HOEFLE, PHOENIX, GORMLEY & ROBERTS, PLLC
ATTORNEYS AT LAW
127 Parrott Avenue | Portsmouth, NH, 03801
Telephone: 603.436.0666 | Facsimile: 603.431.0879 | www.hpgrlaw.com

November 19, 2025

HAND DELIVERED

Stefanie Casella, Principal Planner
Portsmouth City Hall
1 Junkins Avenue
Portsmouth, NH 03801

Re: Owners: Michael & Isaac Roylos
Applicant: Chris Cloutier
Property: 25 Sims Avenue
Tax Map 233, Lot 71[1]
Single Residence B District

Dear Ms. Casella & Zoning Board Members:

On behalf of the Roylos Family and Chris Cloutier enclosed please find the following in support of a request for zoning relief:

- See Viewpoint Land Use Application uploaded today.
- Owner Authorization.
- 11/19/2025 – Memorandum and exhibits in support of Zoning Relief

We look forward to presenting this application to the Planning Board at its December 16, 2025 meeting.

Very truly yours,

R. Timothy Phoenix
Monica F. Kieser

Encl.

cc: Chris Cloutier
Emmanuel Engineering/JVA

[1] Note that the lot at issue, known as Lot 44, was recently unmerged and does not yet have its own lot number.

OWNER'S AUTHORIZATION

I, Michael R. Roylos and Isaac M. Roylos, Owners/Applicants of Sims Avenue, Tax Map 233/Lot 71, hereby authorize law firm Hoefle, Phoenix, Gormley & Roberts, PLLC to represent us before any and all City of Portsmouth Representatives, Boards and Commissions for permitting the project.

Respectfully submitted,

Date: Michael Roylos dotloop verified 11/16/25 9:33 AM EST N99M-BNZN-MTK1-0NLR

Michael R. Roylos

Date: Isaac Roylos dotloop verified 11/14/25 7:41 PM EST B1WX-SFHN-FMI1-OZG0

Isaac M. Roylos

APPLICANT AUTHORIZATION

I, Christopher Cloutier, Applicant of Sims Avenue, Tax Map 233/Lot 71, hereby authorize law firm Hoefle, Phoenix, Gormley & Roberts, PLLC to represent me before any and all Portsmouth Representatives, Boards and Commissions for permitting the project.

Respectfully submitted,

Chris Cloutier

dotloop verified
11/17/25 12:24 PM EST
RMER-EUYL-6PJ0-DCFW

Christopher Cloutier

MEMORANDUM

TO: Portsmouth Zoning Board of Adjustment ("ZBA")
FROM: R. Timothy Phoenix, Esquire
Monica F. Kieser, Esquire
DATE: November 19, 2025
RE: Owners: Michael & Isaac Roylos
Applicant: Chris Cloutier
Property: 25 Sims Avenue
Tax Map 233, Lot 71[1]
Single Residence B District

Dear Chair Eldridge and Members of the Zoning Board of Adjustment ("ZBA"):

On behalf of Owner Michael & Isaac Roylos and Applicant Chris Cloutier ("Cloutier"), we are pleased to submit this Memorandum and exhibits in support of a requested variance from the Portsmouth Zoning Ordinance ("PZO" or "Ordinance").

I. EXHIBITS

A. Existing Conditions Plan – Ambit Engineering,
B. Site Photographs.
   - Satellite View
C. Deed.
D. Rockingham County Registry of Deeds, Plan 0241.
E. City Council Decision to Unmerge.
F. Lot 44 in Context.
G. Tax Map 233.

II. PROPERTY

Lot 44 is the historic designation for the southeasterly third of 25 Sims Avenue. **(Exhibits A, C, and D)**. Lot 44 is a 5,003 s.f. undeveloped parcel with 50.03' feet of frontage located in the Single Residence B District. **(Exhibit A, B)**. Lot 44 was acquired by the Roylos family as a single lot in 1965. **(Exhibit C, D)**. It was subsequently involuntarily merged by the City of Portsmouth with Lots 42 and 43, the lot upon which the Roylos home was constructed. Upon request of the Roylos Family and in consultation with the Planning Board, the City Council restored Lot 44 to its previously unmerged status as a nonconforming lot. **(Exhibit E)**. Cloutier plans to construct a home within the building envelope. Cloutier consulted with City

[1] Note the lot at issue, known as Lot 44, was recently unmerged and does not yet have its own Lot number.

Staff, who opined that relief is required to establish a home on a lot with insufficient area and frontage.

III. RELIEF REQUIRED

Variance Section/Requirement	Existing	Proposed
PZO §10.520/Table §10.521: Dimensional Standards		
15,000 s.f. Lot area	5,000 s.f.	5,000 s.f.
15,000 s.f. Lot area/dwelling unit	5,000 s.f./dwelling	5,000 s.f./dwelling
100 ft. Frontage	50’	50’

IV. ADDITIONAL PERMITS REQUIRED

- Driveway Permit
- Building Permit

V. VARIANCE REQUIREMENTS

1. **The variances will not be contrary to the public interest.**
2. **The spirit of the ordinance is observed.**

The first step in the ZBA’s analysis is to determine whether granting a variance is not contrary to the public interest and is consistent with the spirit and intent of the ordinance, considered together pursuant to Malachy Glen Associates, Inc. v. Town of Chichester, 155 N.H. 102 (2007) and its progeny. Upon examination, it must be determined whether granting a variance “would unduly and to a marked degree conflict with the ordinance such that it violates the ordinance’s basic zoning objectives.” Id. “Mere conflict with the zoning ordinance is not enough.” *Id.*

The purpose of the Portsmouth Zoning Ordinance as set forth in PZO §10.121 is “to promote the health, safety and the general welfare of Portsmouth and its region in accordance with the City of Portsmouth Master Plan… [by] regulating”:

1. The use of land, buildings and structures for business, industrial, residential and other purposes – The proposal requests variance for lot size/lot size per dwelling unit for a single-family home on a 5000 s.f. lot where 15000 s.f. is required. The

lot, size, which is consistent with many other lots in the area (see **Exhibit F**) is a prior nonconforming condition that cannot be changed.

2. The intensity of land use, including lot sizes, building coverage, building height and bulk, yards and open space – The proposal is to build a home within the existing building envelope.
3. The design of facilities for vehicular access, circulation, parking and loading The lot can accommodate off-street parking for a residential use.
4. The impacts on properties of outdoor lighting, noise, vibration, stormwater runoff and flooding – Stormwater management will be evaluated in conjunction with the issuance of a building permit, which requires stormwater be managed on-site. Lighting noise and vibration will be no different than any other single-family home in the neighborhood.
5. The preservation and enhancement of the visual environment – The establishment of a residential use in a residential zone will not detract from the visual environment.
6. The preservation of historic districts, and buildings and structures of historic or architectural interest – The Property is not in the Historic District.
7. The protection of natural resources, including groundwater, surface water, wetlands, wildlife habitat and air quality – There are not wetlands on site and Lot 44 is not within the wetland buffer.

Based upon the foregoing, the variances do not "in a marked degree conflict with the ordinance such that they violate the ordinance's basic zoning objectives." Malachy Glen, supra, which also held:

> One way to ascertain whether granting the variance would violate basic zoning objectives is to examine whether it would alter the essential character of the locality…. Another approach to [determine] whether granting the variance violates basic zoning objectives is to examine whether granting the variance would threaten the public health, safety or welfare. (emphasis added)

The Property is located in a thickly settled area of the City with many lots that are nonconforming size with insufficient frontage. **(Exhibit F)**. Accordingly, variances for lot size which cannot be met and is consistent with other lots in the neighborhood will neither "alter the essential character of the locality," which is significantly single-family nor "threaten the public health, safety or welfare."

3. Substantial justice is done by granting the variances.

If "there is no benefit to the public that would outweigh the hardship to the applicant" this factor is satisfied. Harborside Associates, L.P. v. Parade Residence Hotel, LLC, 162 N.H. 508 (2011). That is, "any loss to the [applicant] that is not outweighed by a gain to the general public is an injustice." Malachy Glen, supra at 109.

The Roylos family is constitutionally entitled to the use of the lot as they see fit, including selling the lot, subject to the effect of establishing a permitted use on an undersized lot. "The right to use and enjoy one's property is a fundamental right protected by both the State and Federal Constitutions." N.H. CONST. pt. I, arts. 2, 12; U.S. CONST. amends. V, XIV; Town of Chesterfield v. Brooks, 126 N.H. 64 (1985) at 68. Part I, Article 12 of the New Hampshire Constitution provides in part that "no part of a man's property shall be taken from him, or applied to public uses, without his own consent, or that of the representative body of the people." Thus, our State Constitutional protections limit the police power of the State and its municipalities in their regulation of the use of property. L. Grossman & Sons, Inc. v. Town of Gilford, 118 N.H. 480, 482 (1978).

"Property" in the constitutional sense has been interpreted to mean not the tangible property itself, but rather the right to possess, use, enjoy **and dispose** of it. Burrows v. City of Keene, 121 N.H. 590, 597 (1981). (emphasis added). The Supreme Court has held that zoning ordinances must be reasonable, not arbitrary and must rest upon some ground of difference having fair and substantial relation to the object of the regulation. Simplex Technologies, Inc. v. Town of Newington, 145 N.H. 727, 731 (2001); Chesterfield at 69.

A municipality's ordinance must reflect the current character of the neighborhood, See Belanger v. City of Nashua, 121 N.H. 389, 393 (1981) (upholding reversal of use variance denial where current character of neighborhood had evolved since its original classification as single-family residential). Here, the vast majority of conforming lot are nonconforming as to lot size while many also fail to comply with frontage requirements. **(Exhibit F).**

Granting the requested variances creates opportunity for sorely needed single-family homes. There is no harm to any neighbor or the general public from granting the variances to establish a permitted residential use and certainly no harm to the public who benefits from an increase in housing stock. Conversely, Roylos and Cloutier will be greatly harmed by denial as Roylos will be deprived of their constitutional right to dispose of their property and Cloutier will lose the opportunity to reasonably develop the Property, requesting only relief for conditions (lot size and frontage) that cannot under any circumstances be met. Accordingly, there is no benefit to the public from granting the variance that outweighs the harm to the owner from denial.

4. Granting the variance will not diminish surrounding property values.

The City Council recognized that the merger of Lot 44 was done without action or consent by the Owner and had to be remedied by restoration of the lot to its pre-merger status. The establishment of a permitted residential use within the building envelope on a nonconforming lot of record, among other lots similarly situated and developed, will not diminish surrounding property values.

5. Denial of the variances results in an unnecessary hardship.

a. Special conditions distinguish the property/project from others in the area.

The Property, having been set out before zoning, is small and narrow. It was further merged for decades without the owner's consent and has just been restored. Because there is no way to make the lot, thus the Project comply with the SRB lot size, frontage, and lot size per dwelling unit requirements, special conditions exist.

b. No fair and substantial relationship exists between the general public purposes of the ordinance and its specific application in this instance.

Lot area and density limits, exist in order to: prevent overburdening/overcrowding of the land; permit areas for stormwater management; and allow for adequate light, air, and sightlines. The establishment of a permitted single-family home on a lot existing for over a century, within its building envelope, provides sorely needed single-family housing. Accordingly, there is no fair and substantial relationship between the general public purposes of the Ordinance, the lot size and frontage are consistent with other lot in the area, and compliance is impossible.

c. The proposed use is reasonable.

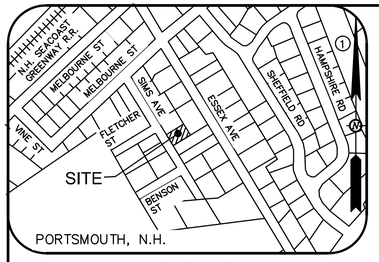
If the use is permitted, it is deemed reasonable. Vigeant v. Hudson, 151 N.H. 747 (2005). Residential uses are permitted in the SRB Zone. We note also that the New Hampshire Supreme Court case of Walker v. City of Manchester, 107 NH 382 (1966) held that a hardship may be found where similar nonconforming uses exist within the neighborhood and the proposed use will have no adverse effect upon the neighborhood. We note that while Walker does not limit or distinguish its analysis based on the underlying cause of the surrounding nonconformity (pre-existing, result of variances, or a planned unit development), a number of nonconforming lots are as they existed on the 1918 Plan. **(Compare Exhibit D to Exhibit G)**. Accordingly, the proposed use is reasonable and denial would create an unnecessary hardship for Roylos and Cloutier.

VI. CONCLUSION

For all the reasons stated, The Roylos Family and Chris Cloutier respectfully request that the Portsmouth Zoning Board of Adjustment the requested relief. We look forward to presenting this application at the December 16, 2025 ZBA Meeting.

Respectfully submitted,
Chris Cloutier

By: _____
R. Timothy Phoenix, Esquire
Monica F. Kieser, E



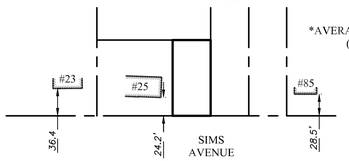
LOCUS
(N.T.S.)

LEGEND

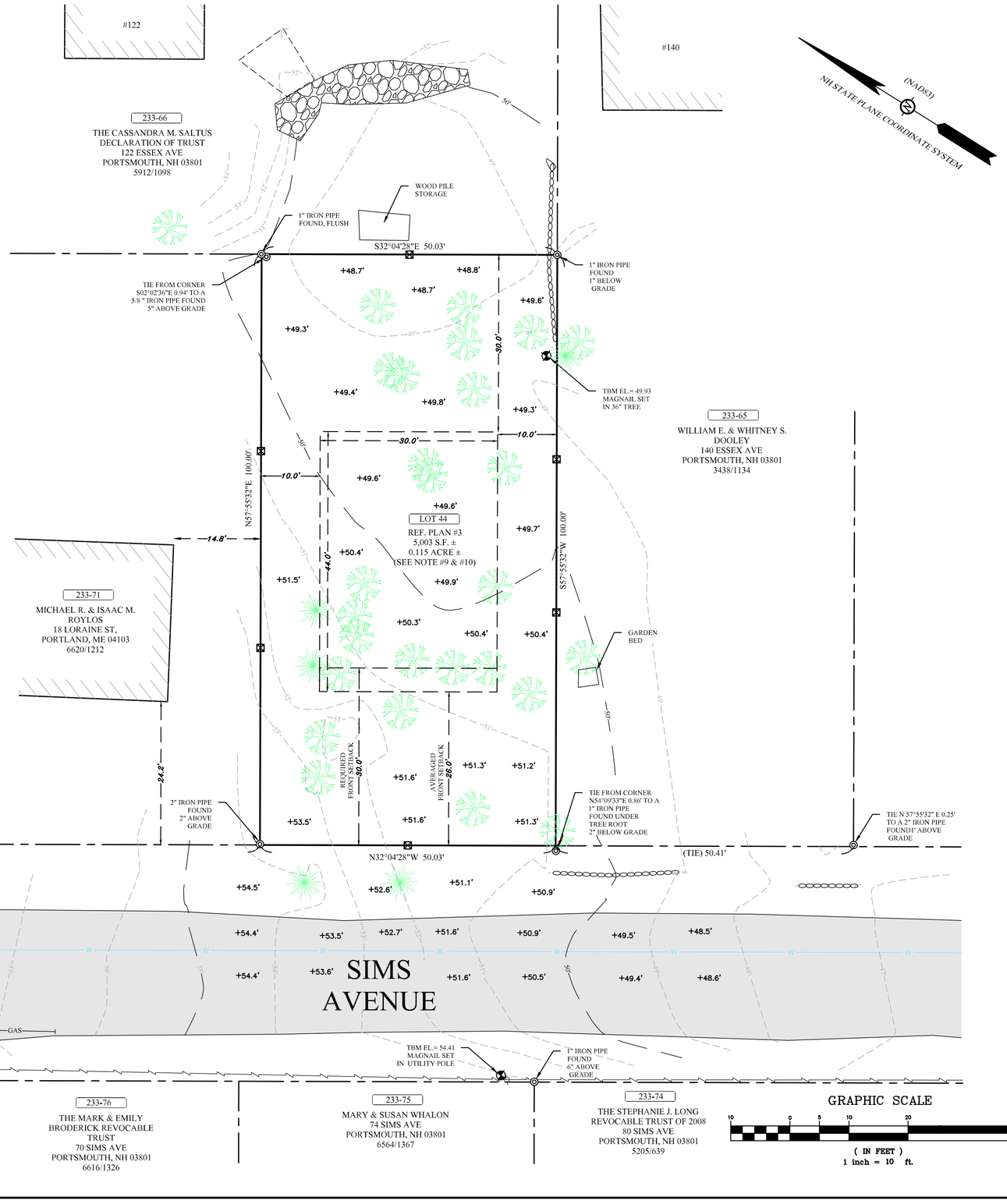
- STONE AREA
- PAVEMENT AREA
- CONTOUR MINOR LINE
- CONTOUR MAJOR LINE
- BOUNDARY LINE
- OVERHEAD WIRE LINE
- BOUNDARY ABUTTERS LINE
- SETBACK LINE
- W — 6" DI WATER LINE
- G — GAS LINE
- CONIFEROUS TREE
- DECIDUOUS TREE
- UTILITY POLE
- BENCHMARK
- IRON PIPE FOUND
- WOODEN STAKE SET
- +53.5' SPOT GRADE ELEVATION

DETAIL "A" FRONT SETBACK CALCULATIONS

NOT TO SCALE



*AVERAGE FRONT SETBACK =
(24.2+28.5)/2 = 26'



GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

NOTES:

1. OWNER OF RECORD: MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   ADDRESS: 18 LORAINE ST, PORTLAND, MAINE 04103
   DEED REFERENCE: BK: 6620 PG: 1214
   TAX SHEET / LOT: 233 / 71
2. ZONED: SRB - SINGLE RESIDENCE B.

   MIN. LOT AREA: 15,000 S.F. — FRONT YARD SETBACK: 30' *
   CONTINUOUS STREET FRONTAGE: 100' — SIDE & REAR YARD SETBACK: 10' & 30'
   DEPTH: 100'
   BUILDING COVERAGE: 20%
   MIN OPEN SPACE: 40%
   HEIGHT: 35'
   *AVERAGE FRONT YARD SETBACK: 26' SEE DETAIL "A" FOR CALCULATIONS
3. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF THE SUBJECT PARCELS AND THE IMPROVEMENTS THEREON.
4. OCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS OF RECORD, AND PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-888-DIG-SAFE.
5. ZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88. ESTABLISHED BY SURVEY GRADE GPS OBSERVATIONS. UNITS: US SURVEY FOOT.
6. PLAN IS BASED UPON A FIELD SURVEY COMPLETED IN JULY OF 2023 WITH TRIMBLE S5 ROBOTIC TOTAL STATION, CARLSON BRX7 RTK GPS UNITS, PANASONIC FZ-M1/TRIMBLE TSC7 DATA COLLECTORS.
7. PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0259F EFFECTIVE DATE 1/29/2021 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
8. CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC.
9. LOT # 44 AS SHOWN ON PLAN RCRD C-15324 WAS SHOWN ON PORTSMOUTH, N.H. TAX MAP AS PART OF TAX MAP 233 LOT 71. IT IS SHOWN ON OTHER GIS MAPS AS #35 SIMS AVE.
10. LOTS #42, #43 AND #44, AS SHOWN PLAN RCRD C-15324, WERE INVOLUNTARILY MERGED BY THE CITY OF PORTSMOUTH. LOT #44 WAS UNMERGED FROM LOTS #42 & #43 BY VOTE OF PORTSMOUTH CITY COUNCIL ON APRIL 7,2025, PURSUANT TO NH RSA 674:39. SEE ITEM #12 IN PORTSMOUTH CITY MEMORANDUM ENTITLED "ACTIONS TAKEN AT PORTSMOUTH CITY COUNCIL MEETING HELD ON APRIL 7, 2025." AS A RESULT OF SAID UNMERGED, LOTS #42 & #43 REMAIN MERGED AS A SINGLE LOT AND LOT #44 IS A SEPARATE AND SINGLE LOT.

REFERENCE PLAN:

1. "SUBDIVISION PLAN FOR RUTH P. MERCER, PORTSMOUTH, N.H." DATED APRIL 18, 1986. PREPARED BY EMERY ENGINEERING. R.C.R.D. C-15324.
2. "PLAN OF LAND OF DONALD R. & LEE D. PEARL, SIMS AVENUE, PORTSMOUTH, N.H." DATED JANUARY 1979. PREPARED BY MOULTON ENGINEERING CO. R.C.R.D. C-8574.
3. "DANIELS PARK, PORTSMOUTH, N.H. BELMONT REALTY CO. PROVIDENCE R.I." DATED JUNE 1918. PREPARED BY C.A. THAYER, ENGINEER. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #702. R.C.R.D. BK 1 PG 166 PLAN #58
4. "PLAN OF LOT #58 DANIELS PARK, PORTSMOUTH, N.H." DATED AUGUST 1973. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #L-493.
5. "LOT LINE REVISION, PORTSMOUTH, N.H. FOR ALFRED & IRENE BOUTOTE." DATED JULY 1979. PREPARED BY JOHN W. DURGIN ASSOCIATES, INC. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #4655. R.C.R.D. C-8851.
6. "PLAN OF LOT, PORTSMOUTH, N.H. FOR GEO. B & MARIE R. UNDERWOOD." DATED OCTOBER 1972 & REVISED AUGUST 1977. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #3215.
7. "PLAN OF LOTS, PORTSMOUTH, N.H. FOR CALLEOPE APOSTOLAKES." DATED NOVEMBER 1972. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #4291. R.C.R.D. C-3494.
8. WORKSHEETS AND FIELD NOTES OF JOHN W. DURGIN. ON THIS FILE WITH THIS OFFICE, JWD FILE #441.

EXHIBIT A

EXISTING CONDITIONS PLAN
SIMS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

TAX MAP 233 LOT 71
LAND OF: MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
PREPARED FOR: CHRIS CLOUTIER

No.	DATE:	REVISION DESCRIPTION	BY	APPR.

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

LICENSED LAND SURVEYOR — 11/19/2025 DATE

STATE OF NEW HAMPSHIRE — No. 1054 — RYAN M. FOWLER — LICENSED LAND SURVEYOR — SIGNATURE

JAMES VERRA & ASSOCIATES, INC.
100 GRIFFIN WAY, UNIT C
PORTSMOUTH, N.H., 03801
603-436-3557 - ©2025
www.jvasurveyors.com

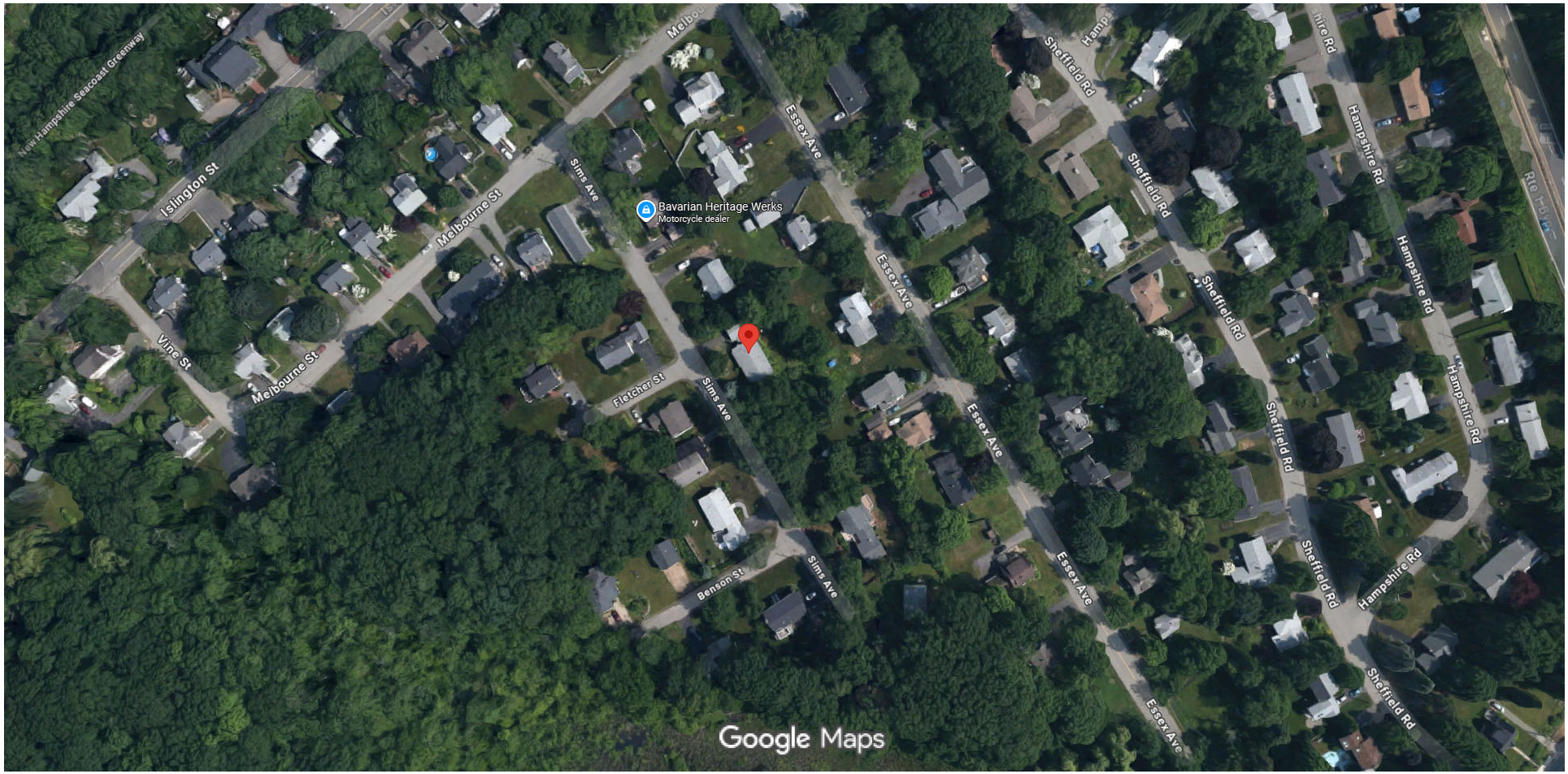
DATE: 11/19/2025	JOB NO. 25-2079
DRWN BY: DK	CHK'D BY: RMF
DWG NAME: 25-2079 EXCON.DWG	SCALE: 1" = 10'

SHEET: V-1

J:\2025 PROJECTS\25-2079 CLOUTIER SIMS AVE LOT 44 PORTSMOUTH NH_DWG\25-2079 EXCON.dwg 2025-11-19

Google Maps

25 Sims Ave



Imagery ©2025 Google, Imagery ©2025 Airbus, Maxar Technologies, Map data ©2025 100 ft

EXHIBIT B

EXHIBIT C

Book:6620 Page:1214

25014535 05/15/2025 11:53:39 AM
Book 6620 Page 1214 Page 1 of 2
Register of Deeds, Rockingham County

Return to:
Noucas Law Office
500 Market Street, Suite 8
Portsmouth, NH 03801

LCHIP	ROA706645	25.00
RECORDING		14.00
SURCHARGE		2.00

FIDUCIARY DEED

THAT, I, **MICHAEL R. ROYLOS,** of 18 Loraine Street, Portland, Maine, duly appointed as the Executor of the Estate of Annette Roylos, deceased, whose Estate was duly admitted to probate in the Probate Court for the County of Rockingham, New Hampshire, (Docket No. 318-2024-ET-00773) by the power conferred by law, and every other power, grant to **MICHAEL R. ROYLOS,** of 18 Loraine Street, Portland, Maine, and **ISAAC M. ROYLOS,** of 6421 SW 78th Street, Gainesville, Florida, as tenants-in-common, each having an undivided one-half interest, the following real estate located in Portsmouth, County of Rockingham, and State of New Hampshire, described as follows:

A certain tract of land, situate on the northeasterly side of Sims Avenue in Portsmouth, County of Rockingham, and State of New Hampshire, more particularly bounded and described as follows:

Beginning at a point on the southwesterly side of Sims Avenue at the westerly corner of land now or formerly of Warren O. Teague, et al; thence in a general northwesterly direction by Sims Avenue, fifty (50) feet to land now or formerly of Bernard F. Woods; thence in a general northeasterly direction by land of Woods, one hundred (100) feet to a point at land now or formerly of Michael Zymaris, et al; thence turning and running in a general southeasterly direction by land of Michael Zymaris, fifty (50) feet, more or less, to a point at land now or formerly of said Teague; thence turning and running in a general southwesterly direction by land of said Teague, one hundred (100) feet, more or less, to the point of beginning.

Said tract of land is otherwise identified as Lot #44 on the Plan of Daniels Park, made by C. A. Thayer, C.E. dated June 1918 and recorded in the Rockingham County Registry of Deeds, Book of Plans No. 1, Page 166 and on Plan 58 of the Portsmouth City Assessor's Plans.

Lots #42, #43 and #44, as shown on the above-described Plan of Daniels Park, were involuntarily merged by the City of Portsmouth. Lot #44 was unmerged from Lots #42 and #43

by vote of the Portsmouth City Council on April 7, 2025, pursuant to NH RSA 674:39. See Item #12 in Portsmouth City Memorandum entitled "Actions Taken at Portsmouth City Council Meeting Held on April 7, 2025." As a result of said unmerger, Lots #42 and #43 remain merged as a single lot and Lot #44 is a separate and single lot.

Meaning and intending to describe and convey the same premises conveyed to Sophie C. Roylos and Annette Roylos by Warranty Deed of Raymond L. Miller and Virginia D. Miller dated May 15, 1965, and recorded in the Rockingham County Registry of Deeds at Book 1766, Page 084.

Said Sophie C. Roylos having predeceased on February 13, 2013, and her death certificate being recorded herewith.

This property is conveyed subject to any and all mortgages, liens or other encumbrances of record.

This conveyance is exempt from the real estate transfer tax pursuant to NH RSA 78-B:2(XI).

WITNESS my hand this 12th day of May, 2025.

Estate of Annette Roylos

Witness

By _____
Michael R. Roylos, Executor

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

May 12, 2025

Then personally appeared the above-named, **MICHAEL R. ROYLOS,** in said capacity and acknowledged the foregoing instrument to be his free act and deed. Before me,

_____
Notary Public/Justice of the Peace

TERRI L. KIRBY
Notary Public - New Hampshire
My Commission Expires
June 15, 2027

NOTARY PUBLIC STATE OF NEW HAMPSHIRE

1766 084

Del G & B & Taylor U.S. Rev. Stamp $1.10

1766 084

Know all men by these presents

THAT, We, Raymond L. Miller and Virginia D. Miller both

of Portsmouth, Rockingham County, State of New Hampshire, for consideration paid, grant to Sophie C. Roylos and Annette Roylos both

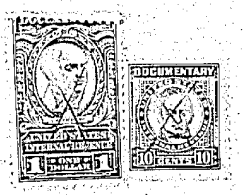
of Portsmouth, Rockingham County, State of New Hampshire, as joint tenants, with rights of survivorship/ and not as tenants in common, with WARRANTY COVENANTS,

A certain tract of land, situate on the northeasterly side of Simes Avenue in Portsmouth, County of Rockingham, and State of New Hampshire, more particularly bounded and described as follows:

Beginning at a point on the southwesterly side of Simes Avenue at the westerly corner of land now or formerly of Warren O. Teague, etal; thence in a general northwesterly direction by Simes Avenue, fifty (50) feet to land now or formerly of Bernard F. Woods; thence in a general northeasterly direction by land of Woods, one hundred (100) feet to a point at land now or formerly of Michael Zymaris, etal; thence turning and running in a general southeasterly direction by land of Michael Zymaris, fifty (50) feet, more or less, to a point at land now or formerly of said Teague; thence turning and running in a general southwesterly direction by land of said Teague, one hundred (100) feet, more or less, to the point of beginning.

Said tract of land is otherwise identified as Lot #41 on Plan 58 of the Portsmouth City Assessor's Plans.

Being the same premises which we acquired by Warranty Deed of Henry J. Robbins, dated February 17, 1958, recorded in Rockingham County Registry of Deeds, Book 1459, Page 195.



We, Raymond L. and Virginia D. Miller, being husband and wife, ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ our respective release to said Grantees all/rights of dower/curtesy and homestead and other interest therein.

WITNESS our hands and seals this 15 day of May, 1965

Witness:

Connie J. Bryan (CTA) — Raymond L. Miller

Virginia D. Miller

The State of New Hampshire

Rockingham, ss. May 15 1965

Then personally appeared the above named Raymond L. Miller and Virginia D. Miller and acknowledged the foregoing instrument to be their voluntary act and deed, before me

Connie J. Bryan
~~Notary Public~~ Justice of the Peace.

REC'D & RECORDED MAY 17 1965 9:38 AM

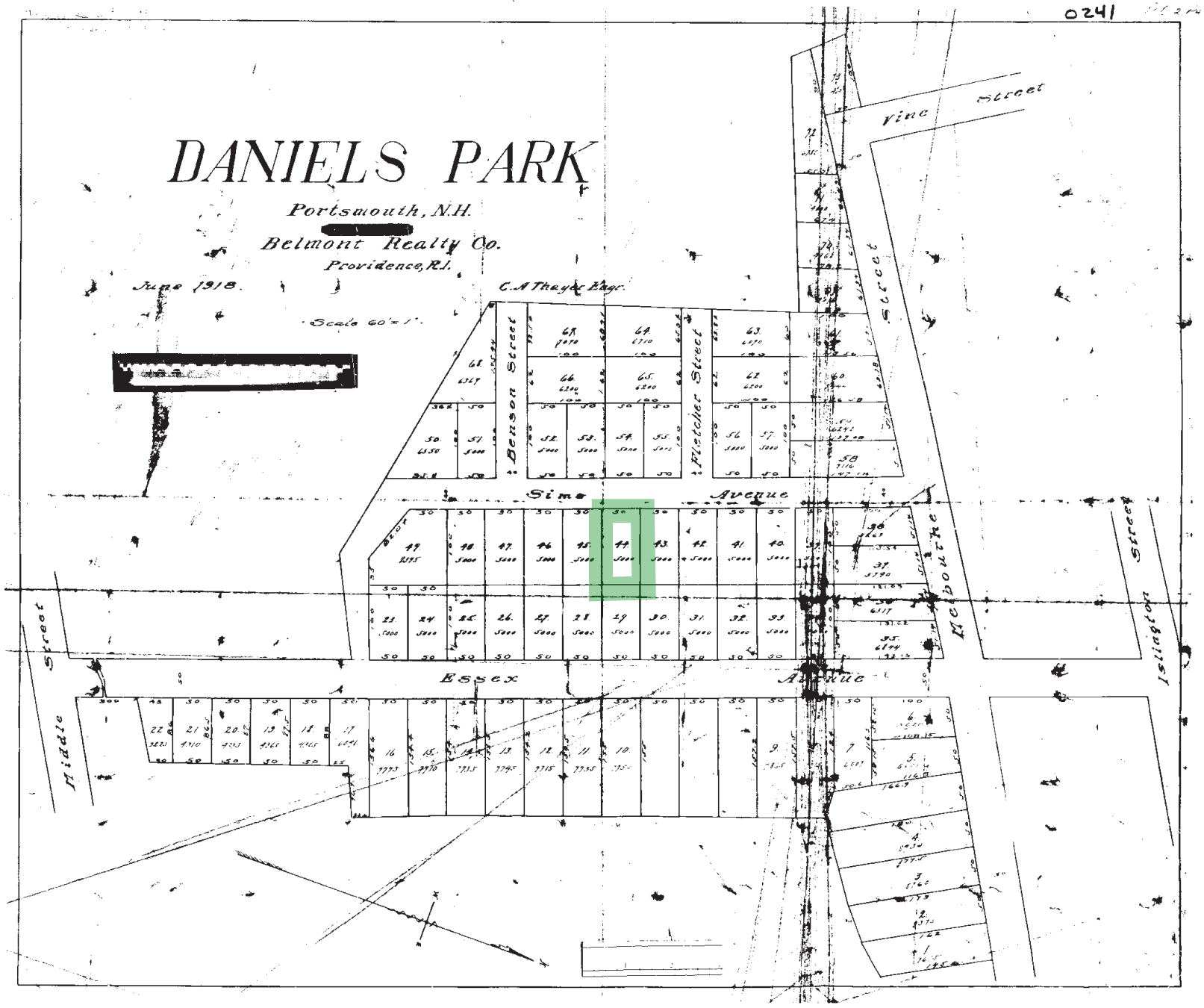

0241
DANIELS PARK
Portsmouth, N.H.
Belmont Realty Co.
Providence, R.I.
June 1918.
C.A Thuyle Engr.
Scale 60'=1".
Vine Street
Benson Street
Fletcher Street
Sims Avenue
Essex Avenue
Middle Street
McDonough Street
Islington Street

EXHIBIT D

EXHIBIT E

CITY COUNCIL MEETING

MUNICIPAL COMPLEX — PORTSMOUTH, NH
DATE: MONDAY, APRIL 7, 2025 — TIME: 7:00PM

Councilor Tabor moved to close the Non-Public Session and seal the minutes of the meeting. Seconded by Councilor Moreau and voted.

III. CALL TO ORDER

Mayor McEachern called the meeting to order at 7:07 p.m.

IV. ROLL CALL

PRESENT: Mayor McEachern, Councilors Tabor, Cook, Denton, Blalock, Bagley and Moreau

ABSENT: Assistant Mayor Kelley and Councilor Lombardi

V. INVOCATION

Mayor McEachern asked for a moment of silent prayer.

VI. PLEDGE OF ALLEGIANCE

Mayor McEachern led in the Pledge of Allegiance to the Flag.

MAYOR'S AWARD

1. Recognition of Everett Eaton

Mayor McEachern recognized Everett for his 25 years of service to the Economic Development Commission. He presented Everett with the gift of a door stop for keeping a lot of doors open over the years and guiding the city through many things.

2. Recognition of Andrea Amico

Mayor McEachern recognized Andrea for her leadership and work over the years regarding PFAS and the impact it has on communities.

VII. ACCEPTANCE OF MINUTES *(There are no minutes on for acceptance this evening)*

VIII. RECOGNITIONS AND VOLUNTEER COMMITTEE REPORTS

1. Mary Loane – Mayor's Blue Ribbon Housing Committee

Ms. Loane said the Committee was created to expand housing units in the city. She spoke to the committee about the process and the review of a number of lots. She indicated the overall quality of life was a large concern for them when reviewing lots. Ms. Loane said the Committee is recommending that the city investigate the lower lot of City Hall because of the opportunities available with that parcel. She urged the city to continue its path to bring more residents and housing to the city.

Brian Goetz said this is important to the closeness of the reservoir. He said homes would change the character of the reservoir and said that this is a valuable piece of land and access to the reservoir. He said this goes beyond the price tag.

With no further speakers, Mayor McEachern declared the public hearing closed.

Councilor Blalock said that is a big impact on the city drinking water.

Councilor Cook thanked City Manager Conard and staff for protecting the area and our drinking water. She is concern about federal funs being secured but she feels it is important to support the Resolution.

Mayor McEachern said this is important and where Portsmouth gets its water.

On a unanimous roll call 7-0, motion passed.

XI. CITY MANAGER'S ITEMS WHICH REQUIRE ACTION

A. CITY MANAGER CONARD

1. Report Back and Recommendation from the Planning Board Regarding 25 Sims Avenue

City Manager Conard said the Planning Board reviewed and the applicant initial request was denied because they wanted to merge all three lots, but the new request is to unmerge 1 lot.

Councilor Cook moved to unmerge Lot 44. Seconded by Councilor Bagley and voted.

2. Below Market Rate Housing Trust

City Manager Conard spoke to the new Below Market Rate Housing Trust. She reported that SoBow Square and the City are both contributing $250,000.00 to this Trust. She stated as part of the review, the city consulted with the Charitable Trust Division of the Attorney General's Office who provided guidance on the appropriate way to handle the investment of public versus private money.

Councilor Tabor moved to authorize the City Manager to execute the Below Market Rate Housing Trust as presented. Seconded by Councilor Moreau.

Councilor Moreau said a great deal of time was put into this and she is pleased with the result.

Motion passed.

3. Friends of Lafayette House PILOT Agreement

City Manager Conard said Assessor Lentz recommended entering into the PILOT Agreement and the Legal Department worked to create the agreement.

Councilor Blalock moved to authorize the City Manager to enter into a PILOT agreement with the Friends of Lafayette House in the amount of $3,500.00. Seconded by Councilor Denton and voted.

PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

EILEEN DONDERO FOLEY COUNCIL CHAMBERS
CITY HALL, MUNICIPAL COMPLEX, 1 JUNKINS AVENUE

7:00 PM Public Hearings begin **March 20, 2025**

MEMBERS PRESENT: Rick Chellman, Chairman; Anthony Coviello**,** Vice-Chair; Karen Conard, City Manager; Joseph Almeida, Facilities Manager; Beth Moreau, City Councilor; Members Paul Giuliano, Andrew Samonas**,** William Bowen, Ryann Wolf, and Alternate Frank Perier

ALSO PRESENT: Peter Stith, Planning Department Manager

MEMBERS ABSENT: None.

I. APPROVAL OF MINUTES

A. Approval of the **February 20, 2025** meeting minutes.

B. Approval of the **February 27, 2025** Work Session minutes.

*Vice-Chari Coviello moved to approve both sets of minutes as presented, seconded by Mr. Almeida. The motion **passed** with all in favor.*

*Vice-Chair Coviello moved to take Section VI. Other Business, Items B, 581 Lafayette Road, and Item A, Co-living Amendments, out of order to bring forward for discussion. Ms. Conard seconded. The motion **passed** with all in favor.*

II. PUBLIC HEARINGS – NEW BUSINESS

A. The request of **96 State Street LLC (Owner),** for property located at **96 State Street** requesting a parking Conditional Use Permit from Section 10.1112.14 to allow zero (0) parking spaces where thirty (30) are required. Said property is located on Assessor Map 107 Lot 52 and lies within the Character District 4 (CD-4) and Historic District. (LU-25-28)

SPEAKING TO THE PETITION

[Timestamp 30:36] Attorney Darcy Peyser was present on behalf of the applicant and reviewed the petition. She said the Conditional Use Permit was necessary to allow the applicant to expand and convert the upper second and third floors to a residential use. She said the second floor would be occupied by the restaurant owner and the third floor would be occupied by restaurant employees. She noted that the Historic District Commission (HDC) approved drawings in

more residential looking, with lower profiles. He said they received variances from the BOA that included eliminating the commercial use on the first floor and allowing duplex and rowhouse apartments. He said the Heinemann Building now had 27 residential units and all the necessary parking and there were four additional buildings, which he further described. He reviewed the parking. He said they would return to TAC for a formal review on April 1.

Vice-Chair Coviello moved that the Board accept the application for Design Review and schedule a public hearing at the April 17, 2025 Planning Board meeting. Ms. Conard seconded.

[Timestamp 1:47:59] Mr. Bowen said in the earlier version, a few spaces were below market rate, and he asked if the design change would impact that number. Mr. Wilson said they wound up with some smaller, more affordable units. He said when they went to TAC, they had proposed a multi-modal way that would have allowed a vertical expansion, and that they also found out that it needed to be a modal way for all forms of transportation, which he further explained. Mr. Bowen said the answer was that there would not be any units below market rate. Vice-Chair Coviello asked if a gate blocked the non-multi modal way and if people were allowed to walk through there. Mr. Wilson said the intention was to have a gate allowing limited access for vehicles, but the sidewalk leading to the property would allow pedestrians. Vice-Chair Coviello said there would then be a gate to prevent vehicles other than the residents' vehicles to get there. Mr. Wilson said the building next to them had the right to use their driveway to get to Hanover Street. He said the traffic going through there was untethered so they did not feel that it was good for the residences. He said the traffic study would preclude them from having traffic cut through. Vice-Chair Coviello said pedestrians would then not walk through that area. Mr. Wilson said they would use the property's sidewalk. Chair Chellman told the Board to be prepared to discuss pedestrian and vehicular circulation and multi modal issues at the next meeting. Mr. Perier asked how close the building heights would be to the Rock Street buildings. Mr. Wilson explained why he thought it would be a 33-ft average elevation, with the building set up 1-12 feet off the sidewalk and that the elevations were similar to others in the area. It was further discussed.

*The motion **passed** by a vote of 8-0, with members Councilor Moreau and Mr. Samonas abstaining.*

V. CITY COUNCIL REFERRALS

A. **25 Sims Avenue** – Involuntary Merger Reversal (RIML-25-1)

[Timestamp 1:57:40] Mr. Stith said the property used to be three lots and the applicant was requesting to unmerge one of the lots. He said the applicant's aunt owned the property and built a house that crossed two of the houses in the 1960s, and then the third lot was bought. He said the City Assessor merged them all and that the applicant asked that the part of the property that was vacant, the third lot, be unmerged. He said the assessor recommended that the lot be unmerged. He said the City Council referred it to the assessor and the Planning Board for a report back. It was further discussed.

*Ms. Conard moved that the Board recommend that the City Council restore Lot 44 only. Councilor Moreau seconded. The motion **passed** with all in favor.*

Partial Legend

See the cover sheet for the complete legend.

- **7-5A** Lot or lot-unit number
- *2.56 ac* Parcel area in acres (ac) or square feet (sf)
- Address number
- 233-137 Parcel number from a neighboring map
- 68' Parcel line dimension
- SIMS AVE Street name
- Parcel/Parcel boundary
- Parcel/ROW boundary
- Water boundary
- Structure (1994 data)
- Parcel covered by this map
- Parcel from a neighboring map (see other map for current status)

EXHIBIT F

0 50 100 200 300 Feet

0 20 40 80 Meters

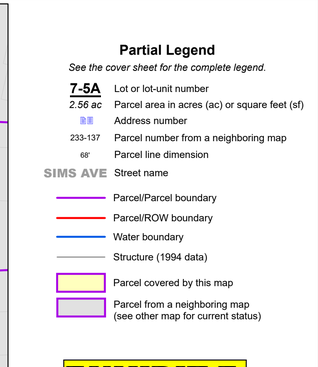
This map is for assessment purposes only. It is not intended for legal description or conveyance.
Parcels are mapped as of April 1.
Building footprints are 2006 data and may not represent current structures.
Streets appearing on this map may be paper (unbuilt) streets.
Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.

SUBJECT LOT

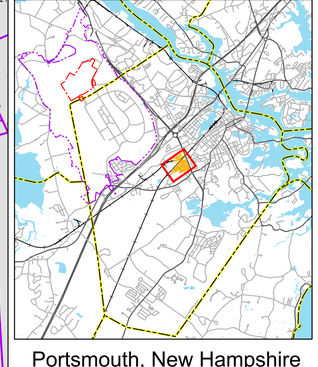
Nonconforming Lot Size & Frontage

Nonconforming Lot Size

Nearby Tax Maps



Map Location



Portsmouth, New Hampshire
2025

Tax Map 233

Partial Legend

See the cover sheet for the complete legend.

- **7-5A** Lot or lot-unit number
- *2.56 ac* Parcel area in acres (ac) or square feet (sf)
- Address number
- 233-137 Parcel number from a neighboring map
- 68' Parcel line dimension
- SIMS AVE Street name
- Parcel/Parcel boundary
- Parcel/ROW boundary
- Water boundary
- Structure (1994 data)
- Parcel covered by this map
- Parcel from a neighboring map (see other map for current status)

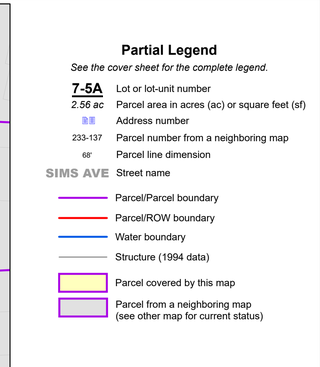
EXHIBIT G

0 50 100 200 300 Feet

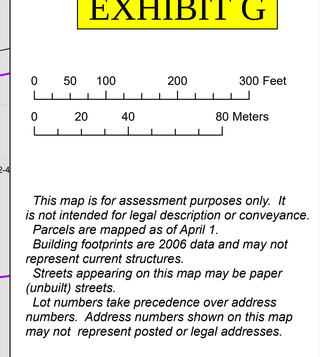
0 20 40 80 Meters

This map is for assessment purposes only. It is not intended for legal description or conveyance.
Parcels are mapped as of April 1.
Building footprints are 2006 data and may not represent current structures.
Streets appearing on this map may be paper (unbuilt) streets.
Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.

Nearby Tax Maps



Map Location



Portsmouth, New Hampshire
2025

Tax Map 233

HOEFLE, PHOENIX, GORMLEY & ROBERTS, PLLC
ATTORNEYS AT LAW
127 Parrott Avenue | Portsmouth, NH, 03801
Telephone: 603.436.0666 | Facsimile: 603.431.0879 | www.hpgrlaw.com

January 30, 2026

HAND DELIVERED & Uploaded to LU-25-169

Stefanie Casella, Principal Planner
Portsmouth City Hall
1 Junkins Avenue
Portsmouth, NH 03801

Re: Owners: Michael & Isaac Roylos
Applicant: Chris Cloutier
LU-25-169
Property: 25 Sims Avenue, Tax Map 233, Lot 71[1]
Single Residence B District

Dear Ms. Casella & Zoning Board Members:

The ZBA continued the aforementioned matter to February 18, 2026 at our request so that we might properly respond to advanced public input opposing the Project based on stormwater management concerns. On Cloutier's behalf, enclosed please find a stormwater management plan set and a drainage analysis completed by Emanuel Engineering **(Exhibit H)**.

Exhibit H proposes a dimensionally compliant, modest 946 s.f. single-family home with an engineered pervious drip edge to capture roof runoff. The drainage analysis of pre-development and post development conditions demonstrates *decreased* peak flows of stormwater for a 2-year, 10,-year, 25-year, and 50-year storm event. Accordingly, no abutting lot will be adversely affected by the Project. We look forward to presenting this application to the Planning Board at its February 18, 2026 meeting.

Very truly yours,

Monica F. Kieser
R. Timothy Phoenix

[1] Note that the lot at issue, known as Lot 44, was recently unmerged and does not yet have its own lot number.

OWNER
MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
18 LORAINE STREET
PORTLAND, ME 04103

APPLICANT
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

CIVIL ENGINEER
EMANUEL ENGINEERING, INC.
100 GRIFFIN ROAD, UNIT C
PORTSMOUTH, NH 03801

LAND SURVEYOR
JAMES VERRA & ASSOCIATES, INC.
100 GRIFFIN ROAD, UNIT C
PORTSMOUTH, NH 03801

ATTORNEY
HOEFLE PHOENIX GORMLEY & ROBERTS, PLLC
127 PARROTT AVE
PORTSMOUTH, NH 03801

STORMWATER MANAGEMENT PLAN FOR CHRIS CLOUTIER

PORTSMOUTH, NH TAX MAP 233 LOT 44
25 SIMS AVENUE (SITE)
PORTSMOUTH, NH 03801

PROJECT LOCUS PLAN
1" = 1,000 '

EXHIBIT H

PROJECT DRAWING SET:		ORIGINAL DATE	REVISION DATE
G1	COVER SHEET	01/30/26	
V1	EXISTING CONDITIONS PLAN	11/19/25	
C1	SITE PLAN	01/30/26	
C2	STORMWATER MANAGEMENT PLAN	01/30/26	
SW1	PRE-DEVELOPMENT CONDITIONS	01/30/26	
SW2	POST-DEVELOPMENT CONDITIONS	01/30/26	
D1	NOTES	01/30/26	
D2	DETAILS	01/30/26	

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

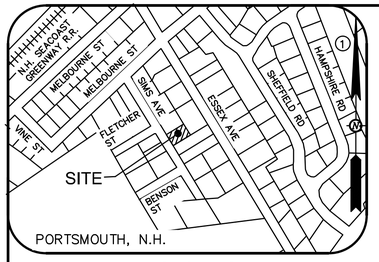
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
COVER
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	AS SHOWN	G1



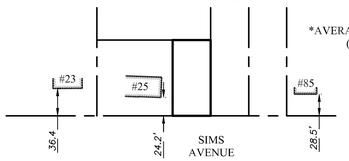
LOCUS
(N.T.S.)

LEGEND

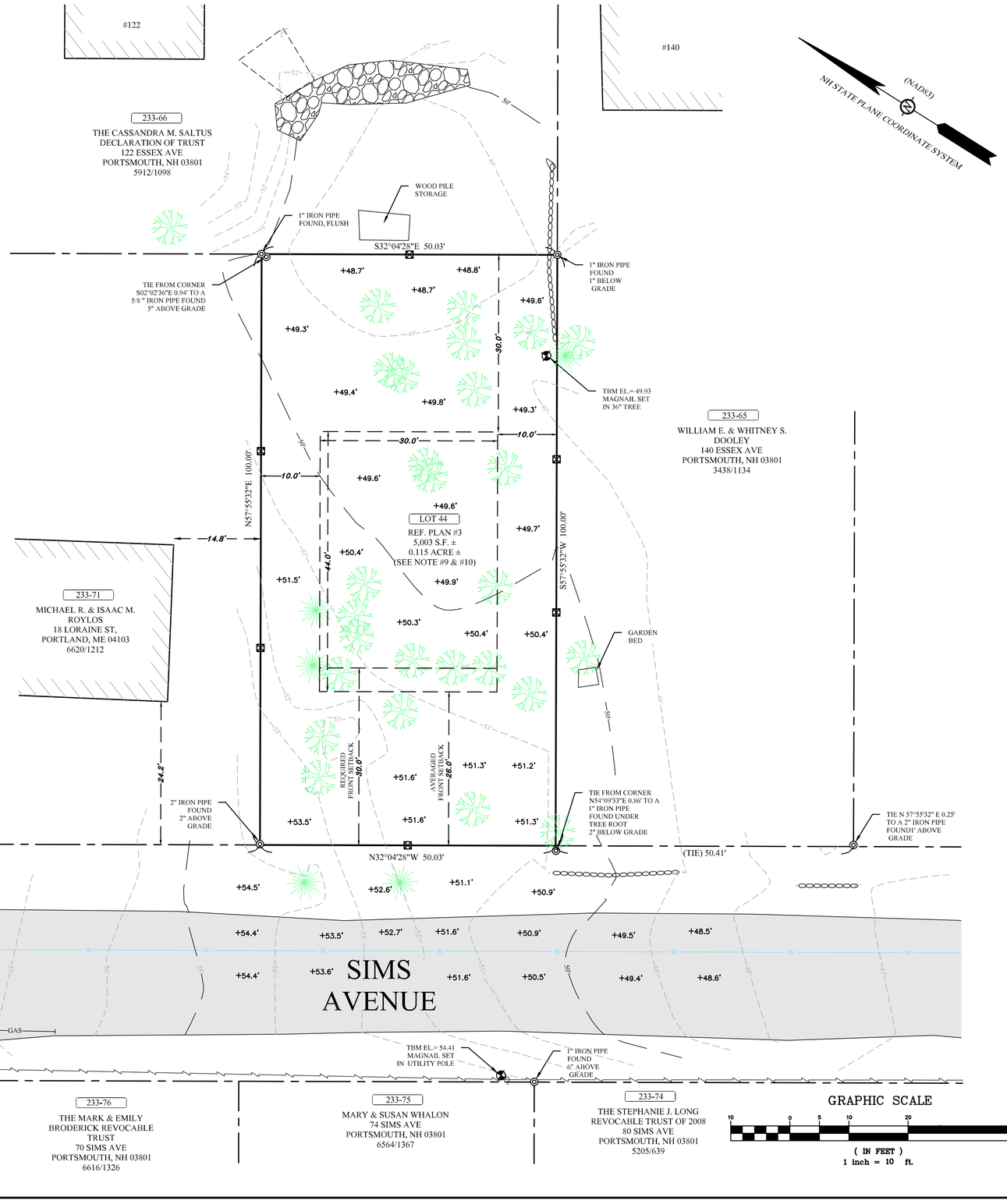
- STONE AREA
- PAVEMENT AREA
- CONTOUR MINOR LINE
- CONTOUR MAJOR LINE
- BOUNDARY LINE
- OVERHEAD WIRE LINE
- BOUNDARY ABUTTERS LINE
- SETBACK LINE
- W — 6" DI WATER LINE
- G — GAS LINE
- CONIFEROUS TREE
- DECIDUOUS TREE
- UTILITY POLE
- BENCHMARK
- IRON PIPE FOUND
- WOODEN STAKE SET
- +53.5' SPOT GRADE ELEVATION

DETAIL "A" FRONT SETBACK CALCULATIONS

NOT TO SCALE



*AVERAGE FRONT SETBACK =
(24.2+28.5)/2 = 26'



GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

NOTES:

1. OWNER OF RECORD: MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   ADDRESS: 18 LORAINE ST, PORTLAND, MAINE 04103
   DEED REFERENCE: BK: 6620 PG: 1214
   TAX SHEET / LOT: 233 / 71
2. ZONED: SRB - SINGLE RESIDENCE B.

   MIN. LOT AREA: 15,000 S.F. — FRONT YARD SETBACK: 30' *
   CONTINUOUS STREET FRONTAGE: 100' — SIDE & REAR YARD SETBACK: 10' & 30'
   DEPTH: 100'
   BUILDING COVERAGE: 20%
   MIN OPEN SPACE: 40%
   HEIGHT: 35'
   *AVERAGE FRONT YARD SETBACK: 26' SEE DETAIL "A" FOR CALCULATIONS
3. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF THE SUBJECT PARCELS AND THE IMPROVEMENTS THEREON.
4. OCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS OF RECORD, AND PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-888-DIG-SAFE.
5. ZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88. ESTABLISHED BY SURVEY GRADE GPS OBSERVATIONS. UNITS: US SURVEY FOOT.
6. PLAN IS BASED UPON A FIELD SURVEY COMPLETED IN JULY OF 2023 WITH TRIMBLE S5 ROBOTIC TOTAL STATION, CARLSON BRX7 RTK GPS UNITS, PANASONIC FZ-M1/TRIMBLE TSC7 DATA COLLECTORS.
7. PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0259F EFFECTIVE DATE 1/29/2021 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
8. CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC.
9. LOT # 44 AS SHOWN ON PLAN RCRD C-15324 WAS SHOWN ON PORTSMOUTH, N.H. TAX MAP AS PART OF TAX MAP 233 LOT 71. IT IS SHOWN ON OTHER GIS MAPS AS #35 SIMS AVE.
10. LOTS #42, #43 AND #44, AS SHOWN PLAN RCRD C-15324, WERE INVOLUNTARILY MERGED BY THE CITY OF PORTSMOUTH. LOT #44 WAS UNMERGED FROM LOTS #42 & #43 BY VOTE OF PORTSMOUTH CITY COUNCIL ON APRIL 7,2025, PURSUANT TO NH RSA 674:39. SEE ITEM #12 IN PORTSMOUTH CITY MEMORANDUM ENTITLED "ACTIONS TAKEN AT PORTSMOUTH CITY COUNCIL MEETING HELD ON APRIL 7, 2025." AS A RESULT OF SAID UNMERGED, LOTS #42 & #43 REMAIN MERGED AS A SINGLE LOT AND LOT #44 IS A SEPARATE AND SINGLE LOT.

REFERENCE PLAN:

1. "SUBDIVISION PLAN FOR RUTH P. MERCER, PORTSMOUTH, N.H." DATED APRIL 18, 1986. PREPARED BY EMERY ENGINEERING. R.C.R.D. C-15324.
2. "PLAN OF LAND OF DONALD R. & LEE D. PEARL, SIMS AVENUE, PORTSMOUTH, N.H." DATED JANUARY 1979. PREPARED BY MOULTON ENGINEERING CO. R.C.R.D. C-8574.
3. "DANIELS PARK, PORTSMOUTH, N.H. BELMONT REALTY CO. PROVIDENCE R.I." DATED JUNE 1918. PREPARED BY C.A. THAYER, ENGINEER. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #702. R.C.R.D. BK 1 PG 166 PLAN #58
4. "PLAN OF LOT #58 DANIELS PARK, PORTSMOUTH, N.H." DATED AUGUST 1973. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #L-493.
5. "LOT LINE REVISION, PORTSMOUTH, N.H. FOR ALFRED & IRENE BOUTOTE." DATED JULY 1979. PREPARED BY JOHN W. DURGIN ASSOCIATES, INC. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #4655. R.C.R.D. C-8851.
6. "PLAN OF LOT, PORTSMOUTH, N.H. FOR GEO. B & MARIE R. UNDERWOOD." DATED OCTOBER 1972 & REVISED AUGUST 1977. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #3215.
7. "PLAN OF LOTS, PORTSMOUTH, N.H. FOR CALLEOPE APOSTOLAKES." DATED NOVEMBER 1972. PREPARED BY JOHN W. DURGIN C.E. ON THIS FILE IN THIS OFFICE, JWD FILE #441, PLAN #4291. R.C.R.D. C-3494.
8. WORKSHEETS AND FIELD NOTES OF JOHN W. DURGIN. ON THIS FILE WITH THIS OFFICE, JWD FILE #441.

EXISTING CONDITIONS PLAN
SIMS AVENUE
PORTSMOUTH, NEW HAMPSHIRE

TAX MAP 233 LOT 71
LAND OF: MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
PREPARED FOR: CHRIS CLOUTIER

No.	DATE:	REVISION DESCRIPTION	BY	APPR.

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

LICENSED LAND SURVEYOR — DATE 11/19/2025

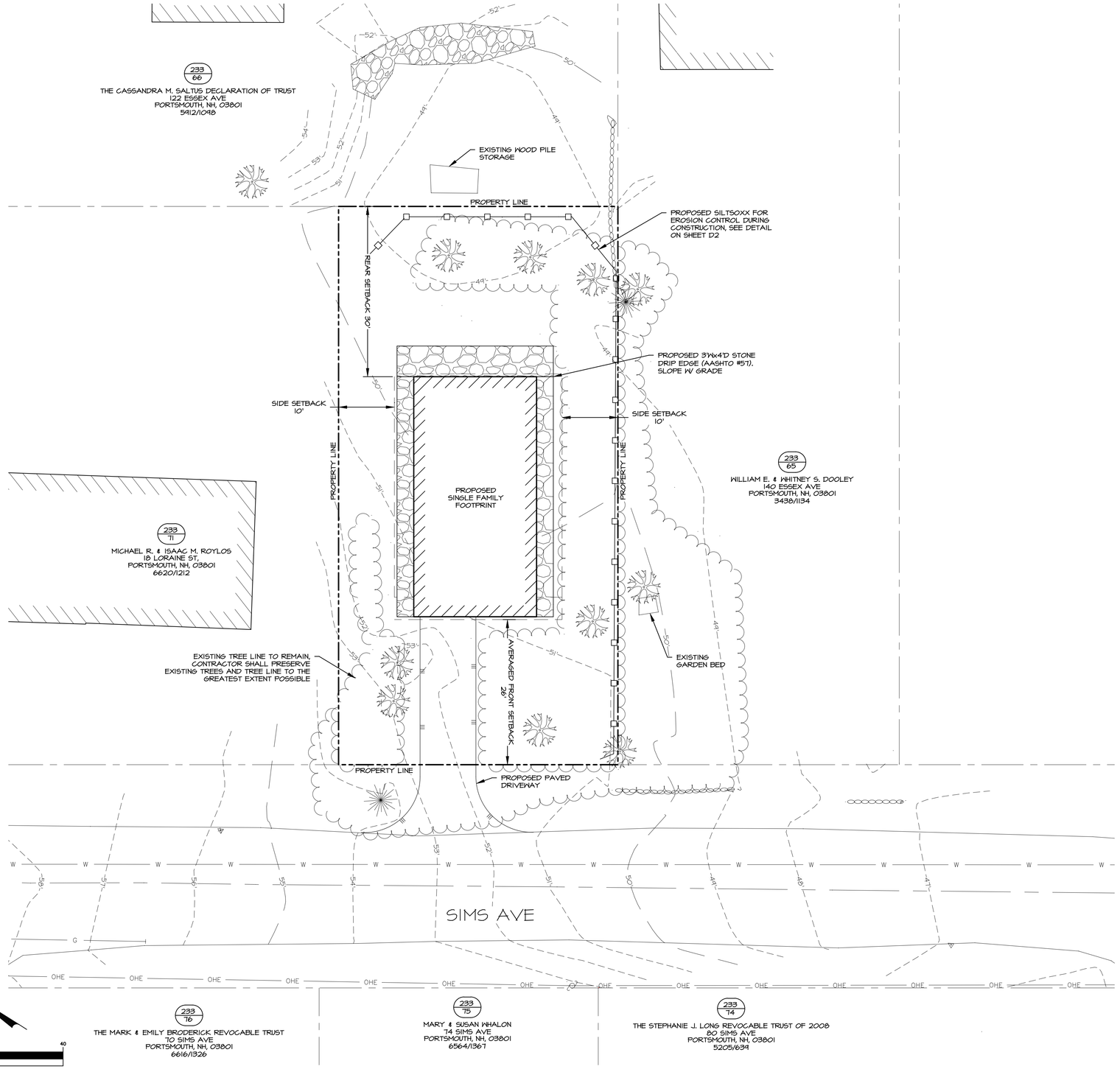
STATE OF NEW HAMPSHIRE — No. 10541 — RYAN M. FOWLER — LICENSED LAND SURVEYOR — SIGNATURE

JAMES VERRA & ASSOCIATES, INC.
100 GRIFFIN WAY, UNIT C
PORTSMOUTH, N.H., 03801
603-436-3557 - ©2025
www.jvasurveyors.com

DATE:	JOB NO.
11/19/2025	25-2079
DRWN BY: DK	CHK'D BY: RMF
DWG NAME: 25-2079 EXCON.DWG	SCALE: 1" = 10'

SHEET: V-1

J:\2025 PROJECTS\25-2079 CLOUTIER SIMS AVE LOT 44 PORTSMOUTH NH_DWG\25-2079 EXCON.dwg 2025-11-19



ZONING NOTES:

1. ZONED SRB - SINGLE RESIDENCE B.
   MIN. LOT AREA: 15,000 SF
   CONTINUOUS STREET FRONTAGE: 100'
   DEPTH: 100'
   BUILDING COVERAGE: 20%
   PROPOSED BUILDING COVERAGE:18.9% (946 SF)
   MIN OPEN SPACE: 40%
   HEIGHT: 35'

   AVERAGE FRONT YARD SETBACK: 26' (SEE SHEET V-1 DETAIL "A")
   SIDE AND BACK SETBACK: 10' & 30'

LEGEND

(TYP)	TYPICAL
	PROPERTY LINE
III	EDGE OF PAVEMENT (EOP)
OHE	OVERHEAD UTILITIES
W	WATER LINE
G	GAS LINE
	UTILITY POLE
	STONE WALL
	TREE LINE
	TREE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED SITE AND ANY SETBACK REQUIREMENTS PER THE CITY OF PORTSMOUTH SITE PLAN REGULATIONS.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0254F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

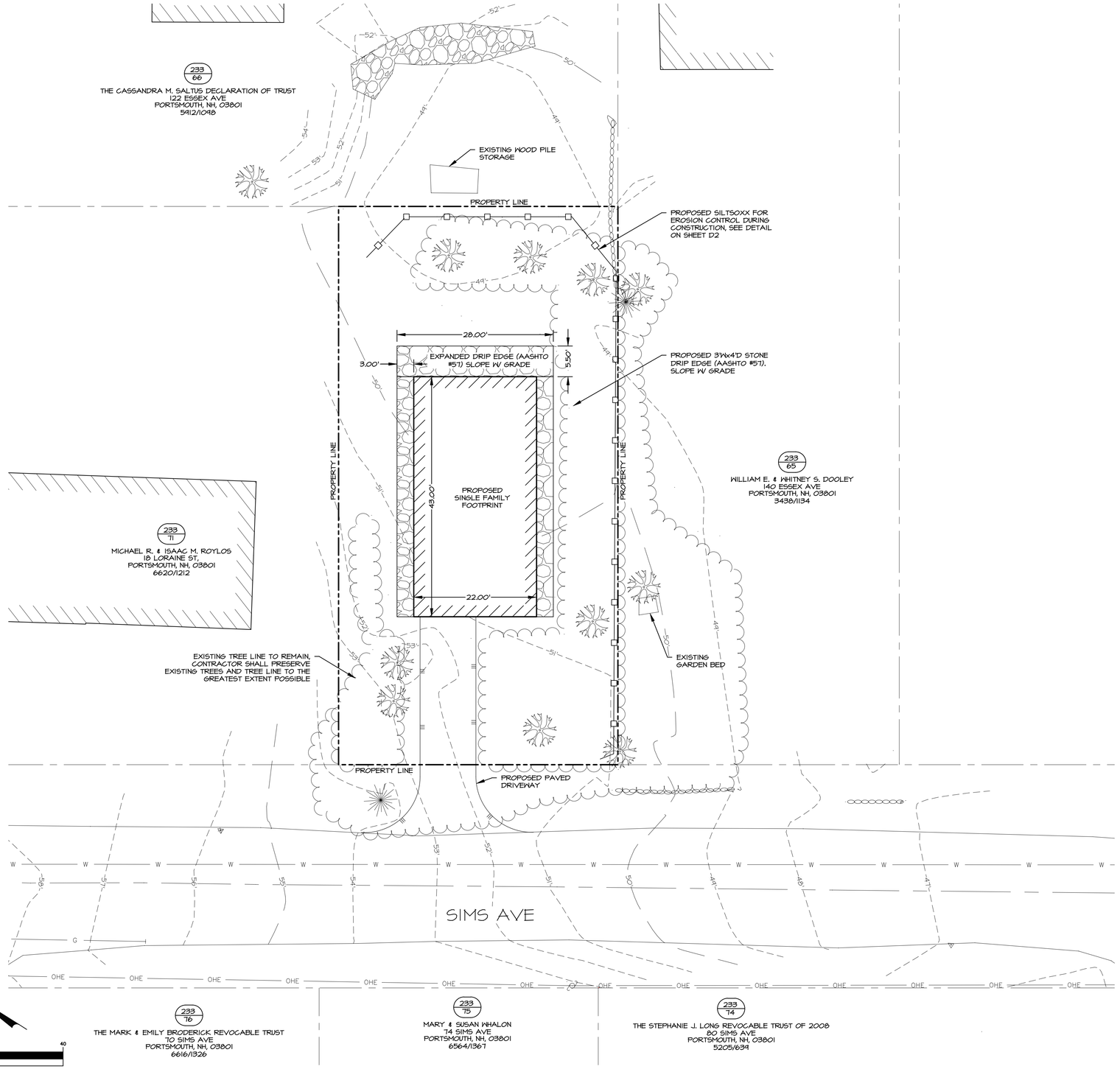
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
SITE PLAN
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	C1



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

SOIL INFORMATION:

THE FOLLOWING SOIL DATA HAS BEEN COMPILED FROM THE NRCS SOIL MAP SURVEY DATABASE.

1. ENTIRE SITE IS URBAN LAND-CANTON COMPLEX (799).

   DRAINAGE CLASS = WELL DRAINED
   Ksat VALUE = 2.0 - 6.0
   DEPTH TO WATER TABLE = >80"
   HYDROLOGIC SOIL GROUP: A

2. NO FORMAL WATER TABLE INVESTIGATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION.

LEGEND

(TYP)	TYPICAL
	PROPERTY LINE
III	EDGE OF PAVEMENT (EOP)
OHE	OVERHEAD UTILITIES
W	WATER LINE
G	GAS LINE
	UTILITY POLE
	STONE WALL
	TREE LINE
	TREE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED CONDITIONS AND HOW STORMWATER IS MANAGED AND REDUCED ON THIS SITE.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0259F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:

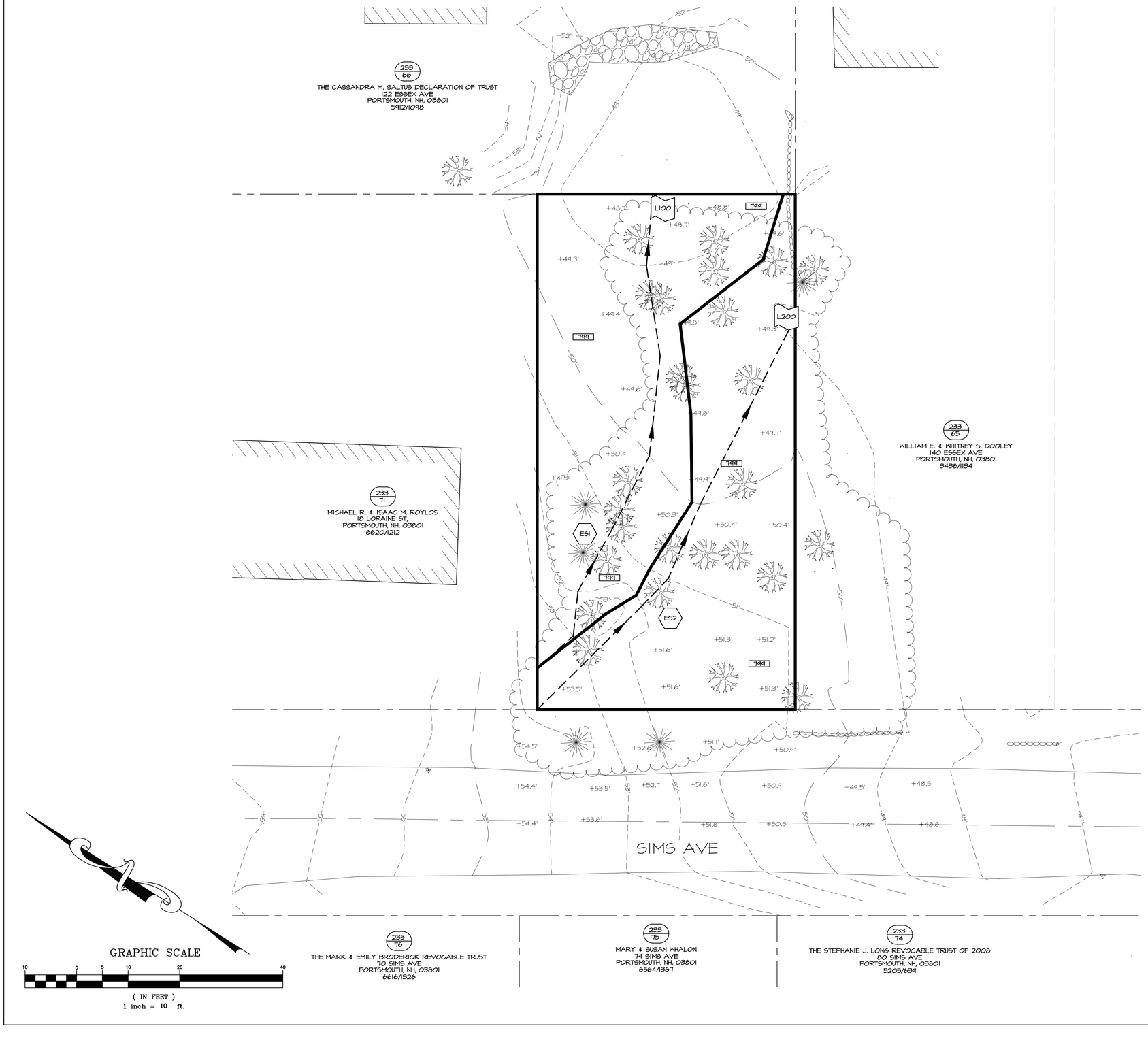
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:

STORMWATER MANAGEMENT PLAN

FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	C2



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

SOIL INFORMATION:

THE FOLLOWING SOIL DATA HAS BEEN COMPILED FROM THE NRCS SOIL MAP SURVEY DATABASE.

1. ENTIRE SITE IS URBAN LAND-CANTON COMPLEX (799).

   DRAINAGE CLASS = WELL DRAINED
   Ksat VALUE = 2.0 - 6.0
   DEPTH TO WATER TABLE = >80"
   HYDROLOGIC SOIL GROUP: A

2. NO FORMAL WATER TABLE INVESTIGATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION.

LEGEND

- Tc FLOW LINE
- SUBCATCHMENT BOUNDARY
- ES1 — SUBCATCHMENT LABEL
- EP01 — POND LABEL
- L100 — LINK LABEL
- XXX — SOIL TYPE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO ANALYZE HOW STORMWATER BEHAVES ON THE EXISTING LOT.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0259F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.
13. PRE-DEVELOPMENT DRAINAGE AREA CALCS:
    DRAINAGE ANALYSIS TOTAL AREA = 5004 SF

    DRAINAGE ANALYSIS IMPERVIOUS = 0 SF
    DRAINAGE ANALYSIS % IMPERVIOUS = 0.00%

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:

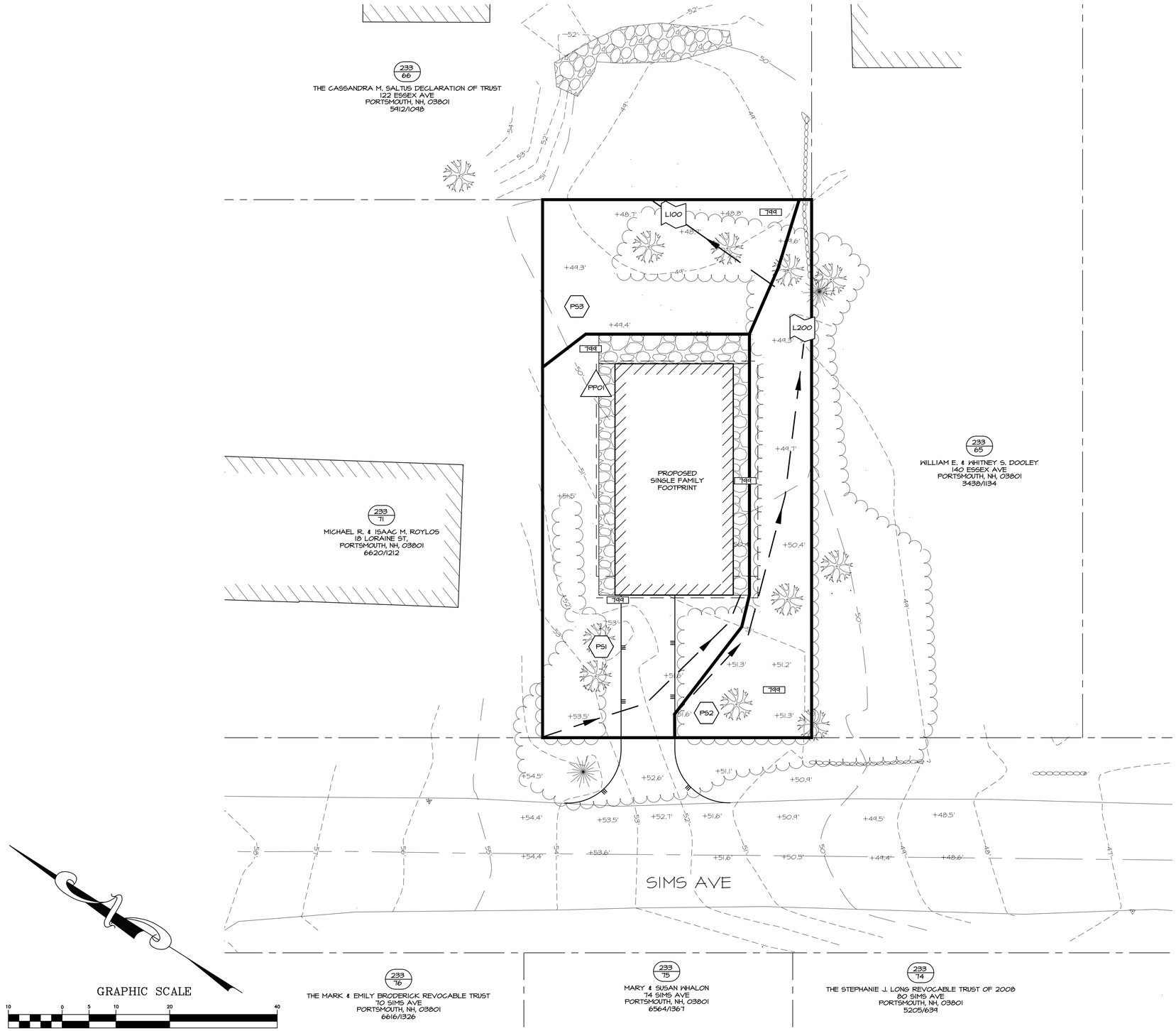
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:

PRE-DEVELOPMENT CONDITIONS

FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	SW1



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

SOIL INFORMATION:

THE FOLLOWING SOIL DATA HAS BEEN COMPILED FROM THE NRCS SOIL MAP SURVEY DATABASE.

1. ENTIRE SITE IS URBAN LAND-CANTON COMPLEX (799).

   DRAINAGE CLASS = WELL DRAINED
   Ksat VALUE = 2.0 - 6.0
   DEPTH TO WATER TABLE = >80"
   HYDROLOGIC SOIL GROUP: A

2. NO FORMAL WATER TABLE INVESTIGATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION.

LEGEND

- Tc FLOW LINE
- SUBCATCHMENT BOUNDARY
- ES1 — SUBCATCHMENT LABEL
- EP01 — POND LABEL
- L100 — LINK LABEL
- XXX — SOIL TYPE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO ANALYZE HOW STORMWATER IS MANAGED ON THE PROPOSED LOT.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0259F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.
13. POST-DEVELOPMENT DRAINAGE AREA CALCS:
    DRAINAGE ANALYSIS TOTAL AREA = 5,004 SF

    DRAINAGE ANALYSIS IMPERVIOUS = 1,211 SF
    DRAINAGE ANALYSIS % IMPERVIOUS = 24.2%

    BUILDING COVERAGE: 18.9% (946 SF)

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11238 LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
POST-DEVELOPMENT CONDITIONS
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	SW2

EROSION AND SEDIMENTATION CONTROL - CONSTRUCTION PHASING AND SEQUENCING:

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILT FENCING AND/OR HAY BALE BARRIERS AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES , LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S) AS PER DETAIL AND AT LOCATIONS SHOWN ON THE DRAWINGS. MAINTAIN (TOP DRESS) REGULARLY TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS.
5. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT FENCING AND HAY BALES TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT FENCING, HAY BALES AND TRAPPED SILT ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
14. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
15. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
17. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
18. BUOYANCY CALCULATIONS HAVE NOT BEEN PERFORMED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANCHORAGE FOR ALL TANKS WHERE REQUIRED.

WINTER CONSTRUCTION NOTES (OCTOBER 15 TO MAY 1):

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 SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

ROCK INFILTRATION AREA MAINTENANCE:

THE ROCK INFILTRATION AREA SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE ROCK HAS BEEN DISPLACED, UNDERMINED, OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW ANY OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS; FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAIL WATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

EROSION AND SEDIMENTATION CONTROL - GENERAL NOTES:

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. SEE ENV-WQ 1505.03.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON NEW HAMPSHIRE STORMWATER MANUAL, VOLUMES 1-3; DATED DECEMBER 2008, PREPARED BY NHDES.
3. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
   - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
   - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
4. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
5. SEE WINTER CONSTRUCTION NOTES IF SCHEDULE AND DATES ARE APPLICABLE.
6. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
7. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED IN THE SHORTEST PRACTICAL TIME. ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE.
8. EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED.
9. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
10. STRAW OR HAY BALE BARRIERS AND SILTATION FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT FENCE AND ANY EDGE OF WET AREA.
11. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
12. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
13. STRAW BALE AND/OR SILT FENCE BARRIERS WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
14. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
15. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
16. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.

SEEDING AND STABILIZATION FOR LOAMED SITE:

1. FOR TEMPORARY & LONG TERM SEEDINGS (BY SEPTEMBER 15 OF THE SAME YEAR OF DISTURBANCE) USE ASWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL.
2. COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE.
3. FERTILIZER & LIME:
   NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P205) 100 LBS/ACRE, POTASH (K20) 100 LBS/ACRE, LIME 2000 LBS/ACRE.
4. MULCH: HAY OR STRAW 1.5-2 TONS/ACRE.
5. GRADING AND SHAPING:
   SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
6. SEED BED PREPARATION
   - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

STABILIZATION CONSTRUCTION ENTRANCE SPECIFICATIONS:

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE (MINIMUM), RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET (OR 50 FEET WITH A 3 TO 6 INCH MOUNTABLE BERM).
3. THE THICKNESS OF THE STONE FOR THE STABILIZATION ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARDS 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. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.
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.

FILTREXX LAND IMPROVEMENT SYSTEMS INSPECTION & MAINTENANCE:

1. CONSULT FILTREXX SNIPP CUT SHEETS FOR ALL FILTREXX PRODUCTS PRIOR TO INSTALLATION AND FOR MAINTENANCE GUIDELINES. HTTP://WWW.FILTREXX.COM/DESIGN_CUT_SHEETS.HTM
2. ROUTINE INSPECTION SHOULD BE CONDUCTED WITHIN 24 HRS OF A RUNOFF EVENT OR AS DESIGNATED BY THE REGULATING AUTHORITY. UNITS SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY MAINTAIN THEIR SHAPE AND ARE PRODUCING ADEQUATE HYDRAULIC FLOW-THROUGH, DITCH/CHANNEL EROSION CONTROL, AND SEDIMENT REMOVAL.
3. IF PONDING BECOMES EXCESSIVE, ADDITIONAL CHECK DAMS, LEVEL SPREADERS, OR SEDIMENT CONTROL UNITS FOR SEDIMENT REMOVAL MAY BE REQUIRED.
4. SEDIMENT ACCUMULATION SHOULD BE REMOVED ONCE IT REACHES THE HEIGHT OF THE CHECK DAM OR UNIT. ALTERNATIVELY, ANOTHER UNIT MAY BE INSTALLED SLIGHTLY UPSLOPE, ON TOP OF THE EXISTING ONE. THIS PROCESS IS NOT CONSIDERED A SOIL DISTURBING ACTIVITY.
5. STORM DEBRIS ACCUMULATION BEHIND CHECK DAMS, LEVEL SPREADER, SEDIMENT CONTROL UNIT, ETC. SHOULD NEVER BE HIGHER THAN THE SIDES OF THE CHECK DAM/UNIT. STORM RUNOFF OVERFLOW SHALL MAINTAIN THE UNITS IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
6. IF A UNIT HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
7. THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF UNITS WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOXX, OR AS DIRECTED BY THE ENGINEER.
8. AS AN ALTERNATIVE, ANOTHER SOXX UNIT MAY BE INSTALLED ADJACENT AND PARALLEL TO THE UPSLOPE SIDE OF THE ORIGINAL TO INCREASE SEDIMENT STORAGE CAPACITY. SOXX SEDIMENT BACKUP IN CENTER OF THE DITCH/CHANNEL SHALL REMAIN LOWER THAN THE SIDES.
9. IF SOXX UNIT BECOMES CLOGGED WITH DEBRIS AND SEDIMENT, IMMEDIATE REMOVAL OF DEBRIS AND SEDIMENT SHOULD BE CONDUCTED TO ASSURE PROPER DRAINAGE AND WATER FLOW THROUGH THE DITCH OR CHANNEL. STORM RUNOFF OVERFLOW OF THE SOXX UNIT IS ACCEPTABLE.
10. SOXX UNITS SHALL BE MAINTAINED UNTIL DISTURBED AREA AROUND THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
11. THE FILTERMEDIATM MAY BE DISPERSED ON SITE ONCE DISTURBED AREA HAS PERMANENTLY STABILIZED, CONSTRUCTION ACTIVITY CEASED, OR DETERMINED BY THE ENGINEER.
12. PERMANENT VEGETATED FILTER STRIPS WILL BE LEFT INTACT.

1	01/30/2026	FOR APPROVAL	
ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

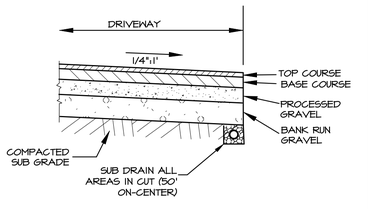
SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:

NOTES
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

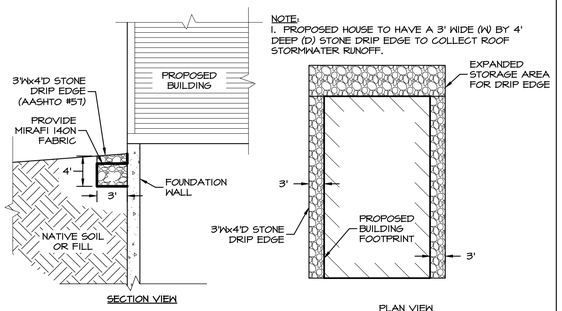
PROJECT:	SCALE:	SHEET:
26-1004	AS SHOWN	D1



PAVEMENT COMPONENTS:
MATERIALS AND PLACEMENT METHODS SHOULD MEET CURRENT NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) REQUIREMENTS.

DRIVEWAY & PARKING AREA:
1-1/2" ASPHALT WEARING SURFACE, NHDOT ½" NOMINAL MAXIMUM AGGREGATE SIZE
2-1/2" ASPHALT BASE, NHDOT ¾" NOMINAL MAXIMUM AGGREGATE SIZE
6" CRUSHED GRAVEL BASE, NHDOT TYPE 304.3
12" GRAVEL SUB BASE, NHDOT TYPE 304.2

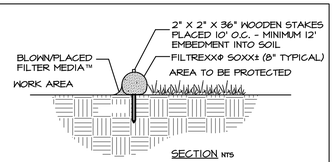
PAVED DRIVEWAY SECTION
N.T.S.



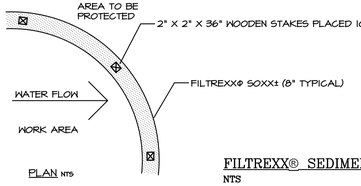
NOTE:
1. PROPOSED HOUSE TO HAVE A 3' WIDE (W) BY 4' DEEP (D) STONE DRIP EDGE TO COLLECT ROOF STORMWATER RUNOFF.

DRIP EDGE DETAIL
NOT TO SCALE

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. ADDITIONAL INFO AVAILABLE AT HTTP://WWW.FILTREXX.COM



SECTION NTS



PLAN NTS

FILTREXX® SEDIMENT CONTROL
NTS

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN:	DESIGN:
NMD	NMD
CHECKED:	CHECKED:
JJM	JJM

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
DETAILS
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	AS SHOWN	D2

EMANUELENGINEERING.COM

STORMWATER CALCULATIONS

Michael R. Roylos and Isaac M. Roylos

25 Sims Avenue (Site)

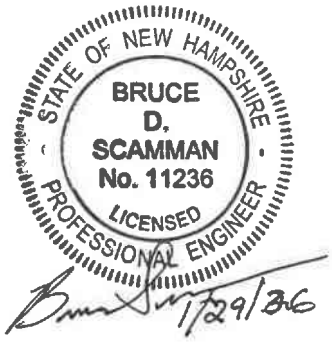
Portsmouth, NH 03801

01/30/2026

EEI Project # 26-1004

Prepared For: Chris Cloutier
50 Lovell Street
Portsmouth, NH 03801

Prepared By: Emanuel Engineering, Inc.
Nick DiBartholomeo, EIT
100 Griffin Road, Unit C
Portsmouth, NH 03801



Bruce Scamman, PE
Emanuel Engineering

Contents

Stormwater Narrative

Existing Conditions

The Michael R. Roylos and Isaac M. Roylos site is shown on Portsmouth Tax Map 233, Lot 44, located at 25 Sims Avenue, Portsmouth NH 03801. The existing lot covers an area of 0.115 acres. The subject area contains woodlands and grass. Surrounding the residence are residential abutters.

The intent of this project is to build a residential home and the associated stormwater Best Management Practices (BMP) to ensure no excess stormwater collects on the abutter's property. The lot is currently vacant with no private septic and drinking water systems. The proposed lot will be connected to city sewer and drinking water. City drinking water runs along Sims Avenue. The sewer tie-in is at the end of the street.

To manage additional runoff from increased impervious surfaces, proposed drainage measures include a drip edge for the building and a stone infiltration storage area. The parcel is bounded:

- North: Residential lots
- East: Residential lots
- West: Sims Avenue
- South: Residential lots

Approximately 0.115 acres (100%) of the site analyzed for drainage are grass and undisturbed woodlands. The existing impervious cover is 0.0% (0.0 acres).

The site has two (2) primary stormwater discharge points, one leading to the Northeast abutter Tax Map 233 Lot 66 (Link L100), the other leading to the Southern abutter Tax Map 233 Lot 65. While there are no wetlands present on the property, the abutters have observed ponding at the low point between the lot in question and the Northeast abutting lot. The site's high point is on the Northwest corner of the lot and drains towards the northeast and south. An increase in impervious cover is proposed, which will be mitigated with a drip edges along the proposed building and a stone infiltration storage area to ensure the post development stormwater conditions decrease from the existing conditions.

Site specific soils were obtained from the NRCS online database. The property is determined to be a single soil series of Urban land-Canton complex. Based on the results of this database, the soils are:

- Well drained
- Ksat Value = 2.0 – 6.0
- Depth to Water Table = >80"
- Hydrologic Soil Group: A

Proposed Development

Proposed developments for Tax map 233, Lot 44 include:

- 946 square-foot residential home
- ±412 square feet of stone drip edges along the residential home, including the expanded drip edge located behind the proposed home

The proposed impervious cover including driveway and building will increase to 24.2% (± 0.028 acres). Proposed building cover on the lot is 18.9%

Drainage Analysis and Design

Purpose:

1. Analyze pre-development runoff flows through the site.
2. Evaluate the impact of the proposed development on drainage patterns and flows.

Goals:

1. Design a stormwater treatment system to adequately handle post-development peak flow and volume.
2. Minimize or eliminate erosion and sedimentation during construction and after construction.

Method:

The stormwater runoff analysis followed the City of Portsmouth's Site Plan Review Regulations, requiring design for a 2-year, 10-year, 25-year, and 50-year 24-hour storm event. The analysis was performed in accordance with NH DES requirements using the U.S. Soil Conservation Service's TR-20 procedure (basis for TR-55).

As described in TR-55, this method calculates storm runoff, peak discharge rates, hydrographs, and required storage volumes. Rainfall is converted to runoff using a curve number (CN) based on soils, vegetation, impervious cover, interception, and surface storage. Runoff is then transformed into a hydrograph using unit hydrograph theory and routed based on travel time.

All modeling was completed using HydroCAD software. HydroCAD applies a S1 (3-point) smoothing factor to the IDF storm curves. This is a 3-point smoothing algorithm to compensate for irregularities that are often present in the IDF curve. This procedure preserves the 5-minute, 1-hour, and 24-hour intensities, but uses a log-log interpolation for all intermediate intensities. If the Storm Duration is different than 24-hours, the intensity for the specified duration is preserved *in addition* to the three standard durations. This is shown on the top right of the drainage analysis. An example is shown as "…24-hr **S1** 1-in Rainfall=1.00""

Multiple Best Management Practices (BMPs) and Low Impact Development (LID) strategies were evaluated during the design of this project. The primary BMPs incorporated into the final design include roof drip edges around the buildings, a stone infiltration storage area, and Silt Soxx erosion control barriers to prevent sediment transport to the off-site wetland. A stabilized gravel construction entrance shall be installed to reduce sediment track-out from construction vehicles. Due to the need to raise portions of the roadway to meet design and regulatory requirements, the existing drainage patterns were maintained by directing surface runoff to the same discharge area as the current conditions.

Several additional BMPs were evaluated but not included in the design. Erosion control blankets were reviewed; however, they were determined to be unnecessary because proposed slopes do not exceed thresholds where blankets provide measurable benefit.

The proposed roof drip edges are classified as a Tier 2 Stormwater Control Measure (SCM), meeting pollutant removal requirements under Env-Wq 1500.

Pre-Development Runoff

The pre-development site was modeled as a 0.115-acre area where stormwater modeling and calculations for Portsmouth Tax Map 233, Lot 44 were performed. The subject area flows into two different abutter lots. Two subcatchment area was needed to model an accurate stormwater flow diagram and are shown on sheet SW1 – Pre Development Drainage Plan included in this report. Please note that due to well drained soils and a small lot area, peak flow rates of 0.00 CFS and low volumes are present across all design storm events.

Subcatchment ES1
Location: North portion of lot.
Land cover type Grass, and woodlands.
Hydrologic Soil Groups (HSG): A
Discharges to: Map 233 Lot 66 northeastern abutter.

Subcatchment ES2
Location: South portion of lot.
Land cover type Grass, and woodlands.
Hydrologic Soil Groups (HSG): A
Discharges to: Map 233 Lot 65 southern abutter.

The stormwater calculations were modeled with good grass cover and good woodlands. The attached HydroCAD worksheets outline specific details on the flow, volumes, times, and flow conditions.

Post-Development Runoff

The post-development site was modeled as a 0.115-acre area which has been divided into three (3) subcatchment areas and one (1) pond area, shown on sheet SW2 – Post Development Drainage Plan included in this report. Please note that due to well drained soils and a small lot area, peak flow rates of 0.00 CFS and low volumes are present across all design storm events

Subcatchment PS1
Location: Northwest portion of lot, along Sims Avenue.
Land cover type: Impervious roof, impervious driveway, grass and woodlands.
Hydrologic Soil Groups (HSG): A
Discharges to: Stone drip edge, Pond PP01.

Subcatchment PS2
Location: Southern portion of lot, along Sims Avenue.
Land cover type: Impervious driveway, grass and woodlands.
Hydrologic Soil Groups (HSG): A
Discharges to: Map 233 Lot 65 southern abutter.

Subcatchment PS3
Location: Northeast corner of lot.
Land cover type: Grass and woodlands.
Hydrologic Soil Groups (HSG): A
Discharges to: Map 233 Lot 66 northeastern abutter.

Pond PP01
Location: Drip edge with extended storage on the perimeter of the residential house for subcatchment PS1.
Description: 3 feet wide x 4 feet deep stone drip edge on two sides of the building (±412 total square feet). The expanded drip edge becomes 5.5 feet wide x 4 feet deep along the back of the building. The intent of the stone drip edge is for stormwater to pass through the AASHTO #57 stone and Mirafi 140N filter fabric, then exfiltrate to the ground within. Any large storm event that exceeds the rate of exfiltration will overflow out the top at a reduced flow and volume to the Northen abutters.
Discharges to: Exfiltrates within and/or overflows and Map 223 Lot 66 Abutter, Link L100.

The stormwater calculations were modeled with good grass cover, good woodlands, and impervious roof. The attached HydroCAD worksheets outline specific details on the flow, volumes, times, and flow conditions.

The proposed development on the site increased the impervious area by +/-1,211 square feet from predevelopment. This included both driveway and house. Building coverage increases by 18.9%

The post-development HydroCAD stormwater flow calculations indicate decreased peak flows for the 2-year, 10-year, 25-year, and 50-year events across the site. A decrease in both post-development peak flow rate and runoff volume is demonstrated for all storm events.

Please note that due to well drained soils and a small lot area, peak flow rates of 0.00 CFS and low volumes are present across all design storm events

The storm-water flow summaries are detailed in the HydroCAD calculations showing the net decrease in runoff at each point of discharge. Each point of discharge has been subtotaled to compare the pre-development and post-development discharges from the same geographical areas of the parcel and shown on the Stormwater Summary sheet as Link L100 and Link L200.

Extreme Precipitation Tables

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	43.063 degrees North
Longitude	70.779 degrees West
Elevation	10 feet
Date/Time	Tue Jan 27 2026 12:16:20 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.93	**1yr**	2.36	2.82	3.23	3.95	4.56	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.22	3.58	**2yr**	2.85	3.44	3.94	4.69	5.34	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.08	4.59	**5yr**	3.61	4.41	5.05	5.95	6.72	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.76	4.88	5.54	**10yr**	4.32	5.33	6.10	7.12	8.00	**10yr**
25yr	0.48	0.76	0.97	1.33	1.77	2.34	**25yr**	1.53	2.14	2.78	3.63	4.75	6.19	7.12	**25yr**	5.48	6.84	7.82	9.05	10.08	**25yr**
50yr	0.53	0.86	1.10	1.54	2.07	2.75	**50yr**	1.79	2.52	3.29	4.32	5.67	7.41	8.60	**50yr**	6.56	8.27	9.45	10.84	12.01	**50yr**
100yr	0.59	0.96	1.24	1.77	2.41	3.25	**100yr**	2.08	2.98	3.90	5.16	6.78	8.88	10.40	**100yr**	7.86	10.00	11.41	13.00	14.32	**100yr**
200yr	0.67	1.10	1.42	2.04	2.82	3.83	**200yr**	2.43	3.51	4.61	6.13	8.09	10.64	12.58	**200yr**	9.42	12.10	13.79	15.59	17.08	**200yr**
500yr	0.80	1.31	1.71	2.48	3.47	4.76	**500yr**	2.99	4.37	5.76	7.71	10.24	13.52	16.19	**500yr**	11.97	15.57	17.72	19.84	21.57	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.87	0.92	1.33	1.67	2.23	2.52	**1yr**	1.98	2.42	2.87	3.17	3.89	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.06	3.46	**2yr**	2.71	3.33	3.83	4.56	5.09	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.80	4.21	**5yr**	3.36	4.05	4.73	5.56	6.26	**5yr**
10yr	0.39	0.59	0.74	1.03	1.33	1.60	**10yr**	1.15	1.57	1.81	2.39	3.06	4.39	4.89	**10yr**	3.88	4.70	5.47	6.44	7.23	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.76	3.54	4.72	5.94	**25yr**	4.18	5.71	6.70	7.85	8.73	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.17	**50yr**	1.53	2.12	2.35	3.08	3.94	5.33	6.86	**50yr**	4.72	6.60	7.80	9.11	10.08	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.47	**100yr**	1.74	2.42	2.63	3.42	4.36	5.99	7.93	**100yr**	5.30	7.63	9.09	10.60	11.64	**100yr**
200yr	0.59	0.89	1.13	1.64	2.29	2.82	**200yr**	1.98	2.76	2.94	3.79	4.81	6.71	9.17	**200yr**	5.94	8.82	10.58	12.35	13.47	**200yr**
500yr	0.69	1.03	1.32	1.92	2.73	3.37	**500yr**	2.35	3.30	3.41	4.33	5.48	7.81	11.10	**500yr**	6.91	10.68	12.94	15.13	16.31	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.21	2.99	3.16	**1yr**	2.65	3.04	3.59	4.38	5.06	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.43	3.70	**2yr**	3.04	3.56	4.09	4.84	5.65	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.35	4.96	**5yr**	3.85	4.77	5.38	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.97	**10yr**	1.39	1.93	2.28	3.10	3.94	5.35	6.19	**10yr**	4.73	5.95	6.80	7.83	8.75	**10yr**
25yr	0.57	0.87	1.09	1.55	2.04	2.57	**25yr**	1.76	2.51	2.95	4.06	5.13	7.81	8.32	**25yr**	6.91	8.00	9.11	10.32	11.40	**25yr**
50yr	0.67	1.02	1.27	1.82	2.45	3.12	**50yr**	2.12	3.05	3.59	4.99	6.29	9.79	10.41	**50yr**	8.66	10.01	11.37	12.70	13.94	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.80	**100yr**	2.55	3.72	4.36	6.14	7.72	12.25	13.04	**100yr**	10.84	12.54	14.19	15.66	17.06	**100yr**
200yr	0.92	1.38	1.75	2.54	3.54	4.64	**200yr**	3.06	4.53	5.32	7.56	9.48	15.37	16.34	**200yr**	13.60	15.72	17.74	19.29	20.88	**200yr**
500yr	1.14	1.70	2.18	3.17	4.51	6.02	**500yr**	3.89	5.88	6.91	9.99	12.46	20.78	22.04	**500yr**	18.39	21.19	23.83	25.42	27.29	**500yr**

Powered by ACIS
Northeast Regional Climate Center

Pre-Development Drainage Areas

STORMWATER ANALYSIS AREA WORKSHEET

EMANUEL ENGINEERING INC.

JOB: 26-1004
DATE: 1/30/2026
ENGINEER: NMD

PRE-DEVELOPMENT DRAINAGE AREAS (ALL AREAS IN SQUARE FEET

SOIL TYPE	*CN #*	*SOIL GROUP*	*SUBCAT ES1 Area*	*SUBCAT ES2 Area*	***Total Area***		
Grass (Good)	39	A	1,205	0	**1,205**		
Woods (Good)	30	A	1,406	2,393	**1,406**		
Impervious, Roof	98	A	0	0	**0**		
Impervious, Road	98	A	0	0	**0**		
			2,611	**2,393**	**5,004**	**0.115**	**acres**
				Total Impervious:	**0**	**0.000**	**acres**
				% Impervious:	**0.00**		

Post-Development Drainage Areas

STORMWATER ANALYSIS AREA WORKSHEET

EMANUEL ENGINEERING INC.

JOB: 26-1004
DATE: 1/30/2026
ENGINEER: NMD

POST-DEVELOPMENT DRAINAGE AREAS (ALL AREAS IN SQUARE FEET

SOIL TYPE	*CN #*	*SOIL GROUP*	*SUBCAT PS1 Area*	*SUBCAT PS2 Area*	*SUBCAT PS3 Area*	***Total Area***		
Grass (Good)	39	A	1,183	31	783	**1,183**		
Woods (Good)	30	A	503	962	331	**503**		
Impervious, Roof	98	A	946	0	0	**946**		
Impervious, Road	98	A	265	0	0	**265**		
			2,897	**993**	**1,114**	**5,004**	**0.115**	**acres**
					Total Impervious:	**1,211**	**0.028**	**acres**
					% Impervious:	**24.20**		

Summary Table (Peak Discharge & Volume)

STORMWATER/DRAINAGE SUMMARY

EMANUEL ENGINEERING INC.

JOB: 26-1004

DATE: 1/30/2026

ENGINEER: NMD

AREAS TAKEN FROM EXISTING CONDITIONS & PROPOSED GRADING

PEAK FLOWS FROM HYDROCAD

Subcatchment Area/Drainage Structure	1-Inch Storm 1.0"		2-Year Storm 3.22"		10-Year Storm 4.88"		25-Year Storm 6.19"		50-Year Storm 7.41"	
	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)
Link L100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Link L200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FLOW TOTALS (CFS)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Net Increase/(Decrease)		**0.00**		**0.00**		**0.00**		**0.00**		**0.00**

VOLUMES FROM HYDROCAD

Subcatchment Area/Drainage Structure	1-Inch Storm 1.0"		2-Year Storm 3.22"		10-Year Storm 4.88"		25-Year Storm 6.19"		50-Year Storm 7.41"	
	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)
Link L100	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.001
Link L200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
FLOW TOTALS (CFS)	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	*0.001*	*0.004*	*0.002*
Net Increase/(Decrease)		**0.000**		**0.000**		**0.000**		**0.000**		**-0.002**

Web Soil Survey Report

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

January 23, 2026

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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.

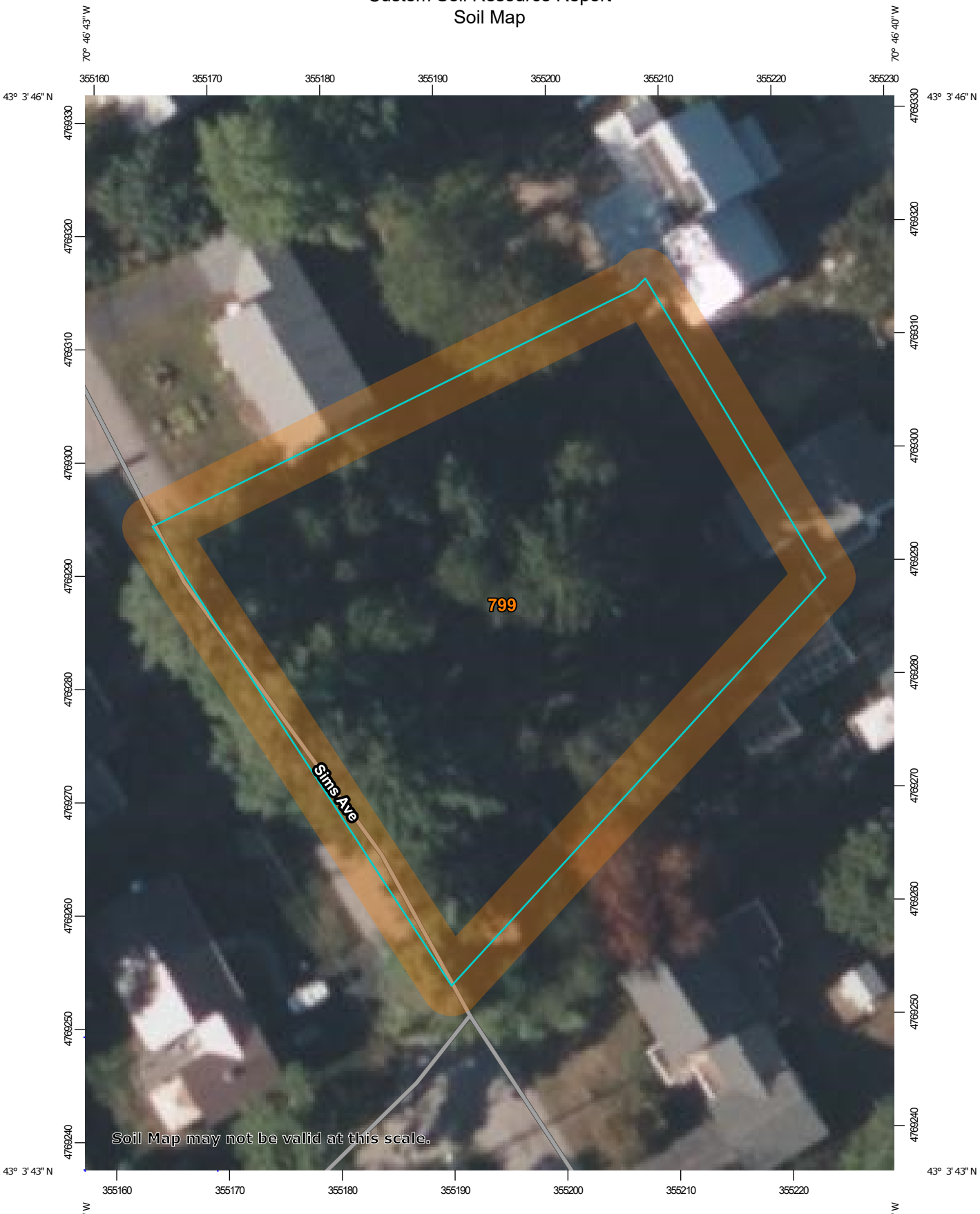
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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: 1:462 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 20 40 80 120

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 28, Sep 9, 2025

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	0.5	100.0%
Totals for Area of Interest		**0.5**	**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

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces

Hydric soil rating: Yes

Boxford and eldridge

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

Walpole

Percent of map unit: 4 percent
Landform: Depressions
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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

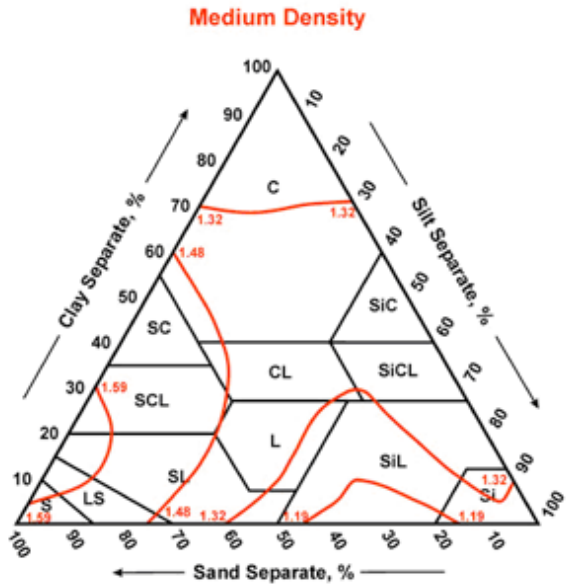
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

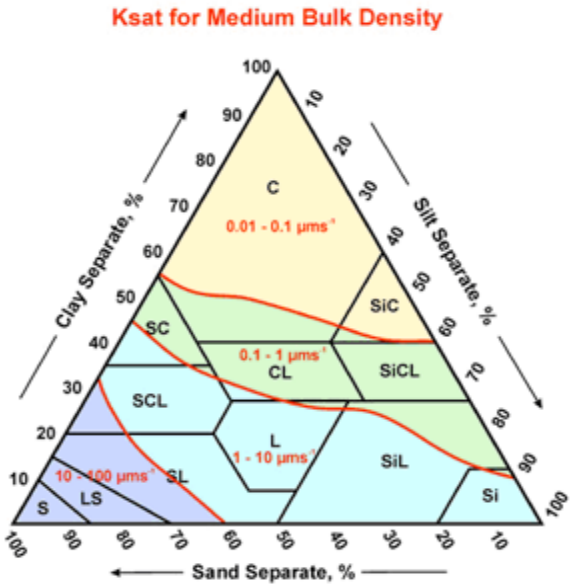
United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Ksat Values (New Hampshire Soils)

K_{sat} VALUES
FOR
NEW HAMPSHIRE SOILS
(Including Hydrologic and DES Soil Lot Sizing Groups)





From: Guide for Estimating Ksat from Soil Properties (**Exhibit 618-9**). (http://soils.usda.gov/technical/handbook/contents/part618ex.html)

Sponsored by the Society of Soil Scientists of Northern New England
SSSNNE Special Publication No. 5
September, 2009

K_{sat} VALUES FOR NEW HAMPSHIRE SOILS

ABOUT THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND

The Society of Soil Scientists of Northern New England (SSSNNE) is a non-profit professional organization of soil scientists, both in the private and public sectors, which is dedicated to the advancement of soil science. The Society fosters the profession of soil classification, mapping and interpretation, and encourages the dissemination of information concerning soil science. With the intent of contributing to the general human welfare, the Society seeks to educate the public on the wise use of soils and the associated natural resources.

INTRODUCTION

The publication "K_{sat} Values for New Hampshire Soils" is designed to assist soil scientists, engineers, and other professionals by assembling tables of existing data for all soil series currently on the state soil legend with regard to K_{sat} values and hydrologic groupings (Hyd.Grp.). The need for this information has become more important since the adoption by the New Hampshire Department of Environmental Services of the revised Alteration of Terrain rules for stormwater management. Additional information has been provided for each soil series with regard to landform, temperature regime (Temp.), soil textures, NHDES Soil Lot Size Groupings (Group), whether the soil is a Spodosol (Spodosol?) and other information which will be valuable to a variety of soil information users.

The data for each soil series has been sorted 3 ways for ease of searching:

Table A-Sorted by Numerical Legend
Table B-Sorted by Soil Series Name
Table C-Sorted by NHDES Soil Group for Establishing Lot Size

The report represents cumulative efforts by private soil scientists and NHDES staff with assistance from the USDA Natural Resource Conservation Service.

Comments or inquires on the information in this publication may be directed to the Board of Directors at the following address:

Society of Soil Scientists
of Northern New England
PO Box 76
Durham, NH 03824

SATURATED HYDRAULIC CONDUCTIVITY (K_{SAT})

K_{sat} refers to the ease with which pores in a saturated soil transmit water. The estimates presented here are expressed in terms of inches per hour (NRCS official data presents K_{sat} in both micrometers per second and inches per hour). K_{sat} values are based on soil characteristics observed in the field, particularly structure, consistence, porosity, and texture. (USDA NRCS, Web Soil Survey)

Saturated flow occurs when the soil water pressure is positive; that is, when the soil matric potential is zero (satiated wet condition). In most soils this situation takes place when about 95 percent of the total pore space is filled with water. The remaining 5 percent is filled with entrapped air. Saturated hydraulic conductivity cannot be used to describe water movement under unsaturated conditions. (Soil Survey Manual, 1993)

It is commonly known that soil features (and thus data) for a certain soil series name may be slightly different from one county soil survey to the next and the range in characteristics (via the Typical Pedon) may be slightly different. For example – a Marlow soil (series) in Carroll County may have a higher sand content in its B horizon as opposed to a Marlow soil (series) in Coos County; resulting in a slightly different Ksat range for the B horizon.

The K_{sat} data for this publication was obtained from the USDA-NRCS Soil Data Mart using the Typical Pedon from the county that best reflected the soil and/or had the most acres of that soil. This data is presented in B and C horizons only as it is assumed that the topsoil (A or A_p horizon) will be removed in typical construction practices.

References:

Web Soil Survey. *Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.*

Soil Data Mart. *http://soildatamart.nrcs.usda.gov/.*

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.*

HYDROLOGIC SOIL GROUPS

Hydrologic group is a group of soils having the same runoff potential under similar storm and cover conditions.

Hydrologic groups are used in equations that estimate runoff from rainfall. These estimates are needed for solving hydrologic problems that arise in planning stormwater management, watershed protection, and flood-prevention projects and for planning or designing structures for the use, control, and disposal of water.

Classifications assigned to soils were based on the use of rainfall-runoff data from small watersheds and infiltrometer plots. From these data, relationships between soil properties and hydrologic groups were established. Assignment of soils to hydrologic groups is based on the relationship between soil properties and hydrologic groups. Wetness characteristics, permeability after prolonged wetting, and depth to very slowly permeable layers are properties that assist in estimating hydrologic groups. Minimum annual steady ponded infiltration rate for a bare ground surface determines the hydrologic soil groups.

Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. (The influence of ground cover is treated independently, not in hydrologic soil groups.).

The soils in the United States are placed into four groups, A, B, C, and D, and three dual classes, *A/D, B/D,* and *C/D.* In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

Group A- Saturated hydraulic conductivity is very high or in the upper half of high and internal free water occurrence is very deep. Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Some soils having loamy sand, sandy loam, loam or silt loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group A are as follows. The saturated hydraulic conductivity of all soil layers exceeds 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer are in group A if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 10 micrometers per second (1.42 inches per hour).

Group B- Saturated hydraulic conductivity is in the lower half of high or in the upper half of moderately high and free water occurrence is deep or very deep. Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group B are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] ranges from 10.0 micrometers per second (1.42 inches per hour) to 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer or water table are in group B if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 4.0 micrometers per second (0.57 inches per hour) but is less than 10.0 micrometers per second (1.42 inches per hour).

Group C- Saturated hydraulic conductivity is in the lower half of moderately high or in the upper half of moderately low and internal free water occurrence is deeper than shallow. Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay and less than 50 percent sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments. The limits on the diagnostic physical characteristics of group C are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] is between 1.0 micrometers per second (0.14 inches per hour) and 10.0 micrometers per second (1.42 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a restriction or water table are in group C if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 0.40 micrometers per second (0.06 inches per hour) but is less than 4.0 micrometers per second (0.57 inches per hour). .

Group D- Saturated hydraulic conductivity is below the upper half of moderately low, and/or internal free water occurrence is shallow or very shallow and transitory through permanent. Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas, they also have high shrink-swell potential. All soils with a depth to a water impermeable layer less than 50 centimeters [20 inches] and all soils with a water table within 60 centimeters [24 inches] of the surface are in this group, although some may have a dual classification, as described in the next section, if they can be adequately drained. The limits on the physical diagnostic characteristics of group D are as follows. For soils with a water impermeable layer at a depth between 50 centimeters and 100 centimeters [20 and 40 inches], the saturated hydraulic conductivity in the least transmissive soil layer is less than or equal to 1.0 micrometers per second (0.14 inches per hour). For soils that are deeper than 100 centimeters [40 inches] to a restriction or water table, the saturated hydraulic

conductivity of all soil layers within 100 centimeters [40 inches] of the surface is less than or equal to 0.40 micrometers per second (0.06 inches per hour).

Dual hydrologic soil groups-Certain wet soils are placed in group D based solely on the presence of a water table within 60 centimeters [24 inches] of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. If these soils can be adequately drained, then they are assigned to dual hydrologic soil groups *(A/D, B/D,* and *C/D)* based on their saturated hydraulic conductivity and the water table depth when drained. The first letter applies to the drained condition and the second to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high water table is kept at least 60 centimeters [24 inches] below the surface in a soil where it would be higher in a natural state.

References:

National Engineering Handbook, Natural Resource Conservation Service, U.S. Department of Agriculture.

Soil Data Mart. *http://soildatamart.nrcs.usda.gov/*.

Soil Survey Manual. *Soil Survey Division Staff. 1993. Soil survey manual. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 18.*

TABLE A

NUMERICAL LEGEND

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Lim	3	0.6	2.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Hadley	8	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Merrimac	10	2.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Gloucester	11	6.0	20.0	6.00	20.0	A	1	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Hinckley	12	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Colton, gravelly	21	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Colton	22	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Masardis	23	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Agawam	24	6.0	20.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Groveton	27	0.6	2.0	0.60	6.0	B	2	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Madawaska	28	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Hartland	31	0.6	2.0	0.20	2.0	B	2	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Boxford	32	0.1	0.2	0.00	0.2	C	3	Silt and Clay Deposits	mesic	fine	no	silty clay loam
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Champlain	35	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	gravelly sand	no	
Adams	36	6.0	20.0	20.00	99.0	A	1	Outwash and Stream Terraces	frigid	sandy	yes	
Melrose	37	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Eldridge	38	6.0	20.0	0.06	0.6	C	3	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Millis	39					C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Canton	42	2.0	6.0	6.00	20.0	B	2	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Montauk	44	0.6	6.0	0.06	0.6	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Henniker	46	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Madawaska, aquentic	48	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Hermon	55	2.0	20.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Becket	56	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Charlton	62	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Berkshire	72	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Marlow	76	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Hollis	86	0.6	6.0	0.60	6.0	C/D	4	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Chatfield	89	0.6	6.0	0.60	6.0	B	4	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Hogback	91	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Lyman	92	2.0	6.0	2.00	6.0	A/D	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep

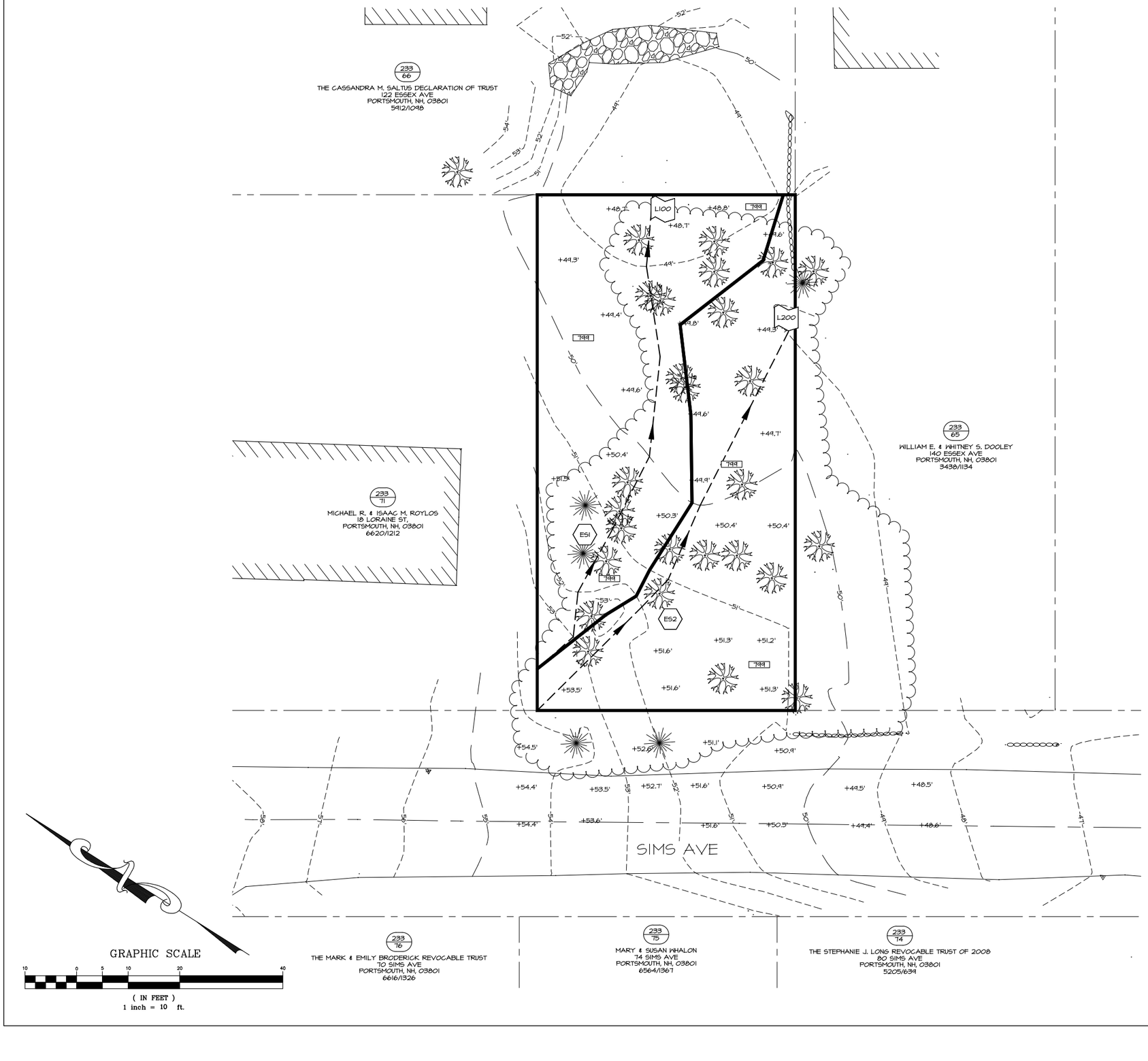
Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Sunday	102	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Winooski	103	0.6	6.0	0.60	6.0	B	3	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Hadley	108	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand, occ flooded
Limerick	109	0.6	2.0	0.60	2.0	C	5	Flood Plain (Bottom Land)	mesic	silty	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Finch	116					C	3	Outwash and Stream Terraces	frigid	sandy	yes	cemented (ortstein)
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand
Telos	123	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Chesuncook	126	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Allagash	127	0.6	2.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy	yes	loamy over sandy
Elliottsville	128	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	20 to 40 in. deep
Hitchcock	130	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam to silt in C
Burnham	131	0.2	6.0	0.02	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over silt
Dartmouth	132	0.6	2.0	0.06	0.6	B	3	Terraces and glacial lake plains	mesic	silty	no	thin strata silty clay loam
Monson	133	0.6	2.0	0.60	2.0	D	4	Friable till, silty, schist & phyllite	frigid	loamy	yes	less than 20 in. deep
Maybid	134	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	mesic	fine	no	silt over clay
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Monadnock	142	0.6	2.0	2.00	6.0	B	2	Loose till, sandy textures	frigid	loamy over sandy, sandy-skeletal	yes	gravelly loamy sand in C
Acton	146	2.0	20.0	2.00	20.0	B	3	Loose till, sandy textures	mesic	sandy-skeletal	no	cobbly loamy sand
Vassalboro	150					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Canterbury	166	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Sunapee	168	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	
Waskish	195					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Sunday	202	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Fryeburg	208	0.6	2.0	2.00	6.0	B	2	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Charles	209	0.6	100.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	silty	no	
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Boscawen	220	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	no	loamy cap
Bemis	224	0.6	0.2	0.00	0.2	C	5	Firm, platy, loamy till	cryic	loamy	no	
Bice	226	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	no	sandy loam
Lanesboro	228	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	channery silt loam in Cd
Poocham	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Buxton	232	0.1	0.6	0.00	0.2	C	3	Silt and Clay Deposits	frigid	fine	no	silty clay
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Biddeford	234	0.0	0.2	0.00	0.2	D	6	Silt and Clay Deposits	frigid	fine	no	organic over clay
Buckland	237	0.6	2.0	0.06	0.2	C	3	Firm, platy, loamy till	frigid	loamy	no	loam in Cd
Elmridge	238	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	loamy over clayey	no	
Brayton	240	0.6	2.0	0.06	0.6	C	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Lyme	246	0.6	6.0	0.60	6.0	C	5	Loose till, sandy textures	frigid	loamy	no	
Millsite	251	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	no	20 to 40 in. deep
Macomber	252	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Lombard	259	0.6	6.0	2.00	20.0	C/D	2	Weathered bedrock, phyllite	frigid	loamy	no	very channery
Sunapee var	269	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	frigid dystrudept
Chatfield Var.	289	0.6	6.0	0.60	6.0	B	3	Loose till, bedrock	mesic	loamy	no	mwd to swpd
Greenwood	295					A/D	6	Organic Materials - Freshwater	frigid	hemic	no	deep organic
Catden	296					A/D	6	Organic Materials - Freshwater	mesic	sapric	no	deep organic
Lovewell	307	0.6	2.0	0.60	2.0	B	3	Flood Plain (Bottom Land)	frigid	silty	no	very fine sandy loam
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Deerfield	313	6.0	20.0	20.00	100.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	single grain in C

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Mashpee	315	6.0	20.0	6.00	20.0	B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Bernardston	330	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Elmwood	338	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Cardigan	357	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	20 to 40 in. deep
Kearsarge	359	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy	no	less than 20 in. deep
Dutchess	366	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	mesic	loamy	no	very channery
Dixfield	378	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Timakwa	393			6.00	100.0	D	6	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Chocorua	395			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Ipswich	397					D	6	Tidal Flat	mesic	hemic/sapric	no	deep organic
Suncook	402	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Metallak	404	6.0	100.0	6.00	100.0	B	3	Flood Plain (Bottom Land)	frigid	loamy over sandy	no	sandy or sandy-skeletal
Medomak	406	0.6	2.0	0.60	2.0	D	6	Flood Plain (Bottom Land)	frigid	silty	no	organic over silt
Haven	410	0.6	2.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Duane	413	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	cemented (ortstein)
Moosilauke	414	6.0	20.0	6.00	20.0	C	5	Loose till, sandy textures	frigid	sandy	no	
Grange	433	0.6	2.0	0.60	2.0	C	5	Outwash and Stream Terraces	frigid	co. loamy over sandy (skeletal)	no	
Swanton	438	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Chichester	442	0.6	2.0	2.00	6.0	B		Loose till, sandy textures	frigid	loamy over sandy	no	loamy over loamy sand
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Metacomet	458	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Gilmanton	478	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	no	fine sandy loam in Cd
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Abenaki	501	0.6	2.0	6.00	99.0	B	2	Outwash and Stream Terraces	frigid	loamy over sandy-skeletal	no	loamy over gravelly
Cohas	505	0.6	2.0	0.60	100.0	C	5	Flood Plain (Bottom Land)	frigid	co. loamy over sandy (skeletal)	no	
Hoosic	510	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	slate, loamy cap
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Leicester	514	0.6	6.0	0.60	20.0	C	5	Loose till, loamy textures	mesic	loamy	no	
Au Gres	516					B	5	Outwash and Stream Terraces	frigid	sandy	yes	single grain, loose
Machias	520	2.0	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy or sandy-skeletal	yes	strata sand/gravel in C
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Caesar	526	20.0	100.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	coarse sand	no	
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Belgrade	532	0.6	2.0	0.06	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	strata of fine sand
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Binghamville	534	0.2	2.0	0.06	0.2	D	5	Terraces and glacial lake plains	mesic	silty	no	
Suffield	536	0.6	2.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Walpole	546	2.0	6.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Howland	566	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	silt loam, platy in Cd
Monarda	569	0.2	2.0	0.02	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Bangor	572	0.6	2.0	0.60	2.0	B	2	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Dixmont	578	0.6	2.0	0.60	2.0	C	3	Friable till, silty, schist & phyllite	frigid	loamy	yes	silt loam, platy in C
Cabot	589	0.6	2.0	0.06	0.2	D	5	Firm, platy, silty till, schist & phyllite	frigid	loamy	no	
Westbrook	597			0.00	2.0	D	6	Tidal Flat	mesic	loamy	no	organic over loam
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Croghan	613	20.0	100.0	20.00	100.0	B	3	Outwash and Stream Terraces	frigid	sandy	yes	single grain in C
Kinsman	614	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Salmon	630	0.6	2.0	0.60	2.0	B	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Canaan	663	2.0	20.0	2.00	20.0	C	4	Weathered Bedrock Till	frigid	loamy-skeletal	yes	less than 20 in. deep
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Surplus	669	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Glebe	671	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	cryic	loamy	yes	20 to 40 in. deep
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Ricker	674	2.0	6.0	2.00	6.0	A	4	Organic over bedrock (up to 4" of mineral)	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Houghtonville	795	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	cobbly fine sandy loam
Matunuck	797			20.00	100.0	D	6	Tidal Flat	mesic	sandy	no	organic over sand
Meadowsedge	894					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Bucksport	895					D	6	Organic Materials - Freshwater	frigid	sapric	no	deep organic
Colonel	927	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	loam in Cd
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Wonsqueak	995			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Glover	NA	0.6	2.0	0.60	2	D	4	Friable till, silty, schist & phyllite	frigid	loamy	no	less than 20 in. deep

no longer recognized
organic materials

Pre-Development Subcatchment Plan



SOIL INFORMATION:

THE FOLLOWING SOIL DATA HAS BEEN COMPILED FROM THE NRCS SOIL MAP SURVEY DATABASE.

1. ENTIRE SITE IS URBAN LAND-CANTON COMPLEX (799).

   DRAINAGE CLASS = WELL DRAINED
   Ksat VALUE = 2.0 - 6.0
   DEPTH TO WATER TABLE = >80"
   HYDROLOGIC SOIL GROUP: A

2. NO FORMAL WATER TABLE INVESTIGATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION.

LEGEND

- Tc FLOW LINE
- SUBCATCHMENT BOUNDARY
- ES1 — SUBCATCHMENT LABEL
- EP01 — POND LABEL
- L100 — LINK LABEL
- XXX — SOIL TYPE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO ANALYZE HOW STORMWATER BEHAVES ON THE EXISTING LOT.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0259F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.
13. PRE-DEVELOPMENT DRAINAGE AREA CALCS:
    DRAINAGE ANALYSIS TOTAL AREA = 5004 SF

    DRAINAGE ANALYSIS IMPERVIOUS = 0 SF
    DRAINAGE ANALYSIS % IMPERVIOUS = 0.00%

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

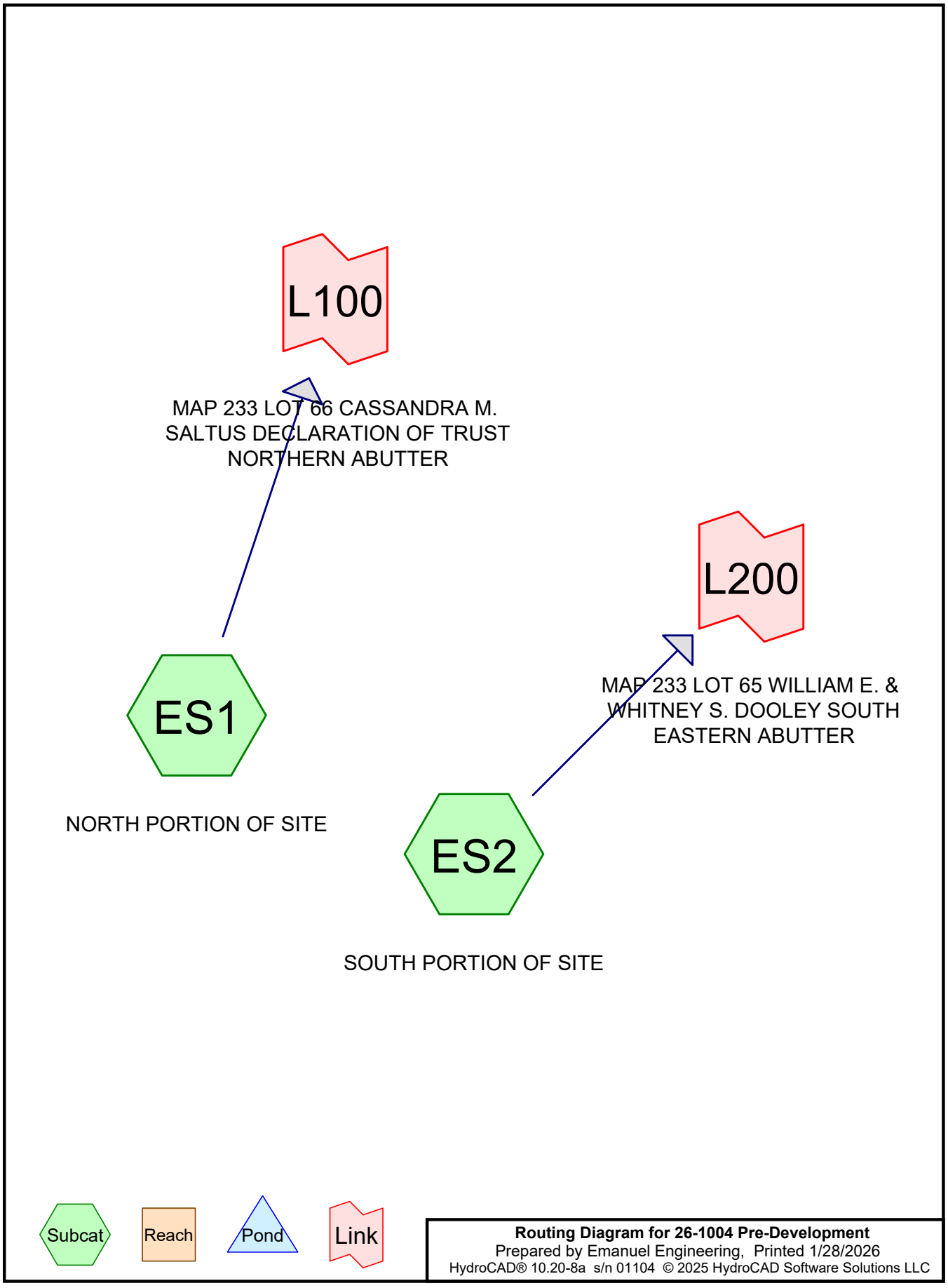
CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
PRE-DEVELOPMENT CONDITIONS
FOR
MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	SW1

Pre-Development Drainage Analysis



Routing Diagram for 26-1004 Pre-Development
Prepared by Emanuel Engineering, Printed 1/28/2026

Project Notes

Copied 4 events from NH-Portsmouth 24-hr S0P storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10-yr	NH-Portsmouth 24-hr S0P	10-yr	Default	24.00	1	4.88	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.028	39	>75% Grass cover, Good, HSG A (ES1)
0.087	30	Woods, Good, HSG A (ES1, ES2)
0.115	**32**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.115	HSG A	ES1, ES2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.115		**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
0.028	0.000	0.000	0.000	0.000	0.028	>75% Grass cover, Good	ES1
0.087	0.000	0.000	0.000	0.000	0.087	Woods, Good	ES1, ES2
0.115	**0.000**	**0.000**	**0.000**	**0.000**	**0.115**	**TOTAL AREA**	

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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.05"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.000 af

SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.03"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment ES1: NORTH PORTION OF SITE

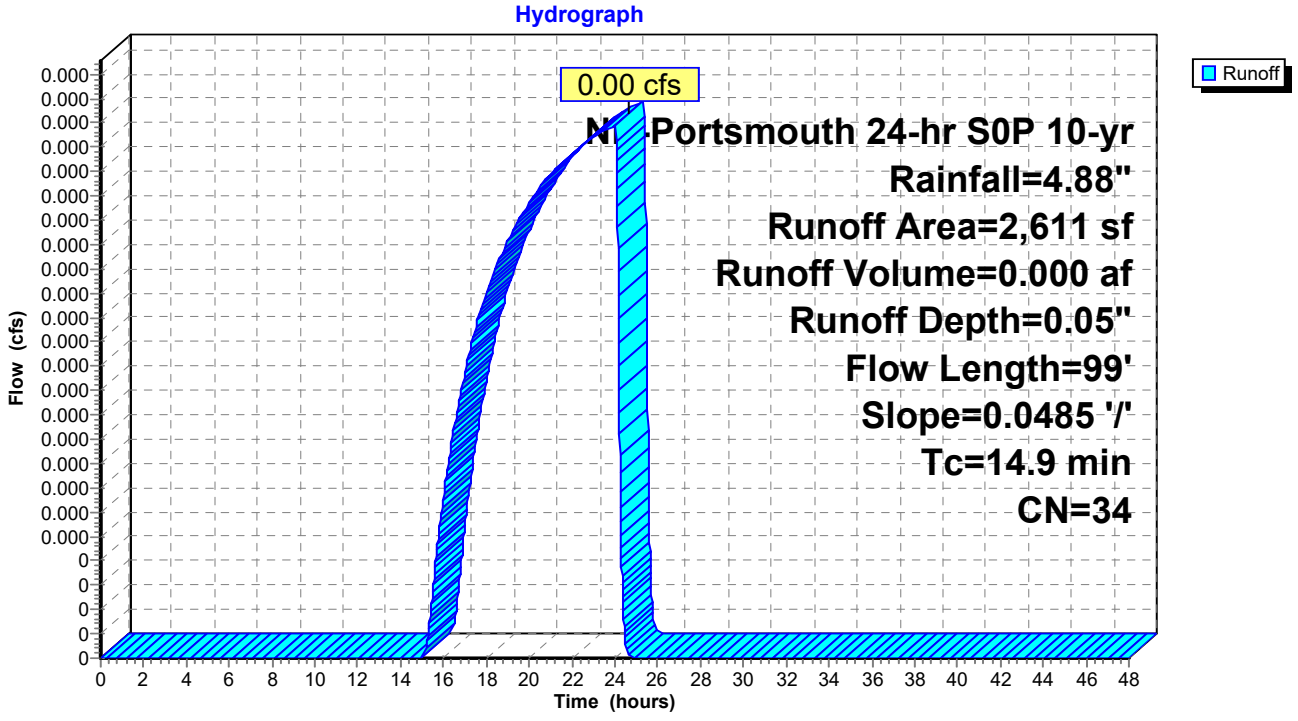
Runoff = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af, Depth= 0.05"
Routed to Link L100 : MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN ABU

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Portsmouth 24-hr S0P 10-yr Rainfall=4.88"

Area (sf)	CN	Description
1,205	39	>75% Grass cover, Good, HSG A
1,406	30	Woods, Good, HSG A
2,611	34	Weighted Average
2,611		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	99	0.0485	0.11		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"

Subcatchment ES1: NORTH PORTION OF SITE



Summary for Subcatchment ES2: SOUTH PORTION OF SITE

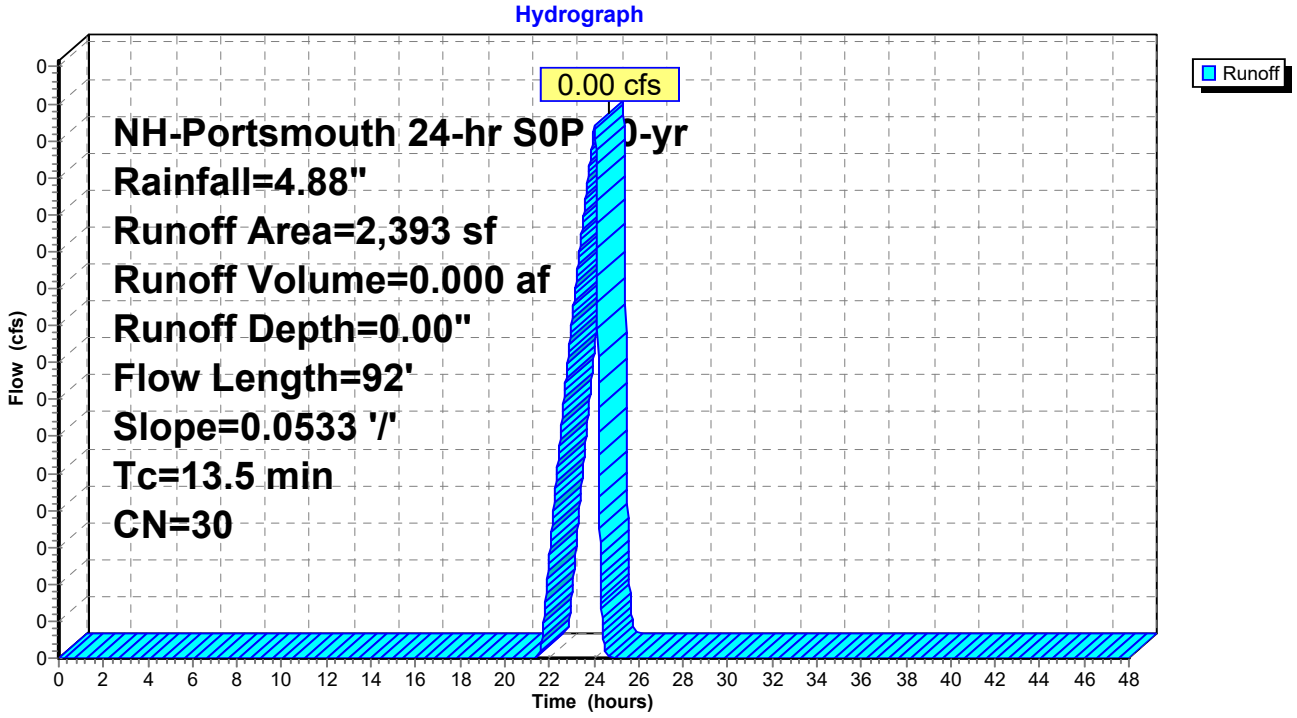
Runoff = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link L200 : MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUTTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Portsmouth 24-hr S0P 10-yr Rainfall=4.88"

Area (sf)	CN	Description
2,393	30	Woods, Good, HSG A
2,393		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	92	0.0533	0.11		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"

Subcatchment ES2: SOUTH PORTION OF SITE

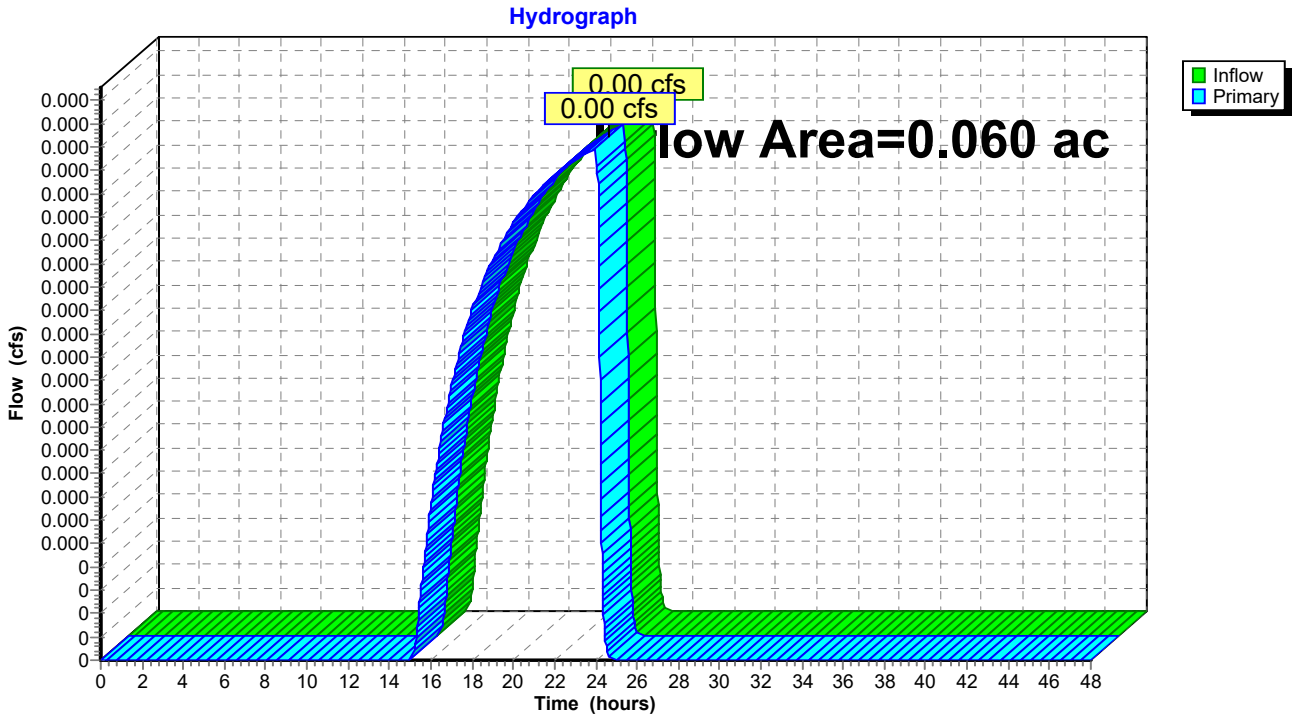


mary for Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN A

Inflow Area = 0.060 ac, 0.00% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN ABUTTI

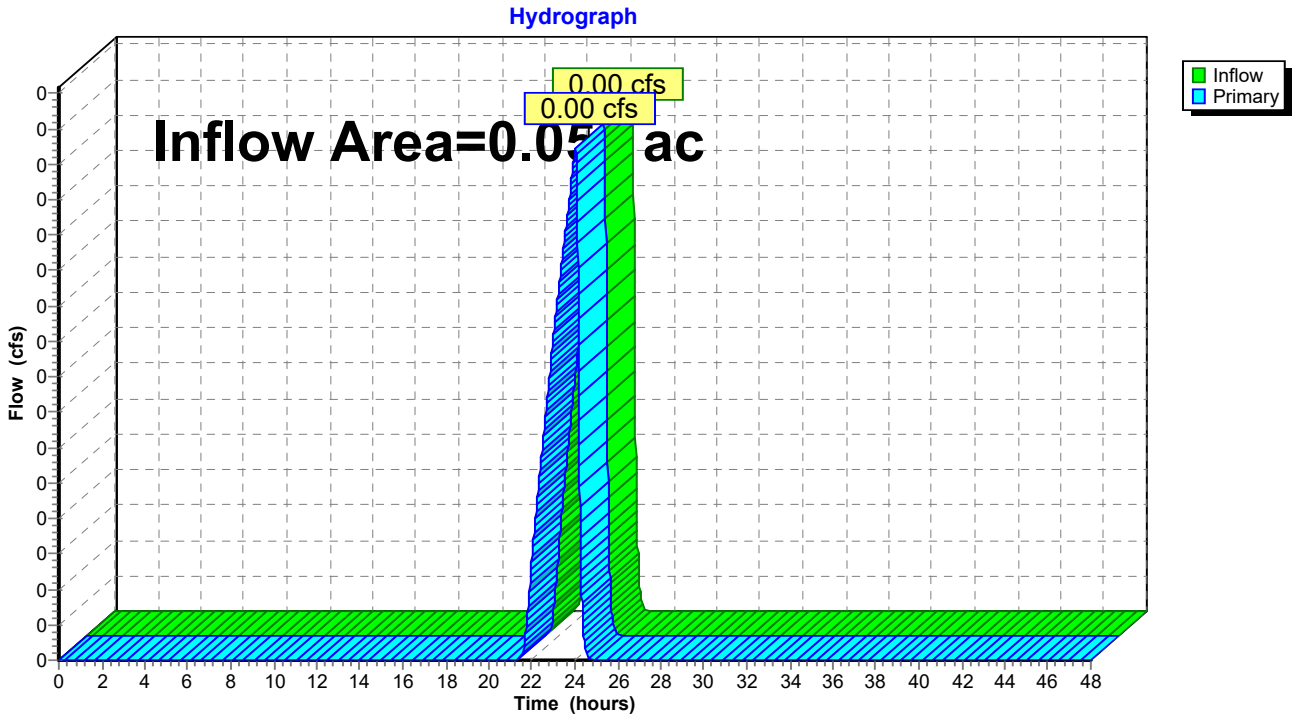


Summary for Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUT

Inflow Area = 0.055 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUTTER



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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.000 af

SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.000 af

SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.05"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.000 af

SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.03"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.25"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.001 af

SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.09"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.002 af Average Runoff Depth = 0.17"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

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

SubcatchmentES1: NORTH PORTION OF Runoff Area=2,611 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=99' Slope=0.0485 '/' Tc=14.9 min CN=34 Runoff=0.00 cfs 0.003 af

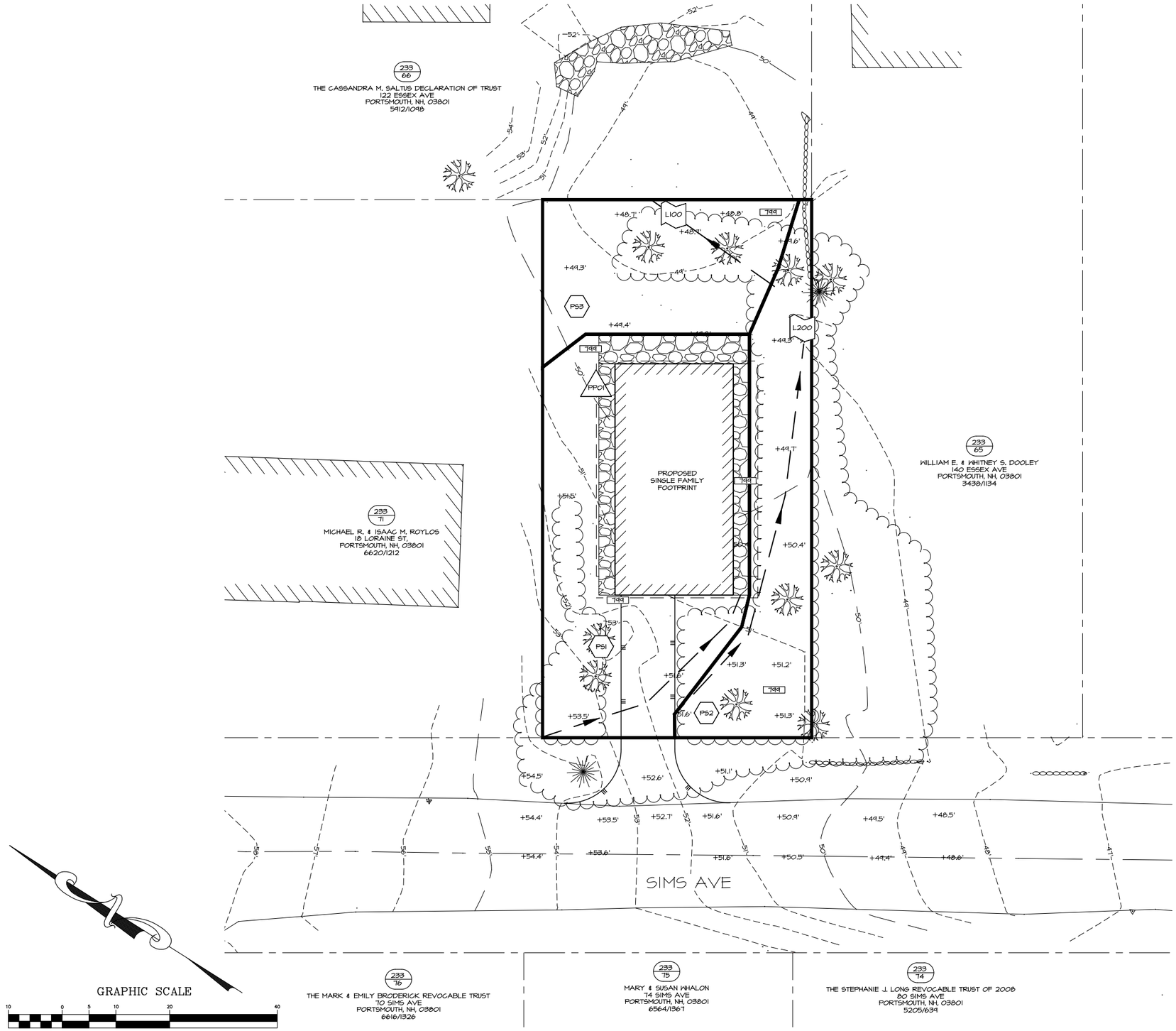
SubcatchmentES2: SOUTH PORTION OF Runoff Area=2,393 sf 0.00% Impervious Runoff Depth=0.29"
Flow Length=92' Slope=0.0533 '/' Tc=13.5 min CN=30 Runoff=0.00 cfs 0.001 af

Link L100: MAP 233 LOT 66 CASSANDRAM. SALTUS DECLARATIONOF Inflow=0.00 cfs 0.003 af
Primary=0.00 cfs 0.003 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.004 af Average Runoff Depth = 0.42"
100.00% Pervious = 0.115 ac 0.00% Impervious = 0.000 ac

Post-Development Subcatchment Plan



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

SOIL INFORMATION:

THE FOLLOWING SOIL DATA HAS BEEN COMPILED FROM THE NRCS SOIL MAP SURVEY DATABASE.

1. ENTIRE SITE IS URBAN LAND-CANTON COMPLEX (799).

   DRAINAGE CLASS = WELL DRAINED
   Ksat VALUE = 2.0 - 6.0
   DEPTH TO WATER TABLE = >80"
   HYDROLOGIC SOIL GROUP: A

2. NO FORMAL WATER TABLE INVESTIGATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION.

LEGEND

- Tc FLOW LINE
- SUBCATCHMENT BOUNDARY
- ES1 — SUBCATCHMENT LABEL
- EP01 — POND LABEL
- L100 — LINK LABEL
- XXX — SOIL TYPE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 233, LOT 44
   MICHAEL R. ROYLOS AND ISAAC M. ROYLOS
   18 LORAINE ST,
   PORTLAND, MAINE 04103
   RCRD BK6620 PG1214
2. THE INTENT OF THIS PLAN IS TO ANALYZE HOW STORMWATER IS MANAGED ON THE PROPOSED LOT.
3. PARCEL IS ZONED SINGLE RESIDENCE B (SRB) PER THE 2026 PORTSMOUTH MAPGEO ONLINE DATABASE.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0259F, DATED JANUARY 29, 2021.
5. SOILS WERE OBTAINED BY EEI ON 01/26/2026 USING THE NRCS ONLINE DATABASE.
6. NO FORMAL WETLAND DELINEATION WAS PERFORMED AS PART OF THIS PLAN PREPARATION. BASED ON FIELD OBSERVATIONS, NO APPARENT WETLAND RESOURCES ARE PRESENT WITHIN THE PROJECT AREA.
7. PROPERTY TO BE SERVICED BY CITY WATER AND SEWER.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SETBACKS APPLY TO THE SIDING (EXTERIOR WALLS) OF THE HOUSE. ROOF OVERHANGS NOT TO EXCEED 3 FEET.
13. POST-DEVELOPMENT DRAINAGE AREA CALCS:
    DRAINAGE ANALYSIS TOTAL AREA = 5,004 SF

    DRAINAGE ANALYSIS IMPERVIOUS = 1,211 SF
    DRAINAGE ANALYSIS % IMPERVIOUS = 24.2%

    BUILDING COVERAGE: 18.9% (946 SF)

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	01/30/2026	FOR APPROVAL	

DRAWN: NMD | DESIGN: NMD
CHECKED: JJM | CHECKED: JJM

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

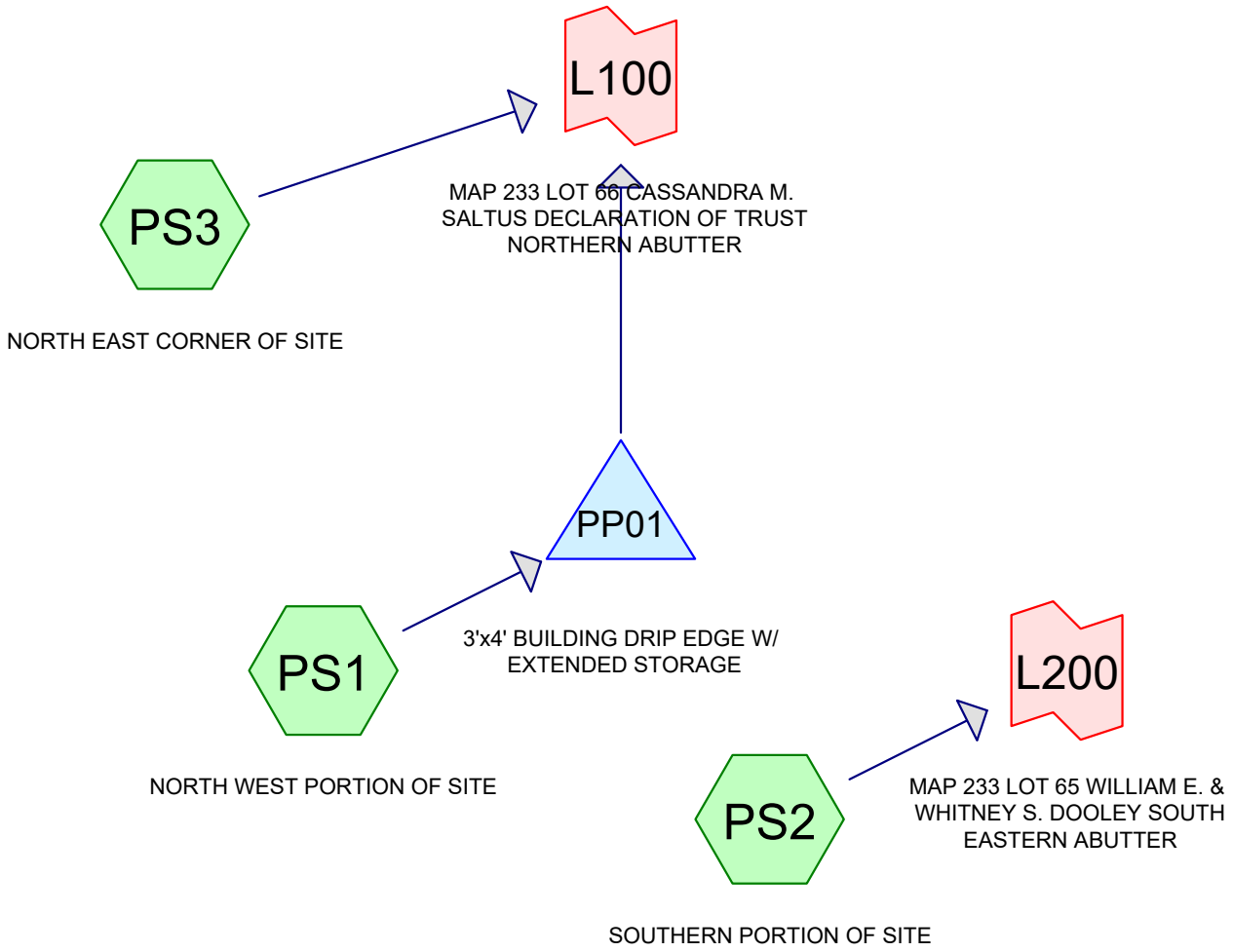
CLIENT:
CHRIS CLOUTIER
50 LOVELL STREET
PORTSMOUTH, NH 03801

SEAL:
STATE OF NEW HAMPSHIRE · BRUCE D. SCAMMAN No. 11236 · LICENSED PROFESSIONAL ENGINEER
1/29/26

TITLE:
POST-DEVELOPMENT CONDITIONS
FOR
MICHAEL R. ROYLOS AND
ISAAC M. ROYLOS
25 SIMS AVE (SITE)
PORTSMOUTH, NH 03801

PROJECT:	SCALE:	SHEET:
26-1004	1"=10'	SW2

Post-Development Drainage Analysis



Subcat Reach Pond Link

Routing Diagram for 26-1004 Post-Development
Prepared by Emanuel Engineering, Printed 1/29/2026

Project Notes

Copied 4 events from NH-Portsmouth 24-hr S0P storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10-yr	NH-Portsmouth 24-hr S0P	10-yr	Default	24.00	1	4.88	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.046	39	>75% Grass cover, Good, HSG A (PS1, PS2, PS3)
0.006	98	Paved parking, HSG A (PS1)
0.022	98	Roofs, HSG A (PS1)
0.041	30	Woods, Good, HSG A (PS1, PS2, PS3)
0.115	**50**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.115	HSG A	PS1, PS2, PS3
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.115		**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
0.046	0.000	0.000	0.000	0.000	0.046	>75% Grass cover, Good	PS1, PS2, PS3
0.006	0.000	0.000	0.000	0.000	0.006	Paved parking	PS1
0.022	0.000	0.000	0.000	0.000	0.022	Roofs	PS1
0.041	0.000	0.000	0.000	0.000	0.041	Woods, Good	PS1, PS2, PS3
0.115	**0.000**	**0.000**	**0.000**	**0.000**	**0.115**	**TOTAL AREA**	

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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=1.36"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.08 cfs 0.008 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.09"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.000 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=48.65' Storage=80 cf Inflow=0.08 cfs 0.008 af
Discarded=0.01 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.008 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.008 af Average Runoff Depth = 0.81"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac

Summary for Subcatchment PS1: NORTH WEST PORTION OF SITE

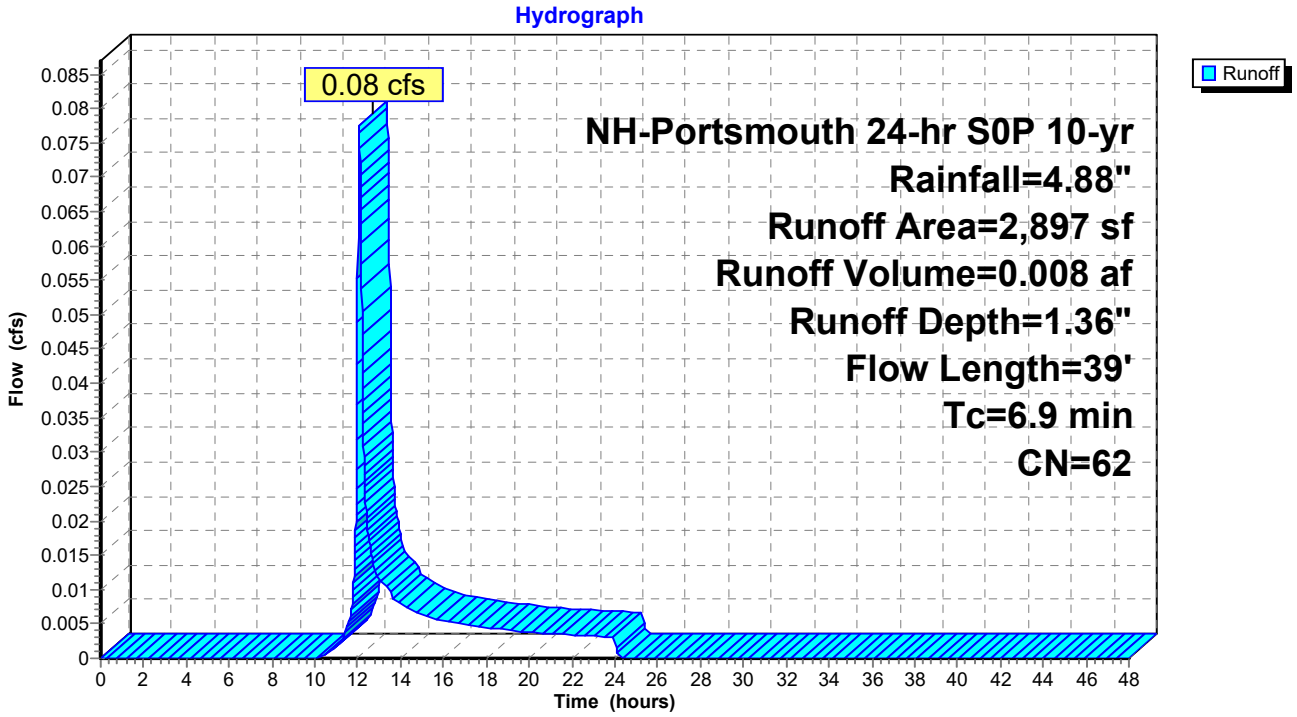
Runoff = 0.08 cfs @ 12.06 hrs, Volume= 0.008 af, Depth= 1.36"
Routed to Pond PP01 : 3'x4' BUILDING DRIP EDGE W/ EXTENDED STORAGE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Portsmouth 24-hr S0P 10-yr Rainfall=4.88"

Area (sf)	CN	Description
1,183	39	>75% Grass cover, Good, HSG A
503	30	Woods, Good, HSG A
265	98	Paved parking, HSG A
946	98	Roofs, HSG A
2,897	62	Weighted Average
1,686		58.20% Pervious Area
1,211		41.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0770	0.09		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	3	0.1330	0.18		**Sheet Flow, First 100' - Grass** Grass: Short n= 0.150 P2= 3.22"
0.0	2	0.0312	0.75		**Sheet Flow, First 100' - Driveway** Smooth surfaces n= 0.011 P2= 3.22"
0.7	4	0.0250	0.10		**Sheet Flow, First 100' - Grass** Grass: Short n= 0.150 P2= 3.22"
2.0	8	0.0500	0.07		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"
0.7	4	0.0250	0.10		**Sheet Flow, First 100' - Grass** Grass: Short n= 0.150 P2= 3.22"
6.9	39	Total			

Subcatchment PS1: NORTH WEST PORTION OF SITE



Summary for Subcatchment PS2: SOUTHERN PORTION OF SITE

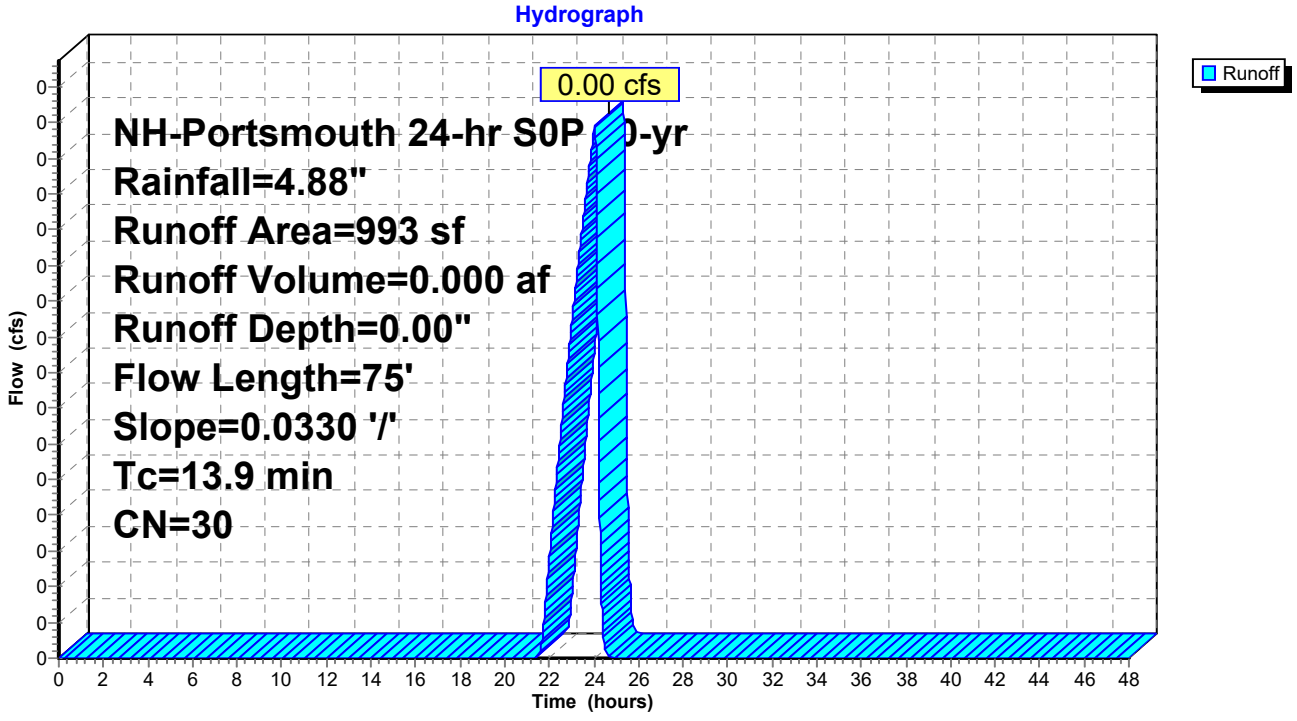
Runoff = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link L200 : MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUTTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Portsmouth 24-hr S0P 10-yr Rainfall=4.88"

Area (sf)	CN	Description
31	39	>75% Grass cover, Good, HSG A
962	30	Woods, Good, HSG A
993	30	Weighted Average
993		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	75	0.0330	0.09		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"

Subcatchment PS2: SOUTHERN PORTION OF SITE



Summary for Subcatchment PS3: NORTH EAST CORNER OF SITE

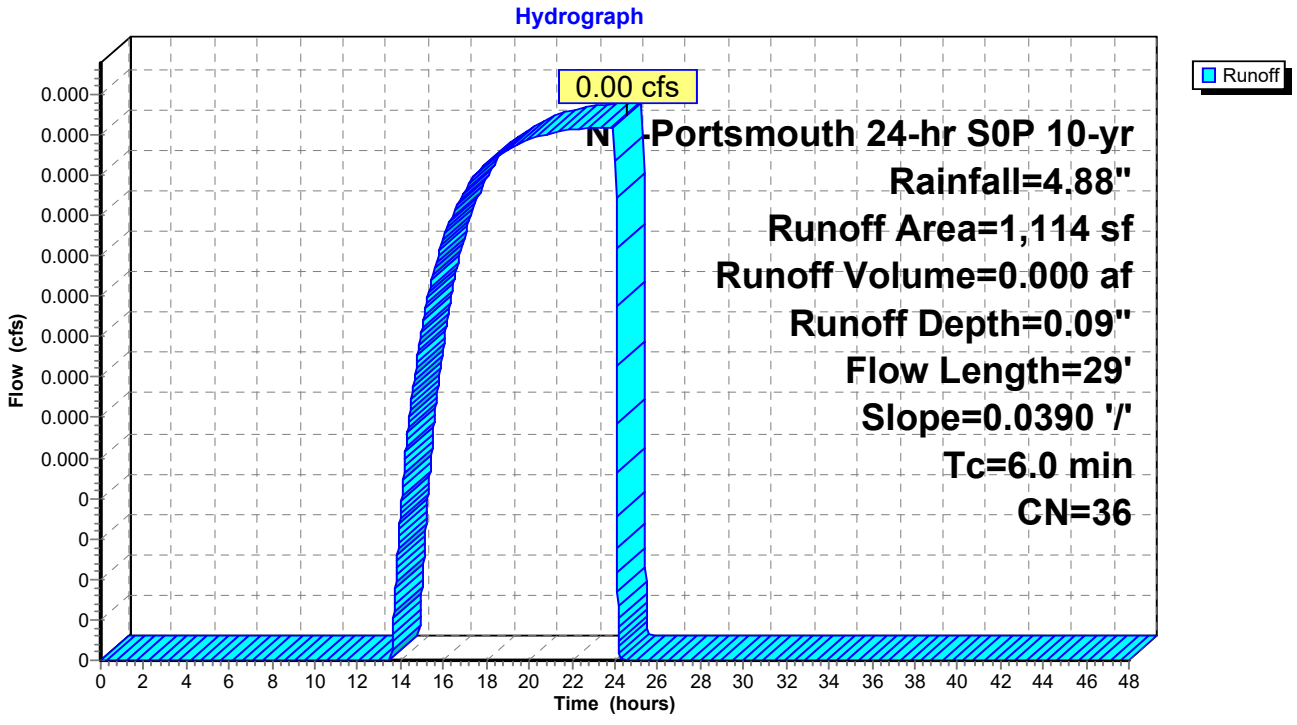
Runoff = 0.00 cfs @ 23.94 hrs, Volume= 0.000 af, Depth= 0.09"
Routed to Link L100 : MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN ABU

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Portsmouth 24-hr S0P 10-yr Rainfall=4.88"

Area (sf)	CN	Description
783	39	>75% Grass cover, Good, HSG A
331	30	Woods, Good, HSG A
1,114	36	Weighted Average
1,114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	23	0.0390	0.08		**Sheet Flow, First 100' - Woods** Woods: Light underbrush n= 0.400 P2= 3.22"
0.8	6	0.0390	0.13		**Sheet Flow, First 100' - Grass** Grass: Short n= 0.150 P2= 3.22"
0.1					**Direct Entry, 6 minutes minimum**
6.0	29	Total			

Subcatchment PS3: NORTH EAST CORNER OF SITE



Summary for Pond PP01: 3'x4' BUILDING DRIP EDGE W/ EXTENDED STORAGE

Inflow Area = 0.067 ac, 41.80% Impervious, Inflow Depth = 1.36" for 10-yr event
Inflow = 0.08 cfs @ 12.06 hrs, Volume= 0.008 af
Outflow = 0.01 cfs @ 11.95 hrs, Volume= 0.008 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.01 cfs @ 11.95 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link L100 : MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN ABU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 48.65' @ 13.57 hrs Surf.Area= 412 sf Storage= 80 cf

Plug-Flow detention time= 68.5 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 68.5 min (988.9 - 920.4)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	494 cf	**3'x4' deep Drip Edge w/ Extended Storage (Prismatic)** Listed below (Recalc 1,648 cf Overall x 30.0% Voids

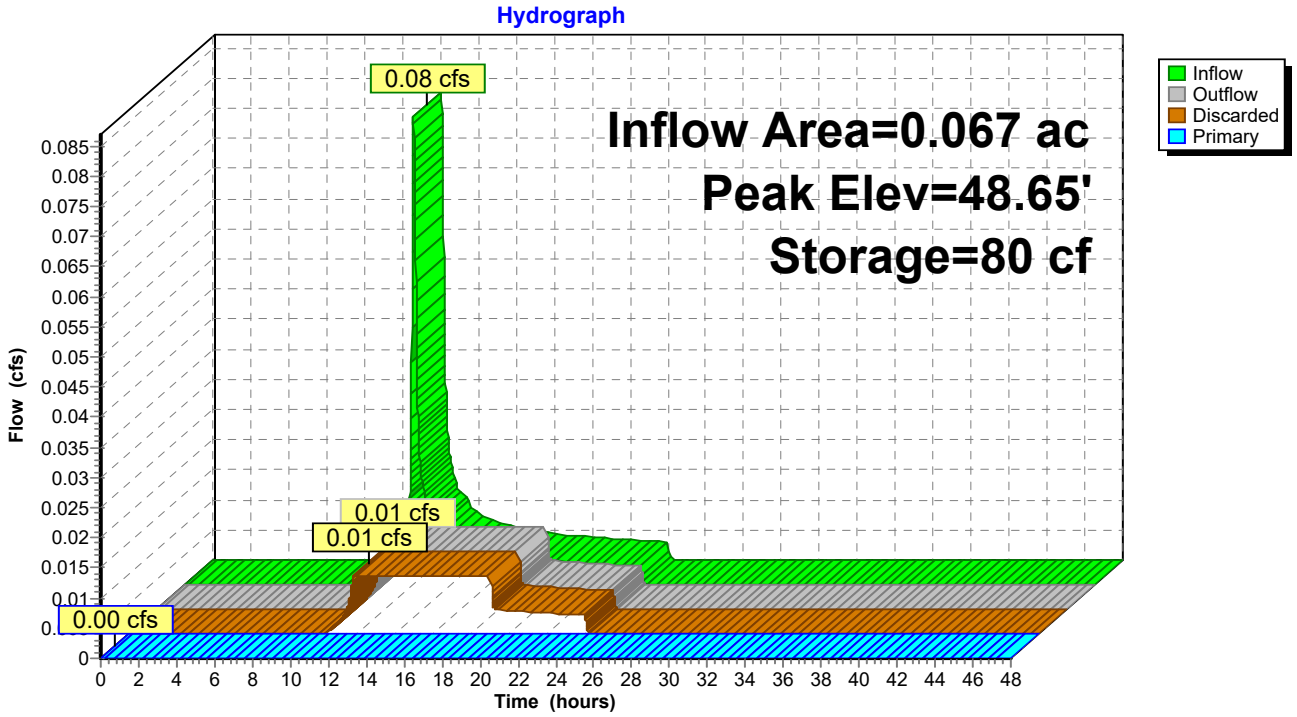
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	412	0	0
52.00	412	1,648	1,648

Device	Routing	Invert	Outlet Devices
#1	Discarded	48.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	51.99'	**35.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.01 cfs @ 11.95 hrs HW=48.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ EXTENDED STORAGE

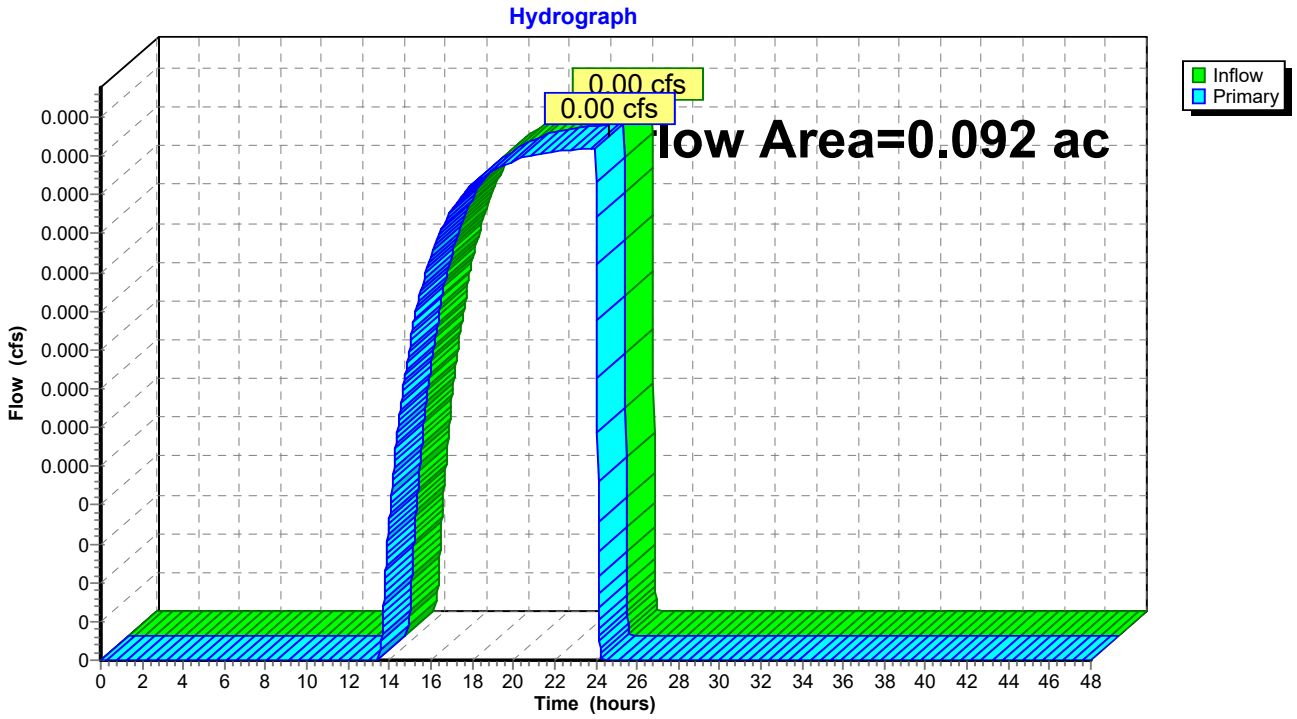


mary for Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN A

Inflow Area = 0.092 ac, 30.19% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.00 cfs @ 23.94 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 23.94 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF TRUST NORTHERN ABUTTI

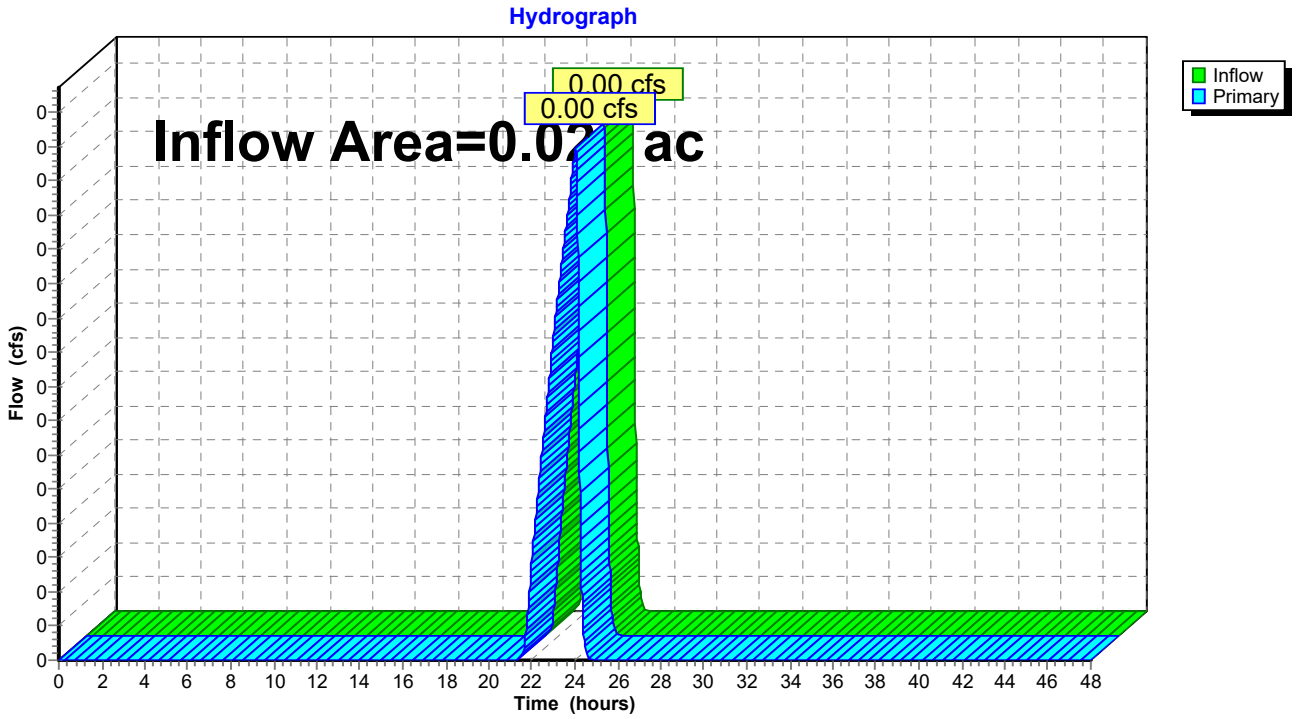


Summary for Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUT

Inflow Area = 0.023 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH EASTERN ABUTTER



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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=0.00"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.00 cfs 0.000 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.000 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=48.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac

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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=0.49"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.02 cfs 0.003 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.000 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=48.08' Storage=10 cf Inflow=0.02 cfs 0.003 af
Discarded=0.01 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.003 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.003 af Average Runoff Depth = 0.28"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac

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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=1.36"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.08 cfs 0.008 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.09"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.000 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=48.65' Storage=80 cf Inflow=0.08 cfs 0.008 af
Discarded=0.01 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.008 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.008 af Average Runoff Depth = 0.81"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac

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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=2.22"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.13 cfs 0.012 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.09"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.34"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.001 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=49.48' Storage=183 cf Inflow=0.13 cfs 0.012 af
Discarded=0.01 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.012 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.013 af Average Runoff Depth = 1.38"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac

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

Subcatchment PS1: NORTH WEST Runoff Area=2,897 sf 41.80% Impervious Runoff Depth=3.11"
Flow Length=39' Tc=6.9 min CN=62 Runoff=0.17 cfs 0.017 af

Subcatchment PS2: SOUTHERN PORTION OF Runoff Area=993 sf 0.00% Impervious Runoff Depth=0.29"
Flow Length=75' Slope=0.0330 '/' Tc=13.9 min CN=30 Runoff=0.00 cfs 0.001 af

Subcatchment PS3: NORTH EAST CORNER Runoff Area=1,114 sf 0.00% Impervious Runoff Depth=0.69"
Flow Length=29' Slope=0.0390 '/' Tc=6.0 min CN=36 Runoff=0.00 cfs 0.001 af

Pond PP01: 3'x4' BUILDING DRIP EDGE W/ Peak Elev=50.57' Storage=317 cf Inflow=0.17 cfs 0.017 af
Discarded=0.01 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.017 af

Link L100: MAP 233 LOT 66 CASSANDRA M. SALTUS DECLARATION OF Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link L200: MAP 233 LOT 65 WILLIAM E. & WHITNEY S. DOOLEY SOUTH Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Total Runoff Area = 0.115 ac Runoff Volume = 0.019 af Average Runoff Depth = 2.01"
75.80% Pervious = 0.087 ac 24.20% Impervious = 0.028 ac