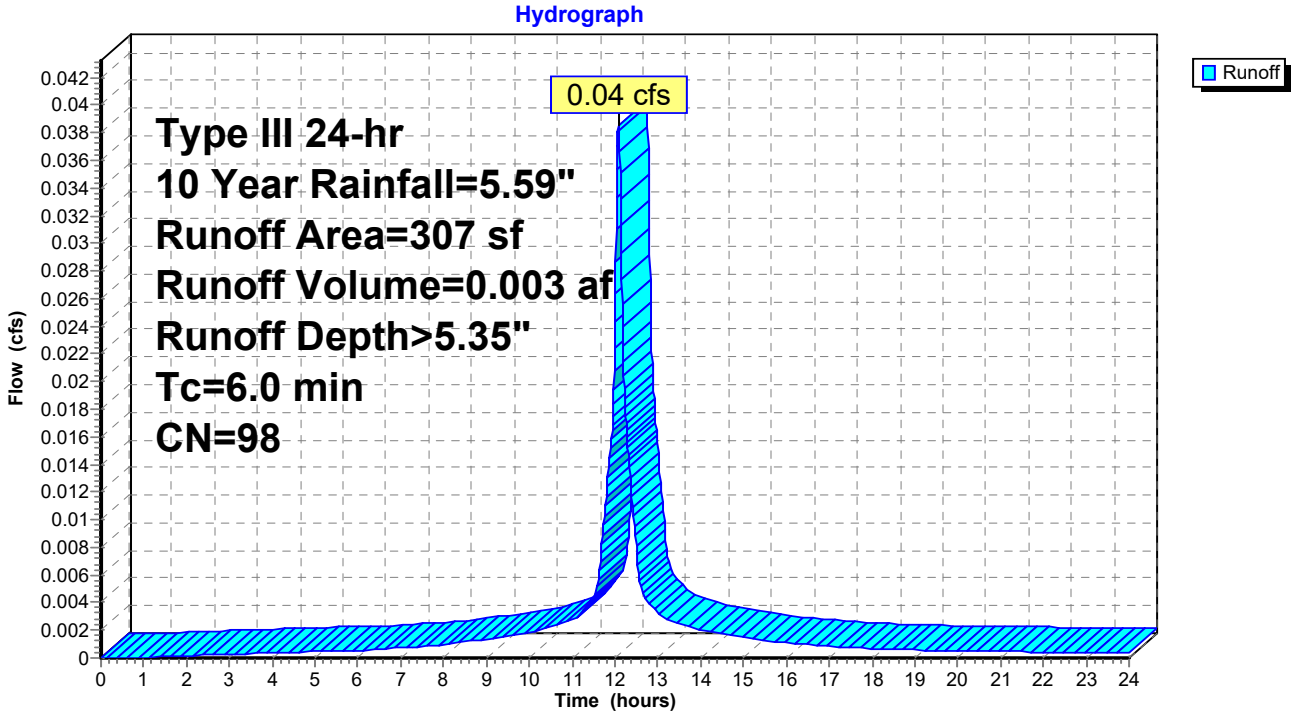
Runoff = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af, Depth> 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
307	98	Roofs, HSG B
307		100.00% Impervious Area

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

Subcatchment R2: Roof 2 Runoff



Summary for Subcatchment R3: Roof 3 Runoff

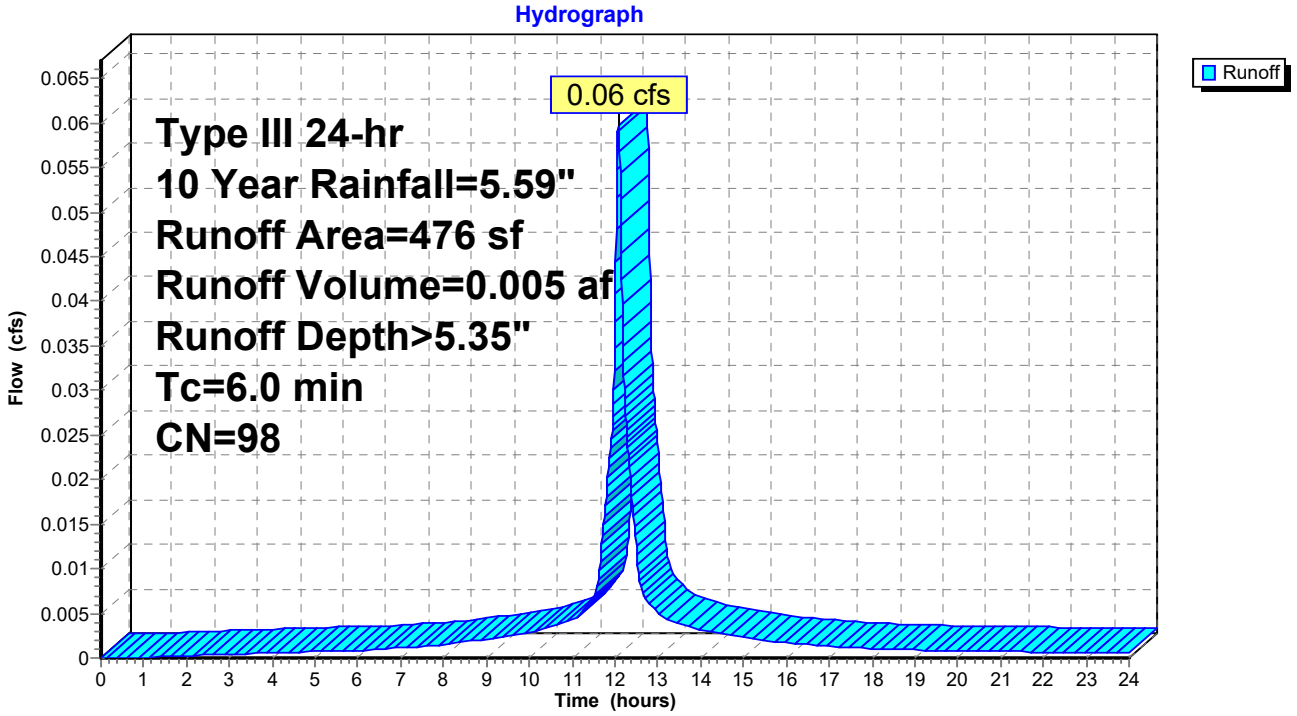
Runoff = 0.06 cfs @ 12.08 hrs, Volume= 0.005 af, Depth> 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
476	98	Roofs, HSG C
476		100.00% Impervious Area

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

Subcatchment R3: Roof 3 Runoff



Summary for Subcatchment S1:

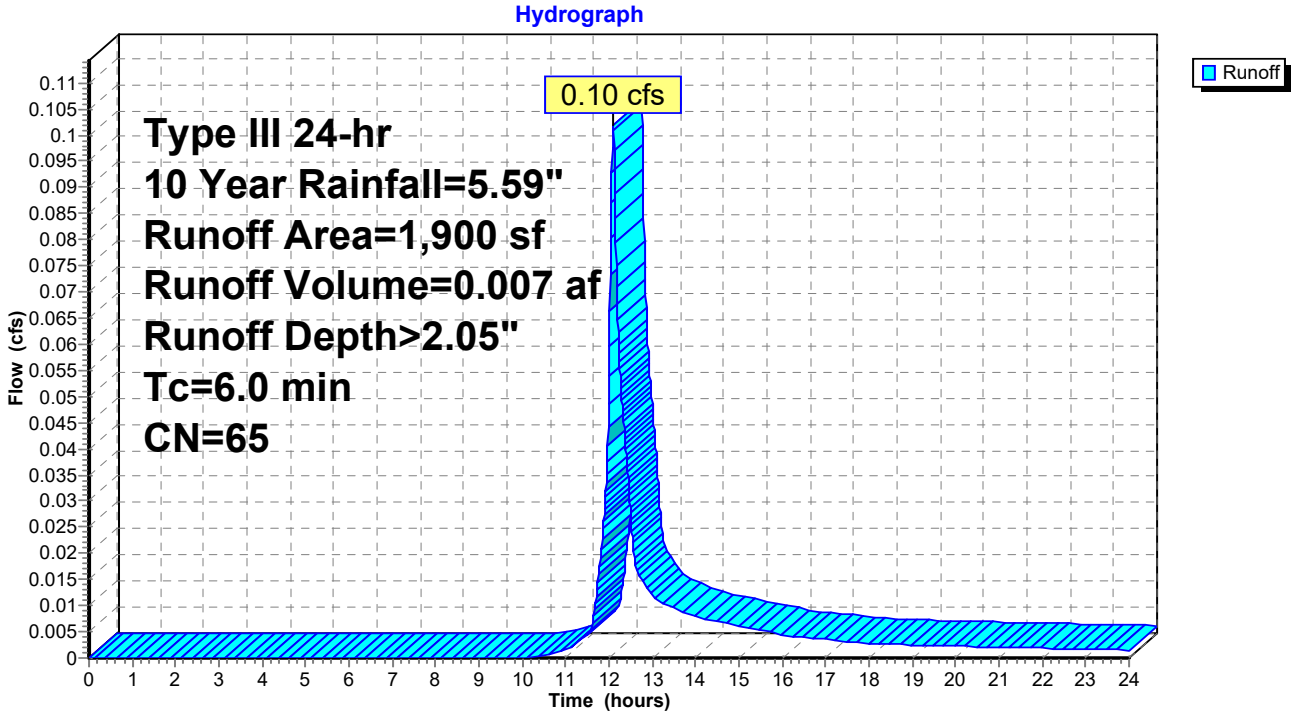
Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
1,900	65	Brush, Good, HSG C
1,900		100.00% Pervious Area

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

Subcatchment S1:



Summary for Subcatchment S2:

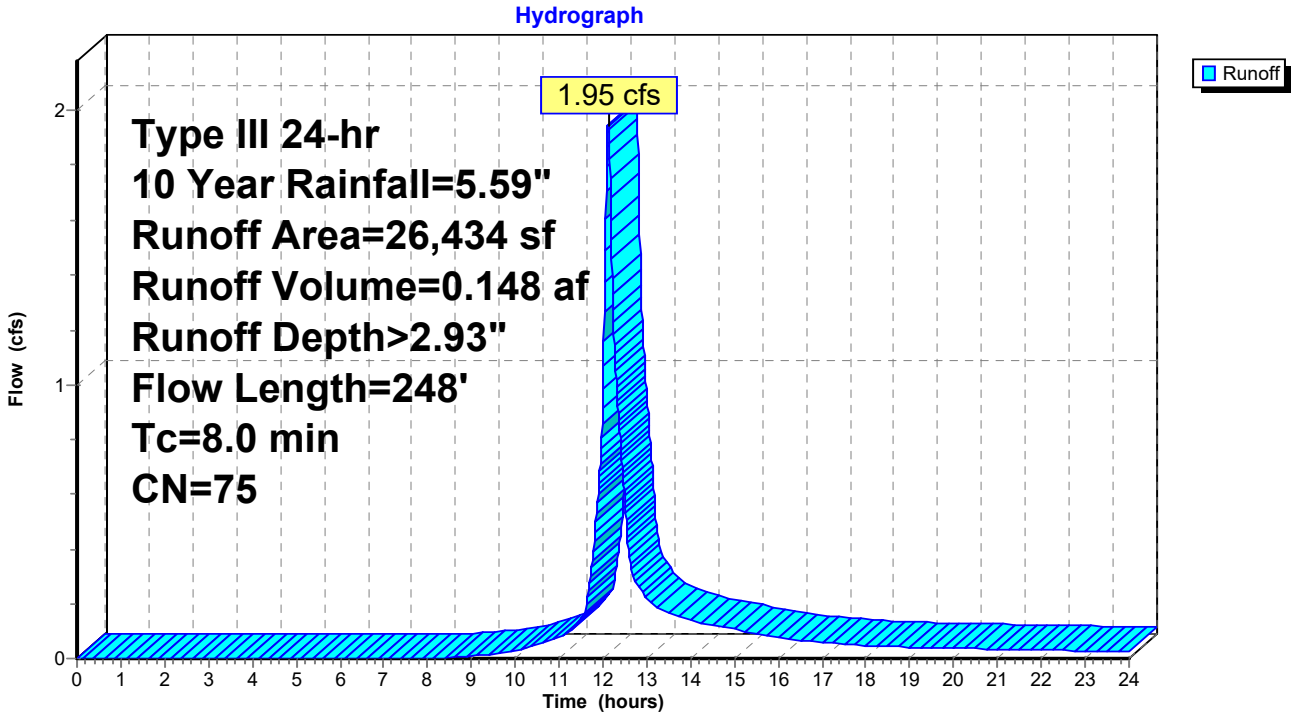
Runoff = 1.95 cfs @ 12.12 hrs, Volume= 0.148 af, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
320	98	Roofs, HSG C
270	98	Paved parking, HSG C
464	61	>75% Grass cover, Good, HSG B
13,894	74	>75% Grass cover, Good, HSG C
2,552	65	Brush, Good, HSG C
7,899	80	>75% Grass cover, Good, HSG D
1,035	73	Brush, Good, HSG D
26,434	75	Weighted Average
25,844		97.77% Pervious Area
590		2.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0800	0.16		**Sheet Flow, Brush, HSG C** n= 0.300 P2= 3.69"
0.6	106	0.0377	2.91		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.2	92	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.0	248	Total			

Subcatchment S2:



Summary for Subcatchment S3A: Driveway/Grass Area

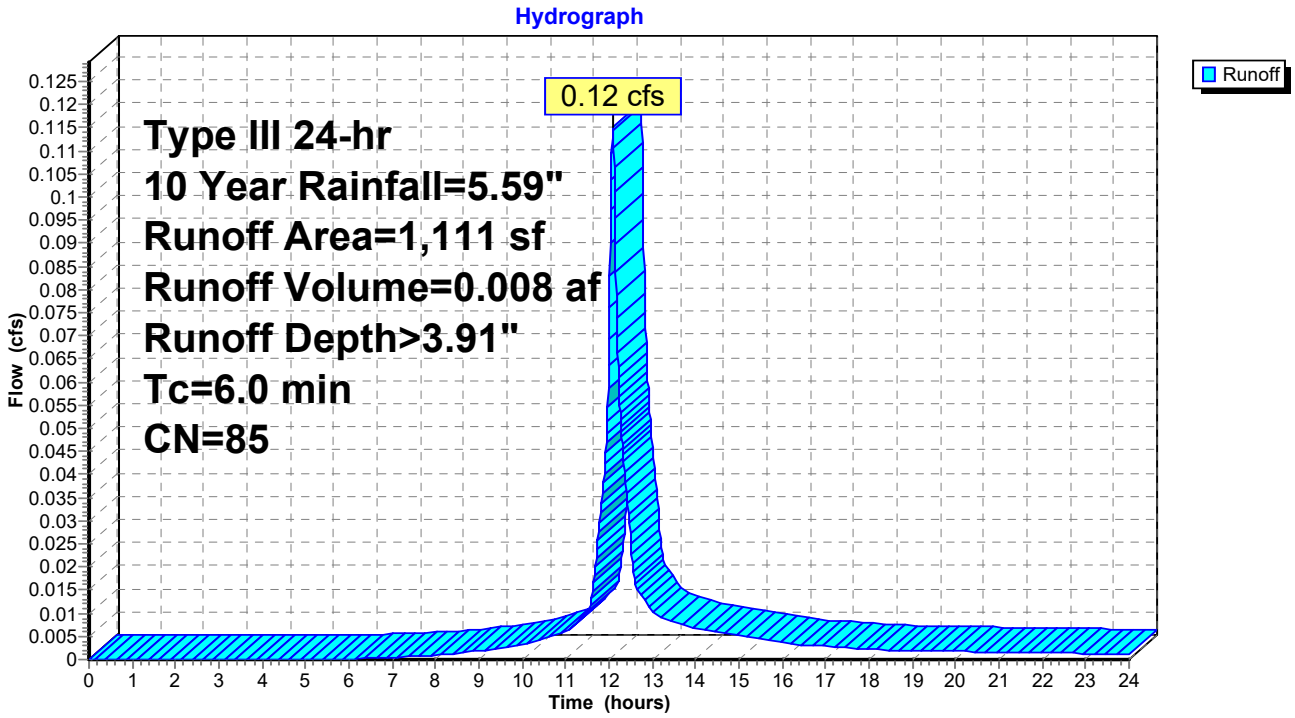
Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
726	98	Paved parking, HSG B
385	61	>75% Grass cover, Good, HSG B
1,111	85	Weighted Average
385		34.65% Pervious Area
726		65.35% Impervious Area

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

Subcatchment S3A: Driveway/Grass Area



Summary for Subcatchment S3B: Road/Driveway/Lawn

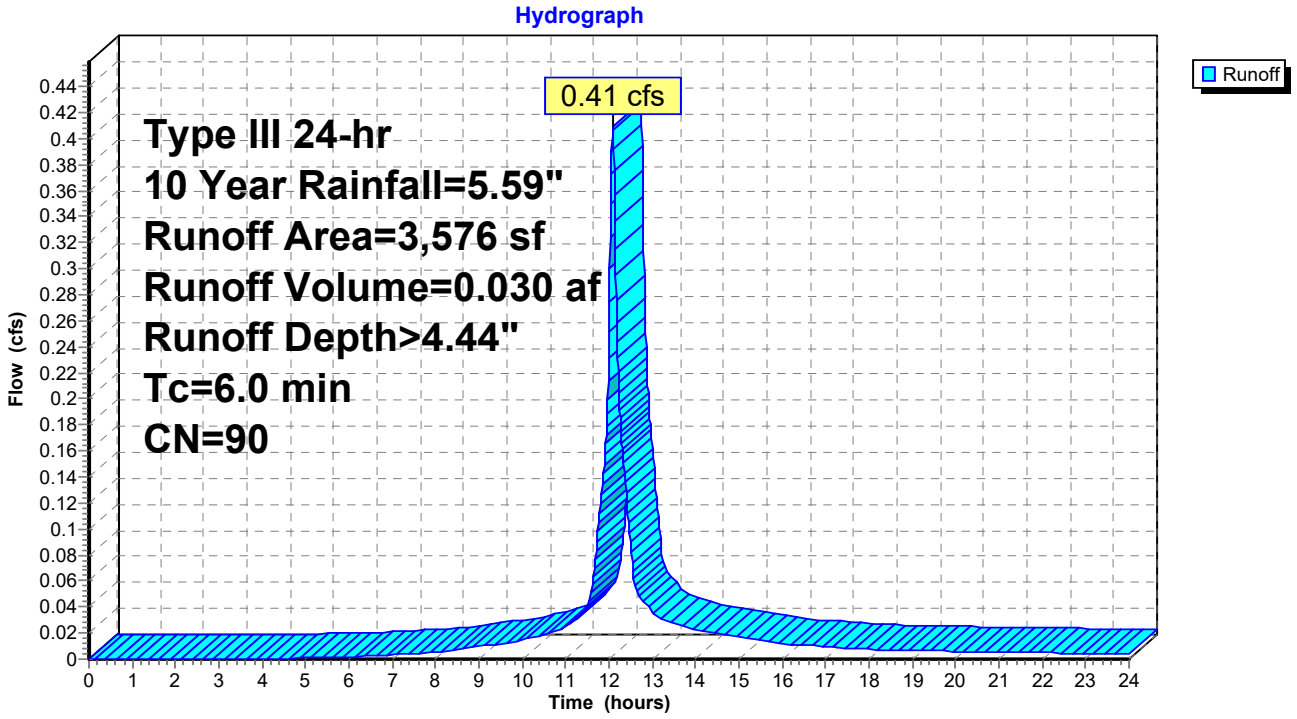
Runoff = 0.41 cfs @ 12.08 hrs, Volume= 0.030 af, Depth> 4.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

Area (sf)	CN	Description
301	98	Roofs, HSG B
1,461	98	Paved parking, HSG B
644	98	Paved parking, HSG C
161	61	>75% Grass cover, Good, HSG B
1,009	74	>75% Grass cover, Good, HSG C
3,576	90	Weighted Average
1,170		32.72% Pervious Area
2,406		67.28% Impervious Area

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

Subcatchment S3B: Road/Driveway/Lawn



Summary for Subcatchment S4: Deck

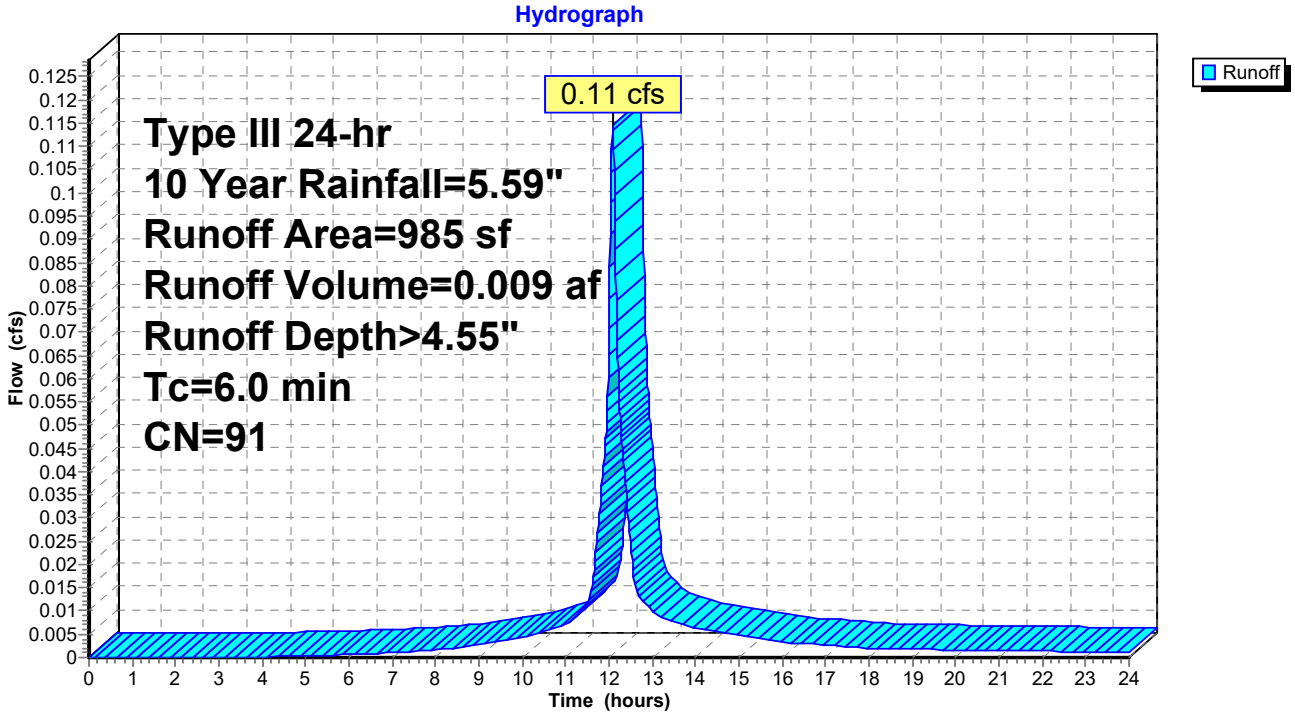
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.59"

	Area (sf)	CN	Description
	155	98	Roofs, HSG C
*	830	90	Deck, HSG C
	985	91	Weighted Average
	830		84.26% Pervious Area
	155		15.74% Impervious Area

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

Subcatchment S4: Deck



Summary for Reach 1R:

Inflow Area = 0.164 ac, 66.54% Impervious, Inflow Depth > 2.33" for 10 Year event
Inflow = 0.41 cfs @ 12.08 hrs, Volume= 0.032 af
Outflow = 0.40 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 3%, Lag= 1.2 min

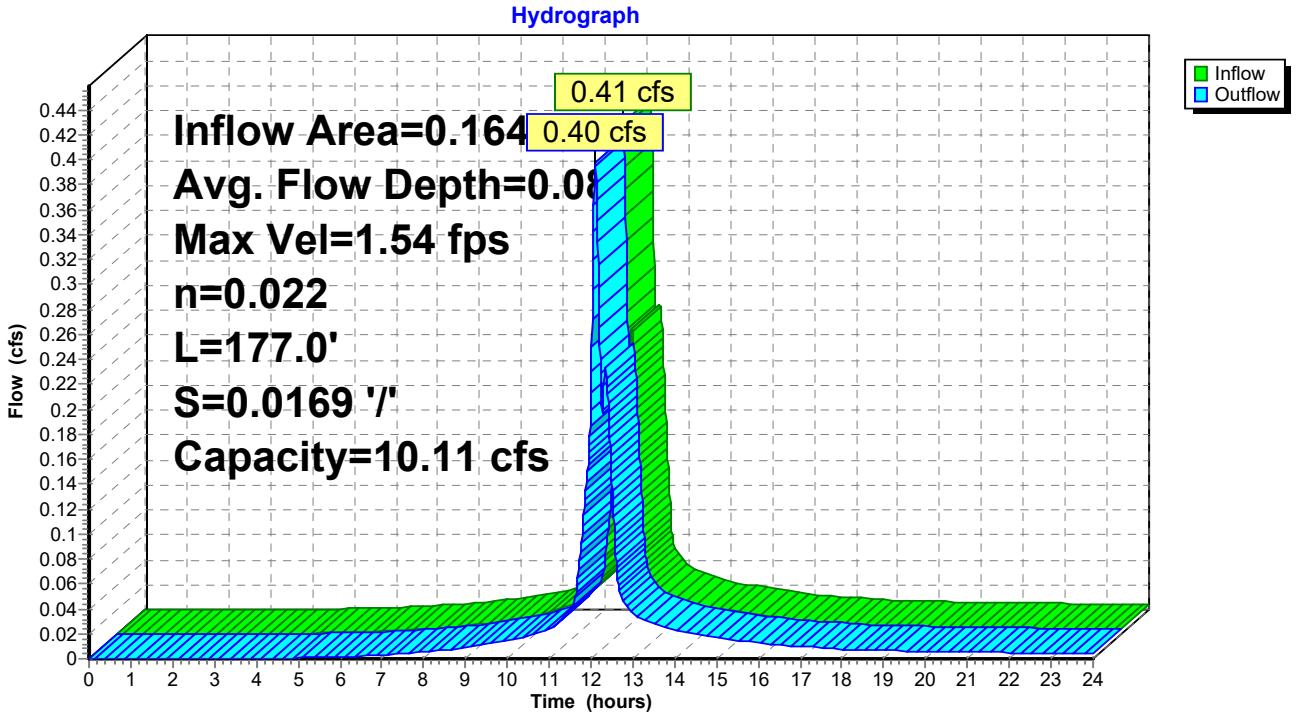
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.54 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 7.3 min

Peak Storage= 46 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 0.50' Flow Area= 2.3 sf, Capacity= 10.11 cfs

3.00' x 0.50' deep channel, n= 0.022 Grass
Side Slope Z-value= 3.0 '/' Top Width= 6.00'
Length= 177.0' Slope= 0.0169 '/'
Inlet Invert= 10.50', Outlet Invert= 7.50'

‡

Reach 1R:



Summary for Reach 2R:

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth > 5.35" for 10 Year event
Inflow = 0.06 cfs @ 12.08 hrs, Volume= 0.005 af
Outflow = 0.03 cfs @ 12.20 hrs, Volume= 0.005 af, Atten= 43%, Lag= 6.7 min

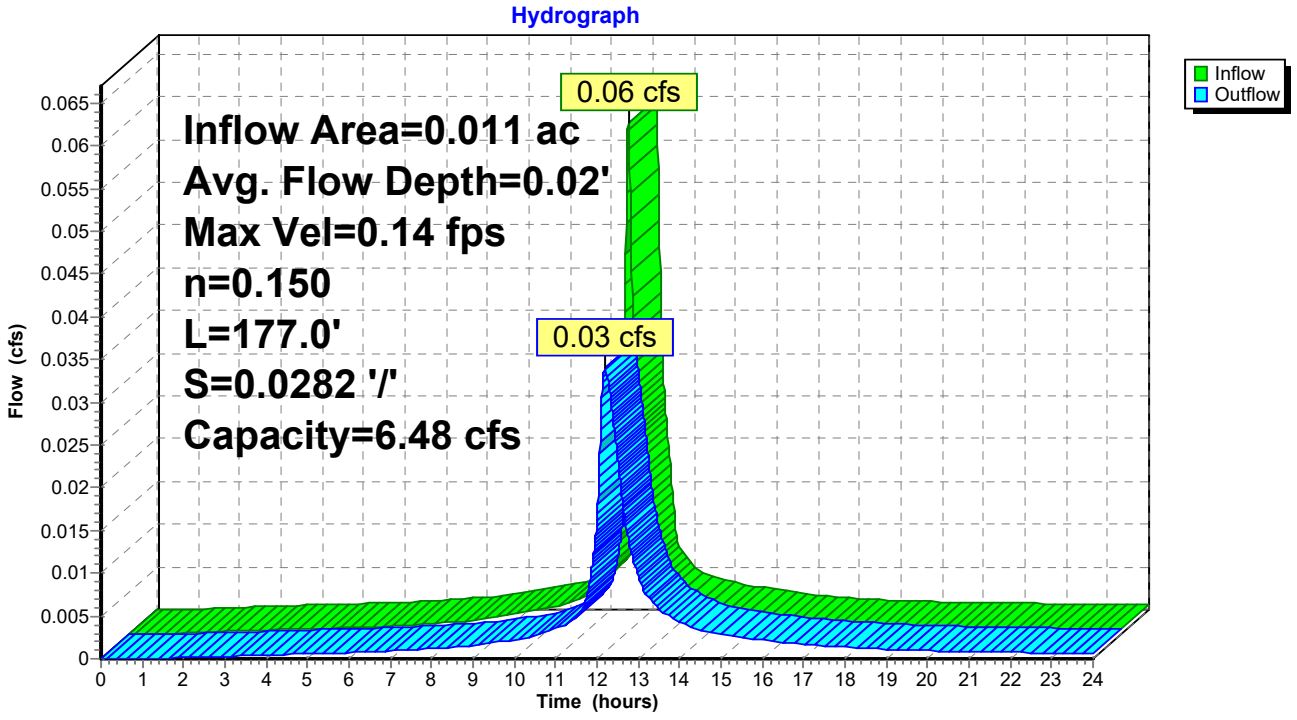
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.14 fps, Min. Travel Time= 21.5 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 54.8 min

Peak Storage= 44 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 0.50' Flow Area= 7.5 sf, Capacity= 6.48 cfs

10.00' x 0.50' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 177.0' Slope= 0.0282 '/'
Inlet Invert= 12.50', Outlet Invert= 7.50'

‡

Reach 2R:



Summary for Pond 1P: Below Deck (Yard Drain 2)

Inflow Area = 0.082 ac, 65.79% Impervious, Inflow Depth > 4.68" for 10 Year event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.032 af
Outflow = 0.15 cfs @ 12.33 hrs, Volume= 0.032 af, Atten= 63%, Lag= 14.7 min
Discarded = 0.06 cfs @ 12.33 hrs, Volume= 0.030 af
Primary = 0.09 cfs @ 12.33 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 10.71' @ 12.33 hrs Surf.Area= 830 sf Storage= 341 cf
Flood Elev= 10.70' Surf.Area= 830 sf Storage= 332 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 29.4 min (800.2 - 770.8)

Volume	Invert	Avail.Storage	Storage Description
#1	9.70'	1,162 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

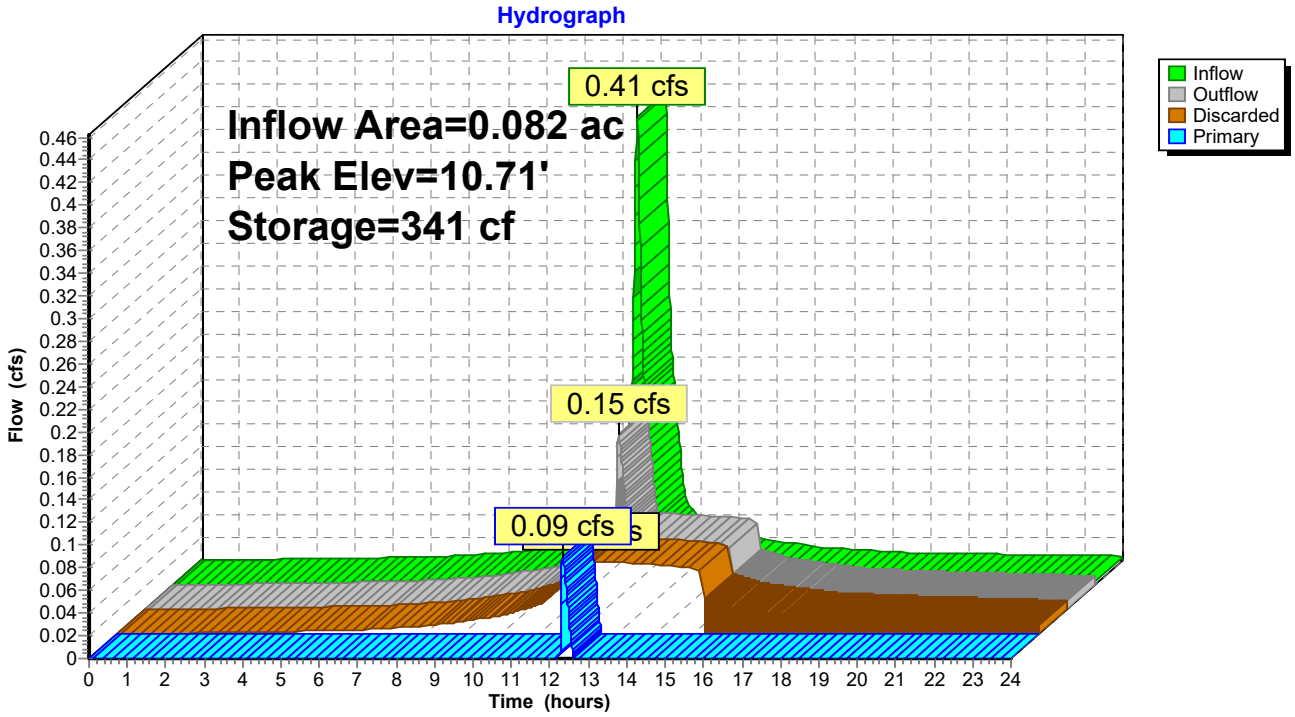
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.70	830	0.0	0	0
10.70	830	40.0	332	332
11.70	830	100.0	830	1,162

Device	Routing	Invert	Outlet Devices
#1	Discarded	9.70'	**3.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.01'
#2	Primary	10.70'	**36.6' long x 5.0' 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) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.06 cfs @ 12.33 hrs HW=10.71' (Free Discharge)
1=Exfiltration (Controls 0.06 cfs)

Primary OutFlow Max=0.09 cfs @ 12.33 hrs HW=10.71' TW=10.56' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.09 cfs @ 0.24 fps)

Pond 1P: Below Deck (Yard Drain 2)



Summary for Pond 2P: Yard Drain 1

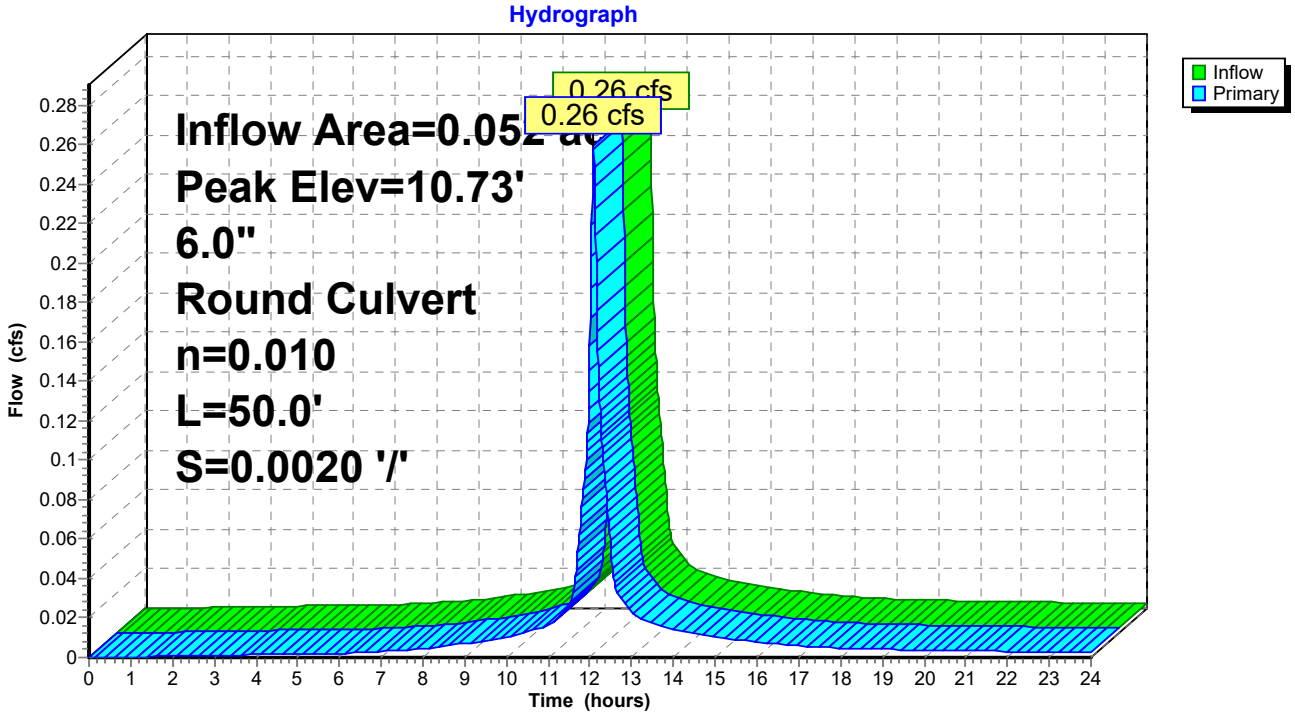
Inflow Area = 0.052 ac, 82.96% Impervious, Inflow Depth > 4.64" for 10 Year event
Inflow = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af
Outflow = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 10.73' @ 12.32 hrs
Flood Elev= 11.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.70'	**6.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 9.70' / 9.60' S= 0.0020 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.20 cfs @ 12.09 hrs HW=10.32' TW=10.26' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 0.20 cfs @ 1.07 fps)

Pond 2P: Yard Drain 1



Summary for Pond 3P: Clean Out 1

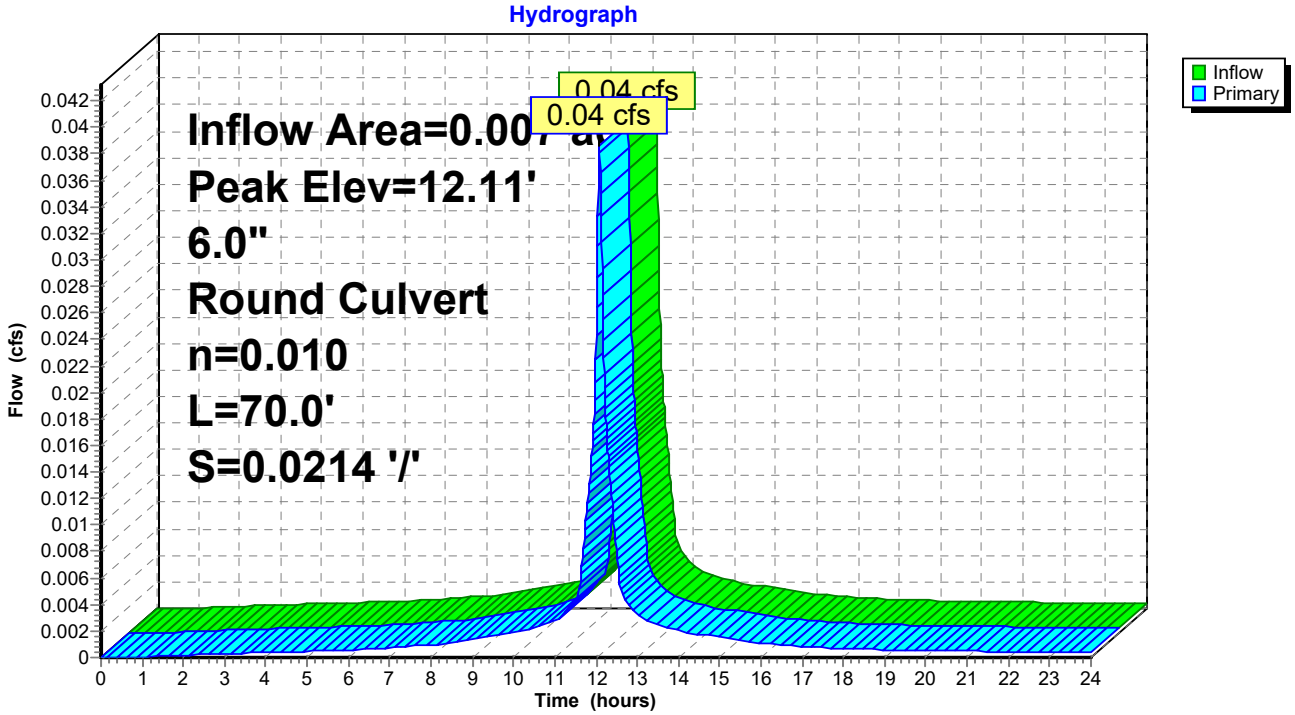
Inflow Area = 0.007 ac,100.00% Impervious, Inflow Depth > 5.35" for 10 Year event
Inflow = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af
Outflow = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 12.11' @ 12.08 hrs
Flood Elev= 15.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.00'	**6.0" Round Culvert** L= 70.0' Ke= 0.500 Inlet / Outlet Invert= 12.00' / 10.50' S= 0.0214 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.04 cfs @ 12.08 hrs HW=12.11' TW=10.25' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 0.04 cfs @ 1.15 fps)

Pond 3P: Clean Out 1



Summary for Pond 4P: Trench Drain

Inflow Area = 0.026 ac, 65.35% Impervious, Inflow Depth > 3.91" for 10 Year event
Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af
Outflow = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.2 min
Primary = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 10.88' @ 12.09 hrs Surf.Area= 0.000 ac Storage= 0.000 af
Flood Elev= 11.68' Surf.Area= 0.000 ac Storage= 0.000 af

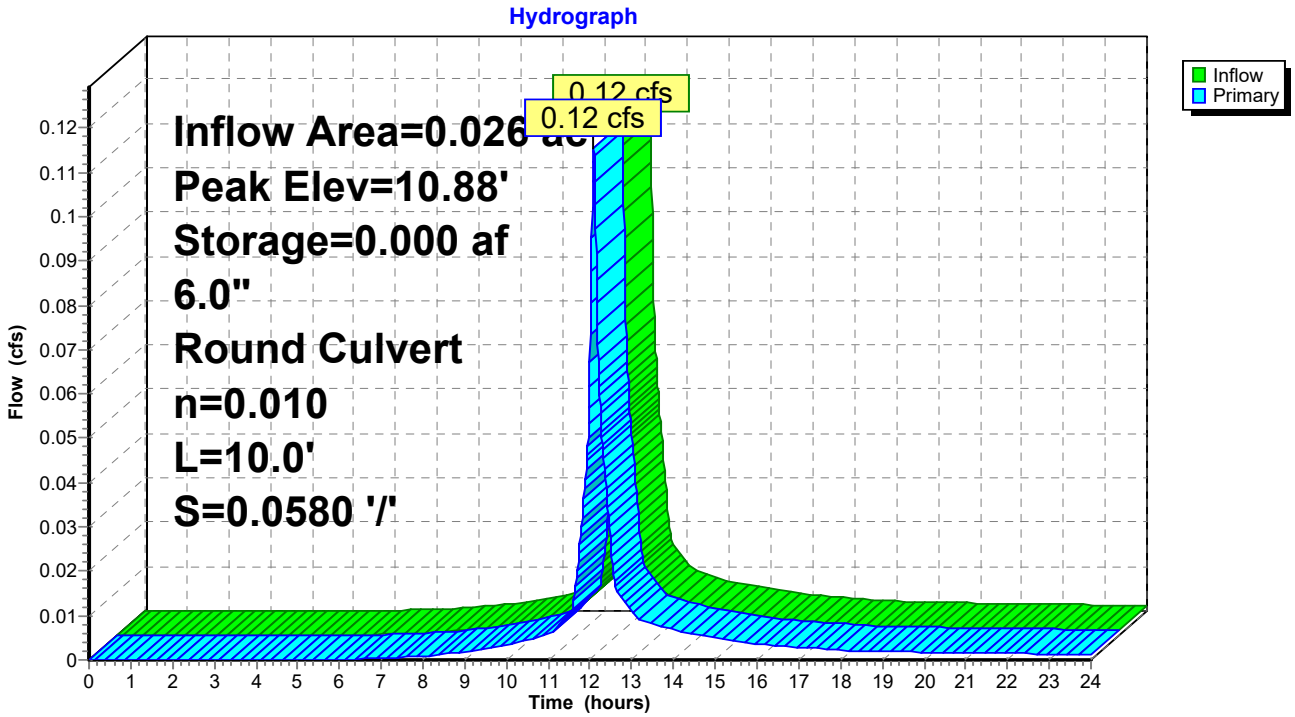
Plug-Flow detention time= 1.2 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 0.8 min (803.4 - 802.6)

Volume	Invert	Avail.Storage	Storage Description
#1	10.68'	0.000 af	**0.50'W x 22.50'L x 1.00'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	10.68'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 10.68' / 10.10' S= 0.0580 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.12 cfs @ 12.09 hrs HW=10.88' TW=10.33' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.12 cfs @ 1.54 fps)

Pond 4P: Trench Drain

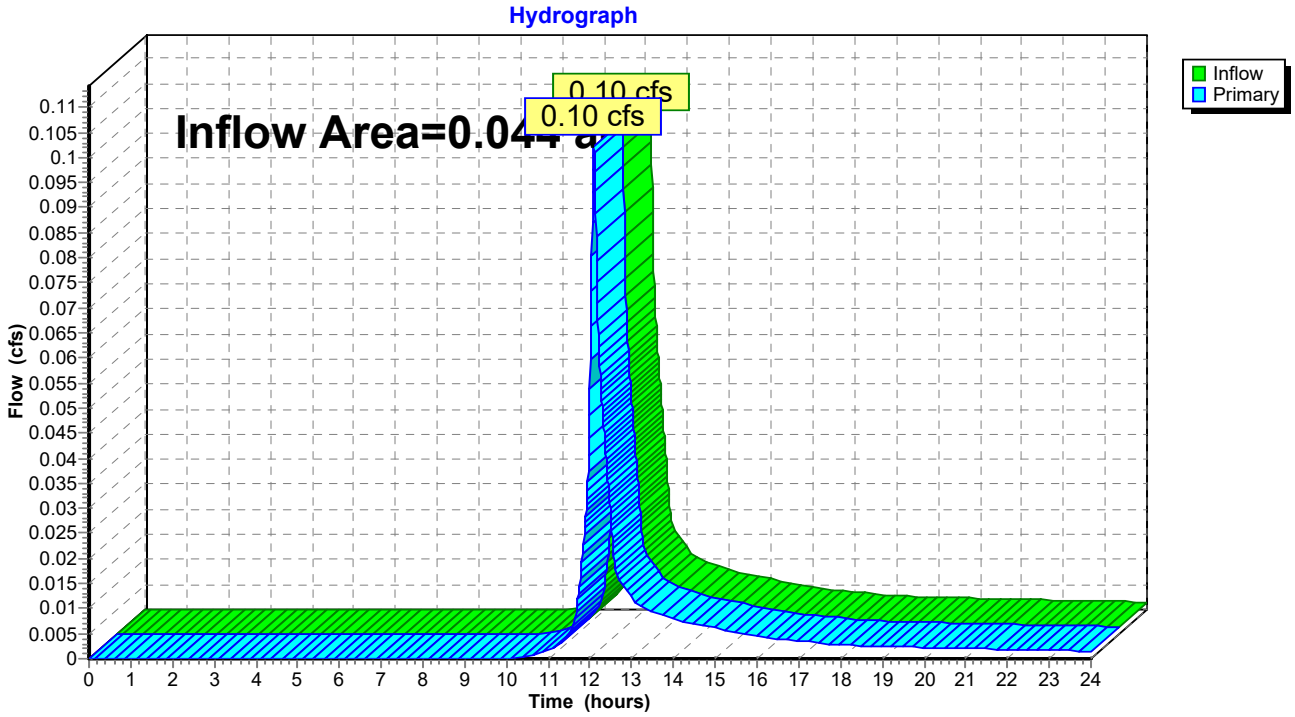


Summary for Link POA 1: Northern POA

Inflow Area = 0.044 ac, 0.00% Impervious, Inflow Depth > 2.05" for 10 Year event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POA 1: Northern POA

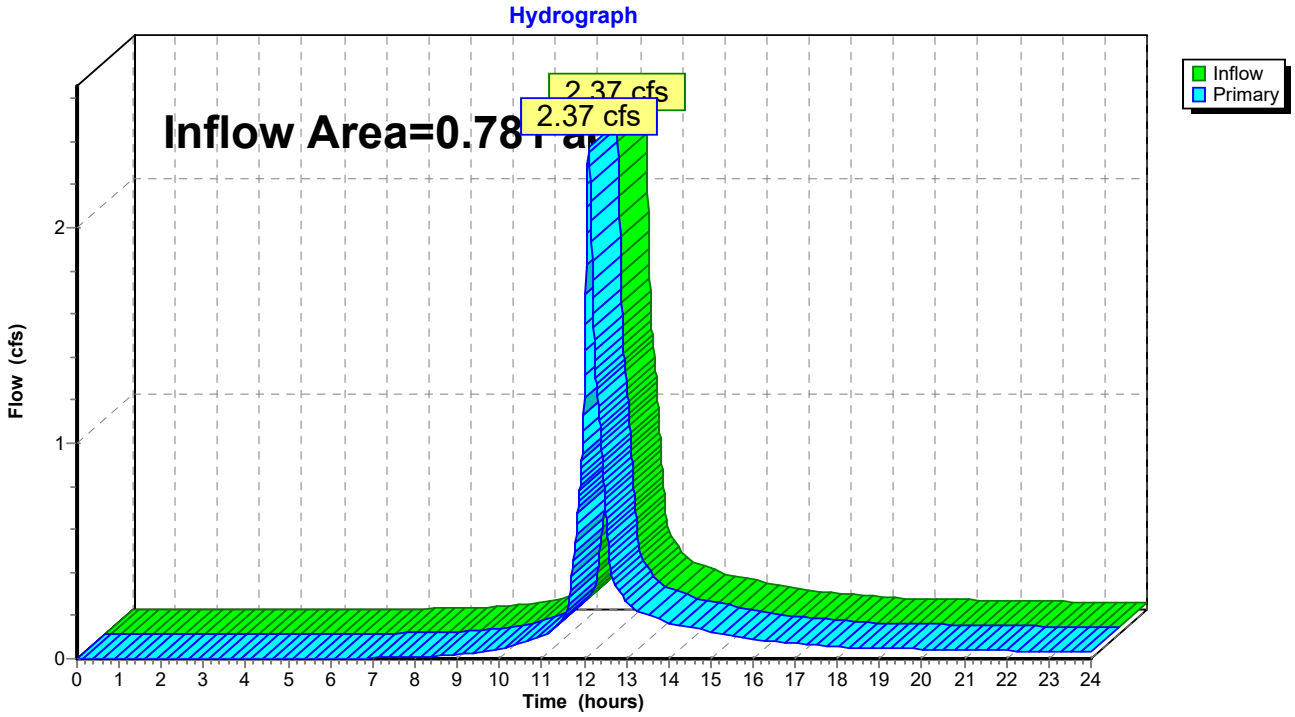


Summary for Link POA 2: Southern POA

Inflow Area = 0.781 ac, 17.07% Impervious, Inflow Depth > 2.84" for 10 Year event
Inflow = 2.37 cfs @ 12.11 hrs, Volume= 0.185 af
Primary = 2.37 cfs @ 12.11 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POA 2: Southern POA



Section 5

Precipitation Table

ALTUS ENGINEERING

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point

Smoothing	Yes
State	
Location	
Latitude	43.069 degrees North
Longitude	70.75 degrees West
Elevation	0 feet
Date/Time	Mon Dec 30 2024 12:29:14 GMT-0500 (Eastern Standard Time)

15% added to values for modeling

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
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	2.92	**1yr**	2.35	2.8
2yr	0.32	0.50	0.62	0.82	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.4
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	4.58	**5yr**	3.60	4.4
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.75	4.86	5.53	**10yr**	4.31	5.3
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.14	2.78	3.63	4.74	6.17	7.10	**25yr**	5.46	6.8
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.29	4.33	5.67	7.39	8.58	**50yr**	6.54	8.2
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.16	6.77	8.85	10.38	**100yr**	7.83	9.9
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.14	8.08	10.60	12.55	**200yr**	9.38	12.
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.78	7.72	10.22	13.47	16.14	**500yr**	11.92	15.

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.63	0.86	0.93	1.33	1.69	2.24	2.49	**1yr**	1.98	2.3

Section 6

NRCS Soils Report

ALTUS ENGINEERING

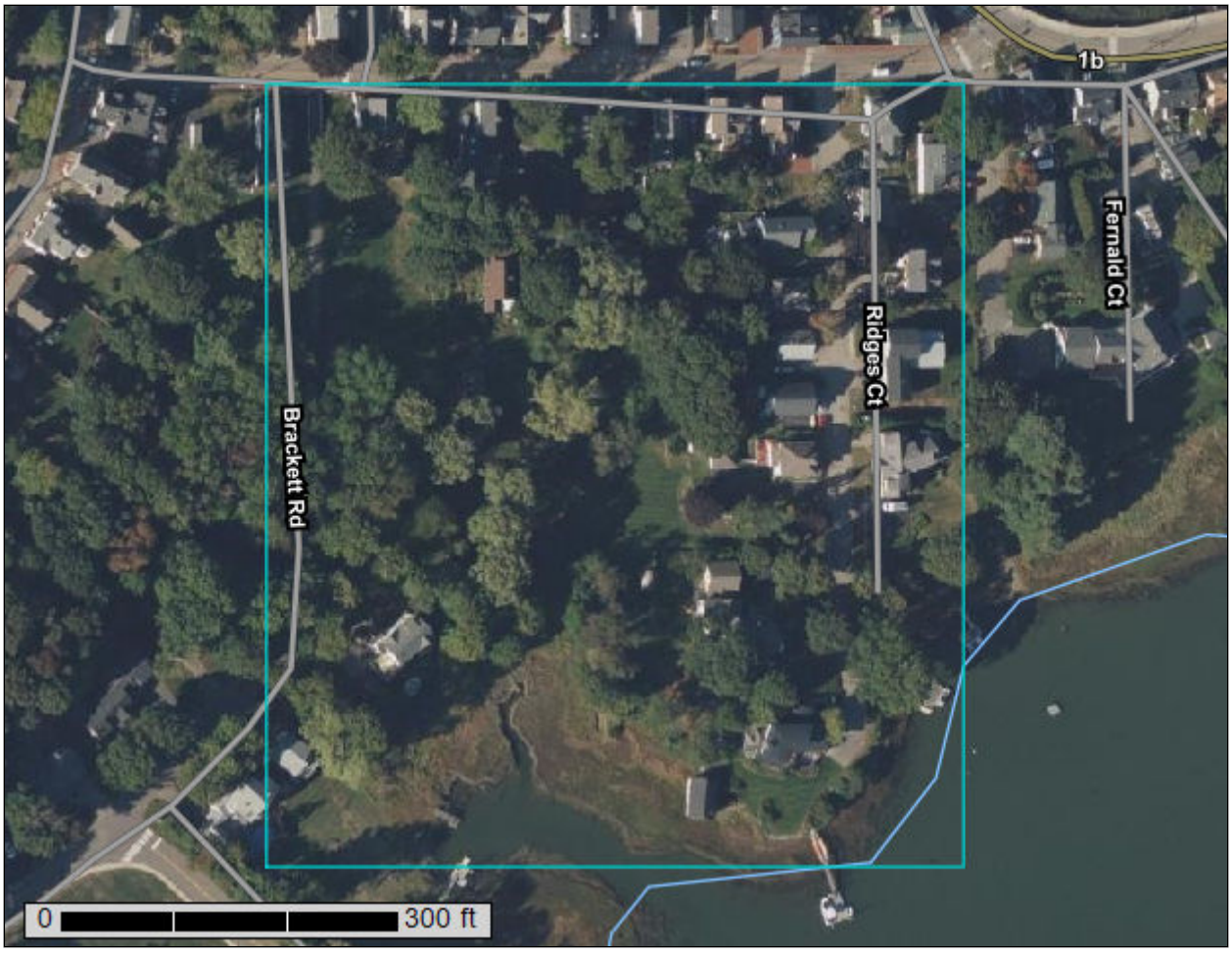
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



December 30, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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 27, Sep 3, 2024

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

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

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

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	9.3	93.0%
W	Water	0.7	7.0%
Totals for Area of Interest		**10.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent
Hydric soil rating: No

Squamscott and scitico
Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scituate and newfields
Percent of map unit: 4 percent
Hydric soil rating: No

Chatfield
Percent of map unit: 4 percent
Hydric soil rating: No

Walpole
Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

W—Water

Map Unit Setting
National map unit symbol: 9cq3
Elevation: 200 to 2,610 feet
Farmland classification: Not prime farmland

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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Section 7

Stormwater Operations & Maintenance Plan

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STORMWATER INSPECTION AND MAINTENANCE MANUAL

Trustees of Rainboth Revocable Trust of 2010
Tax Map 207, Lots 63, 68, and 69
56 Ridges Court
Portsmouth, NH

OWNER:
Trustees of Rainboth Revocable Trust of 2010
122 New Castle Avenue
Portsmouth, NH 03801

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

RESPONSIBLE PARTIES:

Owner:	**Micheal and Annemarie Rainboth**		*603-431-1993*
	Name	*Company*	*Phone*
Inspection:	**Micheal and Annemarie Rainboth**		*603-431-1993*
	Name	*Company*	*Phone*
Maintenance:	**Micheal and Annemarie Rainboth**		*603-431-1993*
	Name	*Company*	*Phone*

NOTES:

Written inspection forms and maintenance logs shall be completed yearly by a qualified inspector retained the owner or assigns.

Photographs of each stormwater BMP are to be taken at each inspection and submitted with the annual inspection reports.

Inspection and maintenance responsibilities shall transfer to any future property owner(s).

This manual shall be updated as needed to reflect any changes related to any transfer of ownership and/or any delegation of inspection and maintenance responsibilities to another entity

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INFILTRATION BASINS

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

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

Maintenance

- Inspect bi-annually and after significant rainfall events.
- If a infiltration basin or tree box filter does not completely drain within 72-hours following a rainfall event, then a qualified professional shall be retained to assess the condition of the facility to determine measures required to restore its filtration and/or infiltration function(s), including but not limited to removal of accumulated sediments and/or replacement or reconstruction of the filter media. Filter media shall be replaced with material matching the specification on the design drawings or the NHDES Stormwater Manual.
- Replace any riprap dislodged from spillways, inlets and outlets.
- Remove any obstructions, litter and accumulated sediment or debris as warranted but no less than once a year.
- Mowing of any grassed area in or adjacent to a raingarden or tree box filter, including any berms, shall be performed at least twice per year (when areas are not inundated) to keep the vegetation in vigorous condition. The cut grass shall be removed to prevent the decaying organic litter from clogging the filter media or choking other vegetation.
- Select vegetation should be maintained in healthy condition. This may include pruning, removal and replacement of dead or diseased vegetation.
- Remove any invasive species, Per AGR 3800 and RSA 430:53.
- Remove any hard wood growth aside from trees in tree box filters.
- Replace media in tree box filters when replacing tree.

CULVERTS AND DRAINAGE PIPES

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

Maintenance

- Culverts and drainage pipes shall be inspected semi-annually, or more often as needed, for accumulation of debris and structural integrity. Leaves and other debris shall be removed from the inlet and outlet to insure the functionality of drainage structures. Debris shall be disposed of on site where it will not concentrate back at the drainage structures or at a solid waste disposal facility.
- Riprap Areas - Culvert outlets and inlets shall be inspected during annual maintenance and operations for erosion and scour. If scour or creek erosion is identified, the outlet owner shall take appropriate means to prevent further erosion. Increased lengths of riprap may require a NHDES Permit and/or local permit.

CATCH BASINS/YARD DRAINS

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

Maintenance

- Remove leaves and debris from structure grates on an as-needed basis.
- Sumps shall be inspected and cleaned annually and any removed sediment and debris shall be disposed of at a solid waste disposal facility.

RIP RAP OUTLETS, SWALES AND PLUNGE POOLS

Function – Rip rap outlets slow the velocity of runoff, minimizing erosion and maximizing the treatment capabilities of associated buffers. Vegetated buffers, either forested or meadow, slow runoff which promotes and reduces peak rates of runoff. The reduced velocities and the presence of vegetation encourage the filtration of sediment and the limited bio-uptake of nutrients.

Maintenance

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

LANDSCAPED AREAS – ORGANIC FERTILIZER MANAGEMENT

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

Maintenance

FERTILIZER PROHIBITED ONCE LAWN IS ESTABLISHED

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

LANDSCAPED AREAS - LITTER CONTROL

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

Maintenance

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

VEGETATIVE SWALES

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

Maintenance

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

CONTROL OF INVASIVE PLANTS

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

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

Maintenance
During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described in the attached "Methods for Disposing Non-Native Invasive Plants" prepared by the UNH Cooperative Extension.

GENERAL CLEAN UP

- Upon completion of the project, the contractor shall remove all temporary stormwater structures (i.e., temporary stone check dams, silt fence, temporary diversion swales, catch basin inlet filter, etc.). Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade, prepared, and seeded. Remove any sediment in catch basins and clean drain pipes that may have accumulated during construction.
- Once in operation, all paved areas of the site should be swept at least once annually at the end of winter/early spring prior to significant spring rains.

SNOW MANANGEMENT

Snow should never be stored in any stormwater practice as it may affect functionality by blocking drains and reducing the storage volume available for runoff. The Owner/Applicant and any maintenance personnel should take great care to ensure that snow is stored only in areas depicted on the site plan and away from locations that could negatively impact drainage infrastructure or flow paths.

APPPENDIX

A. Stormwater System Operations and Maintenance Report
B. Site Grading and Drainage Plan

STORM WATER SYSTEM OPERATION AND MAINTENANCE REPORT

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

General Site Questions and Discharges of Significant Amounts of Sediment			
Subject		**Status**	**Notes**
A discharge of significant amounts of sediment may be indicated by (but is not limited to) observations of the following. Note whether any are observed during this inspection:			*Notes/ Action taken:*
1	Do the current site conditions reflect the attached site plan?	❑Yes ❑No	
2	Is the site permanently stabilized, temporary erosion and sediment controls are removed, and stormwater discharges from construction activity are eliminated?	❑Yes ❑No	
3	Is there evidence of the discharge of significant amounts of sediment to surface waters, or conveyance systems leading to surface waters?	❑Yes ❑No	

Permit Coverage and Plans				
#	**BMP/Facility**	**Inspected**	**Corrective Action Needed and Notes**	**Date Corrected**
	Catch Basins	❑Yes ❑No		
	Drainage Pipes	❑Yes ❑No		
	Riprap Aprons/Plunge Pools	❑Yes ❑No		
	Site Vegetation	❑Yes ❑No		
	Infiltration Basins	❑Yes ❑No		

- INSPECTOR TO TAKE REPRESENTATIVE PHOTOGRAPHS OF EACH BMP INSPECTED AND INCLUDE THEM IN THE ANNUAL INPECTION REPORT.

Section 8

Watershed Plans

Pre-Development Watershed Plan
Post-Development Watershed Plan

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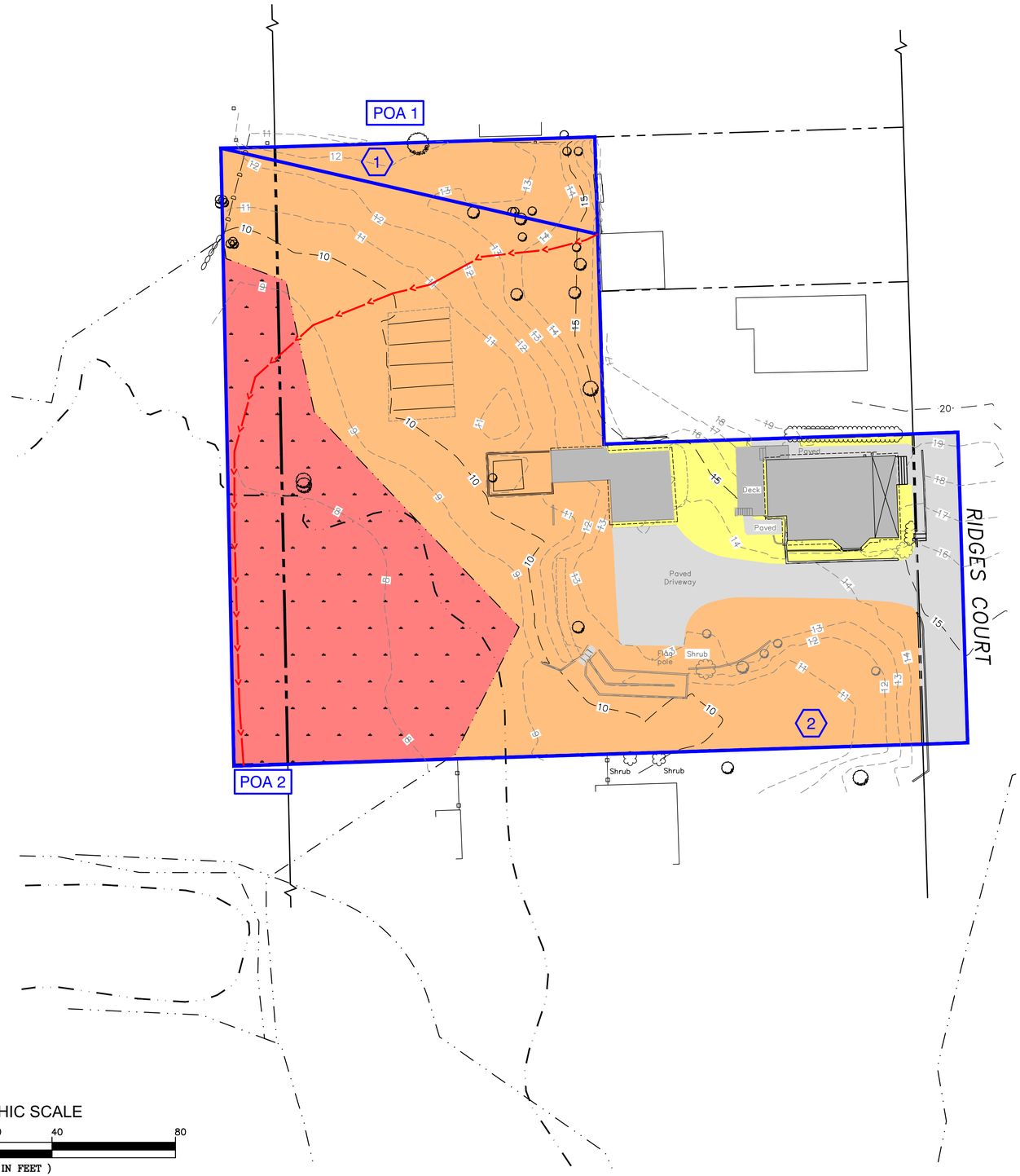


LEGEND

- WATERSHED BOUNDARY
- Tc PATH
- REACH PATH
- SOIL BOUNDARY
- 799 SOIL DESIGNATION
- SOILS – HSG A
- SOILS – HSG B
- SOILS – HSG C
- SOILS – HSG D
- SOILS – IMPERVIOUS PAVE/BLDG
- SOILS – OPEN WATER
- 1 1 1 SUBCATCHMENT/POND/REACH
- POA POINT OF ANALYSIS

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

ALTUS ENGINEERING

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

STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER –

1/29/25

ISSUED FOR: INITIAL SUBMISSION

ISSUE DATE: JANUARY 29, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	01/29/25

DRAWN BY: JMC
APPROVED BY: EDW
DRAWING FILE: 5639.dwg

SCALE:
(22"x34") 1" = 20'
(11"x17") 1" = 40'

OWNERS/APPLICANTS:

ANNEMARIE RAINBOTH, TRUSTEE
& MICHAEL RAINBOTH, TRUSTEE

TRUSTEES OF RAINBOTH
REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE
PORTSMOUTH, NH 03801

PROJECT:

RESIDENTIAL ADDITION
TAX MAP 207
LOT 63, 68, AND 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

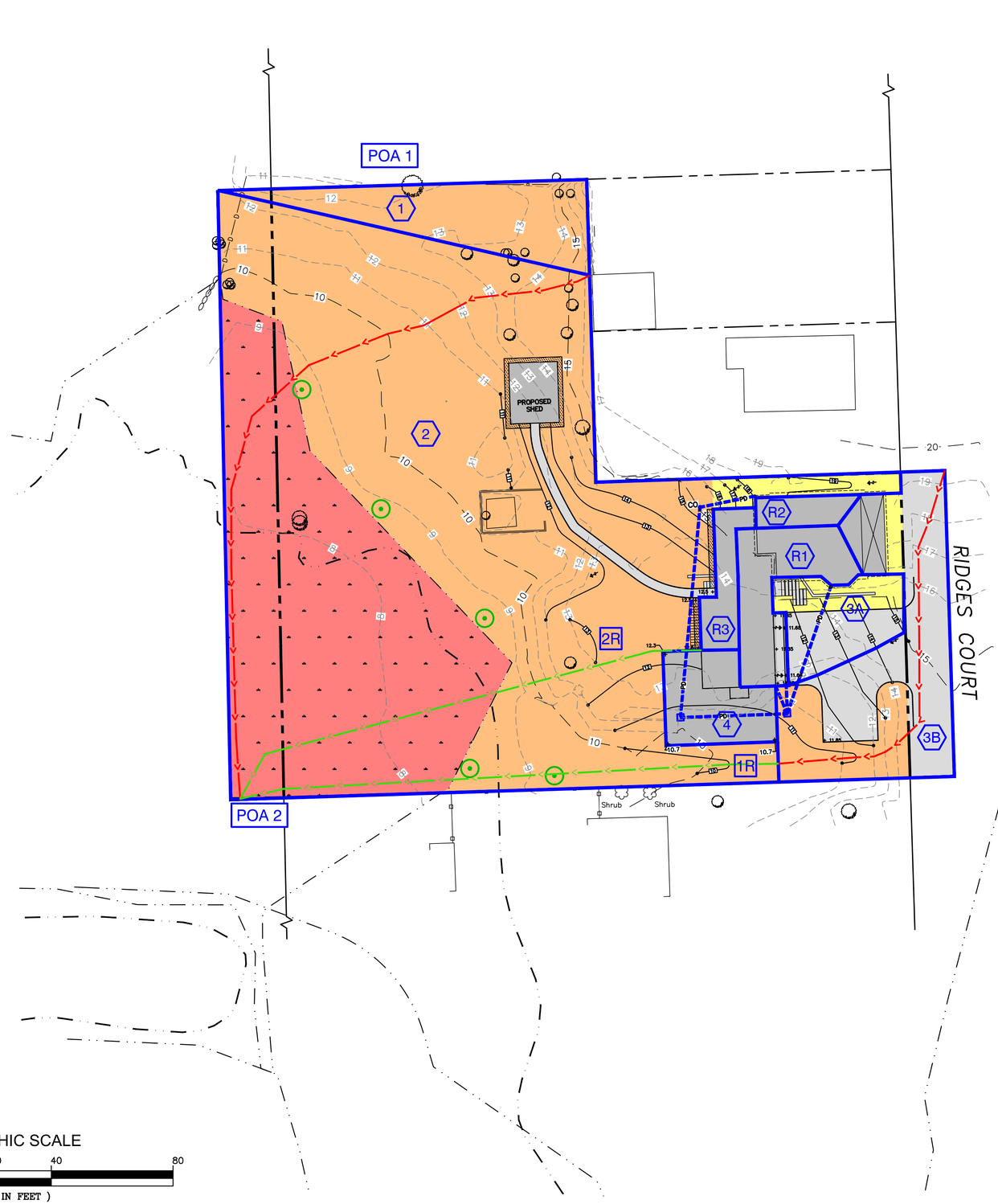
TITLE:

PRE WATERSHED PLAN

SHEET NUMBER:

WS-1

P5639



LEGEND

- WATERSHED BOUNDARY
- Tc PATH
- REACH PATH
- SOIL BOUNDARY
- 799 SOIL DESIGNATION
- SOILS – HSG A
- SOILS – HSG B
- SOILS – HSG C
- SOILS – HSG D
- SOILS – IMPERVIOUS PAVE/BLDG
- SOILS – OPEN WATER
- 1 1 1 SUBCATCHMENT/POND/REACH
- POA POINT OF ANALYSIS

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

P5639

ALTUS ENGINEERING

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TRUSTEES OF RAINBOTH
REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE
PORTSMOUTH, NH 03801

PROJECT:

RESIDENTIAL ADDITION
TAX MAP 207
LOTS 63, 68, AND 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:

POST WATERSHED PLAN

SHEET NUMBER:

WS-2

THIS DRAWING SET HAS NOT BEEN RELEASED FOR CONSTRUCTION

PROPOSED ADDITION
RAINBOTH RESIDENCE

56 Ridges Court
Portsmouth, New Hampshire

Assessor's Parcel 207, Lots 63, 68, and 69

Owner/Applicant:

ANNEMARIE RAINBOTH, TRUSTEE
& MICHAEL RAINBOTH, TRUSTEE

TRUSTEES OF RAINBOTH
REVOCABLE TRUST OF 2010

122 New Castle Avenue
Portsmouth, NH 03801
(603) 431–1993

Civil Engineer:

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

Surveyor:

North Easterly Surveying
SURVEYORS IN N.H. & MAINE
1021 Goodwin Road, Unit #1
Eliot, Maine 03903
(207) 439–6333

Building Designer:

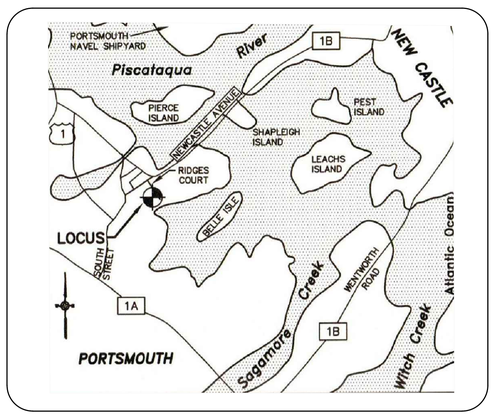
AMY DUTTON
9 Walker Street
Kittery, ME 03904
(207) 345–6050

Wetland Scientist:

JOSEPH W. NOEL, NH CWS #086
P.O. Box 174
South Berwick, ME 03908
(207) 384–5587

Plan Issue Date:

January 29, 2025 *Conservation Commission*



LOCUS NOT TO SCALE

Sheet Index

Title	*Sheet No.:*	*Rev.*	*Date*
Existing Conditions Plan (by Easterly)	1 OF 1	0	02/22/24
Site Preparation Plan	C–1	0	01/29/25
Preliminary Site Plan	C–2	0	01/29/25
Grading & Drainage Plan	C–3	0	01/29/25
Detail Sheet	D–1	0	01/29/25
Detail Sheet	D–2	0	01/29/25
Detail Sheet	D–3	0	01/29/25
Proposed Foundation Plan	A–8	0	01/17/25
Elevations	A–16	0	01/17/25
Elevations	A–17	0	01/17/25

P5639

ZONING DATA PER PORTSMOUTH ZONING ORDINANCE (LAST AMENDED 8/7/2023): – SEE NOTE #6

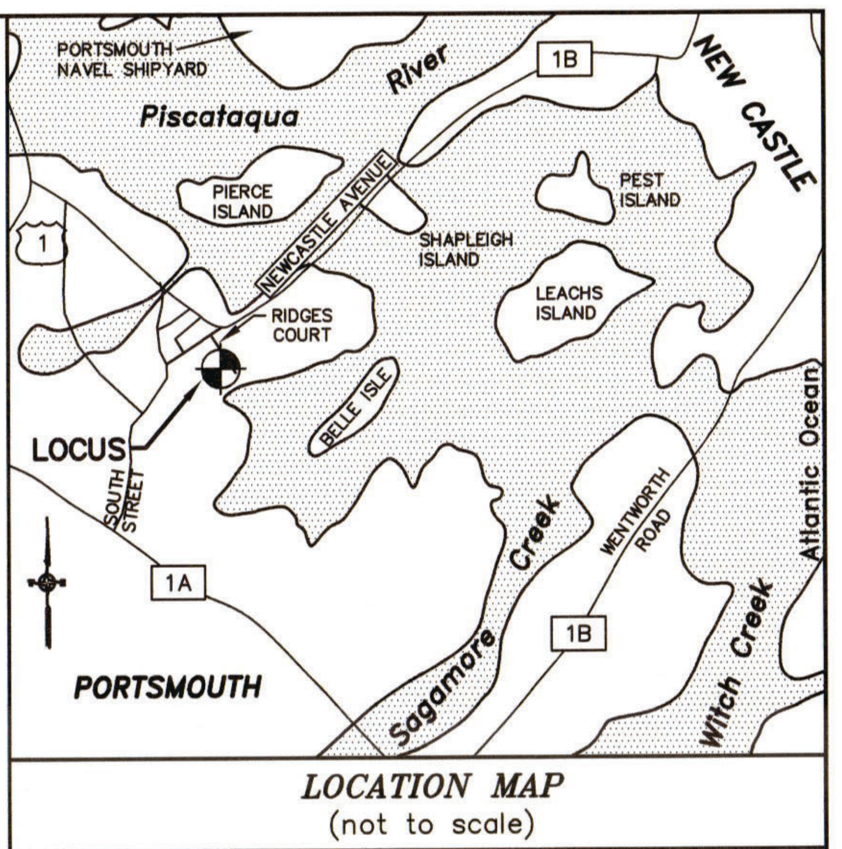
ZONE: Single Residence B (SRB)

REQUIREMENTS:

MINIMUM LOT AREA PER DWELLING UNIT:	15,000 Sq Ft
MINIMUM LOT AREA:	15,000 Sq Ft
MINIMUM CONTINUOUS STREET FRONTAGE:	100 Ft
MINIMUM LOT DEPTH:	100 Ft
MINIMUM FRONT YARD:	30 Ft
MINIMUM SIDE YARD:	10 Ft
MINIMUM REAR YARD:	30 Ft
MAXIMUM STRUCTURE HEIGHT:	35 Ft (Sloped Roof) 30 Ft (Flat Roof)
MAXIMUM ROOF APPURTENANCE HEIGHT:	8 Ft
MAXIMUM BUILDING COVERAGE:	20%
MINIMUM OPEN SPACE:	40%

PLAN REFERENCES:

1. "PLAN OF LOTS BELONGING TO RIENZI RIDGE, PORTSMOUTH, N.H.", PREPARED BY JOHN W. DURGIN, DATED MARCH 1976, RECORDED AT THE R.C.R.D. AS PLAN D-0188.
2. "PLAN OF LAND FOR WILLIAM THOMSON, RIDGE COURT, COUNTY OF ROCKINGHAM, PORTSMOUTH, N.H.", PREPARED BY TOWN PLANNING AND ENGINEERING ASSOCIATES, INC., DATED MAY 1978, RECORDED AT THE R.C.R.D. AS PLAN D-7855.
3. "PLAN OF LAND FOR WILLIAM M. & LOIS CYNEWSKI, DOROTHEA E. MARCONI, ROLAND ROUTHIER & MARY ANN MARCONI AND EDWARD F. & LOUISE D. SMITH, BRACKETT ROAD / NEWCASTLE AVE., COUNTY OF ROCKINGHAM, PORTSMOUTH, N.H.", PREPARED BY RICHARD P. MILLETTE AND ASSOCIATES, DATED JANUARY 27, 1988, RECORDED AT THE R.C.R.D. AS PLAN D-17724.
4. "PLAN OF LOT, No. 122 NEW CASTLE AVE., PORTSMOUTH, N.H.", PREPARED BY JOHN W. DURGIN, DATED MAY 1970, FILE No. 1959, PLAN No. 3154.
5. "STANDARD BOUNDARY SURVEY FOR PROPERTY AT 122 NEW CASTLE AVENUE, ROCKINGHAM COUNTY, PORTSMOUTH, NEW HAMPSHIRE, OWNED BY ANNE MARIE & MICHAEL RAINBOTH", PREPARED BY NORTH EASTERLY SURVEYING, INC., DATED 4/24/2006, PROJECT NO. 06641.
6. "STANDARD BOUNDARY SURVEY FOR PROPERTY AT 28 RIDGES COURT, ROCKINGHAM COUNTY, PORTSMOUTH, NEW HAMPSHIRE, OWNED BY ELLEN M. HEPP REVOCABLE TRUST", PREPARED BY NORTH EASTERLY SURVEYING, INC., DATED 4/24/2006, PROJECT NO. 06672.



LOCATION MAP
(not to scale)

EXISTING BUILDING COVERAGE:

TOTAL LOT AREA (TAX MAP 20 LOT 63)	20,585± SQ. FT.
HOUSE & PORCH	1,090± SQ. FT.
GARAGE	642± SQ. FT.
DECKS/STEPS ≥ 18" ABOVE GROUND	274± SQ. FT.
TAX MAP 207 LOT 63 TOTAL BUILDING COVERAGE	2,006± SQ. FT. (9.7%)

(NO BUILDING COVERAGE ON TAX MAP 207 LOTS 68 & 69)

EXISTING OPEN SPACE:

TOTAL LOT AREA (TAX MAP 207 LOT 63)	20,585± SQ. FT.
EXISTING COVERAGE	
BUILDINGS	1,732± SQ. FT.
DECKS/STEPS	289± SQ. FT.
PAVEMENT/BRICK	2,174± SQ. FT.
CONC./RET. WALLS/EDGING/R.R. TIES	203± SQ. FT.
TOTAL COVERAGE (NON-OPEN SPACE)	4,398± SQ. FT.
TOTAL OPEN SPACE	16,187± SQ. FT.
TAX MAP 207 LOT 63 OPEN SPACE PERCENTAGE	78.6%

(NO COVERAGE ON TAX MAP 207 LOTS 68 & 69)

EXISTING BUILDING HEIGHT (HOUSE)

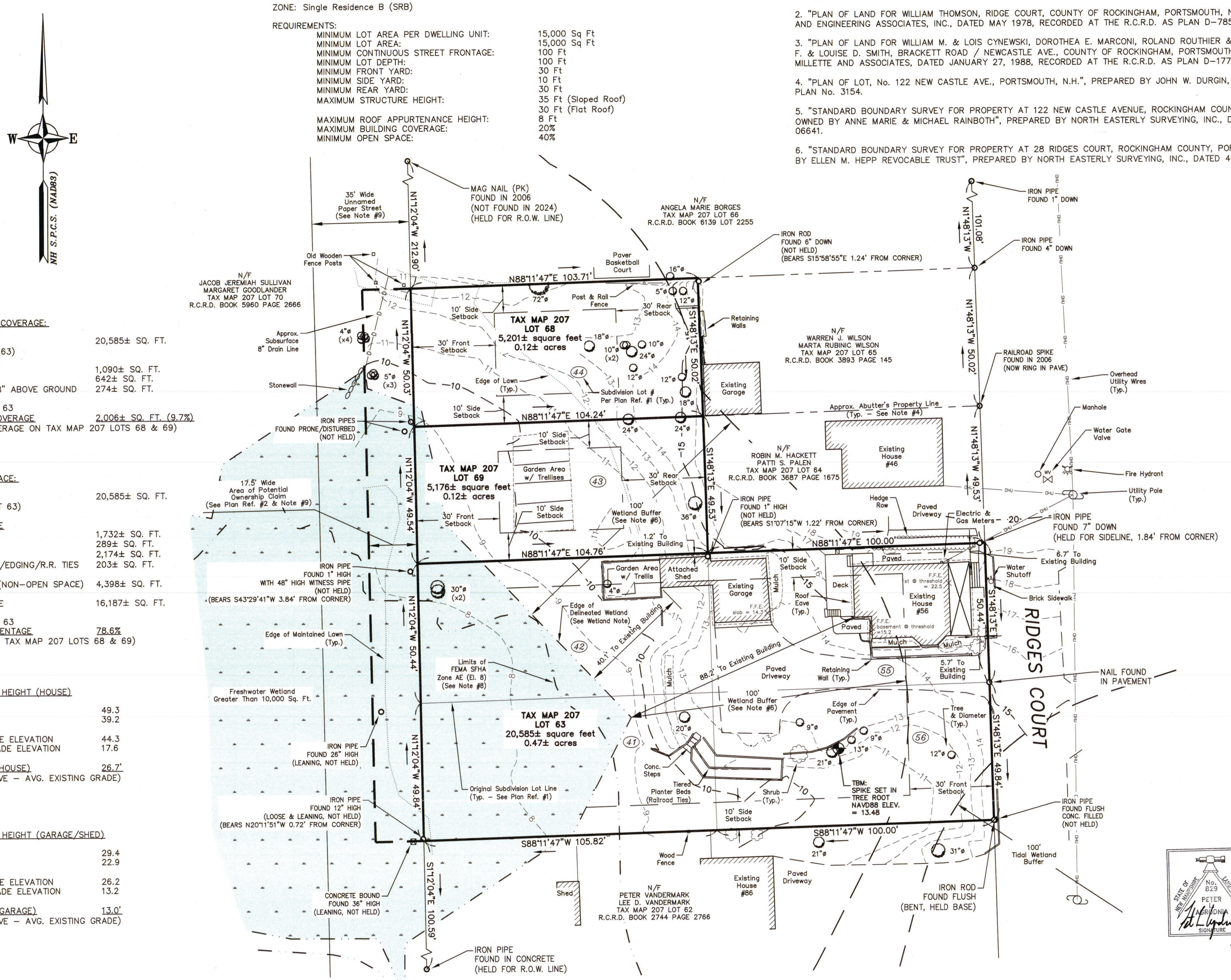
PEAK ELEVATION	49.3
EAVE ELEVATION	39.2
MIDWAY PEAK/EAVE ELEVATION	44.3
AVG. EXISTING GRADE ELEVATION	17.6
BUILDING HEIGHT (HOUSE)	26.7'

(MIDWAY PEAK/EAVE – AVG. EXISTING GRADE)

EXISTING BUILDING HEIGHT (GARAGE/SHED)

PEAK ELEVATION	29.4
EAVE ELEVATION	22.9
MIDWAY PEAK/EAVE ELEVATION	26.2
AVG. EXISTING GRADE ELEVATION	13.2
BUILDING HEIGHT (GARAGE)	13.0'

(MIDWAY PEAK/EAVE – AVG. EXISTING GRADE)



NOTES:

1. OWNERS OF RECORD:
   TAX MAP 207 LOTS 63, 68, 69
   MICHAEL RAINBOTH, TRUSTEE
   ANNEMARIE RAINBOTH, TRUSTEE
   TRUSTEES OF THE RAINBOTH REVOCABLE TRUST OF 2010
   R.C.R.D. BOOK 6513 PAGE 673
   DATED OCTOBER 19, 2023
2. TOTAL EXISTING PARCEL AREAS:
   TAX MAP 207 LOT 63
   20,585± Sq. Ft.
   TAX MAP 207 LOT 68
   5,201± Sq. Ft.
   TAX MAP 207 LOT 69
   5,176± Sq. Ft.
3. BASIS OF BEARING IS PER NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM (NAD83).
4. APPROXIMATE ABUTTER'S LINES SHOWN HEREON ARE FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE RELIED UPON AS BOUNDARY INFORMATION.
5. THE SUBJECT PARCELS ARE CONVEYED TOGETHER WITH THE RIGHT "TO USE THE STREET LEADING TO SAID GRANTED PREMISES FROM NEW CASTLE AVENUE FOR ALL USUAL AND CUSTOMARY PURPOSES". REFERENCE IS MADE TO R.C.R.D. DEED BOOK 6513 PAGE 673. EASEMENTS OR OTHER UNWRITTEN RIGHTS MAY EXIST THAT ENCUMBER OR BENEFIT THE PROPERTY NOT SHOWN HEREON.
6. PORTIONS OF THE SUBJECT PARCELS APPEAR TO LIE WITHIN A 100' WETLAND BUFFER ZONE, AS SHOWN HEREON. REFERENCE IS MADE TO THE CITY OF PORTSMOUTH ZONING ORDINANCE ARTICLE 10 (ENVIRONMENTAL PROTECTION STANDARDS). ZONING INFORMATION AND SETBACKS SHOWN HEREON ARE FOR REFERENCE PURPOSES. CONFIRM CURRENT ZONING REQUIREMENTS WITH THE CITY OF PORTSMOUTH PRIOR TO DESIGN OR CONSTRUCTION. ADDITIONAL ZONING REQUIREMENTS MAY APPLY THAT ARE NOT SHOWN HEREON.
7. THE BOUNDARY SHOWN HEREON IS DETERMINED FROM WRITTEN RECORDS, FIELD EVIDENCE AND PAROL TESTIMONY RECOVERED AT THE TIME OF SURVEY AND MAY BE SUBJECT TO CHANGE IF OTHER EVIDENCE BECOMES AVAILABLE.
8. PORTIONS OF THE SUBJECT PARCELS APPEAR TO LIE WITHIN FEMA SPECIAL FLOOD HAZARD AREA ZONE AE (EL. 8). REFERENCE IS MADE TO FEMA FLOOD INSURANCE RATE MAP NUMBER 33015C0259F, MAP REVISED 1/29/2021. LIMITS OF SAID FLOOD ZONE SHOWN HEREON ARE PER THIS REFERENCED FLOOD MAP.
9. THE WESTERLY BOUNDARY LINES OF THE SUBJECT PARCELS ABUT AN UNNAMED STREET, AS SHOWN ON PLAN REFERENCE #1. THIS STREET IS UNDEVELOPED AND THEREFORE MAY BE CONSIDERED A "PAPER STREET". PLAN REFERENCE #2 DEPICTS A POTENTIAL OWNERSHIP CLAIM TO ONE HALF OF THE UNDEVELOPED STREET THAT DIRECTLY ABUTS THE SUBJECT PARCELS. CONSULTATION WITH A REAL ESTATE ATTORNEY IS ADVISED REGARDING THIS MATTER.

WETLAND NOTE:

THE WETLAND BOUNDARY AS DEPICTED ON THIS PLAN WAS DELINEATED/FLAGGED BY JOSEPH W. NOEL, NH CERTIFIED SOIL SCIENTIST #017 AND NH CERTIFIED WETLAND SCIENTIST #086, ON DECEMBER 21, 2023. THE FLAGS WERE SURVEY LOCATED BY NORTH EASTERLY SURVEYING. THE DELINEATION WAS CONDUCTED IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, (1987) ALONG WITH THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2, JANUARY 2012).

STATE OF NEW HAMPSHIRE — JOSEPH W. NOEL — No. 086 — CERTIFIED WETLAND SCIENTIST

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
VERTICAL DATUM IS NAVD88
CONTOUR INTERVAL = 1'

PURPOSE OF PLAN:

THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS FOR DESIGN PURPOSES. THIS PLAN IS NOT A STANDARD BOUNDARY SURVEY AND IS NOT INTENDED TO BE RECORDED, USED FOR CONVEYANCE, OR ANY OTHER TITLE PURPOSE.

STATE OF NEW HAMPSHIRE — PETER N. AGRODNIA — No. 829 — LICENSED LAND SURVEYOR — SIGNATURE

2/22/2024

REV.	DATE	STATUS	BY	CHKD	APPD.

EXISTING CONDITIONS PLAN

FOR PROPERTY AT

56 Ridges Court

Portsmouth, Rockingham County, New Hampshire

OWNED BY

Michael Rainboth, Trustee

Annemarie Rainboth, Trustee

Trustees of the Rainboth Revocable Trust of 2010
122 New Castle Avenue, Portsmouth, NH 03801

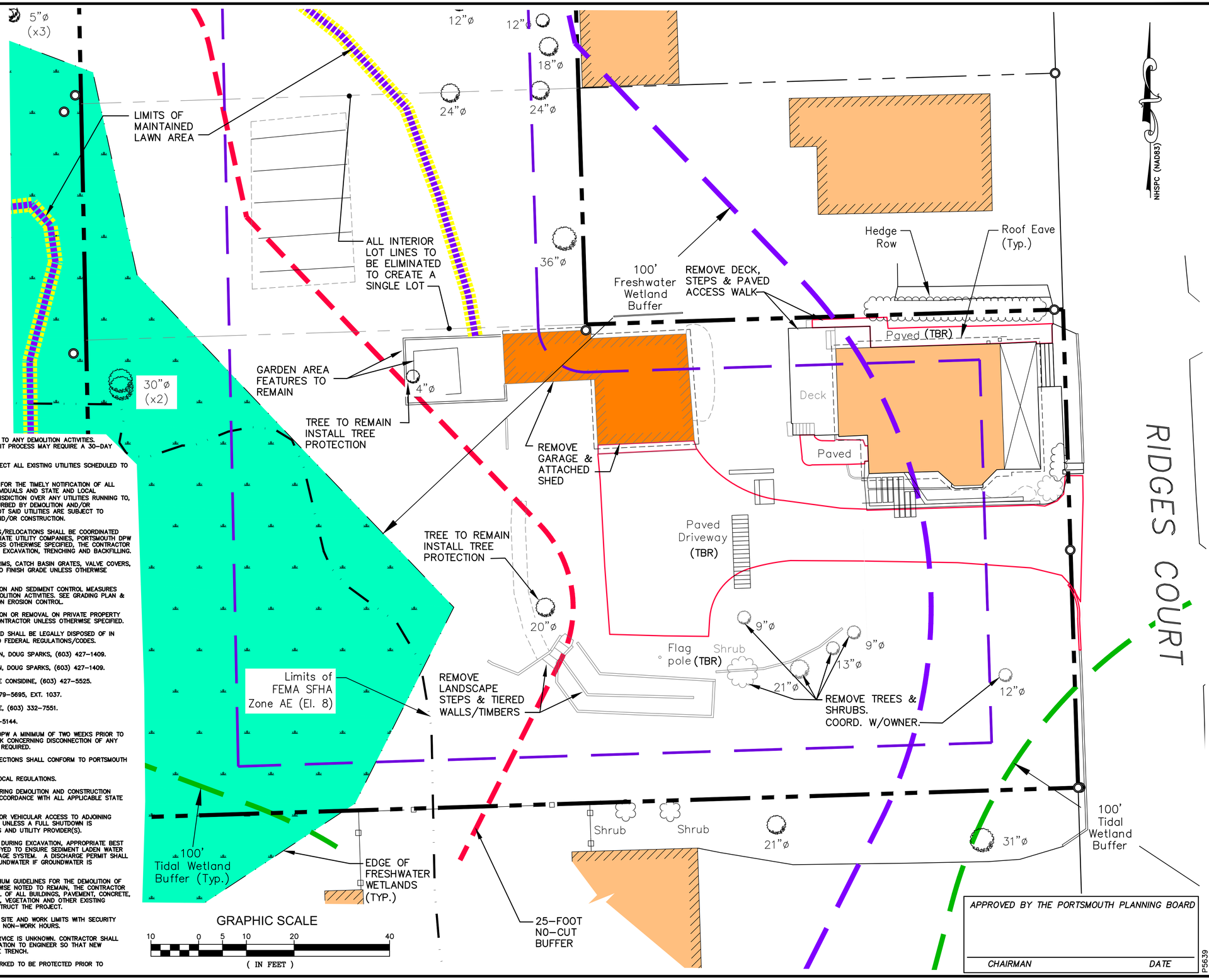
North EASTERLY SURVEYING

SURVEYORS IN N.H. & MAINE (207) 439-6333 — 1021 GOODWIN ROAD, UNIT #1 ELIOT, MAINE 03903

SCALE:	PROJECT NO.	DATE:	SHEET:	DRAWN BY:	CHECKED BY:
1" = 20'	23712	2/22/24	1 OF 1	J.D.S.	P.L.A.

DRAWING No: 23712 EXISTING CONDITIONS
FIELD BOOK No: "Portsmouth #18"

Tax Map 207 Lots 63, 68, 69



SITE PREPARATION NOTES:

1. CITY DEMOLITION PERMIT REQUIRED PRIOR TO ANY DEMOLITION ACTIVITIES. CONTRACTOR IS NOTIFIED THAT THIS PERMIT PROCESS MAY REQUIRE A 30-DAY LEAD TIME.
2. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY NOTIFICATION OF ALL PARTIES, CORPORATIONS, COMPANIES, INDIVIDUALS AND STATE AND LOCAL AUTHORITIES OWNING AND/OR HAVING JURISDICTION OVER ANY UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS TO BE DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES WHETHER OR NOT SAID UTILITIES ARE SUBJECT TO DEMOLITION, RELOCATION, MODIFICATION AND/OR CONSTRUCTION.
4. ALL UTILITY DISCONNECTIONS/DEMOLITIONS/RELOCATIONS SHALL BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES, PORTSMOUTH DPW AND ABUTTING PROPERTY OWNERS. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELATED EXCAVATION, TRENCHING AND BACKFILLING.
5. WHERE SPECIFIED TO REMAIN, MANHOLE RIMS, CATCH BASIN GRATES, VALVE COVERS, HANDHOLES, ETC. SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE SPECIFIED.
6. SEE EROSION CONTROL PLANS FOR EROSION AND SEDIMENT CONTROL MEASURES THAT SHALL BE IN PLACE PRIOR TO DEMOLITION ACTIVITIES. SEE GRADING PLAN & DETAIL SHEETS FOR ADDITIONAL NOTES ON EROSION CONTROL.
7. ALL MATERIALS SCHEDULED FOR DEMOLITION OR REMOVAL ON PRIVATE PROPERTY SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
8. ALL MATERIAL SCHEDULED TO BE REMOVED SHALL BE LEGALLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS/CODES.
9. WATER: PORTSMOUTH DPW WATER DIVISION, DOUG SPARKS, (603) 427-1409.
10. SEWER: PORTSMOUTH DPW SEWER DIVISION, DOUG SPARKS, (603) 427-1409.
11. TELECOMMUNICATIONS: CONSOLIDATED, JOE CONSIDINE, (603) 427-5525.
12. CABLE: COMCAST, MIKE COLLINS, (603) 679-5695, EXT. 1037.
13. ELECTRICAL: EVERSOURCE, JOSHUA LAHAIE, (603) 332-7551.
14. GAS: UNITIL, DAVID BEAULIEU, (603) 294-5144.
15. CONTRACTOR TO CONTACT PORTSMOUTH DPW A MINIMUM OF TWO WEEKS PRIOR TO ANY DEMOLITION TO COORDINATE ALL WORK CONCERNING DISCONNECTION OF ANY EXISTING WATER AND SEWER SERVICES, IF REQUIRED.
16. ALL WATER AND SEWER SERVICE DISCONNECTIONS SHALL CONFORM TO PORTSMOUTH DPW STANDARDS.
17. NO BURNING SHALL BE PERMITTED PER LOCAL REGULATIONS.
18. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
19. AT NO TIME SHALL ANY UTILITY SERVICE OR VEHICULAR ACCESS TO ADJOINING PROPERTIES BE COMPLETELY INTERRUPTED UNLESS A FULL SHUTDOWN IS COORDINATED WITH ALL AFFECTED PARTIES AND UTILITY PROVIDER(S).
20. SHOULD GROUNDWATER BE ENCOUNTERED DURING EXCAVATION, APPROPRIATE BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO ENSURE SEDIMENT LADEN WATER IS NOT DISCHARGED INTO THE CITY DRAINAGE SYSTEM. A DISCHARGE PERMIT SHALL BE OBTAINED PRIOR TO DISCHARGING GROUNDWATER IF GROUNDWATER IS ENCOUNTERED.
21. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR THE DEMOLITION OF EXISTING SITE FEATURES. UNLESS OTHERWISE NOTED TO REMAIN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL BUILDINGS, PAVEMENT, CONCRETE, CURBING, SIGNS, POLES, UTILITIES, FENCES, VEGETATION AND OTHER EXISTING FEATURES AS NECESSARY TO FULLY CONSTRUCT THE PROJECT.
22. CONTRACTOR SHALL SAFELY SECURE THE SITE AND WORK LIMITS WITH SECURITY FENCING WHICH SHALL BE LOCKED DURING NON-WORK HOURS.
23. LOCATION & SIZE OF EXISTING WATER SERVICE IS UNKNOWN. CONTRACTOR SHALL REMOVE SERVICE TO MAIN & REPORT LOCATION TO ENGINEER SO THAT NEW SERVICES CAN BE INSTALLED IN THE SAME TRENCH.
24. TREES TO REMAIN SHALL BE CLEARLY MARKED TO BE PROTECTED PRIOR TO COMMENCING SITEWORK.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

P5639

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
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STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
1/29/25

ISSUED FOR: INITIAL SUBMISSION

ISSUE DATE: JANUARY 29, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
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DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 5639.dwg

SCALE: (22"x34") 1" = 10'
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OWNERS/APPLICANTS:

ANNEMARIE RAINBOTH, TRUSTEE & MICHAEL RAINBOTH, TRUSTEE

TRUSTEES OF RAINBOTH REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE PORTSMOUTH, NH 03801

PROJECT:

RESIDENTIAL ADDITION
TAX MAP 207
LOTS 63, 68 & 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:

SITE PREPARATION PLAN

SHEET NUMBER:

C - 1

SITE NOTES:

1. DESIGN INTENT – THIS PLAN SET IS INTENDED TO DEPICT THE EXPANSION OF A SINGLE FAMILY RESIDENCE PARTIALLY IN THE 100–FOOT WETLAND BUFFER

2. APPROXIMATE LOT AREA: 30,962 S.F.± (0.71 AC.±) (ALL LOTS COMBINED)

3. ZONE: (SRB) SINGLE RESIDENCE B

DIMENSIONAL REQUIREMENTS – (SRB) SINGLE RESIDENCE B

	REQUIRED	EXISTING	PROVIDED
MIN. LOT AREA:	15,000 S.F.	±30,962 SF	±30,962 SF
MIN. STREET FRONTAGE:	100'	100.28'	100.28'
MIN. LOT DEPTH:	100'	205.8'	205.8'
FRONT SETBACK: *	30' (17.8')	±5.8'	±43.0' (ADD'N)
SIDE SETBACK (RIGHT):	10'	±6.6'	±10.0' (ADD'N)
SIDE SETBACK (LEFT):	10'	±64'	±13.0' (DECK)
REAR SETBACK:	30'	±87'	±76.0' (SHED)
MAX. BUILDING HEIGHT:	35'	<35'	<35'
MAX. BUILDING COVERAGE:	20%	±5.9%	±11.3%
MIN. OPEN SPACE:	40%	±86.3%	±83.5%
DISTANCE FROM BUILDING TO WETLANDS:		±40'	±49.5'
DISTANCE FROM IMPERVIOUS TO WETLANDS:		±32'	±86.2'

* FRONT SETBACK CAN BE AN AVERAGE OF ABUTTING PARCELS IN THE SAME ZONE WITHIN 200' OF THE LOT ON THE SAME SIDE OF THE STREET, USING 30–FEET FOR LOTS THAT ARE MORE THAN 30 FEET. SEE SUPPORTING DOCUMENTATION IN SUBMITTED MATERIALS.

4. PORTION OF THE LOT PARCEL LIES IN ZONE AE ELEVATION 8.0 PER FEMA FIRM MAP NUMBER 33015C0259F, MAP REVISED 1/29/21. LOT DEVELOPMENT OCCURS OUTSIDE FLOOD HAZARD ZONE.

5. ALL CONSTRUCTION SHALL MEET THE MINIMUM STANDARDS OF THE CITY OF PORTSMOUTH & NHDOT'S STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITIONS. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.

6. PARKING SPACES REQUIREMENTS:

1.3 SPACES/UNIT X 1 UNIT = 1.3 SPACES REQUIRED

2 SPACES PROVIDED (IN GARAGE)

7. BASE PLAN: "EXISTING CONDITIONS PLAN FOR PROPOERTY LOCATED AT 56 RIDGES COURT PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE" BY NORTH EASTERLY SURVEYING, DATED 2/22/24.

8. WETLANDS MAPPING BY JOSEPH NOEL, WETLANDS SCIENTIST #086 ON DECEMBER 21, 2023 AND CONFIRMED BY MARC JACOBS, WETLANDS SCIENTIST #010.

SITE NOTES FOR MAP 207/LOTS 63, 68 & 69:

1. EXISTING IMPERVIOUS AREAS IN THE 100' BUFFER:

GARAGE/SHED:	640 SF
PORTION OF EX. HOUSE:	220 SF
REAR DECK:	95 SF
PAVEMENT:	1,565 SF
CONCRETE STEPS:	20 SF
MISC:	175 SF
TOTAL:	2,715 SF

2. PROPOSED IMPERVIOUS AREAS IN THE 100' BUFFER:

PORTION OF EX. HOUSE:	220 SF
PROPOSED ADDITION:	1,200 SF
PROPOSED DECK:	875 SF (PERMEABLE)
PROPOSED SHED:	320 SF
PORTION OF PR. DRIVEWAY:	310 SF
MISC.:	250 SF
TOTAL:	3,175 SF

PROP. EFFECTIVE IMPERVIOUS AREA: 2,300 SF

3. EXISTING IMPERVIOUS AREAS ON THE LOTS:

HOUSE:	900 SF
FRONT PORCH/DECK:	200 SF
REAR DECK:	95 SF
GARAGE/SHED:	640 SF
PAVEMENT:	2,150 SF
CONCRETE STEPS:	20 SF
MISC:	235 SF
TOTAL:	4,240 SF (13.7%)

4. PROPOSED IMPERVIOUS AREAS ON THE LOTS:

EX. HOUSE:	900 SF
EX. FRONT PORCH/DECK:	200 SF
EX. PAVED WALK/STEPS:	40 SF
PROPOSED ADDITION:	1,200 SF
PROPOSED DECK:	875 SF (PERMEABLE)
PROPOSED SHED:	320 SF
PROPOSED DRIVEWAY:	1,450 SF
MISC.:	115 SF
TOTAL:	5,100 SF (16.5%)

5. PROP. EFFECTIVE IMPERVIOUS AREA ON LOT: 4,225 SF (13.6%)

6. AREAS ON LOTS:

AREA OF WETLANDS:	6,070 SF
AREAS WITHIN 100–FOOT BUFFERS:	21,342 SF
AREA OUTSIDE TWO (2) BUFFERS:	3,550 SF
TOTAL LOT AREA:	30,962 SF

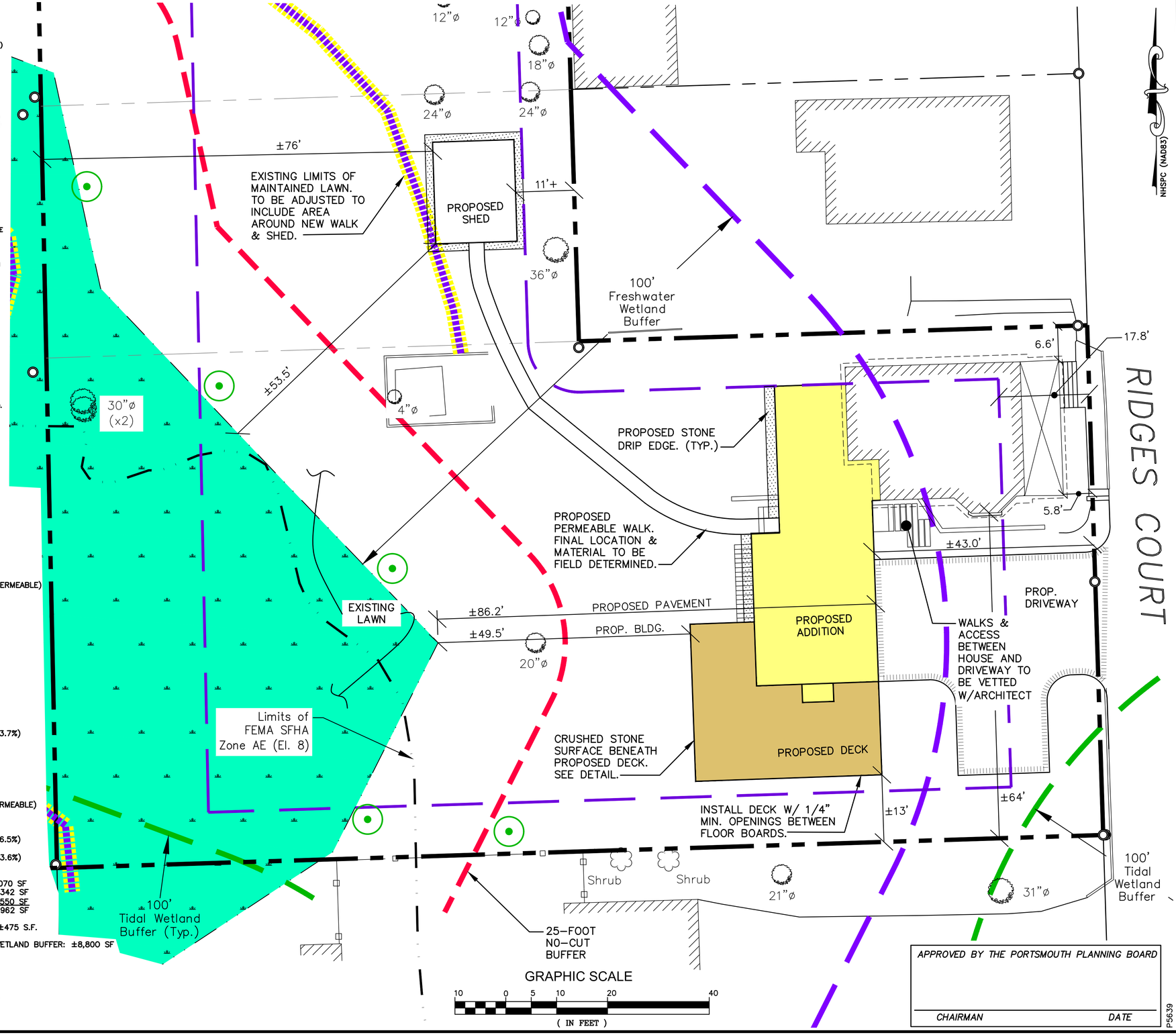
7. TOTAL AREA OF LOT WITHIN THE 100–FOOT TIDAL BUFFER: ±475 S.F.

8. TOTAL AREA OF DISTURBANCE WITHIN THE CITY 100–FOOT WETLAND BUFFER: ±8,800 SF

9. TOTAL AREA OF DISTURBANCE IN THE WETLAND: 0 S.F.

10. TOTAL AREA OF DISTURBANCE ON THE LOT: ±10,500 S.F.

11. TAX MAP 207, LOTS 63, 68 & 69 SHALL BE CONSOLIDATED.



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

P5639

ALTUS ENGINEERING

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

ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE

1/29/25

ISSUED FOR: INITIAL SUBMISSION

ISSUE DATE: JANUARY 29, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	01/29/25

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 5639.dwg

SCALE:
(22"x34") 1" = 10'
(11"x17") 1" = 20'

OWNERS/APPLICANTS:

ANNEMARIE RAINBOTH, TRUSTEE & MICHAEL RAINBOTH, TRUSTEE

TRUSTEES OF RAINBOTH REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE PORTSMOUTH, NH 03801

PROJECT:

RESIDENTIAL ADDITION
TAX MAP 207
LOTS 63, 68 & 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:

SITE PLAN

SHEET NUMBER:

C - 2

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- 12.5 + PROPOSED SPOT GRADE ELEVATION
- PD PROPOSED DRAIN

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

5 (FIVE) 2–3" CALIPER SUGAR MAPLES OR APPROVED EQUAL TO BE INSTALLED IN EITHER WETLAND OR EDGE OF WETLAND. OWNER TO WORK W/ENGINEER TO DETERMINE LOCATIONS IN FIELD.

TEMPORARY EROSION CONTROL BARRIER. SEE DETAIL.

EX. GARDEN AREA

PROPOSED SHED

100' Freshwater Wetland Buffer

CLEANOUT, INV. OUT= 10.5

6" HDPE

CONNECT DOWNSPOUTS TO NEW CLOSED DRAINAGE SYSTEM (TYP.)

MAINTAIN GUTTERS ON NORTH SIDE OF EX. HOUSE. SEE ARCH. DWGS.

MEET & MATCH TO EXISTING PAVEMENT. SAWCUT PAVEMENT AT LIMITS OF WORK.

SEE ARCH. DWGS. FOR DETAILS OF GRADING ADJACENT TO HOME.

STONE DRIP EDGE. (TYP.) SEE DETAIL.

6" HDPE S=0.005 MIN.

GARAGE SLAB ELEV. AT O/H DOOR ±11.95

INSTALL GUTTERS ON FRONT OF BLDG. ADDITION

MAINTAIN GUTTERS ON SOUTH SIDE OF HOUSE. SEE ARCH. DWGS.

PROPOSED 6" HDPE S=0.005 MIN.

PROPOSED TRENCH DRAIN RIM=11.68 INV. OUT=10.68

PROPOSED 6" HDPE S=0.005 MIN.

100' Tidal Wetland Buffer

PROPOSED YARD DRAIN RIM=11.1 INV IN=9.7 INV OUT=9.6

Limits of FEMA SFHA (Zone AE (El. 8)

100' Tidal Wetland Buffer (Typ.)

CRUSHED STONE SURFACE

YARD DRAIN RIM=10.7 INV. IN=9.7 INV. OUT=9.6

6" PERF. HDPE LAID FLAT INV=9.6 (50 LF)

6" HDPE

Shrub Shrub

30"ø (x2)

12"ø 12"ø 18"ø 24"ø 24"ø 36"ø 4"ø 20"ø 21"ø 31"ø

NHSPC (NAD83)

RIDGES COURT

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

EROSION AND SEDIMENT CONTROL NOTES:

1. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
2. CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
3. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
4. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
5. UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBM) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
6. PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
7. TEMPORARY INLET PROTECTION MEASURES SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASINS WITHIN 100' OF THE PROJECT SITE WHEN SITE WORK WITHIN CONTRIBUTING AREA IS ACTIVE OR SAID AREAS HAVE NOT BEEN STABILIZED.
8. 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.
9. 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.
10. 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.
11. NO EARTHWORK, STUMPING OR GRUBBING SHALL COMMENCE UNTIL ALL APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED IN GOOD WORKING ORDER FOR THE DURATION OF CONSTRUCTION AND THE SITE IS STABILIZED.
12. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DESIGN STANDARDS AND SPECIFICATIONS SET FORTH IN THE NHDES NH STORMWATER MANUALS, VOL. 1–3, DATED DECEMBER 2008 AS AMENDED.
13. CONTRACTOR SHALL CONTROL DUST BY SPRAYING WATER, SWEEPING PAVED SURFACES, PROVIDING TEMPORARY VEGETATION, AND/OR MULCHING EXPOSED AREAS AND STOCKPILES.
14. THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PREVENT EROSION, PREVENT SEDIMENT FROM LEAVING THE SITE AND/OR ENTERING WETLANDS AND ENSURE PERMANENT SOIL STABILIZATION.
15. ALL EROSION CONTROL BLANKETS AND FASTENERS SHALL BE BIODEGRADABLE.
16. ALL SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
17. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE SIX (6") INCHES OF COMPACTED LOAM, LIMESTONE, ORGANIC FERTILIZER, SEED, AND MULCH USING APPROPRIATE SOIL STABILIZATION TECHNIQUES.
18. UPON COMPLETION OF CONSTRUCTION, ALL DRAINAGE INFRASTRUCTURE SHALL BE CLEANED OF ALL DEBRIS AND SEDIMENT AND ALL TEMPORARY EROSION AND SEDIMENT CONTROLS REMOVED AND ANY AREAS DISTURBED BY THE REMOVAL SMOOTHED AND REVEGETATED.
19. SLOW RELEASE FERTILIZER SHALL BE USED ON SITE.

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1/29/25

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TRUSTEES OF RAINBOTH REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE PORTSMOUTH, NH 03801

PROJECT:

RESIDENTIAL ADDITION
TAX MAP 207
LOTS 63, 68 & 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE: STORMWATER MANAGMENT PLAN

SHEET NUMBER: C- 3

P5639

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

PROPOSED RESIDENTIAL ADDITION & SITE IMPROVEMENTS
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE
TAX MAP 207 LOT 63, 68 & 69

LONGITUDE: –70°45'20" W
LATITUDE: 43°04'10" N

OWNER / APPLICANT:

ANNEMARIE RAINBOTH, TRUSTEE & MICHAEL RAINBOTH, TRUSTEE
TRUSTEES OF RAINBOTH REVOCABLE TRUST OF 2010
122 NEW CASTLE AVENUE
PORTSMOUTH, NH 03801

DESCRIPTION

The project consists of the removal of a garage and the construction of an addition to a single–family residential home along with associated site improvements.

DISTURBED AREA

The total area to be disturbed for the redevelopment improvements is approximately 10,500 S.F. (±0.24 acres).

PROJECT PHASING

The proposed project will be completed in one phase.

NAME OF RECEIVING WATER

The site drains overland to an unnamed wetland leading to Little Harbor.

SEQUENCE OF MAJOR ACTIVITIES

1. Install temporary erosion control measures including silt fences, stabilized construction entrance and inlet sediment filters as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
2. Raze existing structures or portions thereof as shown,
3. Strip loam and stockpile.
4. Construct site features as shown on plan.
5. Rough grade site including placement of borrow materials.
6. Construct drainage structures, culverts, utilities & swales.
7. Loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
8. Install permeable & impervious driveway.
9. When all construction activity is complete and site is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through hay bale barriers, stone check dams, and silt fences. All storm drain inlets shall be provided with hay bale filters or stone check dams. Stone rip rap shall be provided at the outlets of drain pipes and culverts where shown on the drawings.

Stabilize all ditches, swales, & level spreaders prior to directing flow to them.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.25 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built–up sediment shall be removed from silt fence or other barriers when it has reached one–third the height of the fence or bale, or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. An area shall be considered stable if one of the following has occurred:
   a. Base coarse gravels have been installed in areas to be paved;
   b. A minimum of 85% vegetated growth as been established;
   c. A minimum of 3 inches of non–erosive material such as stone of riprap has been installed; – or –
   d. Erosion control blankets have been properly installed.
9. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
   a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
   b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CON'T)

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.
Jute and Fibrous Matting (Erosion Blanket	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1–1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	* The organic matter content is between 80 and 100% dry weight basis. * Particle size by weight is 100% passing a 6" screen and a minimum of 70 % maximum of 85% passing a 0.75" screen. * The organic portion needs to be fibrous and elongated. * Large portions of silts, clays or fine sands are not acceptable in the mix. * Soluble salts content is less than 4.0 mmhos/cm. * The pH should fall between 5.0 and 8.0.

3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. TEMPORARY GRASS COVER

1. Seedbed Preparation –
   Apply fertilizer at the rate of 600 pounds per acre of 10–10–10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.

2. Seeding –
   a. Utilize annual rye grass at a rate of 40 lbs/acre.
   b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
   c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance –
   Temporary seedings shall be periodically inspected. At a minimum, 95% of the soil surface should be covered by vegetation. If any evidence of erosion or sedimentation is apparent, repairs shall be made and other temporary measures used in the interim (mulch, filter barriers, check dams, etc.).

D. FILTERS

1. Sequence of Installation –
   Sediment barriers shall be installed prior to any soil disturbance of the contributing upslope drainage area.

2. Maintenance –
   a. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water, the sediment barriers shall be replaced with a temporary stone check dam.
   b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
   a. Sediment deposits must be removed when deposits reach approximately one–third (1/3) the height of the barrier.
   b. Any sediment deposits remaining in place after the silt fence or other barrier is no longer required shall be removed. The area shall be prepared and seeded.
   c. Additional stone may have to be added to the construction entrance, rock barrier and riprap lined swales, etc., periodically to maintain proper function of the erosion control structure.

E. PERMANENT SEEDING –

1. Bedding – stones larger than 1½", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

2. Fertilizer – lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds and amounts of lime and fertilizer should be based on an evaluation of soil tests. When a soil test is not available, the following minimum amounts should be applied:

   Agricultural Limestone @ 100 lbs. per 1,000 s.f.
   10–20–20 fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture (recommended):

Type	Lbs. / Acre	Lbs. / 1,000 sf
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

Seed Mixture (For slope embankments):
Grass Seed: Provide fresh, clean, new–crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

Type	Min. Purity (%)	Min. Germination (%)	Kg./Hectare (Lbs/Acre)
Creeping Red Fescue (c)	96	85	45 (40)
Perennial Rye Grass (a)	98	90	35 (30)
Redtop	95	80	5 (5)
Alsike Clover	97	90(e)	5 (5)
		Total	90 (80)

a. Ryegrass shall be a certified fine–textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
b. Fescue varieties shall include – Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CON'T)

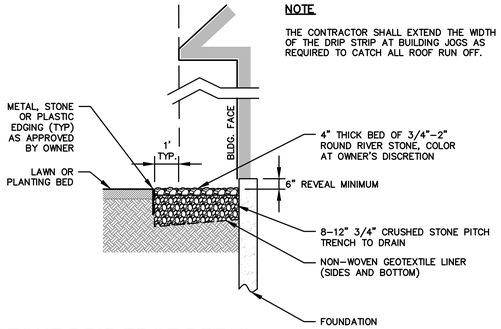
4. Sodding – sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events;

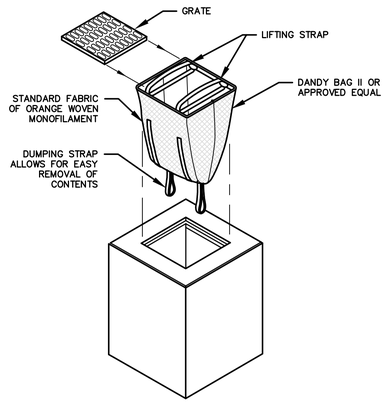
2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and

3. After November 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.



NOTE
THE CONTRACTOR SHALL EXTEND THE WIDTH OF THE DRIP STRIP AT BUILDING JOGS AS REQUIRED TO CATCH ALL ROOF RUN OFF.

STONE DRIP EDGE DETAIL NOT TO SCALE



INSTALLATION AND MAINTENANCE:

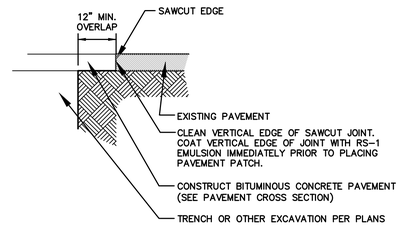
INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN UNIT. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO CATCH BASIN INSERT SO THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF THE UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN INSERT. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY THE UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

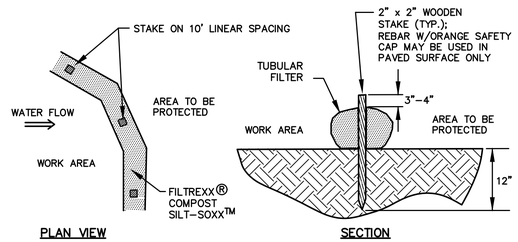
UNACCEPTABLE INLET PROTECTION METHOD:

A SIMPLE SHEET OF GEOTEXTILE UNDER THE GRATE IS NOT ACCEPTABLE.

STORM DRAIN INLET PROTECTION NOT TO SCALE

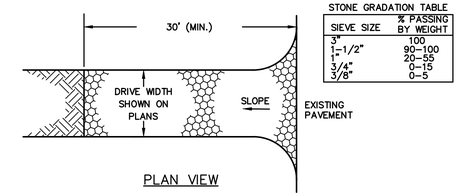


TYPICAL PAVEMENT SAWCUT NOT TO SCALE



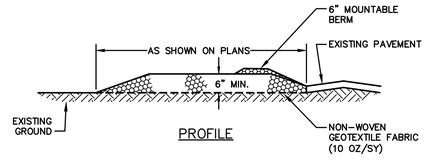
NOTES:
1. SILTSOXX OR APPROVED EQUAL SHALL BE USED FOR TUBULAR SEDIMENT BARRIERS.
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
3. COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
4. ALL SEDIMENT TRAPPED BY BARRIER SHALL BE DISPOSED OF PROPERLY.

TUBULAR SEDIMENT BARRIER DETAIL NOT TO SCALE



STONE GRADATION TABLE

SIEVE SIZE	% PASSING BY WEIGHT
3"	100
1–1/2"	90–100
1"	20–55
3/4"	0–15
3/8"	0–5



CONSTRUCTION SPECIFICATIONS

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

STABILIZED CONSTRUCTION EXIT NOT TO SCALE

P5639

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

ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
1/29/25

ISSUED FOR: INITIAL SUBMISSION

ISSUE DATE: JANUARY 29, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	01/29/25

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 5639–DETAILS.dwg

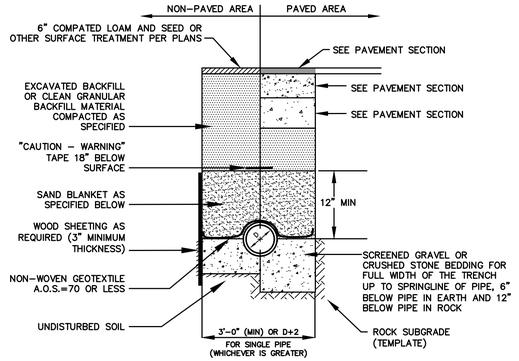
SCALE:
(22"x34") NOT TO SCALE
(11"x17") NOT TO SCALE

OWNERS/APPLICANTS:
ANNEMARIE RAINBOTH, TRUSTEE & MICHAEL RAINBOTH, TRUSTEE
TRUSTEES OF RAINBOTH REVOCABLE TRUST OF 2010
122 NEW CASTLE AVENUE
PORTSMOUTH, NH 03801

PROJECT:
RESIDENTIAL ADDITION
TAX MAP 207
LOTS 63, 68 & 69
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:
EROSION CONTROL NOTES & DETAILS

SHEET NUMBER:
D-1



NOTES

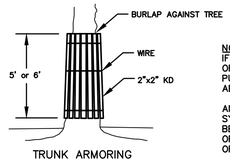
1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
2. INSULATE GRAVITY SEWER AND FORCEMAINS WHERE THERE IS LESS THAN 5'-0" OF COVER WITH 2" THICK CLOSED CELL RIGID BOARD INSULATION, 18" ON EACH SIDE OF PIPE.
3. MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION AND WIDEN TRENCH ACCORDINGLY IF MULTIPLE PIPES ARE IN TRENCH.

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

SCREENED GRAVEL OR CRUSHED STONE BEDDING*	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 - 100
3/8"	20 - 55
# 4	0 - 10
# 8	0 - 5

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

DRAINAGE TRENCH NOT TO SCALE



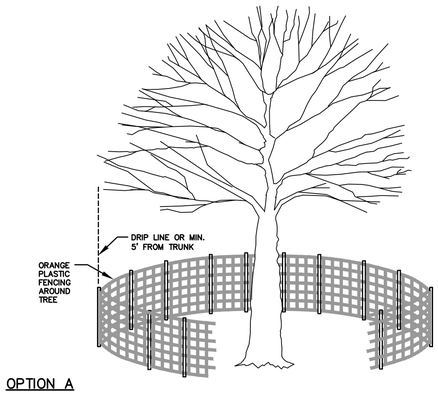
TRUNK ARMORING

NOTE:
IF SOIL BECOMES COMPATCED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHOULD BE AERATED BY PUNCHING SMALL HOLES IN IT WITH SUITABLE AERATING EQUIPMENT.

ANY DAMAGE TO THE CROWN, TRUNK OR ROOT SYSTEM OF ANY TREE RETAINED ON SITE SHOULD BE REPAIRED IMMEDIATELY. CONSULT A FORESTER OR TREE SPECIALIST FOR MORE SERIOUS DAMAGE OF TREES.

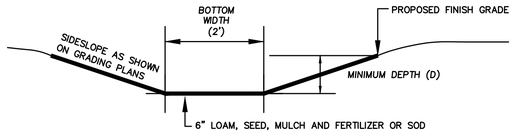
CONTRACTOR TO USE OPTION A OR B WHERE SUITABLE AND/OR AS DIRECTED BY THE ENGINEER.

OPTION B



OPTION A

TREE PROTECTION DETAILS NOT TO SCALE



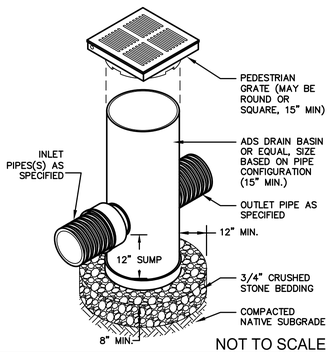
NOTES

1. *THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.*
2. *THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.*
3. *EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.*
4. *CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.*
5. *VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.*
6. *MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.*
7. *THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.*
8. *PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.*

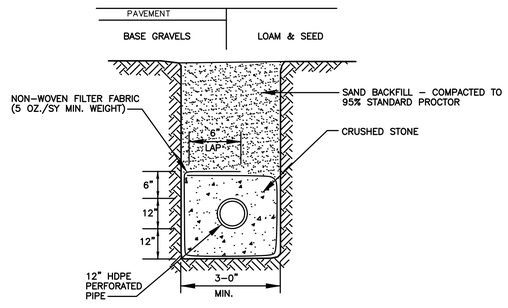
GRASSED SWALE NOT TO SCALE

NOTES:

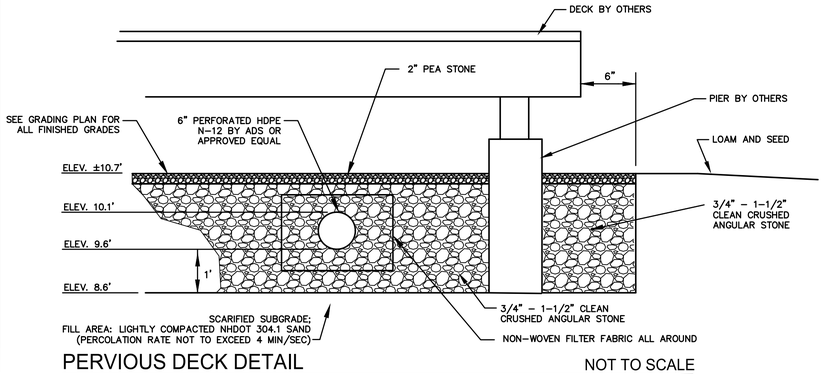
1. FRAMES AND GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN AND DETAILS.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE, N-12HP AND PVC SEWER.
4. INLINE DRAIN TO BE PVC, DIAMETER AS SPECIFIED AND AS MANUFACTURED BY ADS OR APPROVED EQUAL.
5. THE CONTRACTOR SHALL INSTALL THE DRAIN BASIN PER THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON THE DRAWINGS.
6. FOR INSTALLATION IN PEDESTRIAN AND LANDSCAPE AREAS ONLY.



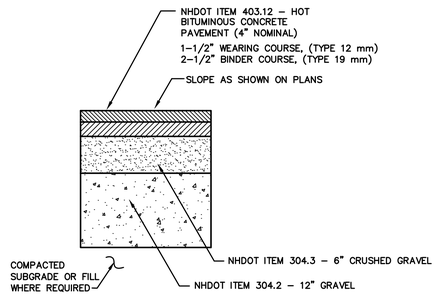
YARD DRAIN NOT TO SCALE



PERFORATED PIPE TRENCH SECTION NOT TO SCALE



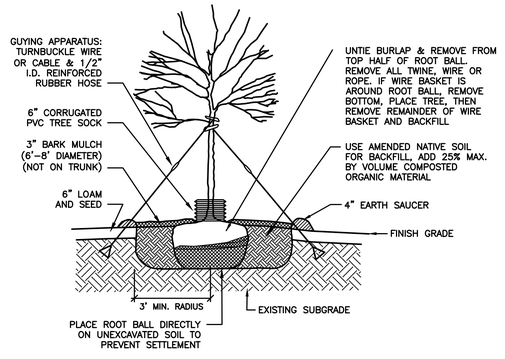
PERVIOUS DECK DETAIL NOT TO SCALE



NOTES

1. PROJECT GEOTECHNICAL REPORT MAY REQUIRE A DIFFERENT PAVEMENT CROSS SECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND FOLLOWING ALL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. IN THE EVENT THAT THE REPORT AND CIVIL PLANS DIFFER, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. ALL EXISTING FILL, BURIED ORGANIC MATTER, CLAY, LOAM, MUCK, AND/OR OTHER QUESTIONABLE MATERIAL SHALL BE REMOVED FROM BELOW ALL PAVEMENT, SHOULDERS AND UNDERGROUND PIPING/UTILITIES TO DEPTHS RECOMMENDED IN GEOTECHNICAL REPORT.
3. SUBGRADE SHALL BE PROOFROLLED A MINIMUM OF 6 PASSES WITH A 10-TON VIBRATORY COMPACTOR OPERATING AT PEAK RATED FREQUENCY OR BY MEANS APPROVED BY THE ENGINEER.
4. FILL BELOW PAVEMENT GRADES SHALL BE GRANULAR BORROW COMPACTED PER NHDOT REQUIREMENTS.
5. SITEWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS WITH THE CONSTRUCTION MANAGER PRIOR TO PLACING GRAVELS.
6. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT.
7. THE BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 92 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. THE BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557.

PAVEMENT CROSS SECTION NOT TO SCALE



NOTES:

1. PLANT TREE SUCH THAT TOP OF ROOT BALL IS FLUSH WITH GRADE (1" - 2" HIGHER IN SLOW DRAINING SOIL). TRUNK FLARE MUST BE VISIBLE AT THE TOP OF THE ROOT BALL.
2. THREE FLAGGED GUY WIRES TO BE EQUALLY SPACED ABOUT TREE. WOODEN STAKES (24" LENGTH) MAY BE SUBSTITUTED FOR METAL ANCHORS. EITHER OPTION SHALL BE DRIVEN OUTSIDE THE ROOT BALL, PREFERABLY IN UNEXCAVATED SOIL AND REMOVED AT THE END OF THE FIRST GROWING SEASON OR WHEN TREE IS STABILIZED.
3. COORDINATE PRUNING WITH LANDSCAPE ARCHITECT WHEN POSSIBLE. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN. PRUNING OF DEAD OR BROKEN BRANCHES OR CO-DOMINANT LEADERS IS PERMITTED.

DECIDUOUS TREE PLANTING NOT TO SCALE

P5639

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1/29/25

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ISSUE DATE: JANUARY 29, 2025

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DRAWING FILE: 5639-DETAILS.dwg

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OWNERS/APPLICANTS:

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& MICHAEL RAINBOTH, TRUSTEE

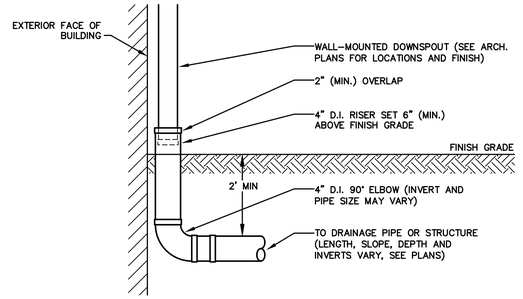
TRUSTEES OF RAINBOTH
REVOCABLE TRUST OF 2010

122 NEW CASTLE AVENUE
PORTSMOUTH, NH 03801

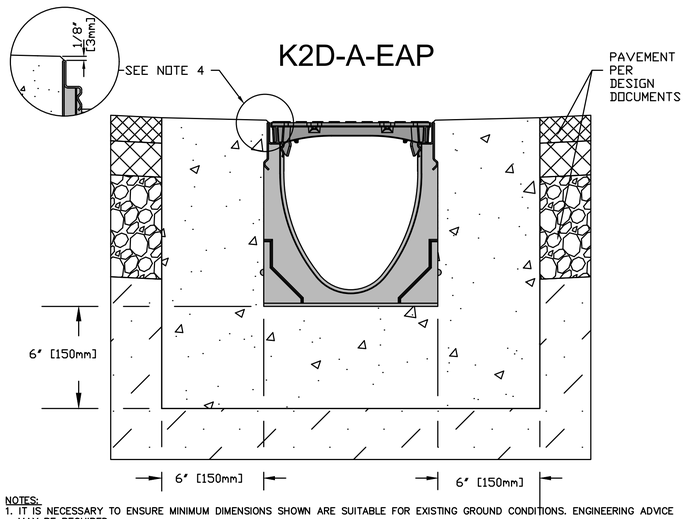
PROJECT:
RESIDENTIAL ADDITION
TAX MAP 207
LOT 63
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:
DETAIL SHEET

SHEET NUMBER:
D - 2



EXTERIOR ROOF DRAIN CONNECTION NOT TO SCALE



NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN 'DRAINLOK' LOAD CLASS A

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH:	14,000 PSI
FLEXURAL STRENGTH:	4,000 PSI
TENSILE STRENGTH:	1,500 PSI
WATER ABSORPTION:	0.07%
FROST PROOF	YES
DILUTE ACID AND ALKALI RESISTANT	YES
B117 SALT SPRAY TEST COMPLIANT	YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'DRAINLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

TRENCH DRAIN DETAIL NOT TO SCALE

P5639

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1/29/25

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TRUSTEES OF RAINBOTH
REVOCABLE TRUST OF 2010
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PORTSMOUTH, NH 03801

PROJECT:
RESIDENTIAL ADDITION
TAX MAP 207
LOT 63
56 RIDGES COURT
PORTSMOUTH, NEW HAMPSHIRE

TITLE:
DETAIL SHEET

SHEET NUMBER:
D - 3

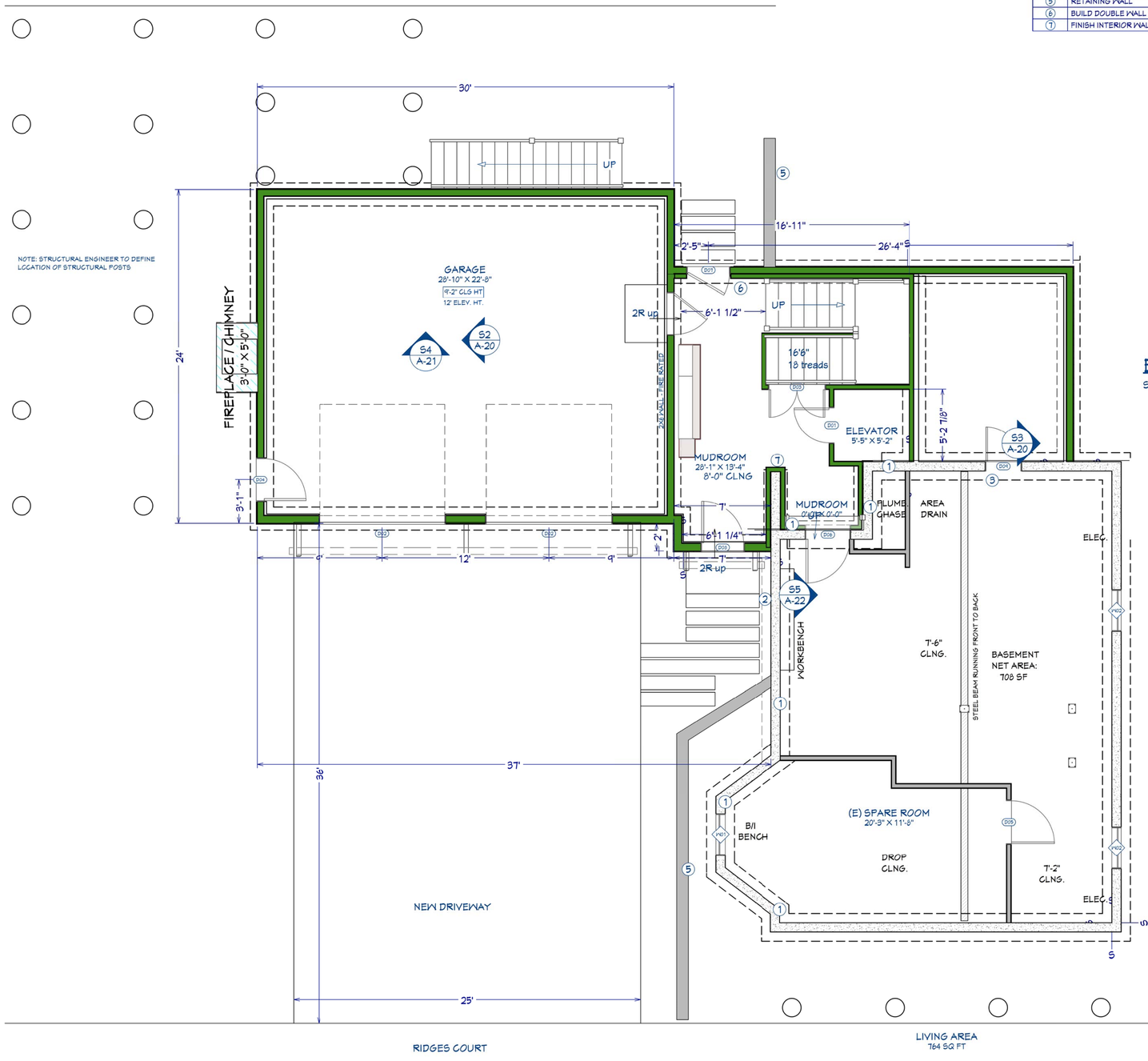
DIMENSIONS
1. DIMENSIONS ARE TO FACE OF STUD, UNLESS NOTED OTHERWISE.
2. CLOSETS ARE 24" CLEAR INSIDE, UNLESS DIMENSIONED OTHERWISE.

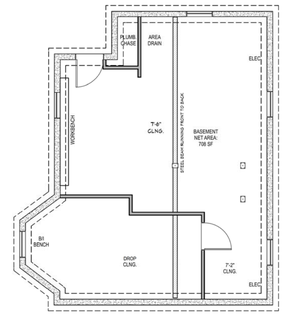
SQUARE FOOTAGES
1. SQ FT NUMBERS ARE INTERIOR TO ROOM FOR USE IN CALCULATING FINISHES.
2. CABINETS AND FIXTURES NOT SUBTRACTED.
3. ADD FOR DOORWAYS WHEN FLOOR FINISHES RUN THROUGH.

NOTES
1 EXTERIOR WALLS 2X6 WOOD STUD @ 16" OC. PROVIDE INSULATION & VAPOR BARRIER CONFORMING TO STATE OR LOCAL CODES. INTERIOR SHEATHING 1/2" GYPSUM BOARD. PROVIDE 1/2" EXTERIOR RATED SHEATHING, HOUSE WRAP WITH DRAINAGE PLANE AND SIDING. PROVIDE STEP FLASHING AT WALLS ADJACENT TO ROOF PLANES.
2 INTERIOR WALLS 2X4 WOOD STUD @ 16" OC, UNLESS NOTED OTHERWISE.
3 ROOF - SEE STRUCTURAL FOR RAFTER SIZES. PROVIDE 5/8" EXTERIOR RATED ROOF SHEATHING 15# ROOFING FELT, ICE & WATER SHIELD AT EAVES AND VALLEYS, ALUMINUM DRIP EDGE AND ASPHALT SHINGLES OR METAL ROOFING. STRUCTURE NOT CALCULATED TO SUPPORT SLATE OR TILE. FLASH ALL PENETRATIONS. PROVIDE CRICKET AT ANY ADDED CHIMNEYS.
4 PROVIDE ROOF AND/OR CEILING INSULATION PER CODE. PROVIDE SOFFIT AND RIDGE VENTS WHERE REQUIRED FOR INSULATION STRATEGY. (VERIFY WITH CODE OFFICER - CLOSED CELL SPRAY FOAM OR DENSE-PACK CELLULOSE INSTALLED AT RAFTERS AND FILLING RIDGE AND EAVES GENERALLY CONTRA-INDICATES VENTING, BATT INSULATION ALWAYS REQUIRES VENTING).
5 PROVIDE SMOKE, CARBON MONOXIDE, AND HEAT DETECTORS WHERE SHOWN AND WHERE REQUIRED BY CODE AND WHERE REQUIRED BY LOCAL AUTHORITIES.
6 PROVIDE FIRE RESISTIVE MATERIALS WHERE REQUIRED BY CODE, INCLUDING BUT NOT LIMITED TO, FIRESTOPPING AT PENETRATIONS, 5/8" TYPE X DRYWALL ON WALLS AND CEILINGS TO SEPARATE GARAGE (WHERE GARAGE PRESENT IN DESIGN) FROM DWELLING, AND SEPARATION OF DWELLINGS (WHERE MORE THAN ONE DWELLING PRESENT IN DESIGN), AND PROTECTION OF FLAMMABLE INSULATION MATERIALS. SEE TABLE R302.6 IRC 2015.
7 COMPLIANCE WITH CODE REQUIREMENTS FOR ROOMS SIZE AND CLEARANCES, (HALLWAY WIDTHS, ROOM SIZES, ETC) ASSUME 1/2" DRYWALL ON WALLS AND 1/2" DRYWALL ON 3/4" STRAPPING ON CEILINGS. ADJUST AS REQUIRED IF MATERIALS DIFFER.
8 SHEAR IS ONLY CALLED OUT WHERE CONTINUOUS SHEATHING WOOD STRUCTURAL PANEL METHOD WILL NOT SUFFICE. SEE PLANS FOR LOCATIONS WHERE ALTERNATE SHEAR METHODS ARE REQUIRED.

GENERAL DESIGN NOTES
1 BUILDER SHALL CONSULT AND FOLLOW THE BUILDING CODE AND OTHER REGULATIONS IN EFFECT FOR THE BUILDING SITE FOR ALL CONSTRUCTION DETAILS NOT SHOWN IN THESE DRAWINGS. REQUIREMENTS DESCRIBED HERE ARE SPECIFIC TO THIS DESIGN AND/OR ARE PROVIDED AS REFERENCE. ADDITIONAL BUILDING CODE OR LOCAL REQUIREMENTS MAY APPLY.
2 BUILDER SHALL MAINTAIN A SAFE WORKSITE, INCLUDING BUT NOT LIMITED TO, PROVISION OF TEMPORARY SUPPORTS WHERE APPROPRIATE AND ADHERENCE TO APPLICABLE SAFETY STANDARDS.
3 DESIGN IS BASED ON THE SNOW LOAD LISTED ON THE FRAMING PLANS, 100 MPH BASIC WIND SPEED, EXPOSURE TYPE B, SOIL BEARING CAPACITY OF 2000 PSF, AND SEISMIC CATEGORY C, UNLESS OTHERWISE NOTED ON THE FRAMING PLANS. BUILDER SHALL PROMPTLY INFORM ARTFORM HOME PLANS OF DIFFERING CONDITIONS.

FOUNDATION NOTES SCHEDULE	
1	EXTEND FOOTING DOWN TO CAPTURE HEIGHT OF ADDITION AND GRADE CHANGE
2	CREATE CONCRETE PLANTING BED W/ STONE VENEER TO COVER UP DELTA OF OLD & NEW FOUNDATION.
3	NEW DOOR LOCATION AT EXISTING WINDOW LOCATION.
4	POROUS DECKING INSTALLATION - NOT CALCULATED IN LOT COVERAGE
5	RETAINING WALL
6	BUILD DOUBLE WALL OR FINISH FOUNDATION WALL @ STAIRCASE
7	FINISH INTERIOR WALLS OF FOUNDATION WALLS W/ 2X4 ON THE FLAT.





EXISTING FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

PROPOSED FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

NOT TO SCALE - ORIGINAL IS 24" X 36"

Revision Table

Number	Date	Description

FLOOR PLANS

CLIENT:
RAINBOTH RESIDENCE
56 RIDGES COURT
PORTSMOUTH, NH

CONTACT:
AMY DUTTON HOME
9 WALKER STREET | KITTERY, ME
amy@amyduttonhome.com
207.337.2020

DATE:
17/01/2025

SCALED FOR:
24" X 36"

SCALE:
SEE SCALE ON DRAWINGS

SHEET:
A-8

EXISTING FRONT VIEW

SCALE: 1/4" = 1'-0"

Note - Actual grade level may vary. Where zoning height restrictions apply, builder shall verify conformance. Manual markup of drawings to demonstrate compliance is recommended.

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

Adjust Window Ht so the space between the window sill and roof is no less than 4"

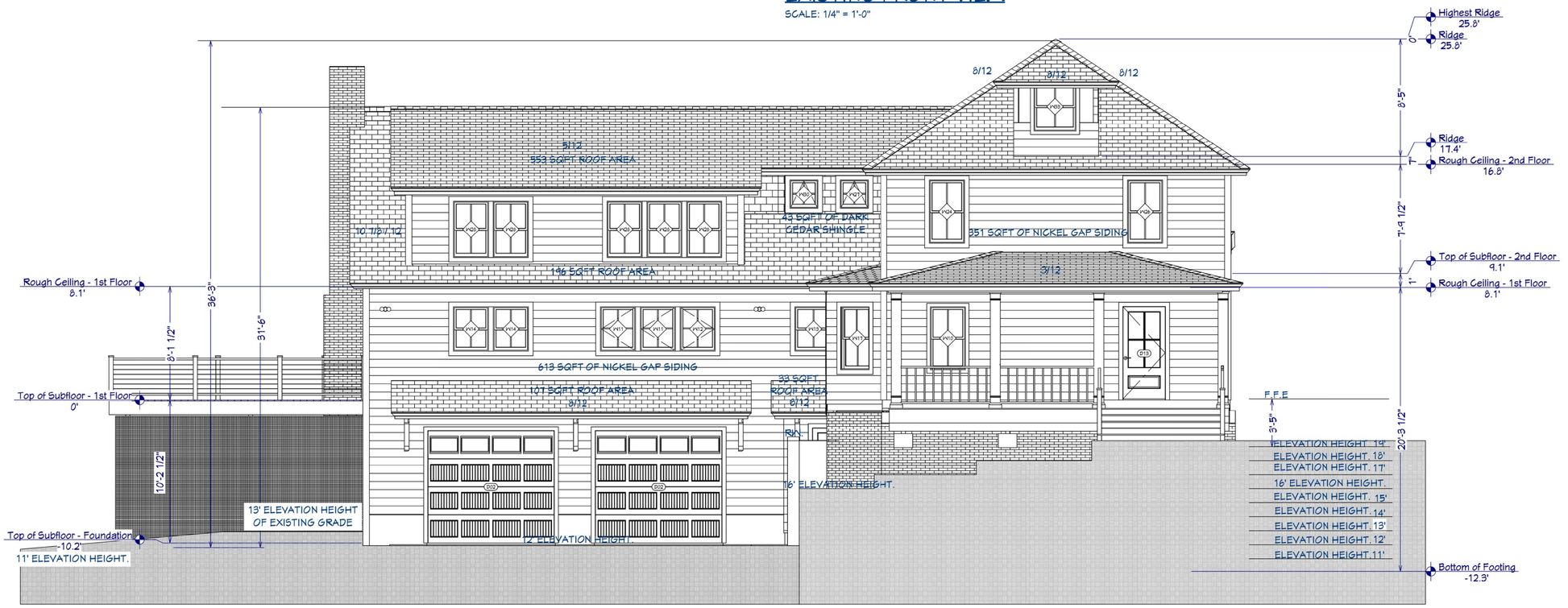
Foundation steps and/or use of cripple walls may be added to suit grade.

For Optional fireplace, consult GC about applicability

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.

6x6 PT Posts shown under Deck & Porch, can be 4x4 PT for posts less than 48" in height. Consult Amy Dutton Home for decks higher than 8 ft off grade.

Garage slab height may vary. If garage slab height is lower than shown, consult Amy Dutton Home for aesthetic direction. Taller garage doors, transoms, lintels and/or additional frieze boards may be required to achieve desired look.



FRONT VIEW

SCALE: 1/4" = 1'-0"

ACTUAL GRADE LEVEL MAY VARY. WHERE ZONING HEIGHT RESTRICTIONS APPLY, BUILDER SHALL VERIFY CONFORMANCE. MANUAL MARKUP OF DRAWINGS TO DEMONSTRATE COMPLIANCE IS RECOMMENDED.

ELEVATIONS

SCALE: 1/4" = 1'-0"

NOT TO SCALE - ORIGINAL IS 24" X 36"

Revision Table

Number	Date	Description

ELEVATIONS

CLIENT:
RAINBOTH RESIDENCE
56 RIDGES COURT
PORTSMOUTH, NH

CONTACT:
AMY DUTTON HOME
9 WALKER STREET | KITTERY, ME
amy@amyduttonhome.com
207.337-2020

DATE:
17/01/2025

SCALED FOR:
24" X 36"

SCALE:
SEE SCALE ON DRAWINGS

SHEET:
A-16

EXISTING REAR VIEW

SCALE: 1/4" = 1'-0"

REAR VIEW

SCALE: 1/4" = 1'-0"

ELEVATIONS

SCALE: 1/4" = 1'-0"

NOT TO SCALE - ORIGINAL IS 24" 36"

Note - Actual grade level may vary. Where zoning height restrictions apply, builder shall verify conformance. Manual markup of drawings to demonstrate compliance is recommended.

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

Adjust Window Ht so the space between the window sill and roof is no less than 4"

Foundation steps and/or use of cripple walls may be added to suit grade.

For Optional fireplace, consult GC about applicability

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.

6x6 PT Posts shown under Deck & Porch, can be 4x4 PT for posts less than 48" in height. Consult Amy Dutton Home for decks higher than 8 ft off grade.

Garage slab height may vary. If garage slab height is lower than shown, consult Amy Dutton Home for aesthetic direction. Taller garage doors, transoms, lintels and/or additional frieze boards may be required to achieve desired look.

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