

Findings of Fact | Site Plan Review

City of Portsmouth Planning Board

Date: December 4, 2023

Property Address: 1155 Sagamore Avenue

Application #: LU 23-178

Decision: Approve Deny Approve with Conditions

Findings of Fact:

Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
1	Compliance with all City Ordinances and Codes and these regulations. <u>Applicable standards:</u>	Meets Does Not Meet	<u>Applicable standards:</u> No Variances Required. Project complies with all Ordinance requirements including parking, setbacks, open space, building coverage, lot area per dwelling unit, height, and frontage.
2	Provision for the safe development, change or expansion of use of the site.	Meets Does Not Meet	TAC reviewed the site layout, and recommended approval. Plans show all utility connections and drainage infrastructure needed. Driveway exists.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	Meets Does Not Meet	Rain Garden to minimize storm water peak discharge (Sheet C3) and provide stormwater treatment. Erosion controls during construction as necessary (D1). Long Term Maintenance Plan provided.
4	Adequate protection for the		No groundwater withdrawal (water supply

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	quality of groundwater.	Meets Does Not Meet	is city). No nearby production wells. Rain Garden provides treatment.
5	Adequate and reliable water supply sources.	Meets Does Not Meet	Water supply is Public -City. Supply confirmed by TAC review. All plumbing fixtures will be low / water conserving.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	Meets Does Not Meet	Sewer connection is Public - City. Was set up for this connection and will be reviewed by DPW.
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	Meets Does Not Meet	Property will not have any fuel consuming devices. No Natural Gas, No Home Heating Oil. All appliances will be Energy Star certified. Air or Geo-thermal heat pump proposed. All air exchange via energy recovery ventilators. Filtered dryer vents are the only other exhaust points.
8	Adequate provision for fire safety, prevention and control.	Meets Does Not Meet	Full NFPA 13 wet sprinkler system construction. Adequate FD access.
9	Adequate protection of natural features such as, but not limited to, wetlands.	Meets Does Not Meet	Urban site, no wetlands or buffers.
10	Adequate protection of historical features on the site.	Meets Does Not Meet	No Historical features present. Existing building is non-contributing.
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	Meets Does Not Meet	The residential use is a low volume trip generator.
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	Meets Does Not Meet	Access is to a state highway.
13	Adequate insulation from external noise sources.	Meets Does Not Meet	No adjacent high noise generators are present.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	Meets Does Not Meet	Trash collection will be city curbside, as allowed. TAC Review included Fire and Police Departments. All concerns addressed in design.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	Meets Does Not Meet	Light and air remains as the site conforms to setbacks and open space requirements. Open space provided.
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	Meets Does Not Meet	Existing sidewalk (easement previously granted) connects site to surrounding environs.
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	Meets Does Not Meet	Land is suitable for the intended purpose, Existing Lot. Currently used as an urban building site. Plans follow ordinance and guidelines; see TAC approval.
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	Meets Does Not Meet	Professionally prepared landscape design provided.
19	Compliance with applicable City approved design standards.	Meets Does Not Meet	Approved by the Technical Advisory Committee
	Other Board Findings:		



200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

29 November 2023

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Site Plan Approval at 1155 Sagamore Road, Tax Map 224, Lot 18

Dear Mr. Chellman and Planning Board Members:

On behalf of Build America, we are pleased to submit the attached plan set for **Site Plan Approval** for the above-mentioned project and request that we be placed on the agenda for your **December 21, 2023**, Meeting. The project is the demolition of the existing building and proposed new construction of a 4-unit residential condominium with the associated and required site improvements.

The site has an existing multi-use building with various uses over time, including commercial uses. Currently parking is in the front yard. The building, pavement, and other features will be removed, and the proposed 4-unit residential Condominium building placed on the property. Parking will be located in the side yard, and in garage spaces in individual units.

Site grades will be adjusted to accommodate the new site layout, but generally the flow directions match the existing. Drainage will be directed to the proposed Rain Garden. New utility connections are proposed, including elimination of the overhead electric service in favor of underground servicing.

The project received Technical Advisory Committee approval recommendation at the November 7, 2023, meeting, subject to the following conditions, with our response in **bold** text:

- 1) Provide a more detailed grading plan. **Detailed grading has been added to Sheet C3.**
- 2) Provide more information on how drainage will be entering the rain garden. **See the flow arrows added to Sheet C3.**
- 3) Water lines running under units will be installed in sleeves. **See note on Sheet C4.**
- 4) There will be one domestic water line servicing the building. Update line size that will be running down the front appropriately. **See revisions on Sheet C4.**
- 5) Provide drawings/details for the duplex pump system and the alarm system need to be provided and approved. **See Detail I on Sheet D2 and Detail M on Sheet D3.**
- 6) Provide cross-section of rain garden including soil layers of test pits. **See Sheets C3 and Sheet D3.**
- 7) Provide an easement deed detailing the water valve and metering access and leak detection easement. **See Note 9 on Sheet C4.**

To be submitted to the Planning Board:

- 1) An elevation view of the proposed structures. **See the supplemental material in the submission package.**
- 2) A cross-section view of the proposed rain garden. **See Sheet D3.**
- 3) A green building checklist. **See the supplemental material in the submission package.**
- 4) Coordinate with NHDOT on Sagamore Avenue sight lines for the northern section of the site. **See Note on Sheet C2.**
- 5) Remove Note #31 from the Utility Plan about third party requirements. **Done (Sheet C4).**

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Existing Conditions & Demolition Plan C1 – This plan shows the existing property boundaries and existing site conditions and notes the demolition of the existing structure and associated features.
- Site Plan C2 – This plan shows the site development in detail with the associated zoning development standards and circulation / layout.
- Landscape Plan L1 & L2 – These plans show the proposed site landscaping and planting details.
- Grading and Erosion Control Plan C3 – This plan shows proposed site grading. The site primarily flow to the west. Impervious surfaces will be directed to a proposed rain garden for treatment and attenuation.
- Utility Plan C4 – This plan shows proposed site utilities. The project will connect to the city’s low pressure sewer system in an existing connection constructed for the purpose and brought to the property line.
- Driveway Profile Plan C5 - This plan shows the proposed driveway profile. The connection to the state highway is unchanged from the current geometry at the point of connection.
- Erosion Control Notes and Details D1 and D2 – D3 – These plans shows site details.

Also please find attached the following submission items:

Tax Map – Ortho Map – USGS
Site Plan Application Checklist
Tri Generation Calculations
E-one sewer capacity Report
Green Building Statement
Site Drainage Analysis
Building Plans

We look forward to an in-person presentation and the Planning Board’s review of this submission. We request approval of the proposed development project.

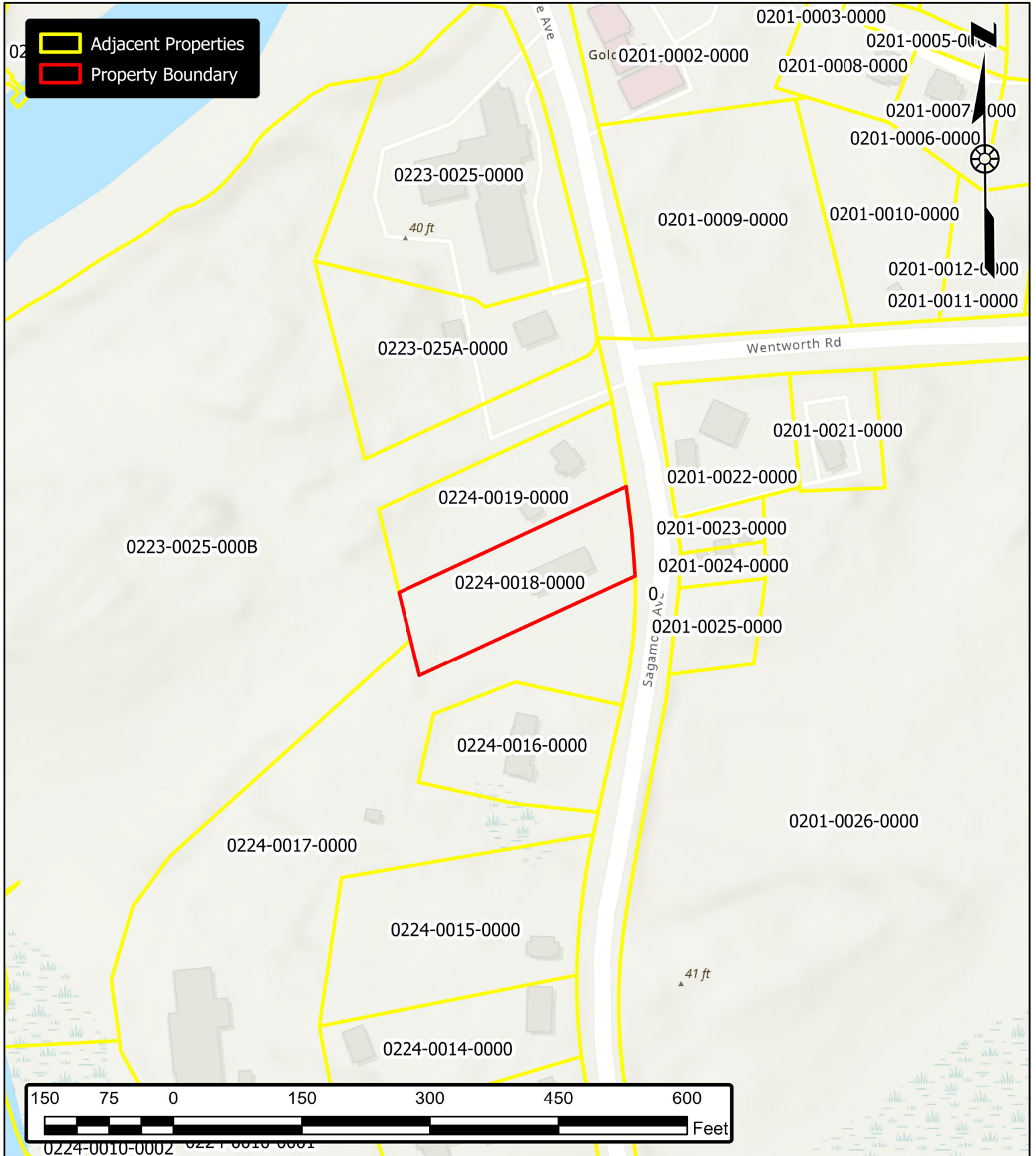
Sincerely,



John R. Chagnon, PE

BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 150'
SUBMITTED: 2023-08-25



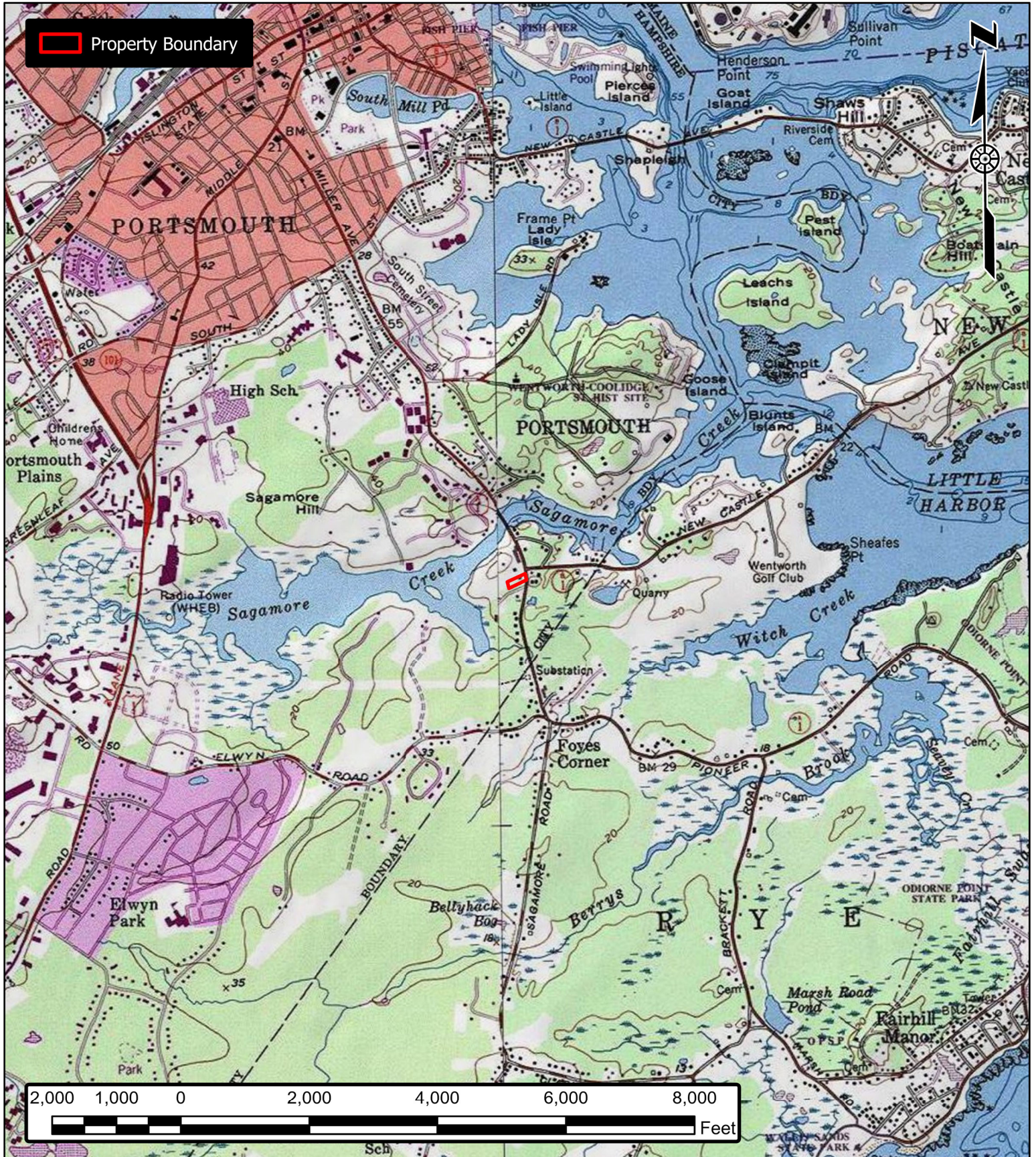
BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 50'
SUBMITTED: 2023-08-25



BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 2000'
SUBMITTED: 2023-08-25





City of Portsmouth, New Hampshire

Site Plan Application Checklist

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

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Applicant: Build America Date Submitted: 10-23-23

Application # (in City's online permitting): TBD

Site Address: 1155 Sagamore Avenue Map: 224 Lot: 18

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Complete application form submitted via the City's web-based permitting program (2.5.2.1(2.5.2.3A))	Online (OL)	N/A
<input type="checkbox"/>	All application documents, plans, supporting documentation and other materials uploaded to the application form in viewpoint in digital Portable Document Format (PDF). One hard copy of all plans and materials shall be submitted to the Planning Department by the published deadline. (2.5.2.8)	OL	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Statement that lists and describes "green" building components and systems. (2.5.3.1B)	TBD	
<input type="checkbox"/>	Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. (2.5.3.1C)	ARCHITECTURAL PLANS	N/A
<input type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. (2.5.3.1D)	SHEET C1 (C1)	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. (2.5.3.1E)	COVER SHEET (CS)	N/A
<input type="checkbox"/>	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. (2.5.3.1F)	C1	N/A
<input type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. (2.5.3.1G)	CS	N/A
<input type="checkbox"/>	List of reference plans. (2.5.3.1H)	C1	N/A
<input type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. (2.5.3.1I)	CS	N/A

Site Plan Specifications			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. (2.5.4.1A)	Required on all plan sheets	N/A
<input type="checkbox"/>	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. (2.5.4.1B)	Required on all plan sheets	N/A
<input type="checkbox"/>	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. (2.5.4.1C)	C1	N/A
<input type="checkbox"/>	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. (2.5.4.1D)	Required on all plan sheets	N/A
<input type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. (2.5.4.1E)	N/A	N/A
<input type="checkbox"/>	Title (name of development project), north point, scale, legend. (2.5.4.2A)	CS	N/A
<input type="checkbox"/>	Date plans first submitted, date and explanation of revisions. (2.5.4.2B)	EACH SHEET	N/A
<input type="checkbox"/>	Individual plan sheet title that clearly describes the information that is displayed. (2.5.4.2C)	Required on all plan sheets	N/A
<input type="checkbox"/>	Source and date of data displayed on the plan. (2.5.4.2D)	C1	N/A

Site Plan Specifications – Required Exhibits and Data

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	<p>1. Existing Conditions: (2.5.4.3A)</p> <ul style="list-style-type: none"> • Surveyed plan of site showing existing natural and built features; • Existing building footprints and gross floor area; • Existing parking areas and number of parking spaces provided; • Zoning district boundaries; • Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre; • Existing impervious and disturbed areas; • Limits and type of existing vegetation; • Wetland delineation, wetland function and value assessment (including vernal pools); • SFHA, 100-year flood elevation line and BFE data, as required. 	C1	
<input type="checkbox"/>	<p>2. Buildings and Structures: (2.5.4.3B)</p> <ul style="list-style-type: none"> • Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation; • Elevations: Height, massing, placement, materials, lighting, façade treatments; • Total Floor Area; • Number of Usable Floors; • Gross floor area by floor and use. 	SHEET C2 (C2)	
<input type="checkbox"/>	<p>3. Access and Circulation: (2.5.4.3C)</p> <ul style="list-style-type: none"> • Location/width of access ways within site; • Location of curbing, right of ways, edge of pavement and sidewalks; • Location, type, size and design of traffic signing (pavement markings); • Names/layout of existing abutting streets; • Driveway curb cuts for abutting prop. and public roads; • If subdivision; Names of all roads, right of way lines and easements noted; • AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC). 	C2	
<input type="checkbox"/>	<p>4. Parking and Loading: (2.5.4.3D)</p> <ul style="list-style-type: none"> • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided). 	C2	
<input type="checkbox"/>	<p>5. Water Infrastructure: (2.5.4.3E)</p> <ul style="list-style-type: none"> • Size, type and location of water mains, shut-offs, hydrants & Engineering data; • Location of wells and monitoring wells (include protective radii). 	SHEET C4 (C4)	
<input type="checkbox"/>	<p>6. Sewer Infrastructure: (2.5.4.3F)</p> <ul style="list-style-type: none"> • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period. 	C4	

<input type="checkbox"/>	7. Utilities: (2.5.4.3G) <ul style="list-style-type: none"> The size, type and location of all above & below ground utilities; Size type and location of generator pads, transformers and other fixtures. 	C4	
<input type="checkbox"/>	8. Solid Waste Facilities: (2.5.4.3H) <ul style="list-style-type: none"> The size, type and location of solid waste facilities. 		
		C2 CITY PICK UP	
<input type="checkbox"/>	9. Storm water Management: (2.5.4.3I) <ul style="list-style-type: none"> The location, elevation and layout of all storm-water drainage. The location of onsite snow storage areas and/or proposed off-site snow removal provisions. Location and containment measures for any salt storage facilities Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures. 	SHEET C3 (C3)	
<input type="checkbox"/>	10. Outdoor Lighting: (2.5.4.3J) <ul style="list-style-type: none"> Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan. 	NO PARKING LOT LIGHTING	
<input type="checkbox"/>	11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)	N/A	
<input type="checkbox"/>	12. Landscaping: (2.5.4.3K) <ul style="list-style-type: none"> Identify all undisturbed area, existing vegetation and that which is to be retained; Location of any irrigation system and water source. 	LANDSCAPE PLAN L-1	
<input type="checkbox"/>	13. Contours and Elevation: (2.5.4.3L) <ul style="list-style-type: none"> Existing/Proposed contours (2 foot minimum) and finished grade elevations. 	C3	
<input type="checkbox"/>	14. Open Space: (2.5.4.3M) <ul style="list-style-type: none"> Type, extent and location of all existing/proposed open space. 	C2	
<input type="checkbox"/>	15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)	N/A	
<input type="checkbox"/>	16. Character/Civic District (All following information shall be included): (2.5.4.3P) <ul style="list-style-type: none"> Applicable Building Height (10.5A21.20 & 10.5A43.30); Applicable Special Requirements (10.5A21.30); Proposed building form/type (10.5A43); Proposed community space (10.5A46). 	N/A	
<input type="checkbox"/>	17. Special Flood Hazard Areas (2.5.4.3Q) <ul style="list-style-type: none"> The proposed development is consistent with the need to minimize flood damage; All public utilities and facilities are located and construction to minimize or eliminate flood damage; Adequate drainage is provided so as to reduce exposure to flood hazards. 	N/A	

Other Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. (3.2.1-2)	SUPPLEMENTAL MATERIAL	
<input type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	C3	
<input type="checkbox"/>	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. (7.3.1)	N/A	
<input type="checkbox"/>	Stormwater Management and Erosion Control Plan. (7.4)	C3 & SHEET D1	
<input type="checkbox"/>	Inspection and Maintenance Plan (7.6.5)	DRAINAGE ANALYSIS	

Final Site Plan Approval Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. (2.5.3.2A)	C5	
<input type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> • Calculations relating to stormwater runoff; • Information on composition and quantity of water demand and wastewater generated; • Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; • Estimates of traffic generation and counts pre- and post- construction; • Estimates of noise generation; • A Stormwater Management and Erosion Control Plan; • Endangered species and archaeological / historical studies; • Wetland and water body (coastal and inland) delineations; • Environmental impact studies. (2.5.3.2B)	SUPPLEMENTAL MATERIAL	
<input type="checkbox"/>	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. (2.5.3.2D)	TBD	



200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

22 October, 2023

**Trip Generation
Proposed Residential Development
1155 Sagamore Avenue
Portsmouth, NH**

On behalf of Build America, LLC, we hereby submit this Trip Generation in support of the applicant's filing with the NHDOT and the Portsmouth Technical Advisory Committee for Site Plan approval. The Applicant / Developer seeks to construct a 4-unit residential Condominium at the site, which is currently occupied with a two-unit residential duplex.

The base trip generation for the proposed 4-unit development is based on a review of the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition. The land use code (LUC) that best resembles the proposed use is LUC 270 – Residential Planned Unit Development. Using that description, the proposed use the site generates the following peak hour trips:

Weekday AM Peak Hour of Generator 0.58 Trips per Dwelling Unit:
4 units X 0.58 Trip Ends per Dwelling Unit = 3 trips
3 Trips (23% entering; 77% exiting)

Weekday PM Peak Hour of Generator 0.72 Trips per Dwelling Unit:
4 units X 0.72 Trip Ends per Dwelling Unit = 3 trips
3 Trips (64% entering; 36% exiting)

The added trip generation from the site is not excessive, will not impact the adjacent street network, and can be accommodated without any changes to the roadway network. Please feel free to call if you have any questions or comments about this application.

Sincerely,

John R. Chagnon, PE
Ambit Engineering, Inc. – Haley Ward

Land Use: 270

Residential Planned Unit Development

Description

A residential planned unit development (PUD), for the purposes of trip generation, is defined as containing any combination of residential land uses. These developments might also contain supporting services such as limited retail and recreational facilities.

Additional Data

Caution—The description of a PUD is general in nature because these developments vary by density and type of dwelling. It is therefore recommended that when information on the number and type of dwellings is known, trip generation should be calculated on the basis of the known type of dwellings rather than on the basis of Land Use 270. Data for this land use are provided as general information and would be applicable only when the number of dwellings is known.

The sites were surveyed in the 1980s, and the 1990s, and the 2000s in Minnesota, South Dakota, and Virginia.

Source Numbers

111, 119, 165, 169, 357

Residential Planned Unit Development (270)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 7

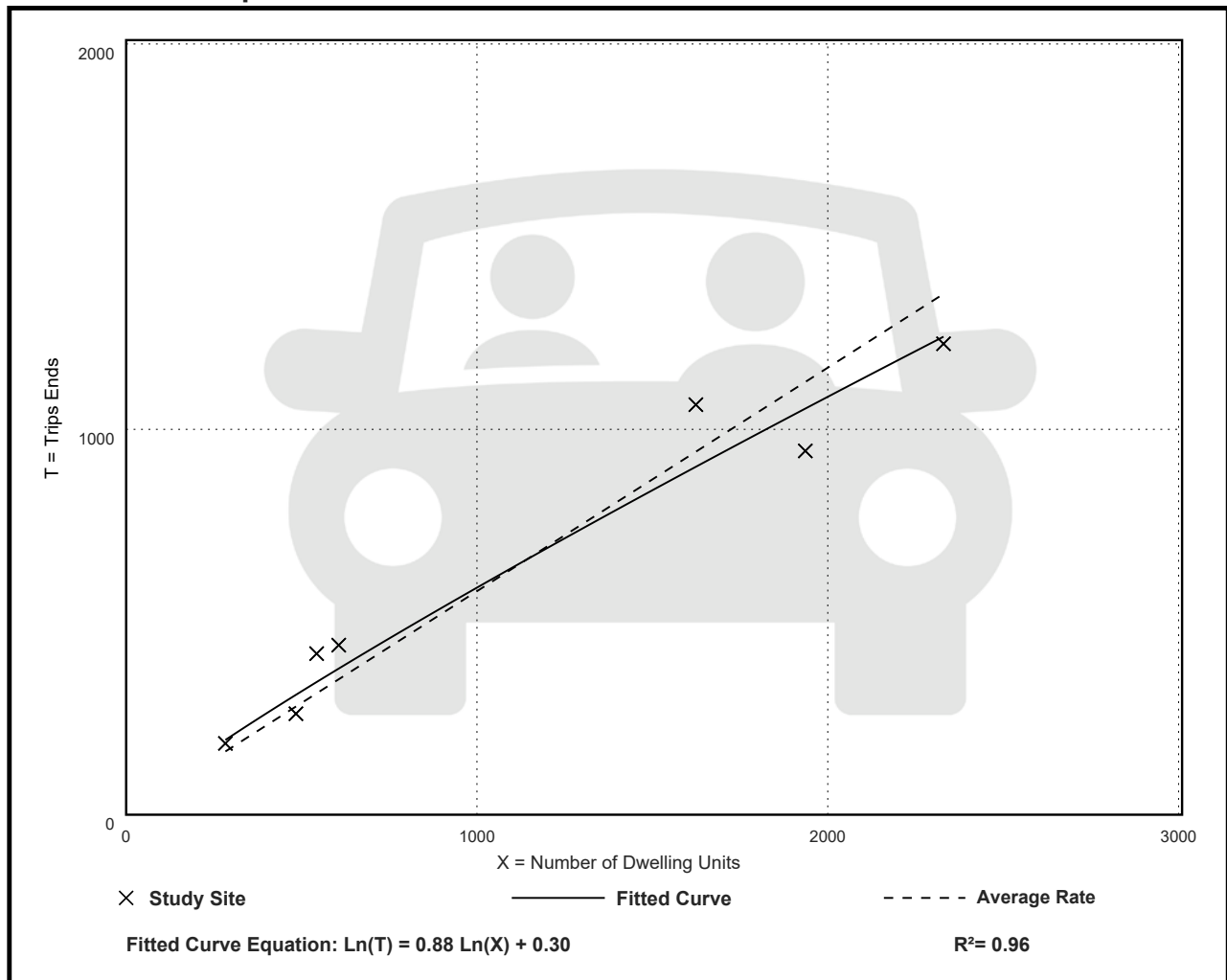
Avg. Num. of Dwelling Units: 1115

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.49 - 0.77	0.10

Data Plot and Equation



Residential Planned Unit Development (270)

Vehicle Trip Ends vs: Dwelling Units

On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 7

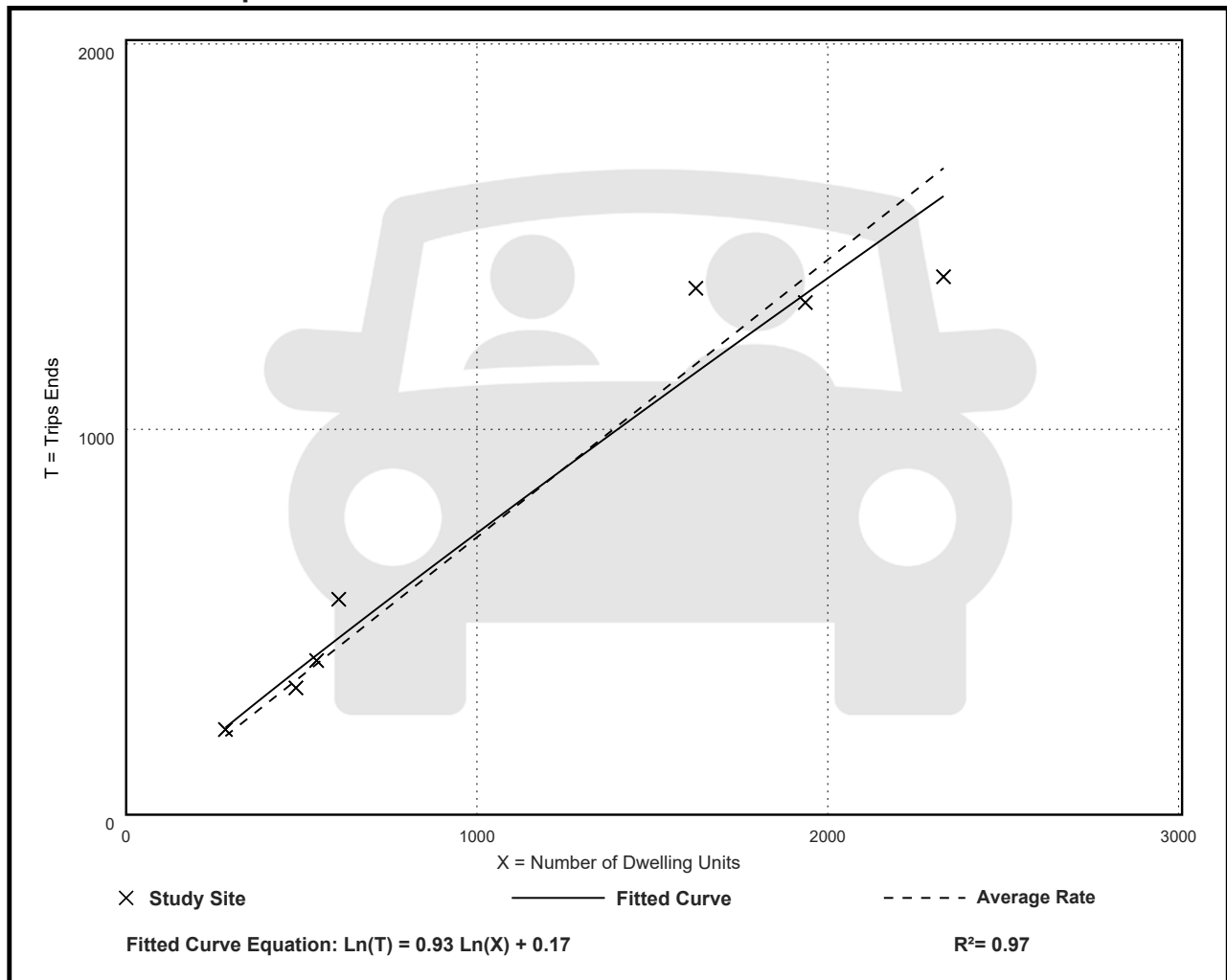
Avg. Num. of Dwelling Units: 1115

Directional Distribution: 64% entering, 36% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.72	0.60 - 0.92	0.11

Data Plot and Equation





Environment One Corporation

Pressure Sewer Preliminary

Cost and Design Analysis

For

1155 Sagamore Road, Portsmouth, NH

Prepared For:

John Chagnon

200 Griffin Rd Unit 3

Portsmouth

NH

03801

Tel: 603.430.9282

Fax:

Prepared By: D.Coppola

October 5, 2023

1155 Sagamore Road, Portsmouth, NH

Prepared by : D.Coppola

On: October 5, 2023

Notes :

Zone 1 is showing individual pumps at each unit, Zone 2 is if this was a duplex for all units

<<<<< **END OF NOTES** >>>>>

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

1155 Sagamore Road, Portsmouth, NH

Prepared By:

D.Coppola

October 5, 2023

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Gals/day per Pump	Max Flow Per Pump (gpm)	Max Sim Ops	Max Flow (GPM)	Pipe Size (inches)	Max Velocity (FPS)	Length of Main this Zone	Friction Loss Factor (ft/100 ft)	Friction Loss This Zone	Accum Fric Loss (feet)	Max Main Elevation	Minimum Pump Elevation	Static Head (feet)	Total Dynamic Head (ft)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE								Friction loss calculations were based on a Constant for inside roughness "C" of: 50									
1.00	1.00	4	4	330	11.00	3	33.00	1.50	5.58	147.00	7.47	10.98	10.98	10.00	0.00	10.00	20.98
2.00	2.00	2	2	1320	11.00	2	22.00	1.50	3.72	147.00	3.53	5.18	5.18	10.00	0.00	10.00	15.18

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

\\CWMDFS02\Home - Remote\dcoppola\My Documents\EONE\New Hampshire\Portsmouth\1111 Sagamore\1155 Sagamore RD Design.EOne

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

1155 Sagamore Road, Portsmouth, NH

Prepared By:
D.Coppola

October 5, 2023

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Gallons per 100 lineal feet	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for:				SDR11HDPE	Gals per Day per Dwelling				200	
1.00	1.00	4	1.50	9.85	147.00	14.48	1,320	91.14	0.26	0.26
2.00	2.00	2	1.50	9.85	147.00	14.48	2,640	182.27	0.13	0.13

"Green" Building Statement, 1155 Sagamore Ave., Portsmouth

Location and Transportation

Walkable Destinations: 1155 Sagamore is two miles from Wentworth-By-The-Sea, two miles from downtown Portsmouth, and less than one mile to the Rye border and the Atlantic Grill.

Bicycles: This area is a frequently used bicycle traffic route to beaches, downtown amenities, other points north and south and other popular locations. Hanging bicycle storage is provided within each garage space.

Ride sharing: Although this location is not serviced directly by public transportation, it enjoys easy access and is a quickly identifiable address for cabs or shared transportation services.

Site

Stormwater: Stormwater will be collected and treated in a proposed Rain Garden before discharge from the property. This Rain Garden provides advanced stormwater treatment where no treatment is currently provided.

Reuse: This site requires demolition of an outdated and underutilized structure. The new 4-unit townhouse structure will better utilize this location with a modern design, defined parking areas, non-polluting HVAC systems, and elimination of an existing multi-unit septic disposal system.

Landscaping: A professionally produced landscaping plan includes shrubbery, grass, and a multitude of trees that currently do not exist. An irrigation system to maintain grass and plantings is included.

Zoning: This project meets requirements in the MRO zone where it is located. No variances have been requested.

Utilities and fire protection

Water: All new water-saving plumbing fixtures will be installed as per the current plumbing code. Frost-free outside water taps are included at each living unit.

Sewer: The existing septic system is being replaced by a common E-one grinder/ejector system connected to the public sewer.

Electric: Eversource has indicated they will be installing a new transformer to service this property. All connections from the pole to this transformer and transformer to the electric meter bank will be underground. The current electric service is overhead. The transformer will be partially screened with landscaping.

Fire Protection: A fire suppression system governed by requirements of NFPA 13 will be installed in each townhouse. Additionally, full foundation to ridge firewalls will be installed between living units.

Gas or heating oil: None.

Energy:

Heating and Air Conditioning: HVAC will be via either air-source or ground-source (geothermal) heat pump. No natural gas, propane gas or heating oil facilities are included in this design. No exhaust flues are required, nor greenhouse gases emitted. Further, the potential for carbon monoxide poisoning from a malfunctioning heating system is eliminated.

Insulation: The heated envelope will be insulated with spray-foam insulation to maximize insulation R-values, minimize air penetration and minimize acoustic noise from outdoors and between living units.

Lighting: LED lighting will be used throughout.

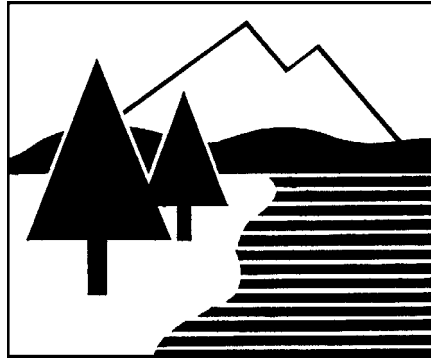
Kitchen Appliances: All kitchen appliances will be energy-star certified.

Fenestration: Very substantial windows and doors are state-of-the-art and shall have a U-value below .30, meeting or exceeding energy-star requirements.

DRAINAGE ANALYSIS

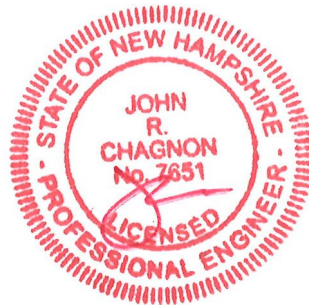
PROPOSED BUILDING REPLACEMENT

1155 SAGAMORE AVENUE
PORTSMOUTH, NH



PREPARED FOR
BUILD AMERICA

16 OCTOBER 2023



200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jchagnon@haleyward.com
(Ambit Job Number 5010314.417.01)

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EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed building replacement and associated utilities and parking at 1155 Sagamore Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 224 as Lot 18. The project proposes to replace an existing building with a 4-unit condominium. The total size of the lot is 30,264 square-feet (0.695 acres). The size of the total drainage area is 38,239 square-feet (0.878 acres).

The development will provide for the construction of a 4-unit condominium, with associated landscaping, utilities, and driveways. The new buildings will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

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, planning board, 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, NH Assessor's Tax Map 224 as Lot 18. Bounding the site to north is a single-family residence. Bounding the site to east is Sagamore Avenue. Bounding the site to south is a condominium complex. Bounding the site to the west is a City owned conservation land. The property is situated in the Single Residence A (SRA) District. A vicinity map is included in the Appendix to this report. The proposed building replacement will demolish an existing building and associated driveway.

This report includes information about the existing site necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. 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 Haley Ward 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 one soil type:

Soil Symbol	Soil Name and Slopes
140B	Chatfield-Hollis-Canton complex (0-8% slopes), rocky

Chatfield-Hollis-Canton complex is well drained with a stated depth to restrictive feature of 20-41 inches. Test pits were dug on the site, with no restrictive layer to at least 56”, and no observed water table. The soil is described as fine, sandy loam, granular, friable, fill.

The physical characteristics of the site consist of flat (0-8%) grades that generally slope downward from the south to the north of the lot. Elevations on the site range from 30 to 35 feet above sea level. The existing site is developed and includes an existing building located in the center of the lot, with an asphalt driveway. Vegetation around the developed portion of the lot consists of established grasses, shrubs, and trees.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0286F (effective date January 29, 2021), the project site 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 three watershed basins (E1, E2 and E3) based on localized topography and discharge location. Subcatchment E1 contains the east third of the lot and drains to the northeast (Sagamore Avenue).

Subcatchment E2 contains the most of the lot, is centered to the west and drains north.

Subcatchment E3 contains a portion of the southwest corner of the lot and drains to the southwest. Subcatchments E1, E2, and E3 drain to discharge points DP1, DP2, and DP3 respectively.

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	15,008	5.8	76	1.21	2.22	DP1
E2	19,569	5.2	74	1.50	2.82	DP2
E3	3,661	5.0	67	0.22	0.45	DP3

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as three subcatchment basins, (P1, P2, and P3). Subcatchments P1, P2, and P3 approximate the locations of E1, E2, and E3 respectively and drain to the same discharge points. Subcatchment P2 is detained and treated through a rain garden before being discharged to DP2.

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	13,988	6.2	74	1.05	1.97	DP1
P2	21,066	5.0	80	1.94	3.42	DP2
P3	3,185	5.0	67	0.19	0.39	DP3

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 9,365 s.f. (24.5%) in the pre-development condition to 13,460 s.f. (35.1%) in the post-development condition. The project proposes the construction of a rain garden on site, providing treatment and reducing the peak flow discharge from the site.

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 rain garden.

Table 3: Pre-Development to Post-Development Comparison

Design Point	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		Description
	Pre	Post	Pre	Post	Pre	Post	
DP1	0.59	0.49	1.21	1.05	2.22	1.97	Sagamore Ave.
DP2	0.71	0.64	1.50	1.46	2.82	2.64	North of Lot
DP3	0.09	0.07	0.22	0.19	0.45	0.39	Southeast of Lot

Note that all post-development peak discharges are either equivalent or less than the existing peak discharges.

OFFSITE INFRASTRUCTURE CAPACITY

There is no Town infrastructure utilized in this project in regard to storm drainage. All retention and routing to the final destination of the stormwater is done on-site, therefore no impact to city infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of soils 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 surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

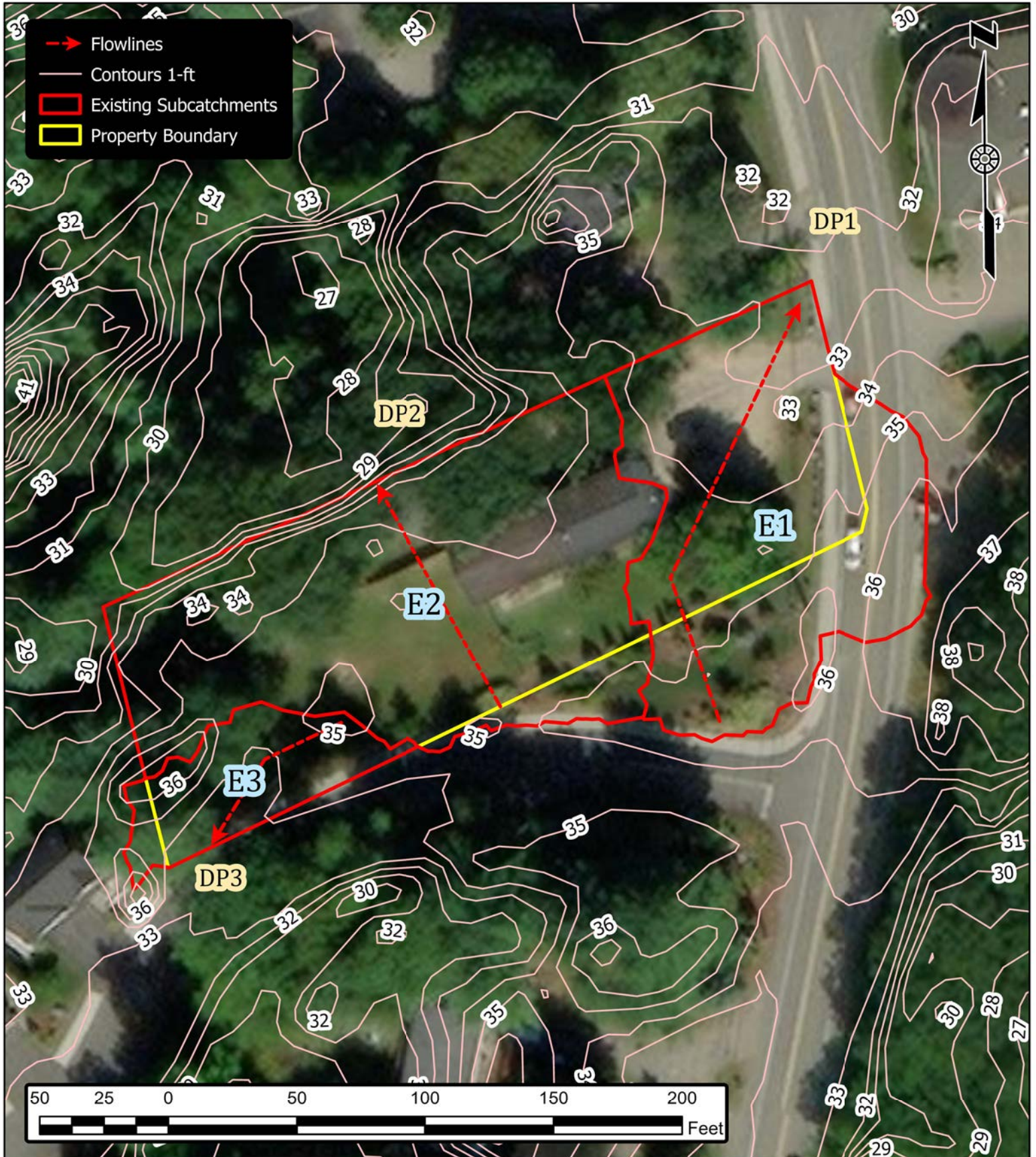
The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the rain garden, the post-development runoff rates are reduced to below the pre-development runoff rates. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. 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 2013.

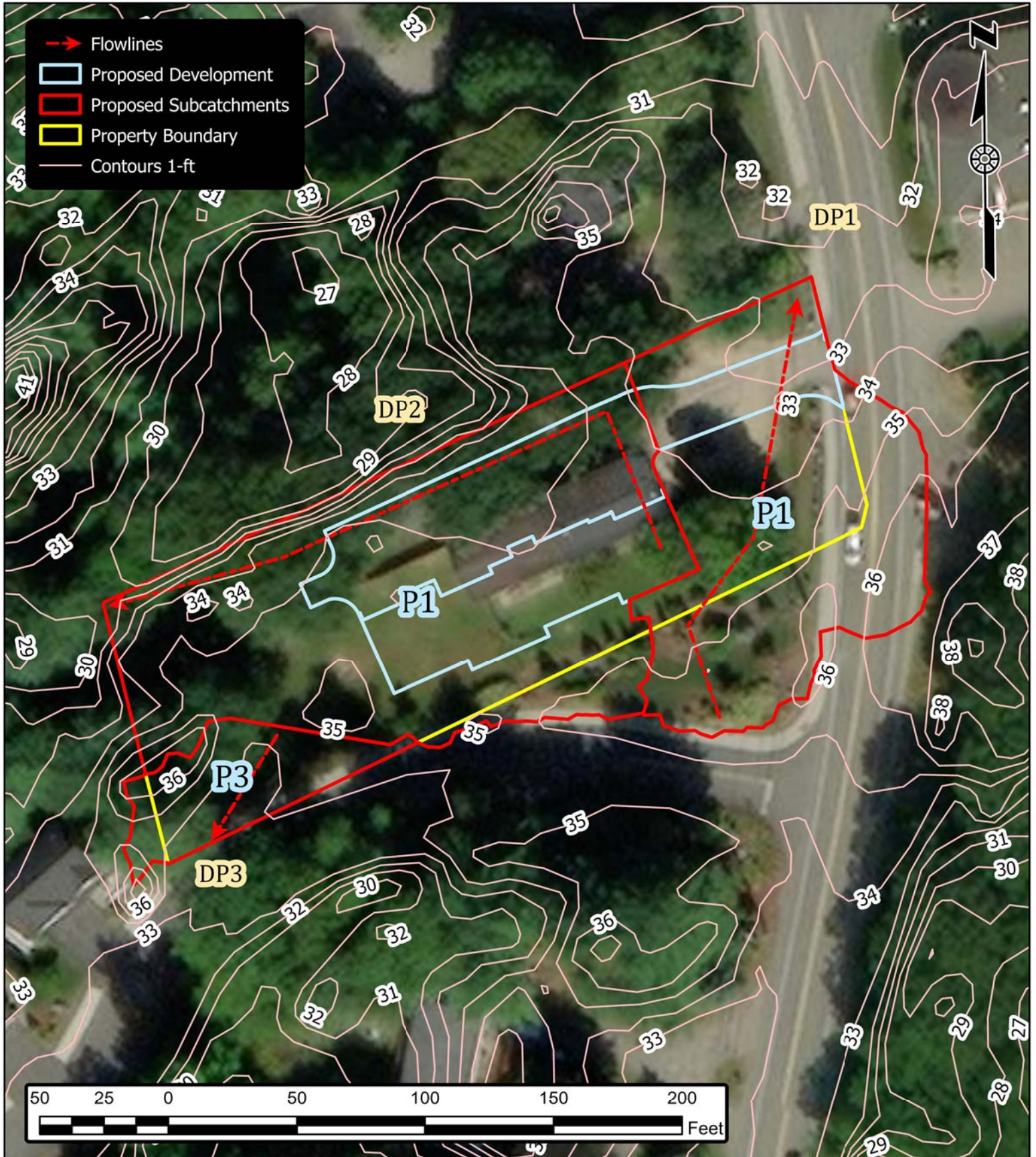
BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 50'
SUBMITTED: 2023-10-24



BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

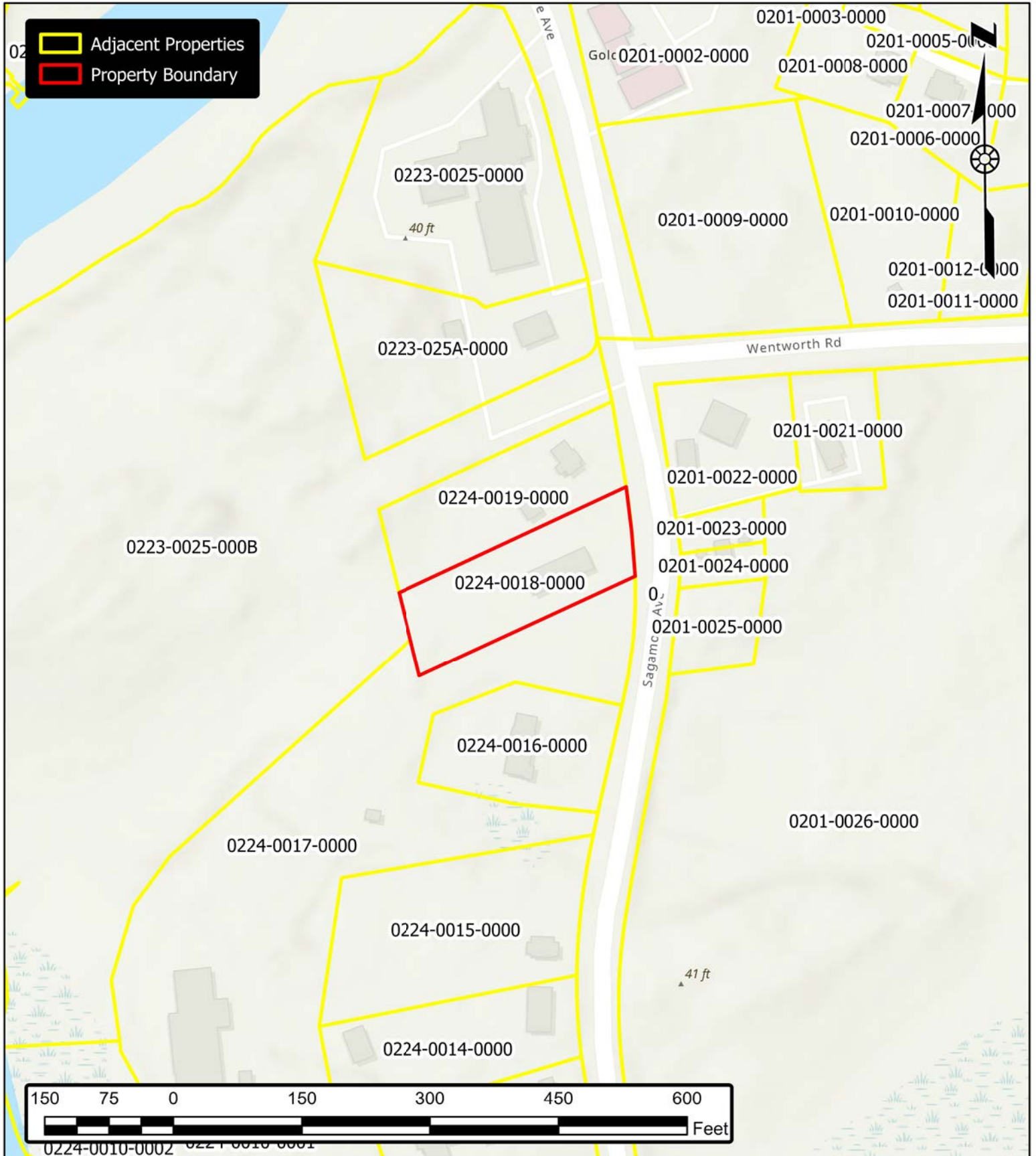
JOB NUMBER: 5010314.417.01
SCALE: 1" = 50'
SUBMITTED: 2023-10-24



APPENDIX A
VICINITY (TAX) MAP

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1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 150'
SUBMITTED: 2023-08-25



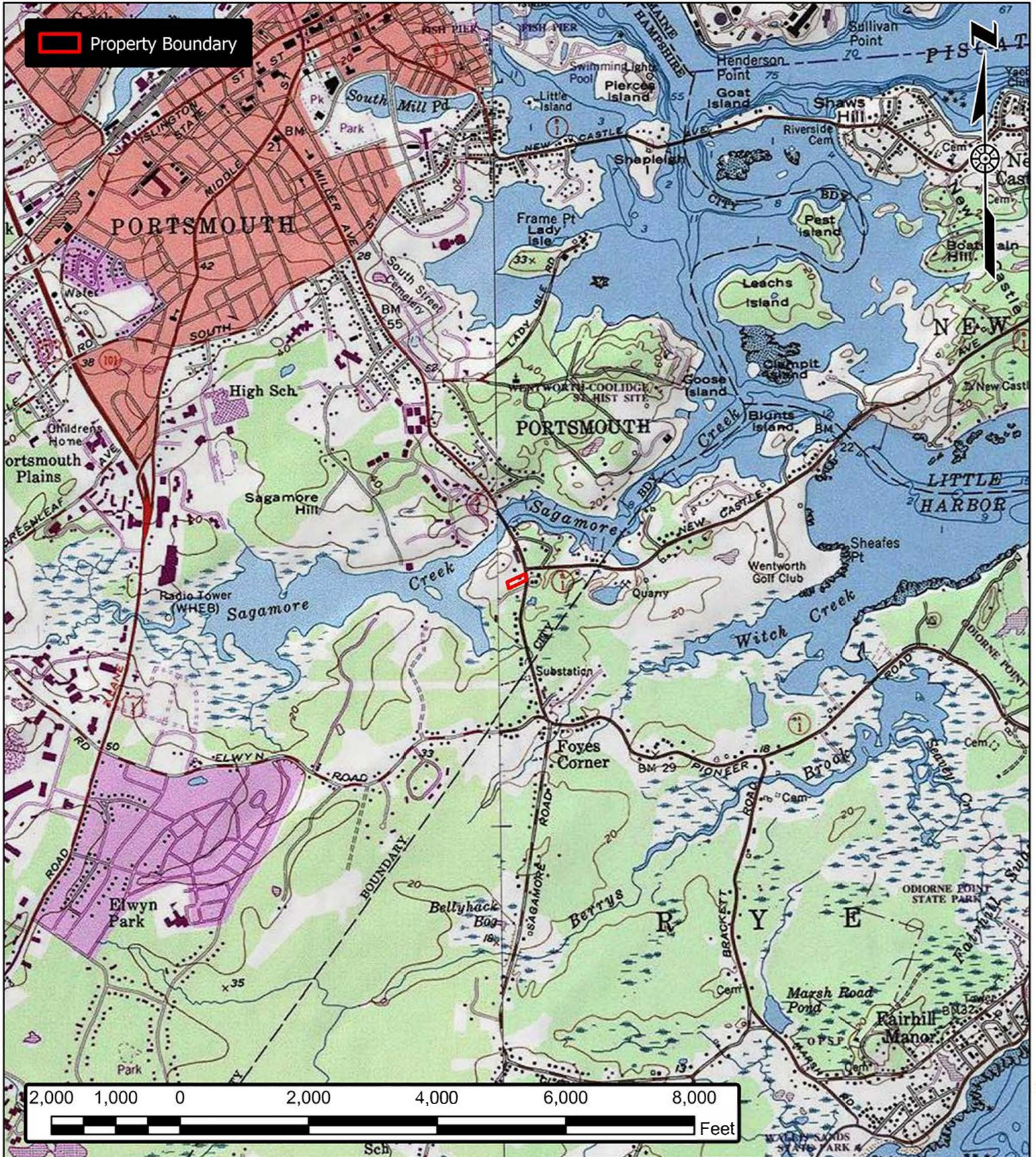
BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 50'
SUBMITTED: 2023-08-25



BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH

JOB NUMBER: 5010314.417.01
SCALE: 1" = 2000'
SUBMITTED: 2023-08-25



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.

Metadata for Point	
Smoothing State	Yes
Location	
Latitude	43.052 degrees North
Longitude	70.748 degrees West
Elevation	10 feet
Date/Time	Fri Aug 25 2023 11:03:42 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.67	2.94	1yr	2.36	2.82	3.24	3.96	4.57	1yr
2yr	0.32	0.50	0.62	0.82	1.03	1.30	2yr	0.89	1.18	1.52	1.94	2.49	3.22	3.58	2yr	2.85	3.45	3.95	4.70	5.35	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.89	2.44	3.15	4.08	4.60	5yr	3.61	4.42	5.07	5.96	6.73	5yr
10yr	0.41	0.65	0.82	1.12	1.46	1.90	10yr	1.26	1.73	2.24	2.91	3.76	4.88	5.55	10yr	4.32	5.34	6.12	7.14	8.01	10yr
25yr	0.48	0.77	0.97	1.34	1.78	2.35	25yr	1.54	2.15	2.79	3.65	4.76	6.19	7.13	25yr	5.48	6.85	7.85	9.07	10.09	25yr
50yr	0.54	0.87	1.11	1.55	2.09	2.78	50yr	1.80	2.54	3.31	4.35	5.69	7.42	8.62	50yr	6.56	8.29	9.48	10.87	12.02	50yr
100yr	0.60	0.98	1.26	1.79	2.44	3.28	100yr	2.10	3.00	3.93	5.19	6.80	8.88	10.42	100yr	7.86	10.02	11.46	13.03	14.33	100yr
200yr	0.68	1.11	1.44	2.07	2.85	3.87	200yr	2.46	3.54	4.66	6.17	8.12	10.65	12.60	200yr	9.42	12.11	13.85	15.63	17.08	200yr
500yr	0.81	1.33	1.73	2.51	3.52	4.81	500yr	3.03	4.42	5.82	7.76	10.28	13.53	16.20	500yr	11.97	15.58	17.81	19.89	21.57	500yr

Lower Confidence Limits

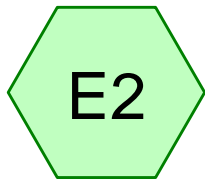
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	1yr	0.62	0.86	0.93	1.34	1.69	2.26	2.50	1yr	2.00	2.41	2.88	3.21	3.94	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.37	1.81	2.33	3.07	3.47	2yr	2.72	3.33	3.84	4.56	5.11	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.11	2.72	3.80	4.20	5yr	3.36	4.04	4.74	5.56	6.26	5yr
10yr	0.39	0.59	0.74	1.03	1.33	1.60	10yr	1.15	1.57	1.80	2.38	3.05	4.38	4.88	10yr	3.88	4.69	5.47	6.44	7.22	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.74	3.52	4.78	5.91	25yr	4.23	5.68	6.69	7.83	8.72	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.17	50yr	1.53	2.12	2.35	3.05	3.91	5.41	6.82	50yr	4.79	6.56	7.77	9.10	10.06	50yr
100yr	0.54	0.81	1.02	1.47	2.02	2.47	100yr	1.74	2.41	2.63	3.39	4.31	6.10	7.87	100yr	5.40	7.57	9.04	10.58	11.63	100yr
200yr	0.59	0.89	1.13	1.64	2.28	2.81	200yr	1.97	2.75	2.94	3.74	4.74	6.86	9.09	200yr	6.07	8.74	10.50	12.32	13.45	200yr
500yr	0.69	1.02	1.31	1.91	2.72	3.36	500yr	2.34	3.29	3.42	4.26	5.39	8.01	10.98	500yr	7.09	10.56	12.80	15.09	16.30	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.09	1yr	0.77	1.06	1.26	1.74	2.20	2.98	3.18	1yr	2.64	3.06	3.59	4.38	5.05	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	3.43	3.72	2yr	3.03	3.58	4.11	4.86	5.64	2yr
5yr	0.40	0.62	0.77	1.05	1.34	1.63	5yr	1.16	1.59	1.89	2.54	3.26	4.36	4.98	5yr	3.85	4.79	5.40	6.40	7.18	5yr
10yr	0.47	0.72	0.89	1.25	1.62	1.99	10yr	1.39	1.94	2.29	3.11	3.97	5.36	6.23	10yr	4.74	5.99	6.85	7.87	8.79	10yr
25yr	0.58	0.88	1.10	1.57	2.06	2.59	25yr	1.78	2.53	2.97	4.08	5.18	7.75	8.38	25yr	6.86	8.05	9.20	10.38	11.45	25yr
50yr	0.68	1.03	1.28	1.84	2.48	3.15	50yr	2.14	3.08	3.61	5.02	6.36	9.69	10.50	50yr	8.57	10.10	11.51	12.78	14.01	50yr
100yr	0.80	1.20	1.51	2.18	2.99	3.84	100yr	2.58	3.76	4.40	6.19	7.83	12.11	13.16	100yr	10.71	12.65	14.40	15.76	17.15	100yr
200yr	0.93	1.41	1.78	2.58	3.60	4.70	200yr	3.10	4.59	5.37	7.63	9.63	15.17	16.51	200yr	13.43	15.87	18.04	19.43	20.98	200yr
500yr	1.16	1.73	2.22	3.23	4.59	6.11	500yr	3.96	5.97	6.97	10.10	12.71	20.46	22.28	500yr	18.11	21.43	24.31	25.62	27.41	500yr



APPENDIX C
HYDROCAD DRAINAGE
ANALYSIS CALCULATIONS



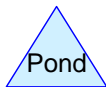
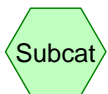
West (DP2)



East (DP1)



Southwest (DP3)



Project Notes

Defined 5 rainfall events from extreme_precip_tables_output IDF

Existing Conditions David T 2023-08-25

Prepared by Haley Ward

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Page 3

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	3.70	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.12	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.53	2

Existing Conditions David T 2023-08-25

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.453	61	>75% Grass cover, Good, HSG B (E1, E2, E3)
0.151	80	>75% Grass cover, Good, HSG D (E1, E2, E3)
0.015	96	Gravel surface, HSG B (E2)
0.150	98	Paved parking, HSG B (E1, E2, E3)
0.064	98	Roofs, HSG B (E1, E2, E3)
0.033	55	Woods, Good, HSG B (E1, E2, E3)
0.011	77	Woods, Good, HSG D (E1, E2, E3)
0.878	74	TOTAL AREA

Existing Conditions David T 2023-08-25

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.716	HSG B	E1, E2, E3
0.000	HSG C	
0.162	HSG D	E1, E2, E3
0.000	Other	
0.878		TOTAL AREA

Existing Conditions David T 2023-08-25

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.453	0.000	0.151	0.000	0.605	>75% Grass cover, Good	E1, E2, E3
0.000	0.015	0.000	0.000	0.000	0.015	Gravel surface	E2
0.000	0.150	0.000	0.000	0.000	0.150	Paved parking	E1, E2, E3
0.000	0.064	0.000	0.000	0.000	0.064	Roofs	E1, E2, E3
0.000	0.033	0.000	0.011	0.000	0.043	Woods, Good	E1, E2, E3
0.000	0.716	0.000	0.162	0.000	0.878	TOTAL AREA	

Existing Conditions David T 2023-08-25

Type III 24-hr 2-yr Rainfall=3.70"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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: East (DP1) Runoff Area=15,008 sf 31.55% Impervious Runoff Depth>1.51"
Flow Length=266' Slope=0.0455 '/' Tc=5.8 min CN=76 Runoff=0.59 cfs 0.043 af

Subcatchment E2: West (DP2) Runoff Area=19,569 sf 22.64% Impervious Runoff Depth>1.38"
Flow Length=200' Slope=0.0411 '/' Tc=5.2 min CN=74 Runoff=0.71 cfs 0.052 af

Subcatchment E3: Southwest (DP3) Runoff Area=3,661 sf 5.00% Impervious Runoff Depth>0.96"
Flow Length=78' Slope=0.0533 '/' Tc=5.0 min CN=67 Runoff=0.09 cfs 0.007 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.102 af Average Runoff Depth = 1.39"
75.55% Pervious = 0.663 ac 24.45% Impervious = 0.215 ac

Summary for Subcatchment E1: East (DP1)

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

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
7,528	61	>75% Grass cover, Good, HSG B
2,510	80	>75% Grass cover, Good, HSG D
4,638	98	Paved parking, HSG B
97	98	Roofs, HSG B
176	55	Woods, Good, HSG B
59	77	Woods, Good, HSG D
15,008	76	Weighted Average
10,273		68.45% Pervious Area
4,735		31.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	266	0.0455	0.76		Lag/CN Method,

Summary for Subcatchment E2: West (DP2)

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

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
10,039	61	>75% Grass cover, Good, HSG B
3,346	80	>75% Grass cover, Good, HSG D
1,732	98	Paved parking, HSG B
2,698	98	Roofs, HSG B
821	55	Woods, Good, HSG B
274	77	Woods, Good, HSG D
659	96	Gravel surface, HSG B
19,569	74	Weighted Average
15,139		77.36% Pervious Area
4,430		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	200	0.0411	0.65		Lag/CN Method,

Summary for Subcatchment E3: Southwest (DP3)

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

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
2,186	61	>75% Grass cover, Good, HSG B
729	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,661	67	Weighted Average
3,478		95.00% Pervious Area
183		5.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Existing Conditions David T 2023-08-25

Type III 24-hr 10-yr Rainfall=5.61"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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: East (DP1) Runoff Area=15,008 sf 31.55% Impervious Runoff Depth>3.04"
Flow Length=266' Slope=0.0455 '/' Tc=5.8 min CN=76 Runoff=1.21 cfs 0.087 af

Subcatchment E2: West (DP2) Runoff Area=19,569 sf 22.64% Impervious Runoff Depth>2.86"
Flow Length=200' Slope=0.0411 '/' Tc=5.2 min CN=74 Runoff=1.50 cfs 0.107 af

Subcatchment E3: Southwest (DP3) Runoff Area=3,661 sf 5.00% Impervious Runoff Depth>2.24"
Flow Length=78' Slope=0.0533 '/' Tc=5.0 min CN=67 Runoff=0.22 cfs 0.016 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.210 af Average Runoff Depth = 2.87"
75.55% Pervious = 0.663 ac 24.45% Impervious = 0.215 ac

Summary for Subcatchment E1: East (DP1)

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

Runoff = 1.21 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
7,528	61	>75% Grass cover, Good, HSG B
2,510	80	>75% Grass cover, Good, HSG D
4,638	98	Paved parking, HSG B
97	98	Roofs, HSG B
176	55	Woods, Good, HSG B
59	77	Woods, Good, HSG D
15,008	76	Weighted Average
10,273		68.45% Pervious Area
4,735		31.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	266	0.0455	0.76		Lag/CN Method,

Summary for Subcatchment E2: West (DP2)

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

Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.107 af, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
10,039	61	>75% Grass cover, Good, HSG B
3,346	80	>75% Grass cover, Good, HSG D
1,732	98	Paved parking, HSG B
2,698	98	Roofs, HSG B
821	55	Woods, Good, HSG B
274	77	Woods, Good, HSG D
659	96	Gravel surface, HSG B
19,569	74	Weighted Average
15,139		77.36% Pervious Area
4,430		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	200	0.0411	0.65		Lag/CN Method,

Summary for Subcatchment E3: Southwest (DP3)

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

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.016 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
2,186	61	>75% Grass cover, Good, HSG B
729	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,661	67	Weighted Average
3,478		95.00% Pervious Area
183		5.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Existing Conditions David T 2023-08-25

Type III 24-hr 25-yr Rainfall=7.12"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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: East (DP1) Runoff Area=15,008 sf 31.55% Impervious Runoff Depth>4.36"
Flow Length=266' Slope=0.0455 '/' Tc=5.8 min CN=76 Runoff=1.73 cfs 0.125 af

Subcatchment E2: West (DP2) Runoff Area=19,569 sf 22.64% Impervious Runoff Depth>4.14"
Flow Length=200' Slope=0.0411 '/' Tc=5.2 min CN=74 Runoff=2.17 cfs 0.155 af

Subcatchment E3: Southwest (DP3) Runoff Area=3,661 sf 5.00% Impervious Runoff Depth>3.40"
Flow Length=78' Slope=0.0533 '/' Tc=5.0 min CN=67 Runoff=0.33 cfs 0.024 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.304 af Average Runoff Depth = 4.16"
75.55% Pervious = 0.663 ac 24.45% Impervious = 0.215 ac

Summary for Subcatchment E1: East (DP1)

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

Runoff = 1.73 cfs @ 12.09 hrs, Volume= 0.125 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
7,528	61	>75% Grass cover, Good, HSG B
2,510	80	>75% Grass cover, Good, HSG D
4,638	98	Paved parking, HSG B
97	98	Roofs, HSG B
176	55	Woods, Good, HSG B
59	77	Woods, Good, HSG D
15,008	76	Weighted Average
10,273		68.45% Pervious Area
4,735		31.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	266	0.0455	0.76		Lag/CN Method,

Summary for Subcatchment E2: West (DP2)

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

Runoff = 2.17 cfs @ 12.08 hrs, Volume= 0.155 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
10,039	61	>75% Grass cover, Good, HSG B
3,346	80	>75% Grass cover, Good, HSG D
1,732	98	Paved parking, HSG B
2,698	98	Roofs, HSG B
821	55	Woods, Good, HSG B
274	77	Woods, Good, HSG D
659	96	Gravel surface, HSG B
19,569	74	Weighted Average
15,139		77.36% Pervious Area
4,430		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	200	0.0411	0.65		Lag/CN Method,

Summary for Subcatchment E3: Southwest (DP3)

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

Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
2,186	61	>75% Grass cover, Good, HSG B
729	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,661	67	Weighted Average
3,478		95.00% Pervious Area
183		5.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Existing Conditions David T 2023-08-25

Type III 24-hr 50-yr Rainfall=8.53"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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: East (DP1) Runoff Area=15,008 sf 31.55% Impervious Runoff Depth>5.64"
Flow Length=266' Slope=0.0455 '/' Tc=5.8 min CN=76 Runoff=2.22 cfs 0.162 af

Subcatchment E2: West (DP2) Runoff Area=19,569 sf 22.64% Impervious Runoff Depth>5.40"
Flow Length=200' Slope=0.0411 '/' Tc=5.2 min CN=74 Runoff=2.82 cfs 0.202 af

Subcatchment E3: Southwest (DP3) Runoff Area=3,661 sf 5.00% Impervious Runoff Depth>4.56"
Flow Length=78' Slope=0.0533 '/' Tc=5.0 min CN=67 Runoff=0.45 cfs 0.032 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.396 af Average Runoff Depth = 5.41"
75.55% Pervious = 0.663 ac 24.45% Impervious = 0.215 ac

Summary for Subcatchment E1: East (DP1)

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

Runoff = 2.22 cfs @ 12.09 hrs, Volume= 0.162 af, Depth> 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
7,528	61	>75% Grass cover, Good, HSG B
2,510	80	>75% Grass cover, Good, HSG D
4,638	98	Paved parking, HSG B
97	98	Roofs, HSG B
176	55	Woods, Good, HSG B
59	77	Woods, Good, HSG D
15,008	76	Weighted Average
10,273		68.45% Pervious Area
4,735		31.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	266	0.0455	0.76		Lag/CN Method,

Summary for Subcatchment E2: West (DP2)

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

Runoff = 2.82 cfs @ 12.08 hrs, Volume= 0.202 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
10,039	61	>75% Grass cover, Good, HSG B
3,346	80	>75% Grass cover, Good, HSG D
1,732	98	Paved parking, HSG B
2,698	98	Roofs, HSG B
821	55	Woods, Good, HSG B
274	77	Woods, Good, HSG D
659	96	Gravel surface, HSG B
19,569	74	Weighted Average
15,139		77.36% Pervious Area
4,430		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	200	0.0411	0.65		Lag/CN Method,

Summary for Subcatchment E3: Southwest (DP3)

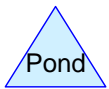
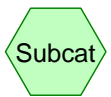
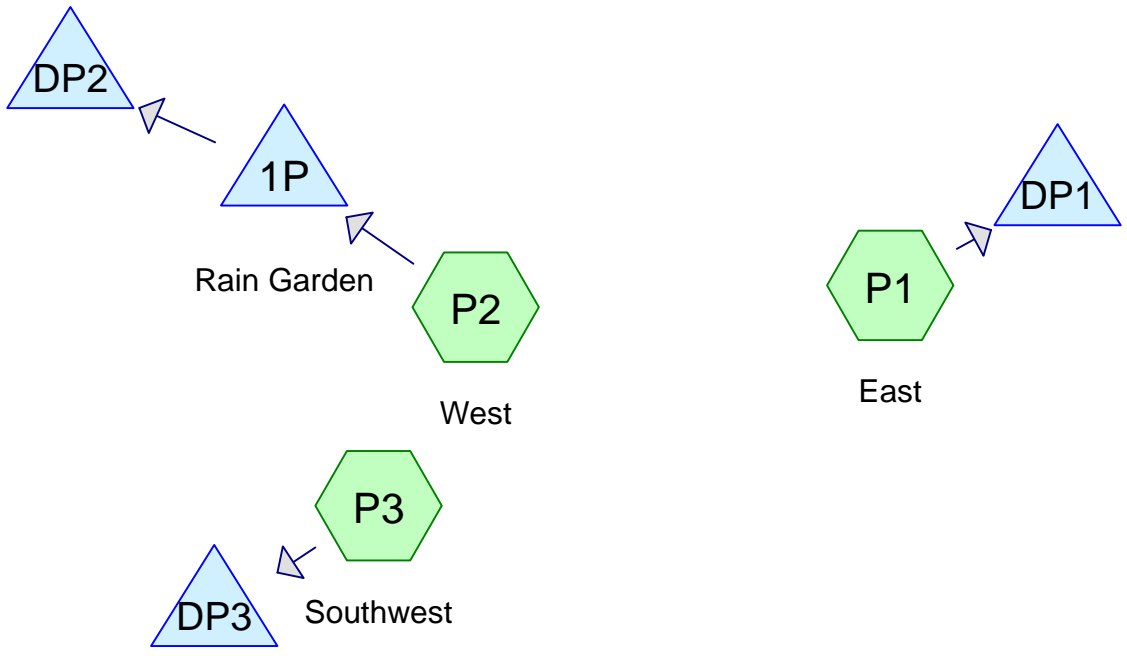
[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.032 af, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
2,186	61	>75% Grass cover, Good, HSG B
729	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,661	67	Weighted Average
3,478		95.00% Pervious Area
183		5.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			



Routing Diagram for Proposed Conditions David T 2023-08-25
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Project Notes

Defined 5 rainfall events from extreme_precip_tables_output IDF

Proposed Conditions David T 2023-08-25

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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	3.70	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.12	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.53	2

Proposed Conditions David T 2023-08-25

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.399	61	>75% Grass cover, Good, HSG B (P1, P2, P3)
0.133	80	>75% Grass cover, Good, HSG D (P1, P2, P3)
0.214	98	Paved parking, HSG B (P1, P2, P3)
0.095	98	Roofs, HSG B (P2, P3)
0.028	55	Woods, Good, HSG B (P1, P2, P3)
0.009	77	Woods, Good, HSG D (P1, P2, P3)
0.878	77	TOTAL AREA

Proposed Conditions David T 2023-08-25

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.736	HSG B	P1, P2, P3
0.000	HSG C	
0.142	HSG D	P1, P2, P3
0.000	Other	
0.878		TOTAL AREA

Proposed Conditions David T 2023-08-25

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.399	0.000	0.133	0.000	0.533	>75% Grass cover, Good	P1, P2, P3
0.000	0.214	0.000	0.000	0.000	0.214	Paved parking	P1, P2, P3
0.000	0.095	0.000	0.000	0.000	0.095	Roofs	P2, P3
0.000	0.028	0.000	0.009	0.000	0.037	Woods, Good	P1, P2, P3
0.000	0.736	0.000	0.142	0.000	0.878	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	31.00	30.00	11.0	0.0909	0.013	0.0	12.0	0.0	

Proposed Conditions David T 2023-08-25

Type III 24-hr 2-yr Rainfall=3.70"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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 P1: East Runoff Area=13,988 sf 25.93% Impervious Runoff Depth>1.38"
Flow Length=266' Slope=0.0455 '/ Tc=6.2 min CN=74 Runoff=0.49 cfs 0.037 af

Subcatchment P2: West Runoff Area=21,066 sf 45.71% Impervious Runoff Depth>1.80"
Flow Length=200' Slope=0.0411 '/ Tc=5.0 min CN=80 Runoff=1.02 cfs 0.072 af

Subcatchment P3: Southwest Runoff Area=3,185 sf 5.75% Impervious Runoff Depth>0.96"
Flow Length=78' Slope=0.0533 '/ Tc=5.0 min CN=67 Runoff=0.07 cfs 0.006 af

Pond 1P: Rain Garden Peak Elev=31.47' Storage=865 cf Inflow=1.02 cfs 0.072 af
Outflow=0.64 cfs 0.061 af

Pond DP1: Inflow=0.49 cfs 0.037 af
Primary=0.49 cfs 0.037 af

Pond DP2: Inflow=0.64 cfs 0.061 af
Primary=0.64 cfs 0.061 af

Pond DP3: Inflow=0.07 cfs 0.006 af
Primary=0.07 cfs 0.006 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.115 af Average Runoff Depth = 1.57"
64.86% Pervious = 0.569 ac 35.14% Impervious = 0.309 ac

Summary for Subcatchment P1: East

Runoff = 0.49 cfs @ 12.10 hrs, Volume= 0.037 af, Depth> 1.38"
 Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
7,627	61	>75% Grass cover, Good, HSG B
2,542	80	>75% Grass cover, Good, HSG D
3,627	98	Paved parking, HSG B
144	55	Woods, Good, HSG B
48	77	Woods, Good, HSG D
13,988	74	Weighted Average
10,361		74.07% Pervious Area
3,627		25.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	266	0.0455	0.72		Lag/CN Method,

Summary for Subcatchment P2: West

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

Runoff = 1.02 cfs @ 12.08 hrs, Volume= 0.072 af, Depth> 1.80"
 Routed to Pond 1P : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
7,946	61	>75% Grass cover, Good, HSG B
2,648	80	>75% Grass cover, Good, HSG D
5,499	98	Paved parking, HSG B
4,130	98	Roofs, HSG B
632	55	Woods, Good, HSG B
211	77	Woods, Good, HSG D
21,066	80	Weighted Average
11,437		54.29% Pervious Area
9,629		45.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	200	0.0411	0.77		Lag/CN Method,
4.3	200	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment P3: Southwest

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

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 0.96"
 Routed to Pond DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
1,829	61	>75% Grass cover, Good, HSG B
610	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,185	67	Weighted Average
3,002		94.25% Pervious Area
183		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Rain Garden

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 1.80" for 2-yr event
 Inflow = 1.02 cfs @ 12.08 hrs, Volume= 0.072 af
 Outflow = 0.64 cfs @ 12.19 hrs, Volume= 0.061 af, Atten= 37%, Lag= 6.6 min
 Primary = 0.64 cfs @ 12.19 hrs, Volume= 0.061 af
 Routed to Pond DP2 :

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.47' @ 12.19 hrs Surf.Area= 918 sf Storage= 865 cf

Plug-Flow detention time= 107.2 min calculated for 0.061 af (84% of inflow)
 Center-of-Mass det. time= 39.1 min (873.3 - 834.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	28.00'	2,657 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	775	0.0	0	0
31.00	775	20.0	465	465
32.00	1,079	100.0	927	1,392
33.00	1,450	100.0	1,265	2,657

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	12.0" Round Culvert L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.00' S= 0.0909 ' S= 0.0909 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	31.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Elev. (feet) 31.00 32.30 32.30 33.00 Width (feet) 0.60 0.60 4.00 4.00

Primary OutFlow Max=0.63 cfs @ 12.19 hrs HW=31.47' (Free Discharge)

1=Culvert (Passes 0.63 cfs of 0.85 cfs potential flow)

2=Custom Weir/Orifice (Weir Controls 0.63 cfs @ 2.24 fps)

Summary for Pond DP1:

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

Inflow Area = 0.321 ac, 25.93% Impervious, Inflow Depth > 1.38" for 2-yr event
 Inflow = 0.49 cfs @ 12.10 hrs, Volume= 0.037 af
 Primary = 0.49 cfs @ 12.10 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

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

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 1.51" for 2-yr event
 Inflow = 0.64 cfs @ 12.19 hrs, Volume= 0.061 af
 Primary = 0.64 cfs @ 12.19 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP3:

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

Inflow Area = 0.073 ac, 5.75% Impervious, Inflow Depth > 0.96" for 2-yr event
 Inflow = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af
 Primary = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Proposed Conditions David T 2023-08-25

Type III 24-hr 10-yr Rainfall=5.61"

Prepared by Haley Ward

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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 P1: East Runoff Area=13,988 sf 25.93% Impervious Runoff Depth>2.86"
Flow Length=266' Slope=0.0455 '/ Tc=6.2 min CN=74 Runoff=1.05 cfs 0.076 af

Subcatchment P2: West Runoff Area=21,066 sf 45.71% Impervious Runoff Depth>3.43"
Flow Length=200' Slope=0.0411 '/ Tc=5.0 min CN=80 Runoff=1.94 cfs 0.138 af

Subcatchment P3: Southwest Runoff Area=3,185 sf 5.75% Impervious Runoff Depth>2.24"
Flow Length=78' Slope=0.0533 '/ Tc=5.0 min CN=67 Runoff=0.19 cfs 0.014 af

Pond 1P: Rain Garden Peak Elev=31.82' Storage=1,202 cf Inflow=1.94 cfs 0.138 af
Outflow=1.46 cfs 0.126 af

Pond DP1: Inflow=1.05 cfs 0.076 af
Primary=1.05 cfs 0.076 af

Pond DP2: Inflow=1.46 cfs 0.126 af
Primary=1.46 cfs 0.126 af

Pond DP3: Inflow=0.19 cfs 0.014 af
Primary=0.19 cfs 0.014 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.228 af Average Runoff Depth = 3.12"
64.86% Pervious = 0.569 ac 35.14% Impervious = 0.309 ac

Summary for Subcatchment P1: East

Runoff = 1.05 cfs @ 12.10 hrs, Volume= 0.076 af, Depth> 2.86"
 Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
7,627	61	>75% Grass cover, Good, HSG B
2,542	80	>75% Grass cover, Good, HSG D
3,627	98	Paved parking, HSG B
144	55	Woods, Good, HSG B
48	77	Woods, Good, HSG D
13,988	74	Weighted Average
10,361		74.07% Pervious Area
3,627		25.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	266	0.0455	0.72		Lag/CN Method,

Summary for Subcatchment P2: West

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

Runoff = 1.94 cfs @ 12.08 hrs, Volume= 0.138 af, Depth> 3.43"
 Routed to Pond 1P : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
7,946	61	>75% Grass cover, Good, HSG B
2,648	80	>75% Grass cover, Good, HSG D
5,499	98	Paved parking, HSG B
4,130	98	Roofs, HSG B
632	55	Woods, Good, HSG B
211	77	Woods, Good, HSG D
21,066	80	Weighted Average
11,437		54.29% Pervious Area
9,629		45.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	200	0.0411	0.77		Lag/CN Method,
4.3	200	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment P3: Southwest

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

Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.014 af, Depth> 2.24"
 Routed to Pond DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
1,829	61	>75% Grass cover, Good, HSG B
610	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,185	67	Weighted Average
3,002		94.25% Pervious Area
183		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Rain Garden

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 3.43" for 10-yr event
 Inflow = 1.94 cfs @ 12.08 hrs, Volume= 0.138 af
 Outflow = 1.46 cfs @ 12.15 hrs, Volume= 0.126 af, Atten= 25%, Lag= 4.6 min
 Primary = 1.46 cfs @ 12.15 hrs, Volume= 0.126 af
 Routed to Pond DP2 :

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.82' @ 12.15 hrs Surf.Area= 1,024 sf Storage= 1,202 cf

Plug-Flow detention time= 70.1 min calculated for 0.126 af (91% of inflow)
 Center-of-Mass det. time= 27.9 min (843.5 - 815.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	28.00'	2,657 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	775	0.0	0	0
31.00	775	20.0	465	465
32.00	1,079	100.0	927	1,392
33.00	1,450	100.0	1,265	2,657

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	12.0" Round Culvert L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.00' S= 0.0909 ' S= 0.0909 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	31.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Elev. (feet) 31.00 32.30 32.30 33.00 Width (feet) 0.60 0.60 4.00 4.00

Primary OutFlow Max=1.45 cfs @ 12.15 hrs HW=31.82' (Free Discharge)

1=Culvert (Passes 1.45 cfs of 2.11 cfs potential flow)

2=Custom Weir/Orifice (Weir Controls 1.45 cfs @ 2.96 fps)

Summary for Pond DP1:

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

Inflow Area = 0.321 ac, 25.93% Impervious, Inflow Depth > 2.86" for 10-yr event
 Inflow = 1.05 cfs @ 12.10 hrs, Volume= 0.076 af
 Primary = 1.05 cfs @ 12.10 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

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

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 3.13" for 10-yr event
 Inflow = 1.46 cfs @ 12.15 hrs, Volume= 0.126 af
 Primary = 1.46 cfs @ 12.15 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP3:

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

Inflow Area = 0.073 ac, 5.75% Impervious, Inflow Depth > 2.24" for 10-yr event
 Inflow = 0.19 cfs @ 12.08 hrs, Volume= 0.014 af
 Primary = 0.19 cfs @ 12.08 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Proposed Conditions David T 2023-08-25

Type III 24-hr 25-yr Rainfall=7.12"

Prepared by Haley Ward

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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 P1: East Runoff Area=13,988 sf 25.93% Impervious Runoff Depth>4.14"
Flow Length=266' Slope=0.0455 '/' Tc=6.2 min CN=74 Runoff=1.52 cfs 0.111 af

Subcatchment P2: West Runoff Area=21,066 sf 45.71% Impervious Runoff Depth>4.80"
Flow Length=200' Slope=0.0411 '/' Tc=5.0 min CN=80 Runoff=2.71 cfs 0.194 af

Subcatchment P3: Southwest Runoff Area=3,185 sf 5.75% Impervious Runoff Depth>3.40"
Flow Length=78' Slope=0.0533 '/' Tc=5.0 min CN=67 Runoff=0.29 cfs 0.021 af

Pond 1P: Rain Garden Peak Elev=32.03' Storage=1,429 cf Inflow=2.71 cfs 0.194 af
Outflow=2.07 cfs 0.181 af

Pond DP1: Inflow=1.52 cfs 0.111 af
Primary=1.52 cfs 0.111 af

Pond DP2: Inflow=2.07 cfs 0.181 af
Primary=2.07 cfs 0.181 af

Pond DP3: Inflow=0.29 cfs 0.021 af
Primary=0.29 cfs 0.021 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.325 af Average Runoff Depth = 4.44"
64.86% Pervious = 0.569 ac 35.14% Impervious = 0.309 ac

Summary for Subcatchment P1: East

Runoff = 1.52 cfs @ 12.09 hrs, Volume= 0.111 af, Depth> 4.14"
 Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
7,627	61	>75% Grass cover, Good, HSG B
2,542	80	>75% Grass cover, Good, HSG D
3,627	98	Paved parking, HSG B
144	55	Woods, Good, HSG B
48	77	Woods, Good, HSG D
13,988	74	Weighted Average
10,361		74.07% Pervious Area
3,627		25.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	266	0.0455	0.72		Lag/CN Method,

Summary for Subcatchment P2: West

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

Runoff = 2.71 cfs @ 12.07 hrs, Volume= 0.194 af, Depth> 4.80"
 Routed to Pond 1P : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
7,946	61	>75% Grass cover, Good, HSG B
2,648	80	>75% Grass cover, Good, HSG D
5,499	98	Paved parking, HSG B
4,130	98	Roofs, HSG B
632	55	Woods, Good, HSG B
211	77	Woods, Good, HSG D
21,066	80	Weighted Average
11,437		54.29% Pervious Area
9,629		45.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	200	0.0411	0.77		Lag/CN Method,
4.3	200	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment P3: Southwest

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

Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.021 af, Depth> 3.40"
 Routed to Pond DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
1,829	61	>75% Grass cover, Good, HSG B
610	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,185	67	Weighted Average
3,002		94.25% Pervious Area
183		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Rain Garden

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 4.80" for 25-yr event
 Inflow = 2.71 cfs @ 12.07 hrs, Volume= 0.194 af
 Outflow = 2.07 cfs @ 12.15 hrs, Volume= 0.181 af, Atten= 24%, Lag= 4.4 min
 Primary = 2.07 cfs @ 12.15 hrs, Volume= 0.181 af
 Routed to Pond DP2 :

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 32.03' @ 12.15 hrs Surf.Area= 1,092 sf Storage= 1,429 cf

Plug-Flow detention time= 57.6 min calculated for 0.181 af (94% of inflow)
 Center-of-Mass det. time= 24.6 min (830.6 - 806.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	28.00'	2,657 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	775	0.0	0	0
31.00	775	20.0	465	465
32.00	1,079	100.0	927	1,392
33.00	1,450	100.0	1,265	2,657

Proposed Conditions David T 2023-08-25

Type III 24-hr 25-yr Rainfall=7.12"

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Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	12.0" Round Culvert L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.00' S= 0.0909 ' S= 0.0909 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	31.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Elev. (feet) 31.00 32.30 32.30 33.00 Width (feet) 0.60 0.60 4.00 4.00

Primary OutFlow Max=2.06 cfs @ 12.15 hrs HW=32.03' (Free Discharge)

1=Culvert (Passes 2.06 cfs of 2.76 cfs potential flow)

2=Custom Weir/Orifice (Weir Controls 2.06 cfs @ 3.33 fps)

Summary for Pond DP1:

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

Inflow Area = 0.321 ac, 25.93% Impervious, Inflow Depth > 4.14" for 25-yr event
 Inflow = 1.52 cfs @ 12.09 hrs, Volume= 0.111 af
 Primary = 1.52 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

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

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 4.50" for 25-yr event
 Inflow = 2.07 cfs @ 12.15 hrs, Volume= 0.181 af
 Primary = 2.07 cfs @ 12.15 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP3:

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

Inflow Area = 0.073 ac, 5.75% Impervious, Inflow Depth > 3.40" for 25-yr event
 Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.021 af
 Primary = 0.29 cfs @ 12.08 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Proposed Conditions David T 2023-08-25

Type III 24-hr 50-yr Rainfall=8.53"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 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 P1: East Runoff Area=13,988 sf 25.93% Impervious Runoff Depth>5.40"
Flow Length=266' Slope=0.0455 '/ Tc=6.2 min CN=74 Runoff=1.97 cfs 0.144 af

Subcatchment P2: West Runoff Area=21,066 sf 45.71% Impervious Runoff Depth>6.12"
Flow Length=200' Slope=0.0411 '/ Tc=5.0 min CN=80 Runoff=3.42 cfs 0.247 af

Subcatchment P3: Southwest Runoff Area=3,185 sf 5.75% Impervious Runoff Depth>4.56"
Flow Length=78' Slope=0.0533 '/ Tc=5.0 min CN=67 Runoff=0.39 cfs 0.028 af

Pond 1P: Rain Garden Peak Elev=32.22' Storage=1,635 cf Inflow=3.42 cfs 0.247 af
Outflow=2.64 cfs 0.234 af

Pond DP1: Inflow=1.97 cfs 0.144 af
Primary=1.97 cfs 0.144 af

Pond DP2: Inflow=2.64 cfs 0.234 af
Primary=2.64 cfs 0.234 af

Pond DP3: Inflow=0.39 cfs 0.028 af
Primary=0.39 cfs 0.028 af

Total Runoff Area = 0.878 ac Runoff Volume = 0.419 af Average Runoff Depth = 5.73"
64.86% Pervious = 0.569 ac 35.14% Impervious = 0.309 ac

Summary for Subcatchment P1: East

Runoff = 1.97 cfs @ 12.09 hrs, Volume= 0.144 af, Depth> 5.40"
 Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
7,627	61	>75% Grass cover, Good, HSG B
2,542	80	>75% Grass cover, Good, HSG D
3,627	98	Paved parking, HSG B
144	55	Woods, Good, HSG B
48	77	Woods, Good, HSG D
13,988	74	Weighted Average
10,361		74.07% Pervious Area
3,627		25.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	266	0.0455	0.72		Lag/CN Method,

Summary for Subcatchment P2: West

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

Runoff = 3.42 cfs @ 12.07 hrs, Volume= 0.247 af, Depth> 6.12"
 Routed to Pond 1P : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
7,946	61	>75% Grass cover, Good, HSG B
2,648	80	>75% Grass cover, Good, HSG D
5,499	98	Paved parking, HSG B
4,130	98	Roofs, HSG B
632	55	Woods, Good, HSG B
211	77	Woods, Good, HSG D
21,066	80	Weighted Average
11,437		54.29% Pervious Area
9,629		45.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	200	0.0411	0.77		Lag/CN Method,
4.3	200	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment P3: Southwest

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

Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.028 af, Depth> 4.56"
 Routed to Pond DP3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
1,829	61	>75% Grass cover, Good, HSG B
610	80	>75% Grass cover, Good, HSG D
182	98	Paved parking, HSG B
1	98	Roofs, HSG B
422	55	Woods, Good, HSG B
141	77	Woods, Good, HSG D
3,185	67	Weighted Average
3,002		94.25% Pervious Area
183		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	78	0.0533	0.50		Lag/CN Method,
2.6	78	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Rain Garden

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 6.12" for 50-yr event
 Inflow = 3.42 cfs @ 12.07 hrs, Volume= 0.247 af
 Outflow = 2.64 cfs @ 12.15 hrs, Volume= 0.234 af, Atten= 23%, Lag= 4.3 min
 Primary = 2.64 cfs @ 12.15 hrs, Volume= 0.234 af
 Routed to Pond DP2 :

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 32.22' @ 12.15 hrs Surf.Area= 1,160 sf Storage= 1,635 cf

Plug-Flow detention time= 49.2 min calculated for 0.234 af (95% of inflow)
 Center-of-Mass det. time= 22.4 min (821.6 - 799.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	28.00'	2,657 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	775	0.0	0	0
31.00	775	20.0	465	465
32.00	1,079	100.0	927	1,392
33.00	1,450	100.0	1,265	2,657

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	12.0" Round Culvert L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.00' S= 0.0909 ' / S= 0.0909 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	31.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Elev. (feet) 31.00 32.30 32.30 33.00 Width (feet) 0.60 0.60 4.00 4.00

Primary OutFlow Max=2.62 cfs @ 12.15 hrs HW=32.21' (Free Discharge)

1=Culvert (Passes 2.62 cfs of 3.19 cfs potential flow)

2=Custom Weir/Orifice (Weir Controls 2.62 cfs @ 3.61 fps)

Summary for Pond DP1:

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

Inflow Area = 0.321 ac, 25.93% Impervious, Inflow Depth > 5.40" for 50-yr event
 Inflow = 1.97 cfs @ 12.09 hrs, Volume= 0.144 af
 Primary = 1.97 cfs @ 12.09 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

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

Inflow Area = 0.484 ac, 45.71% Impervious, Inflow Depth > 5.82" for 50-yr event
 Inflow = 2.64 cfs @ 12.15 hrs, Volume= 0.234 af
 Primary = 2.64 cfs @ 12.15 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond DP3:

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

Inflow Area = 0.073 ac, 5.75% Impervious, Inflow Depth > 4.56" for 50-yr event
 Inflow = 0.39 cfs @ 12.08 hrs, Volume= 0.028 af
 Primary = 0.39 cfs @ 12.08 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

APPENDIX D
SOIL SURVEY INFORMATION



United States
Department of
Agriculture

NRCS

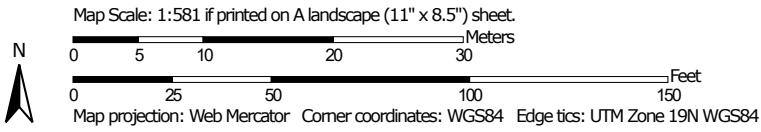
Natural
Resources
Conservation
Service

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



Custom Soil Resource Report Soil Map



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
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	0.7	100.0%
Totals for Area of Interest		0.7	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,

Custom Soil Resource Report

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

140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82m
Elevation: 380 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
B_w - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (K_{sat}): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands

Custom Soil Resource Report

Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

O_i - 0 to 2 inches: slightly decomposed plant material

A - 2 to 5 inches: fine sandy loam

Bw₁ - 5 to 16 inches: fine sandy loam

Bw₂ - 16 to 22 inches: gravelly fine sandy loam

2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (K_{sat}): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex

Across-slope shape: Linear, convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

O_i - 0 to 2 inches: slightly decomposed plant material

A - 2 to 7 inches: gravelly fine sandy loam

Bw - 7 to 16 inches: gravelly fine sandy loam

Custom Soil Resource Report

2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 8 to 23 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F144AY033MA - Shallow Dry Till Uplands

Hydric soil rating: No

Minor Components

Freetown

Percent of map unit: 5 percent

Landform: Swamps, marshes, kettles, depressions, bogs

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Newfields, very stony

Percent of map unit: 5 percent

Landform: Moraines, hills, ground moraines

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

Walpole, very stony

Percent of map unit: 3 percent

Landform: Depressions, outwash terraces, outwash plains, depressions, deltas

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent

Landform: Ridges, hills

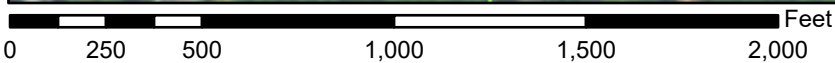
Hydric soil rating: Unranked

APPENDIX E
FEMA FIRM MAP

National Flood Hazard Layer FIRMMette



70°45'12"W 43°3'21"N



1:6,000

70°44'35"W 43°2'54"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **9/27/2023 at 1:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F
INSPECTION & LONG TERM
MAINTENANCE PLAN



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
PROPOSED BUILDING REPLACEMENT

1155 SAGAMORE AVENUE
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide Build America (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 Rain Garden and associated structures on the project site (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 City of Portsmouth Public Works Department, as 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 both the quantity and 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
- Vegetated buffer area

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:

- Rain Garden
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs 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. **Vegetated buffer area:** Check for scour or sediment buildup in buffer area, at least annually. Replace any vegetation removed by scour or sediment buildup with similar vegetation.
4. **Rain Garden:** After installation of the rain garden, perform the following inspections on a monthly basis:
 - a. Monitor for excessive or concentrated accumulations of debris, or excessive erosion below the various pipe inlets. Remove debris as required and replace or add inlet fabric strips or rip rap stones.
 - b. Monitor the outflow for problems with erosion. Repair as required.
 - c. After significant rainfalls, monitor rain garden surfaces for ponding of water. If water remains flooded over the surface 24 hours after a 1” rainfall, then investigate the cause, if not related to overflow blockage, then excavate and replace filter media.
 - d. Monitor vegetation on rain garden and replace dead or dying vegetation as required.
 - e. Monitor rain garden for rodent borrows and repair as required; remove persistent occupiers.
 - f. Monitor side slopes of rain garden for damage or erosion—repair, as necessary.
5. **Outlet Control Structures and Storm Drains:** Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the yard drains and outlet pipe. During construction, maintain inlet protection until the site has been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

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 other source) 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

RAIN GARDEN MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
<p><i>-Inspect pond surface for the occurrence of sediment, trash, debris, or structural damage.</i></p>	<p>Bi-Yearly and following major storm events</p>	<p><i>-Remove sediments, trash, and debris, as necessary.</i></p> <p><i>-Repair outlet structures and appurtenances, as necessary.</i></p>
<p><i>-Check to see if pond drains within 72 hours of rainfall.</i></p> <p><i>-Check vegetation health.</i></p>	<p>Annually</p>	<p><i>-If system does not drain within 72 hours of a rainfall event, consult a qualified professional about restoration of function of the dry well.</i></p> <p><i>-Vegetation should be maintained and pruned.</i></p> <p><i>-Dead or diseased vegetation should be removed, as well as any invasive species.</i></p>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
-Outlet Control Structures -Drain Manholes -Catch Basins	Monthly for 1 year following construction, Every other Month thereafter	<i>Check for erosion or short-circuiting</i> <i>Check for sediment accumulation</i> <i>Check for floatable contaminants</i>
-Drainage Pipes	Monthly for 1 year following construction, 1 time per 2 years thereafter	<i>Check for sediment accumulation/clogging, or soiled runoff.</i> <i>Check for erosion at outlets.</i>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> 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 <i>-Check for sediment accumulation/clogging of stone</i>	After heavy rains, as necessary	<i>-Top dress pad with new stone. -Replace stone completely if completely clogged.</i>
WASHING FACILITIES (if applicable) <i>-Monitor Sediment Accumulation</i>	As often as necessary	<i>-Remove Sediments from traps.</i>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

PROGRESS PRINT

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PROJECT

1155 SAGAMORE AVENUE

PORTSMOUTH NH

OWNER

Owner

REVISION SCHEDULE

No.	Date	Description

Project Phase SCHEMATIC

Proj Issue Date N/A

Project No. 2306

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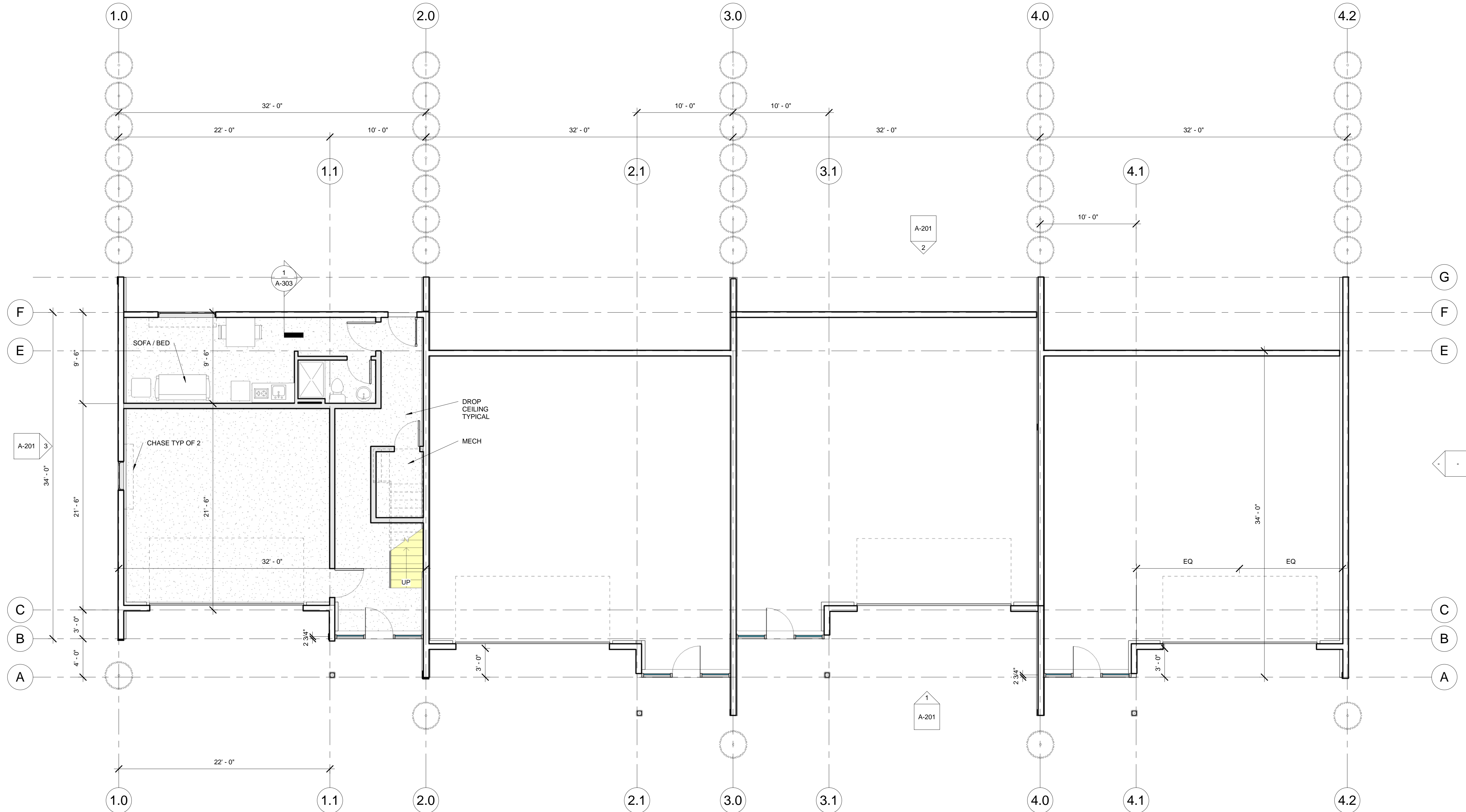
SHEET TITLE

Ground Floor Plan

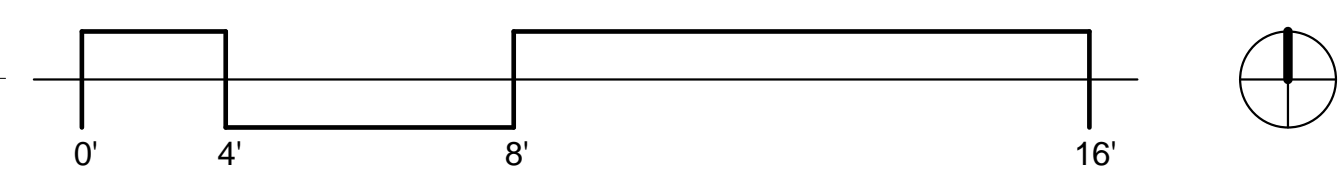
SHEET ISSUE DATE: 07/29/2023

A-101

SHEET 1 OF 8



1 0.0 FLR
3/16" = 1'-0"



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1155 SAGAMORE AVENUE

PORTSMOUTH NH

OWNER

Owner

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No.	Date	Description

Project Phase SCHEMATIC

Proj Issue Date N/A

Project No. 2306

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SHEET TITLE

First Floor Plan

SHEET ISSUE DATE: 07/29/2023

A-102

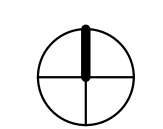
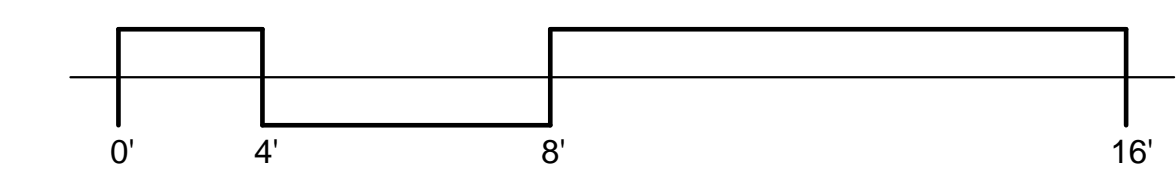
SHEET 2 OF 8

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1 1.0 FLR
3/16" = 1'-0"



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PROJECT

1155 SAGAMORE AVENUE

PORTSMOUTH NH

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No.	Date	Description

Project Phase SCHEMATIC

Proj Issue Date N/A

Project No. 2306

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SHEET TITLE

Second Floor Plan

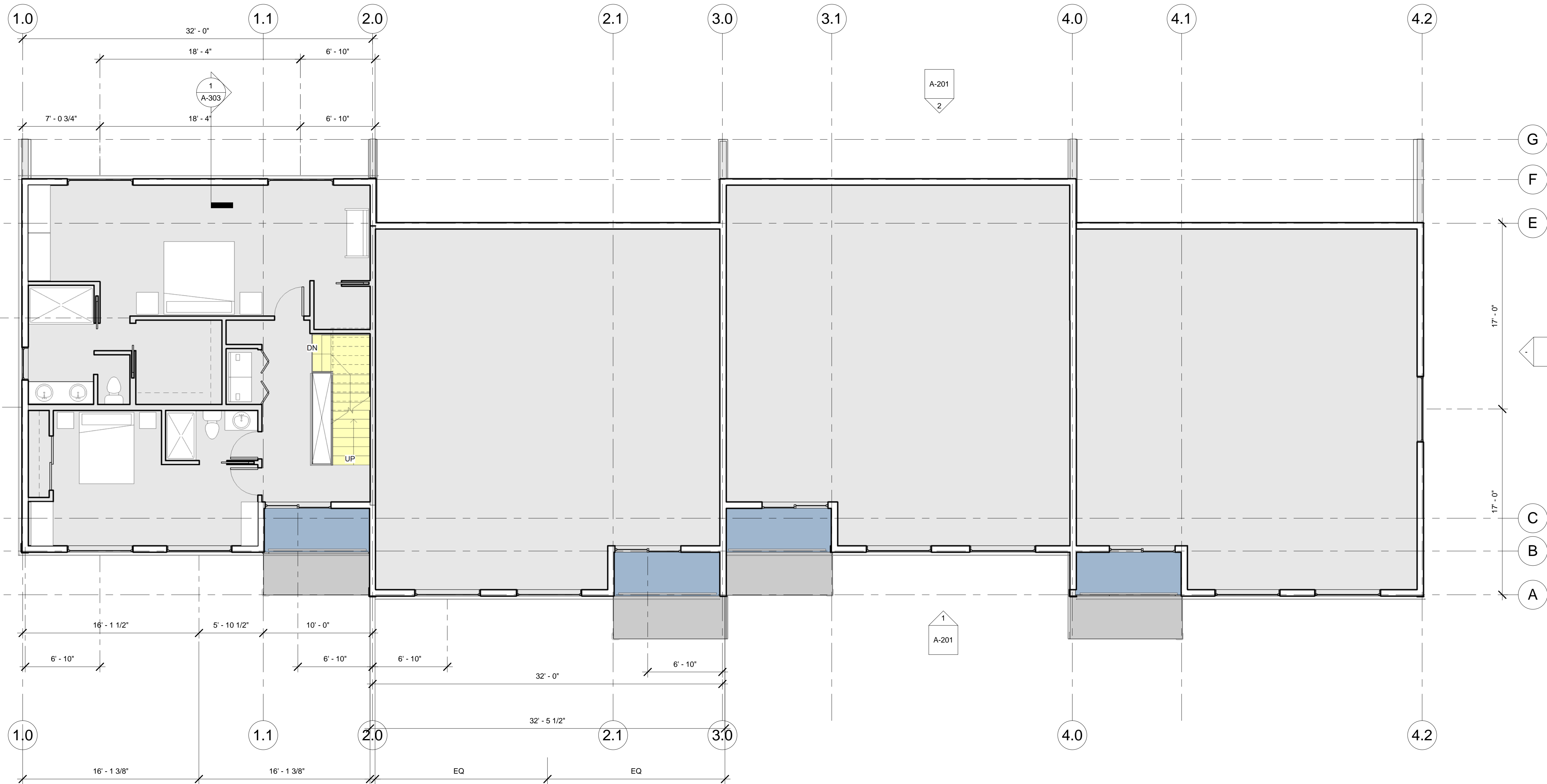
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A-103

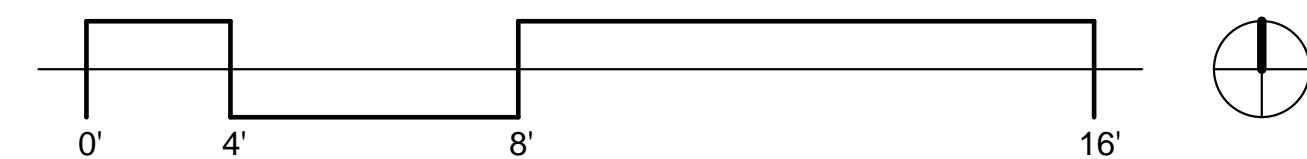
SHEET 3 OF 8

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① 2.0 FLR
3/16" = 1'-0"



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PROJECT

1155 SAGAMORE AVENUE

PORTSMOUTH NH

OWNER

Owner

REVISION SCHEDULE

No.	Date	Description

Project Phase SCHEMATIC

Proj Issue Date N/A

Project No. 2306

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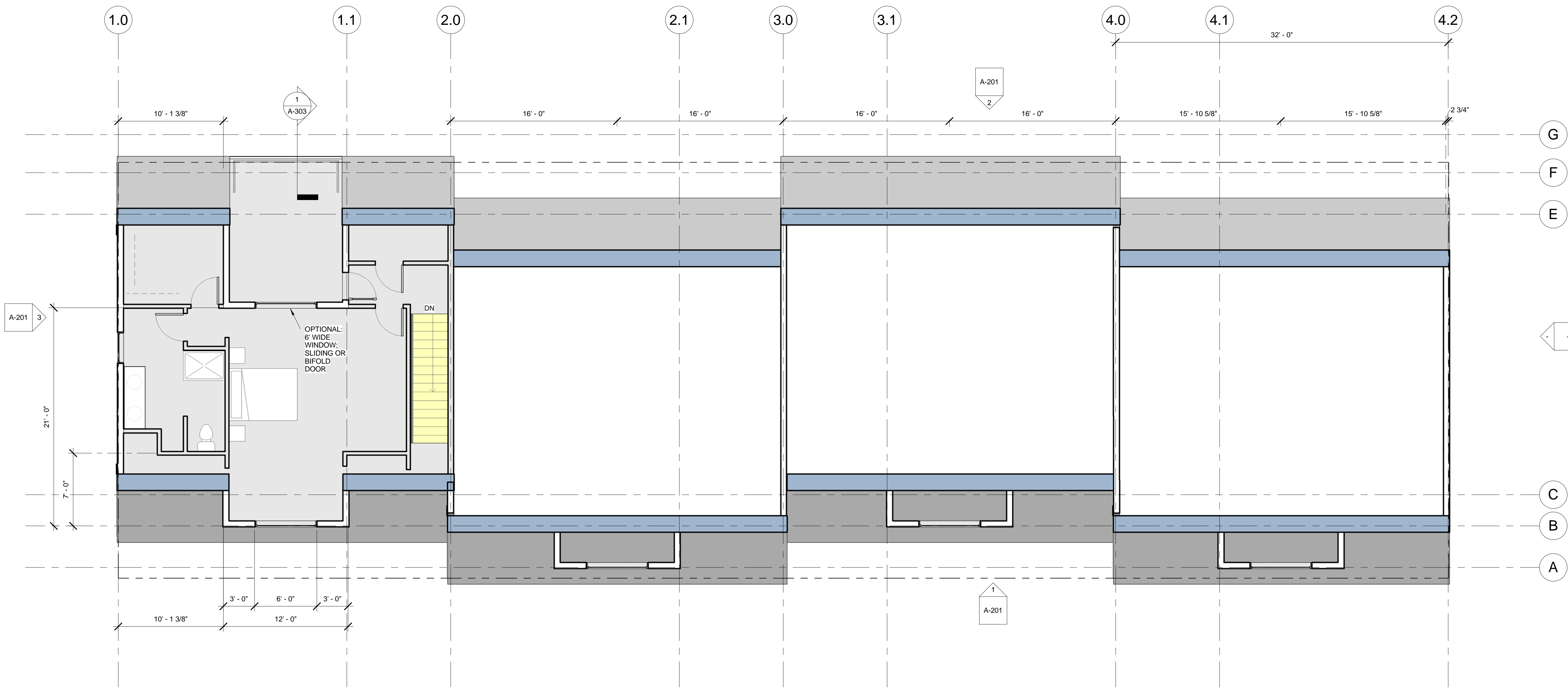
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Third Floor Plan

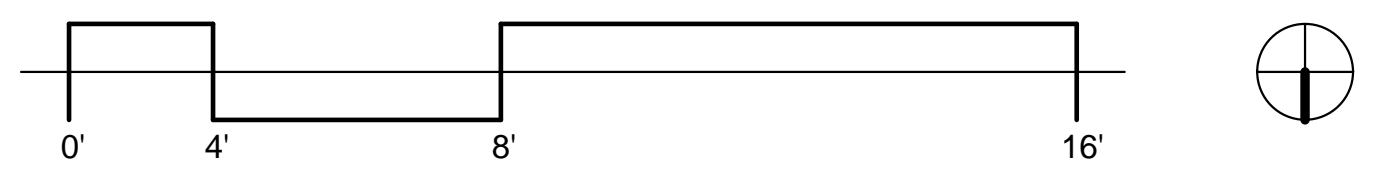
SHEET ISSUE DATE: 07/29/2023

A-104

SHEET 4 OF 8



① 3.0 FLR
3/16" = 1'-0"



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**1155 SAGAMORE
AVENUE**

Owner

REVISION SCHEDULE		
No.	Date	Description

Project Phase SCHEMATIC
 Proj Issue Date N/A
 Project No. 2306

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SHEET TITLE

Elevations

SHEET ISSUE DATE: 07/29/2023

A-201

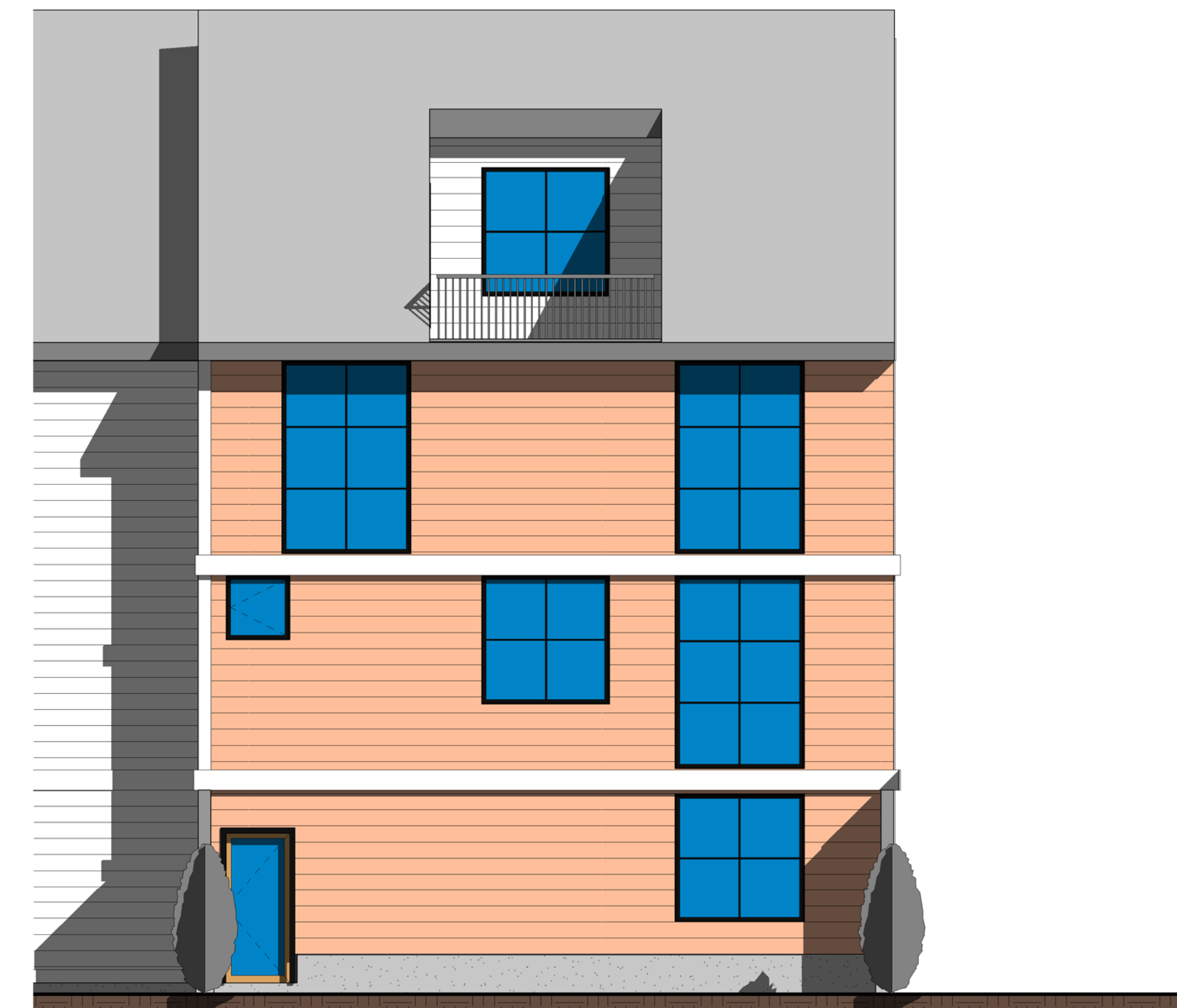
SHEET 5 OF 8



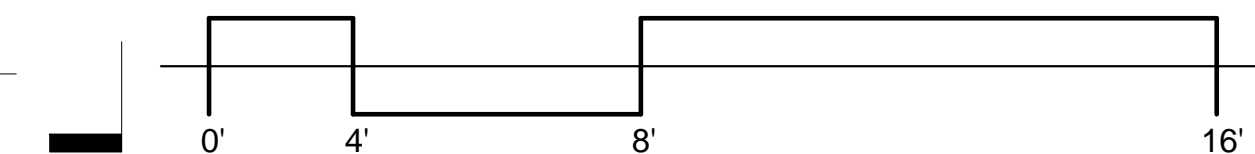
① NORTH-FACADE
 3/16" = 1'-0"



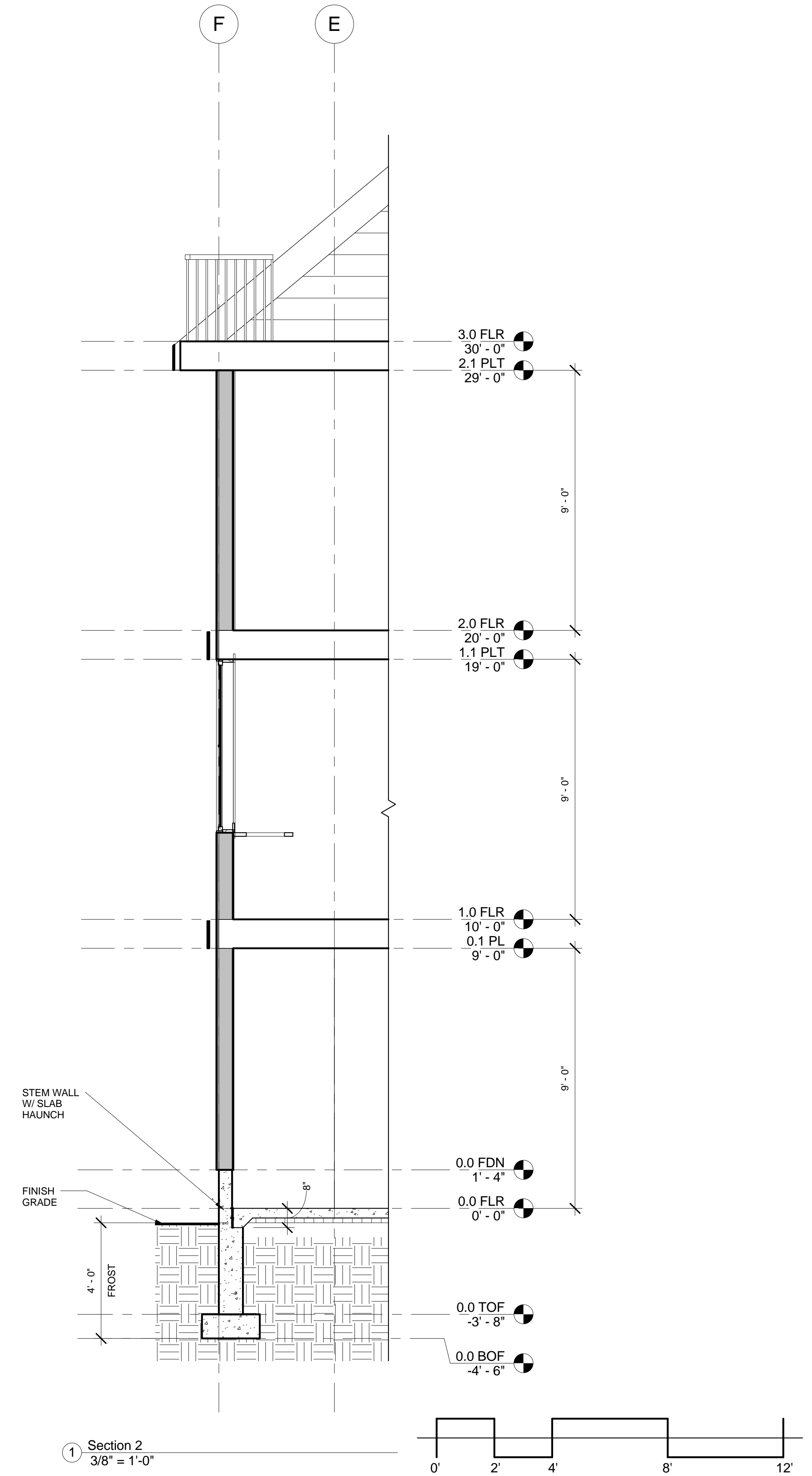
③ EAST
 3/16" = 1'-0"



② SOUTH
 3/16" = 1'-0"



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**1155 SAGAMORE
AVENUE**

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REVISION SCHEDULE		
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Project Phase SCHEMATIC
 Proj Issue Date N/A
 Project No. 2306

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SHEET TITLE

Wall Sections

SHEET ISSUE DATE: 07/29/2023

A-303

CONSULTANTS

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Owner

REVISION SCHEDULE

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Project Phase SCHEMATIC

Proj Issue Date N/A

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SHEET TITLE

3-D

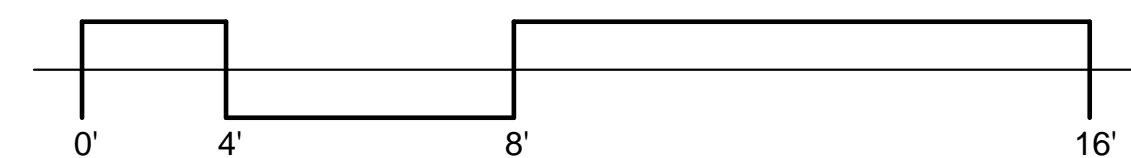
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A-904

SHEET 7 OF 8



1 (3D)



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PROJECT

1155 SAGAMORE AVENUE

PORTSMOUTH NH

OWNER

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REVISION SCHEDULE

No.	Date	Description

Project Phase SCHEMATIC

Proj Issue Date N/A

Project No. 2306

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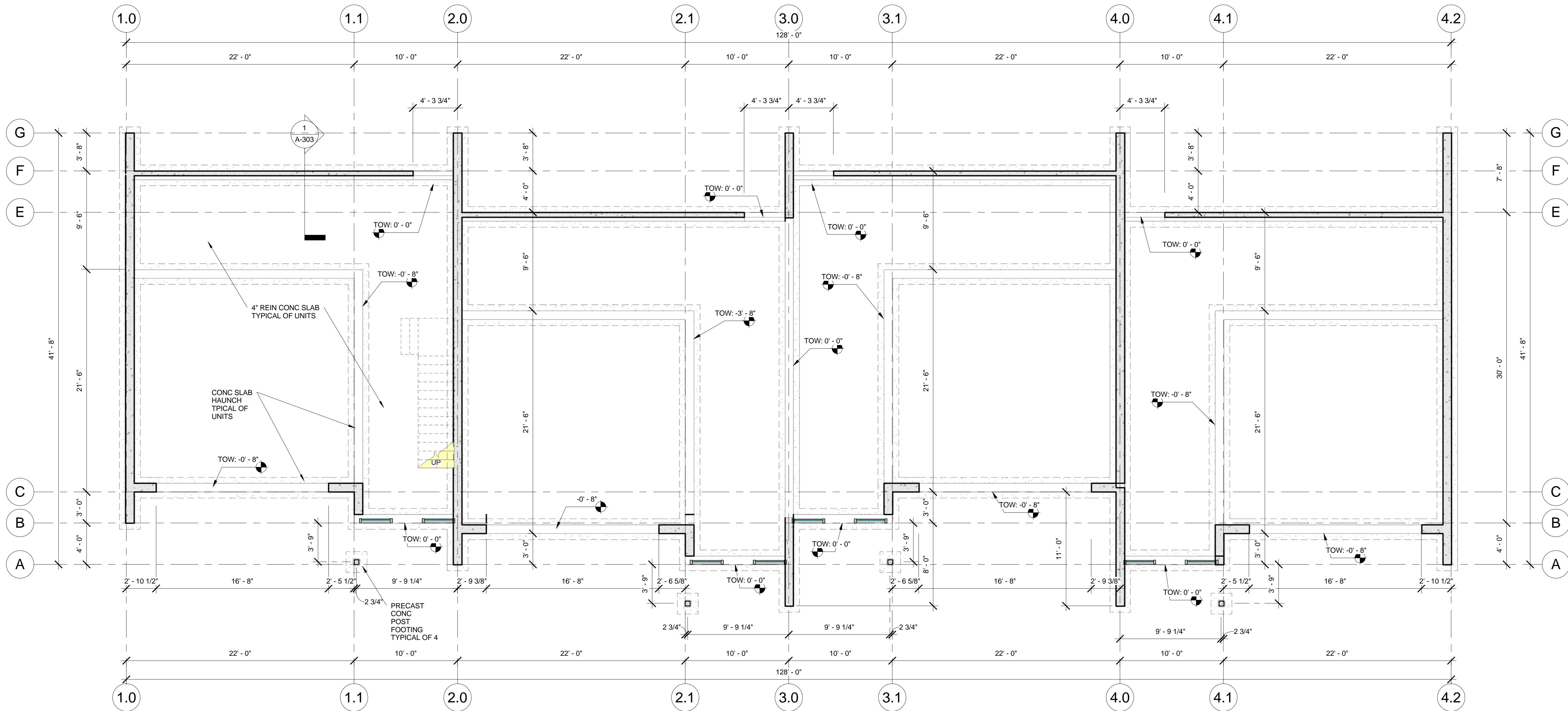
SHEET TITLE

Foundation Plan

SHEET ISSUE DATE: 07/29/2023

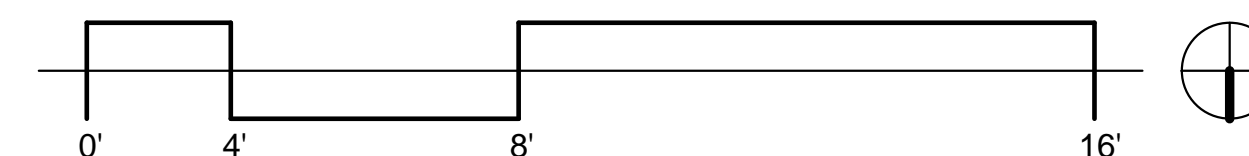
S-101

SHEET 8 OF 8



NOTE:
 1. REINFORCED 10" THK CONC FDN W/ REIN. 10" X 24" CONT. FOOTING TYPICAL UON
 2. TOF: -3'-2", BOP: -4'-6" TYPICAL (SEE WALL SECTION)
 3. TOW: 1'-4" TYPICAL (GRAY), UNLESS OTHERWISE NOTED

① 0.0 FDN
3/16" = 1'-0"



PROPOSED BUILDING REPLACEMENT BUILD AMERICA 1155 SAGAMORE AVENUE PORTSMOUTH NEW HAMPSHIRE SITE PERMIT PLANS

PROJECT PERMITS:
PORTSMOUTH SITE PLAN: PENDING

OWNER:
MICHAEL A. VALINSKI &
MAUREEN OAKMAN
1155 SAGAMORE AVENUE
PORTSMOUTH, NH 03802
TEL. (617) 877-6711

APPLICANT:
BUILD AMERICA
PO BOX 1664
PORTSMOUTH, NH 03802
TEL. (617) 877-6711

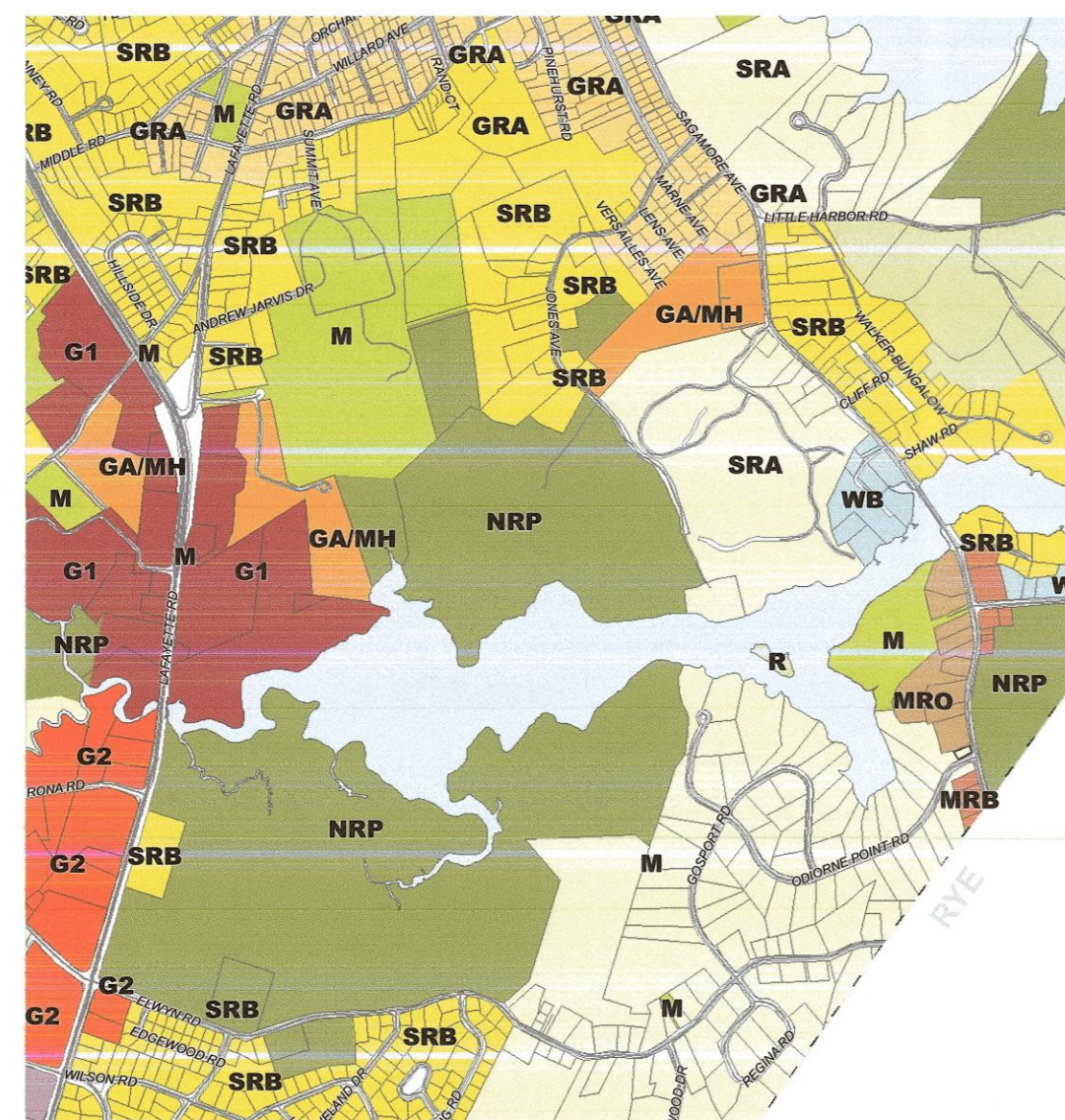
CIVIL ENGINEER & LAND SURVEYOR:

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
TEL. (603) 430-9282

ARCHITECT/DESIGNER:

BUILD AMERICA
PO BOX 1664
PORTSMOUTH, NH 03802
TEL. (617) 877-6711

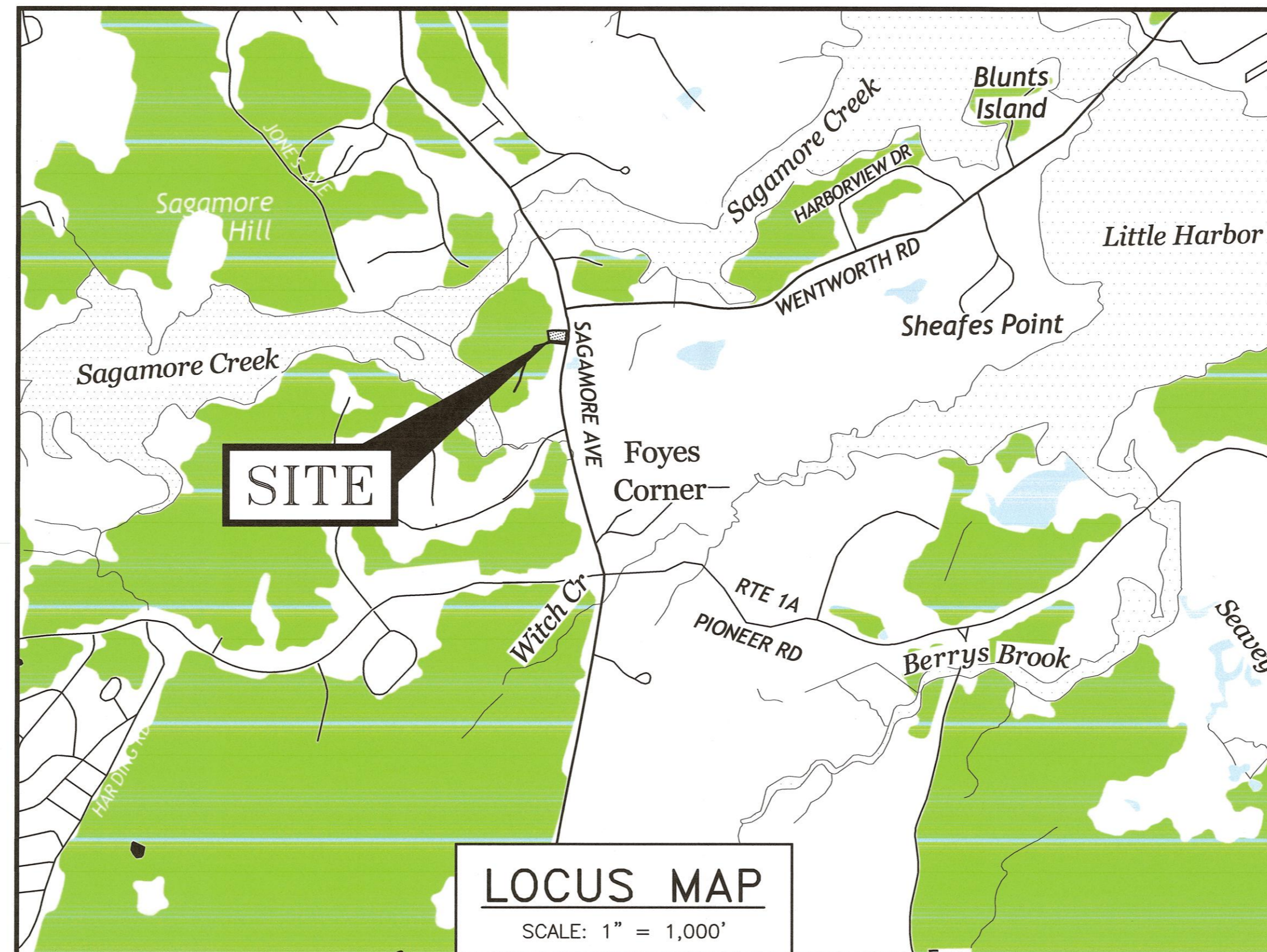
PORTSMOUTH ZONING MAP



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
- Mixed Residential Districts**
- MRO Mixed Residential Office
 - MRB Mixed Residential Business
 - G1 Gateway Corridor
 - G2 Gateway Center
- Business Districts**
- GB General Business
 - B Business
 - WB Waterfront Business
- Industrial Districts**
- OR Office Research
 - I Industrial
 - WI Waterfront Industrial

PROJECT SITE:
TAX MAP 224, LOT 18



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
---	---	UNDERGROUND ELECTRIC
---	---	OVERHEAD ELECTRIC/WIRES
FD	FD	FOUNDATION DRAIN
FM	FM	FORCED SEWER MAIN
---	---	EDGE OF PAVEMENT (EP)
---	---	WOODS / TREE LINE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
⊙	⊙	UTILITY POLE
⊙	⊙	SIGNS
⊙	⊙	WALL MOUNTED EXTERIOR LIGHTS
GWE	GWE	METER (GAS, WATER, ELECTRIC)
⊙	⊙	TRANSFORMER ON CONCRETE PAD
⊙	⊙	ELECTRIC HANDHOLD
⊙	⊙	SHUT OFFS (WATER/GAS)
GV	GV	GATE VALVE
⊙	⊙	HYDRANT
⊙	⊙	CATCH BASIN
⊙	⊙	SEWER MANHOLE
⊙	⊙	DRAIN MANHOLE
⊙	⊙	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
⊙	⊙	PARKING METER
LSA	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	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	TO BE REMOVED
W.W.	W.W.	TYPICAL WINDOW WELL
		PHOTO LOCATION



UTILITY CONTACTS

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

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

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

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

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

INDEX OF SHEETS

DWG No.	Description
C1	EXISTING CONDITIONS & DEMOLITION PLAN
C2	SITE PLAN
L1-L2	LANDSCAPE PLAN
C3	GRADING AND EROSION CONTROL PLAN
C4	UTILITY PLAN
C5	DRIVEWAY PROFILE PLAN
D1-D3	DETAILS & EROSION CONTROL

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

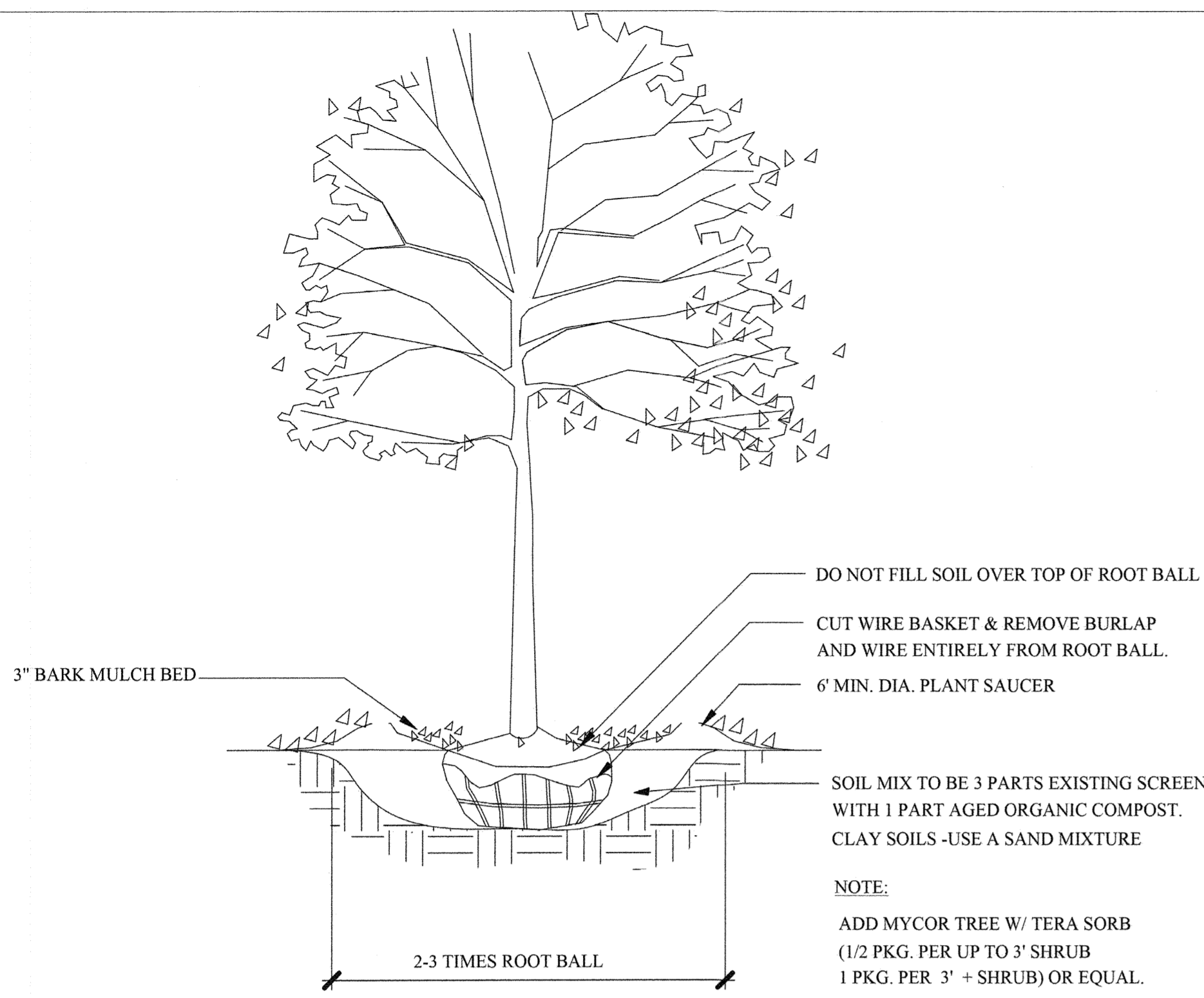
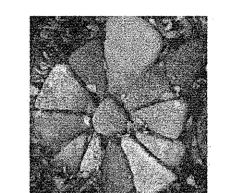
**PROPOSED BUILDING REPLACEMENT
BUILD AMERICA
1155 SAGAMORE AVENUE
PORTSMOUTH, NH**



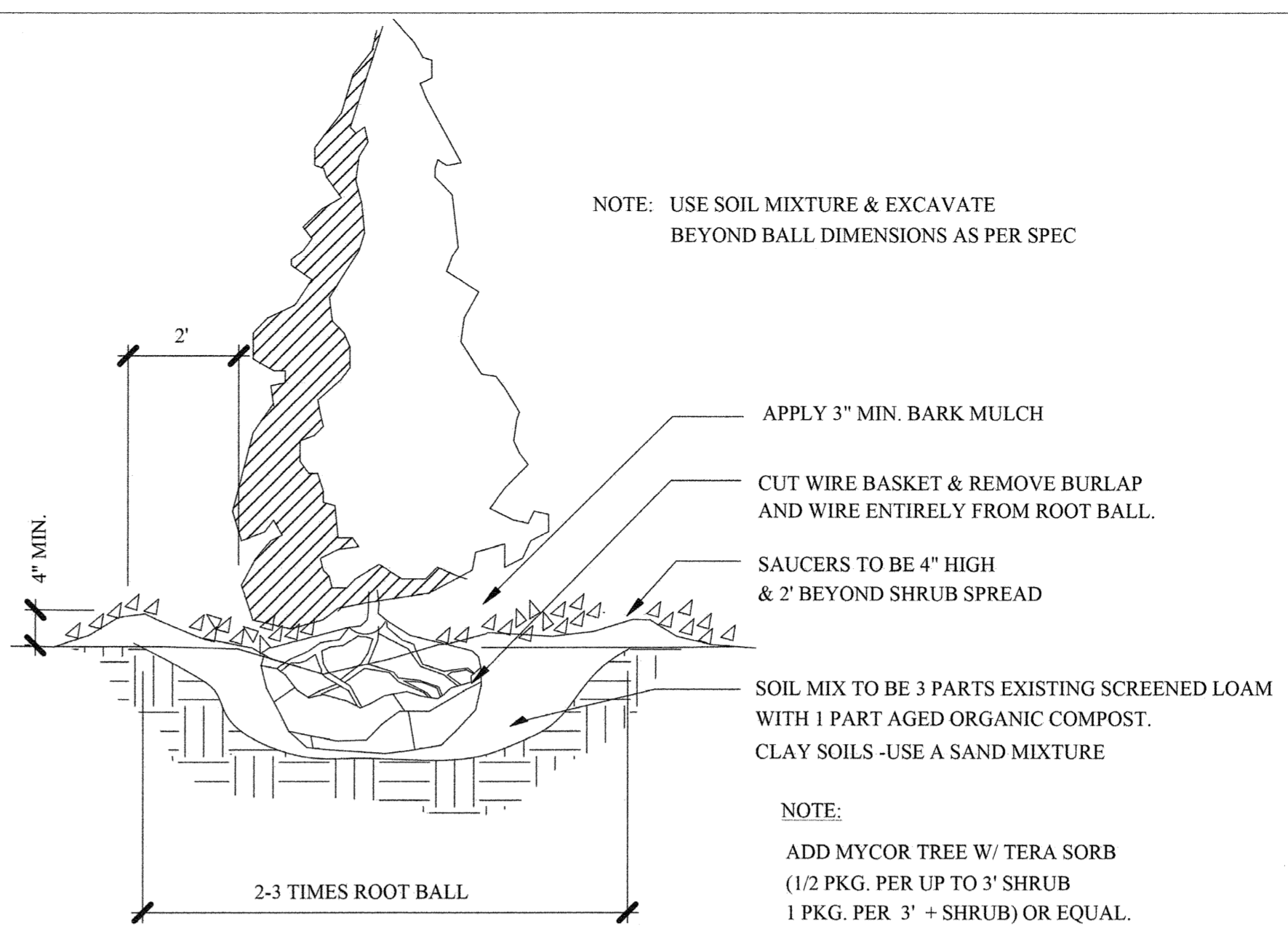
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200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

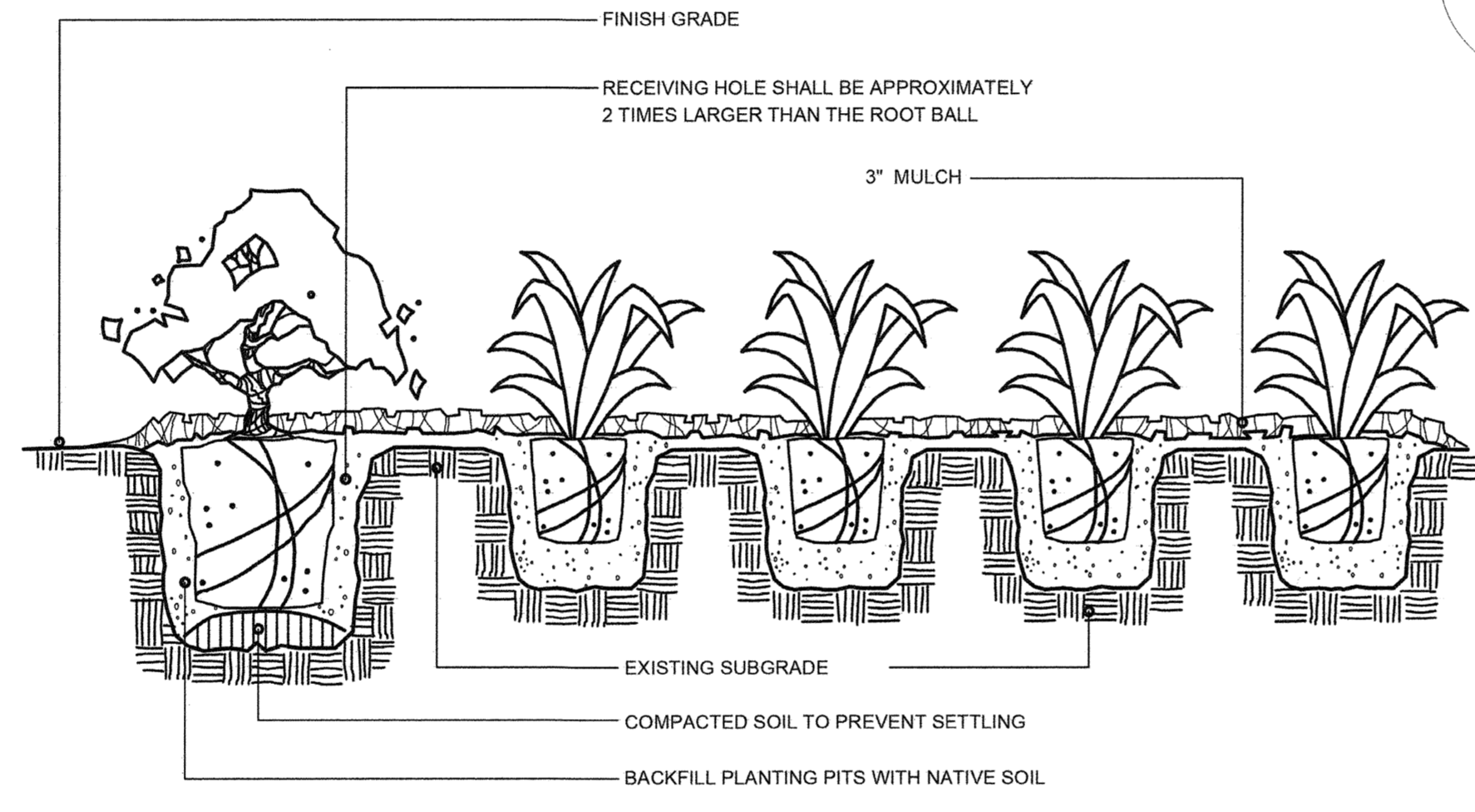
PLAN SET SUBMITTAL DATE: 29 NOVEMBER 2023



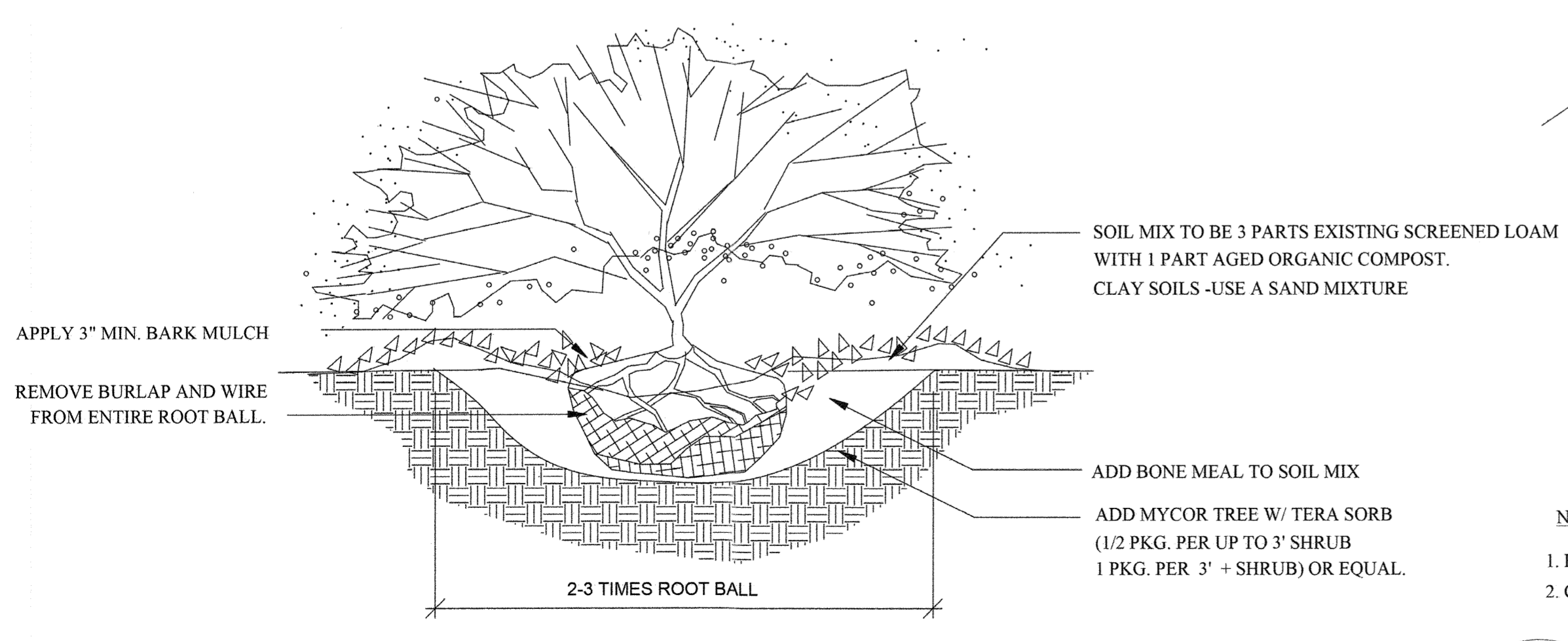
1
L-5
TREE PLANTING - 2"+ CAL.
SCALE: NTS



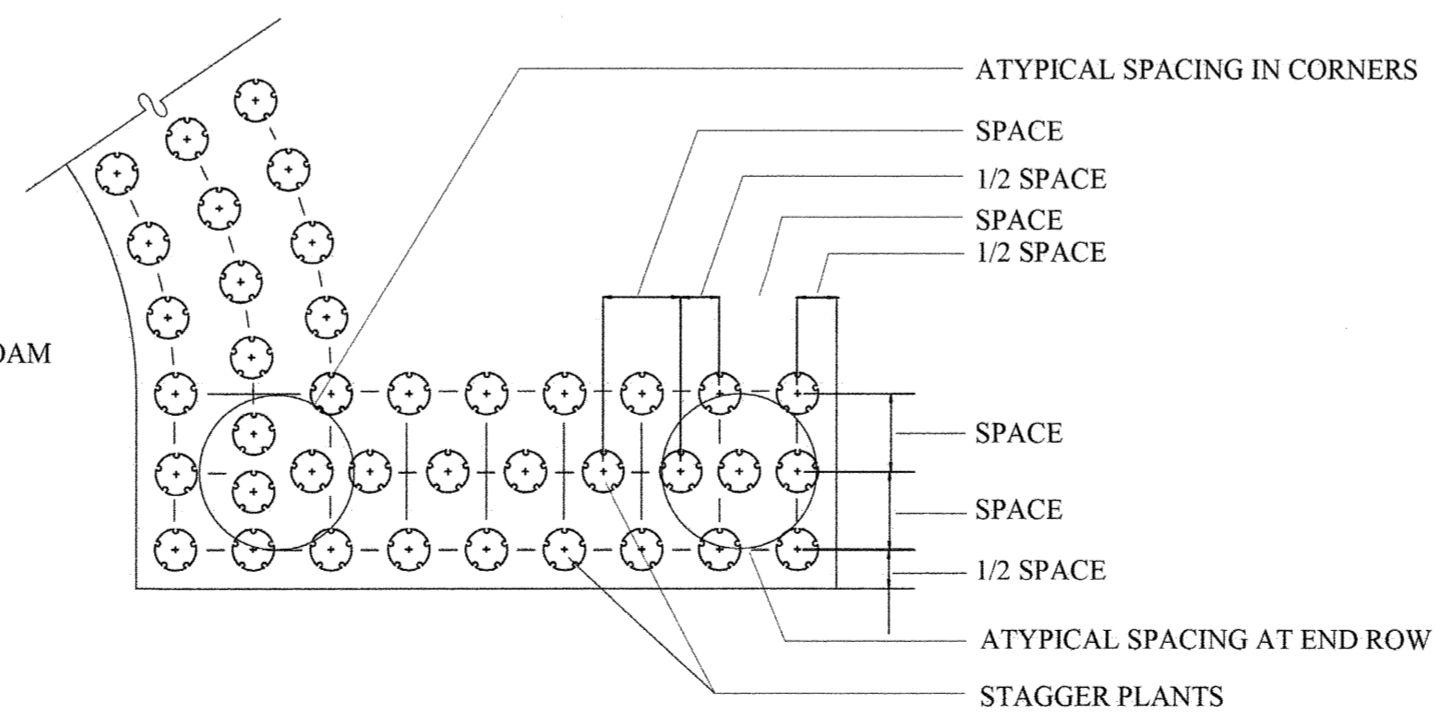
2
L-5
PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS



3
L-5
SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS



4
L-5
B&B SHRUB PLANTING
SCALE: NTS



5
L-5
GROUND COVER SPACING DETAIL
SCALE: NTS

LANDSCAPE NOTES:

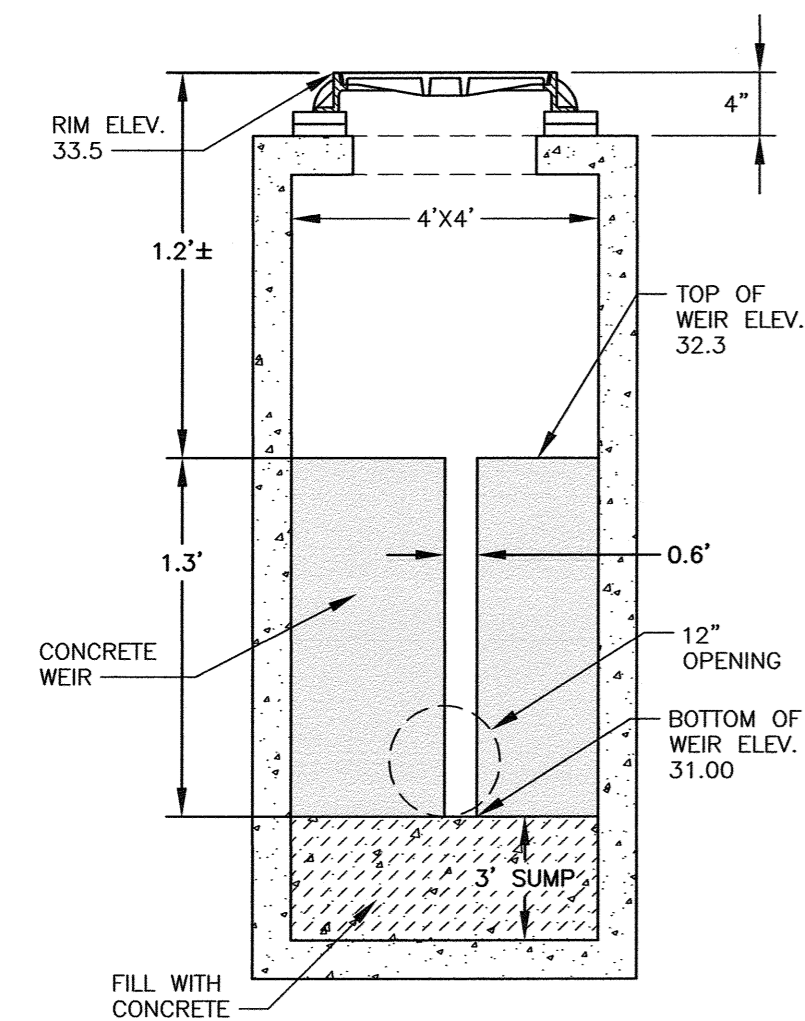
1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE.

No.	Date	By	Revision Notes
No.	Date	Issue Notes	
Design Firm: terra firma landscape architecture 163.a Court Street Portsmouth, NH			
Consultant:			
Project Title: BUILD AMERICA 1155 Sagamore Avenue Portsmouth, NH 03801			
Sheet Title: Landscape Plan			
Project Manager: JC	Project ID: BUILD AMERICA		
Drawn By: TC	Scale: AS NOTED		
Reviewed By: TP	Sheet No.: L-2		
Date: 10/23/2023			
CAD File Name: 155sagamore101223.vwx			

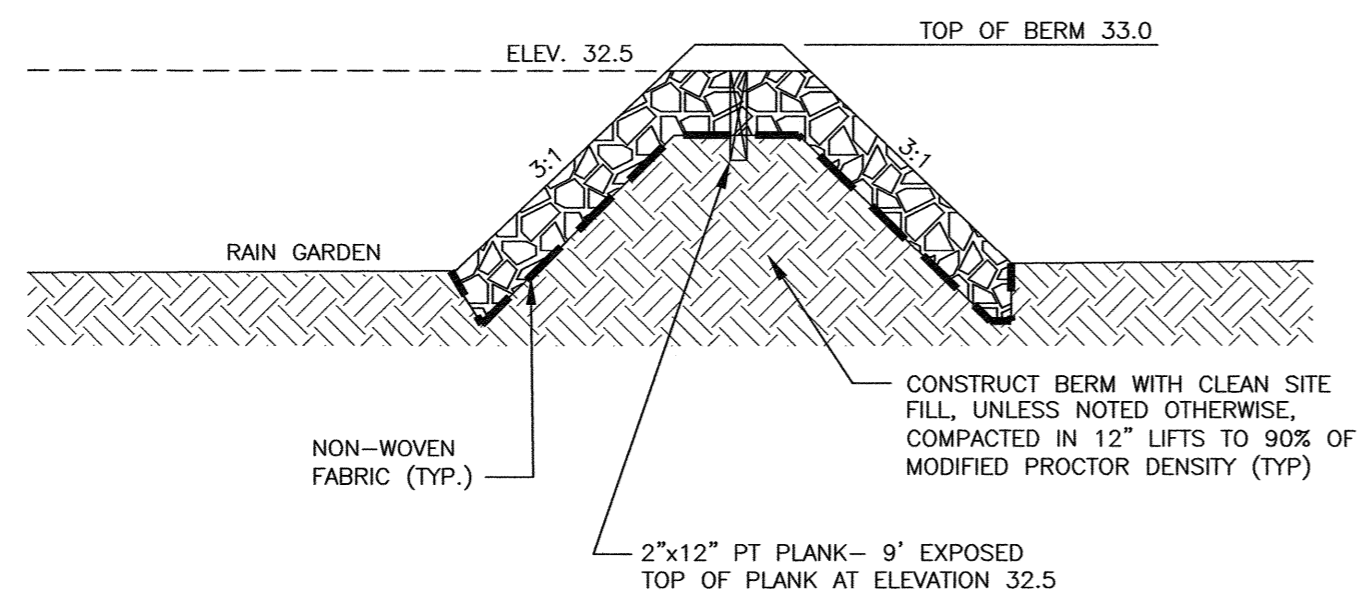
LEGEND: SEE COVER SHEET

RAIN GARDEN PLANTING MIX
SEE LANDSCAPE PLAN

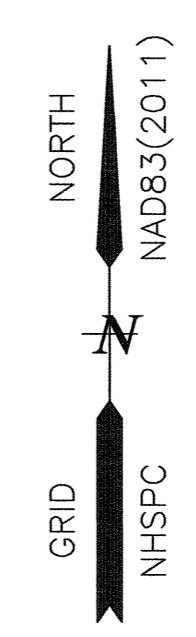
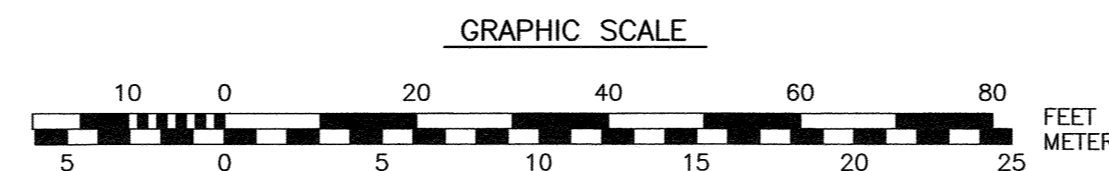
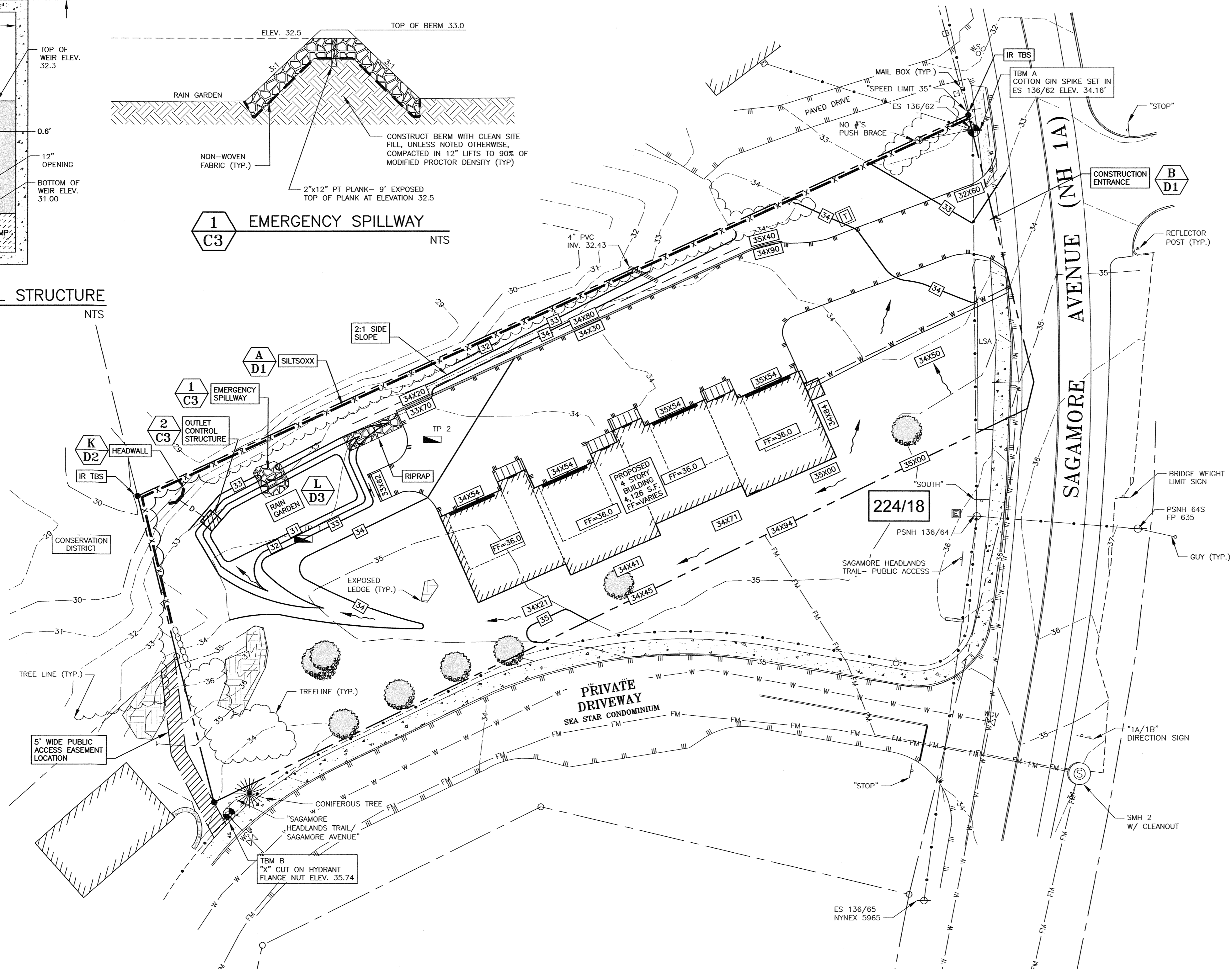


2 OUTLET CONTROL STRUCTURE
C3 5'x5' CONCRETE
NTS

PIPE AND HEADWALL
NOTE: PIPE FROM OCS TO HEADWALL WILL BE A 12" HDPE WITH AN INVERT IN OF 31.00, INVERT OUT OF 30.50, LENGTH OF 11 FEET, AND SLOPE OF 0.045.



1 EMERGENCY SPILLWAY
C3 NTS



NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 224 AS LOT 18.
- 2) OWNERS OF RECORD:
MICHAEL A. VALINSKI &
MAUREEN OAKMAN
1155 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
3991/781
- APPLICANT:
BUILD AMERICA
PO BOX 1664
PORTSMOUTH, NH 03802
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE SITE GRADING ON ASSESSOR'S MAP 224 LOT 18 IN THE CITY OF PORTSMOUTH.
- 8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
- 9) 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.
- 10) 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).
- 11) 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.
- 12) GARAGE SLAB SHALL BE 4" BELOW FLOOR ELEVATION LISTED, SLOPING 1/8" PER FOOT TOWARDS THE DOOR.
- 13) SEE TEST PIT LOGS ON SHEET C1.

No.	DATE	DESCRIPTION	BY	CHK.
2	11/29/23	NOTE 13, SPOT GRADES	DJT	JRC
1	10/16/23	ISSUED TO TAC	SJR	JRC
0	9/5/23	ISSUED FOR APPROVAL	CSA	JRC

NOT FOR CONSTRUCTION

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

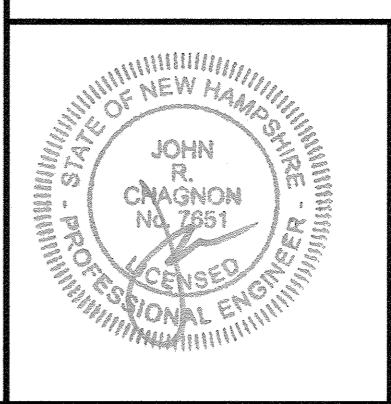
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

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1155 SAGAMORE AVENUE, PORTSMOUTH, NH 03801

GRADING & EROSION CONTROL PLAN

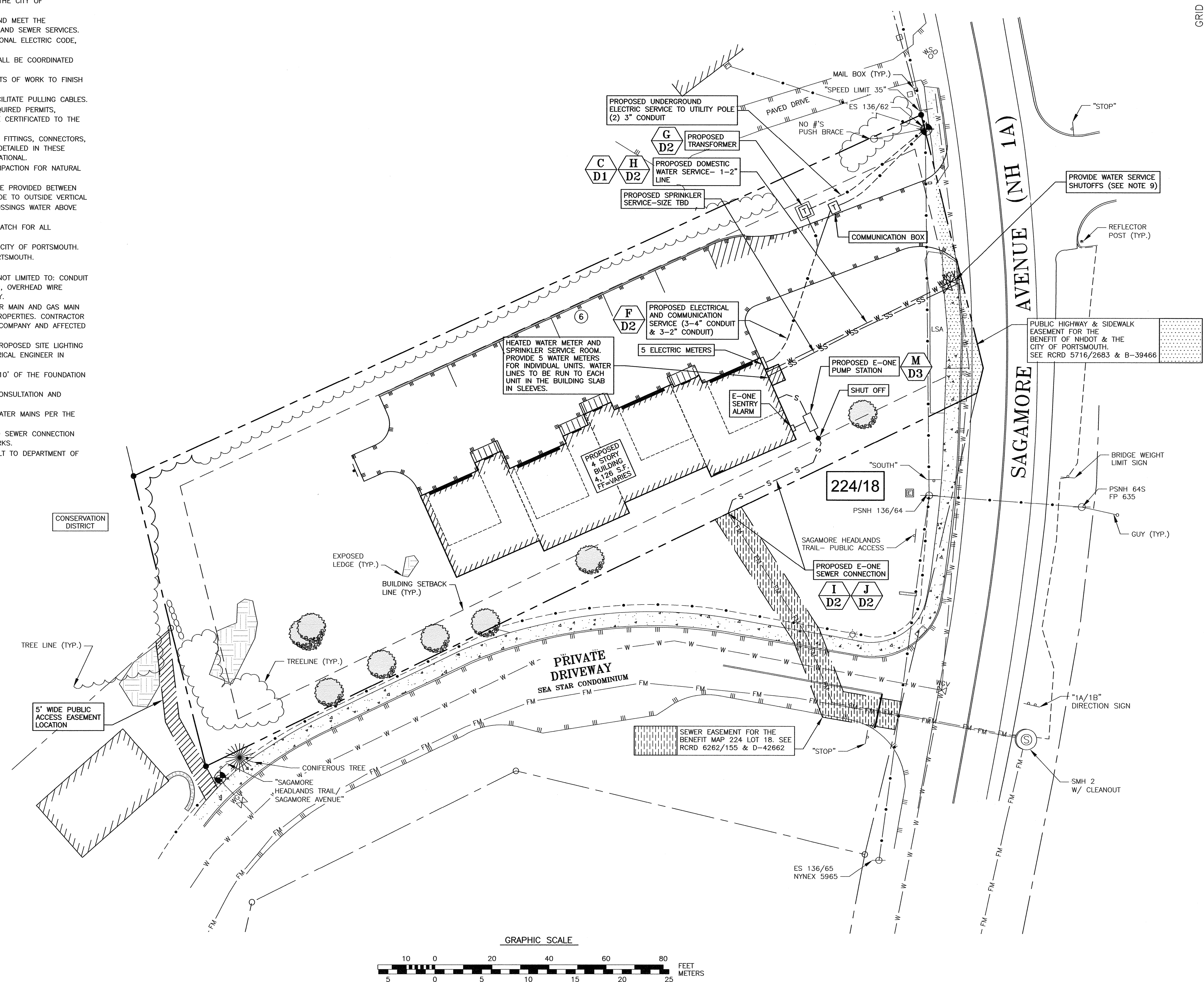
DATE	AUGUST 2023	SCALE	1" = 20'
DRAWN BY	OMS	DESIGNED BY	JRC
CHECKED BY	JRC		
PROJECT No.	5010314.417.01	FIELD BOOK & PAGE	FB 450 PG 1
SHEET	SHEET 3 C3		



UTILITY NOTES:

- 1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
- 2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
- 3) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
- 4) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
- 5) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
- 6) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
- 7) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH.
- 8) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ADJUTING PROPERTIES THROUGHOUT CONSTRUCTION.
- 9) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
- 10) EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
- 11) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
- 12) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
- 13) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
- 14) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
- 15) THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
- 16) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
- 17) A 10'-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.
- 18) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVED AREAS.
- 19) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
- 20) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
- 21) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
- 22) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
- 23) CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ADJUTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ADJUTERS WITH UTILITY COMPANY AND AFFECTED ADJUTER.
- 24) SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER IN COORDINATION WITH THE SITE CIVIL ENGINEER.
- 25) CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
- 26) THE CONTRACTOR SHALL INSTALL THE SEWER LINE AND MANHOLE IN CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
- 27) BRASS WEDGES FOR CONTINUITY OF SIGNAL MUST BE INSTALLED ON WATER MAINS PER THE PORTSMOUTH WATER DEPARTMENT.
- 28) FINAL REVIEW OF ALL UTILITIES SHALL BE MADE DURING THE REQUIRED SEWER CONNECTION PERMIT PROCESS IN COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
- 29) ALL WORK PERFORMED IN THE PUBLIC RIGHT-OF-WAY SHALL BE BUILT TO DEPARTMENT OF PUBLIC WATER WORKS STANDARDS.

LEGEND: SEE COVER SHEET



NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 224 AS LOT 18.
- 2) OWNERS OF RECORD:
MICHAEL A. VALINSKI &
MAUREEN OAKMAN
1155 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
3991/781
APPLICANT:
BUILD AMERICA
PO BOX 1664
PORTSMOUTH, NH 03802
- 3) THE PURPOSE OF THIS PLAN IS TO SHOW THE SITE IMPROVEMENTS ON ASSESSOR'S MAP 224 LOT 18 IN THE CITY OF PORTSMOUTH.
- 4) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
- 5) 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.
- 6) 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.
- 7) 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).
- 8) IRRIGATION WILL BE PROVIDED ON A SEPARATE METERED SERVICE. DESIGNS OF IRRIGATION WILL BE PROVIDED BY THE LANDSCAPE CONTRACTOR AT THE TIME OF CONSTRUCTION.
- 9) PROVIDE STANDARD LEAK, VALVE AND METER EASEMENT DEED FOR THE PRIVATE WATER SYSTEM TO BE REVIEWED AND APPROVED BY THE CITY OF PORTSMOUTH.

No.	DATE	DESCRIPTION	BY	CHK.
3	11/29/23	DETAIL 1&2, NOTE 9&13	DJT	JRC
2	11/7/23	TAC COMMENTS	DJT	JRC
1	10/16/23	ISSUED FOR TAC	SJR	JRC
0	9/05/23	ISSUED FOR APPROVAL	OMS	JRC

NOT FOR CONSTRUCTION



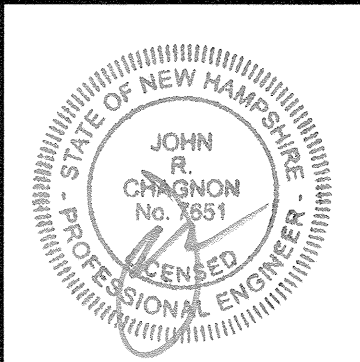
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603-430-9282

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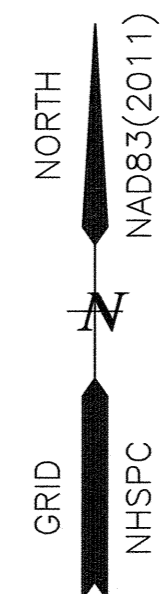
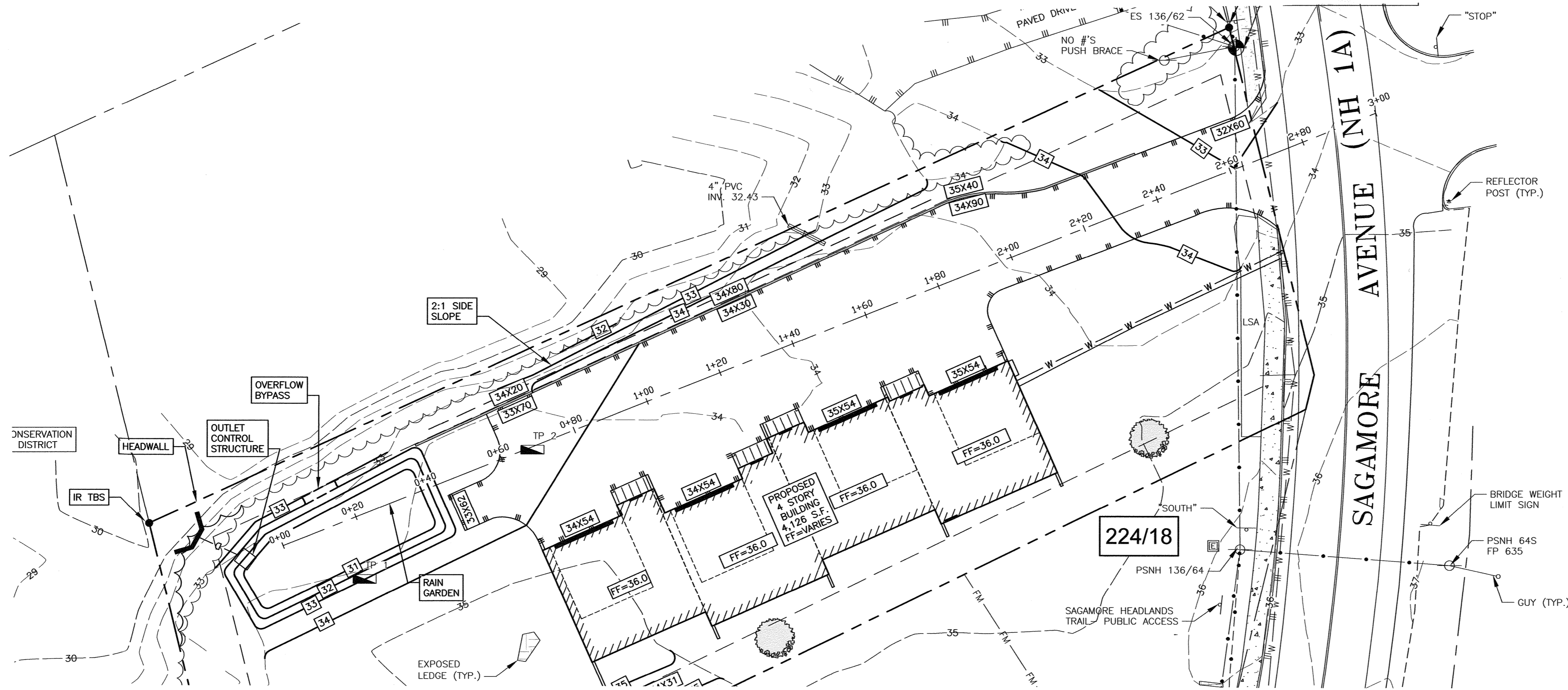
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1155 SAGAMORE AVENUE, PORTSMOUTH, NH 03801

UTILITY PLAN

DATE	AUGUST 2023	SCALE	1" = 20'
DRAWN BY	OMS	DESIGNED BY	JRC
CHECKED BY	JRC	PROJECT No.	5010314.417.01
FIELD BOOK & PAGE	FB 450 PG 1	SHEET	SHEET 4 C4



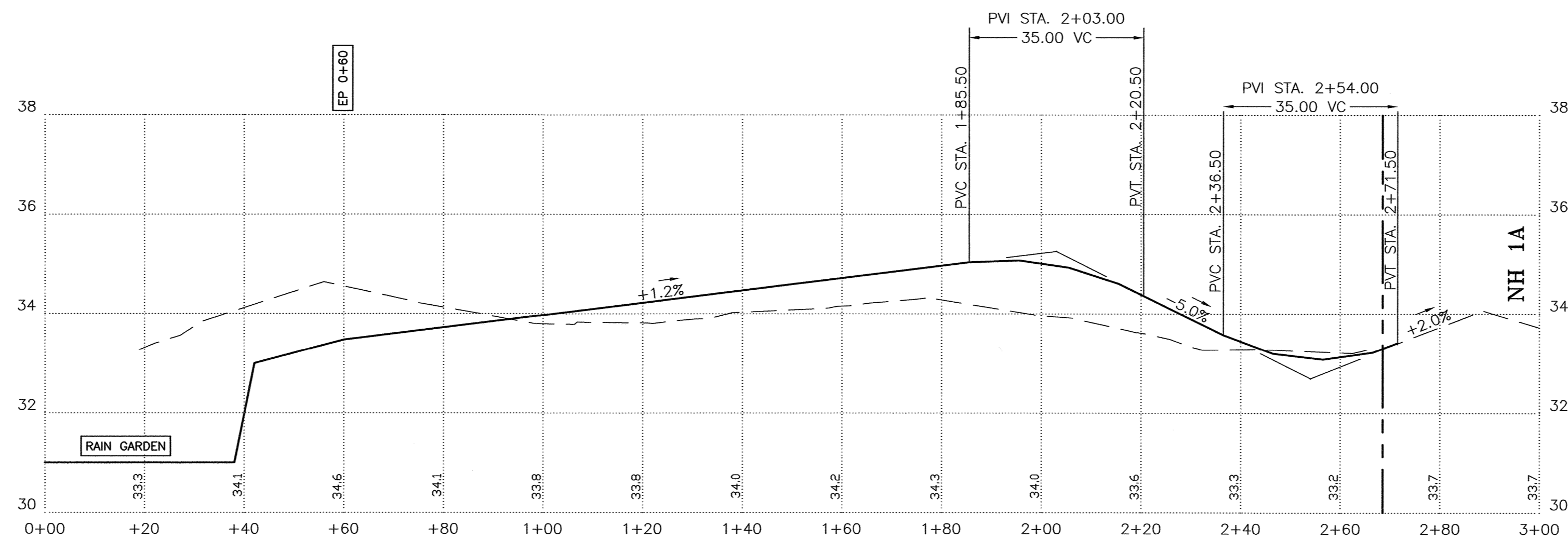
LEGEND: SEE COVER SHEET



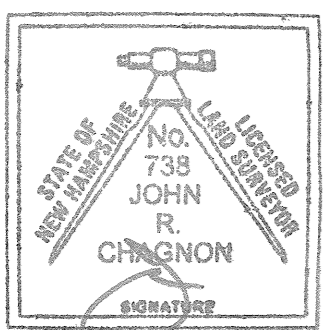
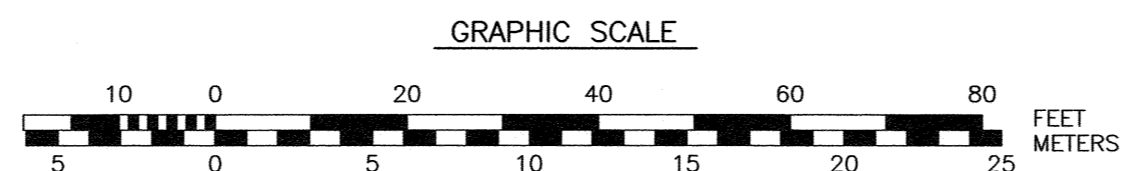
NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 224 AS LOT 18.
- 2) OWNERS OF RECORD:
MICHAEL A. VALINSKI &
MAUREEN OAKMAN
1155 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
3991/781

APPLICANT:
BUILD AMERICA
PO BOX 1664
PORTSMOUTH, NH 03802
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DRIVEWAY PROFILE ON ASSESSOR'S MAP 224 LOT 18 IN THE CITY OF PORTSMOUTH.
- 8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
- 9) 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.
- 10) 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).
- 11) 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.
- 12) GARAGE SLAB SHALL BE 4" BELOW FLOOR ELEVATION LISTED. SLOPING 1/4" PER FOOT TOWARDS THE DOOR.



VERTICAL SCALE: 1" = 2'
HORIZONTAL SCALE: 1" = 20'



"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
DATE: 10-23-23

1	10/23/23	PROFILE	EDS	JRC
0	9/5/23	ISSUED FOR APPROVAL	OMS	JRC
No.	DATE	DESCRIPTION	BY	CHK.

NOT FOR CONSTRUCTION



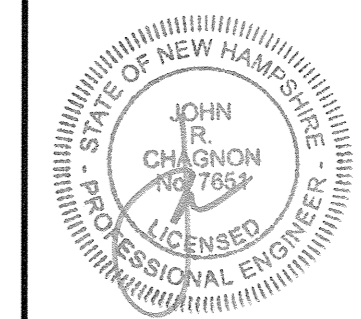
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

WWW.HALEYWARD.COM

PROJECT
BUILD AMERICA
1155 SAGAMORE AVENUE, PORTSMOUTH, NH 03801

TITLE
DRIVEWAY PROFILE PLAN

DATE AUGUST 2023	SCALE 1" = 20'	
DRAWN BY OMS	DESIGNED BY JRC	CHECKED BY JRC
PROJECT No. 5010314.417.01	FIELD BOOK & PAGE FB 450 PG 1	
SHEET		SHEET 5
		C5



CONSTRUCTION SEQUENCE

- DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- INSTALL SILT SOXX TO CONTROL EROSION AND SEDIMENTATION PRIOR TO ANY EARTH MOVING ACTIVITIES.
- REMOVE EXISTING BUILDINGS AND OTHER SITE FEATURES TO BE REMOVED.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
- CUT AND REMOVE ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND OTHER DEBRIS AND RUBBISH AS REQUIRED.
- STRIP AND STOCKPILE LOAM FROM SITE. STOCKPILES SHALL BE SURROUNDED WITH SILT SOXX TO CONTROL SEDIMENT RUN OFF.
- ROUGH GRADE SITE AND CONSTRUCT DRAINAGE STRUCTURES, RAIN GARDEN AND SWALES. INSTALL AND MAINTAIN EROSION CONTROL DEVICES AS SHOWN ON THE PLANS. ALL PERMANENT DITCHES, AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. CONSTRUCT BUILDING FOUNDATIONS.
- LOAM AND SEED DISTURBED AREAS IN ACCORDANCE WITH VEGETATIVE PRACTICE AND GENERAL CONSTRUCTION NOTES. CUT AND FILL SLOPES SHALL BE SEEDED IMMEDIATELY AFTER THEIR CONSTRUCTION.
- CONSTRUCT UTILITIES, BUILDINGS AND PAVEMENT BASE COURSE.
- PLANT LANDSCAPING.
- CONSTRUCT PAVEMENT WEARING COURSE.
- REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF FOUR HOUSING UNITS WITH ASSOCIATED PARKING AND UTILITIES.

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 0.695 ACRES.

BASED ON THE USCS WEB SOIL SURVEY THE SOILS ON SITE CONSIST OF CHATFIELD-HOLLIS-CANTON COMPLEX WHICH IS WELL DRAINED SOILS WITH A HYDROLOGIC SOIL GROUP RATING OF B.

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA OVERLAND DRAINAGE PATHWAYS WHICH ULTIMATELY FLOW TO THE SAGAMORE CREEK.

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 ADJUTING 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.

SILT SOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT SOXX 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, SILT SOXX, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE

ESTABLISHED.
DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT SOXX, 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 SILT SOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT SOXX SHALL BE REMOVED ONCE SITE IS STABILIZED, AND DISTURBED AREAS RESULTING FROM SILT SOXX 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

- LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
- ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
- 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.
- 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 BEFORE 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:

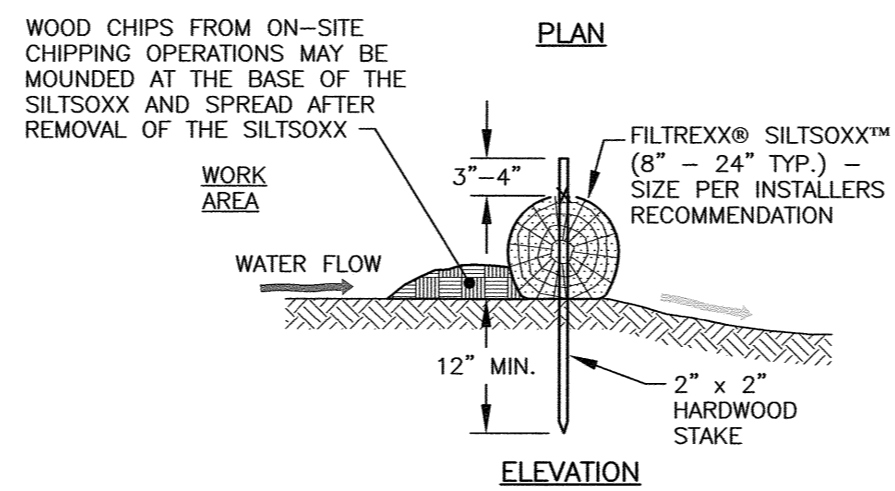
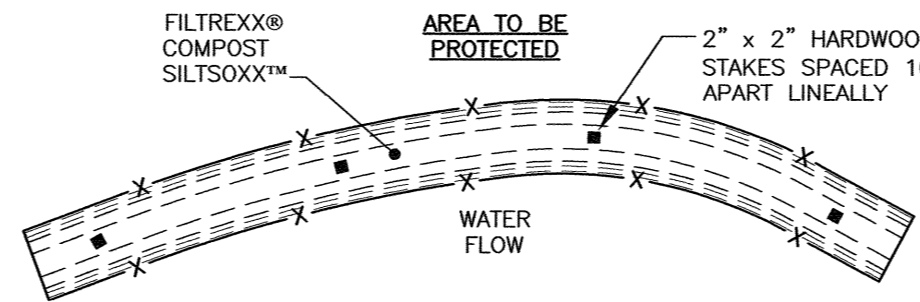
- THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY;
 - IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
 - CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS;
 - INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.
- ALLOWABLE NON-STORMWATER DISCHARGES
- FIRE-FIGHTING ACTIVITIES;
 - FIRE HYDRANT FLUSHING;
 - WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
 - WATER USED TO CONTROL DUST;
 - POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
 - ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
 - PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
 - UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
 - UNCONTAMINATED GROUND WATER OR SPRING WATER;
 - FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
 - UNCONTAMINATED EXCAVATION DEWATERING;
 - LANDSCAPE IRRIGATION.

WASTE DISPOSAL

- 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.
- 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.
- 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.

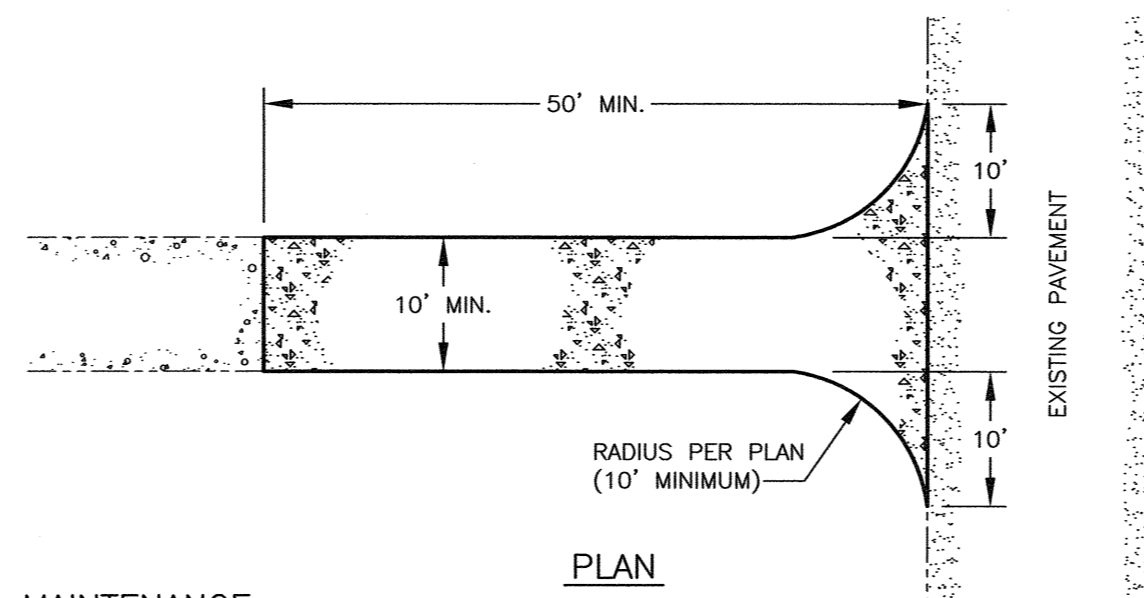
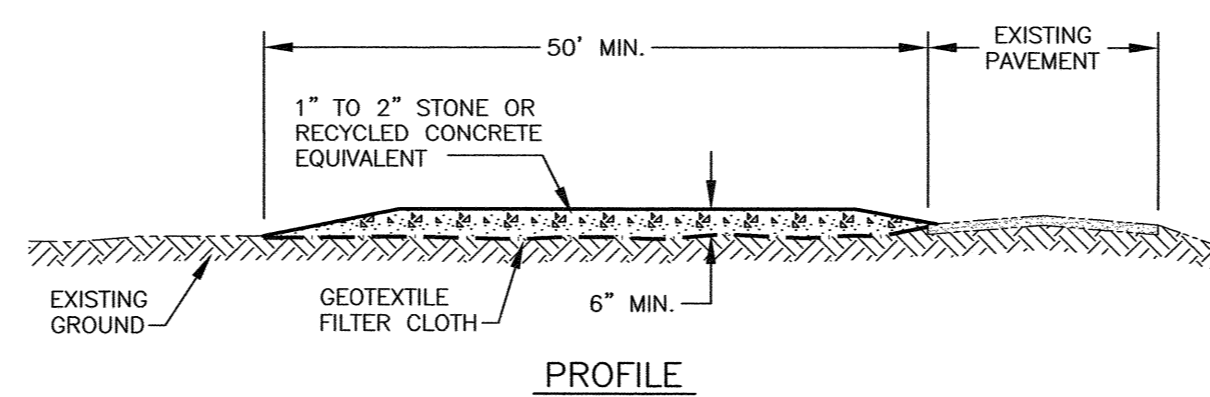
BLASTING NOTES

- CONTRACTOR SHALL CONTACT THE NHDES AND/OR LOCAL JURISDICTION PRIOR TO COMMENCING ANY BLASTING ACTIVITIES.
- 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.



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

A FILTREXX® SILT SOXX™ FILTRATION SYSTEM NTS



MAINTENANCE

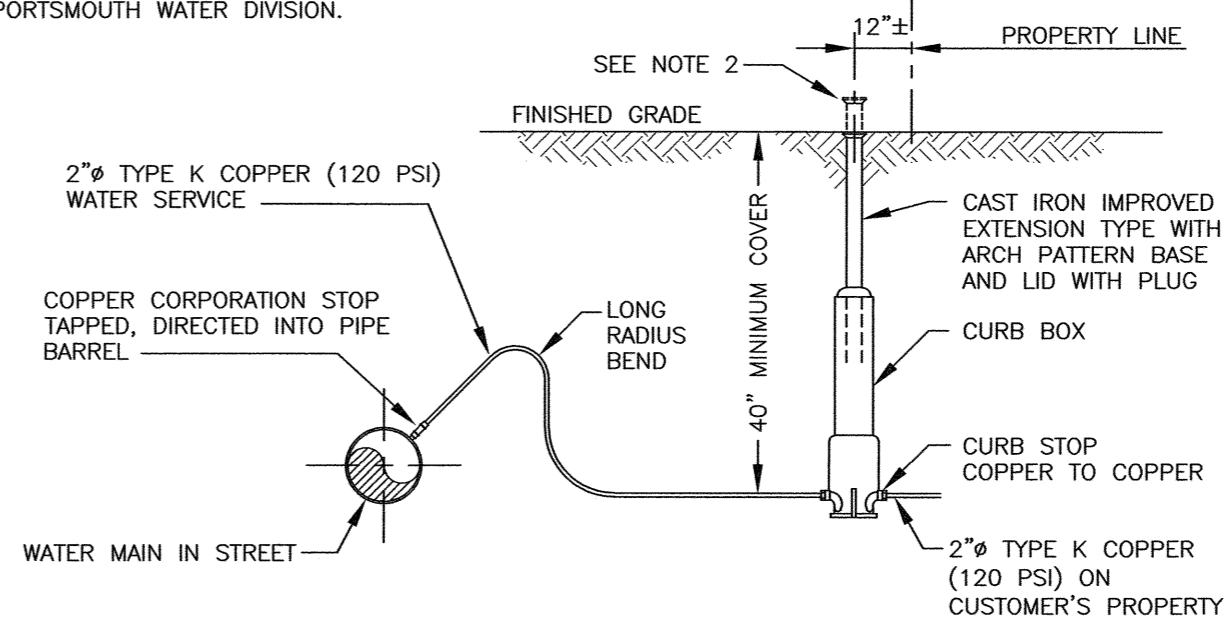
- MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
- IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

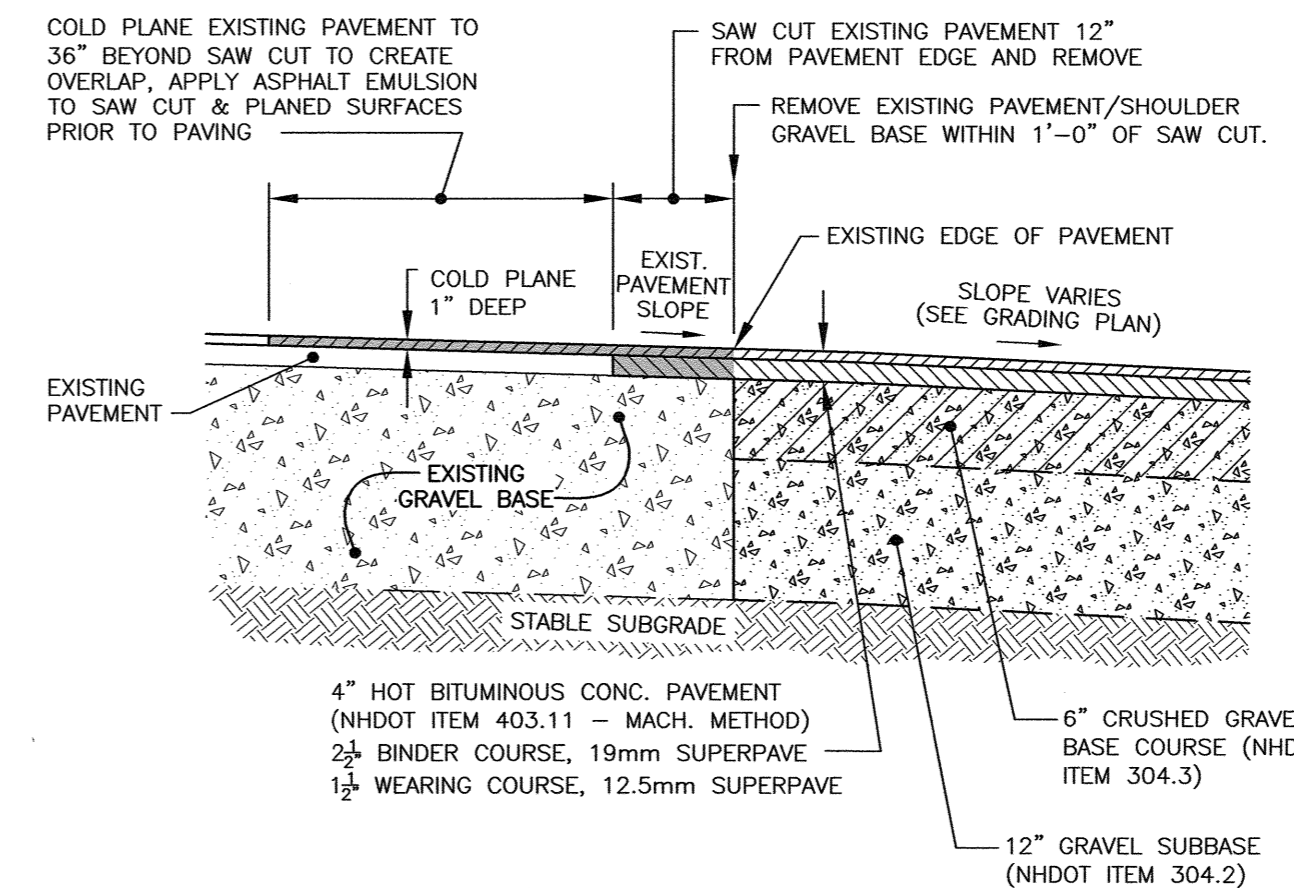
- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
- THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
- ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
- WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B STABILIZED CONSTRUCTION ENTRANCE NTS
SUBSTITUTE FODS IF DESIRED

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

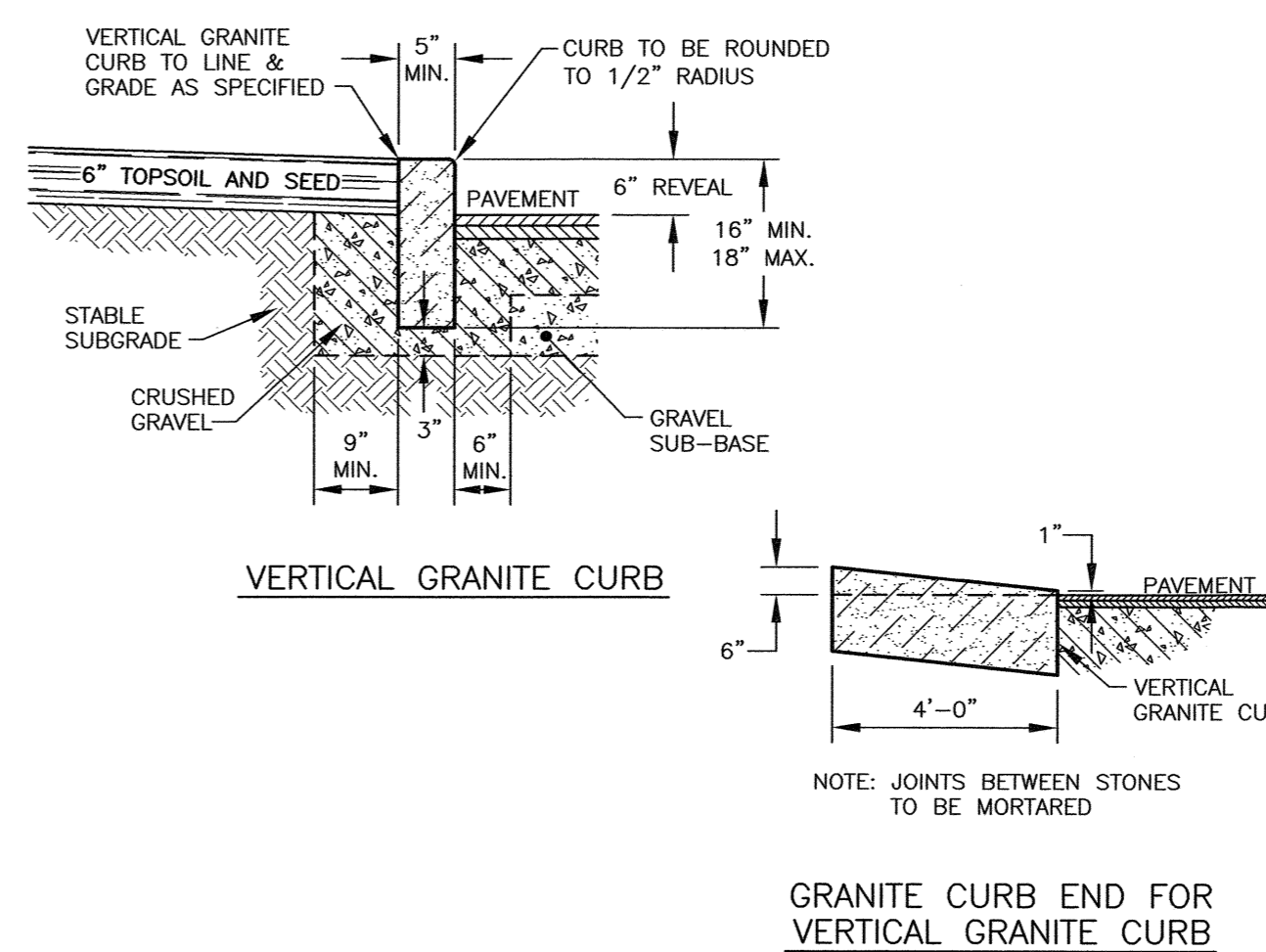


C WATER SERVICE CONNECTION NTS



- NOTES:
- PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 401.
 - CRUSHED GRAVEL AND GRAVEL SUBBASE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 304, TABLE 1E, AND SHALL BE COMPACTED AS INDICATED IN SECTION 304, 3.6 COMPACTION, AND 3.7 DENSITY TESTING, AND CITY OF PORTSMOUTH CONSTRUCTION STANDARDS.

D PAVEMENT / PAVEMENT JOINT DETAIL NTS



E VERTICAL GRANITE CURB NTS

NOTES:

- 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.
- 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.
- 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).
- PURSUANT TO RSA 483-B:9 11 (D), NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS LOCATED WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER. BEYOND 25 FEET, SLOW OR CONTROLLED RELEASE FERTILIZER MAY BE USED. SLOW RELEASE NITROGEN MUST CONTAIN NO MORE THAN 2% PHOSPHORUS, AND A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.
- NO CHEMICALS INCLUDING PESTICIDES OR HERBICIDES OF ANY KIND, SHALL BE APPLIED TO GROUND, TURF, OR ESTABLISHED VEGETATION WITHIN THE WETLAND BUFFER, EXCEPT IF APPLIED BY HORTICULTURE PROFESSIONAL WHO HAVE AN APPLICATION LICENSE. NO CALCIUM CHLORIDE SHALL BE APPLIED WITHIN THE WETLAND BUFFER.

1	10.16.2023	ISSUED FOR APPROVAL	DJT	JRC
0	09.05.2023	ISSUED FOR COMMENT	OMS	JRC
No.	DATE	DESCRIPTION	BY	CHK.

NOT FOR CONSTRUCTION



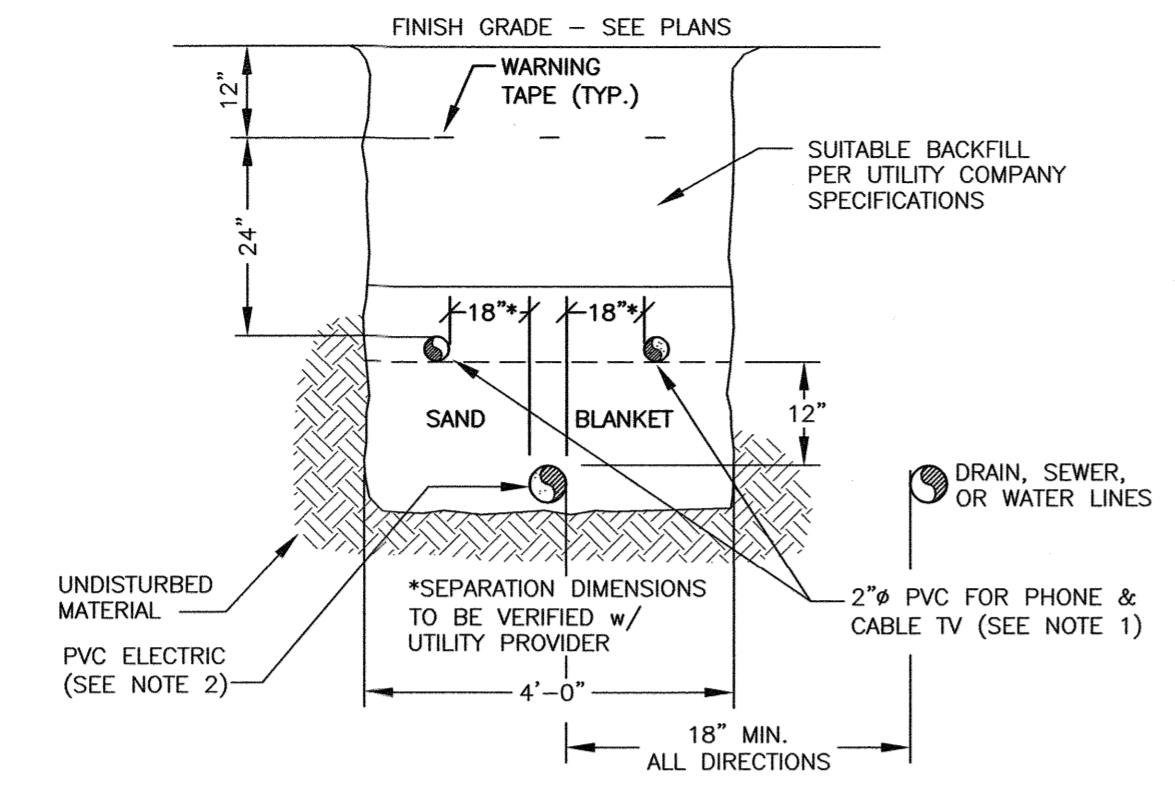
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EROSION CONTROL NOTES & DETAILS

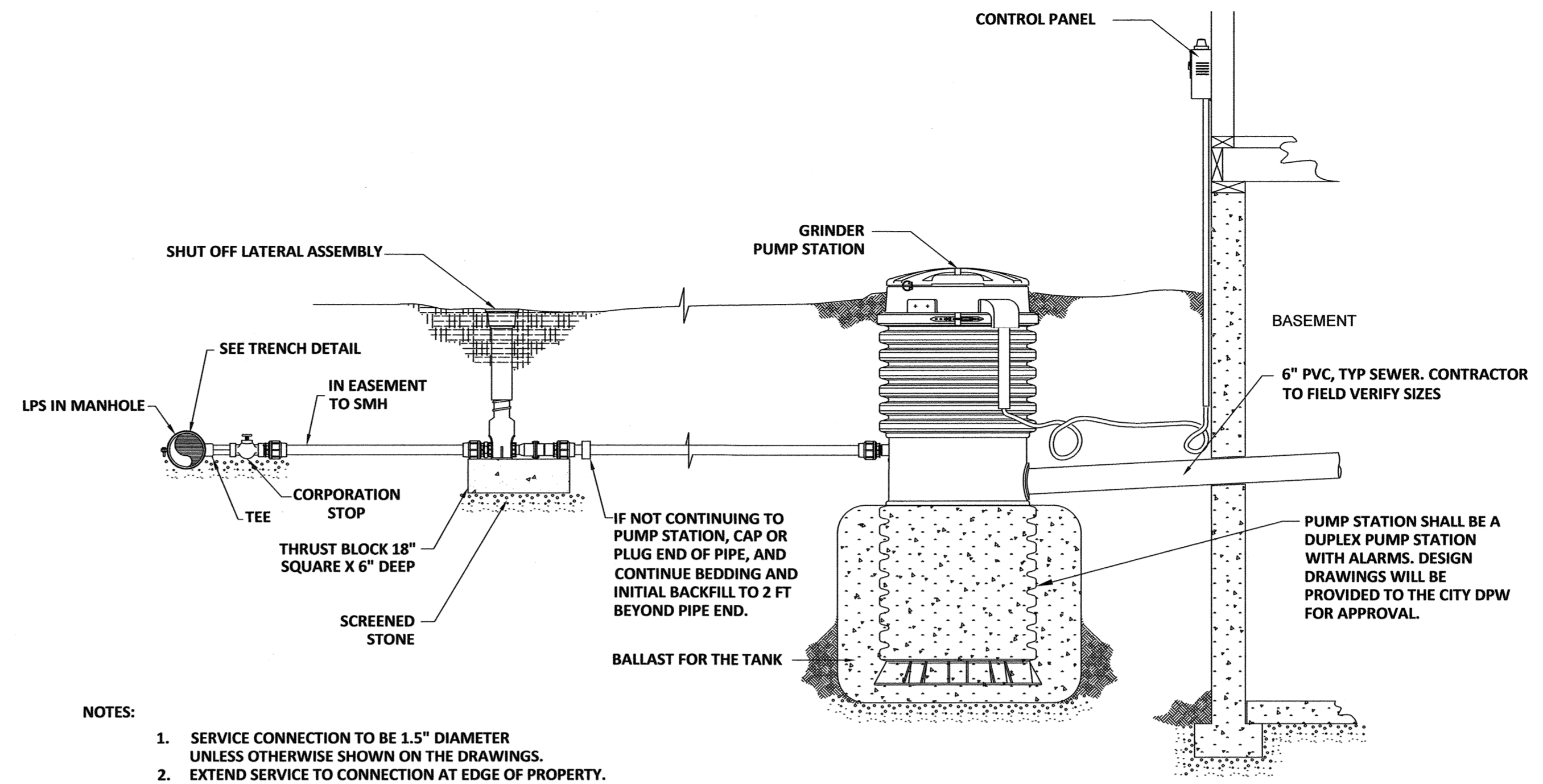
DATE	AUGUST 2023	SCALE	1" = 20'
DRAWN BY	OMS	DESIGNED BY	JRC
CHECKED BY	JRC		
PROJECT No.	5010314-417.01	FIELD BOOK & PAGE	FB 450 PG 1
DRAWING No.			

SHEET 6 D1



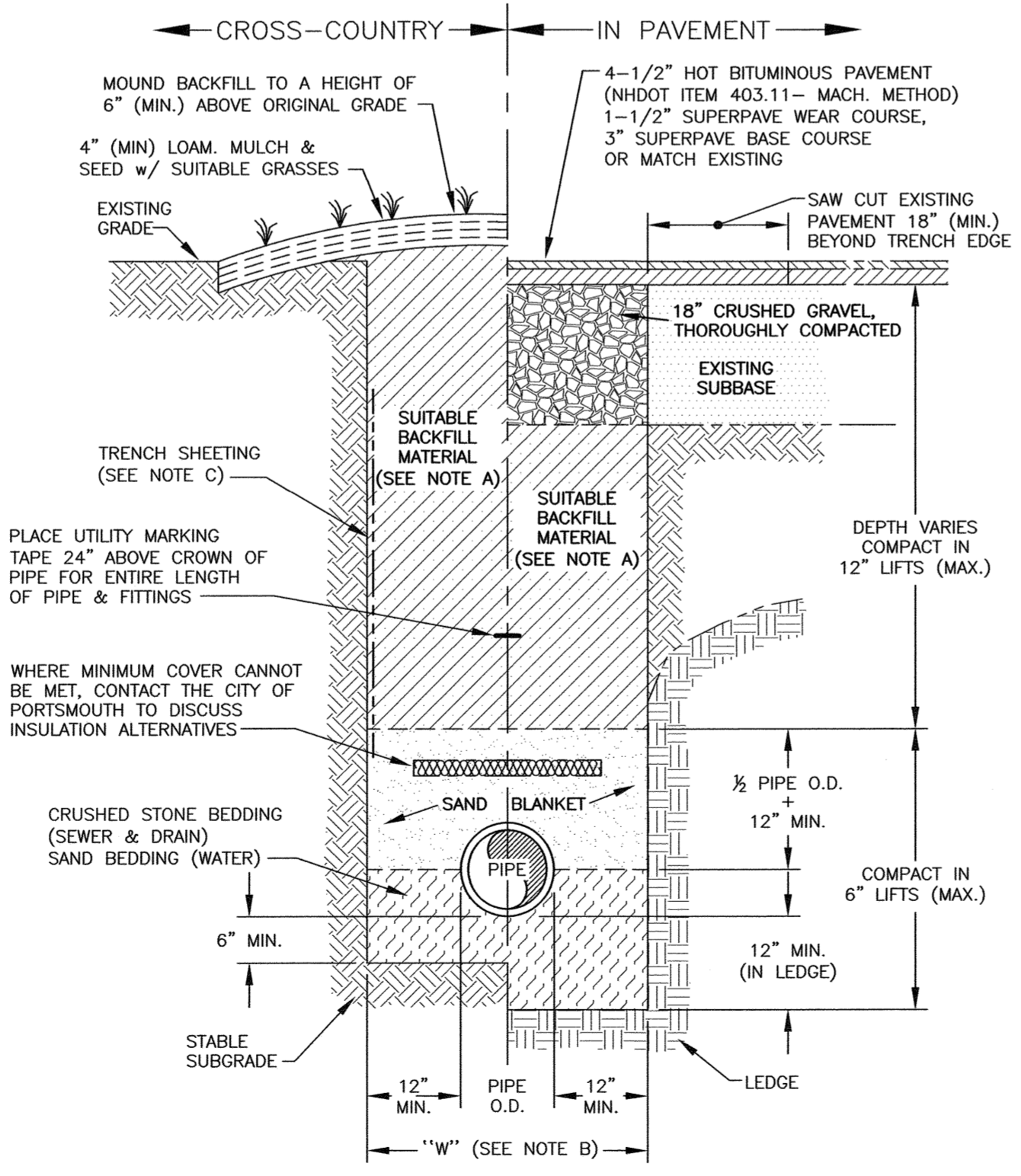
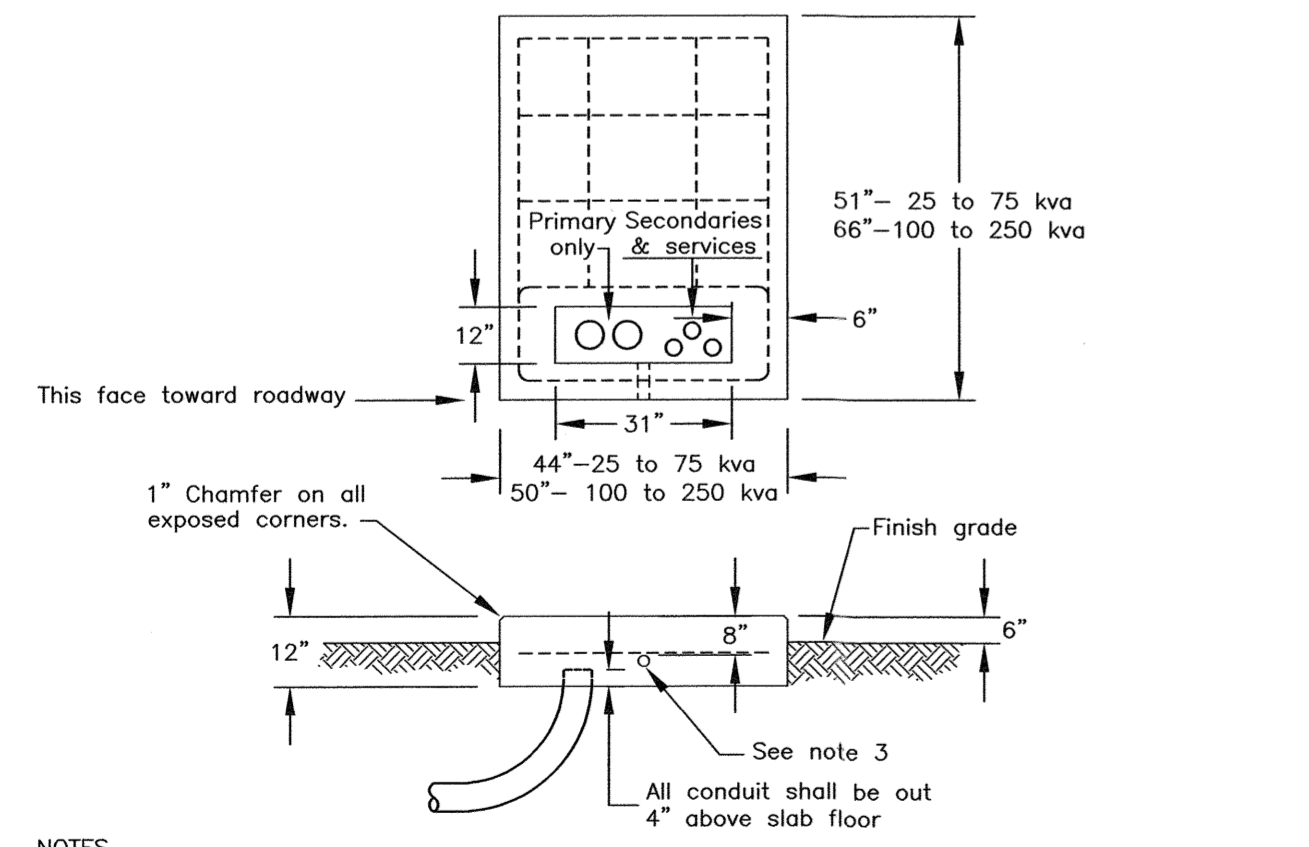
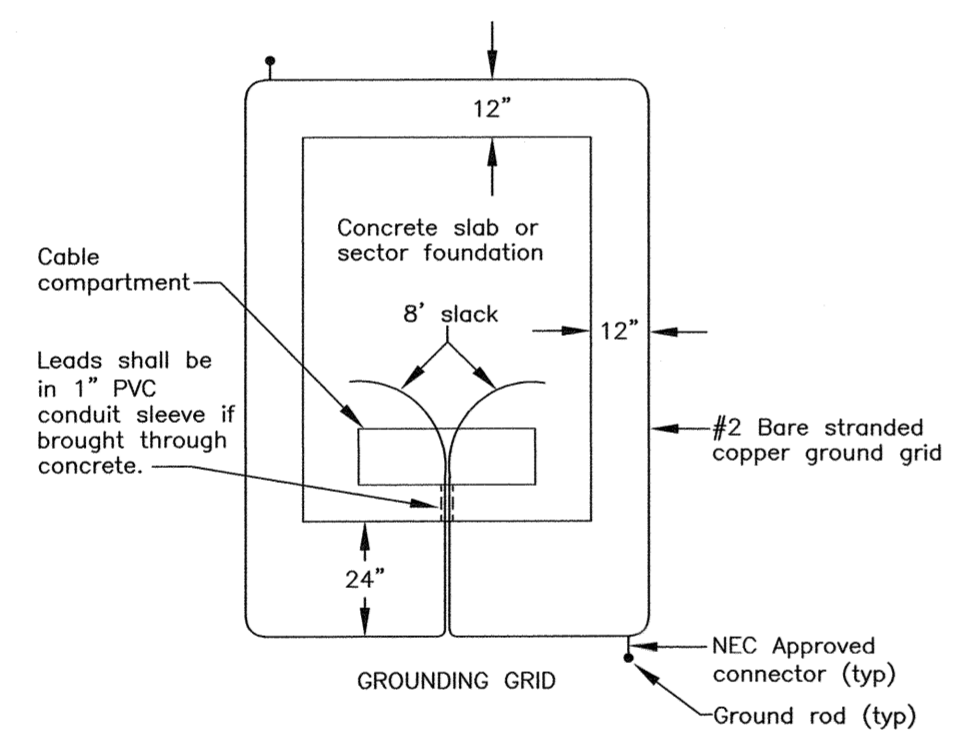
- NOTES:
- 1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
 - 2) NORMAL CONDUIT SIZES FOR CMP ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
 - 3) ALL WORK TO CONFORM 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.

F UTILITY TRENCH
C4 ELECTRIC/PHONE/CABLE
 NTS



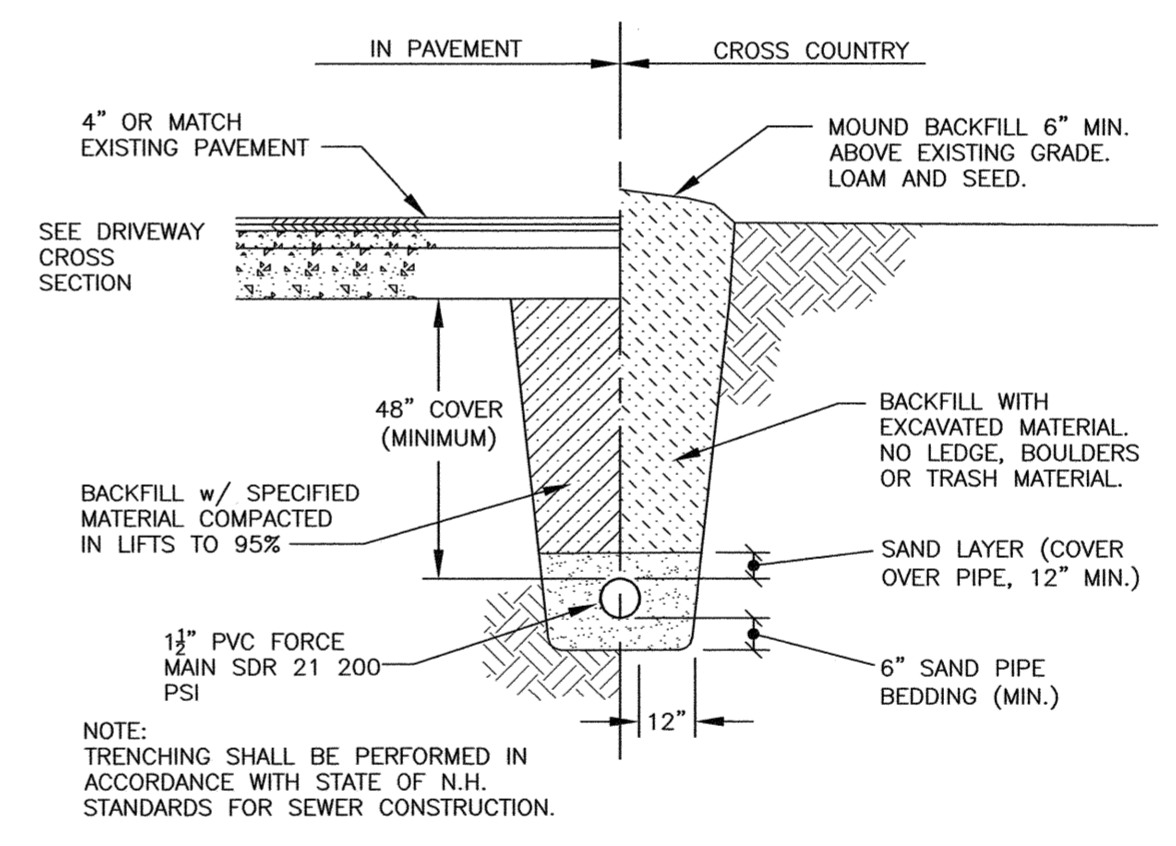
- NOTES:
1. SERVICE CONNECTION TO BE 1.5" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
 2. EXTEND SERVICE TO CONNECTION AT EDGE OF PROPERTY.

I LPS SERVICE CONNECTION DETAIL
C4 COORDINATE WITH CITY OF PORTSMOUTH DPW
 NTS

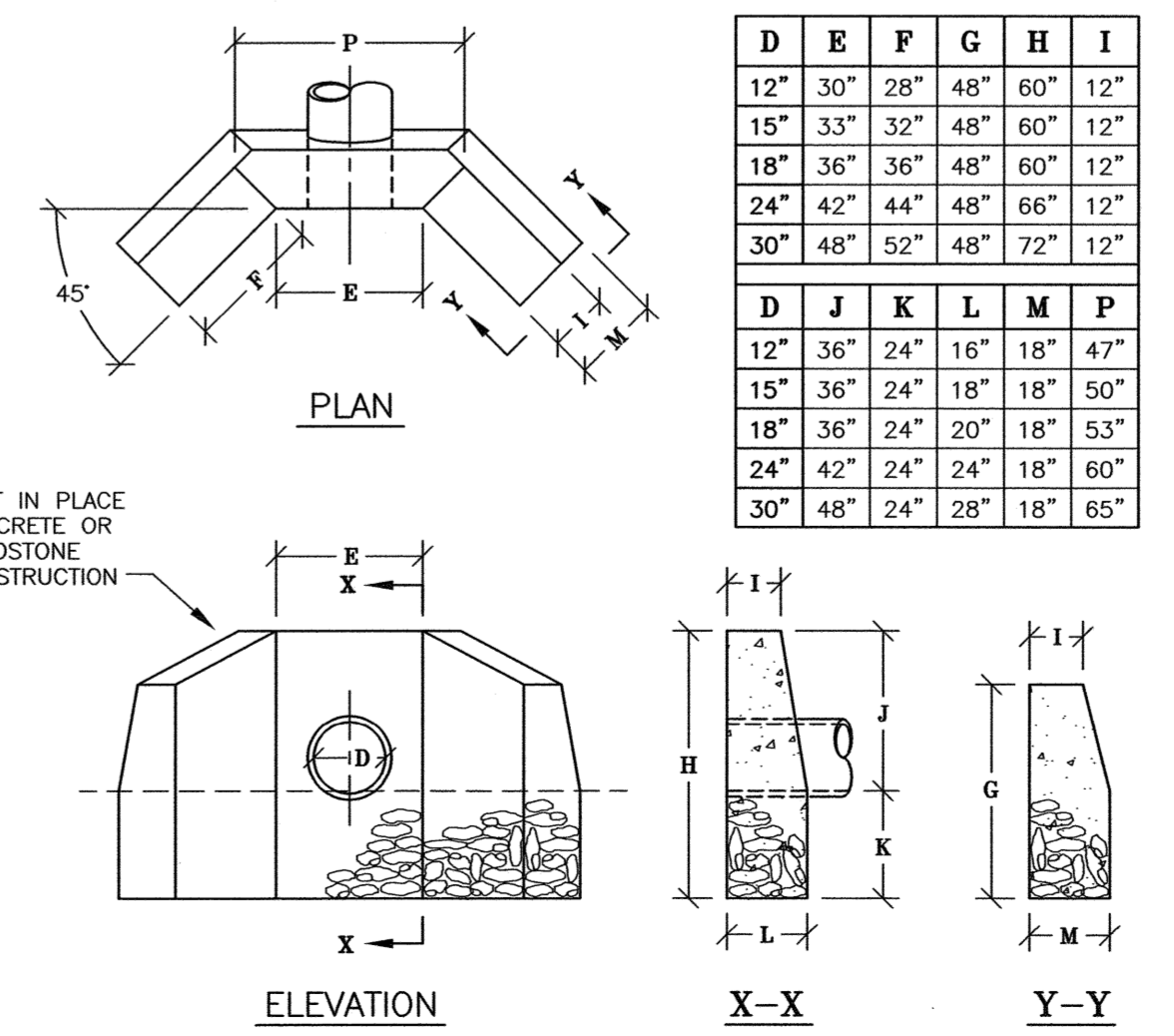


- TRENCH NOTES:
- A) TRENCH BACKFILL: - IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL 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 (ON 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 TYPICAL PIPE TRENCH
C4 NTS



J FORCE MAIN TRENCH DETAIL
C4 NTS



K HEADWALL DETAIL
C3 NTS

- 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.
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No.	DATE	DESCRIPTION	BY	CHK.
2	11.07.2023	TAC COMMENTS	DJT	JRC
1	10.16.2023	ISSUED FOR APPROVAL	DJT	JRC
0	09.05.2023	ISSUED FOR COMMENT	DT	JC

NOT FOR CONSTRUCTION

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

200 Griffin Road, Unit 3
 Portsmouth, NH 03801
 603.430.9282

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DETAILS

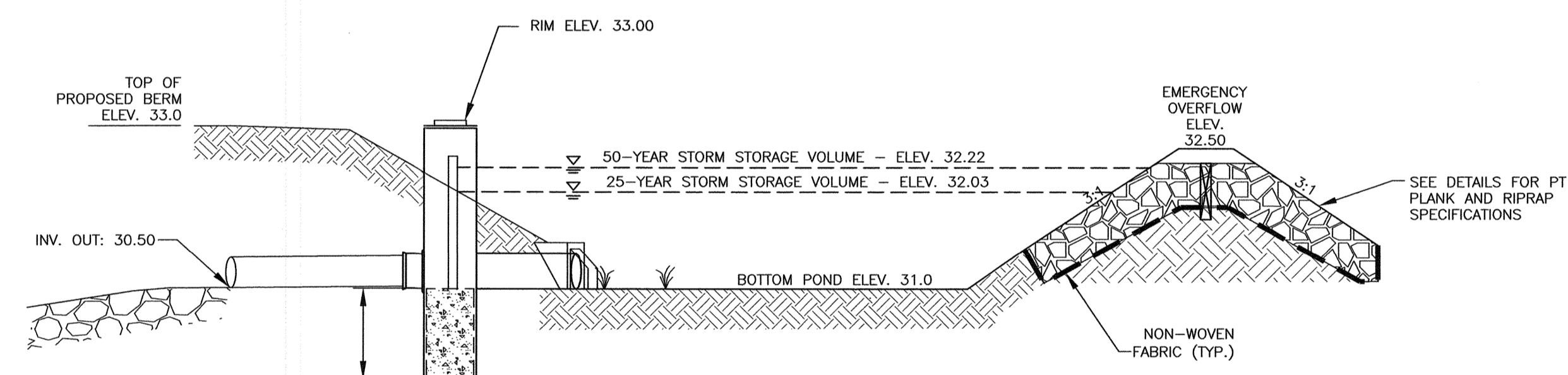
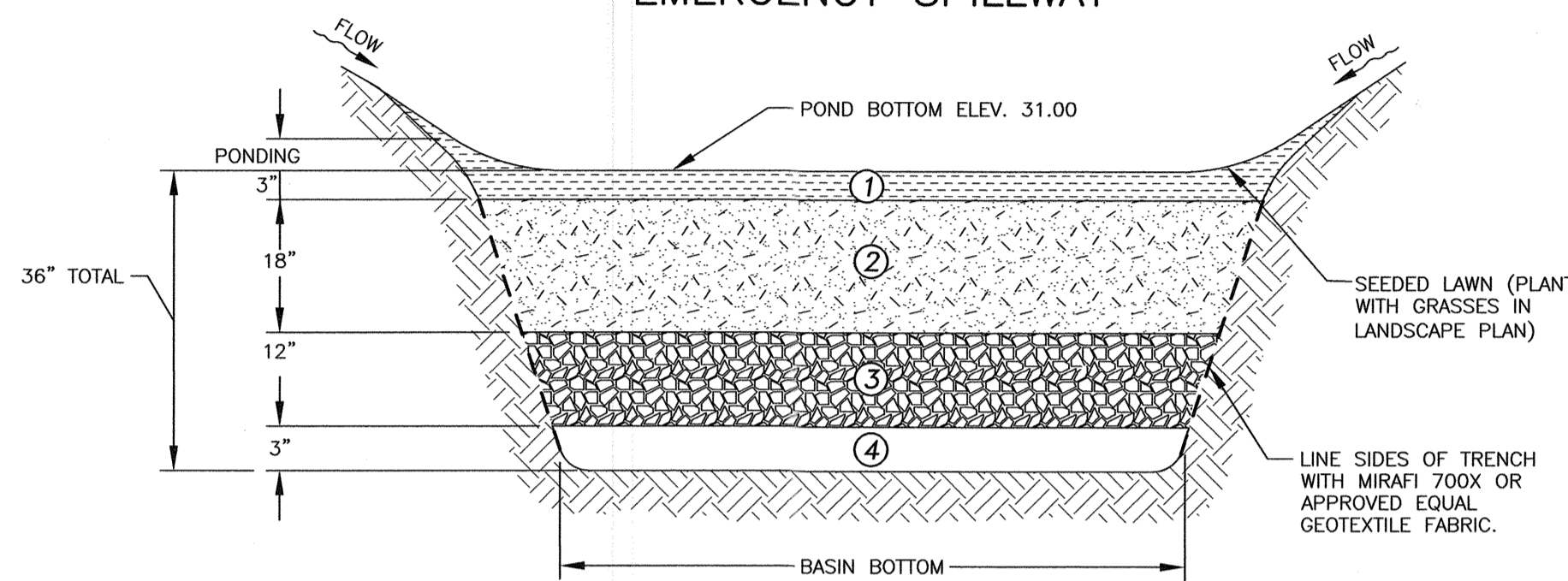
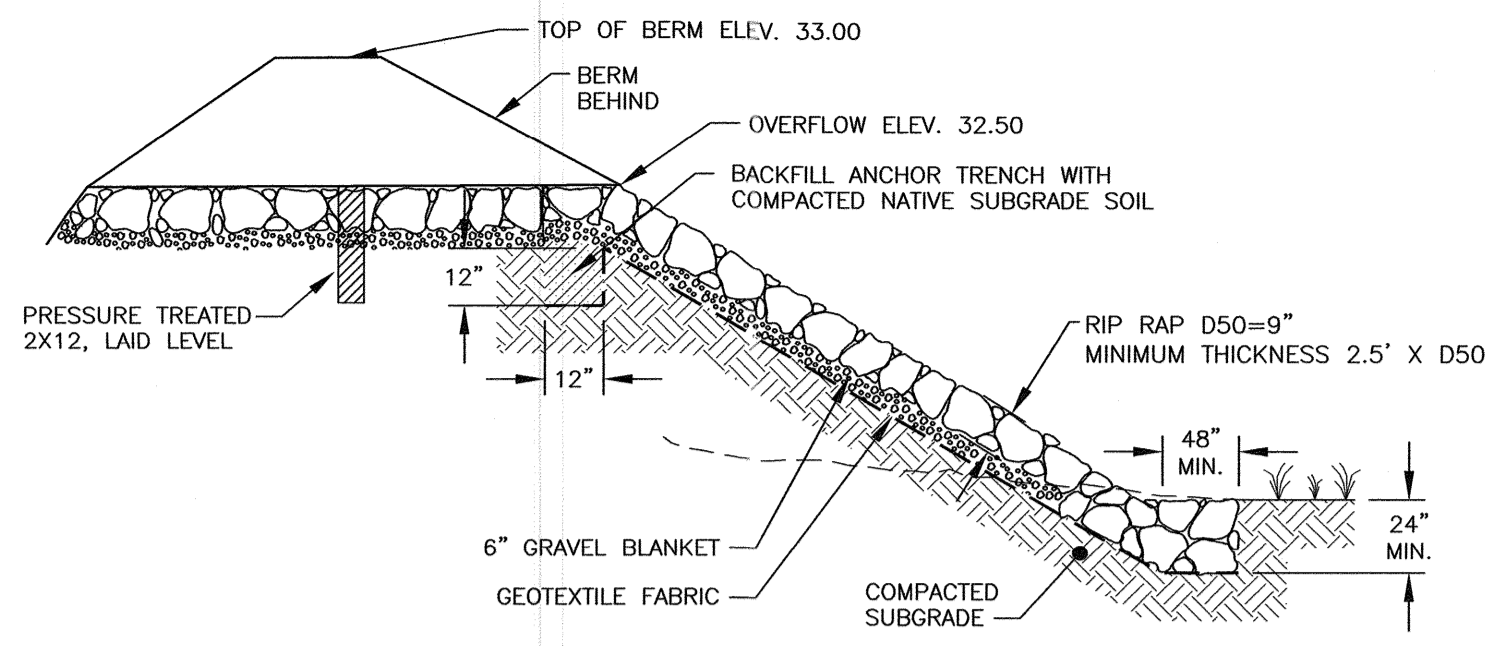
DATE: SEPTEMBER 2023 SCALE: NTS

DRAWN BY: DT DESIGNED BY: JC CHECKED BY: JC

PROJECT No: 5010314.417.01 FIELD BOOK & PAGE: FB 450 PG 1

DRAWING No: SHEET 7 D2

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L RAIN GARDEN DETAIL
NTS

RAIN GARDEN MEDIA

- MULCH/GROWING MEDIUM: GRASS SEED MIX A WITH LOAM
- SOIL FILTER LAYER: USE UNHSC BIORETENTION SOIL SPECIFICATIONS DATED FEBRUARY, 2017. 20% - 30% MULCH BY VOLUME, MIXED THOROUGHLY WITH LOAMY, COARSE SAND (70% - 80% BY VOLUME) MEETING THE FOLLOWING GRADATION:

SI-EVE NO.	% BY WEIGHT, PASSING
4	100
10	95
40	10 - 25
200	0 - 5
- 0.75"φ - 1.5"φ CRUSHED STONE, WASHED.
- 3/8" PEA GRAVEL

BIORETENTION MAINTENANCE

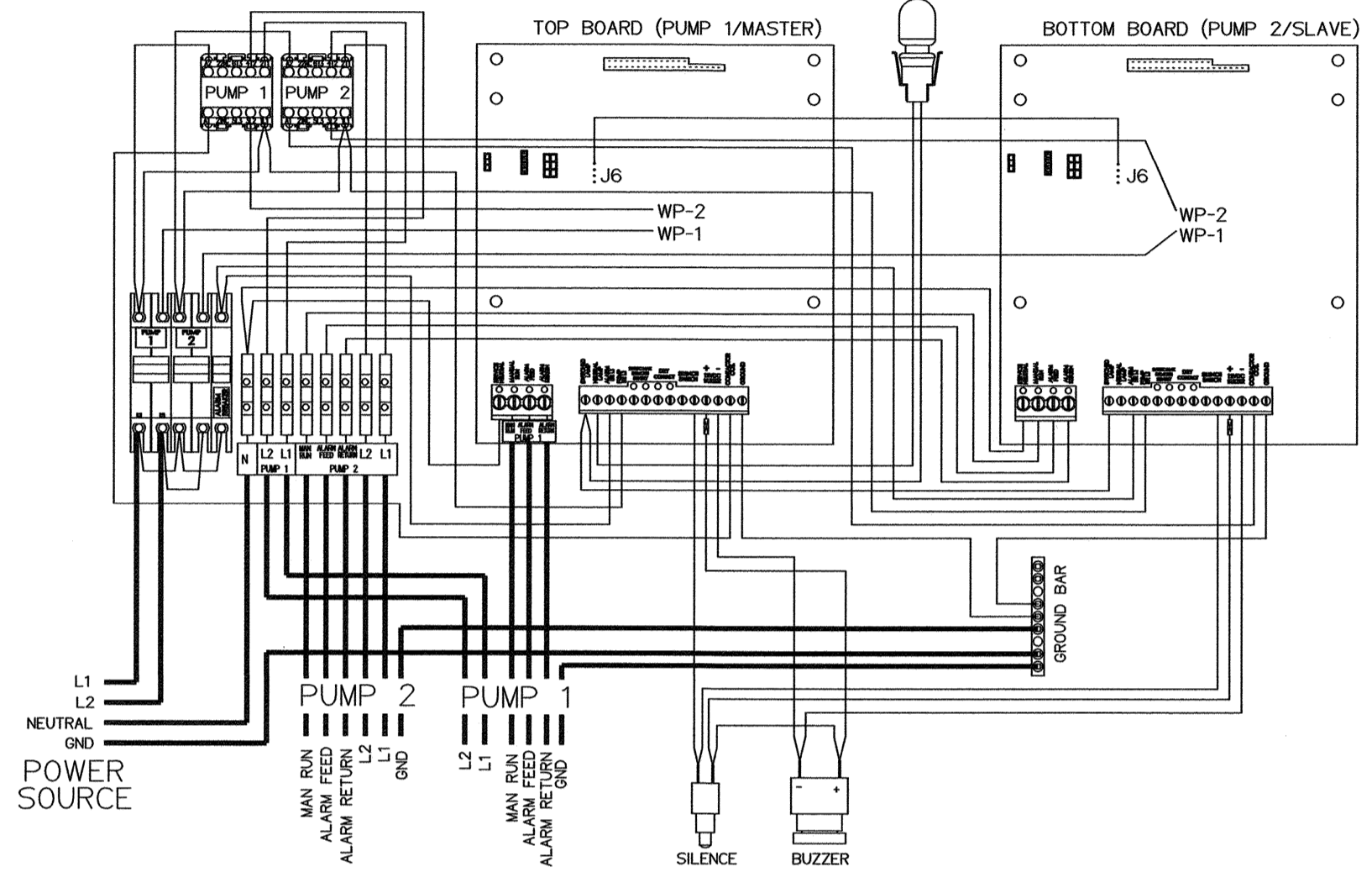
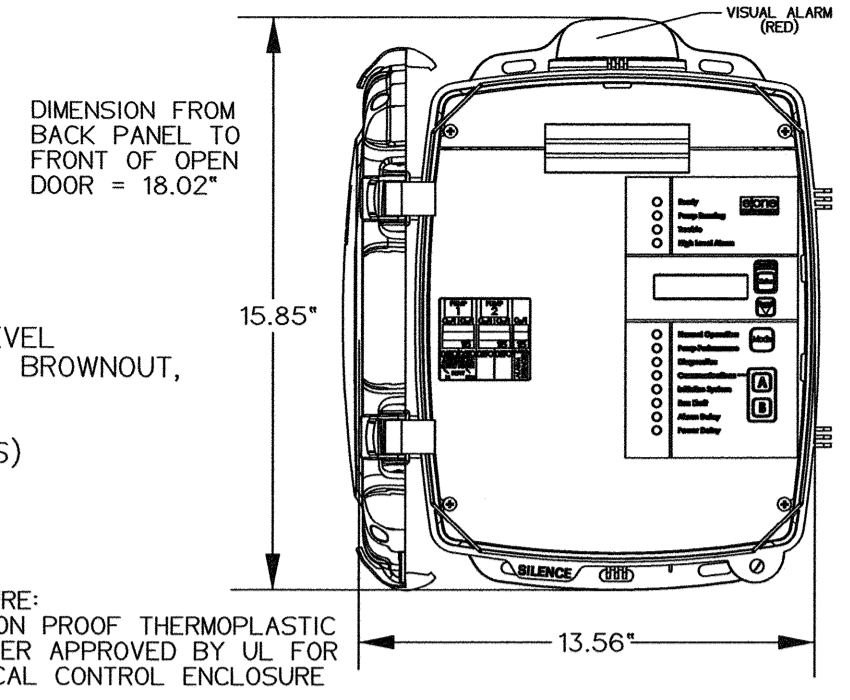
SOILS: VISUALLY INSPECT AND REPAIR EROSION MONTHLY. USE SMALL STONES TO STABILIZE EROSION ALONG DRAINAGE PATHS. CHECK THE pH ONCE OR TWICE A YEAR. APPLY AN ALKALINE PRODUCT, SUCH AS LIMESTONE, IF NEEDED.

MULCH: REMULCH ANY VOID AREAS BY HAND AS NEEDED. EVERY 6 MONTHS, IN THE SPRING AND FALL, ADD A FRESH MULCH LAYER. ONCE EVERY 2 TO 3 YEARS, IN THE SPRING, REMOVE OLD MULCH LATER BEFORE APPLYING NEW ONE.

PLANTS: IMMEDIATELY AFTER THE COMPLETION OF CELL CONSTRUCTION, WATER GRASS COVERING FOR 14 CONSECUTIVE DAYS UNLESS THERE IS SUFFICIENT NATURAL RAINFALL. ONCE A MONTH (MORE FREQUENTLY IN SUMMER), VISUALLY INSPECT VEGETATION FOR DISEASE OR PEST PROBLEMS. IF TREATMENT IS WARRANTED, USE THE LEAST TOXIC APPROACH. TWICE A YEAR, FROM MARCH 15TH TO APRIL 30TH AND OCTOBER 1ST TO NOVEMBER 30TH, REMOVE AND REPLACE ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. DURING TIMES OF EXTENDED DROUGHT, LOOK FOR PHYSICAL FEATURES OF STRESS (UNREVIVED WILTING, YELLOW, SPOTTED OR BROWN PATCHES ETC.). WATER IN THE EARLY MORNING AS NEEDED. WEED REGULARLY, IF NEEDED.

SENTRY PROTECT PLUS DUPLEX

EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR
OPTIONAL POWER LOSS HIGH LEVEL
ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, VOLTAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY

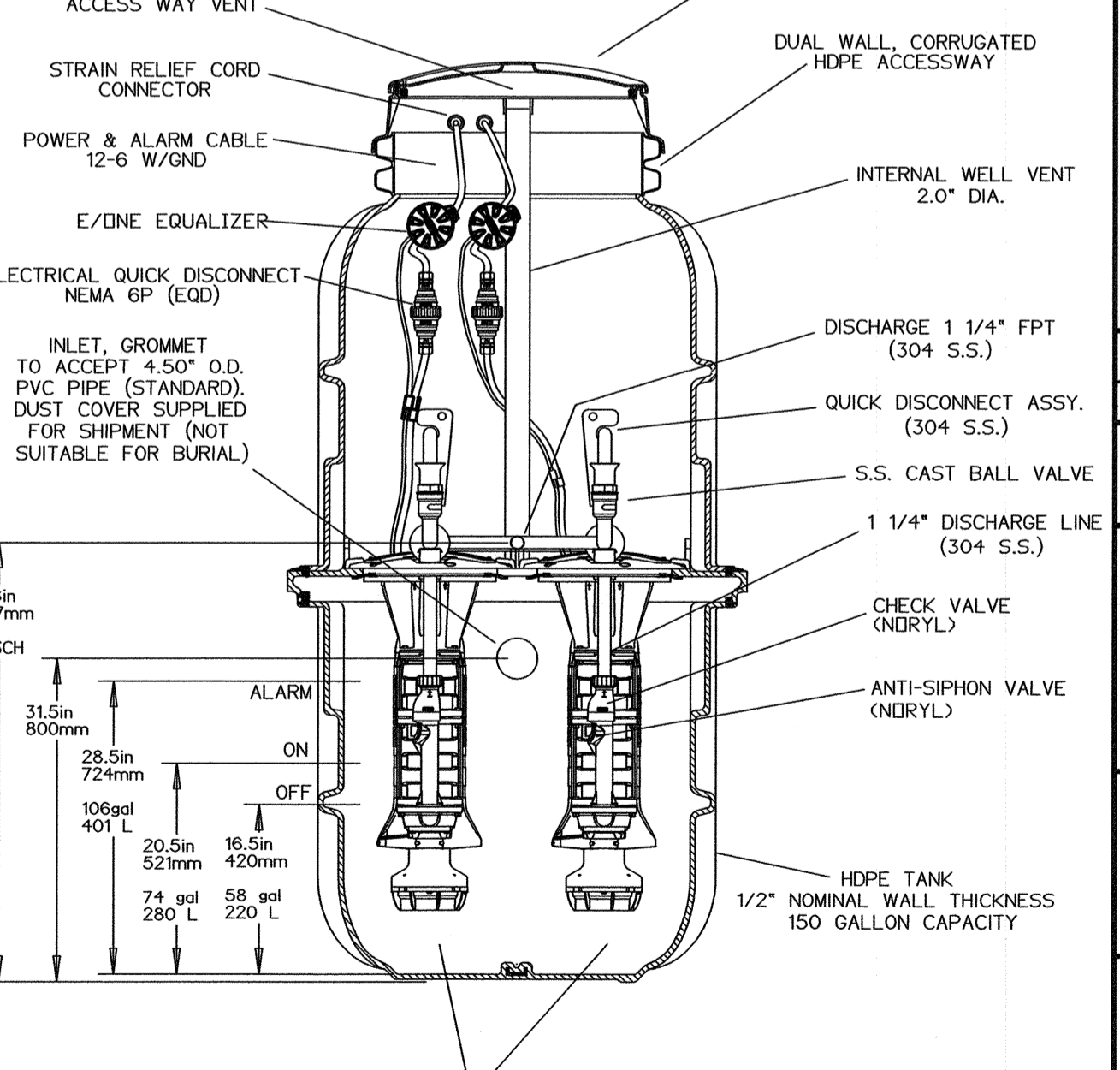
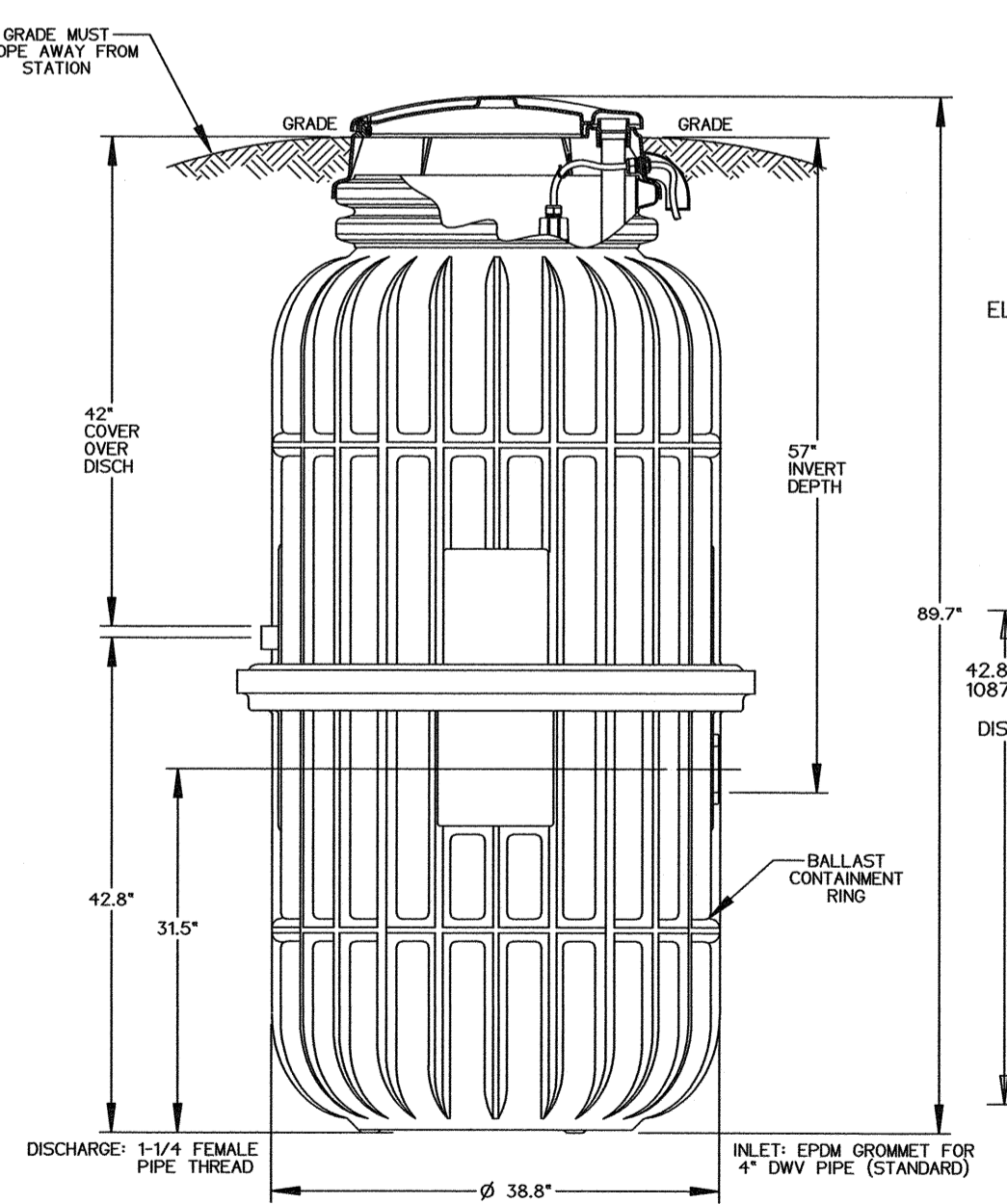


PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

LEGEND

- FROM CORD
- SUPPLY CABLE
- FACTORY INSTALLED

CONTROL CABLE:
TYPE TC; DIRECT BURIAL,
SIX CONDUCTOR



CONCRETE BALLAST MAY BE REQUIRED
SEE INSTALLATION INSTRUCTIONS
FOR DETAILS

M DUPLEX SEWAGE PUMP AND ALARM
NTS

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No.	DATE	DESCRIPTION	BY	CHK.
0	11.29.2023	ADDED TO SET	DJT	JRC

DRAWING ISSUE STATUS

NOT FOR CONSTRUCTION

AMBIT ENGINEERING, INC.
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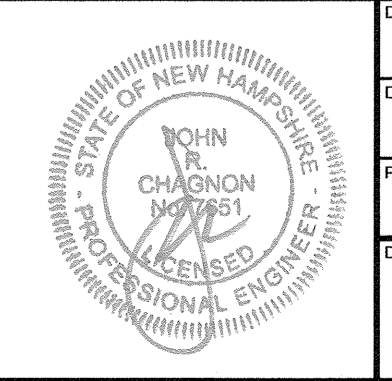
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PROJECT

BUILD AMERICA
1155 SAGAMORE AVENUE, PORTSMOUTH, NH 03801

DETAILS

DATE	SCALE
NOVEMBER 2023	NTS
DRAWN BY DJT	DESIGNED BY JRC
CHECKED BY JRC	
PROJECT No. 5010314.417.01	FIELD BOOK & PAGE FB 450 PG 1
DRAWING No.	



SHEET 8 **D3**