II. OLD BUSINESS

C. The request of **Cynthia Austin Smith and Peter (Owners),** for property located at **9 Kent Street** whereas relief is needed to demolish the existing two-family and construct a single-family dwelling which requires the following: 1) Variances from Section 10.521 to allow a) a lot area and lot area per dwelling of 5,000 square feet where 7,500 square feet is required for each; b) 53% building coverage where 25% is the maximum allowed; c) a 4.5 foot rear yard where 20' is required; d) a 0.5 foot side yard where 10 feet is required; e) a 0 foot front yard where 11 feet is allowed under Section 10.516.10; and f) a 9.5 foot secondary front yard where 13 feet is allowed under Section 10.516.10. 2) A Variance from Section 10.515.14 to allow a 1.5 foot setback for a mechanical unit where 10 feet is required. Said property is located on Assessor Map 113 Lot 42 and lies within the General Residence A (GRA) District. (LU-23-28)

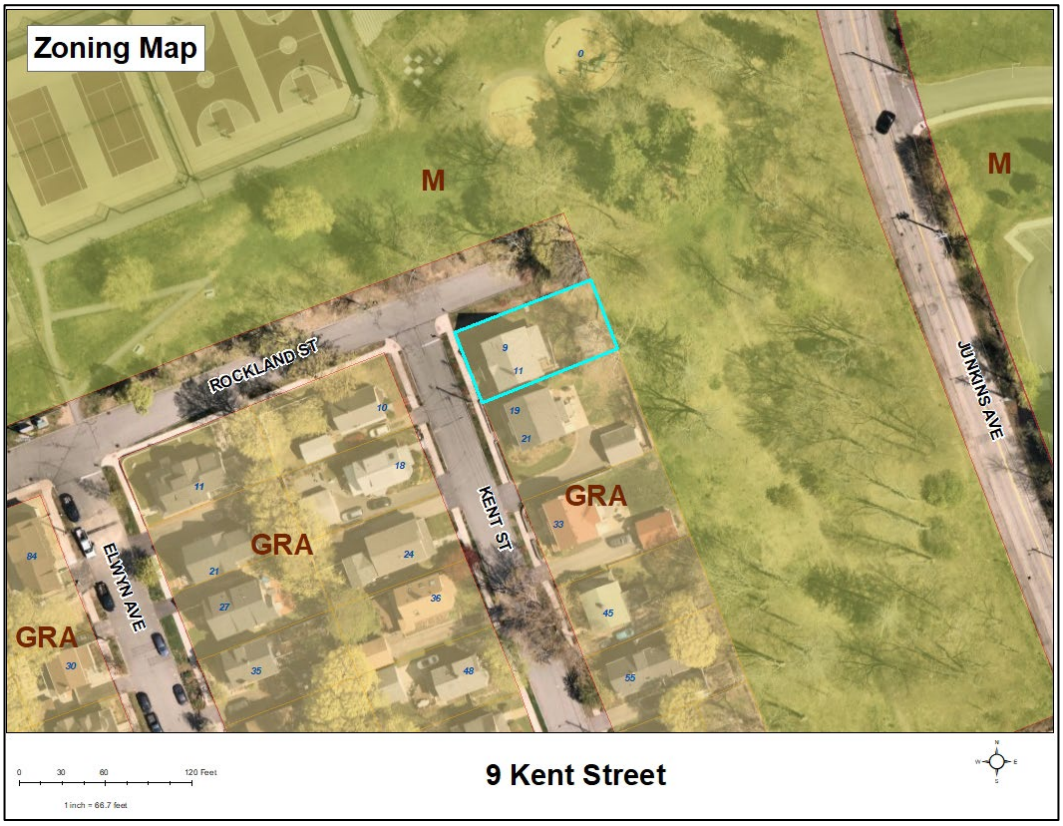
Existing & Proposed Conditions

	Existing	Proposed	Permitted / Required	
Land Use:	Two-family	Demo structure and construct new single unit	Primarily residential	
Lot area (sq. ft.):	5,000	**5,000**	7,500	min.
Lot Area per Dwelling Unit (sq. ft.):	5,000	**5,000**	7,500	min.
Street Frontage (ft.):	50'+	50' +	100	min.
Lot depth (ft.)	100	100	70	min.
Primary Front Yard (ft.):	7	**0**	11 (using front yard averaging in 10.516.10)	min.
Secondary Front Yard (ft.):	16	**9.5**	13 (using front yard averaging in 10.516.10)	min.
Right Yard (ft.):	0.5	**0.5**	10	min.
Rear Yard (ft.):	6	**4.5**	20	min.
Height (ft.):	<35	35	35	max.
Building Coverage (%):	35	**53**	25	max.
Open Space Coverage (%):	63.5	33	30	min.
Parking	0	2 (2 car garage)	2	
Estimated Age of Structure:	1900	Variance request(s) shown in red.		

Other Permits/Approvals Required

- Building Permit

Neighborhood Context



Previous Board of Adjustment Actions

July 19, 1988 – Relief from Zoning Ordinance including:
Variance from Article III, Section 10-302 are requested: a) construction of 4' x 20' rear egress stairs from the second floor to rear yard with 33% building lot coverage in a district where the maximum building lot coverage allowed is 20% and b) construction of said stairs with a 2 ½' right yard where a 10' side yard is the minimum in this district.
The Board voted to **grant** the request as advertised.

Planning Department Comments

The applicant is requesting relief from multiple dimensional standards to demolish the existing structure, construct a single living unit, and add new backyard features.

For this project, the complete demolition of the existing structure creates a vacant lot and will require relief for both the proposed structure dimensions that do not meet zoning and for the non-conforming dimensions of the lot. See Section 10.311 copied below for reference.

> ***10.311*** *Any lot that has less than the minimum lot area or street frontage required by this Ordinance shall be considered to be nonconforming, and no use or structure shall be established on such lot unless the Board of Adjustment has granted a variance from the applicable requirements of this Ordinance.*

At the request of staff, applicant presented the project to the Technical Advisory Committee at a Work session for the review of public infrastructure impacts as they relate to the project.

May 8 Update:
On May 8, 2023 the applicants submitted a revised foundation plan after receiving imput from the abutter. The changes are summarized in the letter dated May 10, 2023 from Jennifer Ramsay and are as follows: the right side of the structure will be 3 feet narrower on the basement level, the new building will be the same in every other aspect and dimension.

Variance Review Criteria

This application must meet all five of the statutory tests for a **variance** (see Section 10.233 of the Zoning Ordinance):

1. *Granting the variance would not be contrary to the public interest.*
2. *Granting the variance would observe the spirit of the Ordinance.*
3. *Granting the variance would do substantial justice.*
4. *Granting the variance would not diminish the values of surrounding properties.*
5. *The "unnecessary hardship" test:*
   (a) The property has special conditions that distinguish it from other properties in the area.
   AND
   (b) Owing to these special conditions, a fair and substantial relationship does not exist between the general public purposes of the Ordinance provision and the specific application of that provision to the property; and the proposed use is a reasonable one.
   OR

Owing to these special conditions, the property cannot be reasonably used in strict conformance with the Ordinance, and a variance is therefore necessary to enable a reasonable use of it.

10.235 Certain Representations Deemed Conditions

Representations made at public hearings or materials submitted to the Board by an applicant for a special exception or variance concerning features of proposed buildings, structures, parking or uses which are subject to regulations pursuant to Subsection 10.232 or 10.233 shall be deemed conditions upon such special exception or variance.

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

March 1, 2023

HAND DELIVERED

Peter Stith, Principal Planner
Portsmouth City Hall
1 Junkins Avenue
Portsmouth, NH 03801

Re: Peter Smith & Cynthia Austin Smith, Owners/Applicants
9 Kent Street
Tax Map 113/Lot 42

Dear Mr. Stith & Zoning Board Members:

On behalf of Peter Smith and Cynthia Austin Smith, Owners/Applicants, enclosed please find the following in support of a request for zoning relief:

- Digital Application submitted via Viewpoint earlier today.
- Owner Authorization.
- 3/1/2023 – Memorandum and exhibits in support of variance application.

We look forward to presenting this application to the Zoning Board at its March 21, 2023 meeting.

Very truly yours,

R. Timothy Phoenix
Monica F. Kieser

Encl.

cc: Peter Smith & Cynthia Austin Smith
John Chagnon, Ambit Engineering, Inc. (email)
Jennifer Ramsey, Somma Studios (email)
Robbi Woodburn, Woodburn & Associates (email)

OWNER'S AUTHORIZATION

We, Peter Smith and Cynthia Austin Smith, Owners/Applicants of 9 Kent Street, Tax Map 113/Lot 42, 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: Peter Smith

Date: Cynthia Austin Smith

MEMORANDUM

TO: Portsmouth Zoning Board of Adjustment ("ZBA")
FROM: R. Timothy Phoenix, Esquire
Monica F. Kieser, Esquire
DATE: March 1, 2023
RE: Owners/Applicants: Peter Smith & Cynthia Austin Smith
Property: 9 Kent Street
Tax Map 113, Lot 42
General Residence District

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

On behalf of Owners/Applicants Peter Smith & Cynthia Austin Smith ("Smith"), we are pleased to submit this Memorandum and exhibits in support of the requested variances from the Portsmouth Zoning Ordinance ("PZO" or "Ordinance").

I. EXHIBITS

A. Redevelopment Plan Set – Ambit Engineering, Somma Studios, Woodburn & Associates
B. Average Grade Exhibit – Ambit Engineering, Inc.
C. Front Setback Exhibit – Ambit Engineering, Inc
D. Stormwater Report – Ambit Engineering, Inc.
E. Renderings – Tangram.
F. Site Photographs.
    - Satellite Views
    - Kent Street & Rockland Street Views
G. Tax Map 113.

II. PROPERTY/PROJECT

9 Kent Street is a 5,000 s.f. (50 ft. wide and 100 ft. deep) corner lot in the General Residence District containing a side-by-side duplex (1,075 s.f.), deck and porch (together 315 s.f.) and one car garage (296 s.f.), but no driveway or off street parking (the "Property"). The home, AC unit, and garage are in the right side yard setback, the garage is in the rear yard setback, and a portion of the existing front deck is slightly within the front yard setback. Smith intends to raze the existing two-family home in favor of a contemporary take on a single-family New Englander (1,353 s.f.) with a lower level garage accessed from Rockland, front/rear porches, and a pervious outdoor living area surrounded by a landscape wall (the "Project"). The outdoor living area an above-grade pervious patio, soaking pool, and pergola. The Project is accompanied by robust landscaping and screening, as well as implementation of a stormwater management system supported by a drainage analysis.

At the outset, Smith engaged their southerly neighbors ("Mikolaites") to discuss their proposed plans, specifically, the interplay between Smith's proposed landscape wall, the installation, and Mikolaites' fence along their mutual boundary. Smith's team also reviewed the Project on two separate occasions with City Staff. At Staff's suggestion, Smith's Engineer sought a work session with the Technical Advisory Committee ("TAC") to discuss the curb cut on Rockland Street, drainage and other aspects of the redevelopment proposal. The latest plan set incorporates feedback received from TAC. In addition, Woodburn & Associates met with the City's Trees and Greenery Committee to review landscaping elements.

After consideration, City Staff have determined that dimensional relief is required for lot area, lot size/dwelling unit, building coverage, and elements within the principal front on Kent, secondary front on Rockland, side, and rear yard setbacks. Notably, the building coverage percentage sought includes the outdoor living area, because Staff have applied the recent zoning amendments related to calculation of building height, which calculates building height in relation to existing average existing grade around the patio. Because the proposed pervious patio is 18 inches above existing grade to provide infiltration and accommodate drainage infrastructure, it is considered a structure for purposes of building coverage calculations. Similarly, any area in the front/side and rear yards where the height of the landscaping wall or pool fencing exceeds 4 feet/6 feet from existing grade, relief from yard setback regulations is required.

III. ADDITIONAL PERMITS REQUIRED

- Demolition Permit – ZBA Application will serve this purpose.
- Driveway Permit
- Stormwater Permit
- Building Permit

[RELIEF CHART FOLLOWS]

III. RELIEF REQUIRED

Variance Section/Requirement	Existing	Proposed
PZO §10.520/Table §10.521: Dimensional Standards 7,500 s.f. Lot area 7,500 s.f. Lot area/dwelling unit	5,000 s.f. 2,500 s.f./dwelling	No change to lot size 5,000 s.f./dwelling (improved)
PZO §10.520/Table §10.521: Dimensional Standards 10' Front Yard Kent St.[1] 13' Front Yard Rockland St.[2]	Kent: 7.5' (steps) 9.2' (front deck) 17.3' (house) Rockland: 15.7' (house)	Kent: 0' (landscape wall) 6.5' (steps) 9.3' (porch) 14.3' (house) Rockland: 1.0' (landscape wall) 12.5' (steps) 9.7' (overhang) 15.3' (house)
PZO §10.520/Table §10.521: Dimensional Standards 10' Side Yard	0.7' (house) 1.7' (garage)	0.6' (house) 0.5' (landscape wall/pergola) 1.5' (AC unit) 11.5' (pool equipment pad)
PZO §10.520/Table §10.521: Dimensional Standards 20' Rear Yard[3]	5.6' (garage)	4.5' (landscape wall) 4.5' (6 ft. privacy fence/pool)[4] 10.3' (pool equipment pad)
PZO §10.520/Table §10.521: Dimensional Standards 25% Building Coverage	35%	53% (includes pervious patio 18" above grade)

[1] In accordance with PZO §10.516, 11 ft. is the average front setback derived from lots within 200 ft. on the east side of Kent Street.
[2] In accordance with PZO §10.516, 13 ft. is the average front setback derived from lots within 200 ft. on the south side of Rockland Street.
[3] Staff has differing opinions about whether easterly lot line is a rear lot line, or a side lot line (given the two front yards). We request relief from the more stringent requirement in an abundance of caution.
[4] Relief is requested for the fence because it will be 6ft. above the patio which is elevated above average grade.

IV. 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 Project proposes a permitted single family home where a duplex presently exists, so redevelopment is more conforming compared to existing conditions.
2. The intensity of land use, including lot sizes, building coverage, building height and bulk, yards and open space – The lot is nonconforming as to lot size, density, building coverage, and yards. The Project decreases density by removing one dwelling unit and reconstructs a new home, AC unit and landscaping elements with yard setbacks similar to what exists today.
3. The design of facilities for vehicular access, circulation, parking and loading – No driveway presently exists, a driveway from Rockland will connect to a below grade garage.
4. The impacts on properties of outdoor lighting, noise, vibration, stormwater runoff and flooding – The Project utilizes pervious materials and a Stormwater Management Plan supported by drainage calculations to ensure there is no increase in stormwater runoff. TAC has reviewed the Project and feedback received from TAC informs the current design.
5. The preservation and enhancement of the visual environment – The Project will replace an aging duplex with a tasteful new home and beautiful landscaping/screening.
6. The preservation of historic districts, and buildings and structures of historic or architectural interest – The Property is outside Historic District.
7. The protection of natural resources, including groundwater, surface water, wetlands, wildlife habitat and air quality – Redevelopment of the Property has no impact compared to existing conditions.

Based upon the foregoing, then 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 intent of the GRA District is to provide single-family, two-family, or multi-family homes in moderate to high densities (5-12 units/acre) with appropriate accessory uses. The Property is located in thickly settled area of the City. The Project's tasteful single-family home decreases density and provides interior parking, while also affording Smith a secluded outdoor living area surrounded by trees and shrubs. In conjunction with robust plantings, the Project's Stormwater Management Plan ensures stormwater is treated on the lot. Accordingly, granting each requested variance will neither "alter the essential character of the locality," nor "threaten the public health, safety or welfare."

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

The Project replaces an aging duplex and garage with a tastefully designed single-family home essentially matching the existing yard setbacks, while the defined outdoor living space was developed in consultation with the immediate abutters. Front setback relief is minimal and elements within the rear yard setback will be screened from view by a row of evergreens. In light of these factors, granting the requested variances will not diminish surrounding property values.

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

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

The Property is small and narrow, with its northeasterly corner sloping toward South Mill Playground; it has no driveway. Although a corner lot, access for a driveway is limited on the Rockland Street side because the public way is not completely paved. These circumstances combine to create special conditions.

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

Lot area, density limits, and building coverage requirements prevent overburdening of the land and overcrowding. Yard setback requirements provide sightlines, promote adequate air, light, space, separation between neighbors and, in conjunction with coverage requirements, ensure adequate space for stormwater treatment. The Project decreases density compared to existing conditions and replaces the existing duplex with a single-family home in a similar location. The outdoor living space is screened by a wall and evergreens and comprised of pervious materials. The Project's drainage analysis and Stormwater Management Plan ensure no increase in stormwater runoff. Accordingly, there is no fair and substantial relationship between the general public purposes of the PZO and its specific application in this instance.

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 GRA Zone. The Project decreases density and tastefully redevelops an existing lot of record. Accordingly, the proposed use is reasonable and denial of the requested variances would create an unnecessary hardship.

5. Substantial justice will be done by granting the variance.

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.

Applicant is constitutionally entitled to the use of the lot as they see fit; including redevelopment of the Property for a permitted single-family home with an incorporated garage, subject only to its effect on density, coverage requirements, and yard setbacks. "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.

Granting the requested variances allows for tasteful redevelopment of an existing lot of record in a manner consistent with the surrounding area. Given that the Project's home and patio/pergola match existing yard setbacks; the front relief is slight; the rear yard includes a screen of evergreen trees; and stormwater is infiltrated into the pervious patio, there is no benefit to the public from denial. Conversely, Smith will be greatly harmed by denial as they will lose the opportunity to redevelop the Property as desired. Accordingly, there is no benefit to the public that outweighs the harm to the owner from denial.

VI. CONCLUSION

For all the reasons stated, Smith respectfully requests that the Portsmouth Zoning Board of Adjustment grant each variance.

Respectfully submitted,
Peter Smith & Cynthia Austin Smith

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

SOMMA
36 Maplewood Ave
Portsmouth, NH
03801

P. 603.766.3760

Date: May 8, 2023

To: City of Portsmouth Planning Department

RE: Zoning Board of Adjustments Submission Updates to 9 Kent Street

This brief is to explain the changes submit on May 8, 2023 for consideration at the Zoning Board of Adjustments hearing on May 16, 2023.

The proposed right-side foundation wall has been moved in 36" from its original location.
Above grade, no changes from our original submission will be evident.
This change was made in order to alleviate abutter concerns of below grade construction at the property line.

Thank you,
Jennifer Ramsey
SOMMA Studios

STRUCTURE REPLACEMENT

SMITH RESIDENCE

9 - 11 KENT STREET, PORTSMOUTH, NEW HAMPSHIRE

PERMIT PLANS

Exhibit A

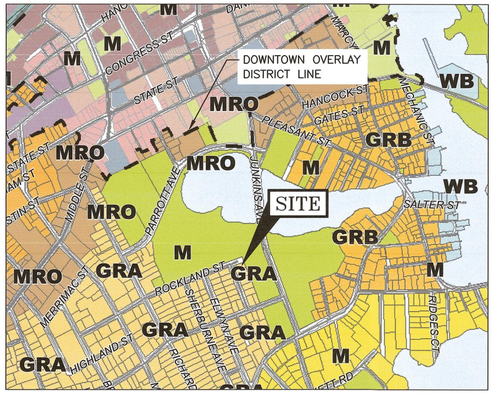
OWNER & APPLICANT:
CYNTHIA AUSTIN SMITH &
PETER SMITH
9 KENT STREET
PORTSMOUTH, NH 03801
(617) 803-2109

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
TEL. (603) 430-9282
FAX (603) 436-2315

ATTORNEY:
HOEFLE, PHOENIX, GORMLEY &
ROBERTS, PLLC
127 PARROTT AVENUE
PORTSMOUTH, NH 03801
TEL. (603) 436-0666
FAX (603) 431-0879

LANDSCAPE ARCHITECT:
WOODBURN & COMPANY LANDSCAPE
ARCHITECTURE, LLC
103 KENT PLACE
NEWMARKET, N.H. 03857
TEL. (603) 659-5949
FAX (603) 659-5939

ARCHITECT:
SOMMA STUDIOS
30 MAPLEWOOD AVENUE
PORTSMOUTH NH 03801
TEL. (617) 766-3760
FAX (617) 766-3761

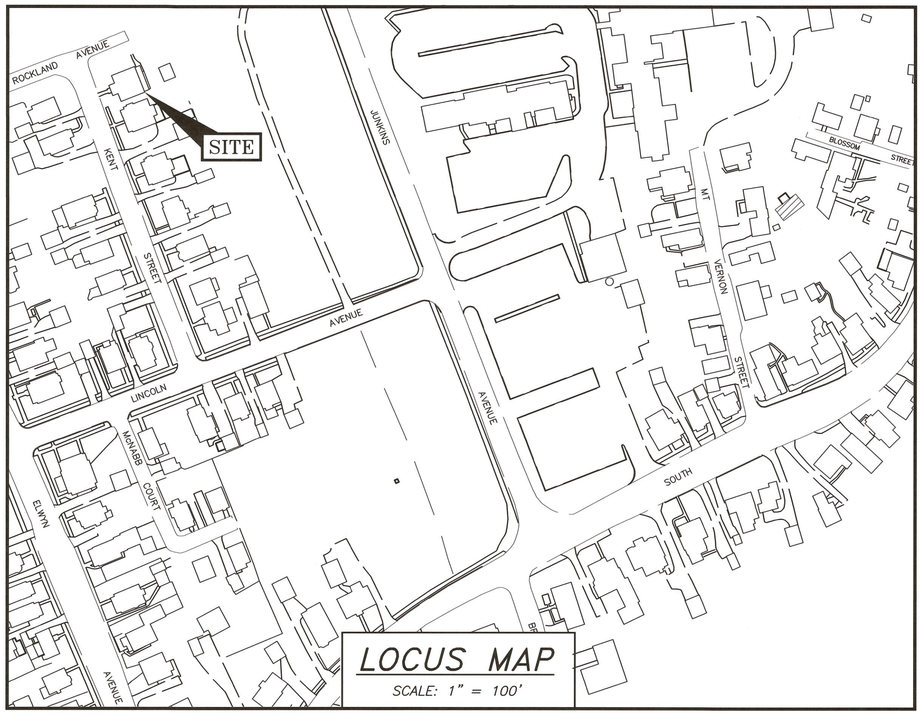


Legend

Character Districts
Character-Based Zoning Area
(Refer to Zoning Map Sheet 2 of 2 Character Districts Regulating Plan)

Residential Districts

R	Rural
SRA	Single Residence A
SRB	Single Residence B
GRA	General Residence A
GRB	General Residence B
GRC	General Residence C
GA/MH	Garden Apartment/Mobile Home Park



PERMIT LIST:
PORTSMOUTH ZONING BOARD: PENDING
PORTSMOUTH DRIVEWAY PERMIT: PENDING
PORTSMOUTH TREES AND GREENERY: PENDING

LEGEND:

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
UGE	UGE	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
	UD	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

DIG SAFE
MA – ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE

INDEX OF SHEETS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436-7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427-1530
ATTN: JIM TOW

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294-5144
ATTN: DAVE BEAULIEU

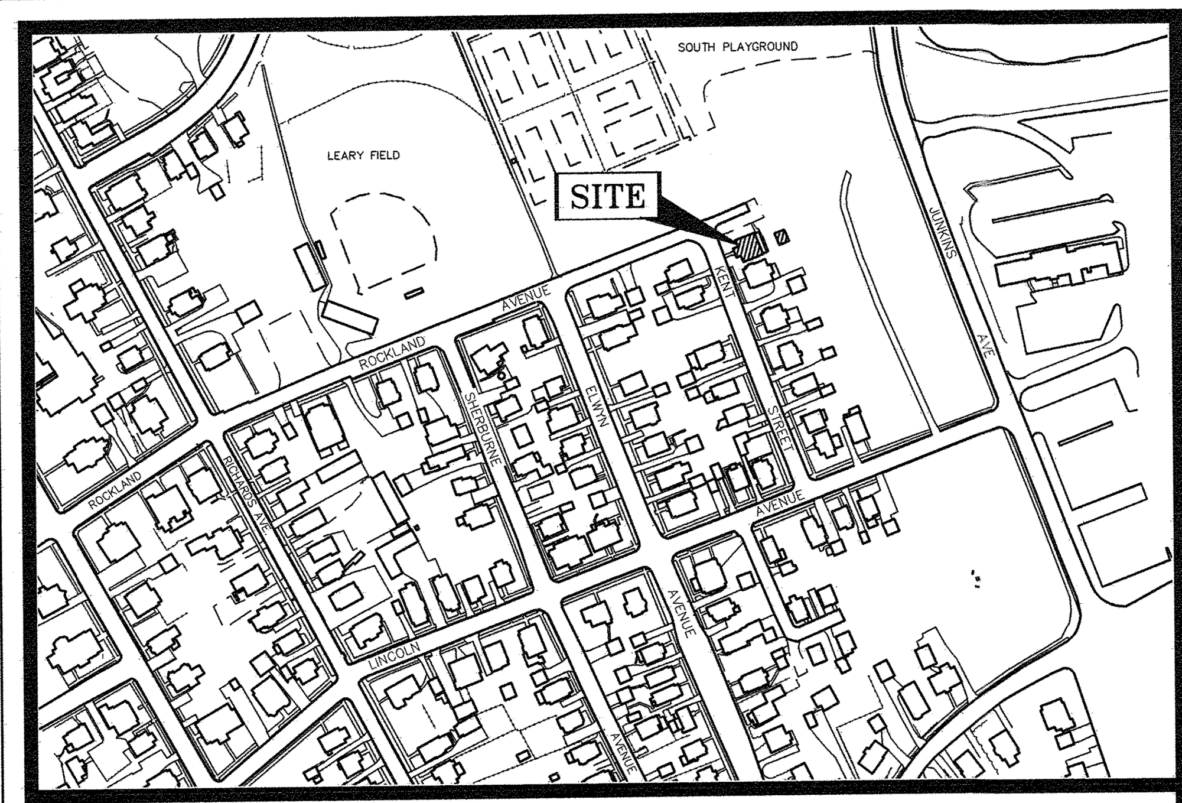
COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427-5525

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679-5695 (X1037)
ATTN: MIKE COLLINS

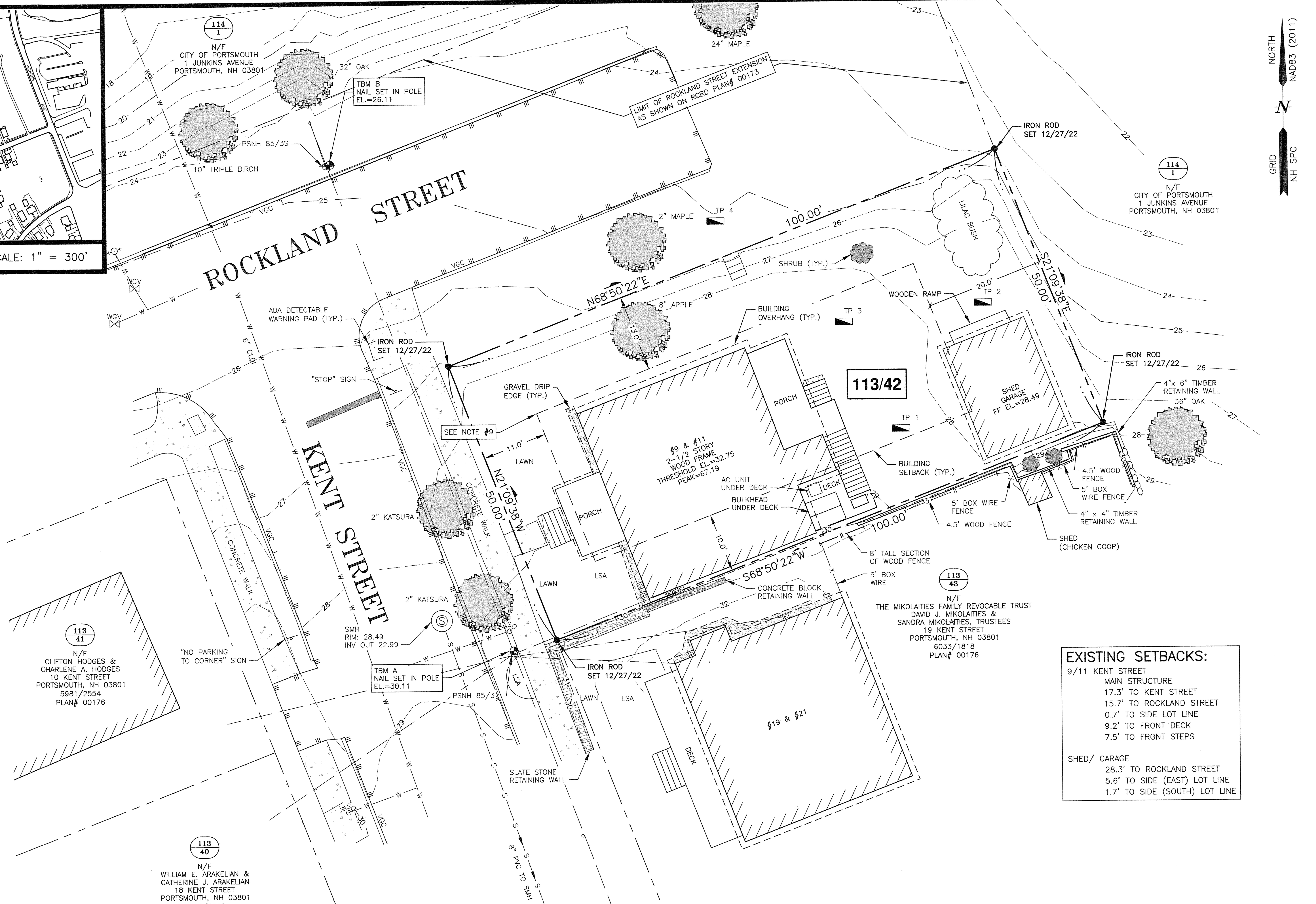
STRUCTURE REPLACEMENT
SMITH RESIDENCE
9 - 11 KENT STREET
PORTSMOUTH, N.H.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 8 MAY 2023



LOCATION MAP SCALE: 1" = 300'



LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/21	MAP 11 / LOT 21
	BOUNDARY
	SETBACK
	RAILROAD SPIKE FOUND/SET
	IRON ROD/ PIPE FOUND
	DRILL HOLE FOUND/SET
S	SEWER LINE
G	GAS LINE
D	STORM DRAIN
W	WATER LINE
	OVERHEAD ELECTRIC/WIRES
100	CONTOUR
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT (EP)
	WOODS / TREE LINE
	UTILITY POLE (w/ GUY)
	GAS SHUT OFF
	WATER SHUT OFF/CURB STOP
GV	GATE VALVE
	HYDRANT
E	METER (GAS, WATER, ELECTRIC)
S	SEWER MANHOLE
	SIGNS
EL.	ELEVATION
FF	FINISHED FLOOR
TBM	TEMPORARY BENCHMARK
TYP.	TYPICAL
VGC	VERTICAL GRANITE CURB
CCB	CAPE COD BERM
LSA	LANDSCAPED AREA

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND OWNED BY ALFRED L. ELWYN PORTSMOUTH N.H. COMPILED FROM A SURVEY MADE 1899 BY A.C. HOYT C.E. RCRD PLAN# 00176.

2) STANDARD BOUNDARY SURVEY TAX MAP 113 – LOT 45 OWNER: MICHAEL T. ROCHE & SUSAN L. JAVUREK, PROPERTY LOCATED AT 45 KENT STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1" = 10', DATED: MAY 2002, NOT RECORDED

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

2.7.23

JOHN R. CHAGNON, LLS #738 DATE

STATE OF NEW HAMPSHIRE No. 738 JOHN R. CHAGNON LICENSED LAND SURVEYOR

GRAPHIC SCALE
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

TEST PIT #1

Date:	11/3/22
Logged by:	STEVEN D. RIKER
ESHWT:	34"
Observed Water:	NONE
Restrictive layer:	NONE
REFUSAL:	NONE TO 66"
Percolation rate:	10 min./inch

DEPTH	DESCRIPTION
0" – 8"	10 YR 3/2 FINE SANDY LOAM, GRANULAR, FRIABLE
0" – 21"	10 YR 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE
21" – 34"	ASH LAYER
34" – 53"	10 YR 3/4 FINE SANDY LOAM, GRANULAR, FRIABLE
53" – 61"	10 YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE
61" – 66"	2.5 YR 5/4 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT #2

Date:	11/3/22
Logged by:	STEVEN D. RIKER
ESHWT:	57"
Observed Water:	NONE
Restrictive layer:	NONE
REFUSAL:	NONE TO 75"
Percolation rate:	10 min./inch

DEPTH	DESCRIPTION
0" – 6"	10 YR 3/3 FINE SANDY LOAM, GRANULAR, FRIABLE
6" – 26"	10 YR 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE
26" – 57"	ASH LAYER
57" – 75"	10 YR 5/4 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT #3

Date:	11/3/22
Logged by:	STEVEN D. RIKER
ESHWT:	55"
Observed Water:	NONE
Restrictive layer:	NONE
REFUSAL:	NONE TO 75"
Percolation rate:	10 min./inch

DEPTH	DESCRIPTION
0" – 37"	10 YR 3/3 FINE SANDY LOAM, GRANULAR, FRIABLE
37" – 55"	ASH LAYER
55" – 75"	10 YR 5/4 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT #4

Date:	11/3/22
Logged by:	STEVEN D. RIKER
ESHWT:	56"
Observed Water:	NONE
Restrictive layer:	PAN AT 56"
REFUSAL:	NONE TO 56"
Percolation rate:	10 min./inch

DEPTH	DESCRIPTION
0" – 5"	10 YR 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE
5" – 18"	ASH LAYER
18" – 27"	10 YR 4/4 FINE SANDY LOAM, GRANULAR, FRIABLE
27" – 56"	2.5 YR 4/4 FINE SANDY LOAM, GRANULAR, FRIABLE
56" – 71"	2.5 YR 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE

EXISTING SETBACKS:

9/11 KENT STREET
MAIN STRUCTURE
17.3' TO KENT STREET
15.7' TO ROCKLAND STREET
0.7' TO SIDE LOT LINE
9.2' TO FRONT DECK
7.5' TO FRONT STEPS

SHED/ GARAGE
28.3' TO ROCKLAND STREET
5.6' TO SIDE (EAST) LOT LINE
1.7' TO SIDE (SOUTH) LOT LINE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 113 AS LOT 42.

2) OWNERS OF RECORD:
CYNTHIA AUSTIN SMITH &
PETER SMITH
9 KENT STREET
PORTSMOUTH, NH 03801
6358/448
PLAN# 00176

3) PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259F, DATED 1/29/2021.

4) EXISTING LOT AREA:
5,000 S.F.
0.1148 ACRES

5) PARCEL IS LOCATED IN THE GENERAL RESIDENCE A (GRA) DISTRICT.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	7,500 S.F.
FRONTAGE:	100 FEET
SETBACKS: FRONT:	15 FEET
SIDE:	10 FEET
REAR:	20 FEET
MAXIMUM STRUCTURE HEIGHT:	35 FEET
MAXIMUM BUILDING COVERAGE:	25%
MINIMUM OPEN SPACE:	30%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY OF ASSESSOR'S MAP 113, LOT 42 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

9) IN ACCORDANCE WITH THE PORTSMOUTH ZONING ORDINANCE, ARTICLE 5, SECTION 10.516 FRONT YARD EXCEPTION FOR EXISTING ALIGNMENTS: THE AVERAGE FRONT SETBACK FOR LOT 113/42 ON KENT STREET IS 10' AND AVERAGE FRONT SETBACK ON ROCKLAND STREET IS 13'. MEASUREMENT TO STRUCTURES 18" ABOVE GRADE.

NO.	DESCRIPTION	DATE
3	ISSUED FOR APPROVAL	2/7/23
2	MONUMENTS SET	12/27/22
1	TEST PIT INFORMATION	11/10/22
0	ISSUED FOR COMMENT	7/13/22

REVISIONS

STANDARD BOUNDARY & TOPOGRAPHIC SURVEY TAX MAP 113 – LOT 42

OWNER:
CYNTHIA AUSTIN SMITH & PETER SMITH
9-11 KENT STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 10' JUNE 2022

FB 301 PG 45 3492

DEMOLITION NOTES

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE.

I) ALL WORK WITHIN THE CITY OF PORTSMOUTH RIGHT OF WAY SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS (DPW).

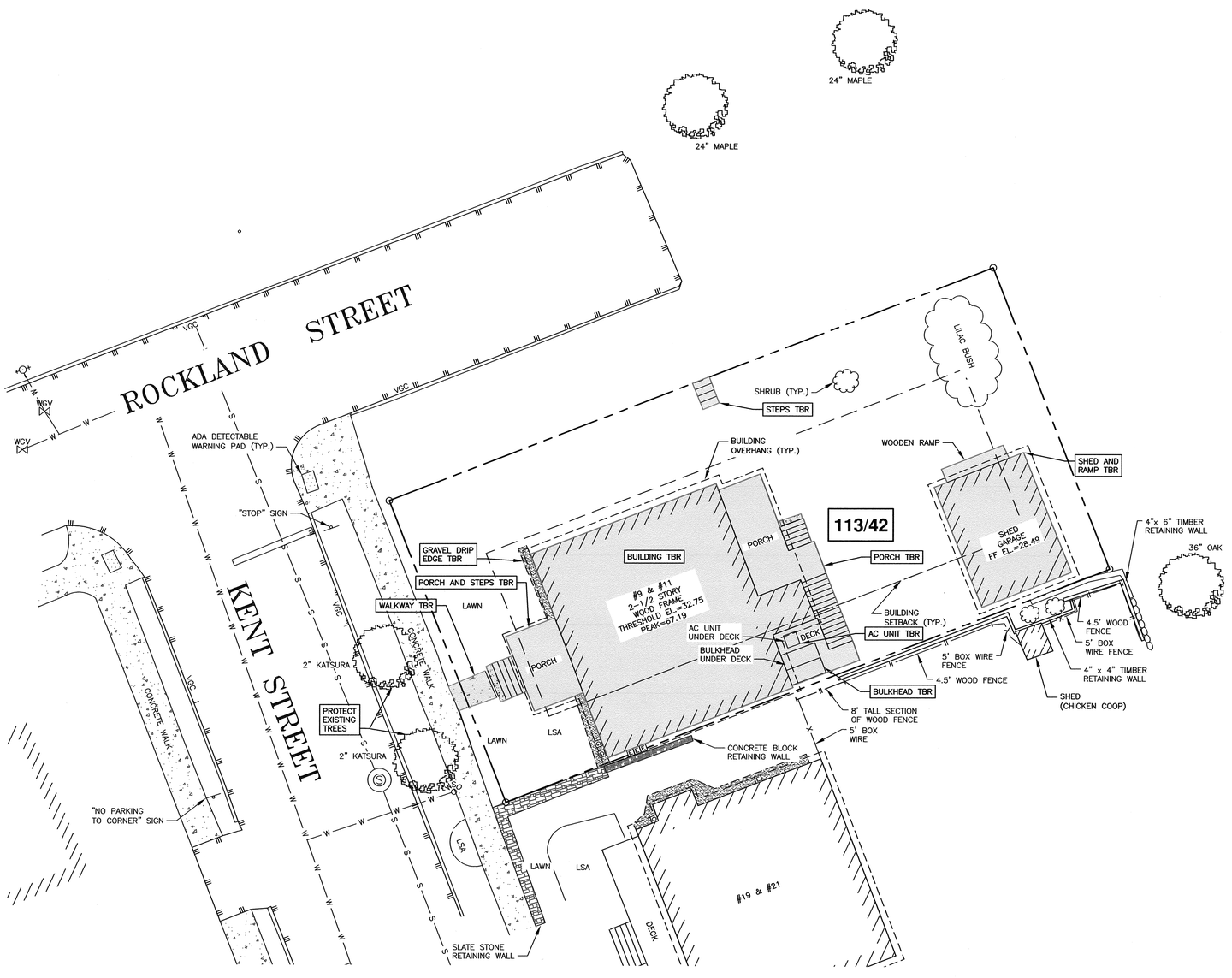
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A NH LICENSED LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH NHDES REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	2/7/23

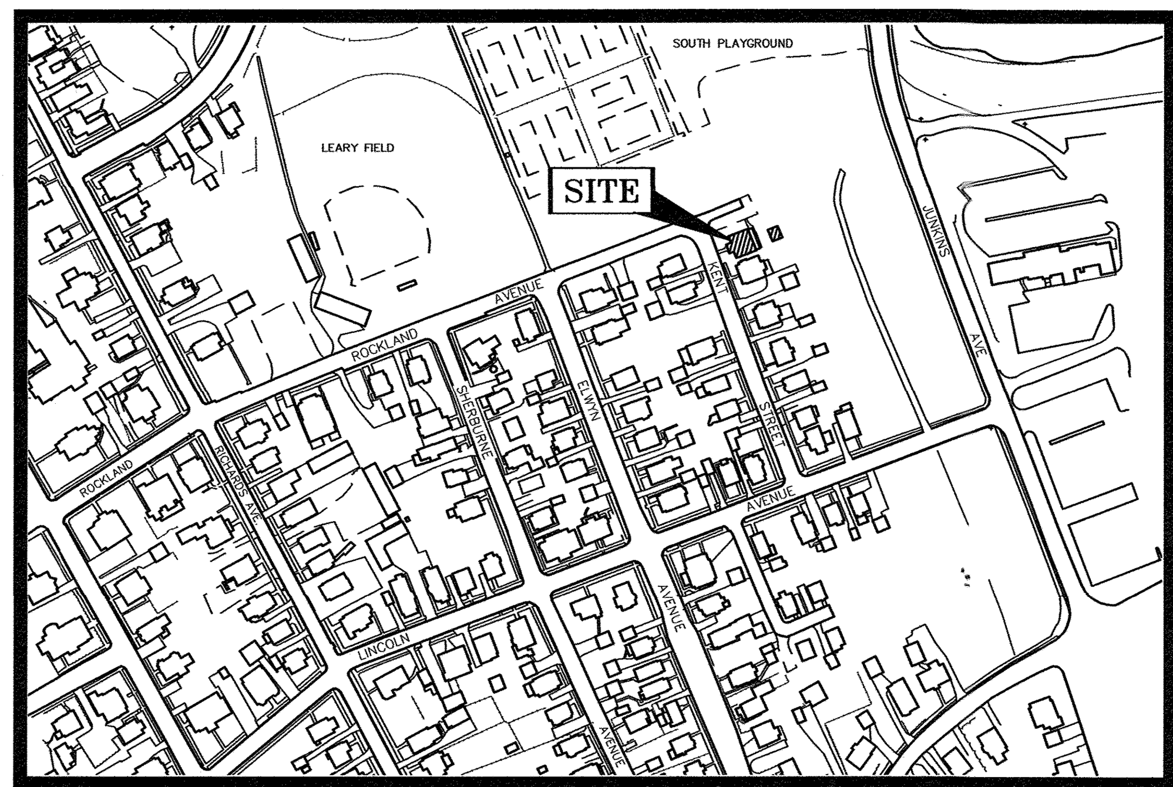
REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 10' FEBRUARY 2023

DEMO PLAN C1

FB 301 PG 45 3492



LOCATION MAP SCALE: 1" = 300'

PROPOSED SETBACKS:

9 & 11 KENT STREET
MAIN STRUCTURE
14.3' TO KENT STREET
9.7' TO ROCKLAND STREET
0.6' TO SIDE (SOUTH) LOT LINE
9.3' TO FRONT PORCH
6.5' TO FRONT (KENT) STEPS
12.5' TO SIDE (ROCKLAND) STEPS

LANDSCAPE WALL:
1.0' TO ROCKLAND STREET
0' TO KENT STREET
4.5' TO SIDE (EAST) LOT LINE
0.5' TO SIDE (SOUTH) LOT LINE

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	1,075	1,353
GARAGE/SHED	296	0
PORCHES/DECKS	315	458
STAIRS/RAMP/LANDINGS	111	205
CONCRETE PADS	27	28
DRIVEWAY	0	297
POOL FRAME WALL	0	37
RETAINING WALLS	0	303
668 S.F. TERRACE	0	668
EXTENDED ROOF OVERHANG	0	66
TOTAL	1,824	3,415
LOT SIZE	5,000	5,000
% LOT COVERAGE	36.5%	68.3%

EXISTING BUILDING COVERAGE:

MAIN STRUCTURE	1,075 S.F.
GARAGE/SHED	296 S.F.
PORCH/DECKS	315 S.F.
STEPS OVER 18" AG	
FRONT PORCH STEPS	9 S.F.
BACK PORCH/DECK STEPS	52 S.F.
TOTAL	1,747 S.F.

BUILDING COVERAGE: 1,747/5000 = 35%

PROPOSED BUILDING COVERAGE:

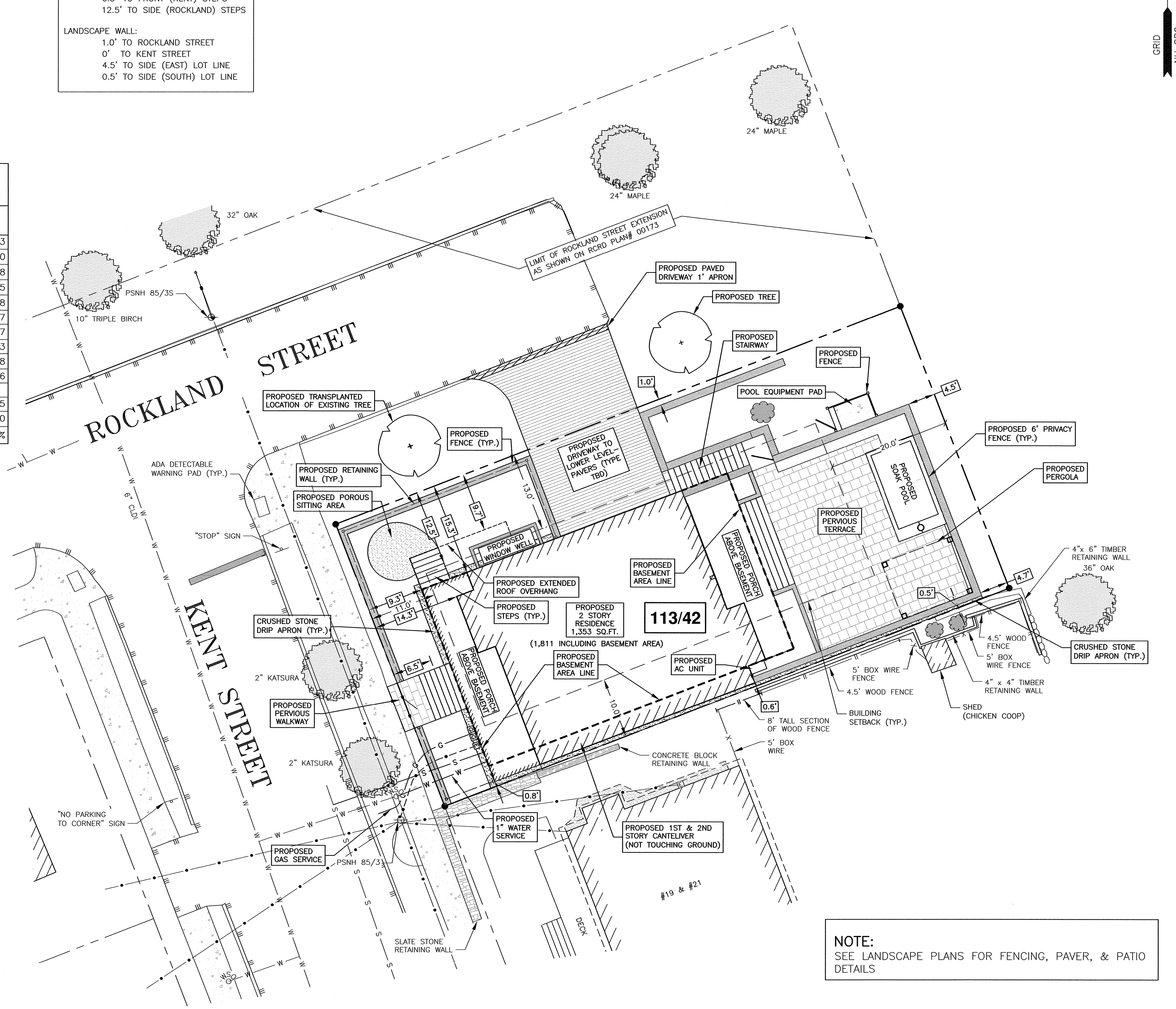
MAIN STRUCTURE	1,353 S.F.
PORCH/PATIOS	458 S.F.
STEPS OVER 18" AG	
FRONT PORCH STEPS	22 S.F.
SIDE PORCH STEPS	13 S.F.
STEPS ON PATIO	62 S.F.
STAIRWAY	60 S.F.
PERVIOUS TERRACE AREA	668 S.F. (INCLUDING PERGOLA FRAME)
POOL EQUIPMENT AREA	24 S.F.
TOTAL	2,660 S.F.

BUILDING COVERAGE: 2,660/5000 = 53%

PROPOSED OPEN SPACE CALCULATION:

MAIN STRUCTURE	1,353 S.F.
PORCH'S	458 S.F.
STAIRS/STEPS	205 S.F.
CONCRETE PADS	28 S.F.
DRIVEWAY	297 S.F.
POOL FRAME WALL	37 S.F.
RETAINING WALLS	303 S.F.
PERVIOUS TERRACE AREA	668 S.F. (INCLUDING PERGOLA FRAME)
TOTAL	3,349 S.F.

COVERAGE: 3349/5000 = 67% COVERAGE
100% − 67% = 33% OPEN SPACE



NOTE:
SEE LANDSCAPE PLANS FOR FENCING, PAVER, & PATIO DETAILS

GRAPHIC SCALE
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

JOHN R. CHAGNON, LLS #738 5-8-23
DATE

STATE OF NEW HAMPSHIRE LAND SURVEYOR No. 738 JOHN R. CHAGNON LICENSED

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 113 AS LOT 42.

2) OWNERS OF RECORD:
CYNTHIA AUSTIN SMITH &
PETER SMITH
9 KENT STREET
PORTSMOUTH, NH 03801
6358/448
PLAN# 00176

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, DATED 1/29/2021.

4) EXISTING LOT AREA:
5,000 S.F.
0.1148 ACRES

5) PARCEL IS LOCATED IN THE GENERAL RESIDENCE A (GRA) DISTRICT.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	7,500 S.F.
FRONTAGE:	100 FEET
SETBACKS:	
FRONT:	15 FEET
SIDE:	10 FEET
REAR:	20 FEET
MAXIMUM STRUCTURE HEIGHT:	35 FEET
MAXIMUM BUILDING COVERAGE:	25%
MINIMUM OPEN SPACE:	30%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED STRUCTURE AND SITE IMPROVEMENTS ON ASSESSOR'S MAP 113, LOT 42 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
5	FOUNDATION	5/8/23
4	DRIVE APRON	3/1/23
3	ISSUED FOR APPROVAL	2/7/23
2	DENSITY CALCULATIONS	1/10/23
1	REVISED LAYOUT	12/28/22
0	ISSUED FOR COMMENT	12/22/22

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7561 LICENSED PROFESSIONAL ENGINEER

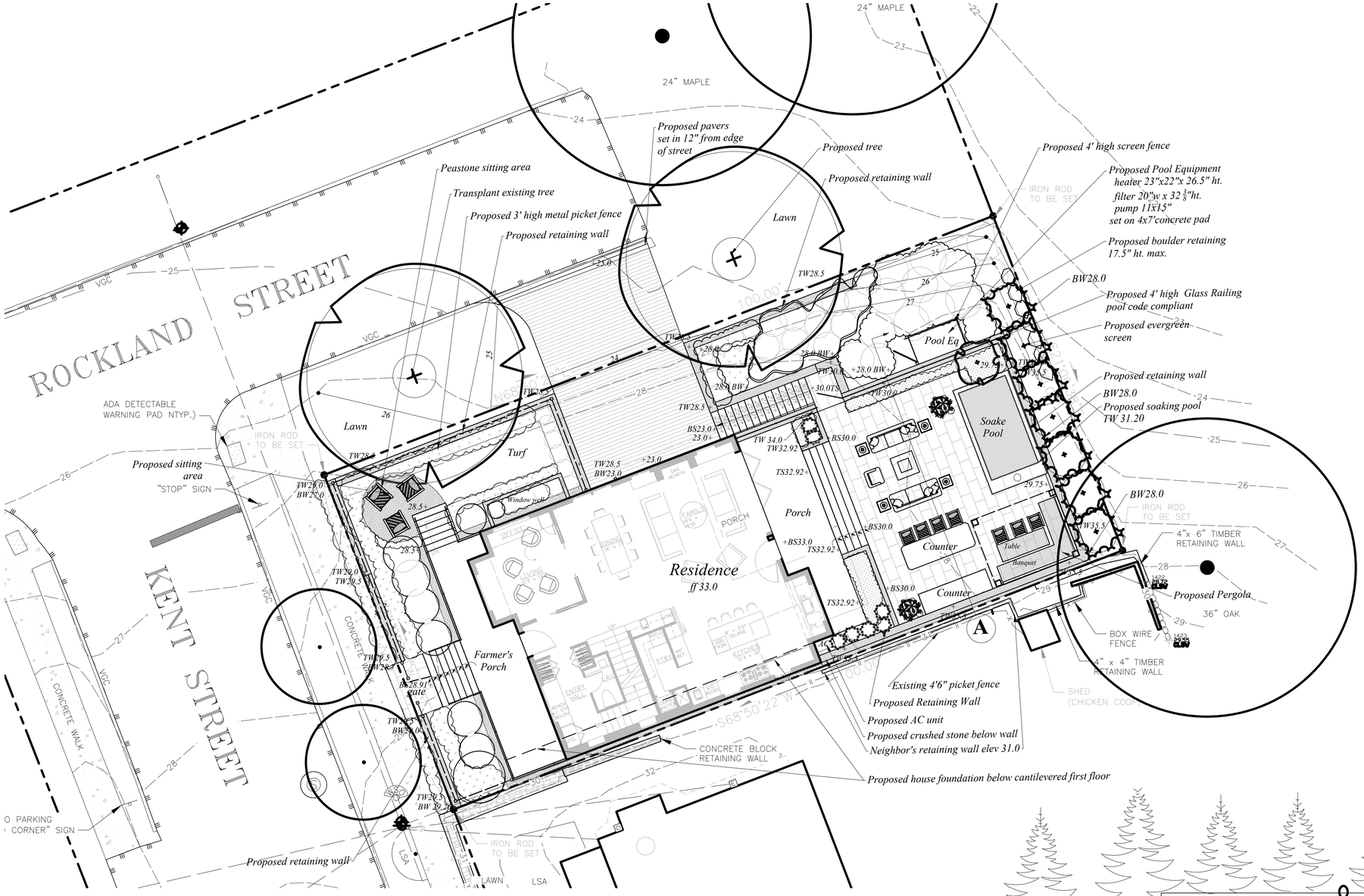
SCALE: 1" = 10' NOVEMBER 2022

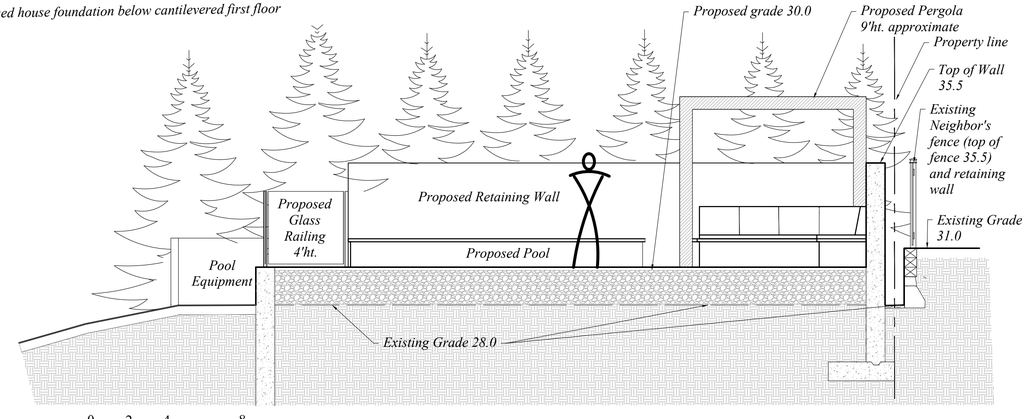
SITE PLAN

C2

FB 301 PG 45

3492





woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

Smith Residence

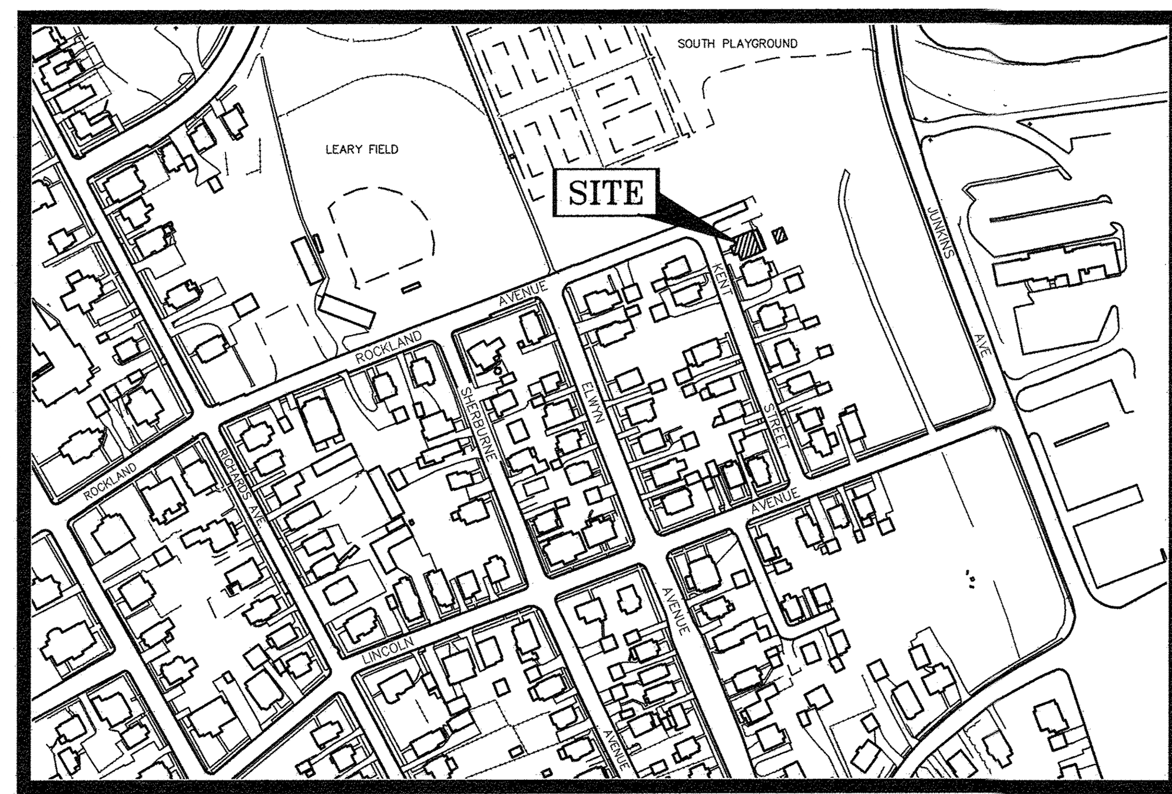
PRELIMINARY LANDSCAPE PLAN

9 Kent Street Portsmouth, New Hampshire

Drawn By:	RW
Checked By:	RW
Scale:	scale
Date:	2023-02-16 issued for ZBA
Revisions:	2023-05-07 Cantilevered foundation

L-1

Sheet 1 of 1



LOCATION MAP SCALE: 1" = 300'

DRAINAGE STRUCTURE TABLE					
STRUCTURE	PROP/EX	RIM	INVERT IN	INVERT OUT	SUMP
YARD DRAIN	PROP	23.0	21.75 STRIP DRAIN	20.0 HDPE	
CB1	PROP	23.8	19.84	19.74	16.74
DMH1	PROP	18.5 +/-	14.94	14.50	
DMH 5398	EX	10.6	(12") 7.20	(54") 2.70	

DRAINAGE PIPE SCHEDULE					
PIPE #	SIZE	LENGTH	INVERT IN	INVERT OUT	SLOPE
P1	12" HDPE	38'	20	19.84	0.004
P2	12" HDPE	24'	19.74	14.60	0.20
P3	12"HDPE	100'	14.50	7.20	0.073

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	DRAINAGE	3/1/23
0	ISSUED FOR APPROVAL	2/7/23

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON LICENSED PROFESSIONAL ENGINEER

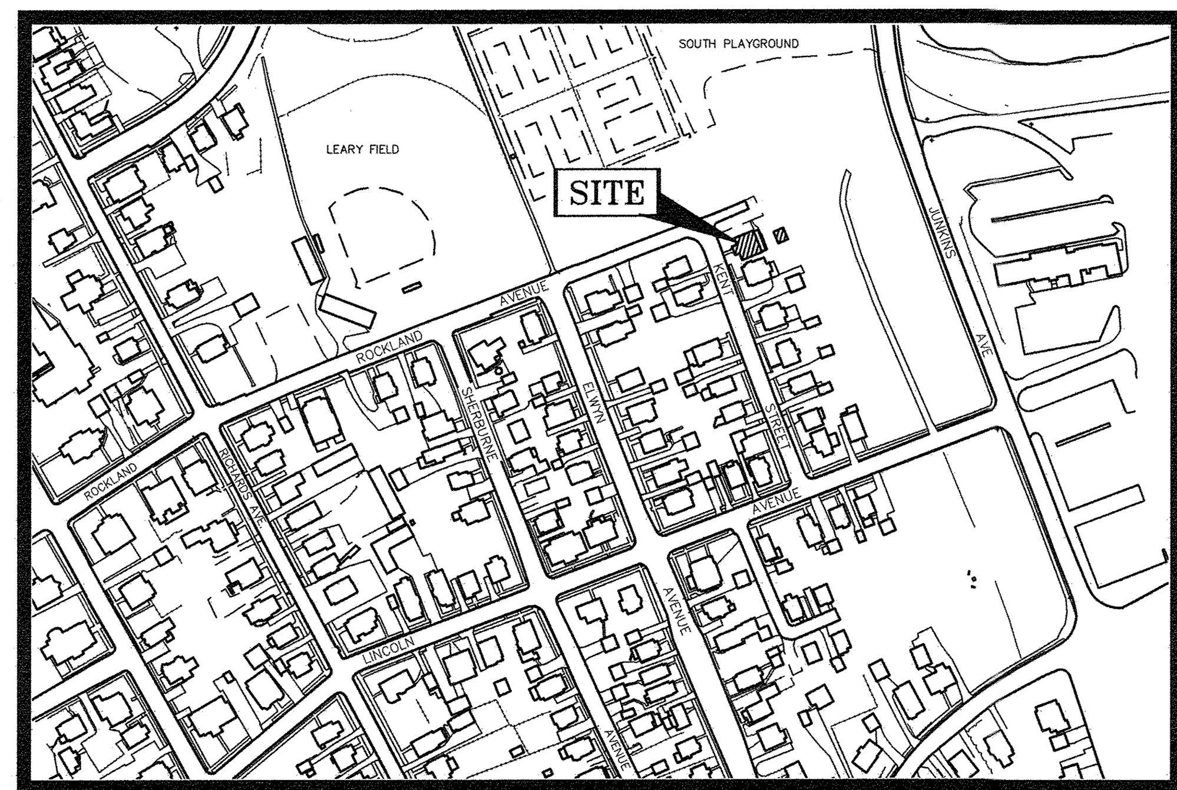
SCALE: 1" = 10' FEBRUARY 2023

DRAINAGE & GRADING PLAN

C3

FB 301 PG 45

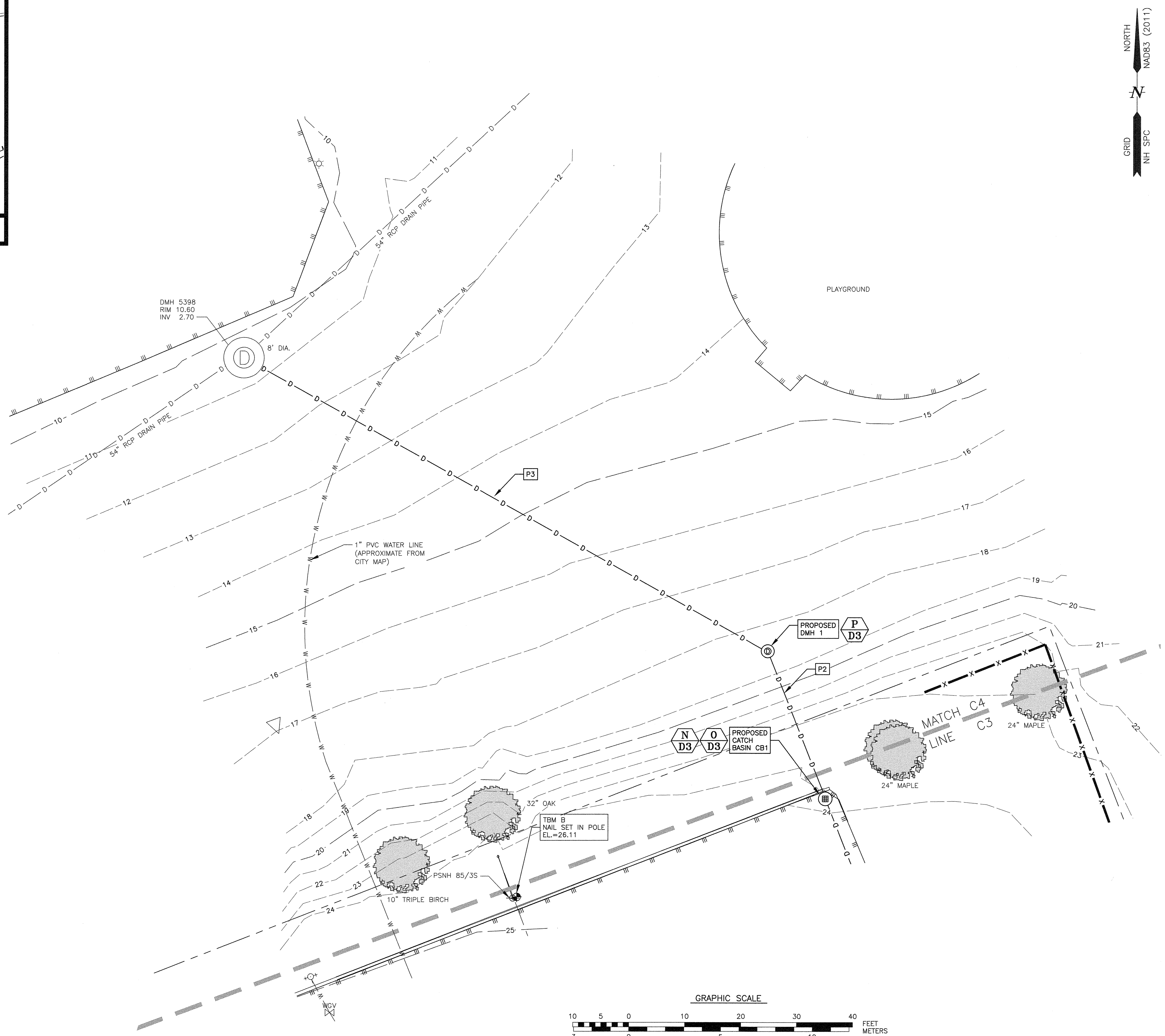
3492



LOCATION MAP SCALE: 1" = 300'

DRAINAGE STRUCTURE TABLE					
STRUCTURE	PROP/EX	RIM	INVERT IN	INVERT OUT	SUMP
YARD DRAIN	PROP	23.0	21.75 STRIP DRAIN	20.0 HDPE	
CB1	PROP	23.8	19.84	19.74	16.74
DMH1	PROP	18.5 +/-	14.94	14.50	
DMH 5398	EX	10.6	(12") 7.20	(54") 2.70	

DRAINAGE PIPE SCHEDULE					
PIPE #	SIZE	LENGTH	INVERT IN	INVERT OUT	SLOPE
P1	12" HDPE	38'	20	19.84	0.004
P2	12" HDPE	24'	19.74	14.60	0.20
P3	12"HDPE	100'	14.50	7.20	0.073



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	3/1/23

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 10' FEBRUARY 2023

OFF SITE DRAINAGE

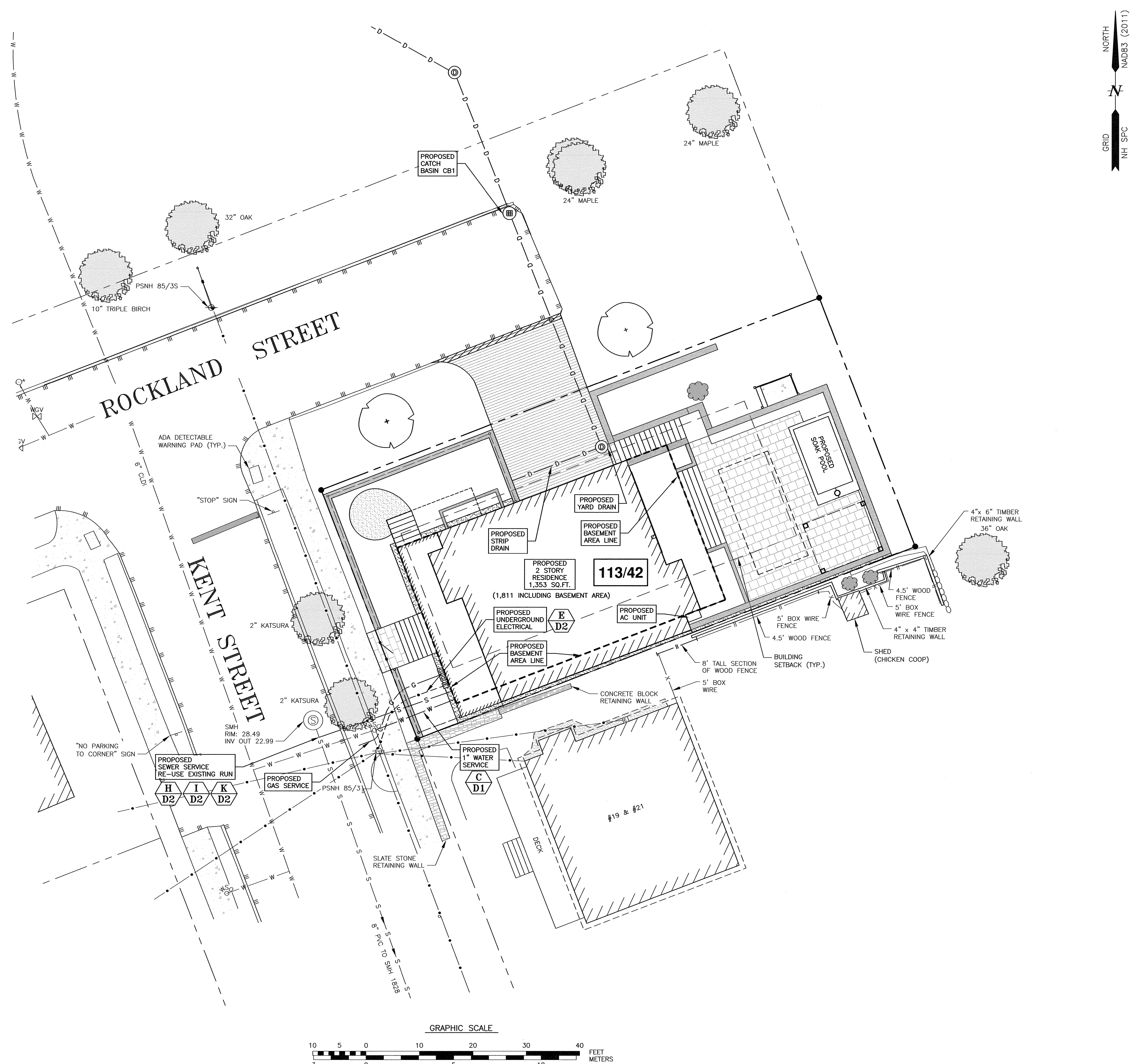
C4

FB 301 PG 45

3492

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	INVERT IN	INVERT OUT
SMH 1714	EX	28.49	N/A	22.99
SMH 1828	EX	28.24	21.29	21.24



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) PROTECT EXISTING STREET TREES DURING UTILITY WORK.

5) BUILDING WILL NOT BE SPRINKLED.

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	GAS LINE	5/8/23
1	SEWER LOCATION	3/1/23
0	ISSUED FOR APPROVAL	2/7/23

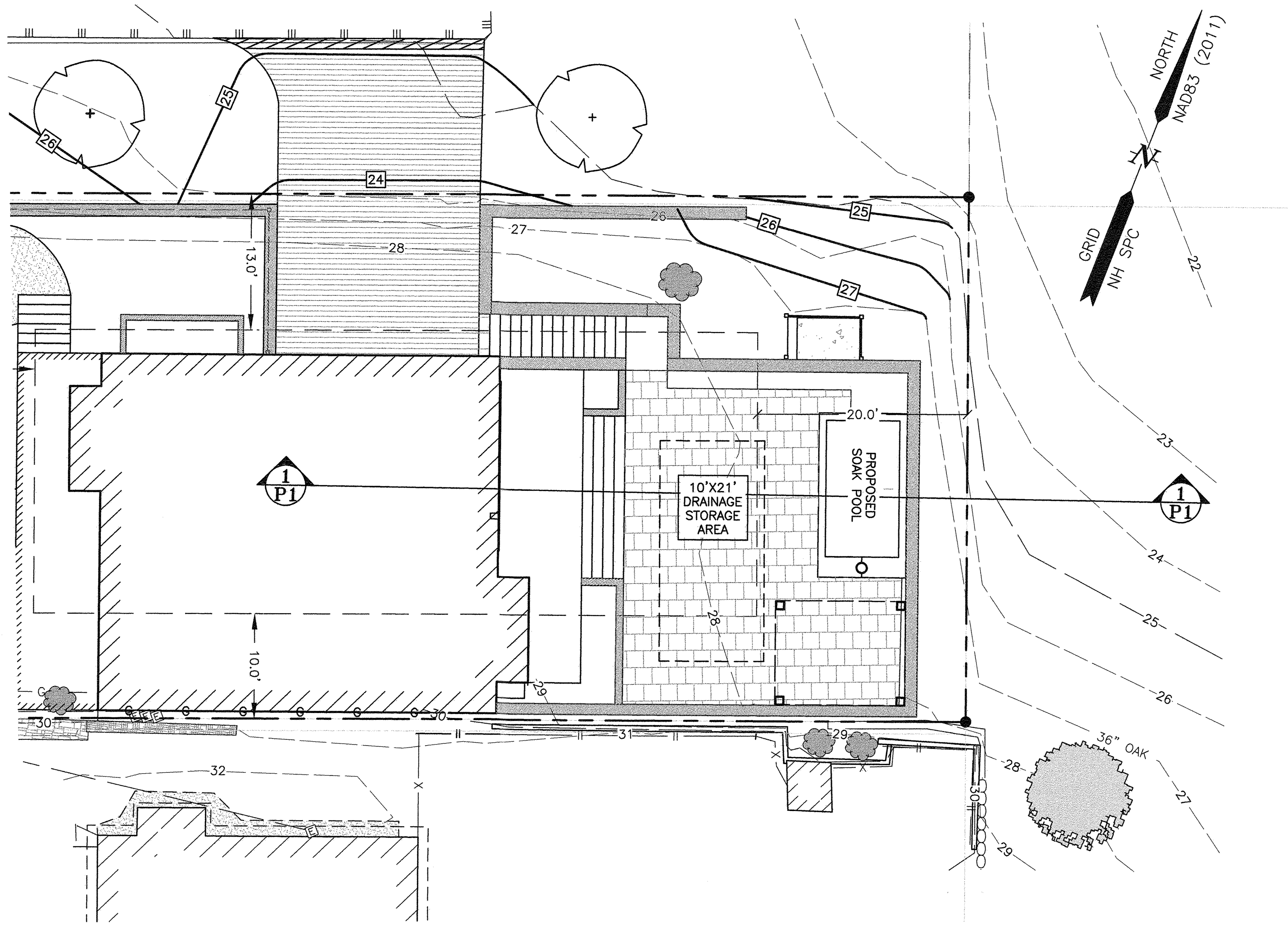
REVISIONS

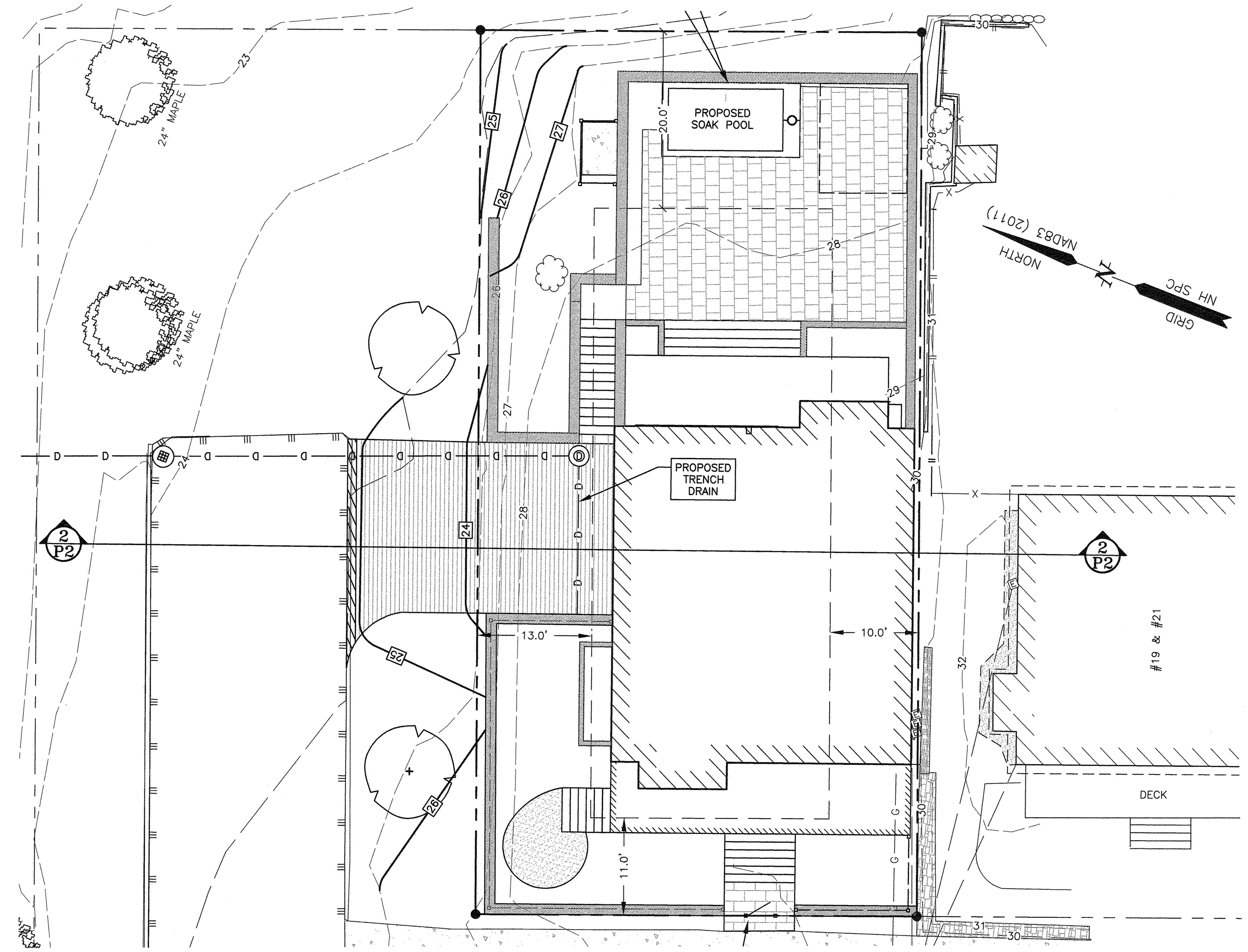
STATE OF NEW HAMPSHIRE — JOHN R. CHAGNON No. 7851 — LICENSED PROFESSIONAL ENGINEER

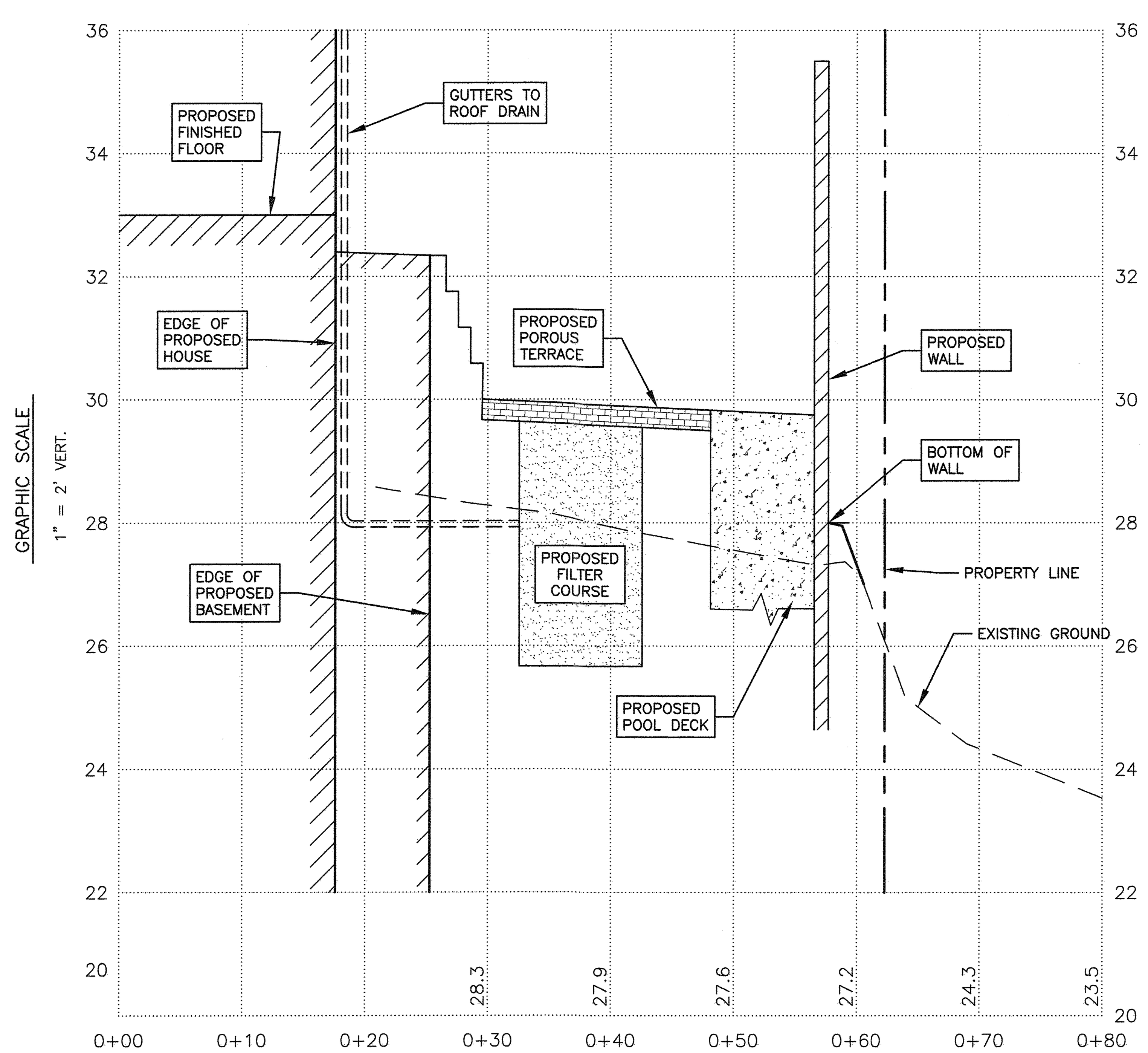
SCALE: 1" = 10'   NOVEMBER 2022

UTILITY PLAN   C5

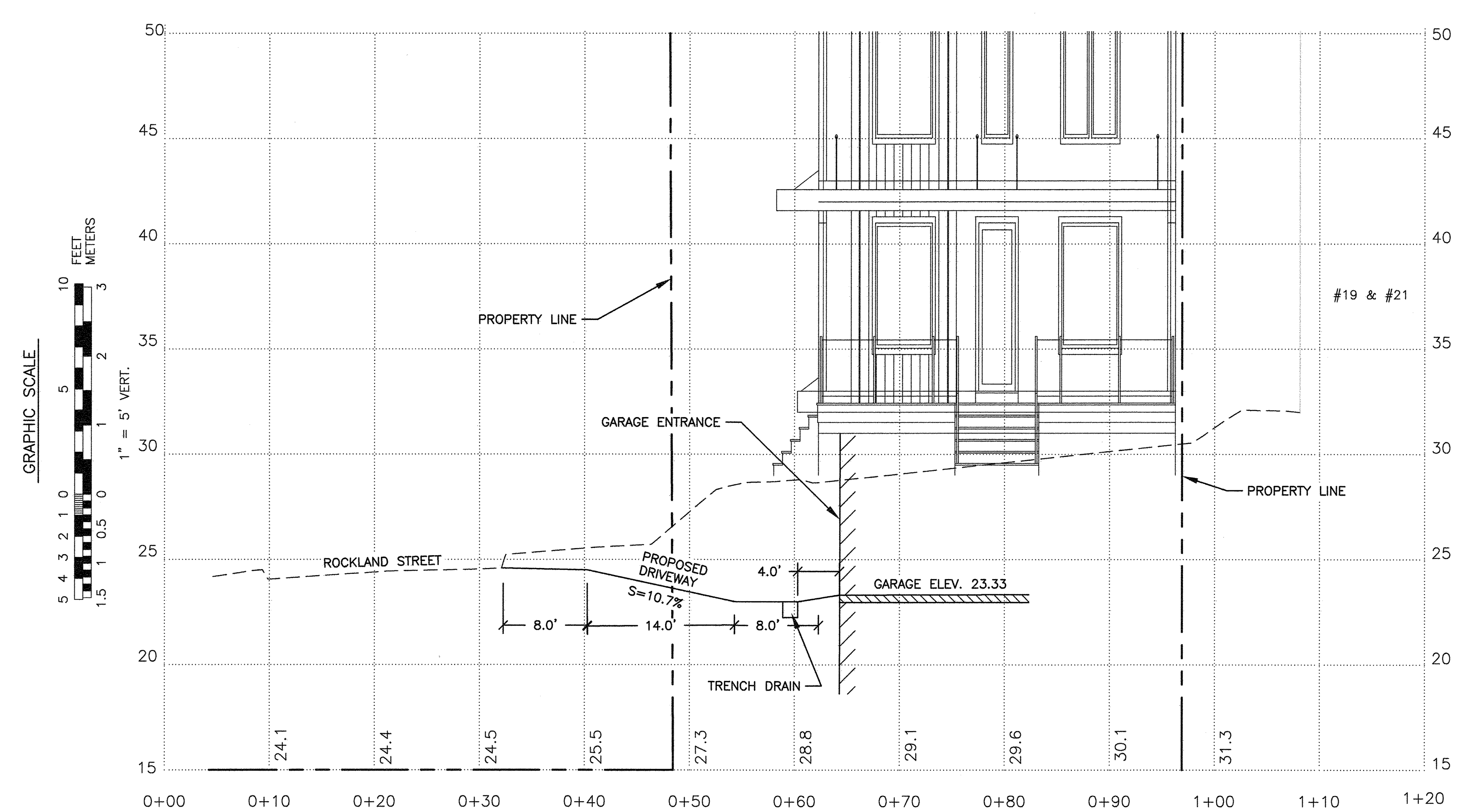
FB 301 PG 45   3492







PATIO SECTION (1)



GRAPHIC SCALE
HORIZONTAL
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

DRIVEWAY SECTION (2)

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 113 AS LOT 42.

2) OWNERS OF RECORD:
CYNTHIA AUSTIN SMITH &
PETER SMITH
9 KENT STREET
PORTSMOUTH, NH 03801
6358/448
PLAN# 00176

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, DATED 1/29/2021.

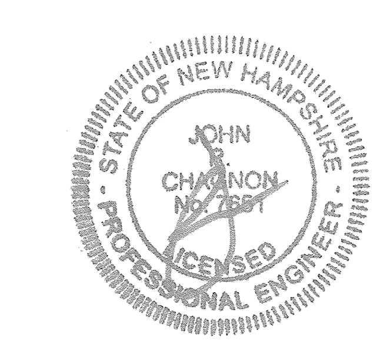
4) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DRIVEWAY STRUCTURE AND SITE IMPROVEMENTS ON ASSESSOR'S MAP 113, LOT 42 IN THE CITY OF PORTSMOUTH.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	DRAINAGE	3/1/23
1	ISSUED FOR APPROVAL	2/7/23
0	ISSUED FOR COMMENT	1/20/23

REVISIONS



SCALE H:1"=10' JANUARY 2023

SITE SECTION

P1

FB 301 PG 45

3492

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL INLET PROTECTION AND PERIMETER CONTROLS, i.e., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE AND CATCH BASIN FILTER BEFORE ANY EARTH MOVING OPERATIONS.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

REMOVE EXISTING GARAGE.

PERFORM IMPROVEMENTS. CONSTRUCT SITE UTILITIES AND BUILD HOME.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

DURING CONSTRUCTION ACCESS WILL BE PROVIDED TO EXISTING PROPERTY LOCATED ON ROCKLAND ST.

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF A BUILDING REPLACEMENT WITH ASSOCIATED UTILITIES, GRADING, AND PARKING.

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 0.115 ACRES.

BASED ON SITE OBSERVATIONS AND TEST PITS THE SOILS ON SITE CONSIST OF FINE SANDY LOAM WHICH ARE WELL DRAINED SOILS WITH A HYDROLOGIC SOIL GROUP RATING OF A.

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED TO CITY OF PORTSMOUTH PROPERTY WHICH ULTIMATELY FLOWS TO THE SOUTH MILL POND THEN TO THE PISCATAQUA RIVER.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". 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.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

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.

DUST CONTROL: DUST CONTROL MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.
IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
- IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA.

STABILIZATION MEASURES TO BE USED INCLUDE:
- TEMPORARY SEEDING;
- MULCHING.

1. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
2. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN THESE AREAS, SILTSOXX, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
3. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILTSOXX, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

MAINTENANCE AND PROTECTION

THE SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILTSOXX SHALL BE REMOVED ONCE SITE IS STABILIZED, AND DISTURBED AREAS RESULTING FROM SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

THE CATCH BASIN INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.
SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, 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 COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;

AFTER OCTOBER 15, 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, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;

STOCKPILES

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

CONCRETE WASHOUT AREA

THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE:
1. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FAILITY;
2. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
3. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS;
4. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON-STORMWATER DISCHARGES

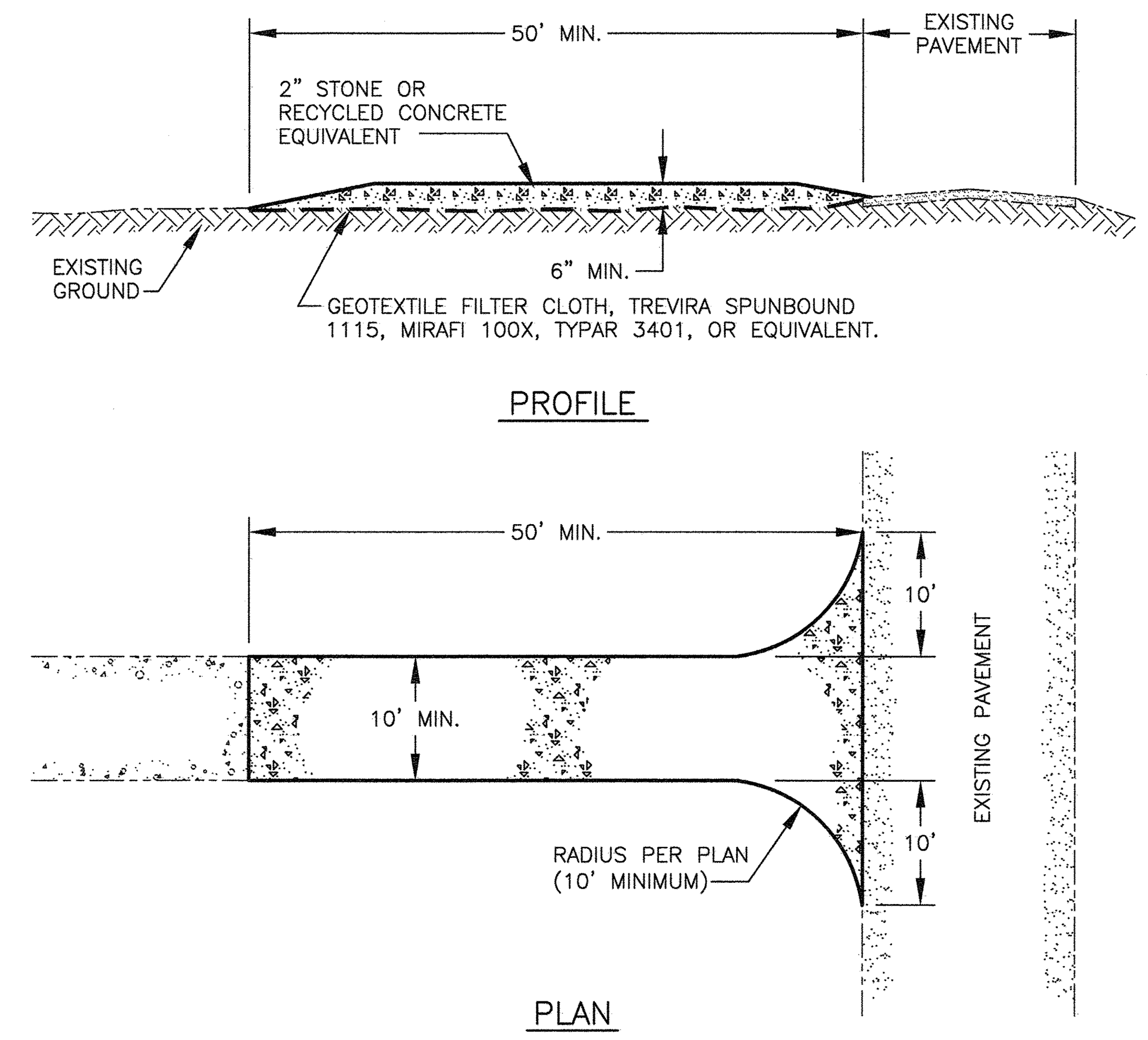
1. FIRE-FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
4. WATER USED TO CONTROL DUST;
5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
6. ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
7. PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
8. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
9. UNCONTAMINATED GROUND WATER OR SPRING WATER;
10. FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
11. UNCONTAMINATED EXCAVATION DEWATERING;
12. LANDSCAPE IRRIGATION.

WASTE DISPOSAL

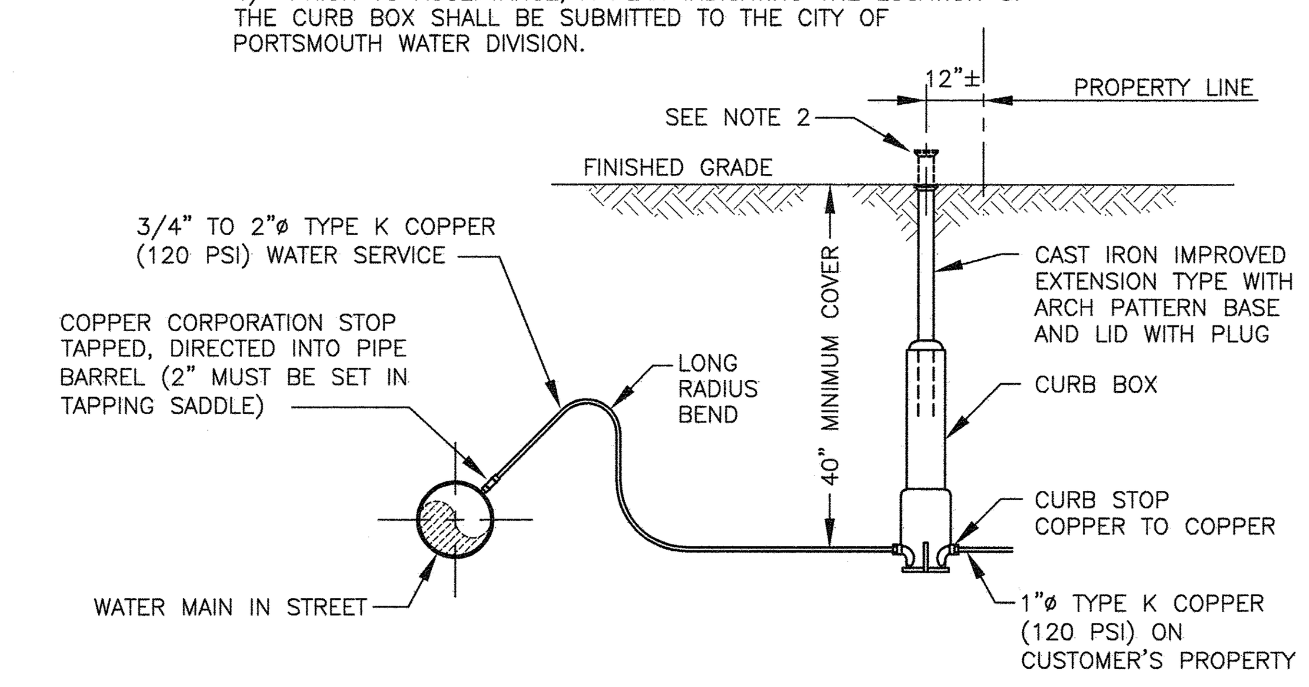
1. WASTE MATERIAL
   - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
   - NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   - ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   - ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
   - SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   - ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

BLASTING NOTES

1. CONTRACTOR SHALL CONTACT THE NHDES AND/OR LOCAL JURISDICTION PRIOR TO COMMENCING ANY BLASTING ACTIVITIES.
2. FOR ANY PROJECT FOR WHICH BLASTING OF BEDROCK IS ANTICIPATED, THE APPLICANT SHALL SUBMIT A BLASTING PLAN THAT IDENTIFIES:
   - WHERE THE BLASTING ACTIVITIES ARE ANTICIPATED TO OCCUR;
   - THE ESTIMATED QUANTITY OF BLAST ROCK IN CUBIC YARDS; AND
   - SITE-SPECIFIC BLASTING BEST MANAGEMENT PRACTICES.

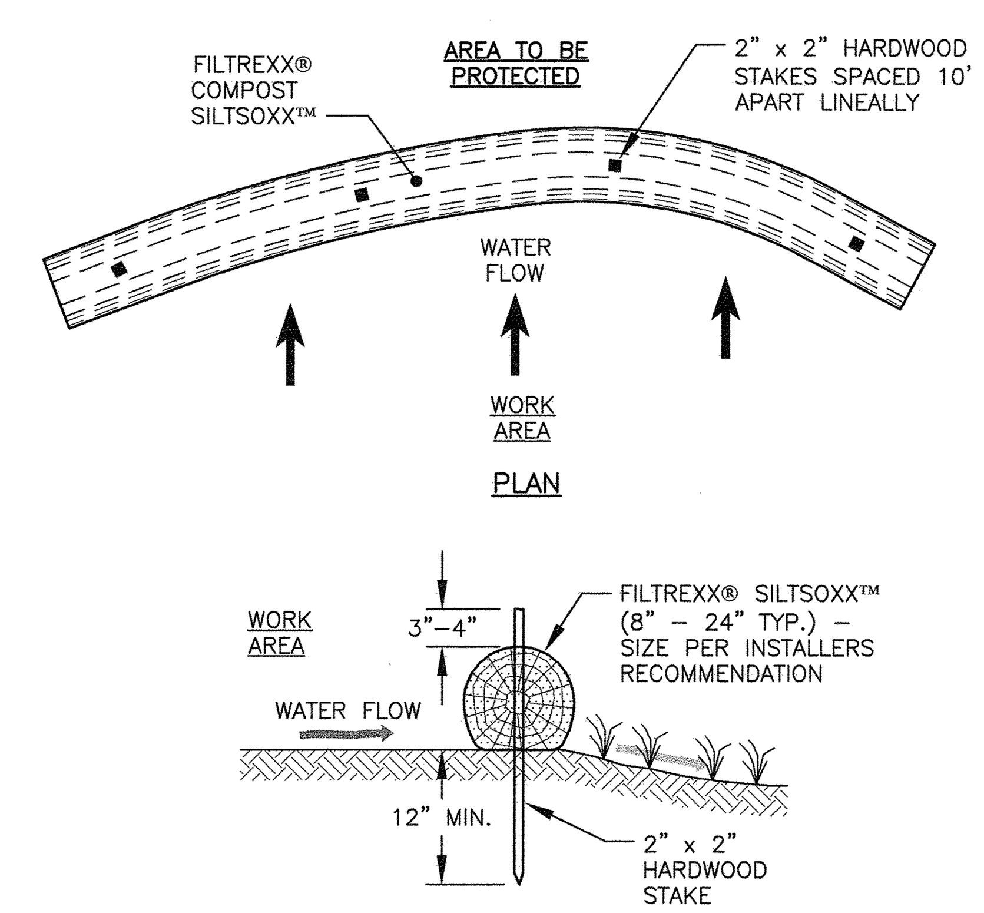


A / C3 STABILIZED CONSTRUCTION ENTRANCE
SUBSTITUTE FODS IF DESIRED — NTS



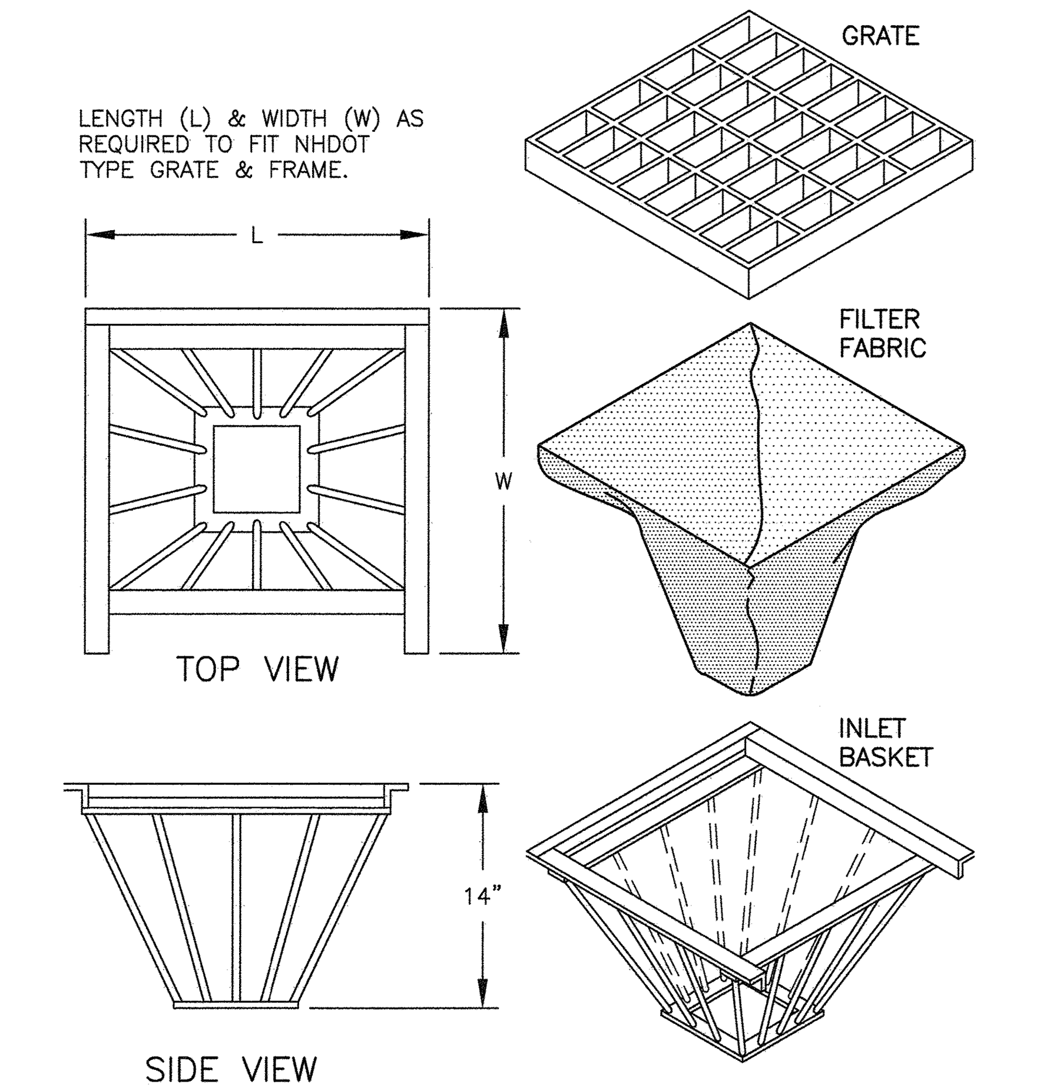
NOTE:
1) INSTALLATION OF WATER MAIN TAP & CURB STOP & BOX SHALL ONLY BE PERFORMED BY THOSE AUTHORIZED BY THE PUBLIC WORKS DEPARTMENT.
2) IN AREAS OF HEAVY GROWTH THE CURB BOX COVER SHALL BE SET 6" ABOVE FINISH GRADE AND A WITNESS STAKE SET.
3) CURB BOX SHALL BE SET APPROXIMATELY 12" OUTSIDE PROPERTY LINE AS SHOWN.
4) PRIOR TO ACCEPTANCE, A PLAN INDICATING THE LOCATION OF THE CURB BOX SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH WATER DIVISION.

C / C4 WATER SERVICE CONNECTION
(PORTSMOUTH) — NTS



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

B / C3 FILTREXX® SILTSOXX™ FILTRATION SYSTEM — NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
- RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.-1 FROM ASTM 54491-85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

D / C3 CATCH BASIN INLET BASKET
AS NEEDED — NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:
1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	2/7/23
0	ISSUED FOR COMMENT	1/20/23

REVISIONS

STATE OF NEW HAMPSHIRE — JOHN R. CHAGNON — No. 7051 — LICENSED PROFESSIONAL ENGINEER

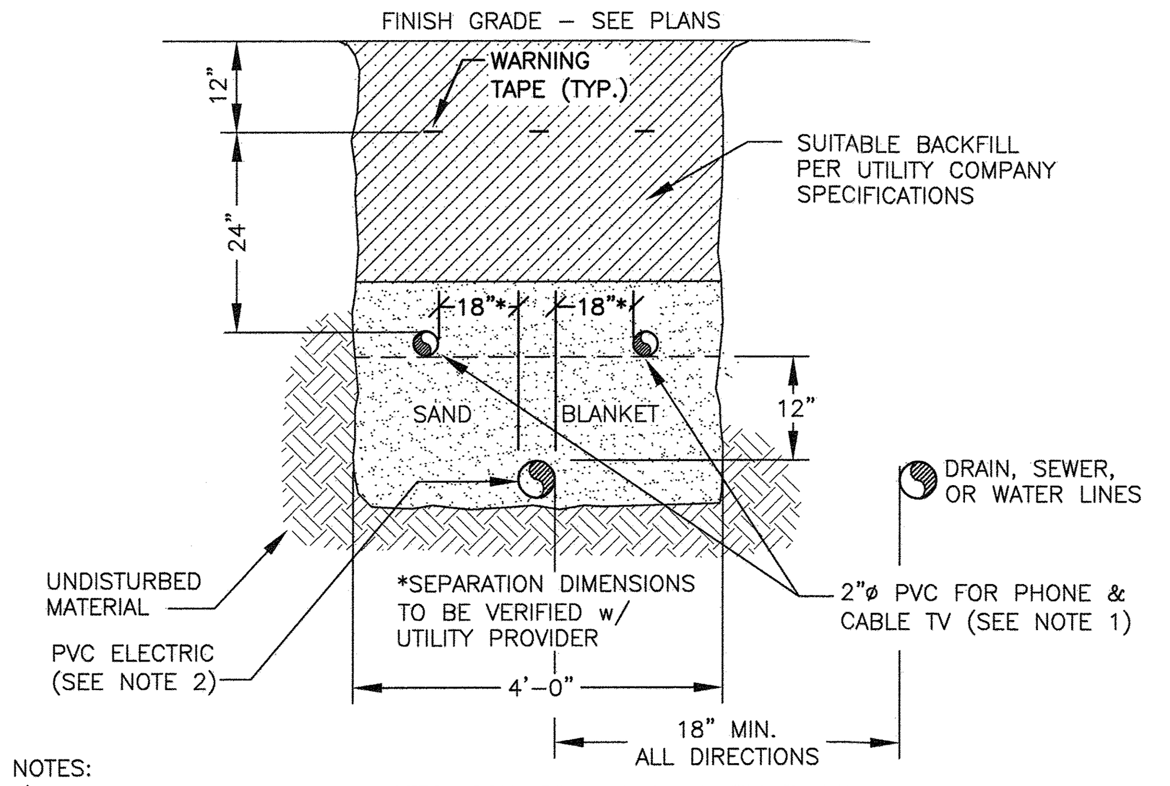
SCALE AS SHOWN — JANUARY 2023

EROSION CONTROL NOTES & DETAILS

D1

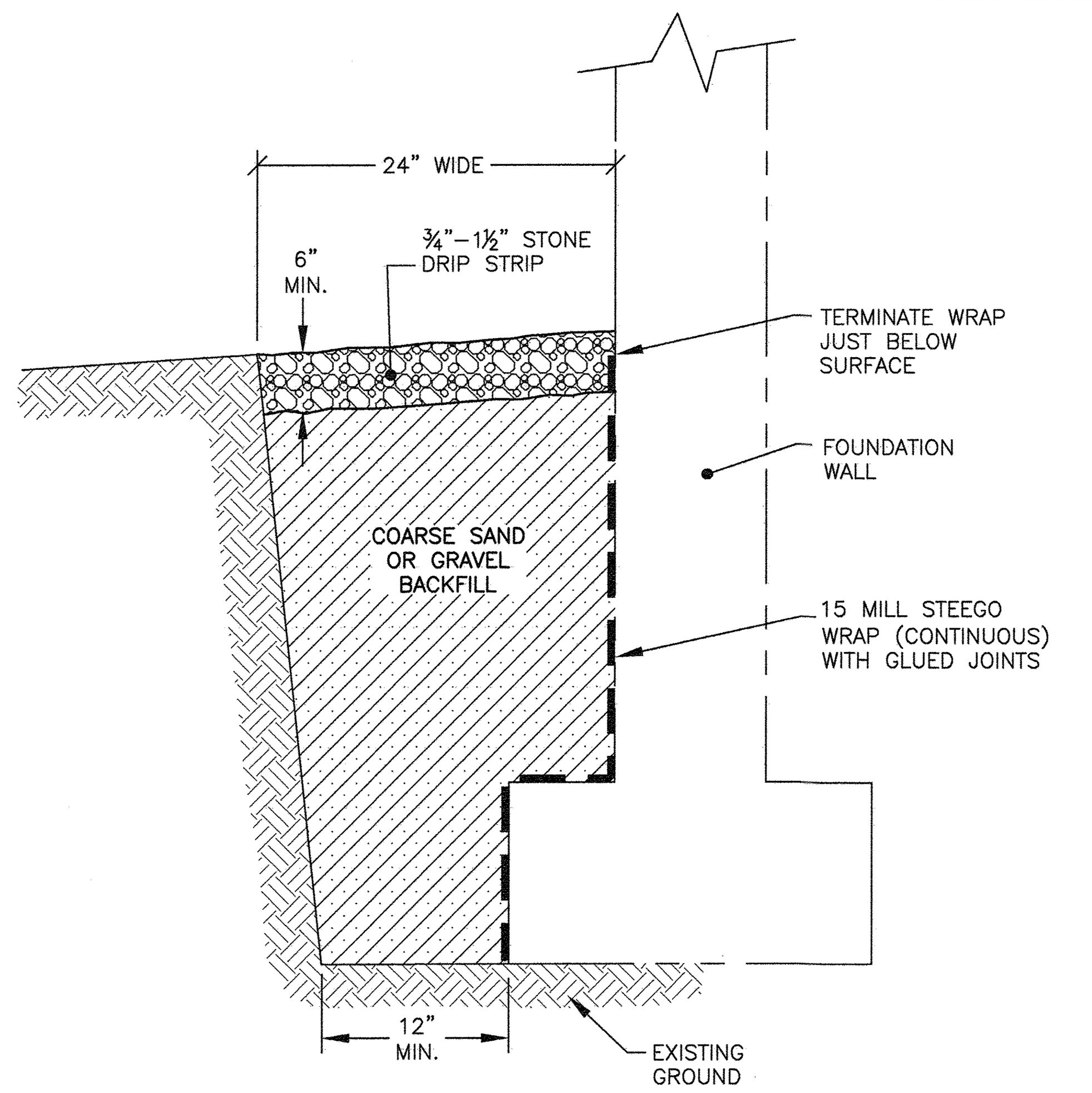
FB. 301, PG 45

3492

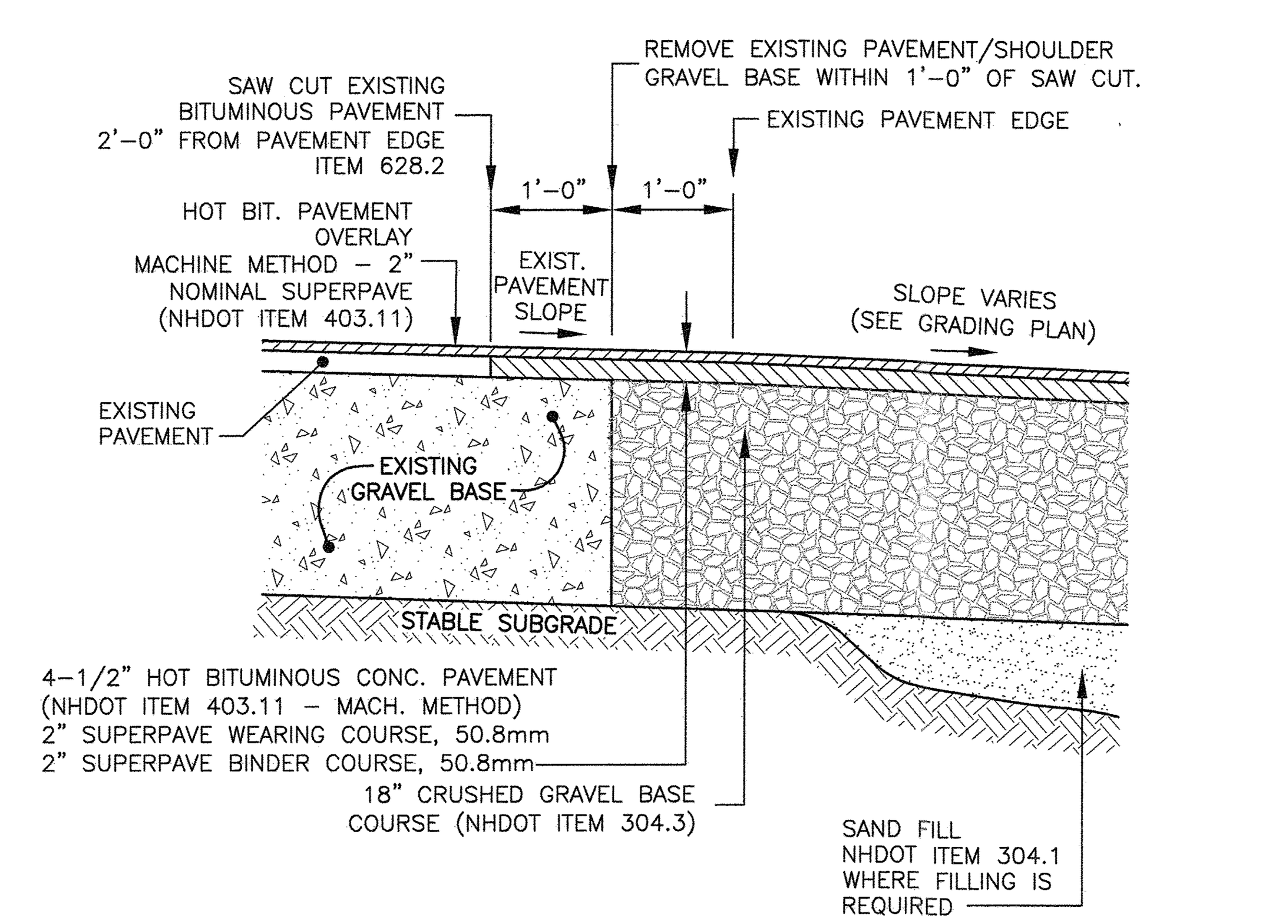


NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

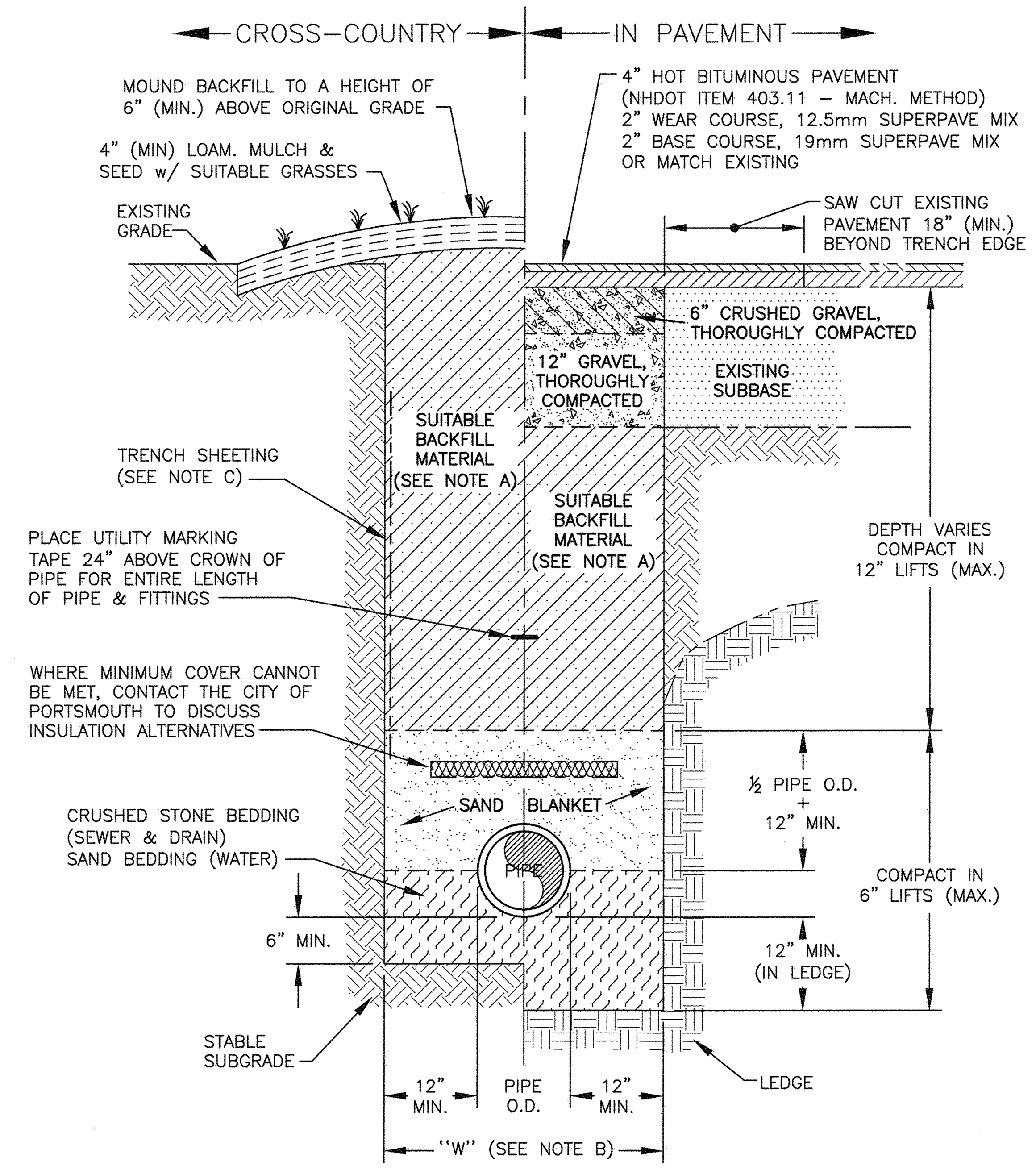
E / C4 UTILITY TRENCH
ELECTRIC/PHONE/CABLE NTS



F / C3 STONE DRIP APRON
FRONT DECK / OVERHANG NTS



G / C3 FULL DEPTH PAVEMENT SECTION AND PAVEMENT JOINT DETAIL
PORTSMOUTH NTS



TRENCH NOTES:
A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

– IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

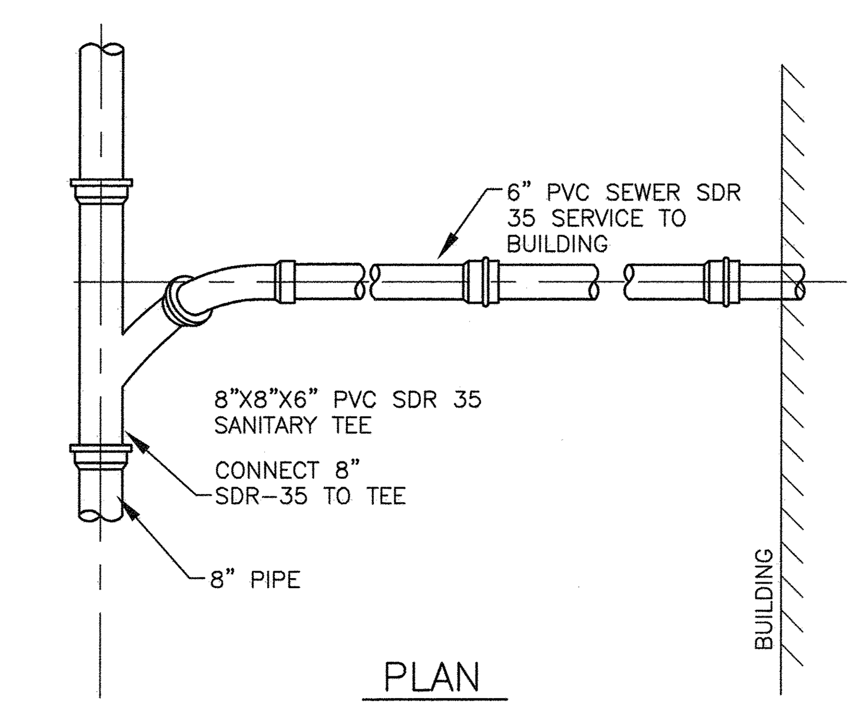
B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

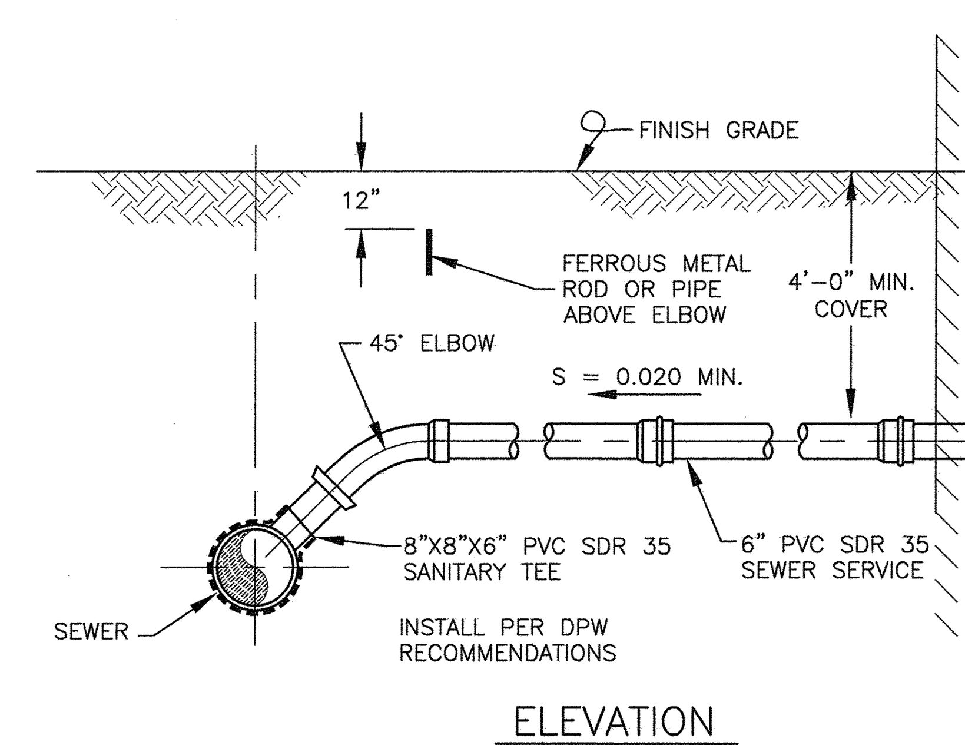
C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
6' MINIMUM FOR SEWER (IN PAVEMENT)
4' MINIMUM FOR SEWER (CROSS COUNTRY)
3' MINIMUM FOR STORMWATER DRAINS
5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

H / C4 TYPICAL PIPE TRENCH
NTS



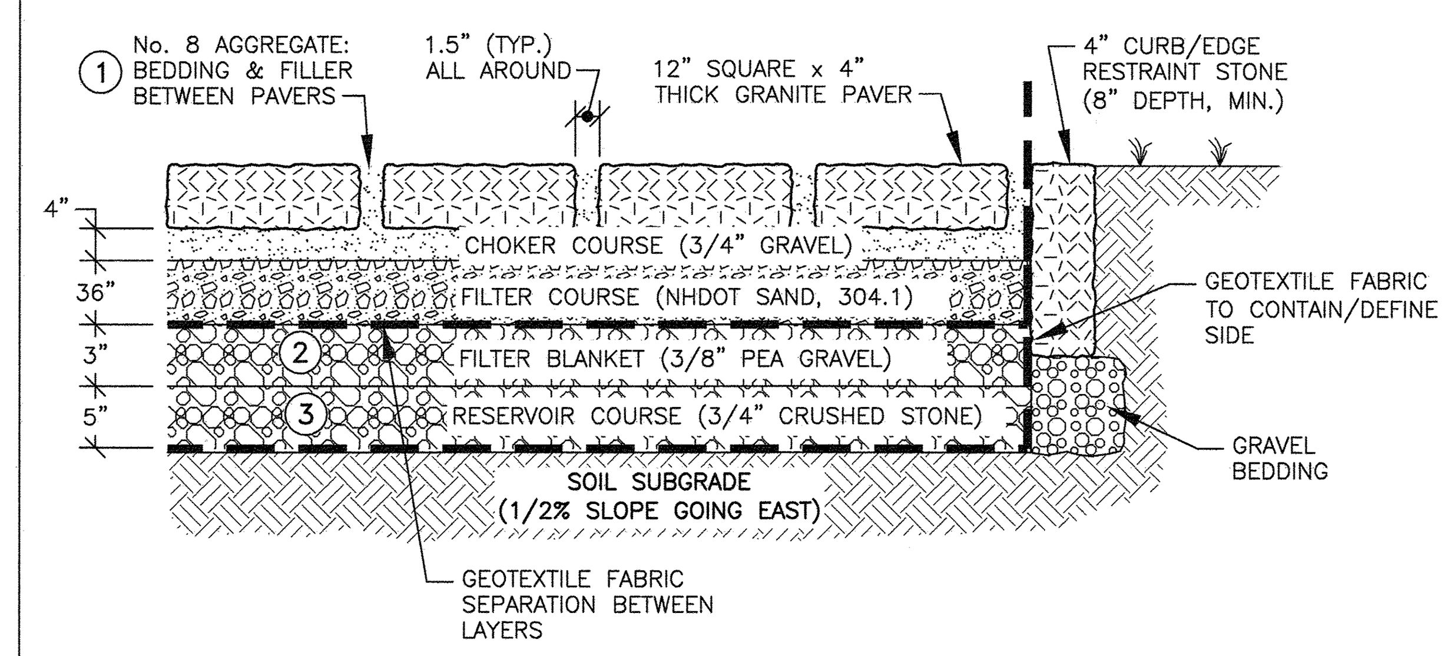


I / C4 TYPE "A" SEWER SERVICE CONNECTION
RE-USE EXISTING TAP AT MAIN NTS

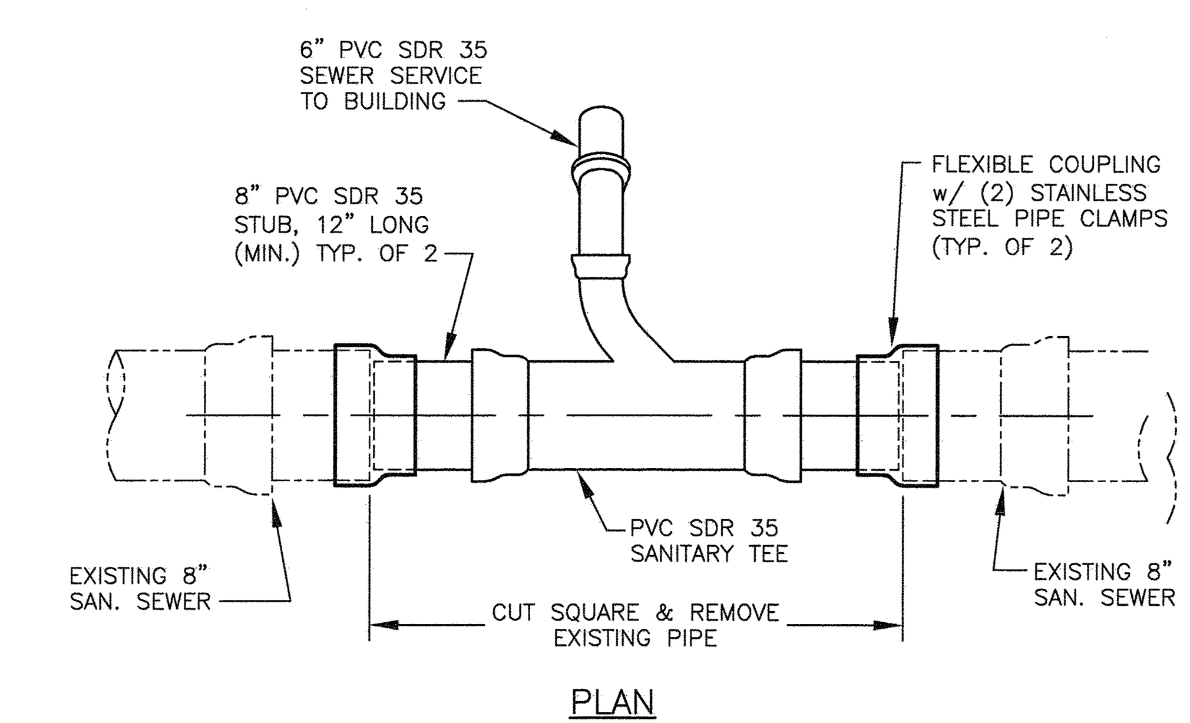
ASTM D 448 GRADATION TABLE

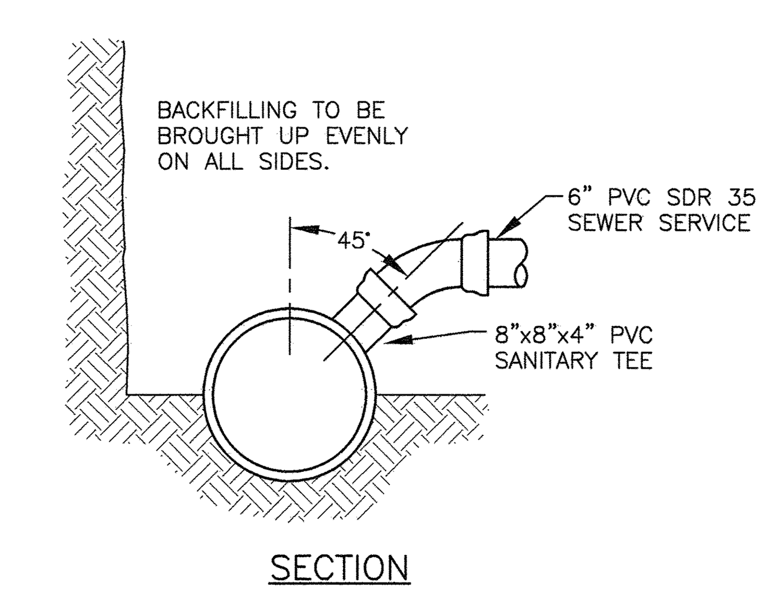
① ASTM No. 8 BEDDING & JOINT FILLER		② ASTM No. 57 STONE OPEN GRADED BASE		③ ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO-STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.
4) ALL FABRIC TO BE TENCATE MIRAFI 140N NONWOVEN GEOTEXTILE.



J / C3 POROUS PAVER SECTION
12" SQUARE GRANITE PAVERS OR APPROVED EQUAL NTS





K / C4 SEWER SERVICE TAP DETAIL
IF NEEDED – RE-USE EXISTING SERVICE TAP NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:
1) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) ALL WATER SERVICE INSTALLATION WORK SHALL BE TO CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS. DETAILS MAY OR MAY NOT BE UP-TO-DATE.

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	2/7/23
0	ISSUED FOR COMMENT	1/20/23

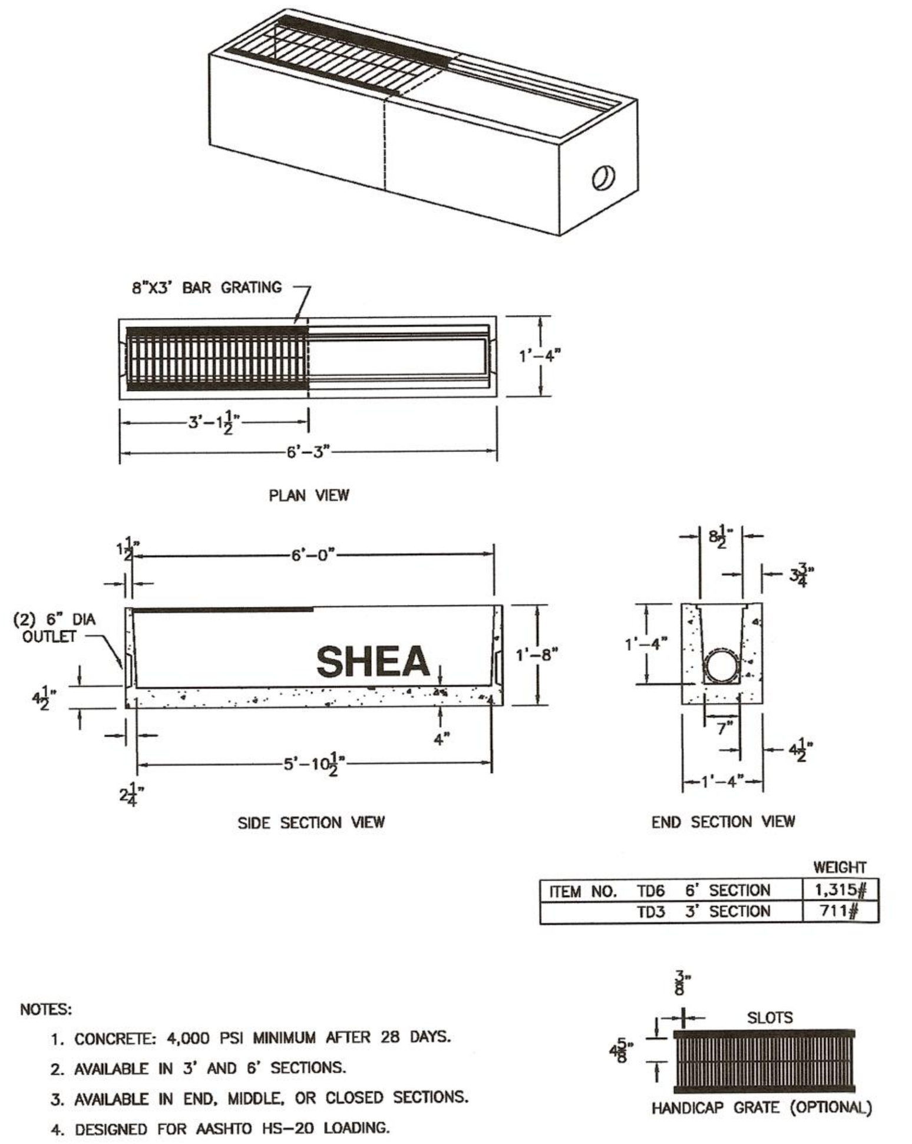
REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7051 – LICENSED PROFESSIONAL ENGINEER

SCALE AS NOTED JANUARY 2023

DETAILS D2

3492

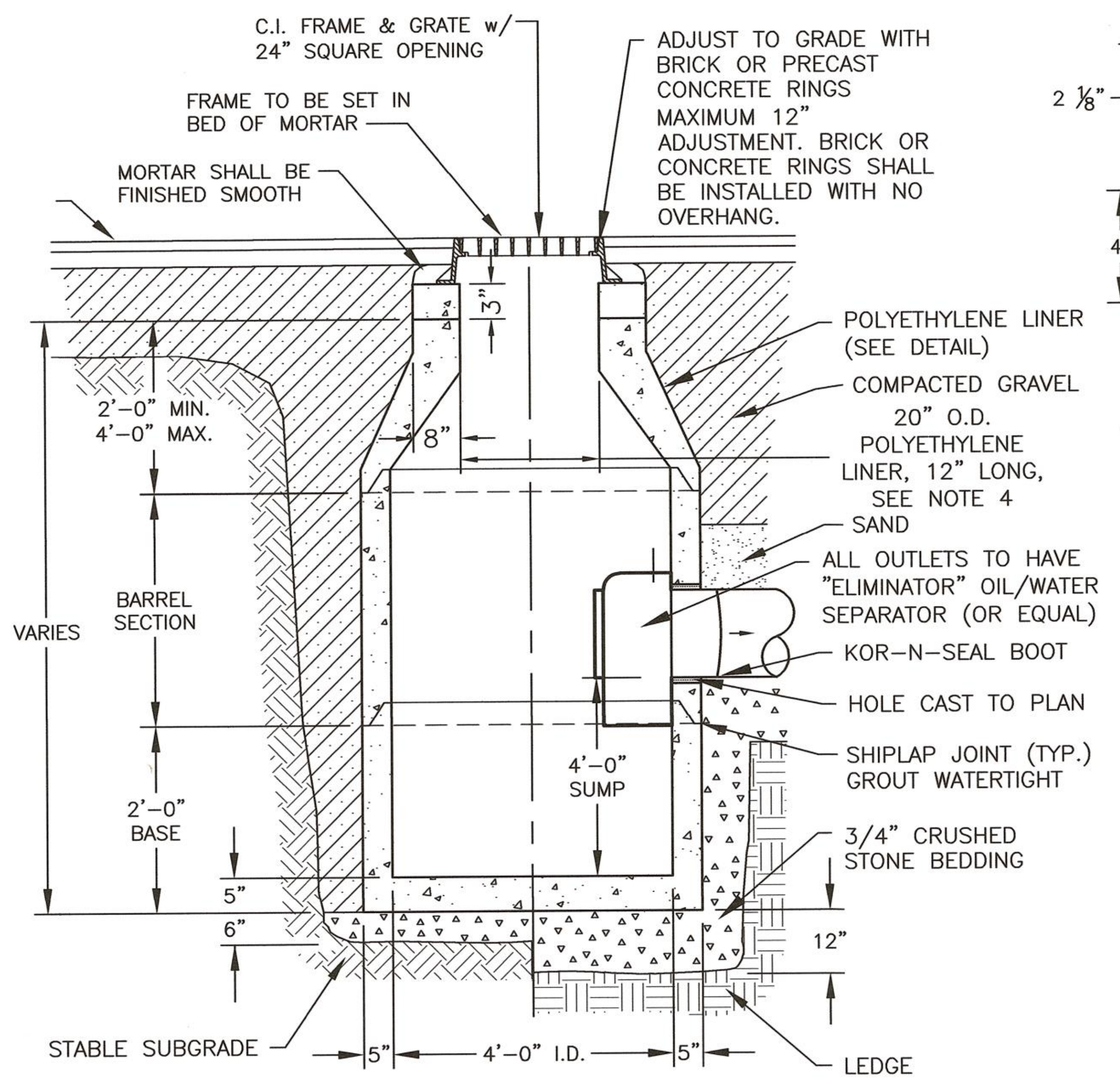


		WEIGHT
ITEM NO.	TD6 6' SECTION	1,315#
	TD3 3' SECTION	711#

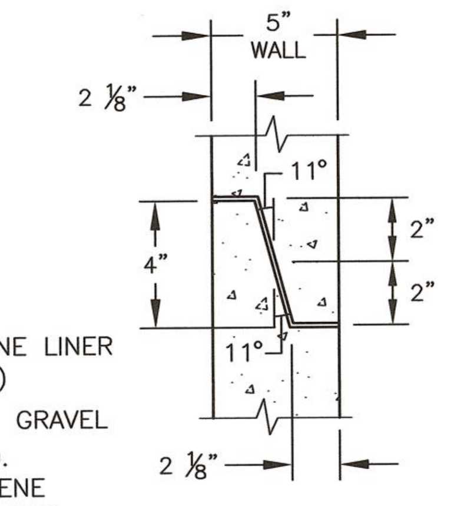
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. AVAILABLE IN 3' AND 6' SECTIONS.
3. AVAILABLE IN END, MIDDLE, OR CLOSED SECTIONS.
4. DESIGNED FOR AASHTO HS-20 LOADING.

SHEA PRODUCT ID: TD3/TD6
TRENCH DRAIN 8"X16"
WEIGHT (LBS): 711#/1,315#

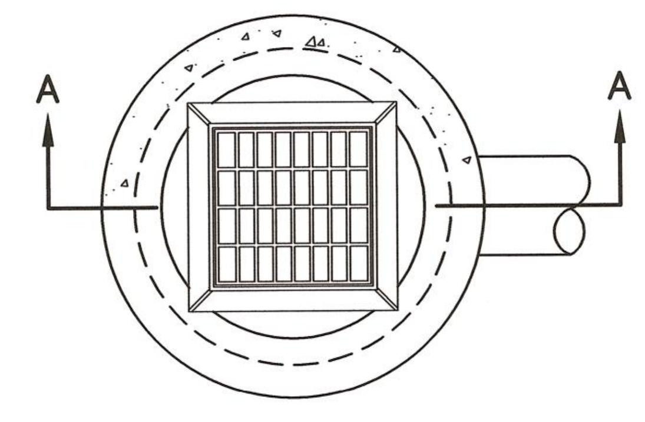
L / C3 STRIP DRAIN
NTS



SECTION A – A



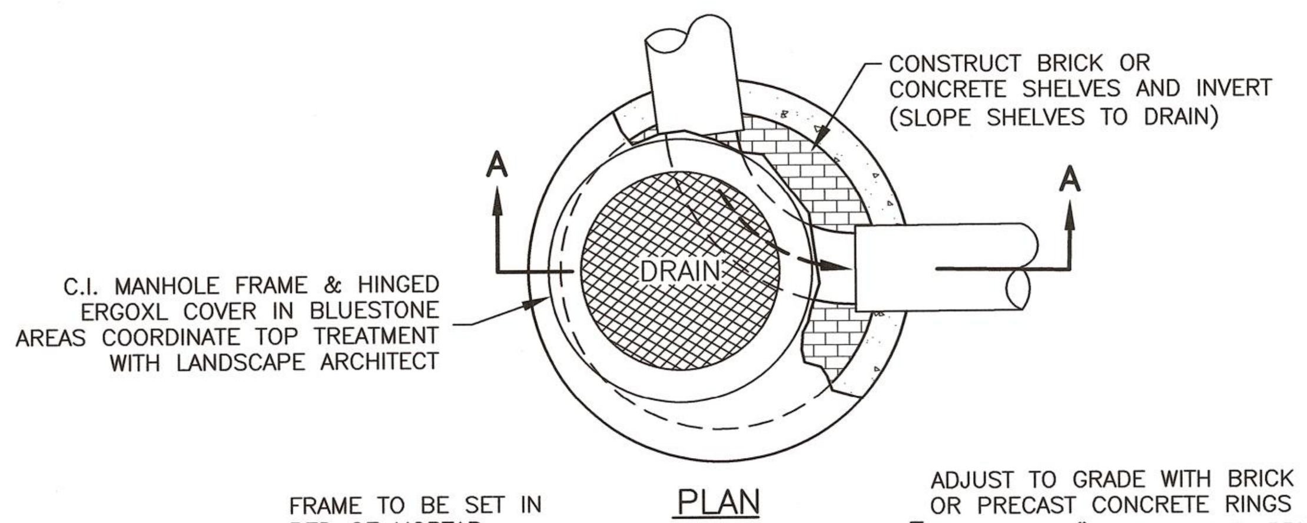
DETAIL OF SHIPLAP JOINT



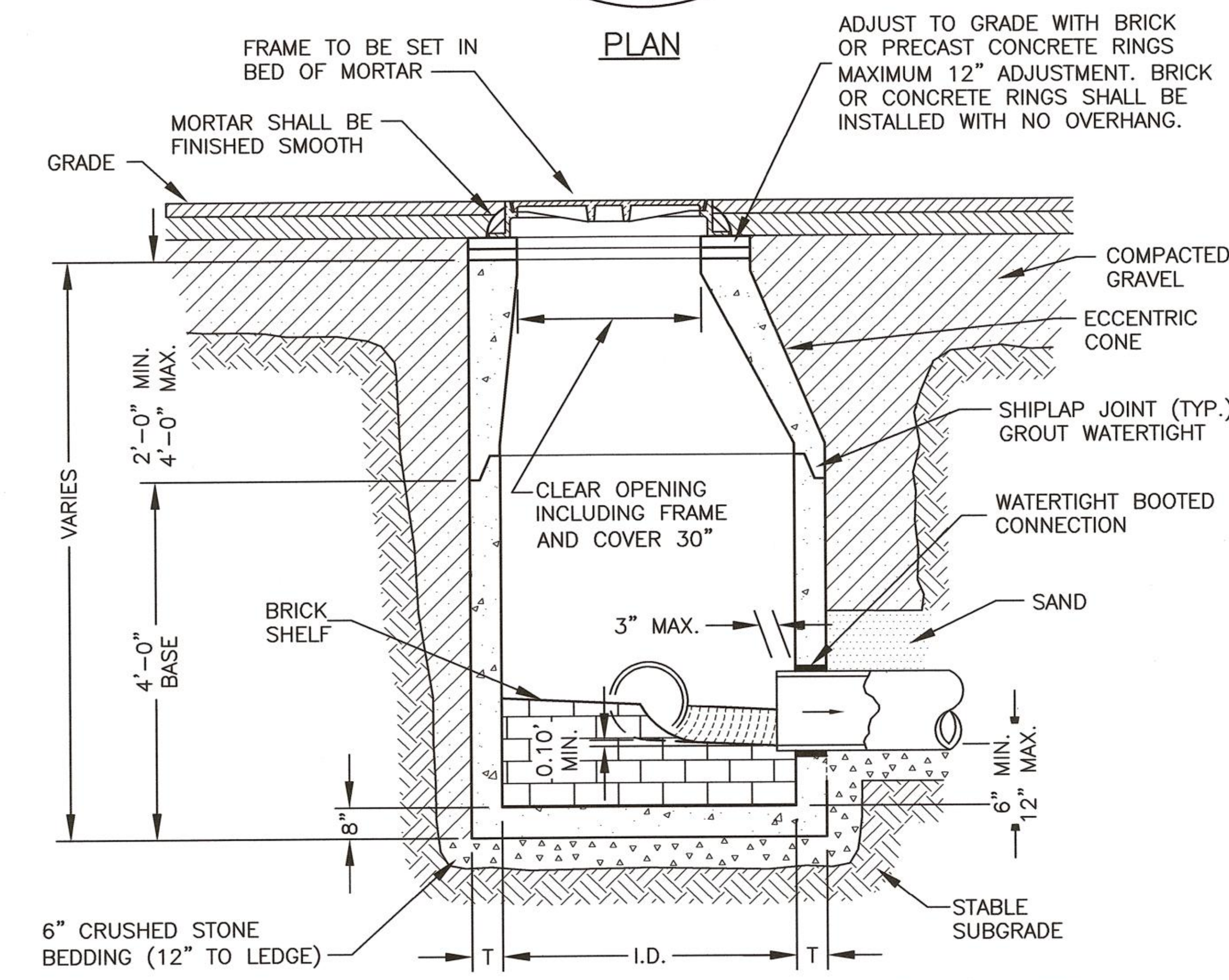
PLAN

NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
6. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
8. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
9. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
10. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
11. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
12. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
13. "ELIMINATOR" OIL/WATER SEPARATOR SHALL BE INSTALLED TIGHT TO INSIDE OF CATCHBASIN.

N / C3 CATCH BASIN DETAIL
NTS



PLAN



SECTION A – A

T=5" FOR 48" I.D. MANHOLE
T=6" FOR 60" I.D. MANHOLE
T=7" FOR 72" I.D. MANHOLE

NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5. ALL MANHOLES SHALL BE 48" I.D. UNLESS SPECIFIED OTHERWISE ON THE PLANS.
6. MANHOLE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND H-20 LOADING.
7. PARGE SPACES BETWEEN PIPE AND MANHOLE WITH MOTAR.

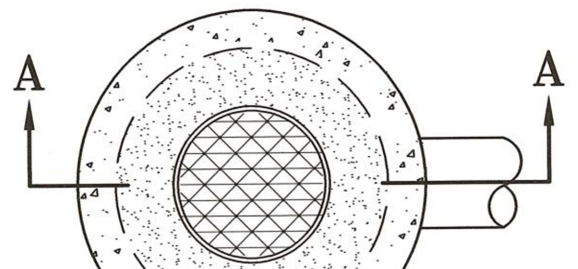
P / C4 DRAIN MANHOLE WITH BOOT DETAIL
NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

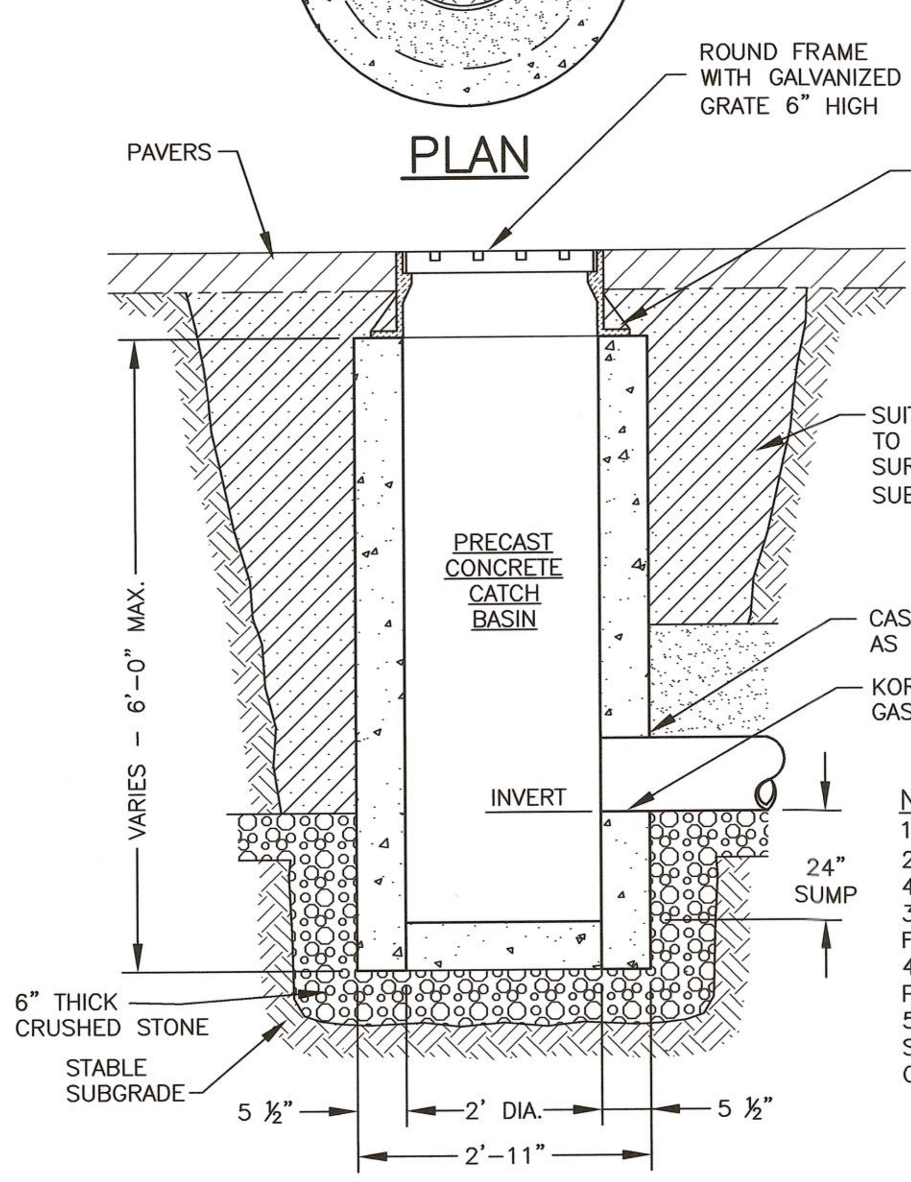
NOTES:
1) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

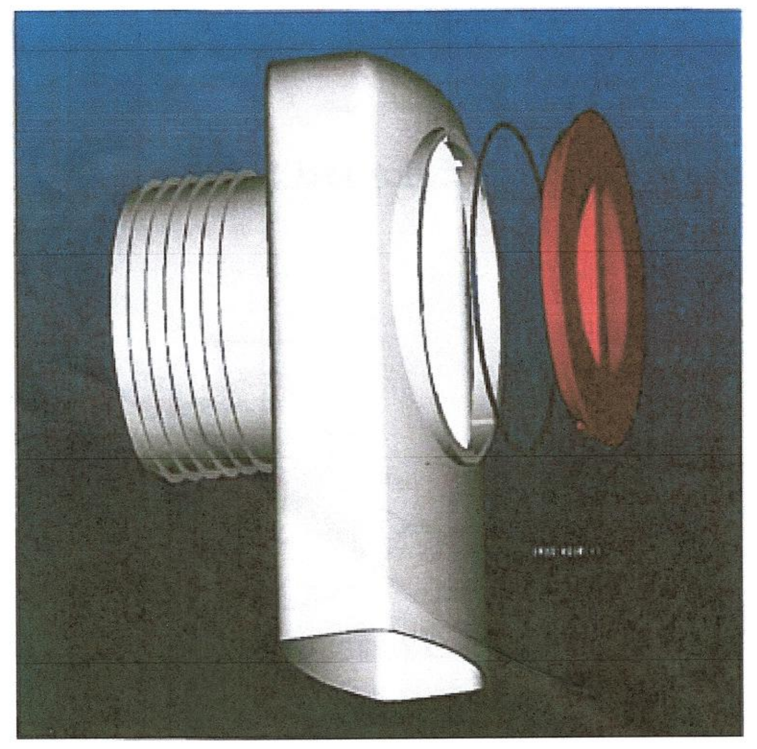


PLAN



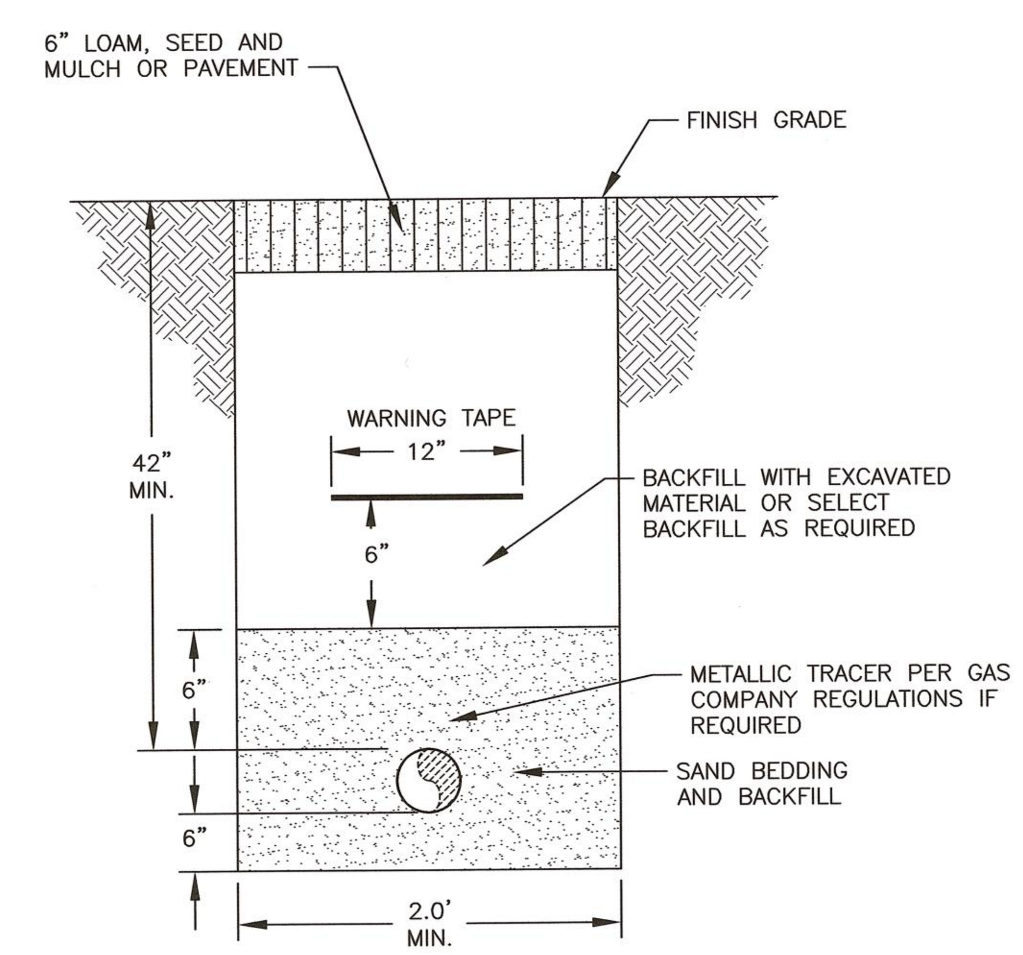
NOTES:
1. CONCRETE 5,000 PSI AFTER 28 DAYS.
2. REINFORCING 1 LAYER OF 4 x 4/4 x 4 W.W.M.
3. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
4. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.
5. PRECAST CONCRETE YARD DRAINS SHALL BE PHOENIX PRECAST PRODUCTS OR EQUAL

M / C3 YARD DRAIN
NTS



NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)
2. INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.
3. 1/4" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP.

O / C3 CATCH BASIN OIL TRAP
THE "ELIMINATOR"
NTS



Q / C5 GAS SERVICE TRENCH
NTS

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADD DETAIL Q	5/8/23
1	DETAILS N, O, P	3/1/23
0	ISSUED FOR APPROVAL	2/7/23

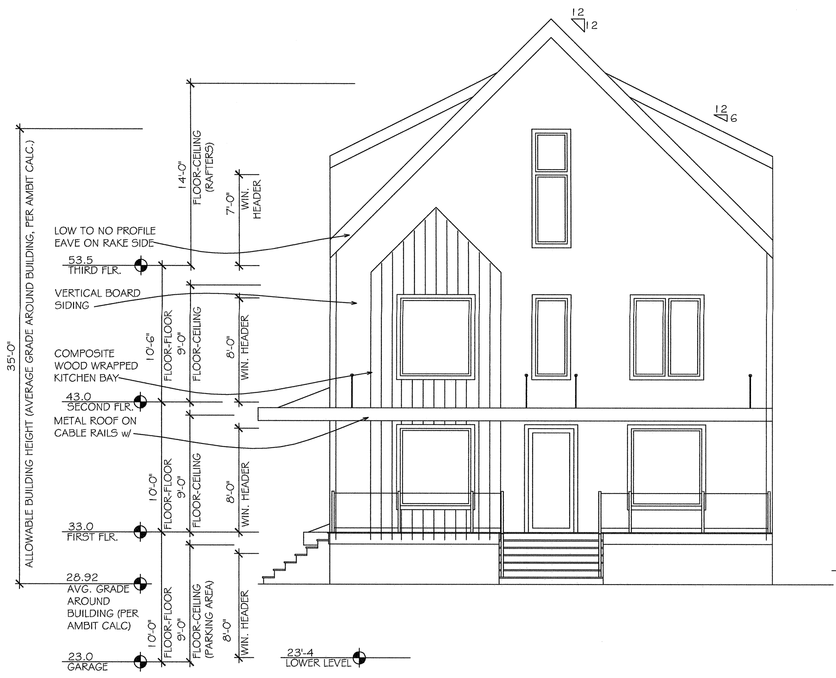
REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7861 LICENSED PROFESSIONAL ENGINEER

AS NOTED JANUARY 2023

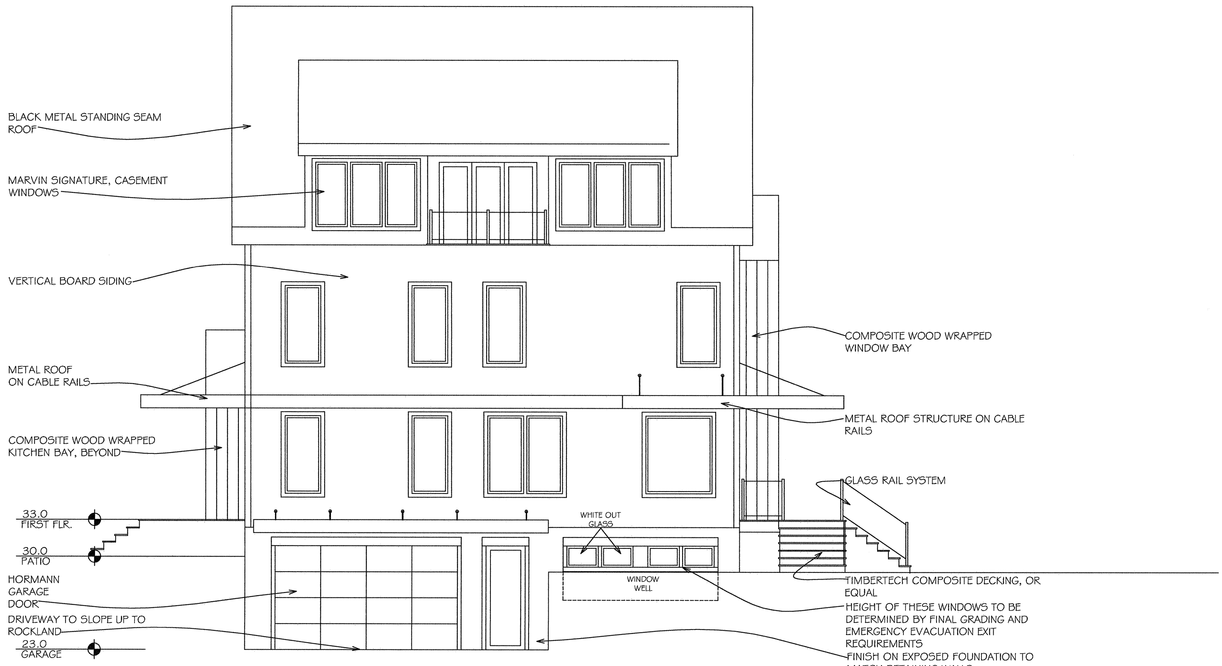
DETAILS D3

3492



KENT STREET ELEVATION

BACK YARD ELEVATION



ROCKLAND STREET ELEVATION

NEIGHBOR FACING ELEVATION

SMITH RESIDENCE

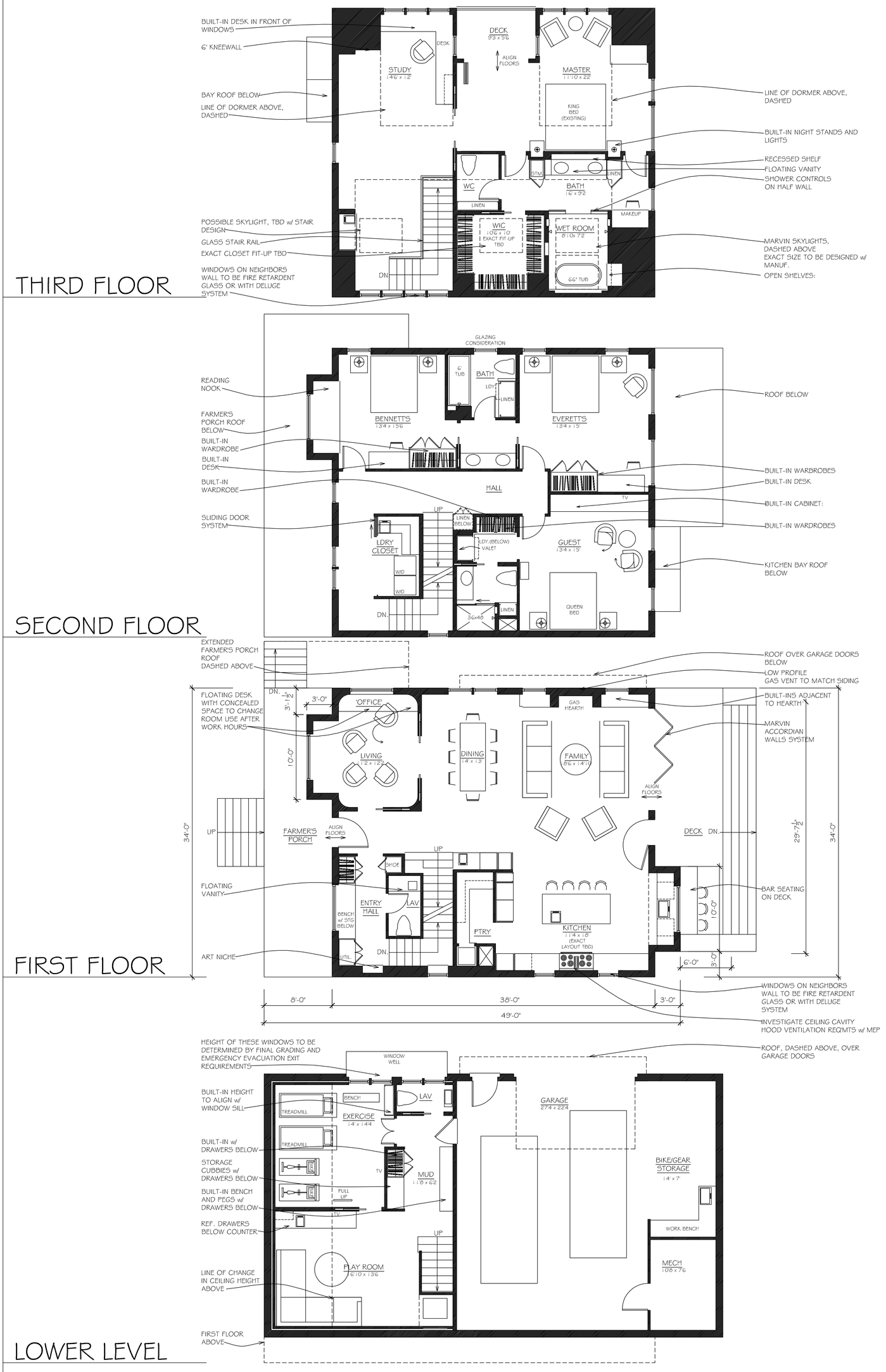
9 KENT STREET, PORTSMOUTH, NH

PROPOSED ELEVATIONS

$\frac{3}{16}" = 1'-0"$

MAR 1, 2023

SOMMA STUDIOS



SMITH RESIDENCE

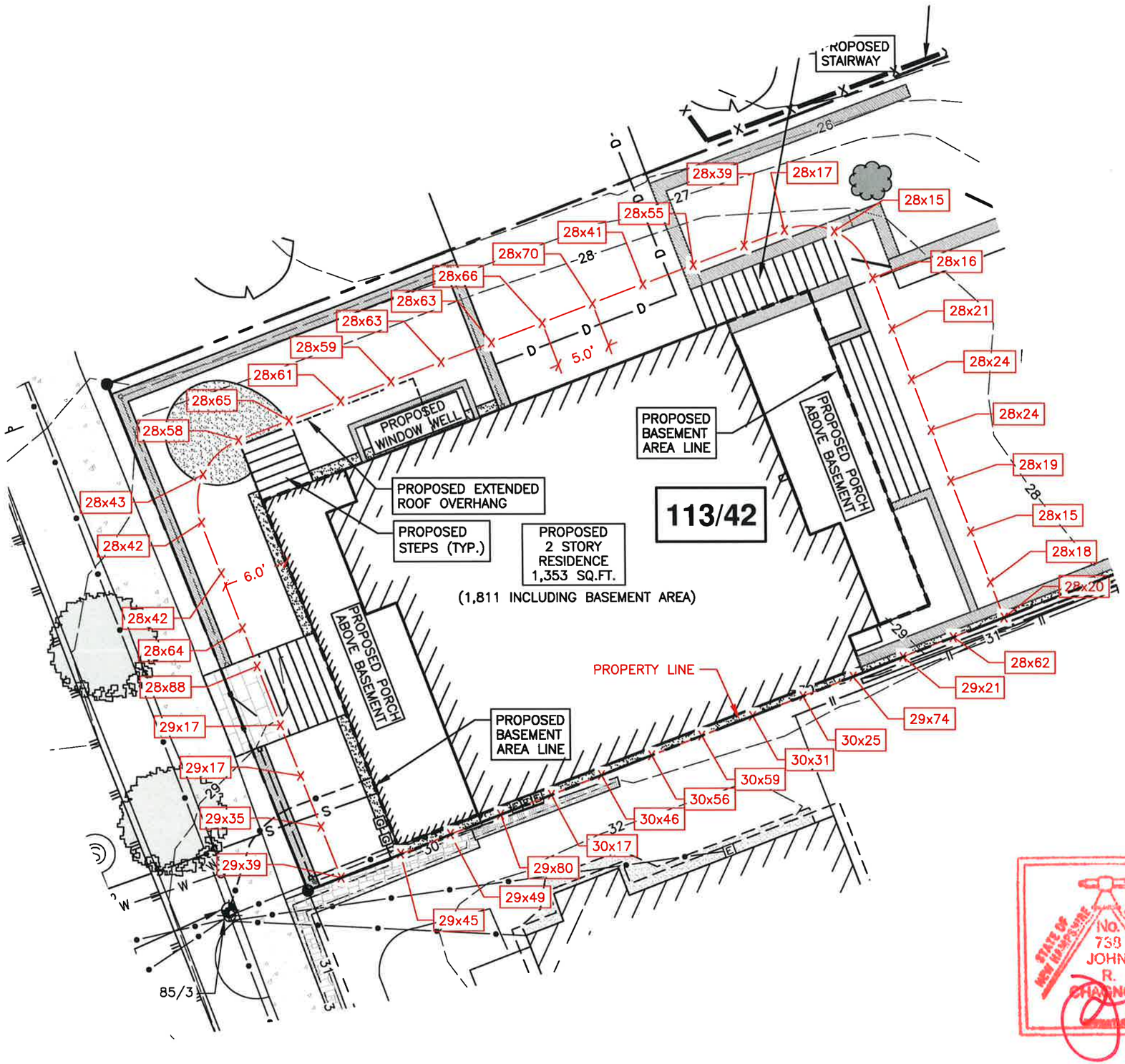
PROPOSED FLOOR PLANS

MAY 16, 2023

9 KENT STREET, PORTSMOUTH, NH

$\frac{3}{16}$" = 1'-0"

SOMMA STUDIOS



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

EXHIBIT B

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/22/23

REVISIONS

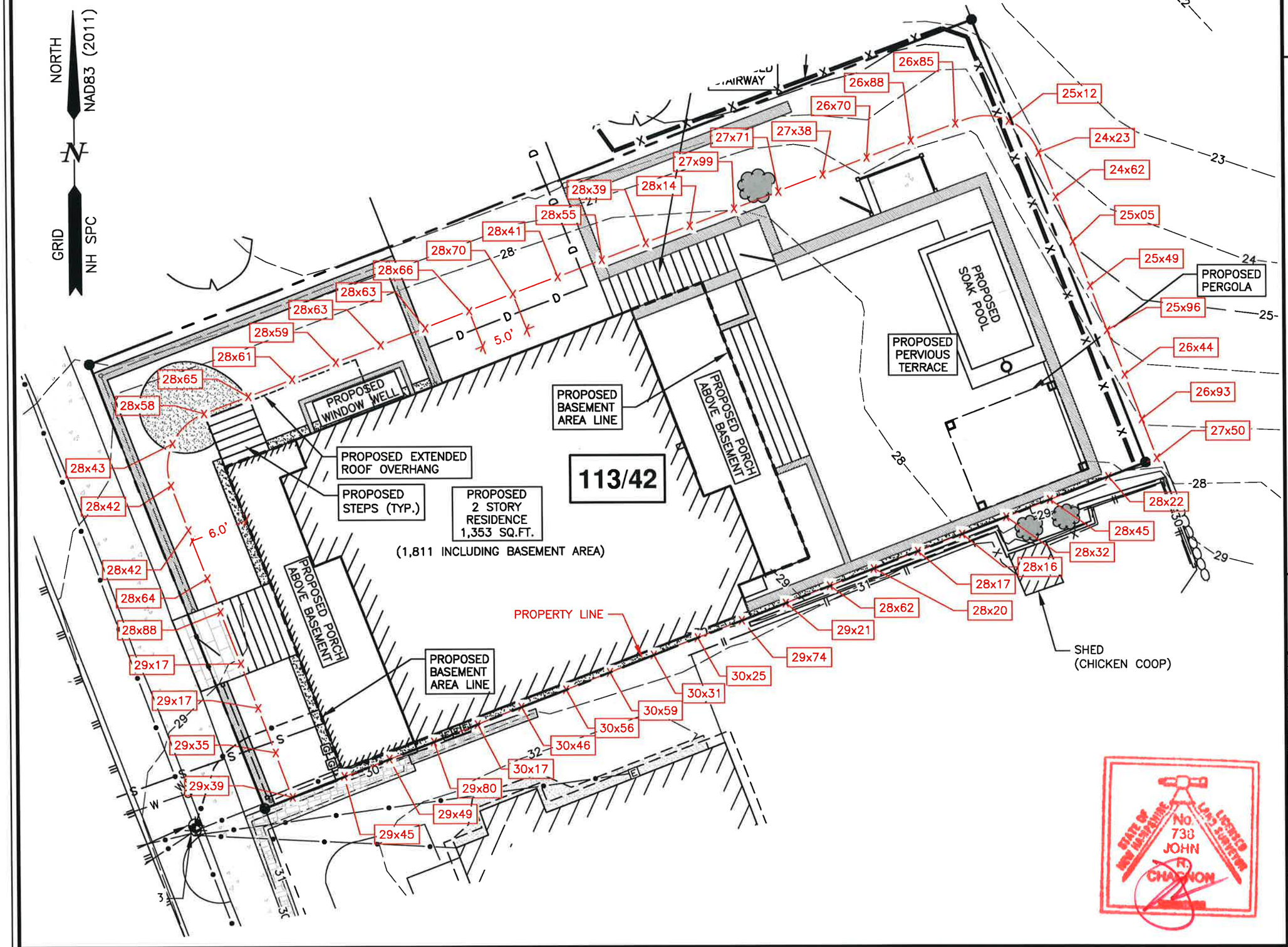
STATE OF NEW HAMPSHIRE — No. 738 JOHN R. CHAGNON — LICENSED LAND SURVEYOR

SCALE: 1" = 10' FEBRUARY 2023

AVERAGE GRADING PLAN C5

FB 301 PG 45 3492

J:\JOBS\JN 3400's\3490's\3492\2022 Survey\Plans & Specs\Site\3492 Survey 2022.dwg, AVERAGE GRADE PLAN, 2/24/2023 11:46:23 AM



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/22/23

REVISIONS

STATE OF NEW HAMPSHIRE — No. 738 — JOHN R. CHAGNON — LICENSED LAND SURVEYOR

SCALE: 1" = 10' — FEBRUARY 2023

AVERAGE GRADING PLAN — C5

FB 301 PG 45 — 3492

J:\JOBS\JN 3400's\3490's\3492\2022 Survey\Plans & Specs\Site\3492 Survey 2022.dwg, AVERAGE GRADE PLAN (2), 2/24/2023 11:42:53 AM

Average Grade Work Sheet - Building Only						
Project	Smith Residence				Calculated	
Address:	9 Kent Street, Portsmouth, NH				2/23/2023	
6' offset from Building; Existing Grades 5' OC						
SECTION	Elev	Elev	Elev	Elev	Total	
SOUTH	28.62	29.21	29.74	30.25	117.82	
	30.31	30.59	30.56	30.46	121.92	
	30.17	29.80	29.49	29.45	118.91	
					0.00	
					0.00	AVG PER SECTION
				12.0	358.65	29.89
WEST	29.39	29.35	29.17	29.17	117.08	
	28.88	28.64	28.42	28.42	114.36	
	28.43				28.43	
						AVG PER SECTION
				9.0	259.87	28.87
NORTH	28.58	28.65	28.61	28.59	114.43	
	28.63	28.63	28.66	28.70	114.62	
	28.41	28.55	28.39	28.17	113.52	
					0.00	
					0.00	AVG PER SECTION
				12.0	342.57	28.55
EAST	28.15	28.16	28.21	28.24	112.76	
	28.24	28.19	28.15	28.18	112.76	
	28.20				28.20	
					0.00	
						AVG PER SECTION
				9	253.72	28.19
Total	1,214.81	>	AVERAGE GRADE			
#	42		28.92			

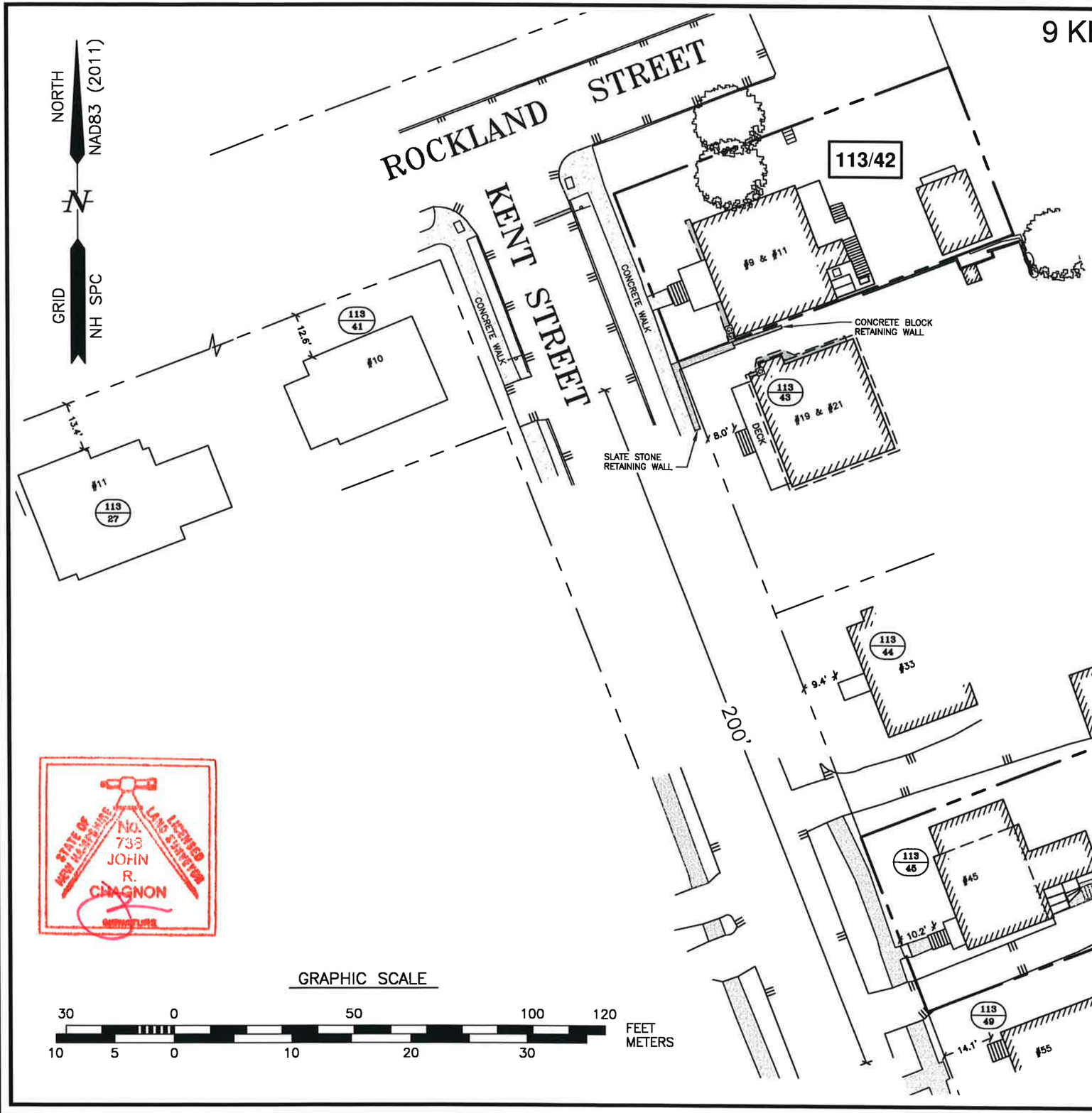
Average Grade Work Sheet - Building and Terrace						
Project	Smith Residence				Calculated	
Address:	9 Kent Street, Portsmouth, NH				2/23/2023	
6' offset from Building; Existing Grades 5' OC						
SECTION	Elev	Elev	Elev	Elev	Total	
SOUTH	28.22	28.45	28.32	28.16	113.15	
	28.17	28.20	28.62	29.21	114.20	
	29.74	30.25	30.31	30.59	120.89	
	30.56	30.46	30.17	29.80	120.99	
	29.49	29.45			58.94	AVG PER SECTION
				18.0	528.17	29.34
WEST	29.39	29.35	29.17	29.17	117.08	
	28.88	28.64	28.42	28.42	114.36	
	28.43				28.43	
						AVG PER SECTION
				9.0	259.87	28.87
NORTH	28.58	28.65	28.61	28.59	114.43	
	28.63	28.63	28.66	28.70	114.62	
	28.41	28.55	28.39	28.14	113.49	
	27.99	27.71	27.38	26.70	109.78	
	26.88	26.85			53.73	AVG PER SECTION
				18.0	506.05	28.11
EAST	25.12	24.23	24.62	25.05	99.02	
	25.49	25.96	26.44	26.93	104.82	
	27.50				27.50	
					0.00	
						AVG PER SECTION
				9	231.34	25.70
Total	1,525.43	>	AVERAGE GRADE			
#	54		28.25			

9 KENT STREET FRONT SETBACK EXHIBIT

OWNER: CYNTHIA AUSTIN SMITH & PETER SMITH
PROPERTY LOCATION: 9–11 KENT STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

NOTES:

IN ACCORDANCE WITH THE PORTSMOUTH ZONING ORDINANCE, ARTICLE 5, SECTION 10.516.10 FRONT YARD EXCEPTION FOR EXISTING ALIGNMENTS: THE AVERAGE FRONT SETBACK FOR LOT 113/42 ON KENT STREET IS 11'. THE AVERAGE SETBACK ON ROCKLAND STREET IS 13'.



KENT STREET		
MAP/LOT	SETBACK	AVERAGE
113/43	8.0	
113/44	9.4	
113/45	10.2	
113/46	14.1	
4	41.7	11'

ROCKLAND STREET		
MAP/LOT	SETBACK	AVERAGE
113/41	12.6	
113/27	13.4	
113/2	26.00	13'

EXHIBIT C

STATE OF NEW HAMPSHIRE
No. 738
JOHN R. CHAGNON
LICENSED LAND SURVEYOR

GRAPHIC SCALE

30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

SCALE: 1"=30' 21 DECEMBER, 2022

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

FB 301 PG 45 3492

J:\JOBS\JN 3400's\3490's\3492\2022 Survey\Plans & Specs\Site\3492 Survey 2022.dwg, AVERAGE SETBK 11X17 EXHIBIT, 12/22/2022 9:34:00 AM

EXHIBIT D

DRAINAGE ANALYSIS

SMITH RESIDENCE

9 KENT STREET
PORTSMOUTH, NH

PREPARED FOR
PETER SMITH

06 FEBRUARY 2023
REVISED: 28 FEBRUARY 2023

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED
PROFESSIONAL ENGINEER

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jrc@ambitengineering.com
(Ambit Job Number 3492)

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Residence Redevelopment at the property known as 9 Kent Street in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 113 as Lot 42. The total size of the lot is 5000± square feet (0.115 acres) and the associated drainage area is 7,643± square-feet (0.175 acres).

The development will provide for a residence redevelopment, parking, and associated utilities. The development has the potential to increase stormwater runoff to adjacent properties, and should be designed in a manner to prevent that occurrence. The site contains an existing building which will be replaced. The proposed stormwater BMPs will offset the impact caused by the redevelopment. Part of the runoff from the site will be directed to an existing City drainage network using a proposed catch basin.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth Assessor's Tax Map 113 as Lot 42. Bounding the site to the north is Rockland Street followed by City property. Bounding the site to the east is City property. Bounding the site to the south is a private residence. Bounding the site to the west is Kent Street, followed by private residences. A vicinity map is included in the Appendix to this report.

The proposed project includes a building redevelopment, associated parking and utilities. This report uses the design to calculate the future impervious coverage of the proposed lot, as required by the City.

This report includes information about the existing site and the proposed site necessary to analyze stormwater runoff and to design any required mitigation. The report includes impervious surface analyses and the associated operations and maintenance manual. The report will provide a narrative of the stormwater runoff. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology

for Small Watersheds" methods. This report uses the HydroCAD version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire."

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of two soil types:

Soil Symbol	Soil Name and Slopes
799	Urban land – Canton Complex (3-15% slopes)

Canton complex is well drained with a stated depth to water table and restrictive feature of more than 80 inches. While there is a pond near the site which might suggest high runoff potential, the soil report and test pit observations suggested high infiltrative capacity, so the Hydrologic Soil Group will be assumed to be A, and the design infiltration rate will be 5 inches per hour.

The physical characteristics of the site consist of flat (0-15%) grades that generally slope from the south to the north. Elevations on the site range from 24 to 29 feet above sea level. The existing site is developed and includes an existing building located to the west of the lot, with a shed to the east. Vegetation around the developed portion of the lot consists of established grasses and some landscape areas.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259F (effective date January 29, 2021), the proposed development is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as two subcatchment basins (E1 and E2) based on localized topography and discharge location. Subcatchment E1 contains the west half of the property and flows toward the South Mill Pond (Discharge Point 1 or DP1). Subcatchment E2 contains the east half of the property and flows toward DP1.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	To Design Point
E1	2,922	5.0	56	0.09	0.25	DP1
E2	4,721	5.0	61	0.21	0.48	DP1

POST-DEVELOPMENT DRAINAGE

Proposed subcatchments P1, P2 and P2a occupy the same approximate space as subcatchments E1 and E2, with P1 matching E1 and both P2 and P2a matching E2. All subcatchments flow to the same discharge point. The peak discharge of P1 is mitigated with the use of a drip apron. The peak discharge of subcatchment P2a is mitigated with the use of permeable pavers. The subcatchments were analyzed for peak discharges using HydroCAD.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
P1	2,156	5.0	67	0.13	0.26	DP1
P2	2,820	5.0	55	0.09	0.23	DP1
P2a	2,667	5.0	84	0.27	0.46	DP1

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 1,824 square-feet (36.5%) in the pre-development condition to 3,415 square-feet (68.3%) in the post-development condition. The project proposes the construction of a drip apron and permeable pavers on site, reducing the peak flow discharge from the site as well as providing treatment.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the drip apron and permeable pavers.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	0.08	0.02	0.30	0.13	0.52	0.49	South Mill Pond

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. A plan sheet detailing the subcatchments and direction of runoff are included in the Attachments. In the developed condition, the site will have a drip apron and permeable pavers. As a result, discharge point DP1 will experience a net decrease in peak discharge for all design storms in the proposed condition.

In addition, a catch basin is proposed adjacent to Rockland Street to help deal with off-site runoff. The catch basin is connected to an existing drainage network north of the property. The proposed drainage to the catch basin is detailed below for design purposes.

Table 4: Proposed Catch Basin Runoff

Design Point	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)	Contributing Area (SF)
CB1	0.30	0.59	1.08	1.36	7,164

OFFSITE INFRASTRUCTURE CAPACITY

There is an overall reduction in off-site flow due to the drip apron and permeable pavers proposed by the project. The new basin will direct flow away from a city playground. The re-direction of flow will provide a net benefit to the City. As a result, there is no anticipated negative impact to City infrastructure.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of construction areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and compacting/surfacing the access drives with gravel.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the installation of the drip apron and permeable pavers, the post-development peak runoff will be sufficiently decreased to mitigate any issues caused by the proposed construction. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. The re-direction of street drainage away from the city playground is a net benefit. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

REFERENCES

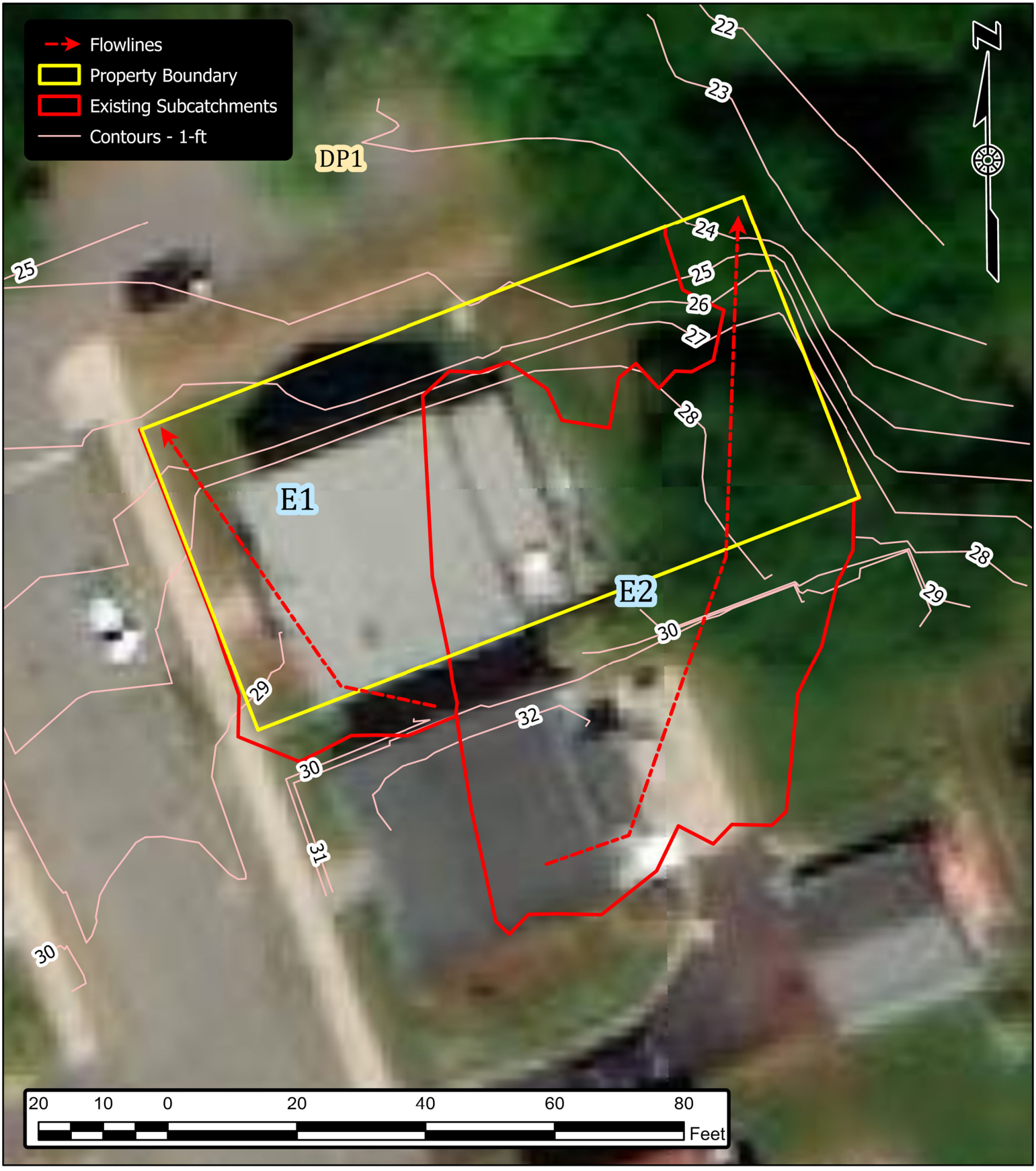
1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2022.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Existing Subcatchments

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, NH

JOB NUMBER: 3492
SCALE: 1" = 20'
SUBMITTED: 12-23-2022

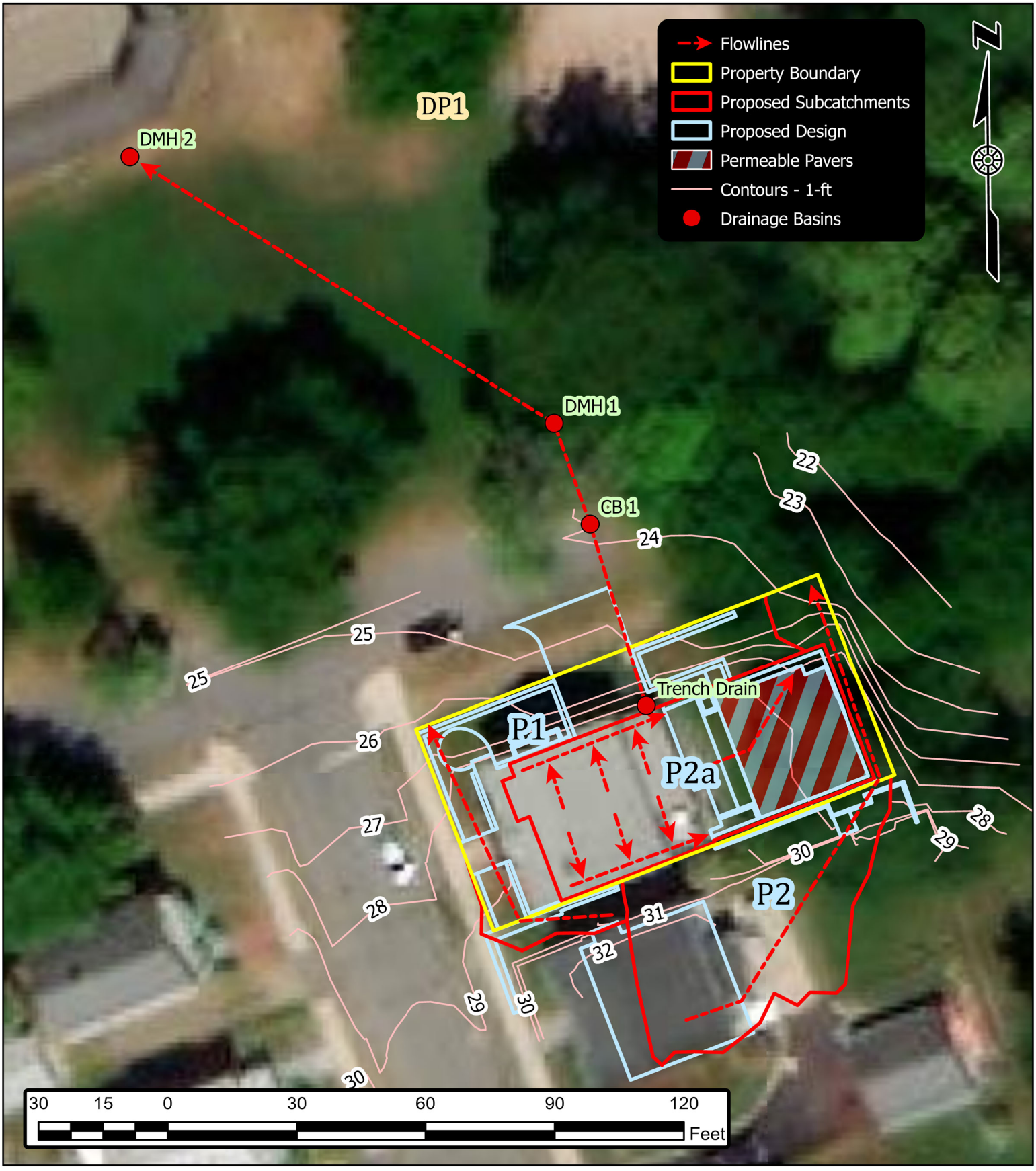


AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Proposed Subcatchments

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, NH

JOB NUMBER: 3492
SCALE: 1" = 30'
SUBMITTED: 02-28-2023



APPENDIX A

VICINITY (TAX) MAP

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Tax Map

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, NH

JOB NUMBER: 3492
SCALE: 1" = 50'
SUBMITTED: 12-22-2022

APPENDIX B

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.756 degrees West
Latitude	43.071 degrees North
Elevation	0 feet
Date/Time	Thu, 22 Dec 2022 14:33:27 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.81	3.22	3.94	4.55	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.94	4.68	5.33	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.07	4.58	**5yr**	3.60	4.40	5.04	5.94	6.70	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.75	4.86	5.53	**10yr**	4.31	5.32	6.09	7.11	7.98	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.14	2.78	3.63	4.74	6.17	7.10	**25yr**	5.46	6.83	7.81	9.03	10.05	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.29	4.33	5.66	7.39	8.58	**50yr**	6.54	8.25	9.43	10.81	11.97	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.16	6.77	8.85	10.38	**100yr**	7.83	9.98	11.39	12.96	14.27	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.14	8.08	10.60	12.55	**200yr**	9.38	12.06	13.76	15.55	17.01	**200yr**
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.78	7.71	10.22	13.47	16.14	**500yr**	11.92	15.52	17.68	19.78	21.48	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.63	0.86	0.93	1.33	1.69	2.24	2.49	**1yr**	1.98	2.39	2.87	3.19	3.90	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.06	3.45	**2yr**	2.71	3.32	3.82	4.55	5.09	**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	3.78	4.19	**5yr**	3.35	4.03	4.72	5.53	6.24	**5yr**
10yr	0.39	0.59	0.73	1.03	1.33	1.60	**10yr**	1.14	1.56	1.80	2.39	3.05	4.37	4.85	**10yr**	3.87	4.67	5.43	6.41	7.19	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.73	5.88	**25yr**	4.19	5.65	6.64	7.78	8.67	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.06	3.92	5.35	6.78	**50yr**	4.73	6.52	7.71	9.03	10.00	**50yr**
100yr	0.54	0.81	1.01	1.46	2.01	2.47	**100yr**	1.73	2.41	2.62	3.40	4.33	6.02	7.82	**100yr**	5.32	7.52	8.95	10.49	11.55	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.77	4.77	6.75	9.02	**200yr**	5.97	8.68	10.38	12.20	13.35	**200yr**
500yr	0.68	1.02	1.31	1.90	2.71	3.36	**500yr**	2.33	3.28	3.41	4.30	5.43	7.86	10.89	**500yr**	6.95	10.47	12.63	14.92	16.17	**500yr**

Upper Confidence Limits

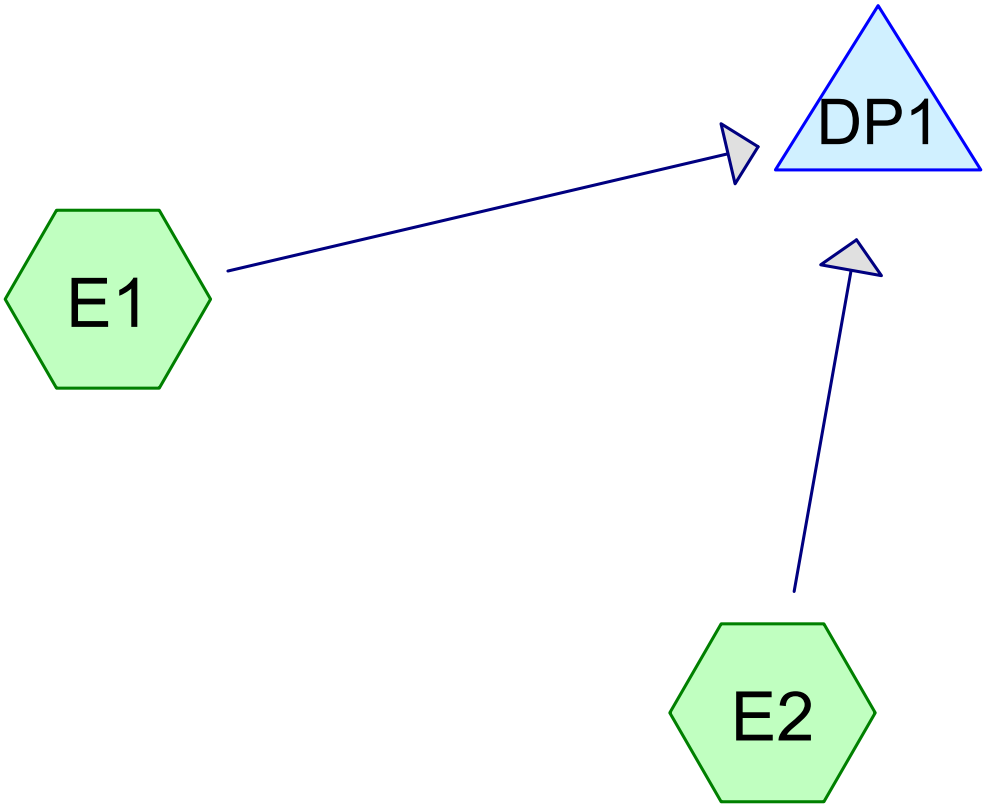
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.17	**1yr**	2.64	3.05	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.87	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.71	**2yr**	3.03	3.56	4.09	4.84	5.63	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.89	2.54	3.25	4.34	4.97	**5yr**	3.84	4.78	5.38	6.38	7.16	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.34	6.21	**10yr**	4.72	5.97	6.83	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.52	2.96	4.08	5.16	7.76	8.36	**25yr**	6.87	8.04	9.17	10.35	11.42	**25yr**
50yr	0.67	1.02	1.27	1.83	2.47	3.13	**50yr**	2.13	3.06	3.60	5.01	6.34	9.71	10.48	**50yr**	8.59	10.08	11.48	12.74	13.98	**50yr**
100yr	0.79	1.20	1.50	2.16	2.97	3.82	**100yr**	2.56	3.73	4.38	6.17	7.79	12.15	13.14	**100yr**	10.75	12.63	14.36	15.72	17.11	**100yr**
200yr	0.93	1.39	1.77	2.56	3.57	4.66	**200yr**	3.08	4.56	5.35	7.60	9.57	15.23	16.48	**200yr**	13.48	15.85	18.00	19.38	20.94	**200yr**
500yr	1.15	1.71	2.20	3.20	4.55	6.06	**500yr**	3.93	5.92	6.94	10.05	12.62	20.58	22.27	**500yr**	18.21	21.41	24.26	25.55	27.37	**500yr**

Powered by ACIS Northeast Regional Climate Center

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 2022-12-22 Existing Conditions - David T
Prepared by Ambit Engineering, Printed 2022-12-23

Project Notes

Defined 5 rainfall events from output (21) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.69	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.10	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.50	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.115	39	>75% Grass cover, Good, HSG A (E1, E2)
0.001	50	Drip Apron (E1)
0.008	98	Paved parking, HSG A (E1, E2)
0.002	98	Paved parking, HSG A, Retwall (E1, E2)
0.050	98	Roofs, HSG A (E1, E2)
0.175	**59**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.175	HSG A	E1, E2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.001	Other	E1
0.175		**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
0.115	0.000	0.000	0.000	0.000	0.115	>75% Grass cover, Good	E1, E2
0.000	0.000	0.000	0.000	0.001	0.001	Drip Apron	E1
0.010	0.000	0.000	0.000	0.000	0.010	Paved parking	E1, E2
0.050	0.000	0.000	0.000	0.000	0.050	Roofs	E1, E2
0.175	**0.000**	**0.000**	**0.000**	**0.001**	**0.175**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Runoff Area=2,922 sf 28.78% Impervious Runoff Depth>0.45"
Tc=5.0 min CN=56 Runoff=0.02 cfs 0.003 af

Subcatchment E2: Runoff Area=4,721 sf 37.60% Impervious Runoff Depth>0.66"
Tc=5.0 min CN=61 Runoff=0.07 cfs 0.006 af

Pond DP1: Inflow=0.08 cfs 0.008 af
Primary=0.08 cfs 0.008 af

Total Runoff Area = 0.175 ac Runoff Volume = 0.008 af Average Runoff Depth = 0.58"
65.77% Pervious = 0.115 ac 34.23% Impervious = 0.060 ac

Summary for Subcatchment E1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.02 cfs @ 12.12 hrs, Volume= 0.003 af, Depth> 0.45"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
	2,045	39	>75% Grass cover, Good, HSG A
*	49	98	Paved parking, HSG A, Retwall
	733	98	Roofs, HSG A
	59	98	Paved parking, HSG A
*	36	50	Drip Apron
	2,922	56	Weighted Average
	2,081		71.22% Pervious Area
	841		28.78% Impervious Area

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

Summary for Subcatchment E2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.07 cfs @ 12.10 hrs, Volume= 0.006 af, Depth> 0.66"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
	2,946	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	1,451	98	Roofs, HSG A
	301	98	Paved parking, HSG A
	4,721	61	Weighted Average
	2,946		62.40% Pervious Area
	1,775		37.60% Impervious Area

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

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 34.23% Impervious, Inflow Depth > 0.58" for 2-yr event
Inflow = 0.08 cfs @ 12.11 hrs, Volume= 0.008 af
Primary = 0.08 cfs @ 12.11 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Runoff Area=2,922 sf 28.78% Impervious Runoff Depth>1.36"
Tc=5.0 min CN=56 Runoff=0.09 cfs 0.008 af

Subcatchment E2: Runoff Area=4,721 sf 37.60% Impervious Runoff Depth>1.73"
Tc=5.0 min CN=61 Runoff=0.21 cfs 0.016 af

Pond DP1: Inflow=0.30 cfs 0.023 af
Primary=0.30 cfs 0.023 af

Total Runoff Area = 0.175 ac Runoff Volume = 0.023 af Average Runoff Depth = 1.59"
65.77% Pervious = 0.115 ac 34.23% Impervious = 0.060 ac

Summary for Subcatchment E1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 1.36"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
	2,045	39	>75% Grass cover, Good, HSG A
*	49	98	Paved parking, HSG A, Retwall
	733	98	Roofs, HSG A
	59	98	Paved parking, HSG A
*	36	50	Drip Apron
	2,922	56	Weighted Average
	2,081		71.22% Pervious Area
	841		28.78% Impervious Area

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

Summary for Subcatchment E2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 1.73"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
	2,946	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	1,451	98	Roofs, HSG A
	301	98	Paved parking, HSG A
	4,721	61	Weighted Average
	2,946		62.40% Pervious Area
	1,775		37.60% Impervious Area

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

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 34.23% Impervious, Inflow Depth > 1.59" for 10-yr event
Inflow = 0.30 cfs @ 12.09 hrs, Volume= 0.023 af
Primary = 0.30 cfs @ 12.09 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Runoff Area=2,922 sf 28.78% Impervious Runoff Depth>2.28"
Tc=5.0 min CN=56 Runoff=0.17 cfs 0.013 af

Subcatchment E2: Runoff Area=4,721 sf 37.60% Impervious Runoff Depth>2.77"
Tc=5.0 min CN=61 Runoff=0.35 cfs 0.025 af

Pond DP1: Inflow=0.52 cfs 0.038 af
Primary=0.52 cfs 0.038 af

Total Runoff Area = 0.175 ac Runoff Volume = 0.038 af Average Runoff Depth = 2.58"
65.77% Pervious = 0.115 ac 34.23% Impervious = 0.060 ac

Summary for Subcatchment E1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 2.28"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
	2,045	39	>75% Grass cover, Good, HSG A
*	49	98	Paved parking, HSG A, Retwall
	733	98	Roofs, HSG A
	59	98	Paved parking, HSG A
*	36	50	Drip Apron
	2,922	56	Weighted Average
	2,081		71.22% Pervious Area
	841		28.78% Impervious Area

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

Summary for Subcatchment E2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.35 cfs @ 12.08 hrs, Volume= 0.025 af, Depth> 2.77"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
	2,946	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	1,451	98	Roofs, HSG A
	301	98	Paved parking, HSG A
	4,721	61	Weighted Average
	2,946		62.40% Pervious Area
	1,775		37.60% Impervious Area

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

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 34.23% Impervious, Inflow Depth > 2.58" for 25-yr event
Inflow = 0.52 cfs @ 12.08 hrs, Volume= 0.038 af
Primary = 0.52 cfs @ 12.08 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Runoff Area=2,922 sf 28.78% Impervious Runoff Depth>3.24"
Tc=5.0 min CN=56 Runoff=0.25 cfs 0.018 af

Subcatchment E2: Runoff Area=4,721 sf 37.60% Impervious Runoff Depth>3.83"
Tc=5.0 min CN=61 Runoff=0.48 cfs 0.035 af

Pond DP1: Inflow=0.73 cfs 0.053 af
Primary=0.73 cfs 0.053 af

Total Runoff Area = 0.175 ac Runoff Volume = 0.053 af Average Runoff Depth = 3.60"
65.77% Pervious = 0.115 ac 34.23% Impervious = 0.060 ac

Summary for Subcatchment E1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 0.018 af, Depth> 3.24"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
	2,045	39	>75% Grass cover, Good, HSG A
*	49	98	Paved parking, HSG A, Retwall
	733	98	Roofs, HSG A
	59	98	Paved parking, HSG A
*	36	50	Drip Apron
	2,922	56	Weighted Average
	2,081		71.22% Pervious Area
	841		28.78% Impervious Area

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

Summary for Subcatchment E2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.48 cfs @ 12.08 hrs, Volume= 0.035 af, Depth> 3.83"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
	2,946	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	1,451	98	Roofs, HSG A
	301	98	Paved parking, HSG A
	4,721	61	Weighted Average
	2,946		62.40% Pervious Area
	1,775		37.60% Impervious Area

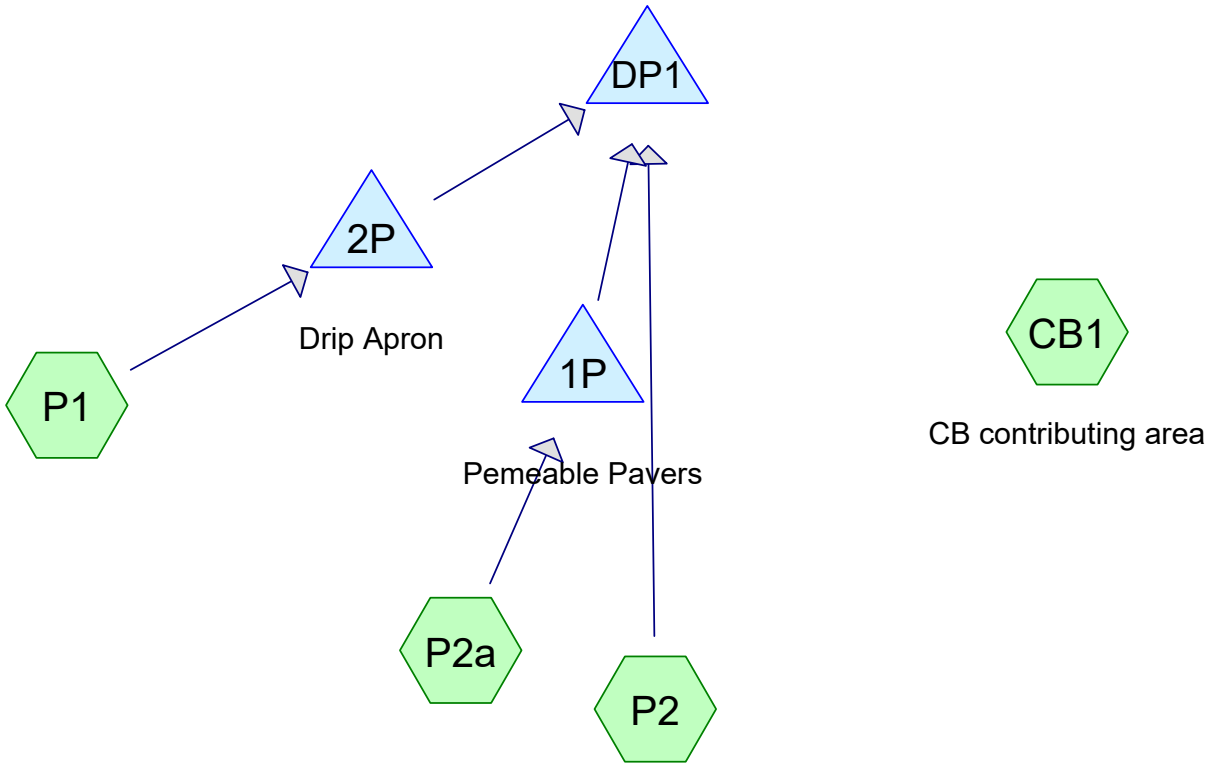
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 34.23% Impervious, Inflow Depth > 3.60" for 50-yr event
Inflow = 0.73 cfs @ 12.08 hrs, Volume= 0.053 af
Primary = 0.73 cfs @ 12.08 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 2022-12-22 Proposed Conditions - David T
Prepared by Haley Ward, Printed 2/28/2023

Project Notes

Defined 5 rainfall events from output (21) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.69	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.10	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.50	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.133	39	>75% Grass cover, Good, HSG A (CB1, P1, P2, P2a)
0.004	50	Drip Apron (CB1, P1, P2)
0.004	96	Gravel surface, HSG A (CB1, P1)
0.114	98	Paved parking, HSG A (CB1, P1, P2a)
0.009	98	Paved parking, HSG A, Retwall (P1, P2, P2a)
0.016	50	Permeable Pavers (P1, P2a)
0.059	98	Roofs, HSG A (CB1, P2, P2a)
0.003	98	Water Surface, HSG A (P2a)
0.340	**72**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.321	HSG A	CB1, P1, P2, P2a
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.019	Other	CB1, P1, P2, P2a
0.340		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.133	0.000	0.000	0.000	0.000	0.133	>75% Grass cover, Good	CB1, P1, P2, P2a
0.000	0.000	0.000	0.000	0.004	0.004	Drip Apron	CB1, P1, P2
0.004	0.000	0.000	0.000	0.000	0.004	Gravel surface	CB1, P1
0.123	0.000	0.000	0.000	0.000	0.123	Paved parking	CB1, P1, P2, P2a
0.000	0.000	0.000	0.000	0.016	0.016	Permeable Pavers	P1, P2a
0.059	0.000	0.000	0.000	0.000	0.059	Roofs	CB1, P2, P2a
0.003	0.000	0.000	0.000	0.000	0.003	Water Surface	P2a
0.321	**0.000**	**0.000**	**0.000**	**0.019**	**0.340**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment CB1: CB contributing area Runoff Area=7,163 sf 62.40% Impervious Runoff Depth>1.57"
Flow Length=189' Slope=0.0258 '/' Tc=5.7 min CN=77 Runoff=0.30 cfs 0.022 af

Subcatchment P1: Runoff Area=2,156 sf 42.39% Impervious Runoff Depth>0.96"
Tc=5.0 min CN=67 Runoff=0.05 cfs 0.004 af

Subcatchment P2: Runoff Area=2,820 sf 25.92% Impervious Runoff Depth>0.41"
Tc=5.0 min CN=55 Runoff=0.02 cfs 0.002 af

Subcatchment P2a: Runoff Area=2,667 sf 71.69% Impervious Runoff Depth>2.10"
Tc=5.0 min CN=84 Runoff=0.15 cfs 0.011 af

Pond 1P: Pemeable Pavers Peak Elev=0.74' Storage=0.002 af Inflow=0.15 cfs 0.011 af
Discarded=0.04 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.011 af

Pond 2P: Drip Apron Peak Elev=1.41' Storage=0.001 af Inflow=0.05 cfs 0.004 af
Discarded=0.01 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.004 af

Pond DP1: Inflow=0.02 cfs 0.002 af
Primary=0.02 cfs 0.002 af

Total Runoff Area = 0.340 ac Runoff Volume = 0.038 af Average Runoff Depth = 1.36"
45.79% Pervious = 0.156 ac 54.21% Impervious = 0.184 ac

Summary for Subcatchment CB1: CB contributing area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.30 cfs @ 12.09 hrs, Volume= 0.022 af, Depth> 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
	3,815	98	Paved parking, HSG A
*	43	50	Drip Apron
	82	96	Gravel surface, HSG A
	168	98	Paved parking, HSG A
	487	98	Roofs, HSG A
	2,568	39	>75% Grass cover, Good, HSG A
	7,163	77	Weighted Average
	2,693		37.60% Pervious Area
	4,470		62.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	189	0.0258	0.55		**Lag/CN Method,**

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 0.96"
Routed to Pond 2P : Drip Apron

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
	1,082	39	>75% Grass cover, Good, HSG A
*	62	50	Drip Apron
*	16	50	Permeable Pavers
	82	96	Gravel surface, HSG A
*	226	98	Paved parking, HSG A, Retwall
	688	98	Paved parking, HSG A
	2,156	67	Weighted Average
	1,242		57.61% Pervious Area
	914		42.39% Impervious Area

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

Summary for Subcatchment P2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 0.41"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
*	54	50	Drip Apron
	2,035	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	708	98	Roofs, HSG A
	2,820	55	Weighted Average
	2,089		74.08% Pervious Area
	731		25.92% Impervious Area

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

Summary for Subcatchment P2a:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.011 af, Depth> 2.10"
Routed to Pond 1P : Pemeable Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.69"

	Area (sf)	CN	Description
*	665	50	Permeable Pavers
	289	98	Paved parking, HSG A
	131	98	Water Surface, HSG A
	90	39	>75% Grass cover, Good, HSG A
*	135	98	Paved parking, HSG A, Retwall
	680	98	Roofs, HSG A
	677	98	Roofs, HSG A
	2,667	84	Weighted Average
	755		28.31% Pervious Area
	1,912		71.69% Impervious Area

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

Summary for Pond 1P: Pemeable Pavers

Inflow Area = 0.061 ac, 71.69% Impervious, Inflow Depth > 2.10" for 2-yr event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 0.011 af
Outflow = 0.04 cfs @ 11.85 hrs, Volume= 0.011 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.85 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.74' @ 12.46 hrs Surf.Area= 0.008 ac Storage= 0.002 af

Plug-Flow detention time= 14.9 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 14.5 min (836.3 - 821.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.012 af	**24.00'W x 14.00'L x 4.00'H Prismatoid** 0.031 af Overall x 40.0% Voids
#2	4.00'	0.008 af	**24.00'W x 14.00'L x 1.00'H Prismatoid**
		0.020 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	4.00'	**38.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.04 cfs @ 11.85 hrs HW=0.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Drip Apron

Inflow Area = 0.049 ac, 42.39% Impervious, Inflow Depth > 0.96" for 2-yr event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 11.90 hrs, Volume= 0.004 af, Atten= 82%, Lag= 0.0 min
Discarded = 0.01 cfs @ 11.90 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.41' @ 12.67 hrs Surf.Area= 0.002 ac Storage= 0.001 af

Plug-Flow detention time= 35.0 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 34.6 min (908.5 - 874.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.002 af	**13.00'W x 6.00'L x 3.00'H Prismatoid** 0.005 af Overall x 40.0% Voids
#2	3.00'	0.002 af	**13.00'W x 6.00'L x 1.00'H Prismatoid**
		0.004 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	3.00'	**34.0' long Sharp-Crested Rectangular Weir** 0 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.01 cfs @ 11.90 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

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

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 46.54% Impervious, Inflow Depth > 0.15" for 2-yr event
Inflow = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af
Primary = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment CB1: CB contributing area Runoff Area=7,163 sf 62.40% Impervious Runoff Depth>3.12"
Flow Length=189' Slope=0.0258 '/' Tc=5.7 min CN=77 Runoff=0.59 cfs 0.043 af

Subcatchment P1: Runoff Area=2,156 sf 42.39% Impervious Runoff Depth>2.22"
Tc=5.0 min CN=67 Runoff=0.13 cfs 0.009 af

Subcatchment P2: Runoff Area=2,820 sf 25.92% Impervious Runoff Depth>1.29"
Tc=5.0 min CN=55 Runoff=0.09 cfs 0.007 af

Subcatchment P2a: Runoff Area=2,667 sf 71.69% Impervious Runoff Depth>3.81"
Tc=5.0 min CN=84 Runoff=0.27 cfs 0.019 af

Pond 1P: Pemeable Pavers Peak Elev=1.96' Storage=0.006 af Inflow=0.27 cfs 0.019 af
Discarded=0.04 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.019 af

Pond 2P: Drip Apron Peak Elev=3.00' Storage=0.002 af Inflow=0.13 cfs 0.009 af
Discarded=0.02 cfs 0.008 af Primary=0.06 cfs 0.001 af Outflow=0.08 cfs 0.009 af

Pond DP1: Inflow=0.12 cfs 0.008 af
Primary=0.12 cfs 0.008 af

Total Runoff Area = 0.340 ac Runoff Volume = 0.078 af Average Runoff Depth = 2.77"
45.79% Pervious = 0.156 ac 54.21% Impervious = 0.184 ac

Summary for Subcatchment CB1: CB contributing area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
	3,815	98	Paved parking, HSG A
*	43	50	Drip Apron
	82	96	Gravel surface, HSG A
	168	98	Paved parking, HSG A
	487	98	Roofs, HSG A
	2,568	39	>75% Grass cover, Good, HSG A
	7,163	77	Weighted Average
	2,693		37.60% Pervious Area
	4,470		62.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	189	0.0258	0.55		**Lag/CN Method,**

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 2.22"
Routed to Pond 2P : Drip Apron

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
	1,082	39	>75% Grass cover, Good, HSG A
*	62	50	Drip Apron
*	16	50	Permeable Pavers
	82	96	Gravel surface, HSG A
*	226	98	Paved parking, HSG A, Retwall
	688	98	Paved parking, HSG A
	2,156	67	Weighted Average
	1,242		57.61% Pervious Area
	914		42.39% Impervious Area

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

Summary for Subcatchment P2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 1.29"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	54	50	Drip Apron
	2,035	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	708	98	Roofs, HSG A
	2,820	55	Weighted Average
	2,089		74.08% Pervious Area
	731		25.92% Impervious Area

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

Summary for Subcatchment P2a:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af, Depth> 3.81"
Routed to Pond 1P : Pemeable Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	665	50	Permeable Pavers
	289	98	Paved parking, HSG A
	131	98	Water Surface, HSG A
	90	39	>75% Grass cover, Good, HSG A
*	135	98	Paved parking, HSG A, Retwall
	680	98	Roofs, HSG A
	677	98	Roofs, HSG A
	2,667	84	Weighted Average
	755		28.31% Pervious Area
	1,912		71.69% Impervious Area

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

Summary for Pond 1P: Pemeable Pavers

Inflow Area = 0.061 ac, 71.69% Impervious, Inflow Depth > 3.81" for 10-yr event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af
Outflow = 0.04 cfs @ 11.70 hrs, Volume= 0.019 af, Atten= 86%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.70 hrs, Volume= 0.019 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.96' @ 12.59 hrs Surf.Area= 0.008 ac Storage= 0.006 af

Plug-Flow detention time= 45.8 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 45.4 min (850.3 - 804.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.012 af	**24.00'W x 14.00'L x 4.00'H Prismatoid** 0.031 af Overall x 40.0% Voids
#2	4.00'	0.008 af	**24.00'W x 14.00'L x 1.00'H Prismatoid**
		0.020 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	4.00'	**38.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.04 cfs @ 11.70 hrs HW=0.06' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Drip Apron

Inflow Area = 0.049 ac, 42.39% Impervious, Inflow Depth > 2.22" for 10-yr event
Inflow = 0.13 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.08 cfs @ 12.21 hrs, Volume= 0.009 af, Atten= 35%, Lag= 7.9 min
Discarded = 0.02 cfs @ 12.20 hrs, Volume= 0.008 af
Primary = 0.06 cfs @ 12.21 hrs, Volume= 0.001 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 3.00' @ 12.20 hrs Surf.Area= 0.004 ac Storage= 0.002 af

Plug-Flow detention time= 80.5 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 80.1 min (927.9 - 847.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.002 af	**13.00'W x 6.00'L x 3.00'H Prismatoid** 0.005 af Overall x 40.0% Voids
#2	3.00'	0.002 af	**13.00'W x 6.00'L x 1.00'H Prismatoid**
		0.004 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	3.00'	**34.0' long Sharp-Crested Rectangular Weir** 0 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.02 cfs @ 12.20 hrs HW=3.00' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.01 cfs @ 12.21 hrs HW=3.00' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.16 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 46.54% Impervious, Inflow Depth > 0.55" for 10-yr event
Inflow = 0.12 cfs @ 12.21 hrs, Volume= 0.008 af
Primary = 0.12 cfs @ 12.21 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment CB1: CB contributing area Runoff Area=7,163 sf 62.40% Impervious Runoff Depth>4.45"
Flow Length=189' Slope=0.0258 '/' Tc=5.7 min CN=77 Runoff=0.84 cfs 0.061 af

Subcatchment P1: Runoff Area=2,156 sf 42.39% Impervious Runoff Depth>3.38"
Tc=5.0 min CN=67 Runoff=0.20 cfs 0.014 af

Subcatchment P2: Runoff Area=2,820 sf 25.92% Impervious Runoff Depth>2.19"
Tc=5.0 min CN=55 Runoff=0.16 cfs 0.012 af

Subcatchment P2a: Runoff Area=2,667 sf 71.69% Impervious Runoff Depth>5.23"
Tc=5.0 min CN=84 Runoff=0.37 cfs 0.027 af

Pond 1P: Pemeable Pavers Peak Elev=3.05' Storage=0.009 af Inflow=0.37 cfs 0.027 af
Discarded=0.04 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.027 af

Pond 2P: Drip Apron Peak Elev=3.01' Storage=0.002 af Inflow=0.20 cfs 0.014 af
Discarded=0.02 cfs 0.010 af Primary=0.32 cfs 0.004 af Outflow=0.34 cfs 0.014 af

Pond DP1: Inflow=0.48 cfs 0.015 af
Primary=0.48 cfs 0.015 af

Total Runoff Area = 0.340 ac Runoff Volume = 0.113 af Average Runoff Depth = 4.01"
45.79% Pervious = 0.156 ac 54.21% Impervious = 0.184 ac

Summary for Subcatchment CB1: CB contributing area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
	3,815	98	Paved parking, HSG A
*	43	50	Drip Apron
	82	96	Gravel surface, HSG A
	168	98	Paved parking, HSG A
	487	98	Roofs, HSG A
	2,568	39	>75% Grass cover, Good, HSG A
	7,163	77	Weighted Average
	2,693		37.60% Pervious Area
	4,470		62.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	189	0.0258	0.55		**Lag/CN Method,**

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af, Depth> 3.38"
Routed to Pond 2P : Drip Apron

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
	1,082	39	>75% Grass cover, Good, HSG A
*	62	50	Drip Apron
*	16	50	Permeable Pavers
	82	96	Gravel surface, HSG A
*	226	98	Paved parking, HSG A, Retwall
	688	98	Paved parking, HSG A
	2,156	67	Weighted Average
	1,242		57.61% Pervious Area
	914		42.39% Impervious Area

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

Summary for Subcatchment P2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 2.19"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
*	54	50	Drip Apron
	2,035	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	708	98	Roofs, HSG A
	2,820	55	Weighted Average
	2,089		74.08% Pervious Area
	731		25.92% Impervious Area

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

Summary for Subcatchment P2a:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.027 af, Depth> 5.23"
Routed to Pond 1P : Pemeable Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.10"

	Area (sf)	CN	Description
*	665	50	Permeable Pavers
	289	98	Paved parking, HSG A
	131	98	Water Surface, HSG A
	90	39	>75% Grass cover, Good, HSG A
*	135	98	Paved parking, HSG A, Retwall
	680	98	Roofs, HSG A
	677	98	Roofs, HSG A
	2,667	84	Weighted Average
	755		28.31% Pervious Area
	1,912		71.69% Impervious Area

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

Summary for Pond 1P: Pemeable Pavers

Inflow Area = 0.061 ac, 71.69% Impervious, Inflow Depth > 5.23" for 25-yr event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 0.027 af
Outflow = 0.04 cfs @ 11.60 hrs, Volume= 0.027 af, Atten= 89%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.60 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 3.05' @ 12.82 hrs Surf.Area= 0.008 ac Storage= 0.009 af

Plug-Flow detention time= 78.2 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 77.9 min (873.8 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.012 af	**24.00'W x 14.00'L x 4.00'H Prismatoid** 0.031 af Overall x 40.0% Voids
#2	4.00'	0.008 af	**24.00'W x 14.00'L x 1.00'H Prismatoid**
		0.020 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	4.00'	**38.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.04 cfs @ 11.60 hrs HW=0.05' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

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

Summary for Pond 2P: Drip Apron

[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=8)

Inflow Area = 0.049 ac, 42.39% Impervious, Inflow Depth > 3.38" for 25-yr event
Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af
Outflow = 0.34 cfs @ 12.10 hrs, Volume= 0.014 af, Atten= 0%, Lag= 1.2 min
Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.010 af
Primary = 0.32 cfs @ 12.10 hrs, Volume= 0.004 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 3.01' @ 12.10 hrs Surf.Area= 0.004 ac Storage= 0.002 af

Plug-Flow detention time= 66.5 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 66.0 min (901.5 - 835.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.002 af	**13.00'W x 6.00'L x 3.00'H Prismatoid** 0.005 af Overall x 40.0% Voids
#2	3.00'	0.002 af	**13.00'W x 6.00'L x 1.00'H Prismatoid**
		0.004 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	3.00'	**34.0' long Sharp-Crested Rectangular Weir** 0 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=3.01' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.19 cfs @ 12.10 hrs HW=3.01' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 0.39 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 46.54% Impervious, Inflow Depth > 1.06" for 25-yr event
Inflow = 0.48 cfs @ 12.10 hrs, Volume= 0.015 af
Primary = 0.48 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment CB1: CB contributing area Runoff Area=7,163 sf 62.40% Impervious Runoff Depth>5.73"
Flow Length=189' Slope=0.0258 '/' Tc=5.7 min CN=77 Runoff=1.08 cfs 0.079 af

Subcatchment P1: Runoff Area=2,156 sf 42.39% Impervious Runoff Depth>4.54"
Tc=5.0 min CN=67 Runoff=0.26 cfs 0.019 af

Subcatchment P2: Runoff Area=2,820 sf 25.92% Impervious Runoff Depth>3.13"
Tc=5.0 min CN=55 Runoff=0.23 cfs 0.017 af

Subcatchment P2a: Runoff Area=2,667 sf 71.69% Impervious Runoff Depth>6.57"
Tc=5.0 min CN=84 Runoff=0.46 cfs 0.034 af

Pond 1P: Pemeable Pavers Peak Elev=3.99' Storage=0.012 af Inflow=0.46 cfs 0.034 af
Discarded=0.07 cfs 0.034 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.034 af

Pond 2P: Drip Apron Peak Elev=3.01' Storage=0.002 af Inflow=0.26 cfs 0.019 af
Discarded=0.02 cfs 0.012 af Primary=0.26 cfs 0.007 af Outflow=0.28 cfs 0.019 af

Pond DP1: Inflow=0.49 cfs 0.023 af
Primary=0.49 cfs 0.023 af

Total Runoff Area = 0.340 ac Runoff Volume = 0.148 af Average Runoff Depth = 5.21"
45.79% Pervious = 0.156 ac 54.21% Impervious = 0.184 ac

Summary for Subcatchment CB1: CB contributing area

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.08 cfs @ 12.09 hrs, Volume= 0.079 af, Depth> 5.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
	3,815	98	Paved parking, HSG A
*	43	50	Drip Apron
	82	96	Gravel surface, HSG A
	168	98	Paved parking, HSG A
	487	98	Roofs, HSG A
	2,568	39	>75% Grass cover, Good, HSG A
	7,163	77	Weighted Average
	2,693		37.60% Pervious Area
	4,470		62.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	189	0.0258	0.55		**Lag/CN Method,**

Summary for Subcatchment P1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 0.019 af, Depth> 4.54"
Routed to Pond 2P : Drip Apron

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
	1,082	39	>75% Grass cover, Good, HSG A
*	62	50	Drip Apron
*	16	50	Permeable Pavers
	82	96	Gravel surface, HSG A
*	226	98	Paved parking, HSG A, Retwall
	688	98	Paved parking, HSG A
	2,156	67	Weighted Average
	1,242		57.61% Pervious Area
	914		42.39% Impervious Area

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

Summary for Subcatchment P2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af, Depth> 3.13"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
*	54	50	Drip Apron
	2,035	39	>75% Grass cover, Good, HSG A
*	23	98	Paved parking, HSG A, Retwall
	708	98	Roofs, HSG A
	2,820	55	Weighted Average
	2,089		74.08% Pervious Area
	731		25.92% Impervious Area

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

Summary for Subcatchment P2a:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.46 cfs @ 12.07 hrs, Volume= 0.034 af, Depth> 6.57"
Routed to Pond 1P : Pemeable Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.50"

	Area (sf)	CN	Description
*	665	50	Permeable Pavers
	289	98	Paved parking, HSG A
	131	98	Water Surface, HSG A
	90	39	>75% Grass cover, Good, HSG A
*	135	98	Paved parking, HSG A, Retwall
	680	98	Roofs, HSG A
	677	98	Roofs, HSG A
	2,667	84	Weighted Average
	755		28.31% Pervious Area
	1,912		71.69% Impervious Area

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

Summary for Pond 1P: Pemeable Pavers

Inflow Area = 0.061 ac, 71.69% Impervious, Inflow Depth > 6.57" for 50-yr event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 0.034 af
Outflow = 0.07 cfs @ 12.57 hrs, Volume= 0.034 af, Atten= 84%, Lag= 30.0 min
Discarded = 0.07 cfs @ 12.57 hrs, Volume= 0.034 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 3.99' @ 12.57 hrs Surf.Area= 0.008 ac Storage= 0.012 af

Plug-Flow detention time= 105.1 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 104.5 min (894.3 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.012 af	**24.00'W x 14.00'L x 4.00'H Prismatoid** 0.031 af Overall x 40.0% Voids
#2	4.00'	0.008 af	**24.00'W x 14.00'L x 1.00'H Prismatoid**
		0.020 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	4.00'	**38.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.57 hrs HW=3.99' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Drip Apron

[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=14)

Inflow Area = 0.049 ac, 42.39% Impervious, Inflow Depth > 4.54" for 50-yr event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.019 af
Outflow = 0.28 cfs @ 12.06 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.00 hrs, Volume= 0.012 af
Primary = 0.26 cfs @ 12.06 hrs, Volume= 0.007 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 3.01' @ 12.05 hrs Surf.Area= 0.004 ac Storage= 0.002 af

Plug-Flow detention time= 58.4 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 58.0 min (884.9 - 827.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.002 af	**13.00'W x 6.00'L x 3.00'H Prismatoid** 0.005 af Overall x 40.0% Voids
#2	3.00'	0.002 af	**13.00'W x 6.00'L x 1.00'H Prismatoid**
		0.004 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**5.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'
#2	Primary	3.00'	**34.0' long Sharp-Crested Rectangular Weir** 0 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.02 cfs @ 12.00 hrs HW=3.01' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.13 cfs @ 12.06 hrs HW=3.01' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.34 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.175 ac, 46.54% Impervious, Inflow Depth > 1.60" for 50-yr event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.023 af
Primary = 0.49 cfs @ 12.07 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Rockingham County, New Hampshire

December 22, 2022

Custom Soil Resource Report
Soil Map

Map Scale: 1:211 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 3 6 12 18

Feet
0 10 20 40 60

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 25, Sep 12, 2022

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	0.1	100.0%
Totals for Area of Interest		**0.1**	**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

Scituate and newfields

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

Chatfield

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

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

Squamscott and scitico

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

APPENDIX E

FEMA FIRM MAP

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

FEMA Flood Map

SMITH RESIDENCE
9 KENT STREET
PORTSMOUTH, NH

JOB NUMBER: 3492
SCALE: 1" = 200'
SUBMITTED: 12-22-2022

APPENDIX F

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
SMITH RESIDENCE

9 KENT STREET
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide Peter Smith (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the proposed drip apron and permeable pavers (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the Portsmouth DPW, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate the quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Permeable pavers
- Drip apron
- Catch basin with deep sump

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide

more permanent mulch or compost or other means of protection.

3. **Permeable Pavers:** Ensure that sediments do not enter and plug pavement. Remove sediments, trash, and debris, as necessary. Repair outlet structures and appurtenances, as necessary. Vacuum at least twice annually.
4. **Drip Apron:** Ensure that sediments do not enter and plug drip apron surface. If system does not drain within 72 hours of a rainfall event, consult a qualified professional about restoration of function of the drip apron.
5. **Storm Drain and Catch Basin Inlets/Outlets:** Monitor drain inlets and outlet for excessive accumulation of sediments, in excess of 1 foot in the sump, monthly for the first year following construction, every other month thereafter. Remove sediments as required.
6. **Gutters:** Monitor gutters after leaf fall events (abscission) for clogging and overflowing. Remove debris as necessary.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.

Figure 2: Phragmites australis. Photo by Le Loup Gris

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Drain Manholes *-Catch Basins*	Monthly for 1 year following construction, Every other Month thereafter	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	Monthly for 1 year following construction, 1 time per 2 years thereafter	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*
-Gutters	After leaf fall events	*Check for clogging, overflowing along roof edges.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

DRIP APRON LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect drip apron for the occurrence of silt or vegetation *-Check to see if trench drains within 72 hours of rainfall.*	Bi-Yearly and following major storm events	*-Ensure that sediments do not enter and plug drip apron surface.* *-if system does not drain within 72 hours of a rainfall event, consult a qualified professional about restoration of function of the drip apron.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

PERMEABLE PAVER LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect pavement surface for the occurrence of sediment, trash, debris, or structural damage. *-Check pavement for surface ponding*	Frequently in first few months following construction, Bi-annually after	*-Ensure that sediments do not enter and plug pavement. Remove sediments, trash, and debris, as necessary.* *-Repair outlet structures and appurtenances, as necessary.* *-Vacuum pavement at least twice annually.* *-Prevent vehicles with muddy wheels from accessing permeable pavement.*
-No winter sanding permitted *-Minimize application of salt*	Continuous practice	

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

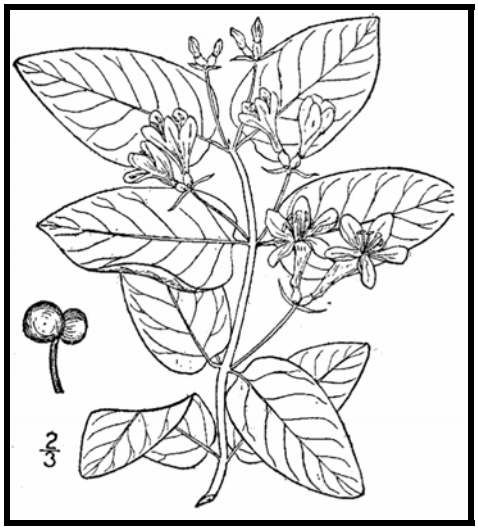
INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

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



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

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

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

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

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

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

New Hampshire Regulations

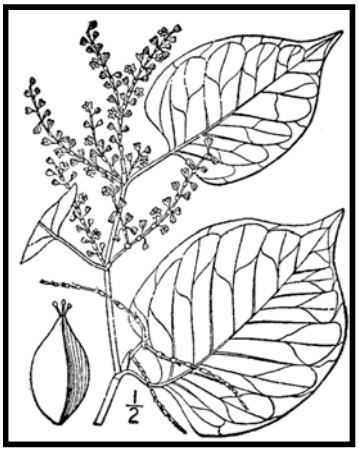
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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

How and When to Dispose of Invasives?

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

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



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

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

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

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

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

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

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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010


EXHIBIT E
Home Color TBD
TANGRAM 3DS


TANGRAM 3DS


TANGRAM 3DS


NO
OUTLET

9 Kent St

Imagery ©2023 Google, Imagery ©2023 Maine GeoLibrary, Maxar Technologies, U.S. Geological Survey, Map data ©2023 50 ft

EXHIBIT F

Google Maps 10 Kent St

Image capture: Sep 2011 © 2023 Google

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)
25	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)

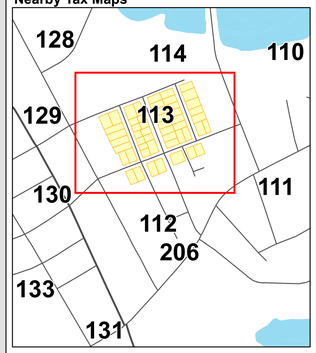
EXHIBIT G

0 50 100 Feet

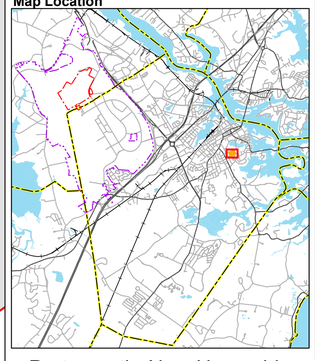
0 20 40 Meters

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
2022

Tax Map 113