

Findings of Fact | Site Plan Review

City of Portsmouth Planning Board

Date: June 18, 2025

Property Address: 65 Washington Street

Application #: LU-25-63

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 the 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: Site Plan Review Regulations and Zoning Ordinance</u>
2	Provision for the safe development, change or expansion of use of the site.	Meets Does Not Meet	The site plan set provides for safe development involving drainage improvements.
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	The site plan set provides an erosion control plan including the installation of silt sacks on existing and proposed catch basins during construction. Stormwater management is provided as part of the drainage improvements, and a maintenance plan for the stormwater infrastructure has been included.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
4	Adequate protection for the quality of groundwater.	Meets Does Not Meet	The site is fully developed. The installation of rain gardens will provide treatment of runoff, improving the quality of the groundwater.
5	Adequate and reliable water supply sources.	Meets Does Not Meet	The Penhallow house is serviced by an existing water line on Washington Street. No water lines are proposed to be impacted.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	Meets Does Not Meet	The Penhallow house is serviced by an existing sewer line that is connected to a 30" sewer main in Newton St, that is connected to a main on Washington St.
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	A silt sack is proposed on the existing and proposed catch basins to collect sedimentation from the construction. Drainage improvements will collect stormwater on site, detain and slowly release the water. Excess water will be directed to an existing 30" drainage main, to avoid discharging stormwater onto adjacent properties.
8	Adequate provision for fire safety, prevention and control.	Meets Does Not Meet	The proposed drainage improvements will not impact the existing fire safety, prevention and control of the site.
9	Adequate protection of natural features such as, but not limited to, wetlands.	Meets Does Not Meet	Natural features such as wetlands do not exist in close proximity to the development area. Proposed drainage improvements will result in an improvement of stormwater runoff off site with the installation of rain gardens and swales.
10	Adequate protection of historical features on the site.	Meets Does Not Meet	The work will be done as per the site plan to not disturb the historical buildings on site. The purpose of the work is to improve the drainage to increase protection of the buildings across the site.
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 site has mainly foot traffic, with no vehicular traffic besides construction or repairs. Drainage improvements will be installed with minimal impact to the flow of traffic and traffic congestion. Vehicular traffic will remain minimal after construction.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
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	The improvements will have minimal impact to the flow of traffic and traffic congestion.
13	Adequate insulation from external noise sources.	Meets Does Not Meet	The drainage improvements will not result in an increase in external noise sources.
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	The existing solid waste disposal will not be impacted by the proposed drainage improvements.
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	The drainage improvements will allow for usable and functional open spaces, which are abundant on site.
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	There are no proposed impacts to the relation of existing accessways to off-site existing streets. The entrance to Newton St from Washington St will be raised as part of the drainage improvements. Adequate measures have been taken to ensure the sidewalk along Washington St remains ADA compliant.
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	The site is fully developed and the work depicted on the site plan can be constructed without danger to health.
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	The site has an abundance of open space. The rain gardens will provide stormwater management as well as a type of landscaping with the rain garden plantings.
19	Compliance with applicable City approved design standards.	Meets Does Not Meet	Application complies with Site Plan Review Regulations. Waivers for parts of the Site Plan Review Regulations have been requested.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	Other Board Findings:		

DRAFT

Ross Engineering, LLC
Civil / Structural Engineering

909 Islington Street
Portsmouth, NH 03801

603-433-7560
alexross@comcast.net

Strawbery Banke
Amended Site Plan Application
Minor Drainage Improvements
Project Narrative

May 28, 2025

This amended site plan application is for minor drainage improvements to an existing fully developed site. Tax Map 104, Lot 7 is an 8.24 Acre parcel, and is the site of the Strawberry Banke Museum.

Site plan approval was granted recently for site improvements to the Visitor Center Building and Ice Rink. The proposed work in this application is located just west of the Ice Rink. The work will take place along Washington St, Newton St, and Whidden Place. The work proposed makes minor changes to improve the drainage on site.

Site improvements include installing 2 cobble swales across Whidden Place, a vegetated swale on the southern side of Newton St, and 2 rain gardens with forebays and underdrains on either side of Whidden Place. Runoff will be directed into the rain gardens through grading and the proposed swales. 5 new catch basins are proposed to direct excess runoff through the rain gardens and into a 30" Drain main.

The entrance of Newton St that intersects with Washington St shall be raised in elevation. This will prevent runoff from Washington St from travelling onto Newton St and washing out the gravel road. Runoff on Washington St will instead be directed into the catch basins located on Washington St, that connect to the 30" Drain Main mentioned above.

A new ramp is proposed to provide ADA access to the Penhallow House. The elevations of the ramp have been incorporated in the grading and drainage design. The ramp shall be installed over an existing gravel path and does not result in a decrease of open space from the existing conditions.

TAC recommended approval of this application at it's meeting on 5-6-25 with the condition of approval that the applicant will work with DPW to ensure proper grading of the proposed rain gardens prior to submission to the Planning Board. The rain garden has been relocated and regraded as per discussions with DPW.

Sincerely,

Alex Ross, P.E.

Ross Engineering, LLC

909 Islington Street
Portsmouth, NH 03801
April 21, 2025

603-433-7560
alexross@comcast.net

Planning Department
City of Portsmouth
Portsmouth, NH 03801

RE: Amended Site Plan Application
Minor Drainage Improvements
Tax Map 104, Lot 7
Portsmouth, NH 03801

Owner: Rodney Rowland
Director of Facilities and Environmental Sustainability
Strawbery Banke Museum

Please be advised that Alex Ross of Ross Engineering is authorized to be my agent for the above application process. Should you have any questions, please contact me.

Sincerely,



Rodney Rowland
Director of Facilities and Environmental Sustainability
Strawbery Banke Museum



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: Alex Ross Date Submitted: 4/21/2025

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

Site Address: Washington St (Penhallow House) Map: 104 Lot: 7

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Complete application form submitted via the City's web-based permitting program (2.5.2.1(2.5.2.3A))	Online Application in Viewpoint	N/A
<input checked="" 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)	Online Application in Viewpoint	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Statement that lists and describes "green" building components and systems. (2.5.3.1B)		X
<input checked="" 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)	N/A - No Work on Structures Proposed	N/A
<input checked="" type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. (2.5.3.1D)	Drawing 1 - Existing Conditions Notes 1 & 3	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. (2.5.3.1E)	Strawbery Banke 17 Hancock St Portsmouth, NH 03801 603-422-0600	N/A
<input checked="" type="checkbox"/>	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. (2.5.3.1F)	Abutter List to be generated by City	N/A
<input checked="" type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. (2.5.3.1G)	Cover Sheet	N/A
<input checked="" type="checkbox"/>	List of reference plans. (2.5.3.1H)	Drawing 1 - Existing Conditions	N/A
<input checked="" type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. (2.5.3.1I)	Drawing 3 - Site Plan	N/A

Site Plan Specifications			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. (2.5.4.1A)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. (2.5.4.1B)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. (2.5.4.1C)	GIS Data to be provided if required by City	N/A
<input checked="" 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 checked="" type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. (2.5.4.1E)	N/A - No Wetlands	N/A
<input checked="" type="checkbox"/>	Title (name of development project), north point, scale, legend. (2.5.4.2A)	Drawing 1 - Existing Conditions	N/A
<input checked="" type="checkbox"/>	Date plans first submitted, date and explanation of revisions. (2.5.4.2B)	All drawings	N/A
<input checked="" type="checkbox"/>	Individual plan sheet title that clearly describes the information that is displayed. (2.5.4.2C)	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Source and date of data displayed on the plan. (2.5.4.2D)	Drawing 1 - Existing Conditions	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 checked="" type="checkbox"/>	1. Existing Conditions: (2.5.4.3A) <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. 	Drawing 1 - Existing Conditions	
<input checked="" type="checkbox"/>	2. Buildings and Structures: (2.5.4.3B) <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. 	Drawing 1 - Existing Conditions	
<input checked="" type="checkbox"/>	3. Access and Circulation: (2.5.4.3C) <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). 	Drawing 3 "Site Plan" & Drawing 6 "Sidewalk Details"	
<input checked="" type="checkbox"/>	4. Parking and Loading: (2.5.4.3D) <ul style="list-style-type: none"> • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided). 		X
<input checked="" type="checkbox"/>	5. Water Infrastructure: (2.5.4.3E) <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). 	Drawing 1 - Existing Conditions & Drawing 3 - Site Plan	
<input checked="" type="checkbox"/>	6. Sewer Infrastructure: (2.5.4.3F) <ul style="list-style-type: none"> • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period. 	Drawing 1 - Existing Conditions & Drawing 3 - Site Plan	

<input checked="" 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. 	Drawing 1 - Existing Conditions & Drawing 3 - Site Plan	
<input checked="" 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. 		X
<input checked="" 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. 	Drawing 5 - Drainage Plan Drawing 7 - CobbleSwale Details Drawing 8 - Details	
<input checked="" 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. 		X
<input checked="" type="checkbox"/>	11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)		X
<input checked="" 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. 	Drawing 5 - Drainage Plan	
<input checked="" 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. 	Drawing 1 - Existing Conditions & Drawing 3 - Site Plan	
<input checked="" 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. 		X
<input checked="" type="checkbox"/>	15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)	N/A - No easements proposed	
<input checked="" 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 - Not in a Character or Civic District	
<input checked="" 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. 	Drawing 1 - Existing Conditions: Note 4	

Other Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. (3.2.1-2)		X
<input checked="" type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	Drawing 5 - Drainage Plan Rain Gardens, Swales	
<input checked="" type="checkbox"/>	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. (7.3.1)	Not in Wellhead Protection or Aquifer Protection Area	
<input checked="" type="checkbox"/>	Stormwater Management and Erosion Control Plan. (7.4)	Drawing 5 - Drainage Plan Drawing 9 - Erosion Control Plan	
<input checked="" type="checkbox"/>	Inspection and Maintenance Plan (7.6.5)	Stormwater Operations & Maintenance Manual	

Final Site Plan Approval Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. (2.5.3.2A)		
<input checked="" type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> • 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)		
<input checked="" type="checkbox"/>	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. (2.5.3.2D)	N/A - No proposed utilities	

Final Site Plan Approval Required Information

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	A list of any required state and federal permit applications required for the project and the status of same. (2.5.3.2E)	No State or Federal Permits Required	
<input checked="" type="checkbox"/>	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." (2.5.4.2E)	Drawing 3 - Site Plan: Note 3	N/A
<input checked="" type="checkbox"/>	For site plans that involve land designated as "Special Flood Hazard Areas" (SFHA) by the National Flood Insurance Program (NFIP) confirmation that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. (2.5.4.2F)	No State or Federal Permits Required	
<input checked="" type="checkbox"/>	Plan sheets submitted for recording shall include the following notes: <ul style="list-style-type: none"> a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." (2.13.3)		N/A

Applicant's Signature: _____

Date: _____

Ross Engineering
Civil/Structural Engineering & Surveying

909 Islington Street
Portsmouth, NH 03801

603-433-7560
alexross@comcast.net

May 28, 2025

City of Portsmouth Planning Department
1 Jenkins Avenue
Portsmouth, NH 03801

Waiver Request Letter

Re: Amended Site Plan Application
Minor Drainage Improvements
Tax Map 104, Lot 7
Portsmouth, NH

Planning Board Members, we are requesting waivers to the site plan review regulations listed below, due to the fact that this is a fully developed existing site with site plan approval. The work proposed in this application is for drainage improvements. Waivers have been requested for regulations for which the work proposed will not impact.

1) 2.5.3.1B: Green Building Components

There is no proposed work to any structures in this application.

2) 2.5.4.3.D: Parking and Loading

Parking will not be impacted by the drainage improvements.

3) 2.5.4.3.H: Solid Waste Facilities

Solid Waste Facilities will not be impacted by the drainage improvements.

4) 2.5.4.3.J: Outdoor Lighting

Outdoor Lighting will not be impacted by the drainage improvements.

5) 2.5.4.3.M: Open Space

Drainage improvements include rain gardens, swales, and grading. There is no decrease in open space as a result of the drainage improvements.

6) 3.2.1-2: Traffic Impact Study

Drainage improvements will not impact the traffic generated by the site.

7) 7.4: Stormwater Calculations and Independent Review

A drainage study is not necessary for these minor improvements.

8) 10.1: Dark Sky Friendly Measures

Outdoor Lighting will not be impacted by the drainage improvements.

Ross Engineering
Civil/Structural Engineering & Surveying

909 Islington Street
Portsmouth, NH 03801

603-433-7560
alexross@comcast.net

Thank you for your consideration.

Sincerely,

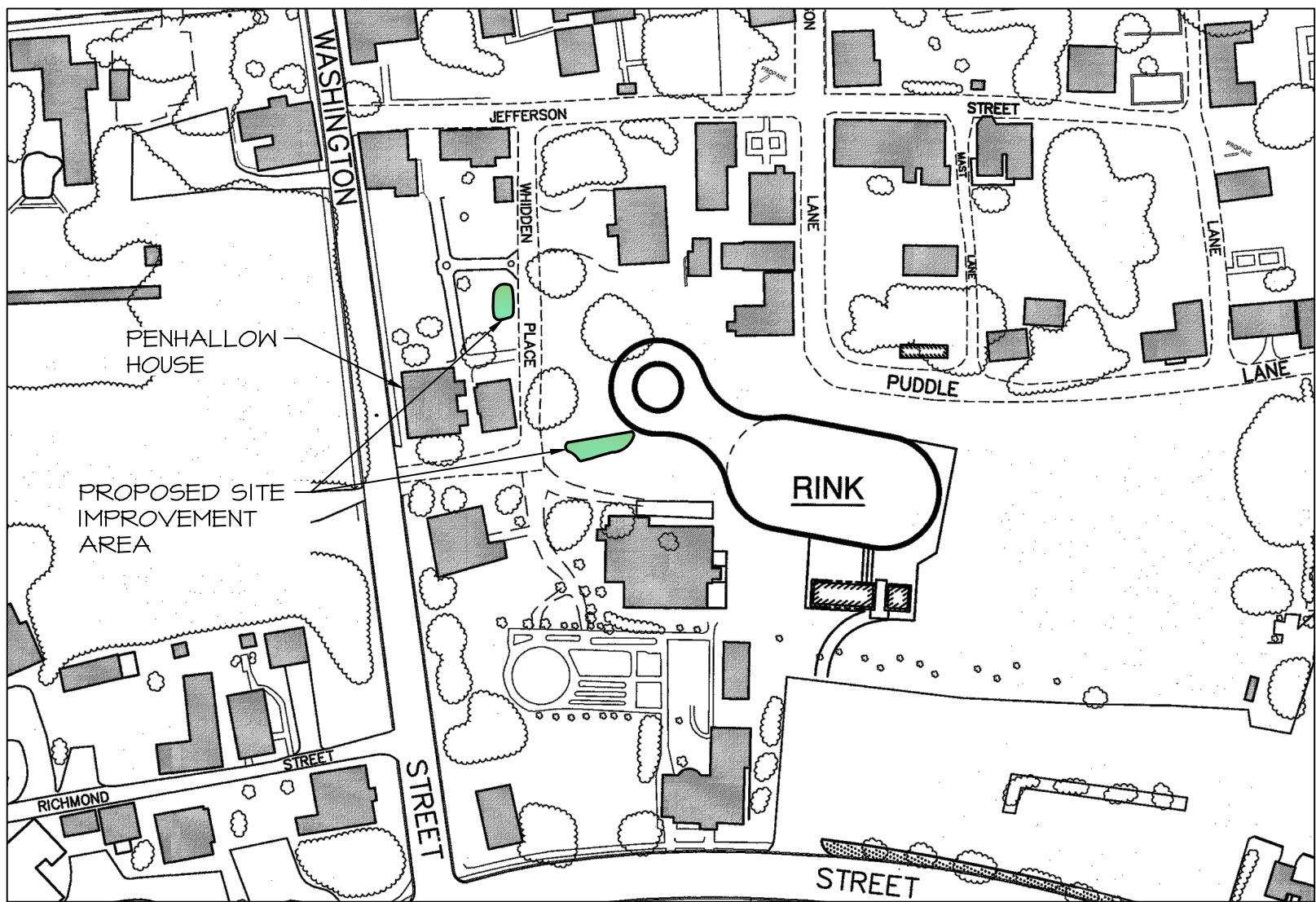
Alex Ross, P.E., LLS

Amended Site Plan Application

Minor Drainage Improvements

Strawbery Banke

Portsmouth, NH 03801



PREPARED FOR:

Strawbery Banke

PREPARED BY:

ROSS ENGINEERING, LLC

Civil/Structural Engineering
& Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

Placework

96 Penhallow Street
Portsmouth, NH 03801
(603) 319-8199

Horsley Witten Group

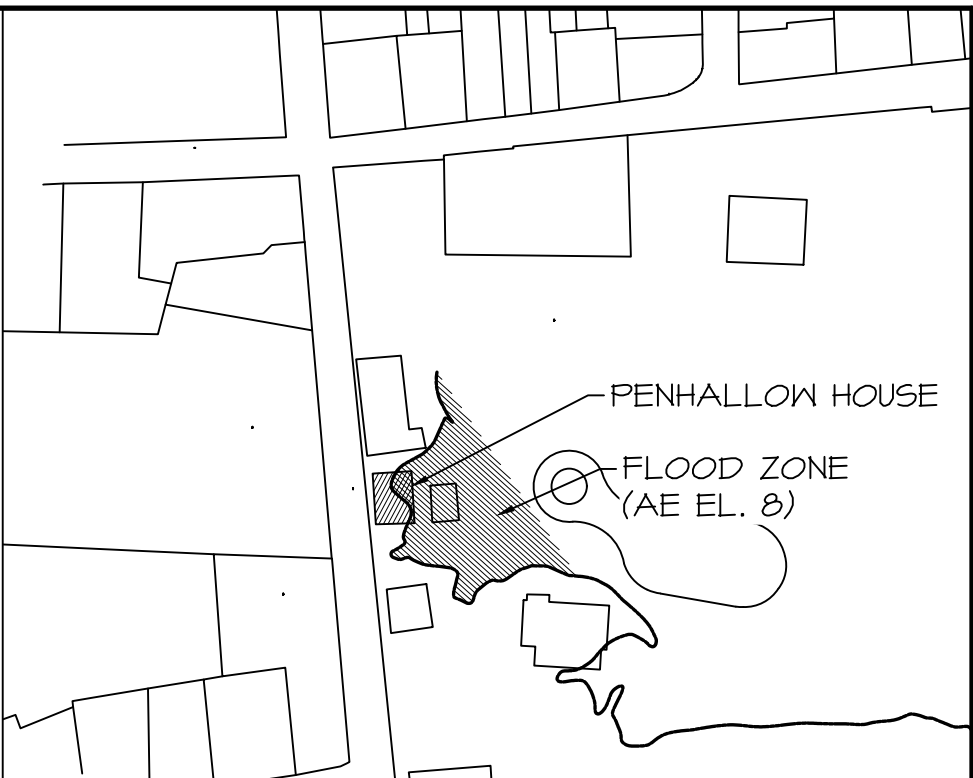
90 Route 6A, Unit 1
Sandwich, MA 02563
(508) 833-6600

LIST OF PROJECT PLANS:

SITE PLAN SET

- 1 - Existing Conditions Plan 1" = 10'
- 2 - Existing Conditions Plan 1" = 20'
- 3 - Site Plan 1" = 10'
- 4 - Site Plan 1" = 20'
- 5 - Drainage Plan
- 6 - Front Entrance Details
- 7 - Cobble Swale Details
- 8 - Details
- 9 - Erosion Control Plan

May 28, 2025



LOCUS PLAN
N.T.S.

NOTES

- 1) OWNER OF RECORD:
STRAWBERRY BANKE INC
TAX MAP 104, LOT 7
PO BOX 300
PORTSMOUTH, NH 03802
AREA: 8.24 ACRES
- 2) BASIS OF BEARING HELD FROM PLAN REFERENCE #1.
- 3) PARCEL IS IN MIXED RESIDENCE-OFFICE ZONE (MRO)
AND HISTORIC DISTRICT (HD):
MINIMUM LOT AREA.....7,500 SF
MIN. LOT AREA PER DWELLING UNIT.....7,500 SF
MINIMUM FRONTAGE.....100 FT
MINIMUM DEPTH.....80 FT
SETBACKS:
FRONT.....5FT
SIDE.....10 FT
REAR.....15 FT
MAXIMUM BUILDING HEIGHT:
SLOPED ROOF.....40 FT
FLAT ROOF.....30 FT
MAXIMUM BUILDING COVERAGE.....40%
MINIMUM OPEN SPACE.....25%
- 4) THE PARCEL IS PARTIALLY LOCATED WITHIN FEMA
FLOOD ZONE AE (EL 8), AS PER FLOOD INSURANCE
RATE MAP #33015C0259F, PANEL 259 OF 681, DATED
JANUARY 29, 2021. VERTICAL DATUM IS NAVD 1988.
- 5) ELEVATIONS SHOWN WERE OBTAINED USING GPS DATA
OBTAINED BY THIS OFFICE USING A BRX7 GPS UNIT ON
AUGUST 18, 2023.

REFERENCE PLANS

- 1) "EXISTING CONDITIONS PLAN
STRAWBERRY BANKE" BY JAMES
VERRA AND ASSOCIATES, INC.
DATED MARCH 17, 2016.
- 2) "PROPOSED SEASONAL ICE
SKATING RINK" BY JOHN
CHAGNON AND AMBIT
ENGINEERING, INC.
DATED MAY 25, 2016

2	5/28/2025	REVISIONS	
1	4/21/2025	TAC SUBMITTAL	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE	1" = 10'		
CHECKED	A.ROSS		
DRAWN	D.D.D.		
CHECKED			

ROSS ENGINEERING, LLC
Civil/Structural Engineering
& Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
RODNEY D ROWLAND
STRAWBERRY BANKE MUSEUM,
PO BOX 300,
PORTSMOUTH, NH 03802

TITLE
**EXISTING
CONDITIONS**

WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9

JOB NUMBER	DWG. NO.	ISSUE
22-027	1 OF 9	2



LEGEND

— 10 —	EXISTING CONTOUR
0x00	SPOT ELEVATION
→	DRAINAGE FLOW PATH
⊙	DRAIN MANHOLE
⊙	SEWER MANHOLE
— □ —	FENCE
⊙	UTILITY POLE
— OHU —	OVERHEAD UTILITIES
— W —	WATER
— SPK —	SPRINKLER LINE
— G —	GAS
— S —	SEWER
— D —	STORMWATER DRAIN
— — —	VERTICAL GRANITE CURB
⊙	CATCH BASIN
⊙	WATER SHUT-OFF
⊙	WATER GATE VALVE
RCP	REINFORCED CONCRETE PIPE
VC	VITRIFIED CLAY PIPE

DMH #4645
RIM ELEV = 8.88
INV. ELEV = 4.72

CB #4646
RIM EL. = 8.33
INV. ELEV = 3.45
WATER LEVEL 4.33

CB #4647
RIM ELEV = 8.48
INV. ELEV = 4.24

SMH #898 RIM = 8.57
INV IN (10"VC) = -0.43
INV IN (10"VC) = -0.52
INV IN (34" BRICK) = -1.63
INV OUT (30"CI) = -1.77

BM NAIL
EL. 9.64'

CB #4648
RIM ELEV = 8.71
INV. ELEV = 4.70

CB #4649
RIM ELEV = 8.90
INV. ELEV = 4.64

YARD DRAIN W/ 12"
CAST IRON GRATE
RIM AT EL. 7.27' (EX.
GRADE); INV. EL. 5.77'

1'x1' NDS CATCH BASIN
RIM 7.41'
INV. IN 6.74'
INV. OUT 6.70'

DRAIN MANHOLE #1
RIM EL. 7.21'
INV. IN 2.29' (8" LINE)
STRUCTURE: 6'0"

CATCH BASIN #1
RIM EL. 7.03'
INV. 5.78' (8" LINE)
STRUCTURE: 3'0"

SEWER MANHOLE #1
RIM EL. 7.46'
INV. 1.79 (PVC PIPE)

CATCH BASIN #3
RIM EL. 7.11'

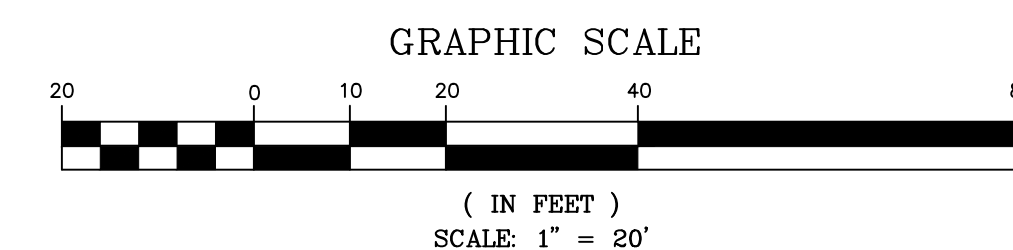
6" CULVERT
INV. OUT ~7.05'

6" CULVERT
INV. OUT ~7.17'

CATCH BASIN #2
RIM EL. 6.88'

REFERENCE PLANS

- "EXISTING CONDITIONS PLAN STRAWBERRY BANKE" BY JAMES VERRA AND ASSOCIATES, INC. DATED MARCH 17, 2016.
- "PROPOSED SEASONAL ICE SKATING RINK" BY JOHN CHAGNON AND AMBIT ENGINEERING, INC. DATED MAY 25, 2016



2	5/28/2025	REVISIONS	
1	4/21/2025	TAC SUBMITTAL	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE	1" = 20'		
CHECKED	A.ROSS		
DRAWN	D.D.D.		
CHECKED			

ROSS ENGINEERING, LLC
Civil/Structural Engineering
& Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
RODNEY D ROWLAND
STRAWBERRY BANKE MUSEUM,
PO BOX 300,
PORTSMOUTH, NH 03802

TITLE
EXISTING CONDITIONS

**WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9**

JOB NUMBER	DWG. NO.	ISSUE
22-027	2 OF 9	2

UTILITIES:

1) CONTACT LIST:
GAS: UNIL: SUSAN L. DUPLISEA.....603-294-5147
WATER: PORTSMOUTH DPW:603-427-1530
SEWER: PORTSMOUTH DPW:603-427-1530
STORMWATER: PORTSMOUTH DPW:603-427-1530
ELECTRIC: EVERSOURCE: CASEY MCDONALD.....603-436-7108 EXT 5641

2) DRAIN MANHOLE #5426 IS TO BE KEPT IN PLACE. THE COVER OF THIS DMH IS TO BE ADJUSTED TO MATCH THE SLOPE OF THE GRADE THAT HAS BEEN ALTERED AT THE ENTRANCE ON WASHINGTON ST.

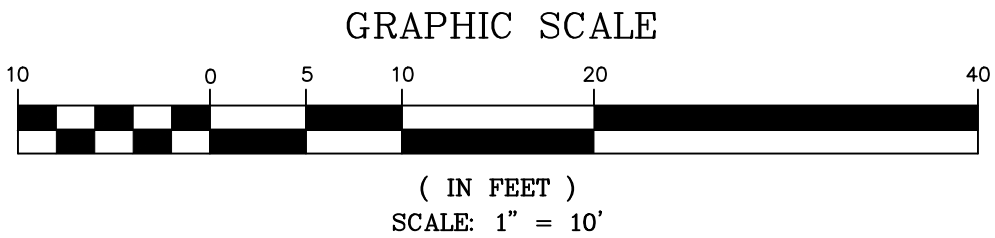
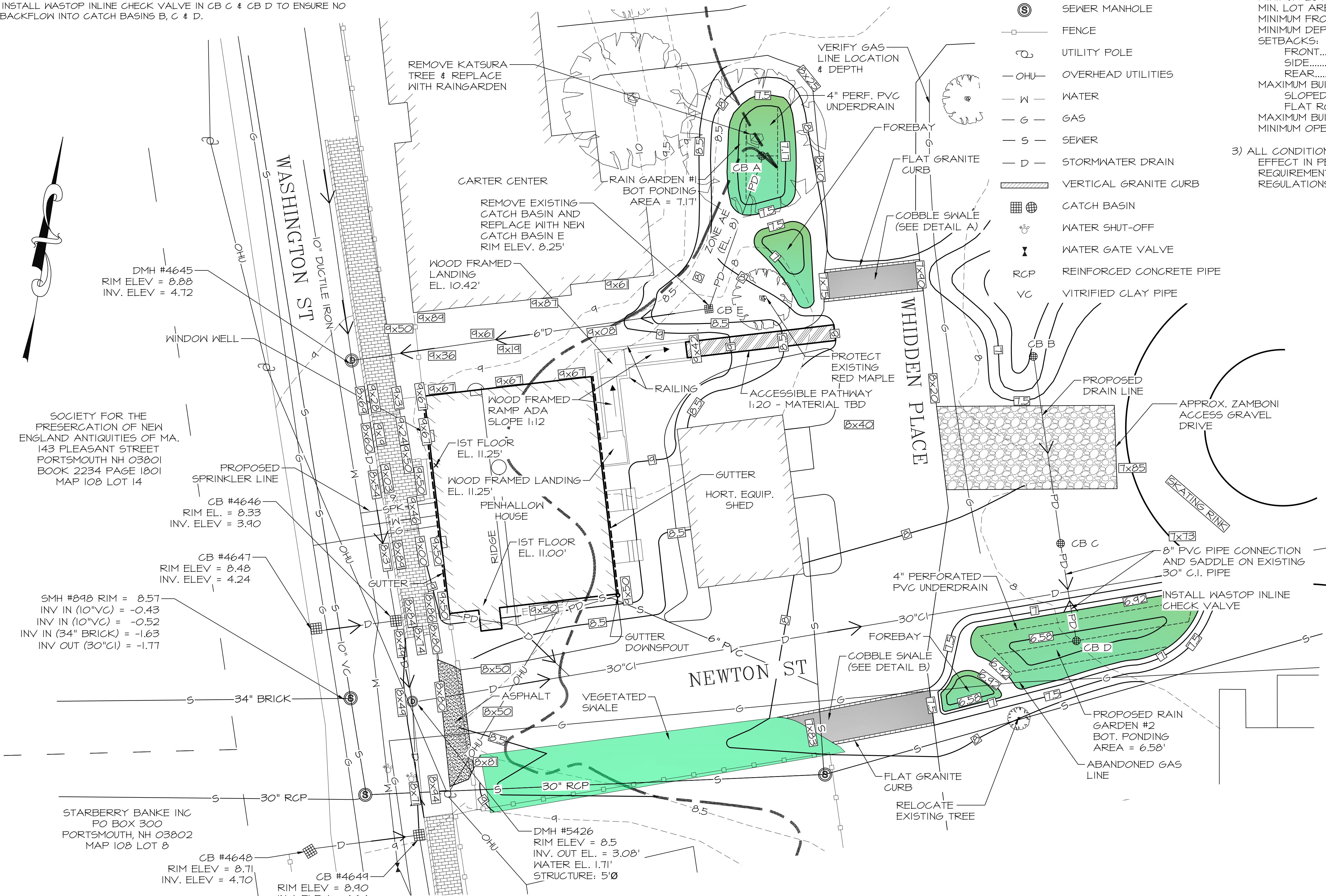
3) INSTALL WASTOP INLINE CHECK VALVE IN CB C & CB D TO ENSURE NO BACKFLOW INTO CATCH BASINS B, C & D.

LEGEND

- IO — EXISTING CONTOUR
- [] — PROPOSED CONTOUR
- 10x00 SPOT ELEVATION
- DRAINAGE FLOW PATH
- ⊙ DRAIN MANHOLE
- ⊙ SEWER MANHOLE
- FENCE
- UTILITY POLE
- OHU — OVERHEAD UTILITIES
- W — WATER
- G — GAS
- S — SEWER
- D — STORMWATER DRAIN
- VERTICAL GRANITE CURB
- CATCH BASIN
- WATER SHUT-OFF
- WATER GATE VALVE
- RCP REINFORCED CONCRETE PIPE
- VC VITRIFIED CLAY PIPE

NOTES

- 1) OWNER OF RECORD:
STRAWBERRY BANKE INC
TAX MAP 104, LOT 7
PO BOX 300
PORTSMOUTH, NH 03802
AREA: 8.24 ACRES
- 2) PARCEL IS IN MIXED RESIDENCE-OFFICE ZONE (MRO) AND HISTORIC DISTRICT (HD):
MINIMUM LOT AREA.....7,500 SF
MIN. LOT AREA PER DWELLING UNIT.....7,500 SF
MINIMUM FRONTAGE.....100 FT
MINIMUM DEPTH.....80 FT
SETBACKS:
FRONT.....5FT
SIDE.....10 FT
REAR.....15 FT
MAXIMUM BUILDING HEIGHT:
SLOPED ROOF.....40 FT
FLAT ROOF.....30 FT
MAXIMUM BUILDING COVERAGE.....40%
MINIMUM OPEN SPACE.....25%
- 3) ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.



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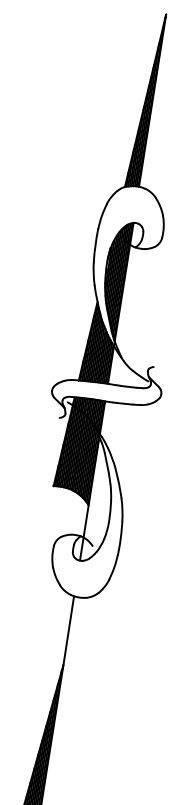
CLIENT
RODNEY D ROWLAND
STRAWBERRY BANKE MUSEUM,
PO BOX 300,
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TITLE

SITE PLAN

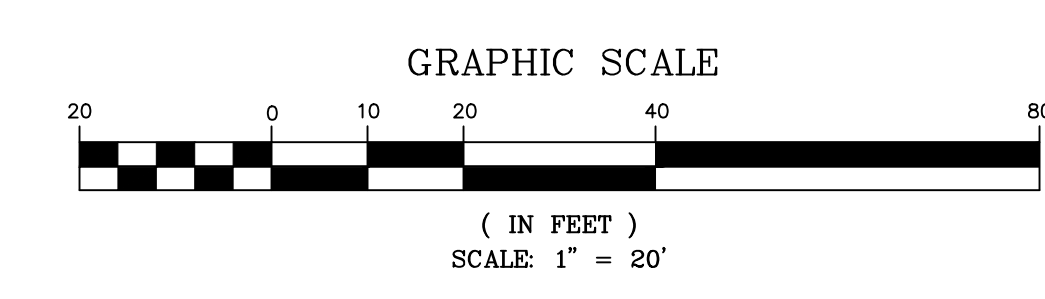
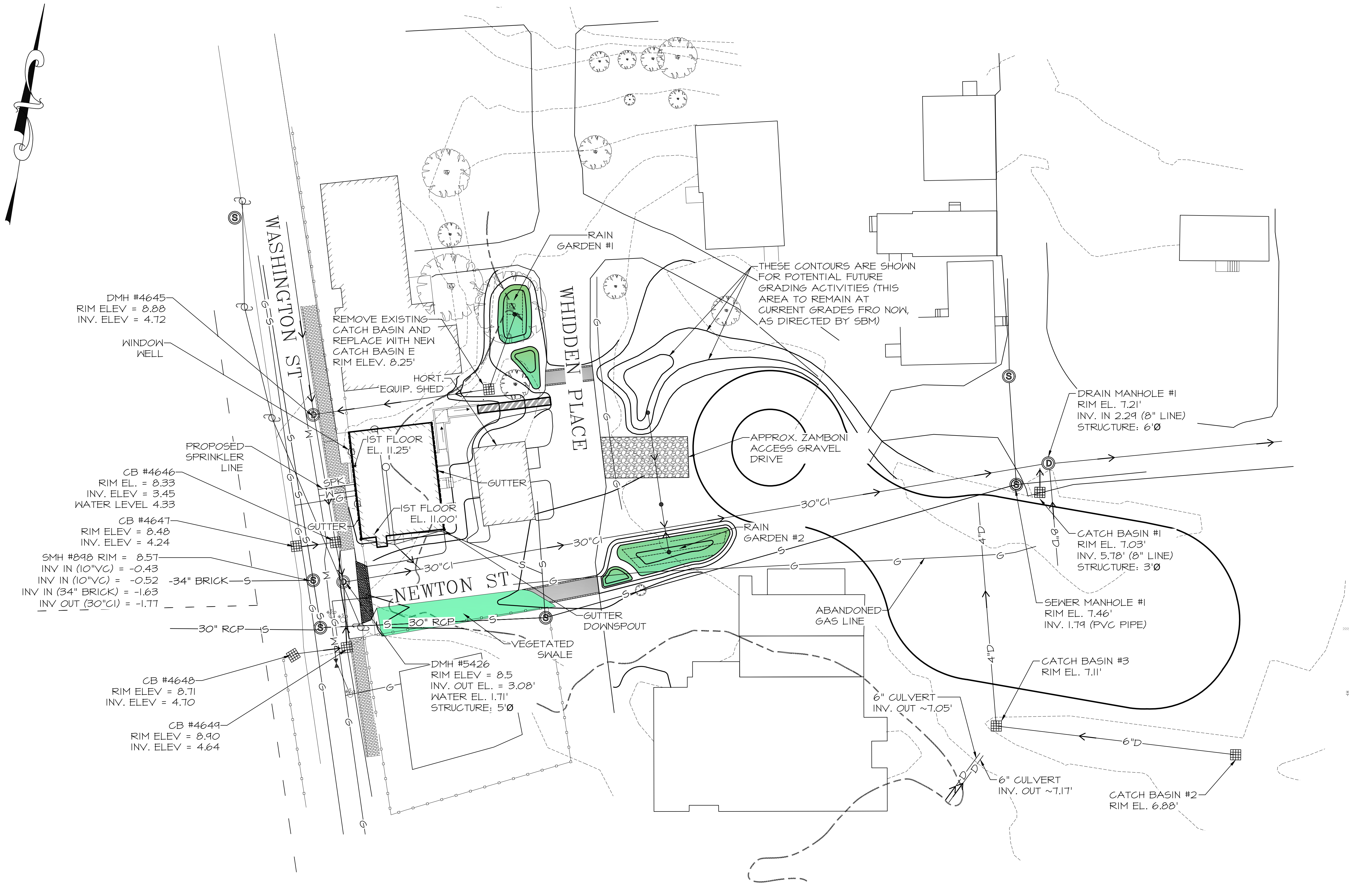
WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9

JOB NUMBER	DWG. NO.	ISSUE
22-027	3 OF 9	2



LEGEND

- o--- EXISTING CONTOUR
- x--- SPOT ELEVATION
- DRAINAGE FLOW PATH
- ⊙ DRAIN MANHOLE
- ⊙ SEWER MANHOLE
- o--- FENCE
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- RCP REINFORCED CONCRETE PIPE
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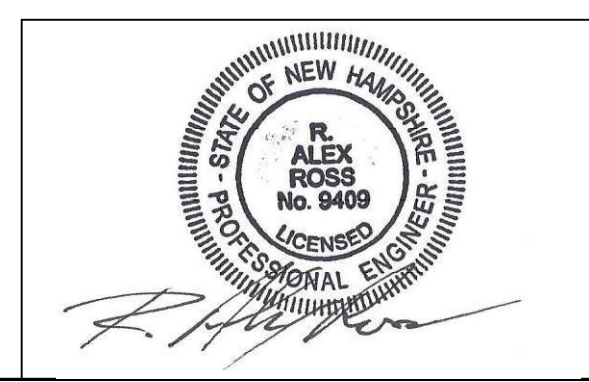
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RODNEY D. ROWLAND
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PO BOX 300,
PORTSMOUTH, NH 03802

TITLE

SITE PLAN

WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9

JOB NUMBER	DWG. NO.	ISSUE
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EXISTING STRUCTURES PROPOSED STRUCTURES

CATCH BASIN

CB #4646
RIM EL. 8.33
INV. 3.90

CB #4647
RIM EL. 8.48
INV. 4.24

CB #4648
RIM EL. 8.71
INV. 4.70

CB #4649
RIM EL. 8.90
INV. 4.64

DRAIN MANHOLE

DMH #4645
RIM EL. 8.88
INV. 4.72

DMH #5426
RIM EL. 8.50
INV. OUT -1.38 (30" CI)

CATCH BASIN

CB A
RIM EL. 7.50
INV. IN 6.17 (4" PERF. PVC UNDERDRAIN)
INV. IN 6.17 (4" PERF. PVC UNDERDRAIN)
INV. OUT 6.12 (6" PVC)
STRUCTURE: 18" PERFORATED NYLOPLAST WITH DOME (BEEHIVE) GRATE

CB B
RIM EL. 7.67
INV. OUT 6.00 (6" PVC)
STRUCTURE: 18" PERFORATED NYLOPLAST WITH STANDARD GRATE
USE REMOVABLE RISER TO ALLOW FOR FUTURE RIM ELEV. RETROFIT

CB C
RIM EL. 7.50
INV. IN 5.60 (6" PVC)
INV. OUT 5.50 (8" PVC)
STRUCTURE: 18" PERFORATED NYLOPLAST WITH STANDARD GRATE

CB D
RIM EL. 7.00
INV. IN 5.58 (4" PERF. PVC UNDERDRAIN)
INV. IN 5.58 (4" PERF. PVC UNDERDRAIN)
INV. OUT 5.50 (8" PVC)
STRUCTURE: 18" PERFORATED NYLOPLAST WITH DOME (BEEHIVE) GRATE

CB E
RIM EL. 8.25
INV. IN 5.80 (6" PVC)
INV. OUT 5.75 (6" PVC)
STRUCTURE: 18" PERFORATED NYLOPLAST WITH STANDARD GRATE

NOTES

1) THE FOLLOWING STORMWATER MANAGEMENT IMPROVEMENTS ARE PROPOSED.

A) INSTALL TWO RAIN GARDENS WITH UNDERDRAINS AND FOREBAYS. RUNOFF TO BE DIRECTED INTO THE RAIN GARDENS, WHICH WILL DETAIN THE RUNOFF AND SLOWLY RELEASE IT INTO SURROUNDING SOILS. UNDERDRAINS WILL DIRECT EXCESS RUNOFF INTO NEW CATCH BASINS.

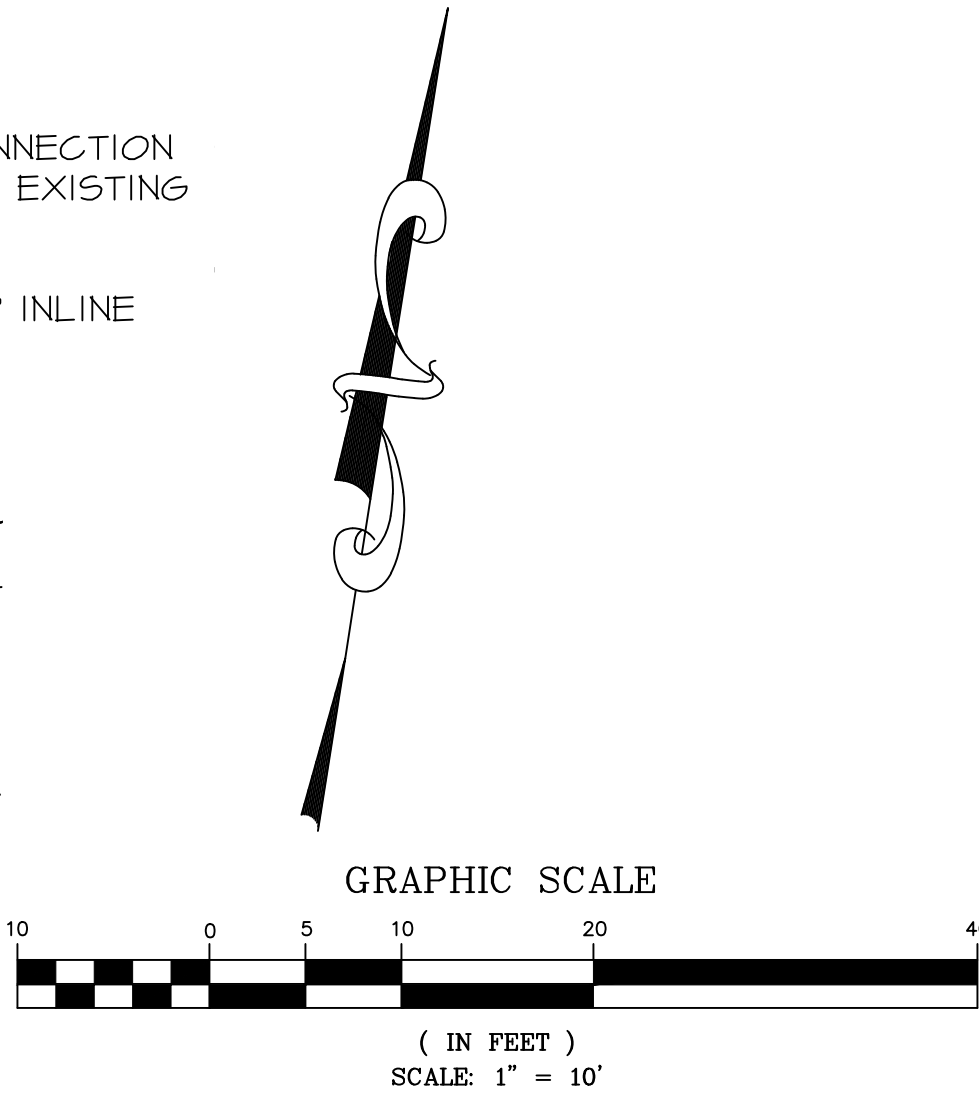
B) INSTALL 2 COBBLE SWALES AND 1 VEGETATED SWALE TO DIRECT DRAINAGE INTO THE FOREBAYS OF THE RAIN GARDENS, THEN TO THE RAIN GARDEN. COBBLE SWALES TO BE INSTALLED CROSSING WHIDDEN PLACE, AND THE VEGETATED SWALE TO BE CONSTRUCTED ON THE SOUTHERN SIDE OF NEWTON ST.

C) INSTALL 5 NEW CATCH BASINS TO COLLECT EXCESS RUNOFF AND DIRECT IT THROUGH EXISTING AND PROPOSED DRAIN LINES INTO AN EXISTING 30" CAST IRON DRAIN LINE.

D) RAISE THE ELEVATION OF THE PAVEMENT AT THE ENTRANCE OF NEWTON ST TO DIRECT RUNOFF ON WASHINGTON ST INTO THE CATCH BASINS ON WASHINGTON ST, RATHER THAN WASHING OUT NEWTON ST.

LEGEND

- 10 EXISTING CONTOUR
- PROPOSED CONTOUR
- 10x00 SPOT ELEVATION
- DRAINAGE FLOW PATH
- DRAIN MANHOLE
- SEWER MANHOLE
- FENCE
- UTILITY POLE
- OVERHEAD UTILITIES
- WATER
- GAS
- SEWER
- STORMWATER DRAIN
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- REINFORCED CONCRETE PIPE
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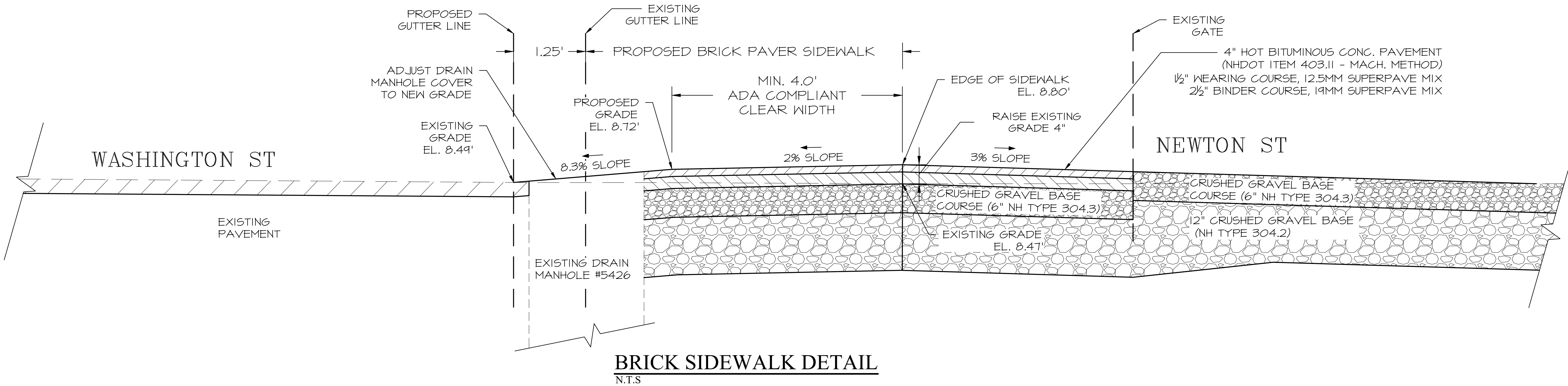
ROSS ENGINEERING, LLC
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& Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
RODNEY D ROWLAND
STRAWBERRY BANKE MUSEUM,
PO BOX 300,
PORTSMOUTH, NH 03802

DRAINAGE PLAN

WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9

JOB NUMBER	DWG. NO.	ISSUE
22-027	5 OF 9	2

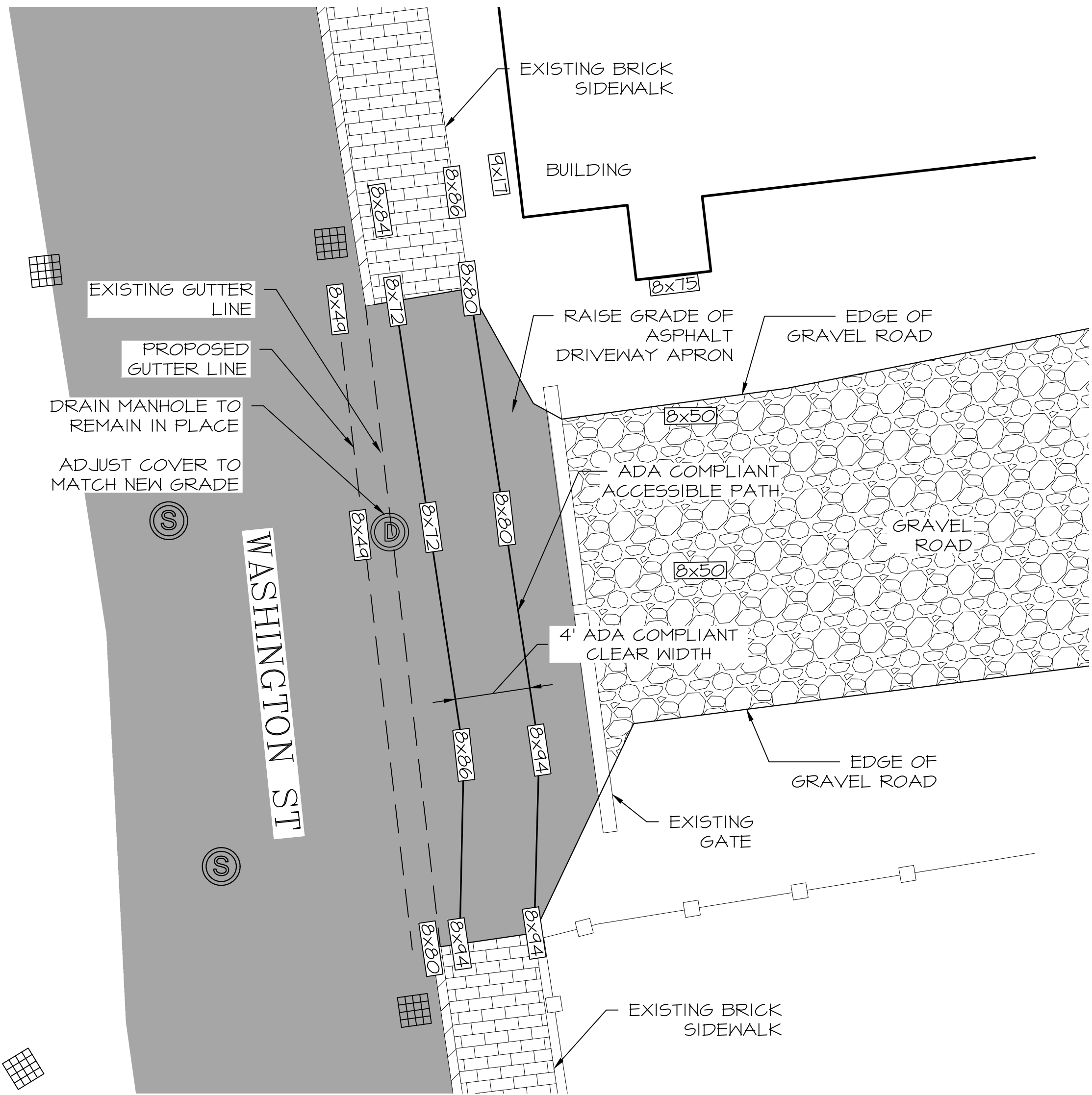


NOTES

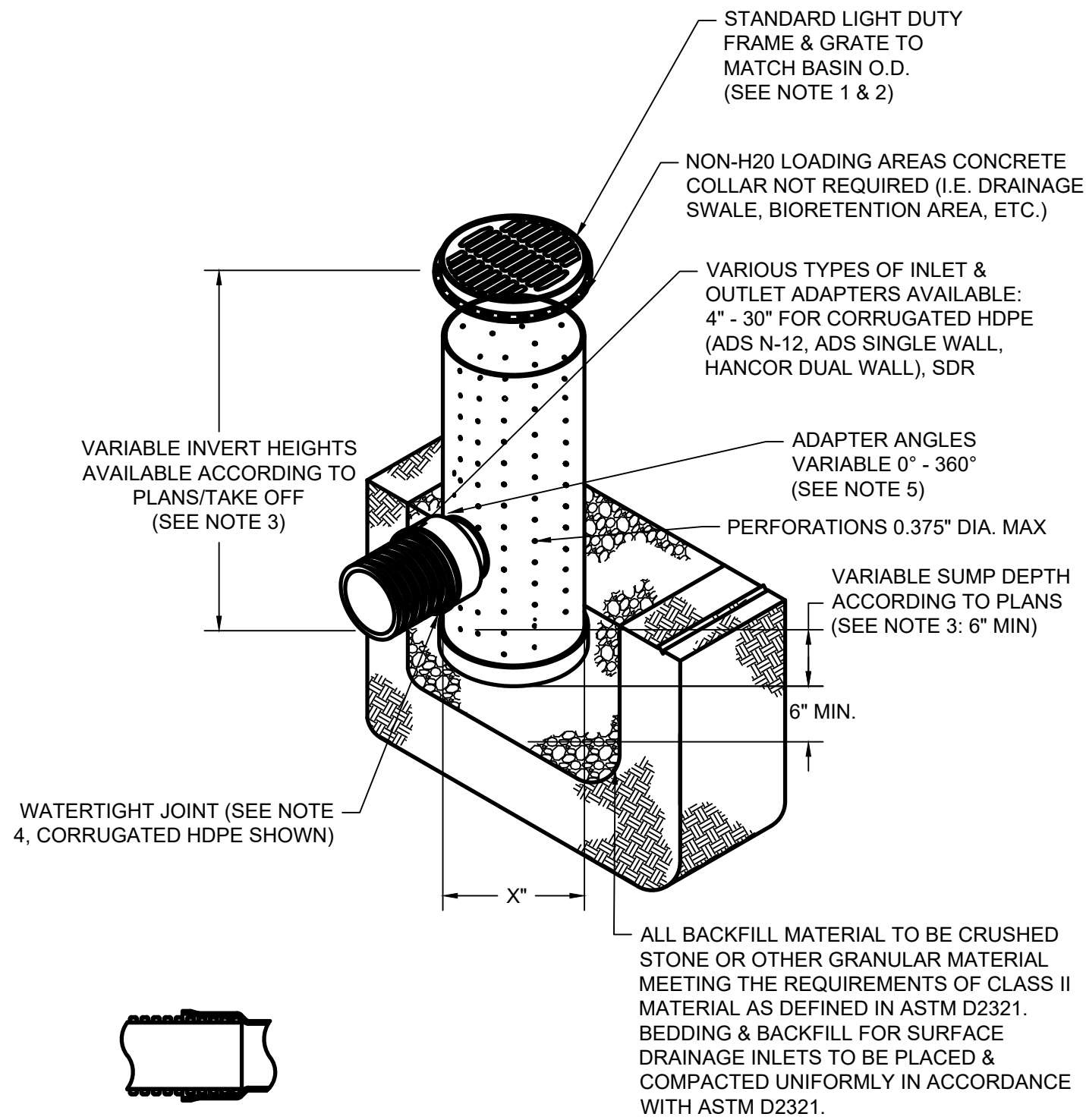
- 1) OWNER OF RECORD:
STRAWBERRY BANKE INC
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PO BOX 300
PORTSMOUTH, NH 03802
AREA: 8.24 ACRES
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MIN. LOT AREA PER DWELLING UNIT.....7,500 SF
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MINIMUM DEPTH.....80 FT
SETBACKS:
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SIDE.....10 FT
REAR.....15 FT
MAXIMUM BUILDING HEIGHT:
SLOPED ROOF.....40 FT
FLAT ROOF.....30 FT
MAXIMUM BUILDING COVERAGE.....40%
MINIMUM OPEN SPACE.....25%

UTILITIES:

CONTACT LIST:
GAS: UNITIL: SUSAN L. DUPLISEA.....603-294-5147
WATER: PORTSMOUTH DPW:603-427-1530
SEWER: PORTSMOUTH DPW:603-427-1530
STORMWATER: PORTSMOUTH DPW:603-427-1530
ELECTRIC: EVERSOURCE: CASEY McDONALD.....603-436-7708 EXT 5641



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ROSS ENGINEERING, LLC Civil/Structural Engineering & Surveying 909 Islington St. Portsmouth, NH 03801 (603) 433-7560			
CLIENT RODNEY D. ROWLAND STRAWBERRY BANKE MUSEUM, PO BOX 300, PORTSMOUTH, NH 03802			
TITLE FRONT ENTRANCE DETAILS			
WHIDDEN PL & NEWTON ST DRAINAGE IMPROVEMENTS PORTSMOUTH, NH 03801 TAX MAP 104, LOT 7-9			
JOB NUMBER	DWG. NO.	ISSUE	
22-027	6 OF 9	2	



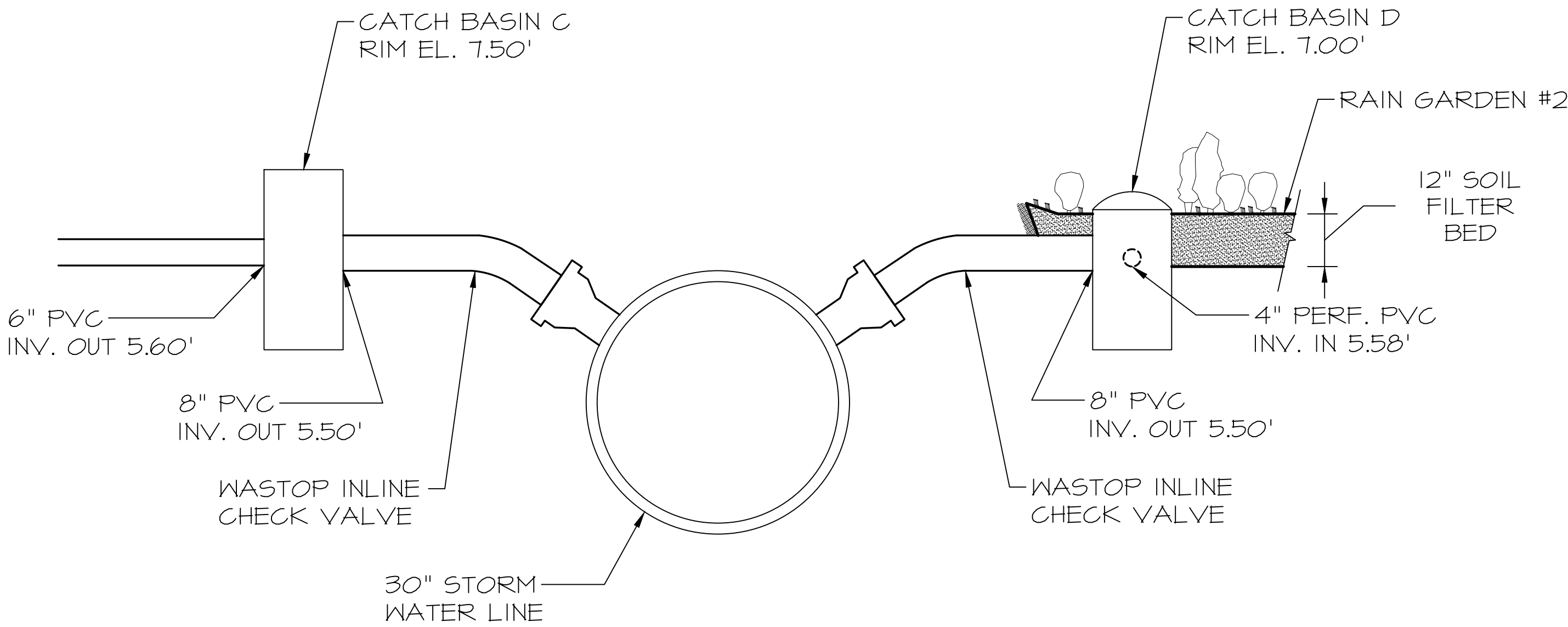
DOME GRATE DETAIL
NOT TO SCALE

- NOTES:
1. GRATES/SOLID COVER TO BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05,
 2. FRAMES TO BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
 3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS SEE DRAWING NO. 7001-110-065
 4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS TO CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
 5. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012, 7001-110-013, & 7001-110-014
 6. TO PREVENT BLOCKAGE OF PERFORATIONS, BASIN SHOULD BE WRAPPED IN AN ENGINEER APPROVED GEO-TEXTILE FABRIC

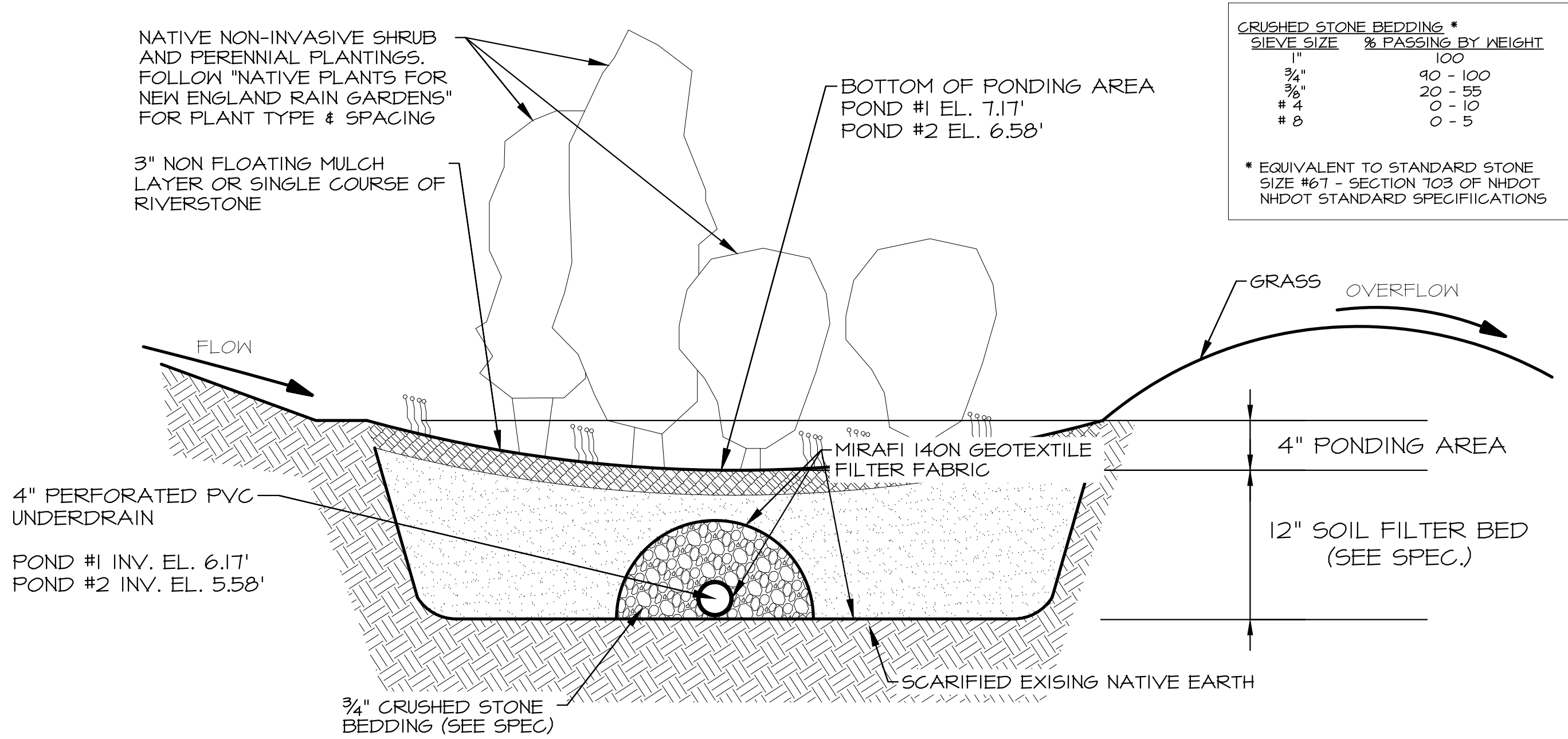
Nyloplast
2130 VERONA AVE
SUFORD, GA 30086
PH: (770) 932-2462
FAX: (770) 932-2460
www.nyloplast-us.com

PERFORATED DRAIN BASIN
NOT TO SCALE

BY "NYLOPLAST" OR APPROVED EQUIVALENT



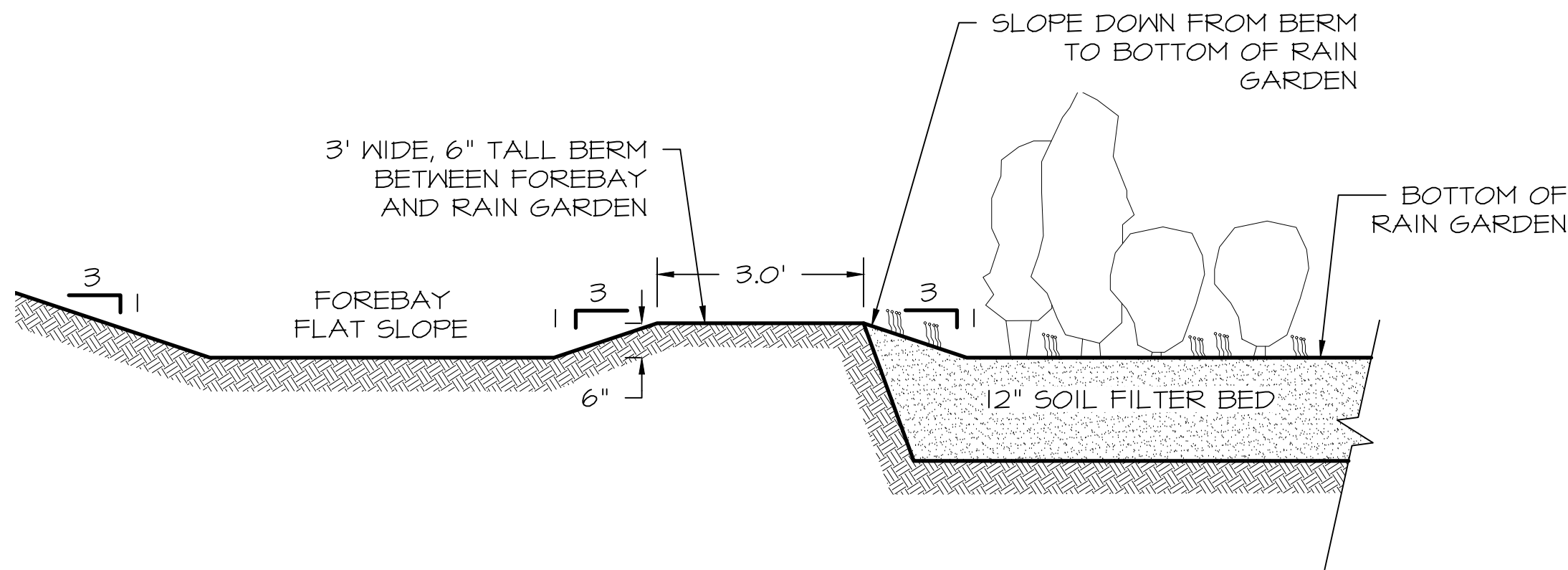
STORM WATER LINE SECTION
Scale : N.T.S.



TYPICAL RAINGARDEN DETAIL
NOT TO SCALE

Component Material	Percent of Mixture by Volume	Gradation of Material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	<5
	70 to 80	10	85 to 100
Loamy coarse sand		20	70 to 100
		60	15 to 40
		200	8 to 15

FILTER MEDIA SPECIFICATION



FOREBAY DETAIL
NTS

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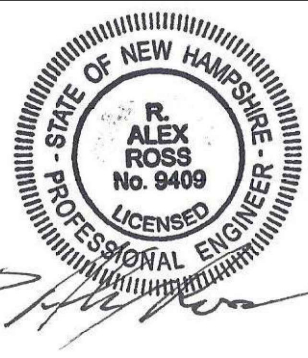
CLIENT
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STRAWBERRY BANKE MUSEUM,
PO BOX 300,
PORTSMOUTH, NH 03802

TITLE

DETAILS

WHIDDEN PL & NEWTON ST
DRAINAGE IMPROVEMENTS
PORTSMOUTH, NH 03801
TAX MAP 104, LOT 7-9

JOB NUMBER	DWG. NO.	ISSUE
22-027	8 OF 9	2



EROSION AND SEDIMENTATION CONTROL
CONSTRUCTION PHASING AND SEQUENCING

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILT/SOXX FENCING AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES, LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL & COVER WHERE PRACTICABLE.
5. MINIMIZE DUST THROUGH APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES ON SITE.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT SOXX FENCING TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT SOXX FENCING ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. ALL TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC. MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
14. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
15. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
16. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
18. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
19. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
20. LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

PLANTING NOTES:

1. ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
2. ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
3. ALL TREES AND SHRUBS SHALL HAVE WATER SAUCERS BUILT AROUND THEIR BASES AND THESE SHALL BE MULCHED WITH 4" OF DARK BROWN AGED BARK MULCH. MULCH MUST BE KEPT 2" AWAY FROM THEIR TRUNKS.
4. ALL TREES AND SHRUBS SHALL BE PLANTED AND MULCHED BEFORE LAWN IS SEEDED.

MAINTENANCE REQUIREMENTS:

1. ALL TREES, SHRUBS, AND PERENNIALS WILL NEED TO BE WATERED THROUGH THANKSGIVING DURING THE FIRST SEASON IN WHICH THEY ARE INSTALLED.
2. AN UNDERGROUND DRIP IRRIGATION SYSTEM IS RECOMMENDED. IF AN UNDERGROUND DRIP IRRIGATION SYSTEM IS NOT INSTALLED, SOAKER HOSES WOUND THROUGHOUT PLANTING BEDS ARE ACCEPTABLE. ALTHOUGH OVERHEAD SPRINKLERS ARE RECOMMENDED FOR LAWN AREAS, THEY ARE NOT ACCEPTABLE FOR IRRIGATING TREES AND SHRUBS.

SEEDING AND STABILIZATION FOR LOAMED SITE:

FOR TEMPORARY & LONG TERM SEEDINGS USE ASWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE, FERTILIZER & LIME: NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P2O5) 100 LBS/ACRE, POTASH (K2O) 100 LBS/ACRE, LIME 2000 LBS/ACRE MULCH: HAY OR STRAW 1.5-2 TONS/ACRE

- A) GRADING AND SHAPING
- 1) SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

- B) SEED BED PREPARATION
- 1) SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - 2) STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 2 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
3. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
4. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED WITHIN 24 HOURS OF EARTH-DISTURBING ACTIVITIES BEING CEASED, AND WILL BE FULLY STABILIZED NO LONGER THAN 14 DAYS AFTER INITIATION. (SEE NOTE II FOR DEFINITION OF STABLE). ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE. ALL TEMPORARY OR LONG TERM SEEDING MUST BE APPLIED TO COMPLY WITH "WINTER CONSTRUCTION NOTES" (SEE WINTER CONSTRUCTION NOTES). EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED (SEE NOTE II FOR DEFINITION OF STABLE).
5. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
6. SILT/SOXX FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT/SOXX AND ANY EDGE OF WET AREA.
7. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
8. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
9. SILT/SOXX FENCING WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
10. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
11. AN AREA SHALL BE CONSIDERED FULLY STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
12. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON STANDARDS AND SPECIFICATIONS SET FORTH IN THE STORM WATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (DECEMBER 2008 OR LATEST) PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, N.H. DES AND NRCS.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND 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 EVENT.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

LONG TERM SEEDING

- WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C	lb/ACRE	lb/1000SF
TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
RED CLOVER (ALSIKE)	20	0.45
TOTAL	40	1.35

LIME: AT 2 TONS PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 20 20 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED. SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE DECEMBER 2008.

SHORT TERM SEEDING

- WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C	#/ACRE	#/1000SF
FOR APRIL 1 - AUGUST 15		
ANNUAL RYE GRASS	40	1
FOR FALL SEEDING		
WINTER RYE	112	2.5

LIME: AT 1 TON PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 10 10 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.

SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED. SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

WHEN PROPOSED FOR ALTERATION DURING CONSTRUCTION AS BEING INFESTED WITH INVASIVE SPECIES SHALL BE MANAGED APPROPRIATELY USING THE DISPOSAL PRACTICES IDENTIFIED IN "NHDOT - BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS -2008" AND "METHODS FOR DISPOSING NON-NATIVE INVASIVE PLANTS - UNH COOPERATIVE EXTENSION - 2010"

SEED MIXES SHALL NOT CONTAIN ANY SPECIES IDENTIFIED BY THE NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST.

MAINTENANCE NOTES

A. MAINTENANCE OF COMMON FACILITIES OR PROPERTY

1. FUTURE OWNERS OR ASSIGNS ARE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER INFRASTRUCTURE ASSOCIATED WITH THE FACILITY AND THE PROPERTY. THIS INCLUDES THE ROOF DRAINAGE SYSTEM, CISTERN, STORMWATER POND, PERVIOUS PAVERS, STORM TECH CHAMBERS, LANDSCAPED AREAS, PERVIOUS ASPHALT AND CONTECH TREATMENT STRUCTURE.

B. GENERAL INSPECTION AND MAINTENANCE REQUIREMENTS

1. PERMANENT STORMWATER AND SEDIMENT AND EROSION CONTROL FACILITIES TO BE MAINTAINED ON THE SITE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- a. RAIN GARDEN
- b. SWALES (COBBLE AND VEGETATED)
- c. CATCH BASINS

2. MAINTENANCE OF PERMANENT MEASURES SHALL FOLLOW THE FOLLOWING SCHEDULE:

- a. **RAIN GARDEN**
THE FOLLOWING RECOMMENDATIONS WILL HELP ASSURE THAT THE RAIN GARDEN IS MAINTAINED TO PRESERVE ITS EFFECTIVENESS:

i. INSPECT SYSTEM AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.

ii. TRASH AND DEBRIS SHOULD BE REMOVED AT EACH INSPECTION.

iii. AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF THE SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.

iv. VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

- b. **SWALES (COBBLE AND VEGETATED)**

i. GRASSED CHANNELS SHOULD BE INSPECTED PERIODICALLY (AT LEAST ANNUALLY) FOR SEDIMENT ACCUMULATION, EROSION, AND CONDITION OF SURFACE LINING (VEGETATION OR RIPRAP). REPAIRS, INCLUDING STONE OR VEGETATION REPLACEMENT, SHOULD BE MADE BASED ON THIS INSPECTION.

ii. REMOVE SEDIMENT AND DEBRIS ANNUALLY, OR MORE FREQUENTLY AS WARRANTED BY INSPECTION.

iii. MOW VEGETATED CHANNELS AT LEAST ONCE PER YEAR IS REQUIRED TO CONTROL ESTABLISHMENT OF WOODY VEGETATION. IT IS RECOMMENDED TO CUT GRASS NO SHORTER THAN 4 INCHES.

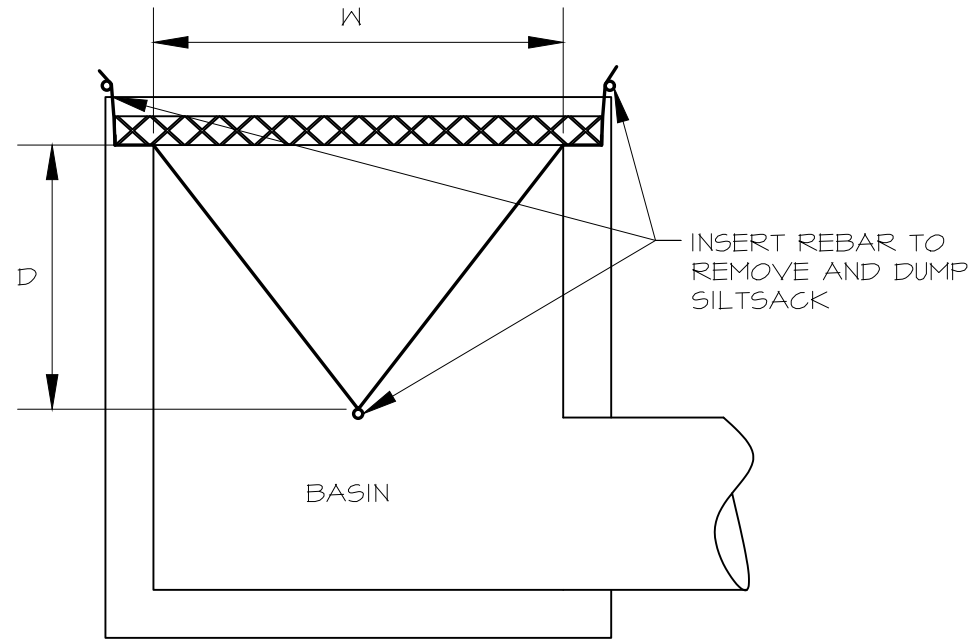
- c. **CATCH BASINS**

i. INSPECT TWICE A YEAR, MORE OFTEN IF NEEDED. INSPECT FOR ACCUMULATION OF DEBRIS. REMOVE MATERIAL FROM SUMP AND INLET/OUTLET AS NECESSARY, DISPOSE OF OFFSITE.

C. OWNERS SHALL PROVIDE A REPORT ON ACTIVITIES PERFORMED THROUGHOUT THE YEAR. REPORT SHALL INCLUDE DOCUMENTATION THAT INSPECTION AND MAINTENANCE IS ACCOMPLISHED PER THIS DOCUMENT AND A CERTIFICATION THAT THE SYSTEMS CONTINUE TO FUNCTION AS DESIGNED. AN ANNUAL REPORT WILL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

STORMWATER INSPECTION & MAINTENANCE LOG

ACTIVITY	DATE OF INSPECTION	WHO INSPECTED	SATISFACTORY: YES, NO, N/A	MAINTENANCE NEEDED	IMPLEMENTED DATE OF CORRECTIVE ACTION	FINDINGS OF INSPECTOR
RAIN GARDEN						
COBBLE & VEGETATED SWALES						
CATCH BASINS						



SILTSACK IS TO BE SECURED BY WEIGHT OF BASIN GRATE TO PREVENT SEDIMENT FROM ENTERING THE DRAIN LINE

INSTALL SILTSACK TO CATCH BASINS ON WASHINGTON ST AND ON SITE PRIOR TO CONSTRUCTION & TO CATCH BASINS A, B, C, D, & E DURING CONSTRUCTION. DO NOT REMOVE SILTSACK UNTIL CONSTRUCTION IS COMPLETE.

Siltsack
N.T.S.



2	5/28/2025	REVISIONS	
1	4/21/2025	TAC SUBMITTAL	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE 1" = 10'			
CHECKED A.ROSS			
DRAWN D.D.D.			
CHECKED			
<div>ROSS ENGINEERING, LLC</div> <div>Civil/Structural Engineering & Surveying</div> <div>909 Islington St.</div> <div>Portsmouth, NH 03801</div> <div>(603) 433-7560</div>			
<div>CLIENT</div> <div>RODNEY D ROWLAND</div> <div>STRAWBERRY BANKE MUSEUM,</div> <div>PO BOX 300,</div> <div>PORTSMOUTH, NH 03802</div>			
<div>TITLE</div> <div>EROSION CONTROL PLAN</div> <div>WHIDDEN PL & NEWTON ST</div> <div>DRAINAGE IMPROVEMENTS</div> <div>PORTSMOUTH, NH 03801</div> <div>TAX MAP 104, LOT 7-9</div>			
JOB NUMBER	DWG. NO.		ISSUE
22-027	9 OF 9		2