

# Findings of Fact | Site Plan Review

## City of Portsmouth Planning Board

Date: January 22, 2026

Property Address: 1980 Woodbury Avenue

Application #: LU-25-163

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.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>1</b>	Compliance with all City Ordinances and Codes and these regulations. <u>Applicable standards:</u>	<b>Meets</b> <b>Does Not Meet</b>	<u>Applicable standards:</u> - Portsmouth Zoning Ordinance (Variances recvd. July 15, 2025) - Portsmouth Site Plan Review Regulations
<b>2</b>	Provision for the safe development, change or expansion of use of the site.	<b>Meets</b> <b>Does Not Meet</b>	The project proposes the development of a gas station and convenience store, aligning with the current use.
<b>3</b>	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.	<b>Meets</b> <b>Does Not Meet</b>	Standard erosion control methods are proposed during site development.  There will be no adverse impacts to downstream properties. All runoff is captured and routes through treatment BMP's prior to entering the city drainage system.
<b>4</b>	Adequate protection for the		Groundwater recharge requirements are

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
	quality of groundwater.	<b>Meets</b> <b>Does Not Meet</b>	met as the site is classified as "urban land".
<b>5</b>	Adequate and reliable water supply sources.	<b>Meets</b> <b>Does Not Meet</b>	The site currently contains a gas station and convenience store and is supplied by municipal water. The proposed development will be served in the same manner, and the utility design has been review by DPW.
<b>6</b>	Adequate and reliable sewage disposal facilities, lines, and connections.	<b>Meets</b> <b>Does Not Meet</b>	The site currently contains a gas station and convenience store and is supplied by municipal sewer. The proposed development will be served in the same manner, and the utility design has been review by DPW.
<b>7</b>	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.	<b>Meets</b> <b>Does Not Meet</b>	Any contaminants present due to the demolition of the current gas station and convenience store will be disposed of in accordance with all applicable regulations.
<b>8</b>	Adequate provision for fire safety, prevention and control.	<b>Meets</b> <b>Does Not Meet</b>	The proposed gas station and convenience store will undergo fire code review within the Building Permit Process.
<b>9</b>	Adequate protection of natural features such as, but not limited to, wetlands.	<b>Meets</b> <b>Does Not Meet</b>	There are no wetlands on-site. Natural features are being protected although the current site is fully developed.
<b>10</b>	Adequate protection of historical features on the site.	<b>Meets</b> <b>Does Not Meet</b>	The site falls outside the City's Historic District
<b>11</b>	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	<b>Meets</b> <b>Does Not Meet</b>	Sufficient off-street parking is provided in-site including for employees. The site entrances and exits will follow the same "right in, right out" traffic pattern that exists today.
<b>12</b>	Adequate traffic controls and traffic management measures to prevent an unacceptable	<b>Meets</b>	The project includes widening the existing sidewalk at the intersection of Woodbury Avenue and Gosling Road. This, along with

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
	increase in safety hazards and traffic congestion off-site.	<b>Does Not Meet</b>	sidewalks on-site will improve pedestrian mobility. All crosswalks on-site will be constructed with stamped concrete providing a visual and physical indicator of pedestrian areas.
<b>13</b>	Adequate insulation from external noise sources.	<b>Meets</b> <b>Does Not Meet</b>	Additional landscaping is proposed between the new convenience store and abutting residential use. The additional landscaping, along with the shape and orientation of the proposed building will help to mitigate noise pollution from the proposed development and traffic along Woodbury Avenue.
<b>14</b>	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.	<b>Meets</b> <b>Does Not Meet</b>	The existing site is currently served by municipal solid waste disposal, police, emergency, medical and other municipal services. The site will remain serviced by the same municipal departments. Furthermore, the project has undergone review by the Technical Advisory Committee to ensure adequate capacity with municipal services.
<b>15</b>	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	<b>Meets</b> <b>Does Not Meet</b>	Outdoor seating is proposed adjacent to the convenience store. This, along with the proposed bike rack and sidewalks provide usable and functional open space.
<b>16</b>	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	<b>Meets</b> <b>Does Not Meet</b>	The sidewalks at the intersection of Gosling and Woodbury will be widened as a part of this project. On-site, there is pedestrian access from both Gosling Road and Woodbury Ave to the convenience store. This connection will also act as an additional route for pedestrians to travel to avoid walking near the busy intersection.
<b>17</b>	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.	<b>Meets</b> <b>Does Not Meet</b>	Plans have been reviewed by the Technical Advisory Committee, and the proposed use will be consistent with other uses in the area.
<b>18</b>	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	<b>Meets</b> <b>Does Not Meet</b>	Landscaping is proposed throughout the site to provide both visual buffers and noise/air pollution buffers.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>19</b>	Compliance with applicable City approved design standards.	<b>Meets</b> <b>Does Not Meet</b>	The site design meets City approved standards.
	<b>Other Board Findings:</b>		

DRAFT



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

NEW  
HAMPSHIRE  
**200**

February 12, 2026

Peter Stith, Planning Manager  
Portsmouth Planning & Sustainability  
1 Junkins Avenue, 3<sup>rd</sup> Floor  
Portsmouth, NH 03801

via Portsmouth's Online Permitting Site

**RE: Response to Technical Advisory Committee Comments  
1980 Woodbury Avenue – Colbea Enterprises, LLC – Tax Map 239 Lot 11  
Application #LU-25-163**

Dear Mr. Stith:

On behalf of our client, Colbea Enterprises, LLC., TF Moran, Inc. (TFM) respectfully submits the following letter in response to the comments made by the City of Portsmouth at the Technical Advisory Committee meeting held on December 2<sup>nd</sup>, 2025. The following materials are included in this revised submission:

- **Letter of Authorization (1 copy);**
- **Site Plan Checklist (1 copy);**
- **Abutters List (1 copy, 3 sets of labels);**
- **Traffic Memo (1 copy);**
- **Drainage Analysis Report (1 copy);**
- **Green Building Statement (1 copy);**
- **Draft Sidewalk Access Easement (1 copy); and**
- **Revised Site Development Plans entitled “Site Development Plans, Tax Map 239 Lot 11, Proposed Gas Station, 1980 Woodbury Avenue, Portsmouth, New Hampshire”, prepared by TFMoran, Inc., dated November 17, 2025, revised December 22, 2025 (1 copy at 22”x34”).**

During the review of this project, City Planning Staff noted that a rear setback was not depicted on the submitted plans (the plans that the Planning Board previously reviewed had shown two 10-foot side setbacks). In discussions with City Staff, given that the site currently has an address of 1980 Woodbury Avenue, the westerly property line should have shown a 15' rear setback instead of the 10' side setback as previously shown. With this configuration, a small portion of the building was within the setback area. To avoid requesting an additional variance for the proposed design, the owner/applicant has initiated a change of the site address to 90 Gosling Road. With this change, the southerly property line (opposite Gosling Road) would be classified as the rear lot line and the westerly property line (opposite Woodbury Avenue) would remain a side setback (as shown on the prior plan). With this modification, the building



**Response to Technical Advisory Committee Comments  
1980 Woodbury Avenue - Colbea Enterprises, LLC – Tax Map 239 Lot 11  
Project #LU-25-163**

**February 12, 2026**

now complies with rear and side setback requirements, and we have revised the plan to reflect one 10-foot side setback along the westerly lot line and one 15-foot rear setback along the southerly lot line. This revision is administrative in nature and does not result in any changes to the building footprint, site layout, parking configuration, or overall design.

To facilitate your review, we have provided your comments along with our responses, which are shown in ***bold italics***.

**REVIEW COMMENTS:**

**General Comments**

1. Please provide a green building statement.
  - a. ***See attached Green Building Statement.***
2. Move water and sewer services out from under canopy for gas pumps.
  - a. ***Water and sewer services have been relocated outside the fueling canopy and associated concrete pad.***
3. Do not route domestic sewer (bathrooms) through grease trap. Connect domestic sewer to sewer service after grease traps.
  - a. ***Domestic sewer has been routed through a manhole after the grease trap.***
4. Provide easements as necessary for 8' sidewalk around lot.
  - a. ***The sidewalk along Gosling Road has been widened to 8' and a draft easement has been attached to this submission.***

We trust that the above responses satisfy the concerns expressed in the City of Portsmouth's comments. Should you wish to further discuss any of the above please contact us so that we may meet and resolve any outstanding concerns.

Respectfully,  
**TFMoran, Inc.**



**Jason Cook, EIT**  
*Civil Engineer*



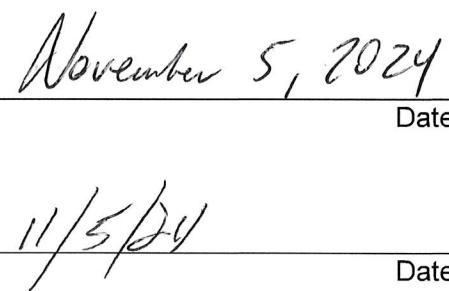
Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

NEW  
HAMPSHIRE  
**200**

### Letter of Authorization

I, Michael Gazdacko, of Colbea Enterprises, LLC, 695 George Washington Highway, Lincoln, RI, hereby authorize TFMoran, Inc., 170 Commerce Way, Suite 102, Portsmouth, NH, to act on my behalf concerning property owned by Colbea Enterprises, LLC, 1980 Woodbury Avenue, Portsmouth, NH, known as Tax Map 239, Lot 11. I hereby appoint TFMoran, Inc. as my agent to act on my behalf in the review process, to include any required signatures.

  
\_\_\_\_\_  
Client Name *Michael Gazdacko, Colbea Enterprises*

  
\_\_\_\_\_  
Date *November 5, 2024*

  
\_\_\_\_\_  
Witness *Jeff*

  
\_\_\_\_\_  
Date *11/5/24*





# 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: Colbea Enterprises, LLC Date Submitted: November 17, 2025

Application # (in City's online permitting): \_\_\_\_\_

Site Address: 1980 Woodbury Avenue Portsmouth, NH 03801 Map: 239 Lot: 11

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 <a href="#">application</a> form submitted via the City's web-based permitting program (2.5.2.1(2.5.2.3A))	Online Portal	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. <b>(2.5.2.8)</b>	Online Portal / Delivered on November 17, 2025	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. <b>(2.5.3.1B)</b>	Cover Letter	
<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. <b>(2.5.3.1C)</b>	S-01 & C-04	N/A
<input checked="" type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. <b>(2.5.3.1D)</b>	S-01	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. <b>(2.5.3.1E)</b>	C-00	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. <b>(2.5.3.1F)</b>	Abutters List	N/A
<input checked="" type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. <b>(2.5.3.1G)</b>	C-00	N/A
<input checked="" type="checkbox"/>	List of reference plans. <b>(2.5.3.1H)</b>	S-01	N/A
<input checked="" type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. <b>(2.5.3.1I)</b>	C-01	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.. <b>(2.5.4.1A)</b>	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. <b>(2.5.4.1B)</b>	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. <b>(2.5.4.1C)</b>	S-01	N/A
<input checked="" type="checkbox"/>	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. <b>(2.5.4.1D)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. <b>(2.5.4.1E)</b>	S-01	N/A
<input checked="" type="checkbox"/>	Title (name of development project), north point, scale, legend. <b>(2.5.4.2A)</b>	C-00	N/A
<input checked="" type="checkbox"/>	Date plans first submitted, date and explanation of revisions. <b>(2.5.4.2B)</b>	All Sheets	N/A
<input checked="" type="checkbox"/>	Individual plan sheet title that clearly describes the information that is displayed. <b>(2.5.4.2C)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Source and date of data displayed on the plan. <b>(2.5.4.2D)</b>	S-01	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"/>	<p><b>1. Existing Conditions: (2.5.4.3A)</b></p> <ul style="list-style-type: none"> <li>Surveyed plan of site showing existing natural and built features;</li> <li>Existing building footprints and gross floor area;</li> <li>Existing parking areas and number of parking spaces provided;</li> <li>Zoning district boundaries;</li> <li>Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre;</li> <li>Existing impervious and disturbed areas;</li> <li>Limits and type of existing vegetation;</li> <li>Wetland delineation, wetland function and value assessment (including vernal pools);</li> <li>SFHA, 100-year flood elevation line and BFE data, as required.</li> </ul>	S-01	
<input checked="" type="checkbox"/>	<p><b>2. Buildings and Structures: (2.5.4.3B)</b></p> <ul style="list-style-type: none"> <li>Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;</li> <li>Elevations: Height, massing, placement, materials, lighting, façade treatments;</li> <li>Total Floor Area;</li> <li>Number of Usable Floors;</li> <li>Gross floor area by floor and use.</li> </ul>	C-04 and Architectural Elevations	
<input checked="" type="checkbox"/>	<p><b>3. Access and Circulation: (2.5.4.3C)</b></p> <ul style="list-style-type: none"> <li>Location/width of access ways within site;</li> <li>Location of curbing, right of ways, edge of pavement and sidewalks;</li> <li>Location, type, size and design of traffic signing (pavement markings);</li> <li>Names/layout of existing abutting streets;</li> <li>Driveway curb cuts for abutting prop. and public roads;</li> <li>If subdivision; Names of all roads, right of way lines and easements noted;</li> <li>AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).</li> </ul>	C-04 & C-12	
<input checked="" type="checkbox"/>	<p><b>4. Parking and Loading: (2.5.4.3D)</b></p> <ul style="list-style-type: none"> <li>Location of off street parking/loading areas, landscaped areas/buffers;</li> <li>Parking Calculations (# required and the # provided).</li> </ul>	C-04	
<input checked="" type="checkbox"/>	<p><b>5. Water Infrastructure: (2.5.4.3E)</b></p> <ul style="list-style-type: none"> <li>Size, type and location of water mains, shut-offs, hydrants &amp; Engineering data;</li> <li>Location of wells and monitoring wells (include protective radii).</li> </ul>	C-06	
<input checked="" type="checkbox"/>	<p><b>6. Sewer Infrastructure: (2.5.4.3F)</b></p> <ul style="list-style-type: none"> <li>Size, type and location of sanitary sewage facilities &amp; Engineering data, including any onsite temporary facilities during construction period.</li> </ul>	C-06	

<input checked="" type="checkbox"/>	<b>7. Utilities: (2.5.4.3G)</b> <ul style="list-style-type: none"> <li>The size, type and location of all above &amp; below ground utilities;</li> <li>Size type and location of generator pads, transformers and other fixtures.</li> </ul>	C-06	
<input checked="" type="checkbox"/>	<b>8. Solid Waste Facilities: (2.5.4.3H)</b> <ul style="list-style-type: none"> <li>The size, type and location of solid waste facilities.</li> </ul>	C-06	
<input checked="" type="checkbox"/>	<b>9. Storm water Management: (2.5.4.3I)</b> <ul style="list-style-type: none"> <li>The location, elevation and layout of all storm-water drainage.</li> <li>The location of onsite snow storage areas and/or proposed off-site snow removal provisions.</li> <li>Location and containment measures for any salt storage facilities</li> <li>Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.</li> </ul>	C-05	
<input checked="" type="checkbox"/>	<b>10. Outdoor Lighting: (2.5.4.3J)</b> <ul style="list-style-type: none"> <li>Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.</li> </ul>	Lighting Plan	
<input checked="" type="checkbox"/>	<b>11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)</b>	Lighting Plan	
<input checked="" type="checkbox"/>	<b>12. Landscaping: (2.5.4.3K)</b> <ul style="list-style-type: none"> <li>Identify all undisturbed area, existing vegetation and that which is to be retained;</li> <li>Location of any irrigation system and water source.</li> </ul>	C-07	
<input checked="" type="checkbox"/>	<b>13. Contours and Elevation: (2.5.4.3L)</b> <ul style="list-style-type: none"> <li>Existing/Proposed contours (2 foot minimum) and finished grade elevations.</li> </ul>	S-01 & C-05	
<input checked="" type="checkbox"/>	<b>14. Open Space: (2.5.4.3M)</b> <ul style="list-style-type: none"> <li>Type, extent and location of all existing/proposed open space.</li> </ul>	S-01 & C-04	
<input checked="" type="checkbox"/>	<b>15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)</b>	S-01	
<input checked="" type="checkbox"/>	<b>16. Character/Civic District (All following information shall be included): (2.5.4.3P)</b> <ul style="list-style-type: none"> <li>Applicable Building Height (10.5A21.20 &amp; 10.5A43.30);</li> <li>Applicable Special Requirements (10.5A21.30);</li> <li>Proposed building form/type (10.5A43);</li> <li>Proposed community space (10.5A46).</li> </ul>	C-04	
<input checked="" type="checkbox"/>	<b>17. Special Flood Hazard Areas (2.5.4.3Q)</b> <ul style="list-style-type: none"> <li>The proposed development is consistent with the need to minimize flood damage;</li> <li>All public utilities and facilities are located and construction to minimize or eliminate flood damage;</li> <li>Adequate drainage is provided so as to reduce exposure to flood hazards.</li> </ul>	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 checked="" type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. (3.2.1-2)	Traffic Memo	
<input checked="" type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	Drainage Analysis Report	
<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 within wellhead protection area	
<input checked="" type="checkbox"/>	Stormwater Management and Erosion Control Plan. (7.4)	C-09	
<input checked="" type="checkbox"/>	Inspection and Maintenance Plan (7.6.5)	Drainage Analysis Report	

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"> <li>• Waivers;</li> <li>• Driveway permits;</li> <li>• Special exceptions;</li> <li>• Variances granted;</li> <li>• Easements;</li> <li>• Licenses.</li> </ul> (2.5.3.2A)		
<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"> <li>• Calculations relating to stormwater runoff;</li> <li>• Information on composition and quantity of water demand and wastewater generated;</li> <li>• Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls;</li> <li>• Estimates of traffic generation and counts pre- and post-construction;</li> <li>• Estimates of noise generation;</li> <li>• A Stormwater Management and Erosion Control Plan;</li> <li>• Endangered species and archaeological / historical studies;</li> <li>• Wetland and water body (coastal and inland) delineations;</li> <li>• Environmental impact studies.</li> </ul> (2.5.3.2B)		
<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)		

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"/>	A list of any required state and federal permit applications required for the project and the status of same. <b>(2.5.3.2E)</b>		
<input 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." <b>(2.5.4.2E)</b>		N/A
<input 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. <b>(2.5.4.2F)</b>		
<input type="checkbox"/>	Plan sheets submitted for recording shall include the following notes: <ol style="list-style-type: none"> <li>"This Site Plan shall be recorded in the Rockingham County Registry of Deeds."</li> <li>"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."</li> </ol> <b>(2.13.3)</b>		N/A

Applicant's Signature: 

Date: November 17, 2025



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## Abutters List

**COLBEA ENTERPRISES LLC**

**1980 WOODBURY AVE, PORTSMOUTH, NH**

November 17, 2025

46077.16

<b>Assessors Map</b>		<b>Abutter Name</b>	<b>Mailing Address</b>
<b>Map</b>	<b>Lot</b>		
LOCUS 239	11	COLBEA ENTERPRISES LLC	695 GEORGE WASHINGTON HWY LINCOLN, RD 02865
239	12	PORTSMOUTH HOUSING AUTHORITY	245 MIDDLE ST PORTSMOUTH, NH 03801
239	10	RIX MAR REALTY TRUST	175 CANAL ST SUITE 401 MANCHESTER, NH 03101
215	7	DANGELO INC, ATTN A/P	PO BOX 519 W BRIDGEWATER, MA 02379
34	2	CFI PROPERTIES LLC	165 FLANDERS ROAD WESTBOROUGH, MA 01851
34	1	NEWINGTON CROSSING LLC	291 CARL BROGG HIGHWAY LEBANON, NH 04027
Civil Engineers / Surveyor		TFMoran, Inc.	170 Commerce Way - Suite 102 Portsmouth, NH 03801



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## TRAFFIC MEMORANDUM

Date: 14 November 2025

To: City of Portsmouth  
1 Junkins Ave, 3<sup>rd</sup> Floor  
Portsmouth, NH

From: Robert E. Duval, P.E.

**Re: Proposed Gas Station & Convenience Store  
1980 Woodbury Avenue (Lot 239/11), Portsmouth NH  
TFM Project No. 46077.16**

---

### **INTRODUCTION**

TFMoran has prepared this traffic memo to evaluate the change in trip generation associated with a proposal to replace an existing gas station/convenience store on Woodbury Ave in Portsmouth, NH with a new gas/convenience store.

The existing site is located at the southwest corner of Woodbury Ave and Gosling Road. The site has three existing driveways, one on Gosling Road and two on Woodbury Ave.

Colbea Enterprises, LLC is proposing to raze the existing 1800 sf x 16 vfp gas/convenience store and build a new, 5500 sf x 12 vfp gas/convenience store on the lot. The three driveway access points will be maintained, with one right-in/right-out driveway on Gosling Road, and a right n enter-only an the north Woodbury Ave access closest to the intersection to be enter-only, and the south Woodbury Ave driveway to remain full access.

### **DESCRIPTION OF ROADWAYS AND INTERSECTIONS**

#### ***Woodbury Ave***

- Classification. Woodbury Ave is a City-maintained arterial that runs from Arboretum Ave at Pease Tradeport in the north to Barlett Street in downtown Portsmouth to the south.
- AADT volume. NHDOT station 82379077 on Woodbury Ave south of Durgin Lane shows 14,530 vehicles per day (2024).
- Lane widths and usage. In the project vicinity, the roadway generally provides two travel lane in each direction, with turn lanes at major intersections and curbed sidewalks on both sides of the road. The speed limit is posted at 30 mph. Pavement markings consist of a double-yellow centerline and solid white shoulder markings and white skip lines between lanes.
- Lighting. There are cobra-head lights along the roadway and at intersections.
- Adjacent uses include mainly retail and commercial with some side streets to residential neighborhoods.

### ***Gosling Road***

- Classification. Gosling Road is a City-maintained major collector that runs east from the Spaulding Turnpike Exit 1 interchange at Pease Blvd to Schiller Station on the Piscataqua River.
- AADT volume. NHDOT station 82379130 on Gosling Road west of Woodbury Ave shows 11,535 vehicles per day (2024).
- Lane widths and usage. In the project vicinity, the roadway generally provides two travel lanes in each direction, with turn lanes at major intersections. There are generally sidewalks and granite curbing on the south side and a mixture of curbing and open drainage to the north. A concrete median separates the two directions of travel. The posted speed limit is 30 mph. Pavement markings consist of a double-yellow centerline and solid white shoulder markings and white skip lines between lanes.
- Lighting. There are cobra-head lights along the roadway and at intersections.
- Adjacent uses include several large industrial, retail, and residential developments.

### ***Woodbury Ave at Gosling Road***

- Traffic Control. This is an existing 4-way signalized intersection with Gosling Road forming the eastbound and westbound approaches, and Woodbury Ave forming the northbound and southbound approaches. A raised median island is provided on all approaches except the westbound approach.
- Pedestrian facilities. There are pedestrian crosswalks at each approach with pedestrian signals and push buttons.
- Approaches. Each approach accommodates two way traffic. The eastbound approach has an exclusive right-turn lane and a left-thru lane. Westbound has one lane that provides left-thru-right movements. The northbound approach provides two exclusive left turn lanes, a thru lane and a thru-right lane. Southbound has an exclusive right-turn lane and an exclusive left-turn lane with two thru lanes.
- Signage. There are lane usage signs on each approach and roadway navigation signage.
- Lighting. There are cobra-head fixtures at the northwest and southeast corners on the mast arms.

## **TRIP GENERATION**

Trip generation rates published by the ITE (12<sup>th</sup> Edition) for Land Use Code (LUC) 945, Convenience Store / Gas Station, were used to calculate vehicle trips for the existing and proposed facilities. The following table shows existing and proposed trip generation and composition, as well as the net change in trips for the new proposal.

Site-generated trips can be broken down into Primary trips, Pass-by trips, and Diverted-linked trips<sup>1</sup>. A primary trip typically goes from the origin to the generator and then returns to the origin. Pass-by trips are attracted from traffic passing the site on an adjacent roadway; i.e. trips already using Gosling Road or Woodbury Ave. Because the site is located at the intersection of two major roadways, Diverted-Linked trips are considered Primary trips for this project.

---

<sup>1</sup> ITE Trip Generation Handbook (3<sup>rd</sup> edition), Appendix E, September 2017.

**Table 1: Trip Generation & Composition**

	Non Pass-By		Pass-By		Total Trips at Site	New Trips on Streets
	In	Out	In	Out		
<b>Existing Gas / Convenience</b>						
Weekday AM Peak Hour Adjacent Street	26	26	83	83	218	<b>52</b>
Weekday PM Peak Hour Adjacent Street	32	32	95	95	254	<b>64</b>
Weekend SAT Peak Hour of the Generator	29	29	86	86	230	<b>58</b>
<b>Proposed Gas / Convenience</b>						
Weekday AM Peak Hour Adjacent Street	32	32	102	101	267	<b>64</b>
Weekday PM Peak Hour Adjacent Street	34	34	104	103	275	<b>68</b>
Weekend SAT Peak Hour of the Generator	34	35	104	104	277	<b>69</b>
<b>Change in Trip Composition</b>						
Weekday AM Peak Hour Adjacent Street	6	6	19	18	49	<b>12</b>
Weekday PM Peak Hour Adjacent Street	2	2	9	8	21	<b>4</b>
Weekend SAT Peak Hour of the Generator	5	6	18	18	47	<b>11</b>

## **CONCLUSION**

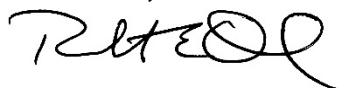
The change in traffic associated with this redevelopment will add approximately 20-50 total trips at the driveways during peak hours, or less than one added trip per minute for AM and Sat hours, and one per 3 minutes in the PM.

Due to the nature of the use, 75% of these driveway volumes will be pass-by trips already on the roadways. Thus only 4 to 12 trips per hour will be added to the roadway network.

This level of traffic is significantly less than day-to-day variations in volume along the adjacent roadways, and represents less than one additional vehicle per cycle passing through the signal. The roadways and signal are appropriately sized to accommodate this minimal change in new trips.

In summary, we find that the traffic associated with this proposal can be safely accommodated on the adjacent roadway network without need for improvements. Please let me know if you have any questions in regard to these items.

**TFMORAN, INC.**



Robert Duval, PE  
Chief Engineer

Existing Trip Generation						
Based on ITE Trip Generation 12th Edition						

ITE LUC 945 - Convenience Store / Gas Station: 1,800 S.F. (8 pumps, 16 vfp)

Time Period	Variable: VFP Subcat: GFA (2-4k) X	Rate /Eq Used	Trip Ends	Directional Split*		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	16	13.65	Rate	218	50%	50%	109 109
Weekday PM Peak Hour Adjacent Street	16	15.85	Rate	254	50%	50%	127 127
Weekend SAT Peak Hour of Generator	16	14.39	Rate	230	50%	50%	115 115
Weekday Daily	16	211.05	Rate	3377	50%	50%	1689 1688
Weekend (SAT) Daily	16	Rate	0		100%	0	0

Existing Trip Composition

ITE LUC 945 - Convenience Store / Gas Station: 1,800 S.F. (8 pumps, 16 vfp)

	Trips		Primary				Pass-By*			
			IN	OUT	% In	# In	% Out	# Out	% In	# In
AM	109	109	24%	26	24%	26	76%	83	76%	83
PM	127	127	25%	32	25%	32	75%	95	75%	95
SAT	115	115	25%	29	25%	29	75%	86	75%	86

\* Table: Vehicle Pass-By Rates by Land Use, ITE Trip Generation Manual, 12th Edition, LUC 945 Convenience Store/Gas Station, General Urban/Suburban, Weekday AM Peak Period, Weekday PM Peak Period, Sites with between 9and 20 VFP, - used PM % for SAT since rates are similar.

Proposed Trip Generation						
Based on ITE Trip Generation 12th Edition						

ITE LUC 945 - Convenience Store / Gas Station: 5,500 S.F. (6 pumps, 12 vfp)

Time Period	Variable: SF Subcat: VFP (9-15) X	Rate/ Eq Used	Trip Ends	Directional Split		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	5.5	48.6	Rate	267	50%	50%	134 133
Weekday PM Peak Hour Adjacent Street	5.5	50.08	Rate	275	50%	50%	138 137
Weekend SAT Peak Hour of Generator	5.5	50.33	Rate	277	50%	50%	138 139
Weekday Daily	5.5	579.86	Rate	3189	50%	50%	1595 1594
Weekend (SAT) Daily	5.5	700.00	Rate	3850	50%	50%	1925 1925

Proposed Trip Composition

ITE LUC 945 - Convenience Store / Gas Station: 5,500 S.F. (6 pumps, 12 vfp)

	Trips		Primary				Pass-By*			
			IN	OUT	% In	# In	% Out	# Out	% In	# In
AM	134	133	24%	32	24%	32	76%	102	76%	101
PM	138	137	25%	34	25%	34	75%	104	75%	103
SAT	138	139	25%	34	25%	35	75%	104	75%	104

\* Table: Vehicle Pass-By Rates by Land Use, ITE Trip Generation Manual, 12th Edition, LUC 945 Convenience Store/Gas Station, General Urban/Suburban, Weekday AM Peak Period, Weekday PM Peak Period, Sites with between 9and 20 VFP, - used PM % for SAT since rates are similar.

Change in Trip Generation

TOTAL TRIP GENERATION	Trip Ends	In	Out	Change in Trip Generation	
				Weekday AM Peak Hour Adjacent Street	Weekday PM Peak Hour Adjacent Street
	49	25	24		
	21	11	10		
	47	23	24		
	-188	-94	-94		
Weekend (SAT) Daily	no existing data				

Change in Trip Composition

	Trips		Primary			Pass-By*		
			IN	OUT	# In	# Out	# In	# Out
AM	25	24			6	6	19	18
PM	11	10			2	2	9	8
SAT	23	24			5	6	18	18

Existing Trip Generation - Comparison between variables							
Based on ITE Trip Generation 12th Edition							

ITE LUC 945 - Convenience Store / Gas Station: 1,800 S.F. (8 pumps, 16 vfp)

Time Period	Variable: VFP Subcat: GFA (2-4k) X	Rate /Eq Used	Trip Ends	Directional Split*		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	16	13.65	Rate	218	50%	50%	109
Weekday PM Peak Hour Adjacent Street	16	15.85	Rate	254	50%	50%	127
Weekend SAT Peak Hour of Generator	16	14.39	Rate	230	50%	50%	115
Weekday Daily	16	211.05	Rate	3377	50%	50%	1689
Weekend (SAT) Daily	16		Rate	0		100%	0

ITE LUC 945 - Convenience Store / Gas Station: 1,800 S.F. (8 pumps, 16 vfp)

Time Period	Variable: SF Subcat: VFP (16-24) X	Rate/ Eq Used	Trip Ends	Directional Split		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	1.8	64.97	Rate	117	51%	49%	60
Weekday PM Peak Hour Adjacent Street	1.8	61.09	Rate	110	50%	50%	55
Weekend SAT Peak Hour of Generator	1.8	54.02	Rate	97	50%	50%	49
Weekday Daily	1.8	642.41	Rate	1156	50%	50%	578
Weekend (SAT) Daily	1.8		Rate	0		100%	0

**Description of LUC 945:**

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells groceries and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and premade sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating

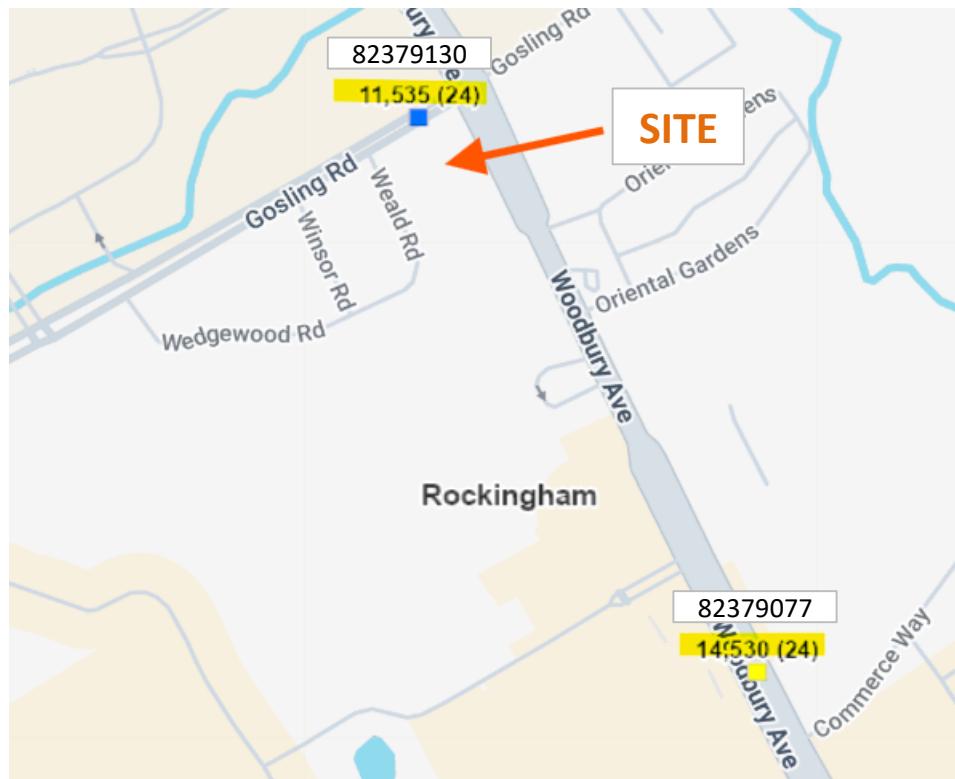
Proposed Trip Generation - Comparision between variables							
Based on ITE Trip Generation 12th Edition							

ITE LUC 945 - Convenience Store / Gas Station: 5,500 S.F. (6 pumps, 12 vfp)

Time Period	Variable: VFP Subcat: GFA (4-5.5k) X	Rate/ Eq Used	Trip Ends	Directional Split		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	12	19.91	Rate	239	51%	49%	122 117
Weekday PM Peak Hour Adjacent Street	12	19.15	Rate	230	50%	50%	115 115
Weekend SAT Peak Hour of Generator	12	19.2	Rate	230	51%	49%	118 112
Weekday Daily	12	203.49	Rate	2442	50%	50%	1221 1221
Weekend (SAT) Daily	12	291.67	Rate	3500	50%	50%	1750 1750

ITE LUC 945 - Convenience Store / Gas Station: 5,500 S.F. (6 pumps, 12 vfp)

Time Period	Variable: SF Subcat: VFP (9-15) X	Rate/ Eq Used	Trip Ends	Directional Split		Directional Distribution	
				In	Out	In	Out
Weekday AM Peak Hour Adjacent Street	5.5	48.6	Rate	267	50%	50%	134 133
Weekday PM Peak Hour Adjacent Street	5.5	50.08	Rate	275	50%	50%	138 137
Weekend SAT Peak Hour of Generator	5.5	50.33	Rate	277	50%	50%	138 139
Weekday Daily	5.5	579.86	Rate	3189	50%	50%	1595 1594
Weekend (SAT) Daily	5.5	700.00	Rate	3850	50%	50%	1925 1925





## Traffic Count (TCDS)

Home    Locate    Locate All    Email This    Backup    Auto-Locate:

List View    All DIRs    Save Search    Report Center    Ad-Hoc Rpts    Graphs/Rpts

Record		◀	◀	1	▶	▶	of 1	Goto Record	go
Location ID	82379130							MPO ID	
Type	SPOT							HPMS ID	
On NHS	No							On HPMS	Yes
LRS ID	L3790486							LRS Loc Pt.	
SF Group	04 (2024)							Route Type	
AF Group	04 (2024)							Route	
GF Group	E (2024)							Active	Yes
Class Dist Grp	Default (2024)							Category	Short Count Volume
Seas Clss Grp	Default (2024)								
WIM Group	Default (2024)								
QC Group	Default								
Fnct'l Class	Major Collector							Milepost	
Located On	Gosling Rd								
Loc On Alias	GOSLING RD WEST OF WOODBURY AVENUE								
More Detail ▶									

### STATION DATA

Directions: **2-WAY**

AADT		Graph	
Year	AADT	DHV-30	K %
2024	11,535 <sup>3</sup>		
2023	11,309 <sup>3</sup>		11
2022	11,055	1,269	11
2021	11,530 <sup>3</sup>		12

**VOLUME COUNT**

	Date	Int	Total	Status
Thu 7/17/2025	15	12,563	✓	
Wed 7/16/2025	15	11,947	✓	
Thu 8/11/2022	60	12,922	✓	
Wed 8/10/2022	60	12,715	✓	
Tue 8/9/2022	60	13,064	✓	
Thu 6/6/2019	60	14,066	✓	
Wed 6/5/2019	60	14,524	✓	
Tue 6/4/2019	60	14,258	✓	
Wed 7/27/2016	60	15,840	✓	
Tue 7/26/2016	60	16,166	✓	

46077-16 Traffic.xlsx



## Traffic Count (TCDS)

Home   Locate   Locate All   Email This   Backup   Auto-Locate:

List View   All DIRs   Save Search   Report Center   Ad-Hoc Rpts   Graphs/Rpts

Record	1	of 1	Goto Record	go																																																					
Location ID	82379077		MPO ID																																																						
Type	SPOT		HPMS ID																																																						
On NHS	No		On HPMS	Yes																																																					
LRS ID	N3790035		LRS Loc Pt.																																																						
SF Group	04 (2024)	►	Route Type																																																						
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WIM Group	Default (2024)	►																																																							
QC Group	Default																																																								
Fnct'l Class	Minor Arterial		Milepost																																																						
Located On	Woodbury Ave																																																								
Loc On Alias	WOODBURY AVE SOUTH OF DURGIN LANE (SB-NB) (81379208-81379209)																																																								
More Detail ►																																																									
<b>STATION DATA</b>																																																									
Directions: <b>2-WAY</b> <b>NB</b> <b>SB</b>																																																									
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	Date	Int	Total	Status																																																					
	Thu 7/20/2023	15	16,472	✓																																																					
	Wed 7/19/2023	15	16,728	✓																																																					
	Tue 7/18/2023	15	16,471	✓																																																					
	Thu 8/13/2020	60	16,627	✓																																																					
	Wed 8/12/2020	60	16,071	✓																																																					
	Tue 8/11/2020	60	16,511	✓																																																					
	Thu 9/21/2017	60	16,733	✓																																																					
	Wed 9/20/2017	60	18,212	✓																																																					
	Tue 9/19/2017	60	17,778	✓																																																					

# ***DRAINAGE ANALYSIS REPORT***

**F O R**

## **Proposed Gas Station & Convenience Store**

**1980 Woodbury Avenue  
Portsmouth, NH 03801**

**Tax Map 239, Lot 11**

**Owned by Colbea Enterprises, LLC**

**November 17, 2025**

**Prepared By:**



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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## **1.0 - SUMMARY & PROJECT DESCRIPTION**

The project includes the development of a Gas Station and Convenience Store at 1980 Woodbury Avenue, Portsmouth, NH. The existing Tax Map 239 Lot 11 is approximately 0.88 acres and currently contains a gas station and convenience store. The site is within the Gateway Neighborhood Mixed Use Corridor and is adjacent to the intersection of Woodbury Avenue and Gosling Road as well as the Portsmouth – Newington Town border.

The proposed project is to construct a 5,500 s.f. single-story building. Associated improvements include and are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes a total of 30,521 SF of impervious area within the property lines and approximately 38,399 SF of disturbance to facilitate the development.

This analysis has been completed to verify the project will not pose adverse stormwater effects on-site and off-site. Compared to the pre-development conditions, the post-development stormwater management system has been designed to reduce peak runoff rates, reduce, or increases within regulatory limits, the runoff volume, reduces the risk of erosion and sedimentation, and improves stormwater runoff quality. In addition, Best Management Practices are employed to formulate a plan that assures stormwater quality both during and after construction. The following summarizes the findings from the study.

## **2.0 - CALCULATION METHODS**

The design storms analyzed in this study are the 2-year, 10-year, 25-year and 50-year 24-hour storm events. The software program, HydroCAD version 10.00<sup>1</sup> was utilized to calculate the peak runoff rates from these storm events. The program estimates the peak rates using the TR-20 method. A Type III storm pattern was used in the model. Rainfall frequencies for the analyzed region were also incorporated into the model. Rainfall frequencies from the higher of the Extreme Precipitation Rates from Cornell University's Northeast Regional Climate Center (see Appendix A) and Portsmouth Site Plan Review Regulations were used to determine the storm-event intensities, see Table 1. Due to the project's location within the Coastal/Great Bay Region community, the design rainfall increases the Cornell rates by 15% to address projected storm surge, sea level rise, and precipitation events per Env-Wq 1503.08(I). Design standards were taken from the New Hampshire Stormwater Manual, December 2008<sup>2</sup>.

24-HOUR RAINFALL RATES		
Storm-Event (year)	Northeast Regional Climate Center Extreme Precipitation (in)	Design Rainfall (in)
2	3.19	3.67
10	4.84	5.57
25	6.13	7.05
50	7.35	8.45

**Table 1 – 24-Hour Rainfall Rates**

<sup>1</sup> HydroCAD version 10.00, HydroCAD Software Solutions LLC, Chocorua, NH, 2013.

<sup>2</sup> New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

Time of Concentration is the time it takes for water to flow from the hydraulically most remote point in the watershed (with the longest travel time) to the watershed outlet. This time is determined by calculating the time it takes runoff to travel this route under one of three hydrologic conditions: sheet flow, shallow concentrated flow, or channel flow. Because the Intensity-Duration-Frequency (IDF) curve is steep with short TC's, estimating the actual intensity is subject to error and overestimates actual runoff. Due to this, the TC's are adjusted to a minimum of 6 minutes.

### **3.0 – EXISTING SITE CONDITIONS**

The soils within the proposed area of disturbance are identified by the NRCS Web Soil (see Appendix B for detail and soil locations). The soils are composed of Urban Land (No HSG Rating).

### **4.0 - PRE-DEVELOPMENT CONDITIONS**

The pre-development condition is characterized by one watershed divided into many subcatchments. Stormwater runoff from the site primarily drains to the municipal stormwater system. There are catch basins located throughout the site that lead to a catch basin in Gosling Road before leaving the area. Pre-development subcatchment areas are depicted on the attached plan entitled "Pre-Development Drainage Map," Sheet D-01 in Appendix G.

In the pre-development condition, the total impervious area is 31,059 SF over a total drainage analysis area of 38,399 SF.

### **5.0 - POST-DEVELOPMENT CONDITIONS**

The post-development condition is characterized by one watershed divided into many subcatchment areas. Post-development subcatchment areas are depicted on the attached plan entitled "Post-Development Drainage Map," sheet D-02 in Appendix G.

In the post-development condition, the total impervious area is 30,521 SF over a total drainage analysis area of 30,399 SF. Impervious area from the project consists of a 5,500 SF footprint Convenience Store and associated improvements. A Stormceptor, Stormtech chambers, and Jellyfish filter are proposed to treat and mitigate the stormwater runoff from the impact of the new impervious area from the proposed development.

Table 2 summarizes the pre- and post-development peak runoff rates for the 2-year, 10-year, 25-year, and 50-year 24-hour Type III storm events for all discharge. Table 3 summarizes the pre- and post-development peak runoff volumes for the 2-year 24-hour Type III storm events for all discharge.

TABLE 2 – SURFACE WATER PEAK RUNOFF RATE COMPARISON (CF)					
POINT OF INTEREST		DESIGN STORM			
		2-year	10-year	25-year	50-year
Map 239 Lot 12	Pre	0.0	0.1	0.1	0.1
	Post	0.0	0.1	0.1	0.1
CB #1428	Pre	2.4	3.7	4.8	5.8
	Post	2.3	3.6	4.5	5.3
CB #1343	Pre	0.4	0.7	0.9	1.0
	Post	0.0	0.1	0.1	0.1

**Table 2 - Pre and Post- Development Peak Runoff Rate Comparison**

TABLE 3 – SURFACE WATER PEAK RUNOFF VOLUME COMPARISON (CF)					
POINT OF INTEREST		DESIGN STORM			
		2-year			
Map 239 Lot 12	Pre	85			
	Post	132			
CB #1428	Pre	7,973			
	Post	9,261			
CB #1343	Pre	1,462			
	Post	83			

**Table 3 - Pre and Post- Development Peak Runoff Volume Comparison**

The proposed project reduces peak rates of runoff compared to existing conditions for all storm events, in accordance Portsmouth stormwater regulations. Additionally, per NHDES, the 2-year 24-hour storm does not result in an increased peak flow rate and reduces, or increases volume within the limits of Env-Wq 1507.05(b)(1), from the pre-development to post-development condition. There will be no adverse effects on the abutting properties from the proposed stormwater management system.

Appendices C and E summarizes all 24-hour storm events for pre- and post-development drainage calculations using HydroCAD analysis. Appendices D and F provide a full summary of the 10-year, 24-hour storm for the pre- and post-development drainage calculations using HydroCAD analysis.

There were four warning messages for the 10-year storm event related to the proposed Stormtech detention system:

- [80] Warning: Pond CB05 exceeded Pond CB07 by 0.02' @ 12.10hrs (0.5cfs 144cf)
- [80] Warning: Pond CB07 exceeded Pond CB06 by 0.25' @ 12.10hrs (1.8cfs 442cf)
- [80] Warning: Pond CB07 exceeded Pond CB08 by 0.20' @ 12.10hrs (0.8cfs 153cf)
- [80] Warning: Pond CB09 exceeded Pond CB10 by 0.04' @ 12.10hrs (0.8cfs 251cf)
- [80] Warning: Pond DMH03 exceeded Pond CB04 by 0.04' @ 12.15hrs (0.8cfs 272cf)

Warning 80 occurs due stormwater staging in the Subsurface Infiltration Basins, causing some adjacent stormwater drainage systems to also stage stormwater. The exceeded catch basins

and manholes are located where inverts into the basins are similar to the bottom of the chambers.

Catch basin and manhole inverts were adjusted to minimize the severity of this occurrence. Catch basin and manholes have been designed to maintain 2' of cover over culverts, slopes of at least 0.5%, and 0.1' drop between inlet and outlet. For all analyzed storm events, stormwater contained in catch basins and manholes do not overflow structure rims.

## **6.0 – REGULATORY COMPLIANCE**

The following regulatory requirements are provided to show project conformance to the applicable criteria of the City of Portsmouth stormwater management regulations defined in the Portsmouth Site Plan Review Regulations Section 7.6.1. All regulations are met.

1. *Adequate provisions shall be made to retain natural and existing flow patterns and maintain existing groundwater recharge volumes to the maximum extent feasible, where appropriate, and/or retain, treat, and/or potentially reuse the stormwater generated on the site.*
  - a. In both the existing and proposed site conditions, the site will drain to the municipal system via catch basins along Woodbury Avenue and Gosling Road.
2. *Efforts shall be made to utilize methods that disconnect and/or reduce the amount of effective impervious area including, but not limited to, infiltration trenches, dry wells, bioretention areas, filter strips, permeable pavement, and cisterns.*
  - a. The proposed site improvements will result in an overall decrease in impervious area compared to what exists today. In addition to the reduced impervious area, significant plantings are proposed where almost no vegetation exists today.
3. *Applicants shall demonstrate why on-site infiltration approaches are not possible or adequate before proposing the use of conventional systems that rely on collection and conveyance to remove runoff from the site.*
  - a. Due to the location of this development and classification of the site, by NRCS, as urban land, the site is not conditioned for infiltration.
4. *All proposed stormwater treatment practices shall be adequately sized to treat the Water Quality Volume (WQV) or Water Quality Flow (WQF) in order to minimize pollutant discharges and be properly maintained in accordance with NH Administrative Code PART Env-Wq 1507.03 “Pollutant Discharge Minimization Requirements” and PART Env-Wq 1707.03, respectively (or as revised/renumbered).*
  - a. The proposed treatment methods, including the Stormceptor and Jellyfish filter are sized to handle the water quality flow and water quality volume.
5. *Where vegetative areas are used to control and treat stormwater, such areas shall be planted with appropriate non-invasive groundcover, shrubs, and/or other plantings sufficient to prevent soil erosion and to promote proper treatment of stormwater.*
  - a. Vegetative areas for stormwater treatment are not proposed although all plants proposed on-site are non-invasive.
6. *Measures shall be taken to control the post-development peak rate of runoff so that it does not exceed pre-development runoff for the 2, 10, 25, and 50-year, 24-hour storm event. Rainfall amounts for these events shall be based on local rainfall data using the extreme precipitation table provided by the Northeast Regional Climate Center or as otherwise required by the NHDES Alteration of Terrain requirements, if applicable.*

- a. The peak rate of runoff is maintained or decreased for all storm events listed above.
7. *Where stormwater will discharge directly to tidal waters, the Planning Board may waive peak flow control requirements provided the Applicant can demonstrate minimal risk of flooding or increased erosion as result of the discharge, adequate onsite stormwater treatment is provided for water quality purposes and the City Engineer concurs with the waiver request.*
  - a. The site does not drain directly to tidal waters.
8. *Site development shall comply with the requirements of the Flood Plain District as regulated by the Zoning Ordinance.*
  - a. The site is not within the Flood Plain District.
9. *BMP designs shall include appropriate separation distances from the seasonal high-water table elevations, where appropriate, and as specified in the New Hampshire Stormwater Manual (as amended).*
  - a. The proposed stormtech system includes an impervious liner. This will provide appropriate separation from the estimated seasonal high water table.
10. *Salt storage areas shall be covered using permanent or semi-permanent measures and loading/offloading areas shall be located and designed to not drain directly to receiving waters and be maintained with good housekeeping measures in accordance with NHDES guidance documents.*
  - a. There are no salt storage areas proposed.
11. *Snow storage areas shall be located such that no direct discharges to receiving waters are possible from the storage site. Runoff from snow storage areas shall enter treatment areas to remove suspended solids and other contaminants before being discharged to receiving waters or preferably be allowed to infiltrate into the groundwater.*
  - a. Proposed snow storage areas will drain towards the catch basins on-site and will pass through the proposed treatment systems.
12. *The applicant shall demonstrate that there is sufficient on- and off-site downstream channel or system capacity to carry the stormwater run-off volume and flow without adverse effects, such as flooding and erosion of stream banks and shoreland areas.*
  - a. While the stormwater runoff leaves the site in three different areas, it ultimately all reaches the municipal system. The total volume of runoff in the two-year storm, when comparing post development conditions to pre-development, is reduced by 44 cubic feet.
13. *Stormwater treatment BMPs involving excavation or other site alterations shall be located outside of protected wetland buffer areas as defined in the City's Zoning Ordinance Article 10 -- Environmental Protection Standards unless approved under a Conditional Use Permit as outlined Article 10, as amended.*
  - a. There are no wetlands or associated buffers located on-site.
14. *In addition to the requirements of this Article, all developments subject to Site Plan Review shall comply with the City's Regulation of Discharges into the Stormwater Drainage System Ordinance.*
  - a. This project will comply with the Stormwater Drainage System Ordinance. A Stormwater Connection Permit will be obtained.

15. *The applicant shall submit documentation demonstrating how and who will maintain stormwater treatment devices post-development.*
  - a. An Inspection and Maintenance Manual has been included as a part of this Drainage Analysis Report. The manual provides language as to who is responsible for maintenance.
  
16. *Property owners of new development projects that will add new paved areas shall minimize their salt use through appropriate measures including hiring Green SnowPro certified operators for winter maintenance.*
  - a. Note 4 on Sheet C-04 describes the winter maintenance requirements listed above.

## **7.0 – BEST MANAGEMENT PRACTICES**

Best Management Practices will be developed in accordance with the New Hampshire Stormwater Manual, Volumes Two and Three, December 2008<sup>3</sup> to formulate a plan that assures stormwater quality both during and after construction. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and mitigate any adverse impacts to stormwater quality resulting from development. Best Management Practices for this project include:

- Temporary practices to be implemented during construction.
- Permanent practices to be implemented after construction.

### **7.1 – TEMPORARY PRACTICES**

1. Erosion, sediment, and stormwater detention measures must be installed as directed by the engineer.
2. All disturbed areas, as well as loam stockpiles, shall be seeded and contained by a silt barrier.
3. Silt barriers must be installed prior to any construction commencing. All erosion control devices including silt barriers and storm drain inlet filters shall be inspected at least once per week and following any rainfall. All necessary maintenance shall be completed within twenty-four (24) hours.
4. Any silt barriers found to be failing must be replaced immediately. Sediment is to be removed from behind the silt fence if found to be one-third the height of the silt barrier or greater.
5. Any area of the site, which has been disturbed and where construction activity will not occur for more than twenty-one (21) days, shall be temporarily stabilized by mulching and seeding.
6. No construction materials shall be buried on-site.

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<sup>3</sup> New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

7. After all areas have been stabilized, temporary practices are to be removed, and the area they are removed from must be smoothed and revegetated.
8. Areas must be temporarily stabilized within 14 days of disturbance or seeded and mulched within 3 days of final stabilization.
9. After October 15<sup>th</sup>, incomplete driveways or parking areas must be protected with a minimum of 3" of crushed gravel, meeting the standards of NHDOT item 304.3.
10. An area shall be considered stable if one of the following has occurred:
  - a) Base course gravels are installed in areas to be paved.
  - b) A minimum of 85% vegetated growth has been established.
  - c) A minimum of 3" of non-erosive material such as stone or rip rap has been installed.
  - d) Erosion control blankets have been properly installed.

## **7.2 – PERMANENT PRACTICES**

The objectives for developing permanent Best Management Practices for this site include the following:

1. Maintain existing runoff flow characteristics.
  - a) Drainage is structured to minimize any offsite increase in runoff.
2. Treatment BMP's are established to ensure the water quality.
3. Maintenance schedules are set to safeguard the long-term working of the stormwater BMP's.

A Stormwater Management Inspection & Maintenance Manual (see Appendix H) is provided to ensure the proper functioning of the system over time.

## **7.3 – BEST MANAGEMENT PRACTICE EFFICIENCIES**

Appendix E of Volume 2 of the New Hampshire Stormwater <sup>4</sup> lists the pollutant removal efficiencies of various BMP's. All proposed BMP's meet all state and City requirements for total suspended solids (TSS) and pollutant removal, Total Nitrogen (TN), and Total Phosphorous (TP).

In-Ground and Subsurface Infiltration Basins (greater than 75 FT from surface water) have 90% TSS removal efficiency, 60% TN removal efficiency, and 65% TP efficiency.

## **8.0 – CONCLUSION**

The proposed stormwater management system will treat, infiltrate, and mitigate the runoff generated from the proposed development and provide protection of groundwater and surface waters as required through the City of Portsmouth stormwater management regulations. The project has been designed in accordance with City regulations. There is little change in the

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<sup>4</sup> New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

flow characteristics of the site. The proposed project has been designed to pose no adverse effects on surrounding properties.

Respectfully,  
**TFMoran, Inc. Seacoast Division**

**Jack McTigue, PE**  
*Project Manager, CPESC*

## **APPENDIX A – EXTREME PRECIPITATION RATES**

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# Extreme Precipitation Tables

## Northeast Regional Climate Center

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

Metadata for Point																
Smoothing	Yes															
State																
Location																
Latitude	43.094 degrees North															
Longitude	70.794 degrees West															
Elevation	10 feet															
Date/Time	Mon Nov 03 2025 11:55:42 GMT-0500 (Eastern Standard Time)															

## Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.26	0.40	0.50	0.65	0.81	1.04	<b>1yr</b>	0.70	0.98	1.21	1.56	2.02	2.65	2.90	<b>1yr</b>	2.34	2.79	3.20	3.92	4.52	<b>1yr</b>
<b>2yr</b>	0.32	0.50	0.62	0.81	1.02	1.30	<b>2yr</b>	0.88	1.18	1.51	1.93	2.48	<b>3.19</b>	3.55	<b>2yr</b>	2.83	3.41	3.91	4.65	5.30	<b>2yr</b>
<b>5yr</b>	0.37	0.58	0.72	0.97	1.24	1.60	<b>5yr</b>	1.07	1.46	1.88	2.42	3.12	4.05	4.55	<b>5yr</b>	3.58	4.38	5.01	5.90	6.66	<b>5yr</b>
<b>10yr</b>	0.41	0.64	0.81	1.11	1.44	1.88	<b>10yr</b>	1.24	1.71	2.21	2.87	3.73	<b>4.84</b>	5.50	<b>10yr</b>	4.28	5.28	6.04	7.06	7.93	<b>10yr</b>
<b>25yr</b>	0.47	0.75	0.96	1.32	1.75	2.31	<b>25yr</b>	1.51	2.12	2.75	3.60	4.70	<b>6.13</b>	7.05	<b>25yr</b>	5.43	6.78	7.73	8.96	9.99	<b>25yr</b>
<b>50yr</b>	0.53	0.85	1.09	1.52	2.05	2.73	<b>50yr</b>	1.77	2.50	3.25	4.28	5.62	<b>7.35</b>	8.53	<b>50yr</b>	6.50	8.20	9.33	10.73	11.91	<b>50yr</b>
<b>100yr</b>	0.60	0.96	1.24	1.75	2.38	3.20	<b>100yr</b>	2.06	2.95	3.84	5.08	6.70	8.80	10.31	<b>100yr</b>	7.79	9.92	11.26	12.85	14.19	<b>100yr</b>
<b>200yr</b>	0.66	1.08	1.40	2.01	2.78	3.77	<b>200yr</b>	2.40	3.47	4.55	6.05	8.00	10.54	12.47	<b>200yr</b>	9.33	11.99	13.59	15.41	16.92	<b>200yr</b>
<b>500yr</b>	0.78	1.29	1.68	2.44	3.41	4.68	<b>500yr</b>	2.94	4.32	5.67	7.60	10.12	13.39	16.04	<b>500yr</b>	11.85	15.43	17.44	19.59	21.37	<b>500yr</b>

## Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.23	0.36	0.44	0.59	0.73	0.89	<b>1yr</b>	0.63	0.87	0.92	1.31	1.66	2.22	2.49	<b>1yr</b>	1.97	2.39	2.83	3.18	3.88	<b>1yr</b>
<b>2yr</b>	0.31	0.49	0.60	0.81	1.00	1.19	<b>2yr</b>	0.86	1.16	1.37	1.82	2.34	3.04	3.43	<b>2yr</b>	2.69	3.30	3.80	4.52	5.04	<b>2yr</b>
<b>5yr</b>	0.35	0.54	0.67	0.92	1.17	1.40	<b>5yr</b>	1.01	1.37	1.61	2.13	2.75	3.77	4.17	<b>5yr</b>	3.34	4.01	4.68	5.50	6.21	<b>5yr</b>
<b>10yr</b>	0.38	0.59	0.73	1.02	1.32	1.60	<b>10yr</b>	1.14	1.56	1.81	2.40	3.08	4.35	4.84	<b>10yr</b>	3.85	4.65	5.40	6.37	7.15	<b>10yr</b>
<b>25yr</b>	0.44	0.66	0.83	1.18	1.55	1.90	<b>25yr</b>	1.34	1.86	2.10	2.78	3.57	4.68	5.87	<b>25yr</b>	4.14	5.64	6.59	7.74	8.63	<b>25yr</b>
<b>50yr</b>	0.48	0.73	0.91	1.31	1.76	2.17	<b>50yr</b>	1.52	2.12	2.35	3.11	3.97	5.28	6.78	<b>50yr</b>	4.68	6.52	7.66	8.97	9.95	<b>50yr</b>
<b>100yr</b>	0.53	0.81	1.01	1.46	2.00	2.47	<b>100yr</b>	1.73	2.41	2.63	3.46	4.41	5.93	7.82	<b>100yr</b>	5.25	7.52	8.90	10.41	11.47	<b>100yr</b>
<b>200yr</b>	0.59	0.89	1.12	1.63	2.27	2.82	<b>200yr</b>	1.96	2.75	2.93	3.85	4.87	6.64	9.03	<b>200yr</b>	5.88	8.68	10.33	12.10	13.25	<b>200yr</b>
<b>500yr</b>	0.68	1.02	1.31	1.90	2.70	3.37	<b>500yr</b>	2.33	3.29	3.40	4.41	5.57	7.72	10.91	<b>500yr</b>	6.83	10.49	12.58	14.78	16.02	<b>500yr</b>

## Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.28	0.44	0.53	0.72	0.88	1.08	<b>1yr</b>	0.76	1.06	1.25	1.75	2.21	2.98	3.13	<b>1yr</b>	2.64	3.01	3.56	4.36	5.01	<b>1yr</b>
<b>2yr</b>	0.33	0.52	0.63	0.86	1.06	1.26	<b>2yr</b>	0.91	1.23	1.48	1.96	2.51	3.41	3.67	<b>2yr</b>	3.02	3.53	4.06	4.81	5.60	<b>2yr</b>
<b>5yr</b>	0.40	0.61	0.76	1.04	1.33	1.61	<b>5yr</b>	1.15	1.57	1.88	2.53	3.24	4.32	4.92	<b>5yr</b>	3.82	4.74	5.34	6.33	7.11	<b>5yr</b>
<b>10yr</b>	0.46	0.71	0.88	1.23	1.59	1.96	<b>10yr</b>	1.38	1.92	2.27	3.09	3.93	5.31	6.15	<b>10yr</b>	4.70	5.92	6.75	7.78	8.69	<b>10yr</b>
<b>25yr</b>	0.57	0.87	1.08	1.54	2.02	2.54	<b>25yr</b>	1.75	2.49	2.93	4.05	5.10	7.72	8.27	<b>25yr</b>	6.83	7.95	9.05	10.25	11.33	<b>25yr</b>
<b>50yr</b>	0.66	1.01	1.25	1.80	2.43	3.09	<b>50yr</b>	2.09	3.02	3.57	4.96	6.24	9.65	10.36	<b>50yr</b>	8.54	9.97	11.30	12.62	13.86	<b>50yr</b>
<b>100yr</b>	0.78	1.17	1.47	2.12	2.91	3.75	<b>100yr</b>	2.51	3.67	4.34	6.10	7.65	12.07	12.99	<b>100yr</b>	10.68	12.49	14.11	15.56	16.97	<b>100yr</b>
<b>200yr</b>	0.90	1.36	1.73	2.50	3.48	4.57	<b>200yr</b>	3.01	4.47	5.29	7.50	9.37	15.13	16.29	<b>200yr</b>	13.39	15.66	17.65	19.17	20.79	<b>200yr</b>
<b>500yr</b>	1.12	1.66	2.14	3.11	4.43	5.92	<b>500yr</b>	3.82	5.79	6.85	9.90	12.28	20.41	21.99	<b>500yr</b>	18.07	21.14	23.73	25.28	27.19	<b>500yr</b>

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**APPENDIX B – SITE-SPECIFIC SOIL SURVEY &**  
**NRCS WEB SOIL REPORT**

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Hydrologic Soil Group—Rockingham County, New Hampshire  
(1980 Woodbury Avenue)



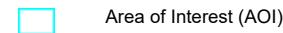
Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

11/3/2025  
Page 1 of 4

## MAP LEGEND

### Area of Interest (AOI)



Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

	A
	A/D
	B
	B/D
	C
	C/D
	D
	Not rated or not available

#### Soil Rating Lines

	A
	A/D
	B
	B/D
	C
	C/D
	D
	Not rated or not available

#### Soil Rating Points

	A
	A/D
	B
	B/D

### C

### C/D

### D

### Not rated or not available

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire  
Survey Area Data: Version 28, Sep 9, 2025

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

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

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



## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
33A	Scitico silt loam, 0 to 5 percent slopes	C/D	0.0	0.0%
699	Urban land		3.7	100.0%
<b>Totals for Area of Interest</b>			<b>3.7</b>	<b>100.0%</b>

### Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

### Rating Options

*Aggregation Method: Dominant Condition*



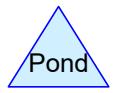
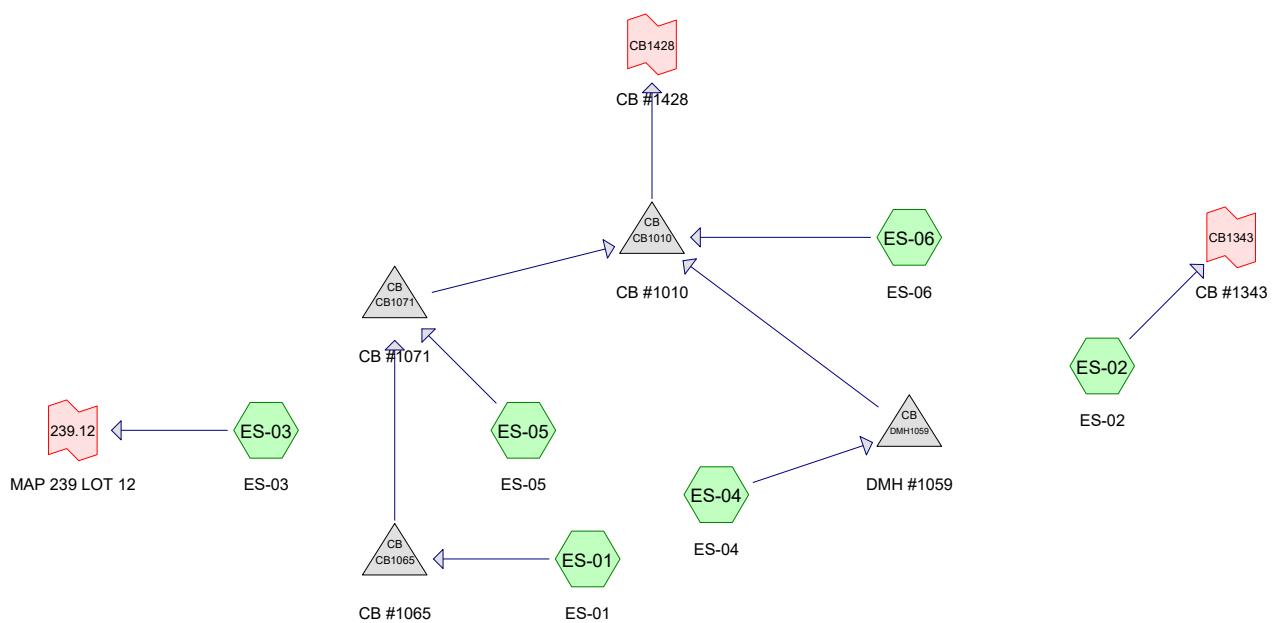
*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

## **APPENDIX C – PRE-DEVELOPMENT CALCULATIONS**

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## Pre-Development Drainage



Routing Diagram for 46077-16 Drainage Analysis

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## Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
7,340	74	>75% Grass cover, Good, HSG C (ES-01, ES-02, ES-03, ES-05, ES-06)
23,929	98	Paved Parking, HSG C (ES-01, ES-02, ES-05, ES-06)
7,130	98	Roofs, HSG C (ES-04)
<b>38,399</b>	<b>93</b>	<b>TOTAL AREA</b>

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## Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
38,399	HSG C	ES-01, ES-02, ES-03, ES-04, ES-05, ES-06
0	HSG D	
0	Other	
<b>38,399</b>		<b>TOTAL AREA</b>

**46077-16 Drainage Analysis**

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Type III 24-hr 2-year Rainfall=3.67"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentES-01: ES-01**

Runoff Area=12,593 sf 65.85% Impervious Runoff Depth>2.61"  
Flow Length=182' Tc=6.0 min CN=90 Runoff=0.8 cfs 2,734 cf

**SubcatchmentES-02: ES-02**

Runoff Area=5,652 sf 87.38% Impervious Runoff Depth>3.10"  
Flow Length=171' Tc=6.0 min CN=95 Runoff=0.4 cfs 1,462 cf

**SubcatchmentES-03: ES-03**

Runoff Area=749 sf 0.00% Impervious Runoff Depth>1.36"  
Flow Length=11' Slope=0.2200 '/' Tc=6.0 min CN=74 Runoff=0.0 cfs 85 cf

**SubcatchmentES-04: ES-04**

Runoff Area=7,130 sf 100.00% Impervious Runoff Depth>3.43"  
Tc=6.0 min CN=98 Runoff=0.6 cfs 2,040 cf

**SubcatchmentES-05: ES-05**

Runoff Area=2,495 sf 73.07% Impervious Runoff Depth>2.80"  
Flow Length=77' Slope=0.0420 '/' Tc=6.0 min CN=92 Runoff=0.2 cfs 582 cf

**SubcatchmentES-06: ES-06**

Runoff Area=9,780 sf 90.74% Impervious Runoff Depth>3.21"  
Flow Length=83' Slope=0.0450 '/' Tc=6.0 min CN=96 Runoff=0.8 cfs 2,617 cf

**Pond CB1010: CB #1010**

Peak Elev=45.59' Inflow=2.4 cfs 7,973 cf  
12.0" Round Culvert n=0.013 L=66.0' S=0.0100 '/' Outflow=2.4 cfs 7,973 cf

**Pond CB1065: CB #1065**

Peak Elev=47.57' Inflow=0.8 cfs 2,734 cf  
12.0" Round Culvert n=0.013 L=123.0' S=0.0106 '/' Outflow=0.8 cfs 2,734 cf

**Pond CB1071: CB #1071**

Peak Elev=46.23' Inflow=1.0 cfs 3,316 cf  
12.0" Round Culvert n=0.013 L=46.0' S=0.0109 '/' Outflow=1.0 cfs 3,316 cf

**Pond DMH1059: DMH #1059**

Peak Elev=46.81' Inflow=0.6 cfs 2,040 cf  
10.0" Round Culvert n=0.013 L=95.0' S=0.0126 '/' Outflow=0.6 cfs 2,040 cf

**Link 239.12: MAP 239 LOT 12**

Inflow=0.0 cfs 85 cf  
Primary=0.0 cfs 85 cf

**Link CB1343: CB #1343**

Inflow=0.4 cfs 1,462 cf  
Primary=0.4 cfs 1,462 cf

**Link CB1428: CB #1428**

Inflow=2.4 cfs 7,973 cf  
Primary=2.4 cfs 7,973 cf

**Total Runoff Area = 38,399 sf Runoff Volume = 9,520 cf Average Runoff Depth = 2.98"**  
**19.12% Pervious = 7,340 sf 80.88% Impervious = 31,059 sf**

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 25-year Rainfall=7.05"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentES-01: ES-01**

Runoff Area=12,593 sf 65.85% Impervious Runoff Depth>5.87"  
Flow Length=182' Tc=6.0 min CN=90 Runoff=1.8 cfs 6,158 cf

**SubcatchmentES-02: ES-02**

Runoff Area=5,652 sf 87.38% Impervious Runoff Depth>6.45"  
Flow Length=171' Tc=6.0 min CN=95 Runoff=0.9 cfs 3,039 cf

**SubcatchmentES-03: ES-03**

Runoff Area=749 sf 0.00% Impervious Runoff Depth>4.08"  
Flow Length=11' Slope=0.2200 '/' Tc=6.0 min CN=74 Runoff=0.1 cfs 255 cf

**SubcatchmentES-04: ES-04**

Runoff Area=7,130 sf 100.00% Impervious Runoff Depth>6.81"  
Tc=6.0 min CN=98 Runoff=1.1 cfs 4,044 cf

**SubcatchmentES-05: ES-05**

Runoff Area=2,495 sf 73.07% Impervious Runoff Depth>6.10"  
Flow Length=77' Slope=0.0420 '/' Tc=6.0 min CN=92 Runoff=0.4 cfs 1,268 cf

**SubcatchmentES-06: ES-06**

Runoff Area=9,780 sf 90.74% Impervious Runoff Depth>6.57"  
Flow Length=83' Slope=0.0450 '/' Tc=6.0 min CN=96 Runoff=1.5 cfs 5,354 cf

**Pond CB1010: CB #1010**

Peak Elev=47.12' Inflow=4.8 cfs 16,825 cf  
12.0" Round Culvert n=0.013 L=66.0' S=0.0100 '/' Outflow=4.8 cfs 16,825 cf

**Pond CB1065: CB #1065**

Peak Elev=48.07' Inflow=1.8 cfs 6,158 cf  
12.0" Round Culvert n=0.013 L=123.0' S=0.0106 '/' Outflow=1.8 cfs 6,158 cf

**Pond CB1071: CB #1071**

Peak Elev=47.46' Inflow=2.2 cfs 7,426 cf  
12.0" Round Culvert n=0.013 L=46.0' S=0.0109 '/' Outflow=2.2 cfs 7,426 cf

**Pond DMH1059: DMH #1059**

Peak Elev=47.41' Inflow=1.1 cfs 4,044 cf  
10.0" Round Culvert n=0.013 L=95.0' S=0.0126 '/' Outflow=1.1 cfs 4,044 cf

**Link 239.12: MAP 239 LOT 12**

Inflow=0.1 cfs 255 cf  
Primary=0.1 cfs 255 cf

**Link CB1343: CB #1343**

Inflow=0.9 cfs 3,039 cf  
Primary=0.9 cfs 3,039 cf

**Link CB1428: CB #1428**

Inflow=4.8 cfs 16,825 cf  
Primary=4.8 cfs 16,825 cf

**Total Runoff Area = 38,399 sf Runoff Volume = 20,118 cf Average Runoff Depth = 6.29"**  
**19.12% Pervious = 7,340 sf 80.88% Impervious = 31,059 sf**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentES-01: ES-01**

Runoff Area=12,593 sf 65.85% Impervious Runoff Depth>7.24"  
Flow Length=182' Tc=6.0 min CN=90 Runoff=2.2 cfs 7,602 cf

**SubcatchmentES-02: ES-02**

Runoff Area=5,652 sf 87.38% Impervious Runoff Depth>7.84"  
Flow Length=171' Tc=6.0 min CN=95 Runoff=1.0 cfs 3,695 cf

**SubcatchmentES-03: ES-03**

Runoff Area=749 sf 0.00% Impervious Runoff Depth>5.33"  
Flow Length=11' Slope=0.2200 '/' Tc=6.0 min CN=74 Runoff=0.1 cfs 332 cf

**SubcatchmentES-04: ES-04**

Runoff Area=7,130 sf 100.00% Impervious Runoff Depth>8.21"  
Tc=6.0 min CN=98 Runoff=1.3 cfs 4,875 cf

**SubcatchmentES-05: ES-05**

Runoff Area=2,495 sf 73.07% Impervious Runoff Depth>7.48"  
Flow Length=77' Slope=0.0420 '/' Tc=6.0 min CN=92 Runoff=0.5 cfs 1,556 cf

**SubcatchmentES-06: ES-06**

Runoff Area=9,780 sf 90.74% Impervious Runoff Depth>7.96"  
Flow Length=83' Slope=0.0450 '/' Tc=6.0 min CN=96 Runoff=1.8 cfs 6,491 cf

**Pond CB1010: CB #1010**

Peak Elev=48.08' Inflow=5.8 cfs 20,525 cf  
12.0" Round Culvert n=0.013 L=66.0' S=0.0100 '/' Outflow=5.8 cfs 20,525 cf

**Pond CB1065: CB #1065**

Peak Elev=49.25' Inflow=2.2 cfs 7,602 cf  
12.0" Round Culvert n=0.013 L=123.0' S=0.0106 '/' Outflow=2.2 cfs 7,602 cf

**Pond CB1071: CB #1071**

Peak Elev=48.61' Inflow=2.7 cfs 9,158 cf  
12.0" Round Culvert n=0.013 L=46.0' S=0.0109 '/' Outflow=2.7 cfs 9,158 cf

**Pond DMH1059: DMH #1059**

Peak Elev=48.55' Inflow=1.3 cfs 4,875 cf  
10.0" Round Culvert n=0.013 L=95.0' S=0.0126 '/' Outflow=1.3 cfs 4,875 cf

**Link 239.12: MAP 239 LOT 12**

Inflow=0.1 cfs 332 cf  
Primary=0.1 cfs 332 cf

**Link CB1343: CB #1343**

Inflow=1.0 cfs 3,695 cf  
Primary=1.0 cfs 3,695 cf

**Link CB1428: CB #1428**

Inflow=5.8 cfs 20,525 cf  
Primary=5.8 cfs 20,525 cf

**Total Runoff Area = 38,399 sf Runoff Volume = 24,552 cf Average Runoff Depth = 7.67"**  
**19.12% Pervious = 7,340 sf 80.88% Impervious = 31,059 sf**

**APPENDIX D – PRE-DEVELOPMENT**  
**CALCULATIONS (10-YEAR STORM EVENT)**

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**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 10-year Rainfall=5.57"

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**Summary for Subcatchment ES-01: ES-01**

Runoff = 1.4 cfs @ 12.09 hrs, Volume= 4,643 cf, Depth> 4.42"  
 Routed to Pond CB1065 : CB #1065

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
4,300	74	>75% Grass cover, Good, HSG C
8,293	98	Paved Parking, HSG C
12,593	90	Weighted Average
4,300		34.15% Pervious Area
8,293		65.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	15	0.0500	0.18		<b>Sheet Flow, Sheet Flow 1</b> Grass: Short n= 0.150 P2= 3.67"
1.0	85	0.0200	1.43		<b>Sheet Flow, Sheet Flow 2</b> Smooth surfaces n= 0.011 P2= 3.67"
0.5	82	0.0200	2.87		<b>Shallow Concentrated Flow, Shallow Concentrated 1</b> Paved Kv= 20.3 fps
3.1					<b>Direct Entry, Direct Entry</b>
6.0	182	Total			

**Summary for Subcatchment ES-02: ES-02**

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 2,346 cf, Depth> 4.98"  
 Routed to Link CB1343 : CB #1343

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
713	74	>75% Grass cover, Good, HSG C			
4,939	98	Paved Parking, HSG C			
5,652	95	Weighted Average			
713		12.62% Pervious Area			
4,939		87.38% Impervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	7	0.0500	0.15		<b>Sheet Flow, Sheet Flow 1</b> Grass: Short n= 0.150 P2= 3.67"
1.0	164	0.0190	2.80		<b>Shallow Concentrated Flow, Shallow Concentrated 1</b> Paved Kv= 20.3 fps
4.2					<b>Direct Entry, Direct Entry</b>
6.0	171	Total			

### Summary for Subcatchment ES-03: ES-03

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 176 cf, Depth> 2.82"  
 Routed to Link 239.12 : MAP 239 LOT 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
749	74	>75% Grass cover, Good, HSG C			
749		100.00% Pervious Area			
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
0.6	11	0.2200	0.31		<b>Sheet Flow, Sheet Flow 1</b>
					Grass: Short n= 0.150 P2= 3.67"
5.4					<b>Direct Entry, Direct Entry</b>
6.0	11	Total			

### Summary for Subcatchment ES-04: ES-04

Runoff = 0.9 cfs @ 12.09 hrs, Volume= 3,166 cf, Depth> 5.33"  
 Routed to Pond DMH1059 : DMH #1059

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
7,130	98	Roofs, HSG C			
7,130		100.00% Impervious Area			
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
6.0					<b>Direct Entry, Direct Entry</b>

### Summary for Subcatchment ES-05: ES-05

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 966 cf, Depth> 4.64"  
 Routed to Pond CB1071 : CB #1071

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
672	74	>75% Grass cover, Good, HSG C			
1,823	98	Paved Parking, HSG C			
2,495	92	Weighted Average			
672		26.93% Pervious Area			
1,823		73.07% Impervious Area			

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 10-year Rainfall=5.57"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	77	0.0420	1.88		<b>Sheet Flow, Sheet Flow 1</b> Smooth surfaces n= 0.011 P2= 3.67"
5.3					<b>Direct Entry, Direct Entry</b>
6.0	77	Total			

**Summary for Subcatchment ES-06: ES-06**

Runoff = 1.2 cfs @ 12.09 hrs, Volume= 4,153 cf, Depth> 5.10"  
 Routed to Pond CB1010 : CB #1010

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
906	74	>75% Grass cover, Good, HSG C
8,874	98	Paved Parking, HSG C
9,780	96	Weighted Average
906		9.26% Pervious Area
8,874		90.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	83	0.0450	1.96		<b>Sheet Flow, Sheet Flow 1</b> Smooth surfaces n= 0.011 P2= 3.67"
5.3					<b>Direct Entry, Direct Entry</b>
6.0	83	Total			

**Summary for Pond CB1010: CB #1010**

Inflow Area = 31,998 sf, 81.63% Impervious, Inflow Depth > 4.85" for 10-year event  
 Inflow = 3.7 cfs @ 12.09 hrs, Volume= 12,929 cf  
 Outflow = 3.7 cfs @ 12.09 hrs, Volume= 12,929 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.7 cfs @ 12.09 hrs, Volume= 12,929 cf  
 Routed to Link CB1428 : CB #1428

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 46.30' @ 12.09 hrs

Flood Elev= 49.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.70'	<b>12.0" Round Culvert</b> L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.70' / 44.04' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.6 cfs @ 12.09 hrs HW=46.24' TW=0.00' (Dynamic Tailwater)

↑ 1=Culvert (Barrel Controls 3.6 cfs @ 4.64 fps)

### Summary for Pond CB1065: CB #1065

Inflow Area = 12,593 sf, 65.85% Impervious, Inflow Depth > 4.42" for 10-year event  
 Inflow = 1.4 cfs @ 12.09 hrs, Volume= 4,643 cf  
 Outflow = 1.4 cfs @ 12.09 hrs, Volume= 4,643 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.4 cfs @ 12.09 hrs, Volume= 4,643 cf  
 Routed to Pond CB1071 : CB #1071

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 47.76' @ 12.09 hrs

Flood Elev= 50.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.10'	<b>12.0" Round Culvert</b> L= 123.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.10' / 45.80' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.4 cfs @ 12.09 hrs HW=47.74' TW=46.60' (Dynamic Tailwater)  
 ↑ 1=Culvert (Outlet Controls 1.4 cfs @ 3.66 fps)

### Summary for Pond CB1071: CB #1071

Inflow Area = 15,088 sf, 67.05% Impervious, Inflow Depth > 4.46" for 10-year event  
 Inflow = 1.7 cfs @ 12.09 hrs, Volume= 5,609 cf  
 Outflow = 1.7 cfs @ 12.09 hrs, Volume= 5,609 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.7 cfs @ 12.09 hrs, Volume= 5,609 cf  
 Routed to Pond CB1010 : CB #1010

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 46.63' @ 12.09 hrs

Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.70'	<b>12.0" Round Culvert</b> L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.70' / 45.20' S= 0.0109 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.7 cfs @ 12.09 hrs HW=46.60' TW=46.24' (Dynamic Tailwater)  
 ↑ 1=Culvert (Outlet Controls 1.7 cfs @ 2.94 fps)

### Summary for Pond DMH1059: DMH #1059

Inflow Area = 7,130 sf, 100.00% Impervious, Inflow Depth > 5.33" for 10-year event  
 Inflow = 0.9 cfs @ 12.09 hrs, Volume= 3,166 cf  
 Outflow = 0.9 cfs @ 12.09 hrs, Volume= 3,166 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.9 cfs @ 12.09 hrs, Volume= 3,166 cf  
 Routed to Pond CB1010 : CB #1010

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 10-year Rainfall=5.57"

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Peak Elev= 46.99' @ 12.09 hrs

Flood Elev= 53.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.40'	<b>10.0" Round Culvert</b> L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.40' / 45.20' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

**Primary OutFlow** Max=0.9 cfs @ 12.09 hrs HW=46.97' TW=46.23' (Dynamic Tailwater)↑**1=Culvert** (Outlet Controls 0.9 cfs @ 3.01 fps)**Summary for Link 239.12: MAP 239 LOT 12**

Inflow Area = 749 sf, 0.00% Impervious, Inflow Depth &gt; 2.82" for 10-year event

Inflow = 0.1 cfs @ 12.09 hrs, Volume= 176 cf

Primary = 0.1 cfs @ 12.09 hrs, Volume= 176 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Summary for Link CB1343: CB #1343**

Inflow Area = 5,652 sf, 87.38% Impervious, Inflow Depth &gt; 4.98" for 10-year event

Inflow = 0.7 cfs @ 12.09 hrs, Volume= 2,346 cf

Primary = 0.7 cfs @ 12.09 hrs, Volume= 2,346 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Summary for Link CB1428: CB #1428**

Inflow Area = 31,998 sf, 81.63% Impervious, Inflow Depth &gt; 4.85" for 10-year event

Inflow = 3.7 cfs @ 12.09 hrs, Volume= 12,929 cf

Primary = 3.7 cfs @ 12.09 hrs, Volume= 12,929 cf, Atten= 0%, Lag= 0.0 min

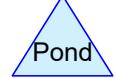
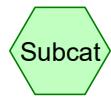
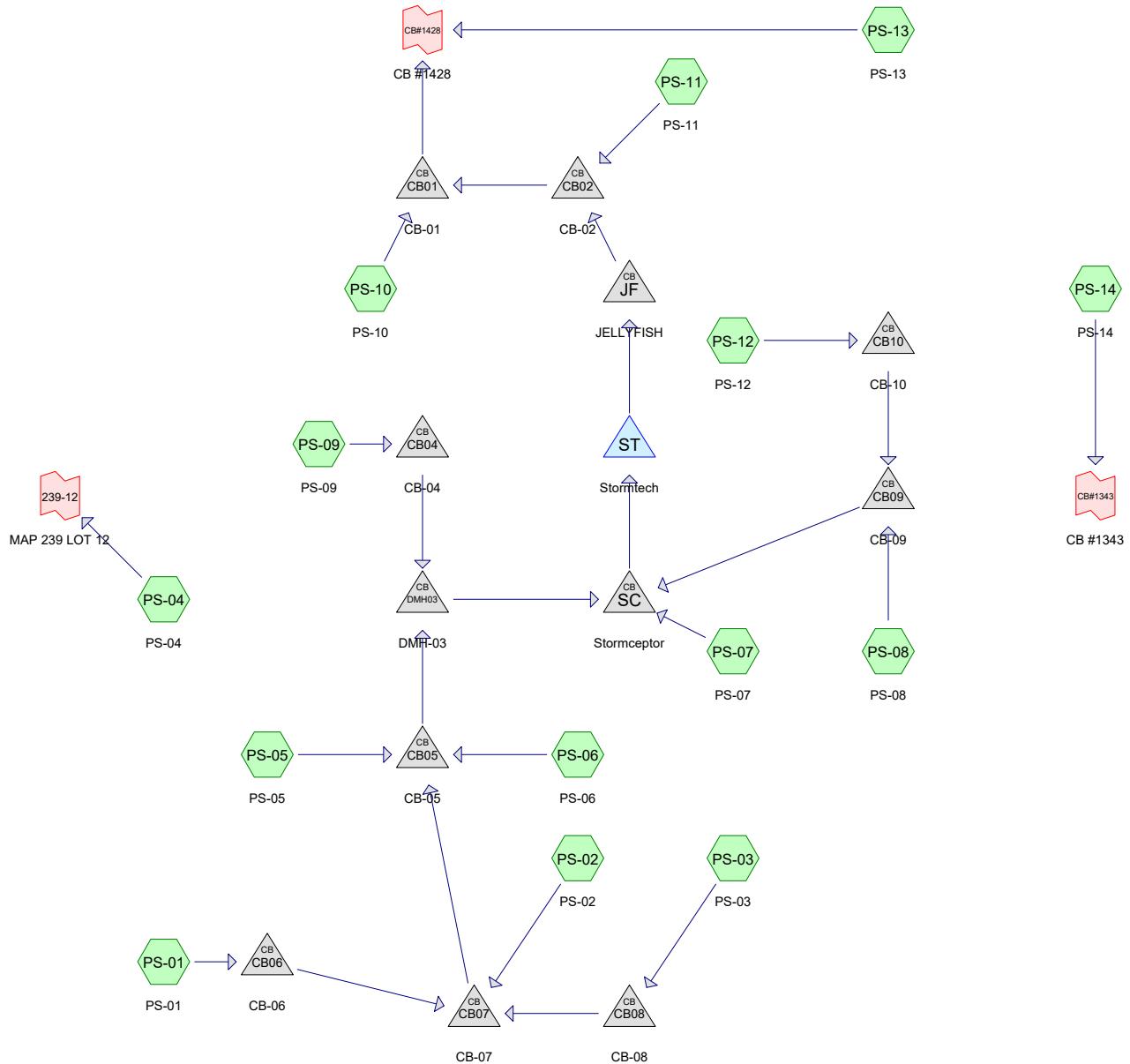
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

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**APPENDIX E – POST-DEVELOPMENT**  
**CALCULATIONS**

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**Post-Development  
Drainage**



**Routing Diagram for 46077-16 Drainage Analysis**  
 Prepared by T F Moran Inc, Printed 11/17/2025  
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# 46077-16 Drainage Analysis

Prepared by T F Moran Inc

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## Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
7,878	74	>75% Grass cover, Good, HSG C (PS-01, PS-02, PS-03, PS-04, PS-06, PS-08, PS-10, PS-13, PS-14)
21,291	98	Paved Parking, HSG C (PS-01, PS-02, PS-03, PS-06, PS-08, PS-09, PS-10, PS-11, PS-12)
9,230	98	Roofs, HSG C (PS-05, PS-07)
<b>38,399</b>	<b>93</b>	<b>TOTAL AREA</b>

# 46077-16 Drainage Analysis

Prepared by T F Moran Inc

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## Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
38,399	HSG C	PS-01, PS-02, PS-03, PS-04, PS-05, PS-06, PS-07, PS-08, PS-09, PS-10, PS-11, PS-12, PS-13, PS-14
0	HSG D	
0	Other	
<b>38,399</b>		<b>TOTAL AREA</b>

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>SubcatchmentPS-01: PS-01</b>	Runoff Area=3,430 sf 78.05% Impervious Runoff Depth>2.90" Flow Length=57' Tc=6.0 min CN=93 Runoff=0.3 cfs 828 cf
<b>SubcatchmentPS-02: PS-02</b>	Runoff Area=2,499 sf 81.83% Impervious Runoff Depth>3.00" Flow Length=38' Tc=6.0 min CN=94 Runoff=0.2 cfs 625 cf
<b>SubcatchmentPS-03: PS-03</b>	Runoff Area=2,418 sf 88.83% Impervious Runoff Depth>3.10" Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=95 Runoff=0.2 cfs 625 cf
<b>SubcatchmentPS-04: PS-04</b>	Runoff Area=1,168 sf 0.00% Impervious Runoff Depth>1.35" Flow Length=100' Slope=0.0050 '/' Tc=23.2 min CN=74 Runoff=0.0 cfs 132 cf
<b>SubcatchmentPS-05: PS-05</b>	Runoff Area=5,500 sf 100.00% Impervious Runoff Depth>3.43" Tc=6.0 min CN=98 Runoff=0.4 cfs 1,574 cf
<b>SubcatchmentPS-06: PS-06</b>	Runoff Area=3,593 sf 99.36% Impervious Runoff Depth>3.43" Flow Length=42' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.3 cfs 1,028 cf
<b>SubcatchmentPS-07: PS-07</b>	Runoff Area=3,730 sf 100.00% Impervious Runoff Depth>3.43" Tc=6.0 min CN=98 Runoff=0.3 cfs 1,067 cf
<b>SubcatchmentPS-08: PS-08</b>	Runoff Area=3,495 sf 93.19% Impervious Runoff Depth>3.21" Flow Length=90' Slope=0.0200 '/' Tc=6.0 min CN=96 Runoff=0.3 cfs 935 cf
<b>SubcatchmentPS-09: PS-09</b>	Runoff Area=2,460 sf 100.00% Impervious Runoff Depth>3.43" Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.2 cfs 704 cf
<b>SubcatchmentPS-10: PS-10</b>	Runoff Area=5,092 sf 44.23% Impervious Runoff Depth>2.16" Flow Length=88' Slope=0.0800 '/' Tc=6.0 min CN=85 Runoff=0.3 cfs 918 cf
<b>SubcatchmentPS-11: PS-11</b>	Runoff Area=1,140 sf 100.00% Impervious Runoff Depth>3.43" Flow Length=46' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.1 cfs 326 cf
<b>SubcatchmentPS-12: PS-12</b>	Runoff Area=1,742 sf 100.00% Impervious Runoff Depth>3.43" Flow Length=83' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.1 cfs 498 cf
<b>SubcatchmentPS-13: PS-13</b>	Runoff Area=1,401 sf 0.00% Impervious Runoff Depth>1.36" Flow Length=163' Tc=6.0 min CN=74 Runoff=0.0 cfs 158 cf
<b>SubcatchmentPS-14: PS-14</b>	Runoff Area=731 sf 0.00% Impervious Runoff Depth>1.36" Flow Length=43' Tc=6.0 min CN=74 Runoff=0.0 cfs 83 cf
<b>Pond CB01: CB-01</b>	Peak Elev=45.57' Inflow=2.2 cfs 9,103 cf 12.0" Round Culvert n=0.013 L=54.0' S=0.0100 '/' Outflow=2.2 cfs 9,103 cf
<b>Pond CB02: CB-02</b>	Peak Elev=45.94' Inflow=2.0 cfs 8,185 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0067 '/' Outflow=2.0 cfs 8,185 cf

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 2-year Rainfall=3.67"

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**Pond CB04: CB-04**Peak Elev=47.26' Inflow=0.2 cfs 704 cf  
12.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.2 cfs 704 cf**Pond CB05: CB-05**Peak Elev=47.47' Inflow=1.4 cfs 4,680 cf  
12.0" Round Culvert n=0.013 L=40.0' S=0.0063 '/' Outflow=1.4 cfs 4,680 cf**Pond CB06: CB-06**Peak Elev=47.73' Inflow=0.3 cfs 828 cf  
12.0" Round Culvert n=0.013 L=43.0' S=0.0081 '/' Outflow=0.3 cfs 828 cf**Pond CB07: CB-07**Peak Elev=47.62' Inflow=0.6 cfs 2,078 cf  
12.0" Round Culvert n=0.013 L=59.0' S=0.0059 '/' Outflow=0.6 cfs 2,078 cf**Pond CB08: CB-08**Peak Elev=48.04' Inflow=0.2 cfs 625 cf  
12.0" Round Culvert n=0.013 L=67.0' S=0.0104 '/' Outflow=0.2 cfs 625 cf**Pond CB09: CB-09**Peak Elev=47.15' Inflow=0.4 cfs 1,434 cf  
12.0" Round Culvert n=0.013 L=77.0' S=0.0052 '/' Outflow=0.4 cfs 1,434 cf**Pond CB10: CB-10**Peak Elev=47.18' Inflow=0.1 cfs 498 cf  
12.0" Round Culvert n=0.013 L=31.0' S=0.0065 '/' Outflow=0.1 cfs 498 cf**Pond DMH03: DMH-03**Peak Elev=47.25' Inflow=1.5 cfs 5,384 cf  
12.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.5 cfs 5,384 cf**Pond JF: JELLYFISH**Peak Elev=46.23' Inflow=1.9 cfs 7,859 cf  
12.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=1.9 cfs 7,859 cf**Pond SC: Stormceptor**Peak Elev=47.08' Inflow=2.3 cfs 7,885 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=2.3 cfs 7,885 cf**Pond ST: Stormtech**Peak Elev=46.47' Storage=481 cf Inflow=2.3 cfs 7,885 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=1.9 cfs 7,859 cf**Link 239-12: MAP 239 LOT 12**Inflow=0.0 cfs 132 cf  
Primary=0.0 cfs 132 cf**Link CB#1343: CB #1343**Inflow=0.0 cfs 83 cf  
Primary=0.0 cfs 83 cf**Link CB#1428: CB #1428**Inflow=2.3 cfs 9,261 cf  
Primary=2.3 cfs 9,261 cf**Total Runoff Area = 38,399 sf Runoff Volume = 9,502 cf Average Runoff Depth = 2.97"**  
**20.52% Pervious = 7,878 sf 79.48% Impervious = 30,521 sf**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPS-01: PS-01**Runoff Area=3,430 sf 78.05% Impervious Runoff Depth>6.22"  
Flow Length=57' Tc=6.0 min CN=93 Runoff=0.5 cfs 1,777 cf**SubcatchmentPS-02: PS-02**Runoff Area=2,499 sf 81.83% Impervious Runoff Depth>6.33"  
Flow Length=38' Tc=6.0 min CN=94 Runoff=0.4 cfs 1,319 cf**SubcatchmentPS-03: PS-03**Runoff Area=2,418 sf 88.83% Impervious Runoff Depth>6.45"  
Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=95 Runoff=0.4 cfs 1,300 cf**SubcatchmentPS-04: PS-04**Runoff Area=1,168 sf 0.00% Impervious Runoff Depth>4.07"  
Flow Length=100' Slope=0.0050 '/' Tc=23.2 min CN=74 Runoff=0.1 cfs 396 cf**SubcatchmentPS-05: PS-05**Runoff Area=5,500 sf 100.00% Impervious Runoff Depth>6.81"  
Tc=6.0 min CN=98 Runoff=0.9 cfs 3,120 cf**SubcatchmentPS-06: PS-06**Runoff Area=3,593 sf 99.36% Impervious Runoff Depth>6.81"  
Flow Length=42' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.6 cfs 2,038 cf**SubcatchmentPS-07: PS-07**Runoff Area=3,730 sf 100.00% Impervious Runoff Depth>6.81"  
Tc=6.0 min CN=98 Runoff=0.6 cfs 2,116 cf**SubcatchmentPS-08: PS-08**Runoff Area=3,495 sf 93.19% Impervious Runoff Depth>6.57"  
Flow Length=90' Slope=0.0200 '/' Tc=6.0 min CN=96 Runoff=0.5 cfs 1,913 cf**SubcatchmentPS-09: PS-09**Runoff Area=2,460 sf 100.00% Impervious Runoff Depth>6.81"  
Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.4 cfs 1,395 cf**SubcatchmentPS-10: PS-10**Runoff Area=5,092 sf 44.23% Impervious Runoff Depth>5.30"  
Flow Length=88' Slope=0.0800 '/' Tc=6.0 min CN=85 Runoff=0.7 cfs 2,247 cf**SubcatchmentPS-11: PS-11**Runoff Area=1,140 sf 100.00% Impervious Runoff Depth>6.81"  
Flow Length=46' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.2 cfs 647 cf**SubcatchmentPS-12: PS-12**Runoff Area=1,742 sf 100.00% Impervious Runoff Depth>6.81"  
Flow Length=83' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.3 cfs 988 cf**SubcatchmentPS-13: PS-13**Runoff Area=1,401 sf 0.00% Impervious Runoff Depth>4.08"  
Flow Length=163' Tc=6.0 min CN=74 Runoff=0.2 cfs 477 cf**SubcatchmentPS-14: PS-14**Runoff Area=731 sf 0.00% Impervious Runoff Depth>4.08"  
Flow Length=43' Tc=6.0 min CN=74 Runoff=0.1 cfs 249 cf**Pond CB01: CB-01**Peak Elev=46.71' Inflow=4.4 cfs 18,825 cf  
12.0" Round Culvert n=0.013 L=54.0' S=0.0100 '/' Outflow=4.4 cfs 18,825 cf**Pond CB02: CB-02**Peak Elev=47.27' Inflow=3.7 cfs 16,577 cf  
12.0" Round Culvert n=0.013 L=30.0' S=0.0067 '/' Outflow=3.7 cfs 16,577 cf

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 25-year Rainfall=7.05"

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**Pond CB04: CB-04**Peak Elev=49.61' Inflow=0.4 cfs 1,395 cf  
12.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.4 cfs 1,395 cf**Pond CB05: CB-05**Peak Elev=50.08' Inflow=2.7 cfs 9,554 cf  
12.0" Round Culvert n=0.013 L=40.0' S=0.0063 '/' Outflow=2.7 cfs 9,554 cf**Pond CB06: CB-06**Peak Elev=49.60' Inflow=0.5 cfs 1,777 cf  
12.0" Round Culvert n=0.013 L=43.0' S=0.0081 '/' Outflow=0.5 cfs 1,777 cf**Pond CB07: CB-07**Peak Elev=50.01' Inflow=1.3 cfs 4,396 cf  
12.0" Round Culvert n=0.013 L=59.0' S=0.0059 '/' Outflow=1.3 cfs 4,396 cf**Pond CB08: CB-08**Peak Elev=49.60' Inflow=0.4 cfs 1,300 cf  
12.0" Round Culvert n=0.013 L=67.0' S=0.0104 '/' Outflow=0.4 cfs 1,300 cf**Pond CB09: CB-09**Peak Elev=49.20' Inflow=0.8 cfs 2,901 cf  
12.0" Round Culvert n=0.013 L=77.0' S=0.0052 '/' Outflow=0.8 cfs 2,901 cf**Pond CB10: CB-10**Peak Elev=49.04' Inflow=0.3 cfs 988 cf  
12.0" Round Culvert n=0.013 L=31.0' S=0.0065 '/' Outflow=0.3 cfs 988 cf**Pond DMH03: DMH-03**Peak Elev=49.76' Inflow=3.1 cfs 10,949 cf  
12.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=3.1 cfs 10,949 cf**Pond JF: JELLYFISH**Peak Elev=47.33' Inflow=3.6 cfs 15,931 cf  
12.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=3.6 cfs 15,931 cf**Pond SC: Stormceptor**Peak Elev=49.01' Inflow=4.4 cfs 15,966 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=4.4 cfs 15,966 cf**Pond ST: Stormtech**Peak Elev=47.59' Storage=1,013 cf Inflow=4.4 cfs 15,966 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=3.6 cfs 15,931 cf**Link 239-12: MAP 239 LOT 12**Inflow=0.1 cfs 396 cf  
Primary=0.1 cfs 396 cf**Link CB#1343: CB #1343**Inflow=0.1 cfs 249 cf  
Primary=0.1 cfs 249 cf**Link CB#1428: CB #1428**Inflow=4.5 cfs 19,301 cf  
Primary=4.5 cfs 19,301 cf**Total Runoff Area = 38,399 sf Runoff Volume = 19,982 cf Average Runoff Depth = 6.24"**  
**20.52% Pervious = 7,878 sf 79.48% Impervious = 30,521 sf**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPS-01: PS-01**Runoff Area=3,430 sf 78.05% Impervious Runoff Depth>7.60"  
Flow Length=57' Tc=6.0 min CN=93 Runoff=0.6 cfs 2,174 cf**SubcatchmentPS-02: PS-02**Runoff Area=2,499 sf 81.83% Impervious Runoff Depth>7.72"  
Flow Length=38' Tc=6.0 min CN=94 Runoff=0.5 cfs 1,609 cf**SubcatchmentPS-03: PS-03**Runoff Area=2,418 sf 88.83% Impervious Runoff Depth>7.84"  
Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=95 Runoff=0.4 cfs 1,581 cf**SubcatchmentPS-04: PS-04**Runoff Area=1,168 sf 0.00% Impervious Runoff Depth>5.31"  
Flow Length=100' Slope=0.0050 '/' Tc=23.2 min CN=74 Runoff=0.1 cfs 517 cf**SubcatchmentPS-05: PS-05**Runoff Area=5,500 sf 100.00% Impervious Runoff Depth>8.21"  
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,761 cf**SubcatchmentPS-06: PS-06**Runoff Area=3,593 sf 99.36% Impervious Runoff Depth>8.21"  
Flow Length=42' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.7 cfs 2,457 cf**SubcatchmentPS-07: PS-07**Runoff Area=3,730 sf 100.00% Impervious Runoff Depth>8.21"  
Tc=6.0 min CN=98 Runoff=0.7 cfs 2,550 cf**SubcatchmentPS-08: PS-08**Runoff Area=3,495 sf 93.19% Impervious Runoff Depth>7.96"  
Flow Length=90' Slope=0.0200 '/' Tc=6.0 min CN=96 Runoff=0.6 cfs 2,320 cf**SubcatchmentPS-09: PS-09**Runoff Area=2,460 sf 100.00% Impervious Runoff Depth>8.21"  
Flow Length=52' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.5 cfs 1,682 cf**SubcatchmentPS-10: PS-10**Runoff Area=5,092 sf 44.23% Impervious Runoff Depth>6.64"  
Flow Length=88' Slope=0.0800 '/' Tc=6.0 min CN=85 Runoff=0.9 cfs 2,819 cf**SubcatchmentPS-11: PS-11**Runoff Area=1,140 sf 100.00% Impervious Runoff Depth>8.21"  
Flow Length=46' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.2 cfs 779 cf**SubcatchmentPS-12: PS-12**Runoff Area=1,742 sf 100.00% Impervious Runoff Depth>8.21"  
Flow Length=83' Slope=0.0150 '/' Tc=6.0 min CN=98 Runoff=0.3 cfs 1,191 cf**SubcatchmentPS-13: PS-13**Runoff Area=1,401 sf 0.00% Impervious Runoff Depth>5.33"  
Flow Length=163' Tc=6.0 min CN=74 Runoff=0.2 cfs 622 cf**SubcatchmentPS-14: PS-14**Runoff Area=731 sf 0.00% Impervious Runoff Depth>5.33"  
Flow Length=43' Tc=6.0 min CN=74 Runoff=0.1 cfs 324 cf**Pond CB01: CB-01**Peak Elev=47.23' Inflow=5.1 cfs 22,883 cf  
12.0" Round Culvert n=0.013 L=54.0' S=0.0100 '/' Outflow=5.1 cfs 22,883 cf**Pond CB02: CB-02**Peak Elev=47.81' Inflow=4.3 cfs 20,064 cf  
12.0" Round Culvert n=0.013 L=30.0' S=0.0067 '/' Outflow=4.3 cfs 20,064 cf

**46077-16 Drainage Analysis**

Prepared by T F Moran Inc

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Type III 24-hr 50-year Rainfall=8.45"

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**Pond CB04: CB-04**Peak Elev=51.23' Inflow=0.5 cfs 1,682 cf  
12.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.5 cfs 1,682 cf**Pond CB05: CB-05**Peak Elev=51.91' Inflow=3.2 cfs 11,580 cf  
12.0" Round Culvert n=0.013 L=40.0' S=0.0063 '/' Outflow=3.2 cfs 11,580 cf**Pond CB06: CB-06**Peak Elev=51.17' Inflow=0.6 cfs 2,174 cf  
12.0" Round Culvert n=0.013 L=43.0' S=0.0081 '/' Outflow=0.6 cfs 2,174 cf**Pond CB07: CB-07**Peak Elev=51.74' Inflow=1.5 cfs 5,363 cf  
12.0" Round Culvert n=0.013 L=59.0' S=0.0059 '/' Outflow=1.5 cfs 5,363 cf**Pond CB08: CB-08**Peak Elev=51.16' Inflow=0.4 cfs 1,581 cf  
12.0" Round Culvert n=0.013 L=67.0' S=0.0104 '/' Outflow=0.4 cfs 1,581 cf**Pond CB09: CB-09**Peak Elev=50.86' Inflow=1.0 cfs 3,511 cf  
12.0" Round Culvert n=0.013 L=77.0' S=0.0052 '/' Outflow=1.0 cfs 3,511 cf**Pond CB10: CB-10**Peak Elev=50.43' Inflow=0.3 cfs 1,191 cf  
12.0" Round Culvert n=0.013 L=31.0' S=0.0065 '/' Outflow=0.3 cfs 1,191 cf**Pond DMH03: DMH-03**Peak Elev=51.63' Inflow=3.7 cfs 13,262 cf  
12.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=3.7 cfs 13,262 cf**Pond JF: JELLYFISH**Peak Elev=47.95' Inflow=4.1 cfs 19,285 cf  
12.0" Round Culvert n=0.013 L=24.0' S=0.0062 '/' Outflow=4.1 cfs 19,285 cf**Pond SC: Stormceptor**Peak Elev=50.56' Inflow=5.3 cfs 19,324 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=5.3 cfs 19,324 cf**Pond ST: Stormtech**Peak Elev=48.44' Storage=1,330 cf Inflow=5.3 cfs 19,324 cf  
12.0" Round Culvert n=0.013 L=4.0' S=0.0000 '/' Outflow=4.1 cfs 19,285 cf**Link 239-12: MAP 239 LOT 12**Inflow=0.1 cfs 517 cf  
Primary=0.1 cfs 517 cf**Link CB#1343: CB #1343**Inflow=0.1 cfs 324 cf  
Primary=0.1 cfs 324 cf**Link CB#1428: CB #1428**Inflow=5.3 cfs 23,505 cf  
Primary=5.3 cfs 23,505 cf**Total Runoff Area = 38,399 sf Runoff Volume = 24,385 cf Average Runoff Depth = 7.62"**  
**20.52% Pervious = 7,878 sf 79.48% Impervious = 30,521 sf**

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**APPENDIX F – POST-DEVELOPMENT**  
**CALCULATIONS (10-YEAR STORM EVENT)**

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**Summary for Subcatchment PS-01: PS-01**

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,359 cf, Depth> 4.76"  
 Routed to Pond CB06 : CB-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
2,677	98	Paved Parking, HSG C
753	74	>75% Grass cover, Good, HSG C
3,430	93	Weighted Average
753		21.95% Pervious Area
2,677		78.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	26	0.0600	0.22		<b>Sheet Flow, Sheet Flow 1</b> Grass: Short n= 0.150 P2= 3.67"
0.5	31	0.0150	1.04		<b>Sheet Flow, Sheet Flow 2</b> Smooth surfaces n= 0.011 P2= 3.67"
3.5					<b>Direct Entry, Direct Entry</b>
6.0	57	Total			

**Summary for Subcatchment PS-02: PS-02**

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,014 cf, Depth> 4.87"  
 Routed to Pond CB07 : CB-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
2,045	98	Paved Parking, HSG C
454	74	>75% Grass cover, Good, HSG C
2,499	94	Weighted Average
454		18.17% Pervious Area
2,045		81.83% Impervious Area

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Type III 24-hr 10-year Rainfall=5.57"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	8	0.0500	0.16		<b>Sheet Flow, Sheet Flow 1</b> Grass: Short n= 0.150 P2= 3.67"
0.1	5	0.0200	0.81		<b>Sheet Flow, Sheet Flow 2</b> Smooth surfaces n= 0.011 P2= 3.67"
1.0	10	0.0500	0.17		<b>Sheet Flow, Sheet Flow 3</b> Grass: Short n= 0.150 P2= 3.67"
0.3	15	0.0150	0.90		<b>Sheet Flow, Sheet Flow 4</b> Smooth surfaces n= 0.011 P2= 3.67"
3.8					<b>Direct Entry, Direct Entry</b>
6.0	38	Total			

**Summary for Subcatchment PS-03: PS-03**

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,004 cf, Depth> 4.98"  
 Routed to Pond CB08 : CB-08

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
2,148	98	Paved Parking, HSG C
270	74	>75% Grass cover, Good, HSG C
2,418	95	Weighted Average
270		11.17% Pervious Area
2,148		88.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	52	0.0150	1.15		<b>Sheet Flow, Sheet Flow 1</b> Smooth surfaces n= 0.011 P2= 3.67"
5.2					<b>Direct Entry, Direct Entry</b>
6.0	52	Total			

**Summary for Subcatchment PS-04: PS-04**

Runoff = 0.1 cfs @ 12.33 hrs, Volume= 274 cf, Depth> 2.81"  
 Routed to Link 239-12 : MAP 239 LOT 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
1,168	74	>75% Grass cover, Good, HSG C
1,168		100.00% Pervious Area

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.2	100	0.0050	0.07		<b>Sheet Flow, Sheet Flow 1</b> Grass: Dense n= 0.240 P2= 3.67"

**Summary for Subcatchment PS-05: PS-05**

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 2,443 cf, Depth> 5.33"  
 Routed to Pond CB05 : CB-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
5,500	98	Roofs, HSG C
5,500		100.00% Impervious Area

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

**Summary for Subcatchment PS-06: PS-06**

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,596 cf, Depth> 5.33"  
 Routed to Pond CB05 : CB-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
3,570	98	Paved Parking, HSG C
23	74	>75% Grass cover, Good, HSG C
3,593	98	Weighted Average
23		0.64% Pervious Area
3,570		99.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	42	0.0150	1.10		<b>Sheet Flow, Sheet Flow 1</b> Smooth surfaces n= 0.011 P2= 3.67"
5.4					<b>Direct Entry, Direct Entry</b>
6.0	42	Total			

**Summary for Subcatchment PS-07: PS-07**

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 1,656 cf, Depth> 5.33"  
 Routed to Pond SC : Stormceptor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

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Type III 24-hr 10-year Rainfall=5.57"

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Area (sf)	CN	Description			
3,730	98	Roofs, HSG C			
3,730		100.00% Impervious Area			
Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, Direct Entry</b>

**Summary for Subcatchment PS-08: PS-08**

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,484 cf, Depth> 5.10"  
 Routed to Pond CB09 : CB-09

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
3,257	98	Paved Parking, HSG C			
238	74	>75% Grass cover, Good, HSG C			
3,495	96	Weighted Average			
238		6.81% Pervious Area			
3,257		93.19% Impervious Area			
Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	90	0.0200	1.44		<b>Sheet Flow, Sheet Flow 1</b>
					Smooth surfaces n= 0.011 P2= 3.67"
5.0					<b>Direct Entry, Direct Entry</b>
6.0	90	Total			

**Summary for Subcatchment PS-09: PS-09**

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,092 cf, Depth> 5.33"  
 Routed to Pond CB04 : CB-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
2,460	98	Paved Parking, HSG C			
2,460		100.00% Impervious Area			
Tc	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	52	0.0150	1.15		<b>Sheet Flow, Sheet Flow 1</b>
					Smooth surfaces n= 0.011 P2= 3.67"
5.2					<b>Direct Entry, Direct Entry</b>
6.0	52	Total			

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Type III 24-hr 10-year Rainfall=5.57"

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**Summary for Subcatchment PS-10: PS-10**

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 1,653 cf, Depth> 3.90"  
 Routed to Pond CB01 : CB-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
2,252	98	Paved Parking, HSG C
1,193	74	>75% Grass cover, Good, HSG C
1,647	74	>75% Grass cover, Good, HSG C
5,092	85	Weighted Average
2,840		55.77% Pervious Area
2,252		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	88	0.0800	2.50		<b>Sheet Flow, Sheet Flow 1</b>
					Smooth surfaces n= 0.011 P2= 3.67"
5.4					<b>Direct Entry, Direct Entry</b>
6.0	88	Total			

**Summary for Subcatchment PS-11: PS-11**

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 506 cf, Depth> 5.33"  
 Routed to Pond CB02 : CB-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description
1,140	98	Paved Parking, HSG C
1,140		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	46	0.0150	1.12		<b>Sheet Flow, Sheet Flow 1</b>
					Smooth surfaces n= 0.011 P2= 3.67"
5.3					<b>Direct Entry, Direct Entry</b>
6.0	46	Total			

**Summary for Subcatchment PS-12: PS-12**

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 774 cf, Depth> 5.33"  
 Routed to Pond CB10 : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

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Area (sf)	CN	Description			
1,742	98	Paved Parking, HSG C			
1,742		100.00% Impervious Area			
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
1.1	83	0.0150	1.26		<b>Sheet Flow, Sheet Flow 1</b> Smooth surfaces n= 0.011 P2= 3.67"
4.9					<b>Direct Entry, Direct Entry</b>
6.0	83	Total			

**Summary for Subcatchment PS-13: PS-13**

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 330 cf, Depth> 2.82"  
 Routed to Link CB#1428 : CB #1428

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
1,401	74	>75% Grass cover, Good, HSG C			
1,401		100.00% Pervious Area			
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
2.1	25	0.0500	0.20		<b>Sheet Flow, Sheet Flow 1</b> Grass: Short n= 0.150 P2= 3.67"
0.8	138	0.0200	2.87		<b>Shallow Concentrated Flow, Shallow Concentrated 1</b> Paved Kv= 20.3 fps
3.1					<b>Direct Entry, Direct Entry</b>
6.0	163	Total			

**Summary for Subcatchment PS-14: PS-14**

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 172 cf, Depth> 2.82"  
 Routed to Link CB#1343 : CB #1343

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-year Rainfall=5.57"

Area (sf)	CN	Description			
731	74	>75% Grass cover, Good, HSG C			
731		100.00% Pervious Area			

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	30	0.0500	0.21		<b>Sheet Flow, Sheet Flow 1</b>
					Grass: Short n= 0.150 P2= 3.67"
0.2	13	0.0150	0.87		<b>Sheet Flow, Sheet Flow 2</b>
					Smooth surfaces n= 0.011 P2= 3.67"
3.4					<b>Direct Entry, Direct Entry</b>
6.0	43	Total			

**Summary for Pond CB01: CB-01**

Inflow Area = 35,099 sf, 86.96% Impervious, Inflow Depth > 4.97" for 10-year event  
 Inflow = 3.5 cfs @ 12.11 hrs, Volume= 14,549 cf  
 Outflow = 3.5 cfs @ 12.11 hrs, Volume= 14,549 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.5 cfs @ 12.11 hrs, Volume= 14,549 cf  
 Routed to Link CB#1428 : CB #1428

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 46.12' @ 12.11 hrs  
 Flood Elev= 49.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.70'	<b>12.0" Round Culvert</b> L= 54.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.70' / 44.16' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.4 cfs @ 12.11 hrs HW=46.07' TW=0.00' (Dynamic Tailwater)  
 ↑1=Culvert (Barrel Controls 3.4 cfs @ 4.29 fps)

**Summary for Pond CB02: CB-02**

[57] Hint: Peaked at 46.49' (Flood elevation advised)

Inflow Area = 30,007 sf, 94.21% Impervious, Inflow Depth > 5.16" for 10-year event  
 Inflow = 3.0 cfs @ 12.12 hrs, Volume= 12,896 cf  
 Outflow = 3.0 cfs @ 12.12 hrs, Volume= 12,896 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.0 cfs @ 12.12 hrs, Volume= 12,896 cf  
 Routed to Pond CB01 : CB-01

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 46.49' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	<b>12.0" Round Culvert</b> L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.00' / 44.80' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.0 cfs @ 12.12 hrs HW=46.33' TW=46.05' (Dynamic Tailwater)  
 ↑1=Culvert (Inlet Controls 2.0 cfs @ 2.54 fps)

### Summary for Pond CB04: CB-04

Inflow Area = 2,460 sf, 100.00% Impervious, Inflow Depth > 5.33" for 10-year event  
 Inflow = 0.3 cfs @ 12.09 hrs, Volume= 1,092 cf  
 Outflow = 0.3 cfs @ 12.09 hrs, Volume= 1,092 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.3 cfs @ 12.09 hrs, Volume= 1,092 cf  
 Routed to Pond DMH03 : DMH-03

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 48.26' @ 12.10 hrs

Flood Elev= 52.04'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.45'	<b>12.0" Round Culvert</b> L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.45' / 46.30' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.0 cfs @ 12.09 hrs HW=48.13' TW=48.16' (Dynamic Tailwater)  
 ↑ 1=Culvert (Controls 0.0 cfs)

### Summary for Pond CB05: CB-05

[80] Warning: Exceeded Pond CB07 by 0.03' @ 12.10 hrs (0.5 cfs 155 cf)

Inflow Area = 17,440 sf, 91.40% Impervious, Inflow Depth > 5.10" for 10-year event  
 Inflow = 2.1 cfs @ 12.09 hrs, Volume= 7,415 cf  
 Outflow = 2.1 cfs @ 12.09 hrs, Volume= 7,415 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.1 cfs @ 12.09 hrs, Volume= 7,415 cf  
 Routed to Pond DMH03 : DMH-03

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 48.55' @ 12.10 hrs

Flood Elev= 51.89'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.55'	<b>12.0" Round Culvert</b> L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.55' / 46.30' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.9 cfs @ 12.09 hrs HW=48.41' TW=48.16' (Dynamic Tailwater)  
 ↑ 1=Culvert (Inlet Controls 1.9 cfs @ 2.42 fps)

### Summary for Pond CB06: CB-06

Inflow Area = 3,430 sf, 78.05% Impervious, Inflow Depth > 4.76" for 10-year event  
 Inflow = 0.4 cfs @ 12.09 hrs, Volume= 1,359 cf  
 Outflow = 0.4 cfs @ 12.09 hrs, Volume= 1,359 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.4 cfs @ 12.09 hrs, Volume= 1,359 cf  
 Routed to Pond CB07 : CB-07

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 48.28' @ 12.09 hrs

Flood Elev= 51.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.35'	<b>12.0" Round Culvert</b> L= 43.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.35' / 47.00' S= 0.0081 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.0 cfs @ 12.09 hrs HW=48.24' TW=48.42' (Dynamic Tailwater)  
 ↑ 1=Culvert (Controls 0.0 cfs)

**Summary for Pond CB07: CB-07**

[80] Warning: Exceeded Pond CB06 by 0.25' @ 12.10 hrs (1.8 cfs 440 cf)  
 [80] Warning: Exceeded Pond CB08 by 0.20' @ 12.10 hrs (0.8 cfs 152 cf)

Inflow Area = 8,347 sf, 82.31% Impervious, Inflow Depth > 4.85" for 10-year event  
 Inflow = 1.0 cfs @ 12.09 hrs, Volume= 3,377 cf  
 Outflow = 1.0 cfs @ 12.09 hrs, Volume= 3,377 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.0 cfs @ 12.09 hrs, Volume= 3,377 cf  
 Routed to Pond CB05 : CB-05

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 48.53' @ 12.10 hrs  
 Flood Elev= 52.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	<b>12.0" Round Culvert</b> L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.00' / 46.65' S= 0.0059 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.1 cfs @ 12.09 hrs HW=48.42' TW=48.42' (Dynamic Tailwater)  
 ↑ 1=Culvert (Outlet Controls 0.1 cfs @ 0.15 fps)

**Summary for Pond CB08: CB-08**

Inflow Area = 2,418 sf, 88.83% Impervious, Inflow Depth > 4.98" for 10-year event  
 Inflow = 0.3 cfs @ 12.09 hrs, Volume= 1,004 cf  
 Outflow = 0.3 cfs @ 12.09 hrs, Volume= 1,004 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.3 cfs @ 12.09 hrs, Volume= 1,004 cf  
 Routed to Pond CB07 : CB-07

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 48.33' @ 12.09 hrs  
 Flood Elev= 52.19'

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Device	Routing	Invert	Outlet Devices
#1	Primary	47.80'	<b>12.0" Round Culvert</b> L= 67.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.80' / 47.10' S= 0.0104 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.0 cfs @ 12.09 hrs HW=48.30' TW=48.42' (Dynamic Tailwater)  
 ↑1=Culvert (Controls 0.0 cfs)

**Summary for Pond CB09: CB-09**

[80] Warning: Exceeded Pond CB10 by 0.10' @ 12.15 hrs (1.1 cfs 341 cf)

Inflow Area = 5,237 sf, 95.46% Impervious, Inflow Depth > 5.17" for 10-year event  
 Inflow = 0.6 cfs @ 12.09 hrs, Volume= 2,258 cf  
 Outflow = 0.6 cfs @ 12.09 hrs, Volume= 2,258 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.6 cfs @ 12.09 hrs, Volume= 2,258 cf  
 Routed to Pond SC : Stormceptor

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 47.96' @ 12.11 hrs  
 Flood Elev= 51.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.50'	<b>12.0" Round Culvert</b> L= 77.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.50' / 46.10' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.1 cfs @ 12.09 hrs HW=47.82' TW=47.82' (Dynamic Tailwater)  
 ↑1=Culvert (Outlet Controls 0.1 cfs @ 0.17 fps)

**Summary for Pond CB10: CB-10**

Inflow Area = 1,742 sf, 100.00% Impervious, Inflow Depth > 5.33" for 10-year event  
 Inflow = 0.2 cfs @ 12.09 hrs, Volume= 774 cf  
 Outflow = 0.2 cfs @ 12.09 hrs, Volume= 774 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.2 cfs @ 12.09 hrs, Volume= 774 cf  
 Routed to Pond CB09 : CB-09

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 47.90' @ 12.11 hrs  
 Flood Elev= 51.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	<b>12.0" Round Culvert</b> L= 31.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.80' / 46.60' S= 0.0065 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.0 cfs @ 12.09 hrs HW=47.78' TW=47.82' (Dynamic Tailwater)  
 ↑ 1=Culvert (Controls 0.0 cfs)

### Summary for Pond DMH03: DMH-03

[57] Hint: Peaked at 48.31' (Flood elevation advised)

[80] Warning: Exceeded Pond CB04 by 0.10' @ 12.15 hrs (1.2 cfs 364 cf)

Inflow Area = 19,900 sf, 92.46% Impervious, Inflow Depth > 5.13" for 10-year event  
 Inflow = 2.4 cfs @ 12.09 hrs, Volume= 8,507 cf  
 Outflow = 2.4 cfs @ 12.09 hrs, Volume= 8,507 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.4 cfs @ 12.09 hrs, Volume= 8,507 cf  
 Routed to Pond SC : Stormceptor

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 48.31' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	<b>12.0" Round Culvert</b> L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 46.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.2 cfs @ 12.09 hrs HW=48.16' TW=47.82' (Dynamic Tailwater)  
 ↑ 1=Culvert (Inlet Controls 2.2 cfs @ 2.81 fps)

### Summary for Pond JF: JELLYFISH

Inflow Area = 28,867 sf, 93.98% Impervious, Inflow Depth > 5.15" for 10-year event  
 Inflow = 2.8 cfs @ 12.12 hrs, Volume= 12,390 cf  
 Outflow = 2.8 cfs @ 12.12 hrs, Volume= 12,390 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.8 cfs @ 12.12 hrs, Volume= 12,390 cf  
 Routed to Pond CB02 : CB-02

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 46.73' @ 12.17 hrs

Flood Elev= 51.46'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.25'	<b>12.0" Round Culvert</b> L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.25' / 45.10' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.0 cfs @ 12.12 hrs HW=46.62' TW=46.34' (Dynamic Tailwater)  
 ↑ 1=Culvert (Inlet Controls 2.0 cfs @ 2.54 fps)

### Summary for Pond SC: Stormceptor

[57] Hint: Peaked at 47.96' (Flood elevation advised)

[80] Warning: Exceeded Pond CB09 by 0.02' @ 12.10 hrs (0.4 cfs 71 cf)

Inflow Area = 28,867 sf, 93.98% Impervious, Inflow Depth > 5.16" for 10-year event  
 Inflow = 3.5 cfs @ 12.09 hrs, Volume= 12,422 cf  
 Outflow = 3.5 cfs @ 12.09 hrs, Volume= 12,422 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.5 cfs @ 12.09 hrs, Volume= 12,422 cf

Routed to Pond ST : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5

Peak Elev= 47.96' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	46.00'	<b>12.0" Round Culvert</b> L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.00' / 46.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.7 cfs @ 12.09 hrs HW=47.82' TW=46.85' (Dynamic Tailwater)  
 ↑ 1=Culvert (Inlet Controls 3.7 cfs @ 4.73 fps)

### Summary for Pond ST: Stormtech

Inflow Area = 28,867 sf, 93.98% Impervious, Inflow Depth > 5.16" for 10-year event  
 Inflow = 3.5 cfs @ 12.09 hrs, Volume= 12,422 cf  
 Outflow = 2.8 cfs @ 12.12 hrs, Volume= 12,390 cf, Atten= 19%, Lag= 1.8 min  
 Primary = 2.8 cfs @ 12.12 hrs, Volume= 12,390 cf

Routed to Pond JF : JELLYFISH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 5  
 Peak Elev= 47.07' @ 12.16 hrs Surf.Area= 661 sf Storage= 774 cf

Plug-Flow detention time= 6.8 min calculated for 12,364 cf (100% of inflow)  
 Center-of-Mass det. time= 5.1 min ( 759.3 - 754.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	45.30'	656 cf	<b>20.50'W x 32.23'L x 3.75'H Field A</b> 2,478 cf Overall - 837 cf Embedded = 1,641 cf x 40.0% Voids
#2A	45.80'	837 cf	<b>ADS_StormTech SC-800 +Cap x 16 Inside #1</b> Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 16 Chambers in 4 Rows Cap Storage= 3.4 cf x 2 x 4 rows = 27.4 cf
		1,493 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.30'	<b>12.0" Round Culvert</b>

L= 4.0' CPP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 45.30' / 45.30' S= 0.0000 '/' Cc= 0.900  
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.3 cfs @ 12.12 hrs HW=46.98' TW=46.62' (Dynamic Tailwater)  
↑  
1=Culvert (Inlet Controls 2.3 cfs @ 2.89 fps)

### **Summary for Link 239-12: MAP 239 LOT 12**

Inflow Area = 1,168 sf, 0.00% Impervious, Inflow Depth > 2.81" for 10-year event  
Inflow = 0.1 cfs @ 12.33 hrs, Volume= 274 cf  
Primary = 0.1 cfs @ 12.33 hrs, Volume= 274 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### **Summary for Link CB#1343: CB #1343**

Inflow Area = 731 sf, 0.00% Impervious, Inflow Depth > 2.82" for 10-year event  
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 172 cf  
Primary = 0.1 cfs @ 12.09 hrs, Volume= 172 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### **Summary for Link CB#1428: CB #1428**

Inflow Area = 36,500 sf, 83.62% Impervious, Inflow Depth > 4.89" for 10-year event  
Inflow = 3.6 cfs @ 12.11 hrs, Volume= 14,879 cf  
Primary = 3.6 cfs @ 12.11 hrs, Volume= 14,879 cf, Atten= 0%, Lag= 0.0 min

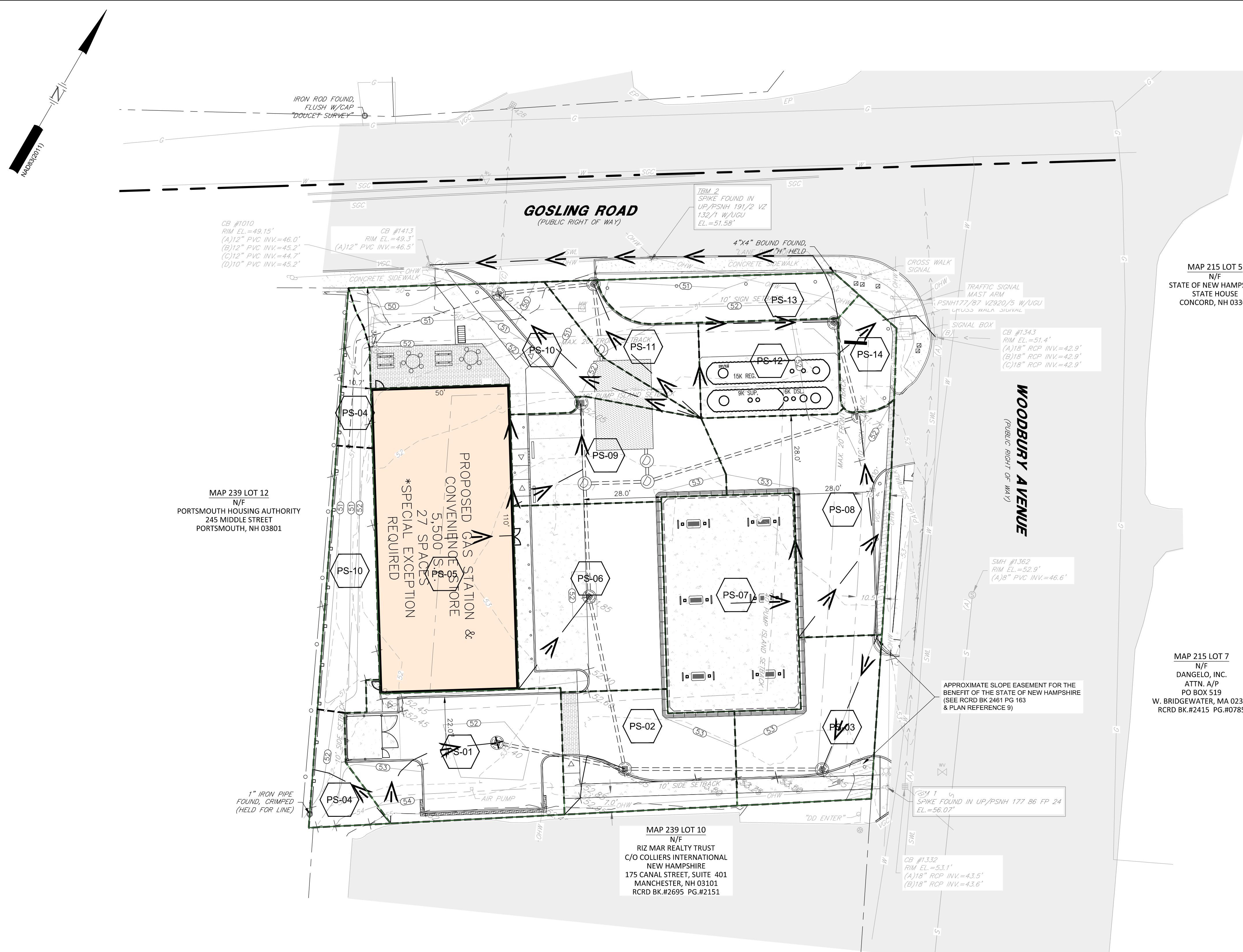
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

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## **APPENDIX G – DRAINAGE MAPS**

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**TAX MAP 239 LOT 11**  
**POST-DEVELOPMENT DRAINAGE MAP**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

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

NOVEMBER 17, 2025

20 HORIZONTAL SCALE 1"=20'  
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
46077.16	JKC CADFILE	46077-16 POST-DEV MAP		D-02

**APPENDIX H – INSPECTION AND MAINTENANCE  
MANUAL**

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Project #46077.16

# ***STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE MANUAL***

**F O R**

## **Proposed Gas Station & Convenience Store**

**1980 Woodbury Avenue  
Portsmouth, New Hampshire**

**Tax Map 239, Lot 11**

**Owned by Colbea Enterprises, LLC**

**November 17, 2025**

**Prepared By:**



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## **Table of Contents**

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Appendix B – Control of Invasive Plants	
Appendix C – Stormtech® Chamber System – Isolator® Row O & M Manual	

## **Maintenance of Property**

TFMoran, Inc., has prepared the following Stormwater Management System Inspection & Maintenance Plan for Colbea Enterprises, LLC at 1980 Woodbury Avenue Portsmouth, New Hampshire. The intent of this plan is to provide the owner, and future property managers/owners of the site with a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this development. This includes all temporary and permanent stormwater and erosion control measure during and post construction.

## **Plans**

Refer to the Site Development Plans prepared by MSC a division of TFMoran, Inc. for Tax Map 239 Lot 11, 1980 Woodbury Avenue, Portsmouth, New Hampshire, dated November 17, 2025. See Appendix A for the "Stormwater Inspection and Maintenance Plan" identifying locations of stormwater practices described hereon.

## **Owner Responsibility**

The owner shall be responsible for the following inspection and maintenance program which is necessary to keep the Stormwater Management System functioning properly. These measures will help greatly to reduce potential environmental impacts. By following the enclosed procedures, Colbea Enterprises, LLC and its successors 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.

The owner and future owners are the party responsible for the following record keeping activities further identified in this Inspection & Maintenance Manual:

- Conduct reporting, inspection, and maintenance activities in accordance with the "Inspection and Maintenance Checklist Requirements" and if applicable "Regular Inspection and Maintenance Guidance" provided by University of New Hampshire Stormwater Center (UNHSC);
- Document each inspection and maintenance activity with the "Inspection and Maintenance Log" and if applicable "Checklist for Inspection" provided by University of New Hampshire Stormwater Center (UNHSC);
- Photograph each practice that is subject to the "Inspection and Maintenance Checklist Requirements" at each inspection of that stormwater practice;
- Document actions taken if invasive species begin to grow in the stormwater management system; and
- Document each application of deicing material applied to the site with the "Deicing Log"

All record keeping required by the Inspection & Maintenance Manual shall be maintained by the responsible party and be made available to the applicable regulatory agencies (i.e. City of Portsmouth, etc.) upon request. Logs and reports required by this Inspection & Maintenance Manual should be prepared by a qualified inspector with working knowledge of the site. This manual and associated records shall be transferred to any future owners.

All current and future owners must comply with RSA 485-A:17, Env-Wq 1500, the permit, and all conditions contained in the permit.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will greatly help to reduce potential environmental impacts. By following the enclosed procedures, Colbea Enterprises, LLC and its successors 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.

## **General Inspection and Maintenance Requirements**

*Temporary* stormwater, sediment and erosion control measures that require maintenance on the site during construction include, but are not limited, to the following:

- Stabilized construction entrance;
- Litter/trash removal;
- Construction dumpster area;
- Silt sock barriers;
- Inlet protection;
- Gravel.

*Permanent* stormwater, sediment and erosion control measures that require maintenance on the site include, but are not limited, to the following:

- Litter/trash removal;
- Dumpster area maintenance;
- Landscaping and hardscaping;
- Conventional pavement;
- Stormtech Chambers;
- Drainage Inlets (i.e. catch basins, drop inlets, etc.);
- Drainage Structures (i.e. drain manholes, drainage cleanouts, yard drains, etc.)
- Roof gutters and downspouts;
- Culvert pipes;
- Grit/Oil/Water separators;
- Subsurface storage structures; and
- Surface maintenance related to deicing/plowing.

## **Inspection and Maintenance Checklist Requirements**

By implementing the following procedures, current owners will be able to maintain the functional design of the Stormwater Management System and maximize the systems ability to remove sediment and other contaminants from site-generated stormwater runoff. The owner shall conduct inspection and maintenance activities in accordance with the following checklist:

	<i>Frequency</i>	<i>Inspect</i>	<i>Action</i>
<i>Temporary Controls</i>			
<b>Stabilized Construction Entrance</b>	Weekly	<ul style="list-style-type: none"> <li>Inspect adjacent roadway for sediment tracking</li> <li>Inspect stone for sediment accumulation</li> </ul>	<ul style="list-style-type: none"> <li>Sweep adjacent roadways as soon as sediment is tracked</li> <li>Top dress with additional stone when necessary to prevent tracking</li> </ul>
<b>Litter/Trash Removal</b>	Routinely	<ul style="list-style-type: none"> <li>Inspect site especially construction areas</li> </ul>	<ul style="list-style-type: none"> <li>Remove debris and clean areas as necessary</li> </ul>
<b>Construction Dumpster Area</b>	Routinely	<ul style="list-style-type: none"> <li>Dumpster Areas</li> </ul>	<ul style="list-style-type: none"> <li>Remove any accumulated debris and dispose of properly</li> </ul>
<b>Silt Sock Barrier</b>	Weekly and after measurable rainfall	<ul style="list-style-type: none"> <li>Inspect accumulated sediment level, rips and tears</li> </ul>	<ul style="list-style-type: none"> <li>Repair or replace damaged lengths</li> <li>Remove and dispose accumulated sediment once level reaches 1/3 of barrier</li> </ul>
<b>Inlet Protection</b>	During construction and after measurable rainfall	<ul style="list-style-type: none"> <li>Inspect for accumulated sediment</li> </ul>	<ul style="list-style-type: none"> <li>Empty sediment bag if more than ½ filled with sediment or debris. Replace bag if torn or punctured to ½" diameter or greater on the lower half of the bag</li> </ul>
<b>Gravel</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect gravel for ruts and depth</li> </ul>	<ul style="list-style-type: none"> <li>Replace gravel as necessary, regrade as necessary to maintain design grades, remove any accumulated gravel washed from roadway</li> </ul>

	<i>Frequency</i>	<i>Inspect</i>	<i>Action</i>
<i>Permanent Controls</i>			
<b>Litter/Trash Removal</b>	Routinely	<ul style="list-style-type: none"> <li>Inspect site</li> </ul>	<ul style="list-style-type: none"> <li>Remove debris and clean areas as necessary</li> </ul>
<b>Dumpster Area Maintenance</b>	Routinely	<ul style="list-style-type: none"> <li>Dumpster Areas</li> </ul>	<ul style="list-style-type: none"> <li>Remove any accumulated debris and dispose of properly</li> </ul>

	<i>Frequency</i>	<i>Inspect</i>	<i>Action</i>
<i>Permanent Controls</i>			
<b>Landscaping and hardscaping (not including Bioretention Systems)</b>	Spring	<ul style="list-style-type: none"> <li>Mulch/stone: Inspect mulch areas for trash and debris and thickness of mulch</li> </ul>	<ul style="list-style-type: none"> <li>Remove weeds, invasive species, and debris. Top dress with new mulch or stone when necessary</li> </ul>
	Spring	<ul style="list-style-type: none"> <li>Trees and Shrubs: Inspect for broken, weak or diseased branches and debris</li> </ul>	<ul style="list-style-type: none"> <li>Prune to maintain shape to avoid splitting, remove broken, weak or diseased branches, replace as necessary</li> </ul>
	As necessary	<ul style="list-style-type: none"> <li>Lawn</li> </ul>	<ul style="list-style-type: none"> <li>Mow as required</li> </ul>
	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect landscaped areas for debris and litter</li> </ul>	<ul style="list-style-type: none"> <li>Remove debris and litter as necessary</li> </ul>
<b>Conventional Pavement</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect pavement for debris</li> </ul>	<ul style="list-style-type: none"> <li>Sweeping as required</li> </ul>
<b>Stormtech® Chambers</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect isolator row</li> </ul>	<ul style="list-style-type: none"> <li>Remove accumulated sediment by the JetVac process when sediment reaches an average depth of 3 inches. See the attached Stormtech® Isolator® Row O&amp;M Manual requirements in this document.</li> </ul>
<b>Drainage Inlets (Catch Basins / Drop Inlets)</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect for sediment</li> <li>Inspect for hydrocarbons</li> <li>Inspect Hoods</li> </ul>	<ul style="list-style-type: none"> <li>If sump is more than half full of sediment, remove sediment as necessary</li> <li>Remove and dispose of properly</li> <li>Repair and replace as necessary</li> </ul>
<b>Drainage Structures (Drain Manholes, Drain Cleanouts, Yard Drains, etc.)</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect for accumulated sediment and debris</li> </ul>	<ul style="list-style-type: none"> <li>Clean any material upon inspection and deposit of properly</li> </ul>
<b>Roof Gutters and Downspouts</b>	Spring and Fall	<ul style="list-style-type: none"> <li>Inspect for accumulated sediment and debris</li> </ul>	<ul style="list-style-type: none"> <li>Clean any material upon inspection and deposit of properly</li> </ul>

	<i>Frequency</i>	<i>Inspect</i>	<i>Action</i>
<i>Permanent Controls</i>			
<b>Grit/Oil/Water Separator</b>	Quarterly	<ul style="list-style-type: none"> <li>Inspection for debris or sediment buildup</li> <li>Inspect structure.</li> </ul>	<ul style="list-style-type: none"> <li>Remove trash and debris and dispose properly</li> <li>Remove floating oil, grease and petroleum substances using special vacuum hoses; treat as hazardous waste</li> <li>Removal of sediment and dispose of properly.</li> <li>Repair as necessary.</li> </ul>

## **Inspection and Maintenance Records**

A detailed, written record of all logs, reports, and photographs required by this Inspection & Maintenance Manual must be kept by the owner.

The attached forms are provided to assist the property manager with the inspection and maintenance of the Stormwater Management System. The “Inspection and Maintenance Log” (Attachment 1) and “Deicing Log” (Attachment 2) on the following pages are a blank copy to aid in record keeping required by this Inspection & Maintenance Manual.

Supplement the “Inspection and Maintenance Log” with the most currently available “Checklist for Inspections” from UNHSC (attached to this Manual for reference). Each inspection or maintenance activity shall include photographs of each practice that is subject to the “Inspection and Maintenance Checklist Requirements” at each inspection of that stormwater practice. Log actions taken if invasive species begin to grow in the stormwater management system as required per the attached “Control of Invasive Plants”.

For all surface maintenance related activities related to deicing/plowing, complete the “Deicing Log” to track the amount and type of deicing materials applied to the site. No winter sanding of is permitted on permeable pavements or porous asphalt. Minimization of salt application for ice control is recommended on, or where, runoff may discharge to these areas. Snow shall be stored in designated snow storage areas which have been designed to drain on-site and receive treatment via the stormwater management system prior to infiltration or discharge.

## **Owner's Certification**

### Contact Information

Owner: Colbea Enterprises, LLC  
Contact Person Michael Gazdacko  
695 George Washington Highway Lincoln, RI 02865

I have reviewed this document and understand the responsibilities contained. I agree to perform the required maintenance on the stormwater management system.

---

Owner's Signature (future owner's and successors, if applicable)

---

Print Name

---

Title

---

Date

Any inquiries in regards to the design, function, and/or maintenance of any one of the above mentioned facilities or tasks shall be directed to the project engineer:

TFMoran, Inc. Seacoast Division  
170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
603-431-2222

## **ATTACHMENT 1**

Inspection and Maintenance Log

## *Inspection and Maintenance Log*

## Attachment 1

## **ATTACHMENT 2**

Deicing Log

## *Deicing Log*

## **APPENDIX A**

### **Stormwater Inspection & Maintenance Plan**



## **APPENDIX B**

### **Control of Invasive Plants**

## CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

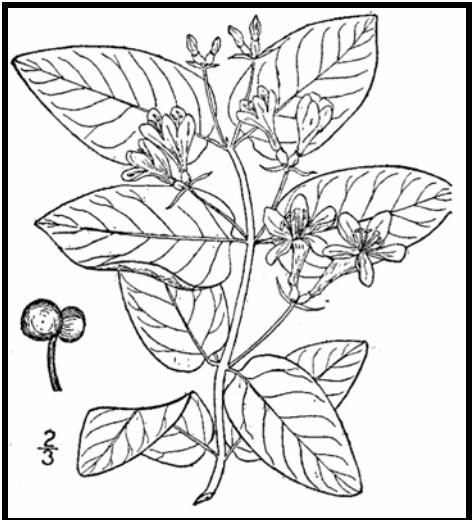
### Background:

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

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

## Methods for Disposing Non-Native Invasive Plants

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



**Tatarian honeysuckle**

*Lonicera tatarica*

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

the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

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

Control of invasives is beyond the scope of this fact sheet. For information about control visit [www.nhinvasives.org](http://www.nhinvasives.org) or contact your UNH Cooperative Extension office.

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

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

Knowing how a particular plant reproduces indicates its method of spread and helps determine

### New Hampshire Regulations

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

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

## How and When to Dispose of Invasives?

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

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

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

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

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

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

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

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



Japanese knotweed

*Polygonum cuspidatum*

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

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

## Suggested Disposal Methods for Non-Native Invasive Plants

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

Woody Plants	Method of Reproducing	Methods of Disposal
Norway maple <i>(Acer platanoides)</i> European barberry <i>(Berberis vulgaris)</i> Japanese barberry <i>(Berberis thunbergii)</i> autumn olive <i>(Elaeagnus umbellata)</i> burning bush <i>(Euonymus alatus)</i> Morrow's honeysuckle <i>(Lonicera morrowii)</i> Tatarian honeysuckle <i>(Lonicera tatarica)</i> showy bush honeysuckle <i>(Lonicera x bella)</i> common buckthorn <i>(Rhamnus cathartica)</i> glossy buckthorn <i>(Frangula alnus)</i>	<b>Fruit and Seeds</b> 	<b>Prior to fruit/seed ripening</b> Seedlings and small plants <ul style="list-style-type: none"> <li>▪ Pull or cut and leave on site with roots exposed. No special care needed.</li> </ul> Larger plants <ul style="list-style-type: none"> <li>▪ Use as firewood.</li> <li>▪ Make a brush pile.</li> <li>▪ Chip.</li> <li>▪ Burn.</li> </ul> <b>After fruit/seed is ripe</b> Don't remove from site. <ul style="list-style-type: none"> <li>▪ Burn.</li> <li>▪ Make a covered brush pile.</li> <li>▪ Chip once all fruit has dropped from branches.</li> <li>▪ Leave resulting chips on site and monitor.</li> </ul>
oriental bittersweet <i>(Celastrus orbiculatus)</i> multiflora rose <i>(Rosa multiflora)</i>	<b>Fruits, Seeds, Plant Fragments</b> 	<b>Prior to fruit/seed ripening</b> Seedlings and small plants <ul style="list-style-type: none"> <li>▪ Pull or cut and leave on site with roots exposed. No special care needed.</li> </ul> Larger plants <ul style="list-style-type: none"> <li>▪ Make a brush pile.</li> <li>▪ Burn.</li> </ul> <b>After fruit/seed is ripe</b> Don't remove from site. <ul style="list-style-type: none"> <li>▪ Burn.</li> <li>▪ Make a covered brush pile.</li> <li>▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</li> </ul>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard <i>(Alliaria petiolata)</i> spotted knapweed <i>(Centaurea maculosa)</i> <ul style="list-style-type: none"> <li>▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.</li> </ul> black swallow-wort <i>(Cynanchum nigrum)</i> <ul style="list-style-type: none"> <li>▪ May cause skin rash. Wear gloves and long sleeves when handling.</li> </ul> pale swallow-wort <i>(Cynanchum rossicum)</i> giant hogweed <i>(Heracleum mantegazzianum)</i> <ul style="list-style-type: none"> <li>▪ Can cause major skin rash. Wear gloves and long sleeves when handling.</li> </ul> dame's rocket <i>(Hesperis matronalis)</i> perennial pepperweed <i>(Lepidium latifolium)</i> purple loosestrife <i>(Lythrum salicaria)</i> Japanese stilt grass <i>(Microstegium vimineum)</i> mile-a-minute weed <i>(Polygonum perfoliatum)</i>	<b>Fruits and Seeds</b> 	<b>Prior to flowering</b> Depends on scale of infestation Small infestation <ul style="list-style-type: none"> <li>▪ Pull or cut plant and leave on site with roots exposed.</li> </ul> Large infestation <ul style="list-style-type: none"> <li>▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).</li> <li>▪ Monitor. Remove any re-sprouting material.</li> </ul> <b>During and following flowering</b> Do nothing until the following year or remove flowering heads and bag and let rot.  Small infestation <ul style="list-style-type: none"> <li>▪ Pull or cut plant and leave on site with roots exposed.</li> </ul> Large infestation <ul style="list-style-type: none"> <li>▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).</li> <li>▪ Monitor. Remove any re-sprouting material.</li> </ul>
common reed <i>(Phragmites australis)</i> Japanese knotweed <i>(Polygonum cuspidatum)</i> Bohemian knotweed <i>(Polygonum x bohemicum)</i>	<b>Fruits, Seeds, Plant Fragments</b> Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	<b>Small infestation</b> <ul style="list-style-type: none"> <li>▪ Bag all plant material and let rot.</li> <li>▪ Never pile and use resulting material as compost.</li> <li>▪ Burn.</li> </ul> <b>Large infestation</b> <ul style="list-style-type: none"> <li>▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.</li> <li>▪ Monitor and remove any sprouting material.</li> <li>▪ Pile, let dry, and burn.</li> </ul>

January 2010



## **APPENDIX C**

Stormtech® Chamber System – Isolator® Row O & M Manual

# *Isolator® Row* O&M Manual



SC-740



MC-4500

## THE ISOLATOR® ROW

### INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

### THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-160LP, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160LP, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the “first flush” and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

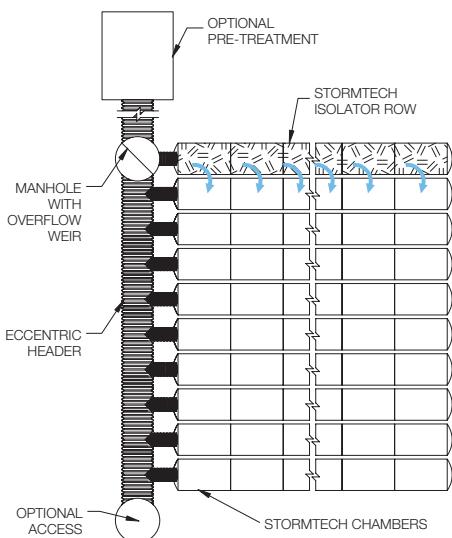
*Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.*



Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.



StormTech Isolator Row with Overflow Spillway (not to scale)





## ISOLATOR ROW INSPECTION/MAINTENANCE

### INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

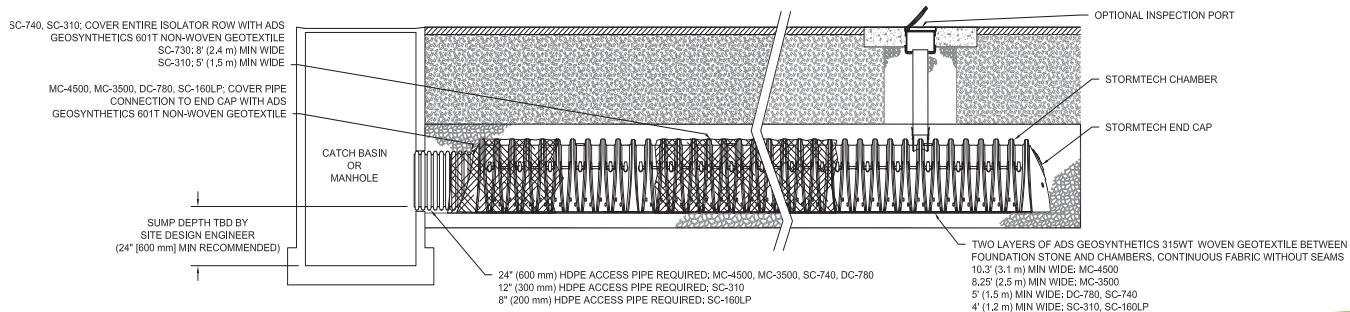
### MAINTENANCE

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45° are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

### StormTech Isolator Row (not to scale)

*Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row.*



# ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

## STEP 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)

- i. Remove lid from floor box frame
- ii. Remove cap from inspection riser
- iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
- iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Rows

- i. Remove cover from manhole at upstream end of Isolator Row
- ii. Using a flashlight, inspect down Isolator Row through outlet pipe
  1. Mirrors on poles or cameras may be used to avoid a confined space entry
  2. Follow OSHA regulations for confined space entry if entering manhole
- iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

## STEP 2

Clean out Isolator Row using the JetVac process.

A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable

B) Apply multiple passes of JetVac until backflush water is clean

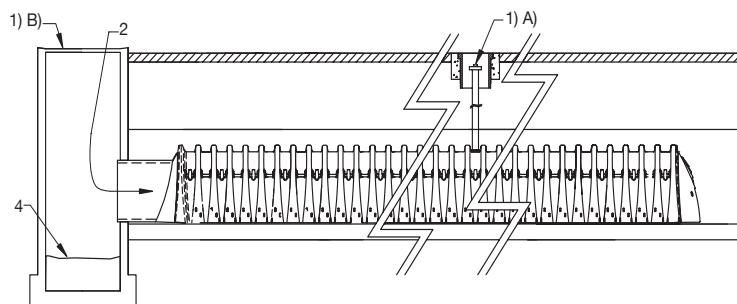
C) Vacuum manhole sump as required

## STEP 3

Replace all caps, lids and covers, record observations and actions.

## STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



## SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings		Sediment Depth (1)-(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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Advanced Drainage Systems, Inc.  
4640 Trueman Blvd., Hilliard, OH 43026  
1-800-821-6710 [www.ads-pipe.com](http://www.ads-pipe.com)



December 09, 2025

Planning & Sustainability  
Attn: Peter Britz  
1 Junkins Avenue, 3<sup>rd</sup> Floor  
Portsmouth, New Hampshire 03801

Seasons Coner Market  
1980 Woodbury Avenue  
Portsmouth, New Hampshire 03801  
Architect's Project Number: 41-25-20000

## Green Building Statement

This project, commissioned by Colbea Enterprise, LLC., located at 1980 Woodbury Avenue in Portsmouth, New Hampshire, is committed to integrating sustainable design principles consistent with the LEED green building standard. The proposed 5,500-square-foot wood-frame building, featuring HardiePlank siding, a hip roof structure, and a designated mechanical well to house HVAC equipment, has been planned with environmental responsibility and long-term performance as core priorities.

### Energy Efficiency and HVAC Performance

The project incorporates high-efficiency HVAC systems designed to reduce overall energy consumption while maintaining optimal indoor air quality. The mechanical well allows for enhanced system organization, ease of maintenance, and minimized visual impact. System selections prioritize reduced energy loads, high seasonal efficiency ratings, and the use of modern controls to optimize performance throughout the building's operational lifecycle.

### Energy Efficiency Lighting

The project incorporates high-efficiency lighting systems to reduce energy consumption and operational costs while enhancing occupant comfort. All interior and exterior lighting fixtures are specified as LED, providing superior luminous efficacy, extended service life, and reduced maintenance compared to conventional lighting technologies. Lighting power densities are designed to meet or exceed the requirements of the applicable energy code.

Lighting controls are integrated throughout the building to further improve energy performance, including occupancy sensors in regularly occupied and intermittently used spaces. These strategies ensure that lighting is used only when needed and at appropriate levels.

Collectively, the use of LED lighting and advanced controls significantly reduces overall electrical demand, lowers greenhouse gas emissions associated with building operation, and supports the project's commitment to sustainable and energy-efficient design.

### Sustainable Site and Building Materials

The design utilizes durable, low-maintenance exterior materials, such as HardiePlank siding, to enhance building longevity and reduce lifecycle environmental impacts. The aluminum storefront systems will feature low-emissivity glass, which enhances energy efficiency by regulating heat, providing UV protection, and optimizing light transmission, thereby improving overall comfort. Overall construction practices will follow sustainable material selection principles, including responsible sourcing and waste-minimization strategies.

## Water Conservation and Environmental Stewardship

Low-flow plumbing fixtures and water-conscious site strategies will be deployed to reduce potable water usage. Stormwater management design will align with local regulations and best practices to protect surrounding ecological conditions.

## Indoor Environmental Quality

The building will utilize low-emitting materials, high-efficiency ventilation, and appropriate filtration to promote healthy interior environments. Daylighting and occupant comfort considerations are integrated into the design where applicable.

Through these measures, this project demonstrates a clear commitment to responsible development, energy stewardship, and alignment with LEED-based sustainable building practices. The project team is dedicated to reducing environmental impact while delivering a durable, efficient, and high-quality facility for long-term community use.

If you have any questions or require additional information, please feel free to contact me at 479-273-7780 X438 or [helder.lopes@hfa-ae.com](mailto:helder.lopes@hfa-ae.com).

Respectfully submitted,



**Helder A. Lopes**

HFA-AE, LTD.  
31 Hayward St., Ste. E-1  
Franklin, MA 02038  
479-273-7780 x438  
[helder.lopes@hfa-ae.com](mailto:helder.lopes@hfa-ae.com)

## ACCESS AND RIGHT TO PASS/REPASS EASEMENT

This ACCESS AND RIGHT TO PASS/REPASS EASEMENT (“Easement”) is made and executed as of this \_\_\_\_\_ day of \_\_\_\_\_, 2026, by and among COLBEA ENTERPRISES, LLC, a Rhode Island limited liability company authorized to do business in New Hampshire, having an address of 695 George Washington Highway, Lincoln, RI, 02865 (“COLBEA”), and the CITY OF PORTSMOUTH, a duly incorporated municipality under the laws of New Hampshire, with a mailing address of 1 Junkins Avenue, Portsmouth, NH 03801 (“CITY”), with reference to the facts set forth below. COLBEA and CITY may be referred to collectively as the “parties” or singularly as a “party.”

### RECITALS

WHEREAS, COLBEA is the owner of a certain parcel of improved commercial property known and described as Tax Map 239, Lot 11, 1980 Woodbury Avenue, Portsmouth, Rockingham County, State of New Hampshire, as further described by deed that can be found at **Book 6281, Page 2912**, at the Rockingham Registry of Deeds, and is a corner lot flanked by Gosling Road and Woodbury Avenue (the “Property”);

WHEREAS, CITY is the owner of a Right-Of-Way (“SIDEWALK”) that runs along the Property on Gosling Road, as well as Woodbury Avenue, Portsmouth, Rockingham County, State of New Hampshire;

WHEREAS, COLBEA desires to provide an access easement relative to widening the aforesaid SIDEWALK along Gosling Road for the benefit of CITY for use by the general public for pedestrian travel to pass/repass over an area of its property, discussed further below.

NOW THEREFORE, in consideration of the recitals and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Grant of Access Easement to CITY. COLBEA grants to CITY an Easement for the public at large to pass/repass on, over, through and across the eight (8') foot paved SIDEWALK along Gosling Road. Said area is more particularly described and identified as “*Proposed 8' Wide Concrete Sidewalk*” on a Plan that can be found at **Plan #\_\_\_\_\_** at the Rockingham Registry of Deeds (the “Easement Area”).

2. Character of Easement. This Easement granted herein is appurtenant and shall inure to the present and future owners of the properties (including any permitted users of the properties). This Easement is to the benefit of CITY hereto, its respective successors in interest,

assigns, agents, contractors, principals, directors, shareholders, tenants, subtenants, customers, employees, guests, and invitees.

3. Use of Easement. No party shall block or obstruct the use of the Easement or use the Easement in a manner which is inconsistent with or detrimental to the use of the Easement, as set forth herein.

4. Maintenance. CITY shall maintain any paved and/or unpaved areas, if applicable, subject to the Easement granted herein as follows:

- (a) Maintain the surface in a level, smooth and evenly covered condition with the type of surface and materials originally installed or of similar quality, use and durability;
- (b) Remove and/or treat all snow and ice on the paved and/or unpaved areas to the extent reasonably necessary to keep the travel areas clear of snow and ice; and,
- (c) Remove all debris and refuse and sweep the paved areas to the extent reasonably necessary to keep the areas in a neat, clean and orderly condition.

5. Eminent Domain. If at any time all or any portion of the Easement Area granted herein shall be taken or threatened to be taken through condemnation, any party hereto who has the benefit of any such Easement granted herein which is taken or threatened to be taken, shall have the right to participate in and represent their own interest in any condemnation proceedings affecting such Easement and the condemnation award shall be allocated as determined pursuant to the condemnation proceeding.

6. General Provisions.

6.1 Binding on Successors. This Easement and all of the covenants and conditions herein contained shall be binding upon the executors, administrators, heirs, assigns and successors of each of the parties hereto.

6.2 Authority. Each party signing this Easement represents and warrants that such party has full authority to do so, that performance of all of the obligations contained herein have been duly authorized by all requisite actions on behalf of such party, and that this Easement binds such party.

6.3 Severability. If any term, provision, covenant or condition of this Easement is held to be invalid, void or otherwise unenforceable, to any extent, by any court of competent jurisdiction, the remainder of this Easement shall not be affected thereby, and each term, provision and covenant shall be valid and enforceable to the fullest extent permitted by law.

6.4 Intent. The intent of this Easement is to provide to the CITY the right to access COLBEA'S property over the Easement Area.

6.5 Entire Agreement. This Easement sets forth the entire understanding and agreement of the parties with respect to all matters discussed herein and supersedes any and all prior agreements, written or oral regarding such matters. The provisions hereof may not be changed or modified except by an instrument in writing, signed by the parties hereto.

6.6 New Hampshire Law. This Easement is being executed, delivered, and is intended to be performed in the State of New Hampshire. To the extent permitted by law, the execution, validity, construction and performance of this Easement shall be construed and enforced in accordance with the laws of the State of New Hampshire. This Agreement shall be deemed made and entered into in Rockingham County.

6.7 Runs with Land. All conditions, covenants and agreements contained herein are made for the direct benefit of CITY and shall burden COLBEA.

*[Remainder of Page Intentionally Left Blank]*

COLBEA

CITY

By: \_\_\_\_\_  
(name/title)

By: \_\_\_\_\_  
(name/title)

STATE OF NEW HAMPSHIRE

\_\_\_\_\_, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2025, personally appeared the above-named,  
\_\_\_\_\_, of COLBEA, and acknowledged the foregoing instrument to be the voluntary act  
and deed of said Limited Liability Company.

Before me,

\_\_\_\_\_  
Justice of the Peace/Notary Public  
My Commission Expires:

STATE OF NEW HAMPSHIRE

\_\_\_\_\_, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2021, personally appeared the above-named  
\_\_\_\_\_, of CITY, and acknowledged the foregoing instrument to be the  
voluntary act and deed of said Domestic Nonprofit Corporation.

Before me,

\_\_\_\_\_  
Justice of the Peace/Notary Public  
My Commission Expires:

## GENERAL INFORMATION

**OWNER & APPLICANT**  
MAP 239 LOT 11  
COLBEA ENTERPRISES, LLC  
695 GEORGE WASHINGTON HIGHWAY  
LINCOLN, RI 02865

### RESOURCE LIST

PLANNING/ZONING DEPARTMENT  
1 JUNKINS AVE, 3RD FLOOR  
PORTSMOUTH, NH 03801  
(603) 610-7216

BUILDING DEPARTMENT  
1 JUNKINS AVE  
PORTSMOUTH, NH 03801  
(603) 610-7243

PUBLIC WORKS  
680 PEVERLY HILL ROAD  
PORTSMOUTH, NH 03801  
(603) 427-1530

POLICE DEPARTMENT  
3 JUNKINS AVE  
PORTSMOUTH, NH 03801  
(603) 427-1500

FIRE DEPARTMENT  
170 COURT STREET  
PORTSMOUTH, NH 03801  
(603) 427-1515

### ASSOCIATED PROFESSIONALS

ARCHITECT  
HARRISON FRENCH & ASSOCIATES  
31 HAYWARD STREET, SUITE E-1  
FRANKLIN, MA 02038  
(401) 265-2533

ENVIRONMENTAL SERVICES  
T2G SOLUTIONS INC.  
20 OLDE CARRIAGE LANE  
DOUGLAS, MA 01516  
ERIC SIMPSON, P.G., LSP

TRAFFIC ENGINEER  
TFMORAN INC.  
48 CONSTITUTION DRIVE  
BEDFORD, NH 03110  
(203) 472-4488  
JEN PORTER, PE

LIGHTING DESIGN  
LSI INDUSTRIES  
10000 ALLIANCE ROAD  
CINCINNATI, OH 45242  
(513) 372-3368  
MIKE ELLISON, TECHNICAL DESIGN SERVICES SPECIALIST

UNDERGROUND FULE TANK  
STORAGE SYSTEM  
GPI - GREENMAN PEDERSEN, INC.  
21 DANIEL SQUARE, 2ND FLOOR  
PORTSMOUTH, NH 038001  
(603) 527-7481  
HUSEYIN SEVINCIL

CANOPY DESIGN  
AUSTIN MOHAWK AND COMPANY, LLC  
2175 BEECHGROVE PLACE  
UTICA, NY 13501  
(315) 793-3000  
SUSANNE M. WILSON

# PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE  
PORTSMOUTH, NEW HAMPSHIRE

## INDEX OF SHEETS

SHEET	SHEET TITLE	
C-00	COVER	
C-01	NOTES & LEGEND	
S-1	EXISTING CONDITIONS PLAN	
C-02	AERIAL PLAN	
C-03	SITE PREPARATION & DEMOLITION PLAN	
C-04	SITE LAYOUT PLAN	
C-05	GRADING & DRAINAGE PLAN	
C-06	UTILITY PLAN	
C-07	LANDSCAPE PLAN	
C-08	LANDSCAPE DETAILS	
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C-10	EROSION CONTROL NOTES	
C-11 & C-12	TRUCK MOVEMENT PLANS	
C-13	SIGN PLAN	
C-14 TO C-22	CONSTRUCTION DETAILS	
REFERENCE PLANS BY ASSOCIATED PROFESSIONALS		
- LIGHTING PLAN (BY LSI)		
- ARCHITECTURAL ELEVATIONS (BY HFA)		
- CANOPY PLANS (BY AUSTIN MOHAWK)		
PERMITS/APPROVALS		
NUMBER	APPROVED	EXPIRES
PORTSMOUTH PLANNING BOARD SITE PLAN REVIEW APPROVAL	-	-
PORTSMOUTH ZONING BOARD VARIANCE REQUEST	LU-25-39	7.15.2025
NHDES SEWER CONNECTION PERMIT	-	-
NHDES OIL REMEDIATION & COMPLIANCE AST PERMIT	-	-
NHDES UNDERGROUND STORAGE TANK (UST) CONSTRUCTION	-	-

## VICINITY PLAN



TAX MAP 239 LOT 11

### COVER

PROPOSED GAS STATION & CONVENIENCE STORE  
1980 WOODBURY AVENUE  
PORTSMOUTH, NEW HAMPSHIRE  
OWNED BY  
COLBEA ENTERPRISES, LLC

SCALE: AS NOTED

NOVEMBER 17, 2025

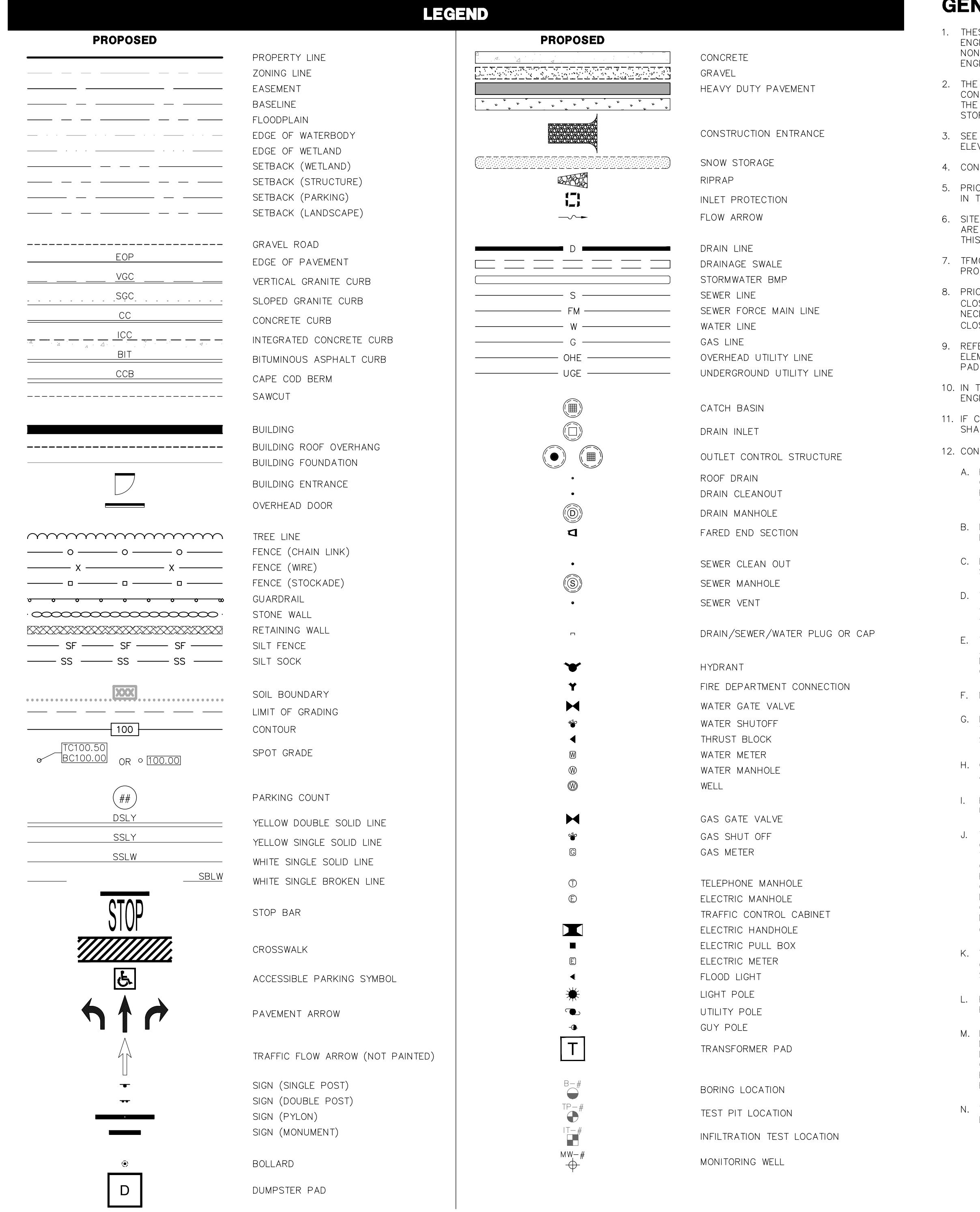
2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR
REV	DATE	DESCRIPTION	DR	CK



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists  
170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
www.tfmoran.com

F	46077.16	DR	JKC	FB	46077-16_COVER&NOTES	C-00
CK	CRR	CADFILE				





### ABBREVIATIONS

GENERAL		UTILITIES	
ABAN	ABANDON	EP	EDGE OF PAVEMENT
AC	ACRES	EXIST	EXISTING
ADJ	ADJUST	FFE	FINISHED FLOOR ELEVATION
APPROX	APPROXIMATE	FND	FOUNDATION
BC	BOTTOM OF CURB	HP	HIGH POINT
BIT	BITUMINOUS	INV	INVERT ELEVATION
BK/PG	BOOK & PAGE	IT	INFILTRATION TEST
BLDG	BUILDING	LF	LINEAR FEET
BMP	BEST MANAGEMENT PRACTICE	LSA	LANDSCAPE AREA
BS	BOTTOM OF SLOPE	MAX	MAXIMUM
BW	BOTTOM OF WALL	MIN	MINIMUM
COCON	CONCRETE	N/F	NOW OR FORMERLY
COORD	COORDINATE	NHFG	NEW HAMPSHIRE FISH & GAME
DIA	DIAMETER	NTS	NOT TO SCALE
ELEV	ELEVATION	NTS	NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

**DIG SAFE**  
DO NOT DIG  
THIS PROPERTY  
MAY CONTAIN  
UNEXCAVATED  
UTILITY PLANT SHIPS  
BUTT BUSINESS  
HOURS PRIOR TO CONSTRUCTION

### GENERAL NOTES

- THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-COMPLIANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
- THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER ONE WEEK IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
- SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
- CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN EASEMENTS.
- PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
- SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS. NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
- TMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
- PRIOR WRITTEN PERMISSION FROM THE LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
- REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
- IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
- IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
- CONTRACTOR'S GENERAL RESPONSIBILITIES:
  - BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
  - NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES IN PROPOSED LAYOUT AND IN EXISTING FEATURES.
  - EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. NOTIFY ALL APPROPRIATE AUTHORITY OF CONSTRUCTION ACTIVITIES REQUIRING TESTS OR INSPECTIONS IN ADVANCE.
  - TAKE APPROPRIATE MEASURES TO MINIMIZE NOISE, DUST, AND DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT BETWEEN THE HOURS OF 7:00 AM AND 6:00 PM, MONDAY THROUGH FRIDAY IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL ORDINANCES AND REGULATIONS OF THE CITY OF PORTSMOUTH.
  - Maintain emergency access to all areas affected by work at all times.
  - In accordance with RSA 430:53 and AGR 3800, the contractor shall not transport invasive species off the property, and shall dispose of invasive species on-site in a legal manner.
  - Coordinate with all utility companies and contact DIGSAFE (811 or 888-344-7233) at least 72 hours prior to any excavation.
  - Protect new and existing buried utilities during all site work. Damaged utilities shall be repaired or replaced at no additional cost to the owner.
  - The contractor shall be responsible for the means and methods of construction and for conditions at the site. These plans, prepared by TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES. CONTRACTOR IS RESPONSIBLE FOR WORKING THE SITE, THE SURVEYOR OR DIGSAFE (811) DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
  - Written dimensions have precedence over scaled or coordinate dimensions. In case of conflict between this plan set and any other drawing and/or specification, the engineer shall be notified immediately for clarifications.
  - Provide an as-built plan at the completion of the project as required by portsmouth regulations.
  - If any deviations from the approved plans and specifications have been made, the site contractor shall provide as-built drawings stamped by a licensed surveyor or qualified engineer along with a letter stamped by a qualified engineer describing all such deviations, and bear all costs for preparing and filing any new permits or permit amendments that may be required.
  - The contractor shall provide the following documentation to owner and engineer:
    - Advance written notice at least one week prior to commencing any work under the permit and notification to aot via the start of construction form.
    - If any underground detention systems, infiltration systems, or filtering systems were installed, for each such system:
      - Representative photographs of the system after completion but prior to backfilling; and
      - A letter signed by the engineer who observed the system prior to backfilling that the system conforms to the approved plans and specifications.
    - Upon completion of construction, written certification that:
      - All work has been constructed in accordance with the approved plans and specifications.
      - If any deviations from the approved plans were made, written descriptions and as-built drawings of all such deviations, stamped by a qualified engineer, shall be provided.

### GRADING & DRAINAGE NOTES

- THE CONTRACTOR SHALL ENSURE THAT ALL WORK INCLUDING INSPECTIONS AND TESTS IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
- THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO Dewatering METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
- COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
- COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED LAYOUT AND GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES, FOOTING DRAINS, AND ROOF DRAIN INFORMATION.
- LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
- THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
- THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER.
- ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
- ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE WITHIN 1/4".
- THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
- ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
- ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
- STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- NO FILL SHALL BE PLACED IN ANY WETLAND AREA WITHOUT A WETLANDS PERMIT.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
- DENSITY REQUIREMENTS:
 

MINIMUM DENSITY*	LOCATION
95%	BELLOW PAVED OR CONCRETE AREAS
92**	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90***	BELLOW LOAM AND SEED AREAS

 ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT.
  - \* ASTM D-1557
  - \*\* ASTM D-698.
- NO FILL SHALL BE PLACED IN ANY WETLAND AREA WITHOUT A WETLANDS PERMIT.
- THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:
 

DRAINAGE	MUNICIPAL
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	UTIL
ELECTRIC	EVERSOURCE
TELEPHONE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.
CABLE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.

### UTILITY NOTES

- LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION IS AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
- COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
- ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
- SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
- ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
- ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
- THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
- PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
- UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPAKED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
- THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:
 

DRAINAGE	MUNICIPAL
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	UTIL
ELECTRIC	EVERSOURCE
TELEPHONE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.
CABLE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.

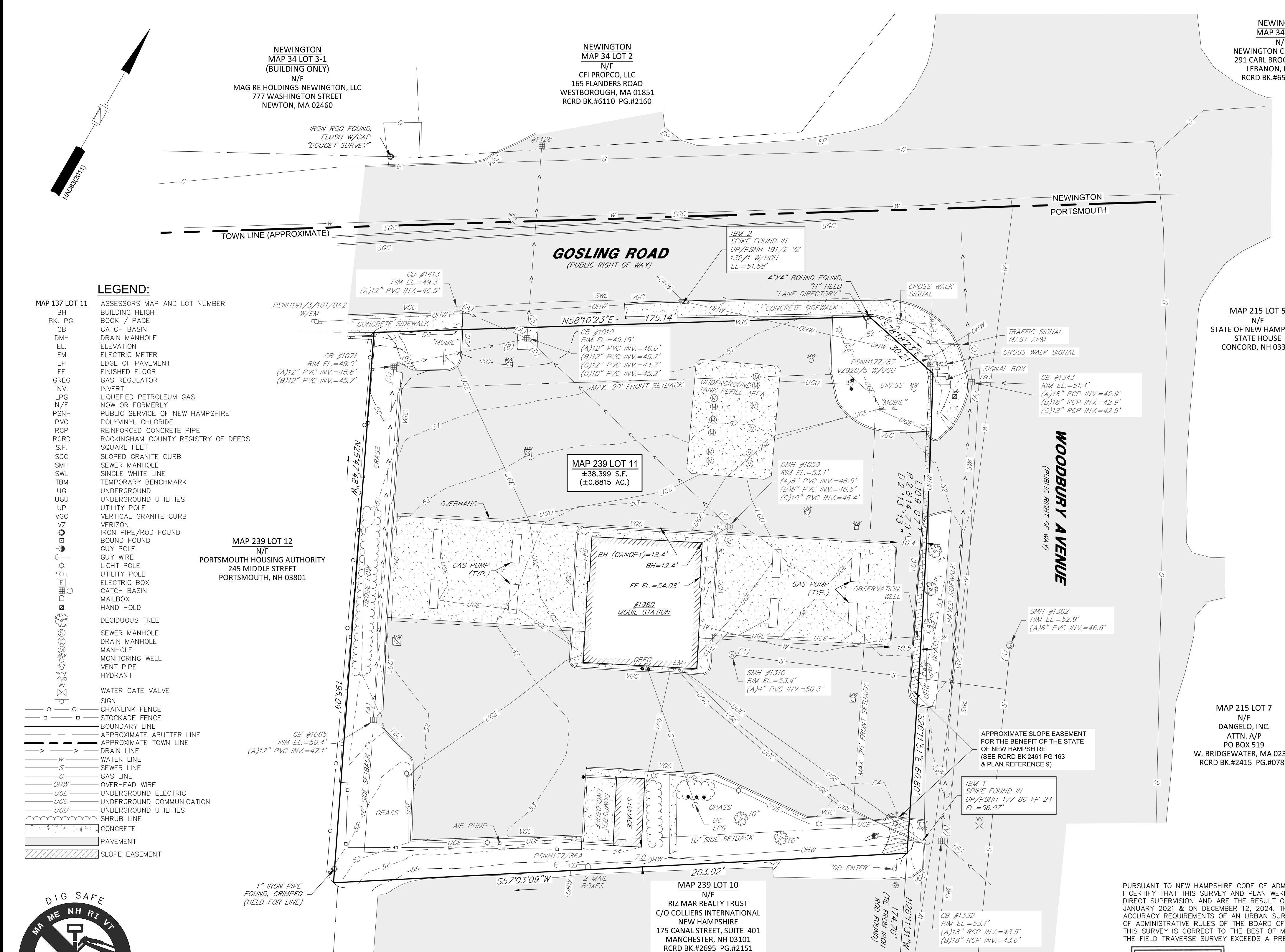
### TAX MAP 239 LOT 11

**NOTES & LEGEND**

**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

### SCALE:

Seacoast Division		Civil Engineers	170 Commerce Way, Suite 102
TFM	®	Structural Engineers	Portsmouth, NH 03801
		Traffic Engineers	Phone (603) 431-2222
		Land Surveyors	Fax (603) 431-0910
		Landscape Architects	www.tfmoran.com
		Scientists	
F	46077.16	DR	JKC FB
I		CK	CRR CADFILE
E		DR	CK
NOVEMBER 17, 2025	C-01		



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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

**NOTES:**

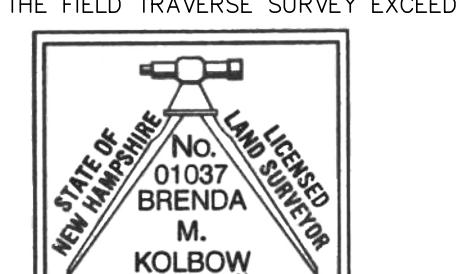
1. THE PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR (G1) ZONING DISTRICT.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 239 AS LOT 11.
3. THE PARCEL IS LOCATED IN ZONE X, "AREA OF MINIMAL FLOOD HAZARD", AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 260 OF 681, MAP NUMBER 33015C0260F, WITH A MAP REVISED DATE OF JANUARY 29, 2021.
4. DIMENSIONAL REQUIREMENTS:  
LOT STANDARDS:  
MIN. DEVELOPMENT SITE AREA: REQUIRED: 38,399 SF  
MIN. LOT DEPTH: NR  
MIN. STREET DEPTH: 200FT  
MIN. STREET FRONTRAGE: 100FT\*\*  
MIN. OPEN SPACE: 10%  
MINIMUM YARD DIMENSIONS:  
FRONT (MIN./MAX.): 0FT/20FT 10.4FT  
SIDE: 10FT 7.0FT  
REAR: 15FT >15FT  
DESIGN STANDARDS:  
MAX. BUILDING HEIGHT: 40FT 18.4FT  
MAX. BUILDING COVERAGE: 70% 19.3%  
MAX. BUILDING FOOTPRINT: 10,000SF 7,402SF
5. OWNER OF RECORD:  
MAP 239 LOT 11:  
COLBEA ENTERPRISES, LLC  
695 GEORGE WASHINGTON HIGHWAY  
LINCOLN, RI 02865  
RCRD BK#2821 PG#2912
6. PARCEL AREA:  
MAP 239 LOT 11:  
±38,399 S.F.  
(±0.8815 ACRES)
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. THIS IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE BOUNDARY LINES, TOPOGRAPHY AND CURRENT SITE CONDITIONS OF MAP 239 LOT 11.
9. FIELD SURVEY COMPLETED BY TCE IN JANUARY 2021 AND ON DECEMBER 12, 2024 USING A LEICA TS-16 TOTAL STATION, GS-18 & GS-15 GPS RECEIVERS AND CARLSON DATA COLLECTION SOFTWARE.
10. HORIZONTAL DATUM IS NAD83 (2011) PER REDUNDANT NETWORK RTK GPS OBSERVATIONS. THE VERTICAL DATUM IS NAVD88 PER REDUNDANT NETWORK RTK GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 1 FOOT.
11. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH ARE NOT EXAMINED OR LOCATED ON THIS PARCEL(S). COLD DETERMINE.
12. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.

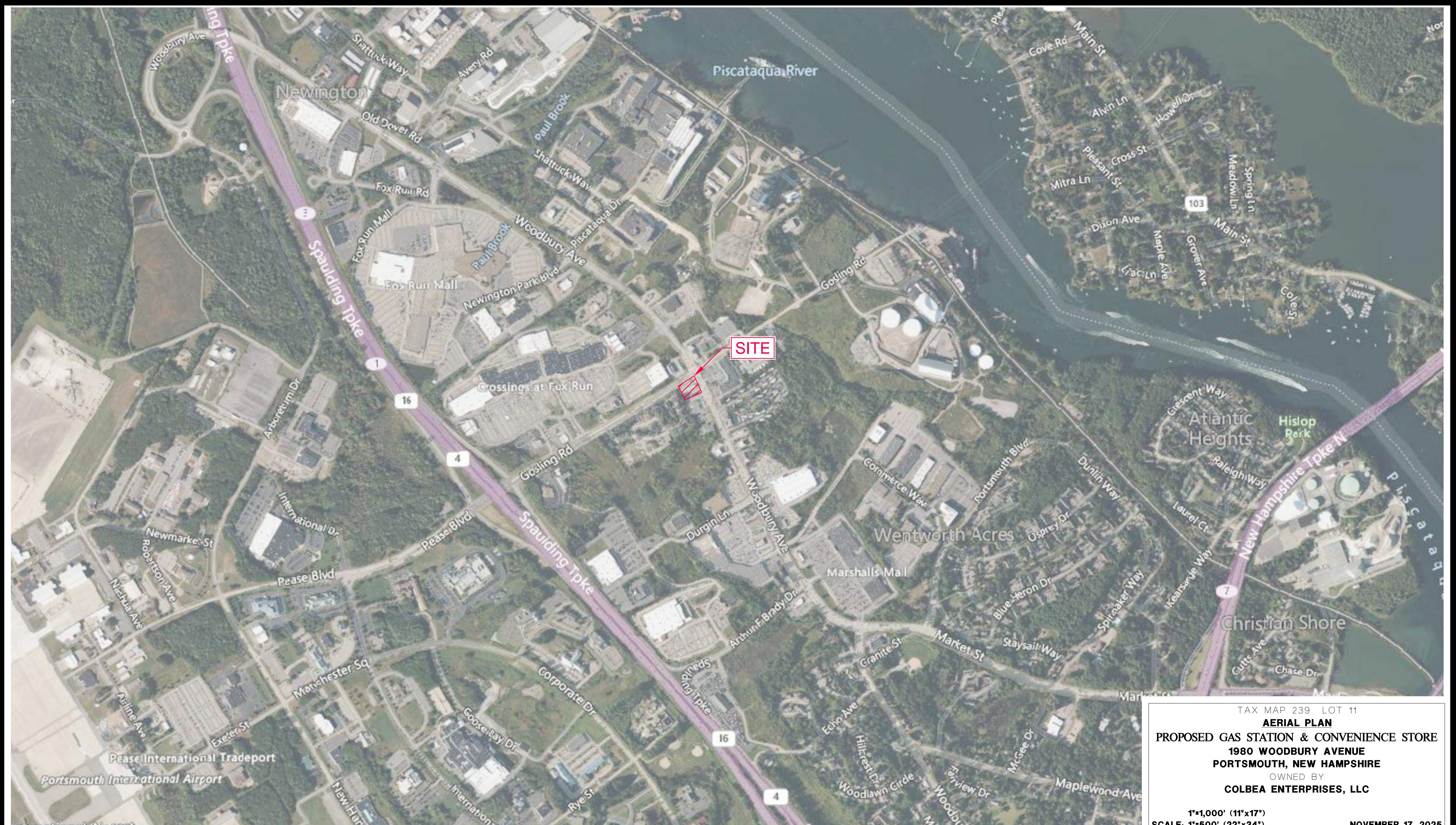
**PLAN REFERENCES:**

1. "STATE OF NEW HAMPSHIRE STATE HIGHWAY DEPARTMENT PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. SN-FAP 129 (2) WHITE MOUNTAIN HIGHWAY CITY OF PORTSMOUTH COUNTY OF ROCKINGHAM LAYOUT AS-BUILT PLANS" DATED 4-28-40.
2. "STATE OF NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS PLANS OF PROPOSED FEDERAL AID PRIMARY PROJECT FG-F-027-1922 N.H. PROJECT NO. C-3275 CONTRACT I MARKET STREET EXTENSION LAYOUT AS BUILT PLANS CITY OF PORTSMOUTH - TOWN OF NEWINGTON COUNTY OF ROCKINGHAM" DATED 8-18-83.
3. "ALTA/ACSM LAND TITLE SURVEY TOSCO MARKETING COMPANY 97 GOSLING ROAD NEWINGTON, NEW HAMPSHIRE" BY MCNEANEY SURVEY ASSOCIATES, DATED FEB. 10, 2000, WITH REVISION 1 DATED 3/29/00, RCRD PLAN #D-28044.
4. "BOUNDARY & TOPOGRAPHIC PLAN ASSESSORS MAP R-39 - LOT 11 WOODBURY AVE. & GOSLING ROAD PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR MOBIL OIL CORPORATION" BY STORCH ASSOCIATES, DATED 12/6/91, RCRD PLAN #D-21731.
5. "TRAFFIC SIGNAL PLAN DOVER ROAD - GOSLING ROAD FOX RUN MALL NEWINGTON, NEW HAMPSHIRE" BY ANDREWS-NICHOLS ENGINEERS, ENVIRONMENTAL CONSULTANTS ARCHITECTS, DATED FEB. 1, 1982, WITH LAST REVISION 4-23-82.
6. "EASEMENT PLAN OVER LAND OF PORTSMOUTH HOUSING AUTHORITY ASSESSOR'S PARCEL 239-12 GOSLING ROAD, PORTSMOUTH, NH, IN FAVOR OF THE CITY OF PORTSMOUTH FOR GMA ENGINEERS, INC." BY JAMES VERRA AND ASSOCIATES, INC., DATED 7/27/2016, WITH REVISION 1 DATED 8/9/2016, RCRD PLAN #D-39722.
7. "LOT LINE ELIMINATION PLAN FOR D'ANGELO, INC. WOODBURY AVENUE COUNTY OF ROCKINGHAM PORTSMOUTH, NH" BY RICHARD P. MILLETTE AND ASSOCIATES, DATED DEC. 1982, RCRD PLAN #D-11318.
8. "EXISTING CONDITIONS PLAN GOSLING ROAD & WOODBURY AVENUE PORTSMOUTH & NEWINGTON, N.H. FOR CMA ENGINEERS, INC." BY JAMES VERRA AND ASSOCIATES, INC., DATED 4/14/2016, WITH REVISION 2 7/27/2016. PLAN IS NOT RECORDED.
9. "PROPERTY ACQUIRED BY STATE OF NEW HAMPSHIRE FROM DUNCAN CONSTRUCTION COMPANY, INC. IN PORTSMOUTH, N.H. ROCKINGHAM COUNTY PROJECT: PORTSMOUTH-NEWINGTON, C-3275" DATED AUGUST 15, 1983, RCRD PLAN C-11802.

**TAX MAP 239 LOT 11****EXISTING CONDITIONS PLAN****MOBIL STATION****1980 WOODBURY AVENUE****PORTSMOUTH, NEW HAMPSHIRE****COUNTY OF ROCKINGHAM**OWNED BY  
COLBEA ENTERPRISES, LLCSCALE: 1" = 20' (22x34)  
1" = 40' (11x17)

JANUARY 14, 2025

PURSUANT TO NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES LAN 503.09(24):  
I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY  
DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN  
JANUARY 2021 & ON DECEMBER 12, 2024. THIS SURVEY CONFORMS TO THE  
ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE  
OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS.  
THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND  
THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.2025-01-14  
DATE2025-01-14  
DATE



TAX MAP 239 LOT 11

**AERIAL PLAN**

**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
**OWNED BY**  
**COLBEA ENTERPRISES, LLC**

1"=1,000" (11"x17")

SCALE: 1"=500' (22"x34")

NOVEMBER 17, 2025

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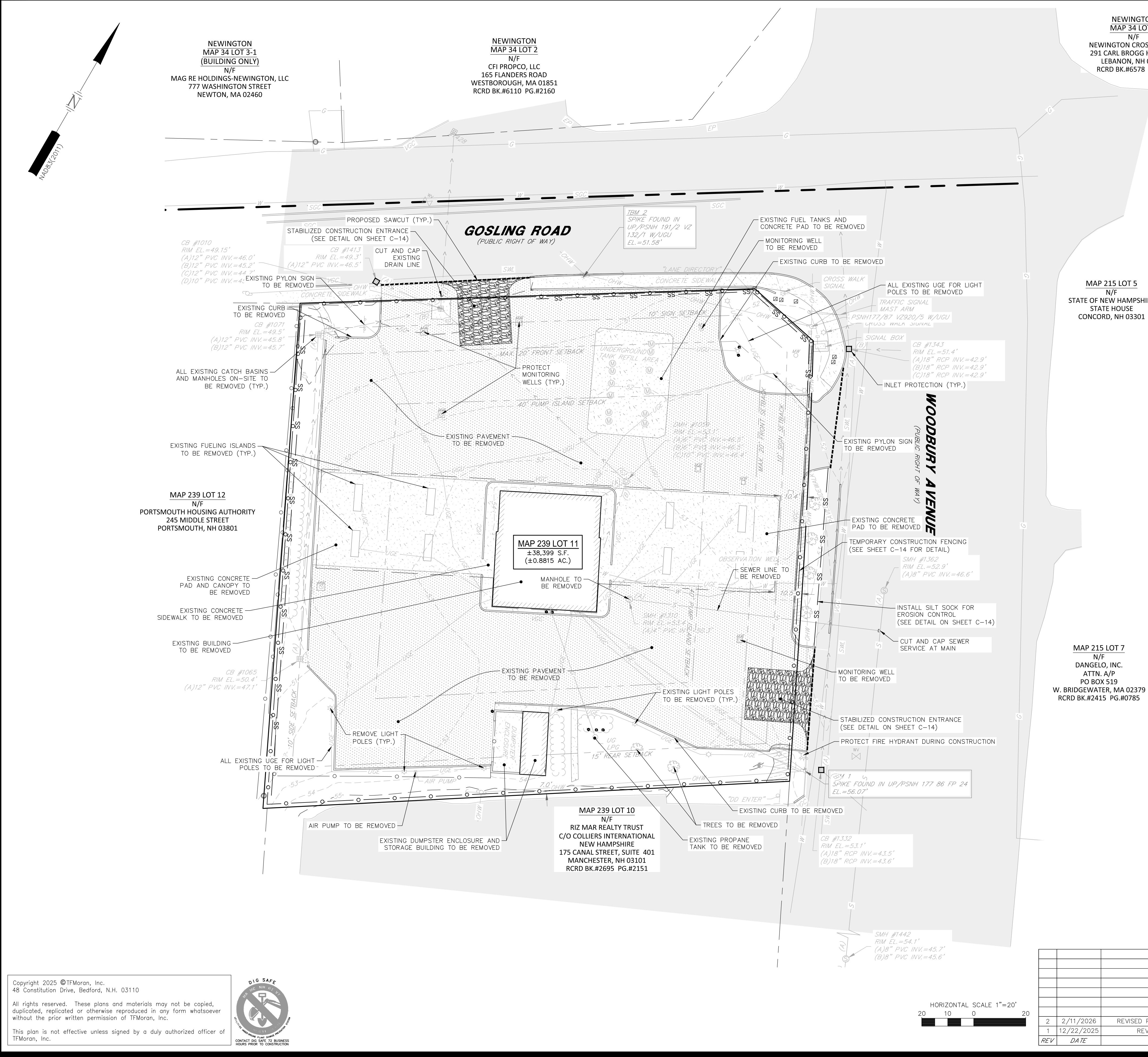
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2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR
REV	DATE	DESCRIPTION	DR	CK

Seacoast Division		Civil Engineers		170 Commerce Way, Suite 102
		Structural Engineers		Portsmouth, NH 03801
		Traffic Engineers		Phone (603) 431-2222
		Land Surveyors		Fax (603) 431-0910
		Landscape Architects		www.tfmoran.com
TFM	®			
F	46077.16	DR	JKC	FB
		CK	CRR	CADFILE
				46077-16_AERIAL
				C-02

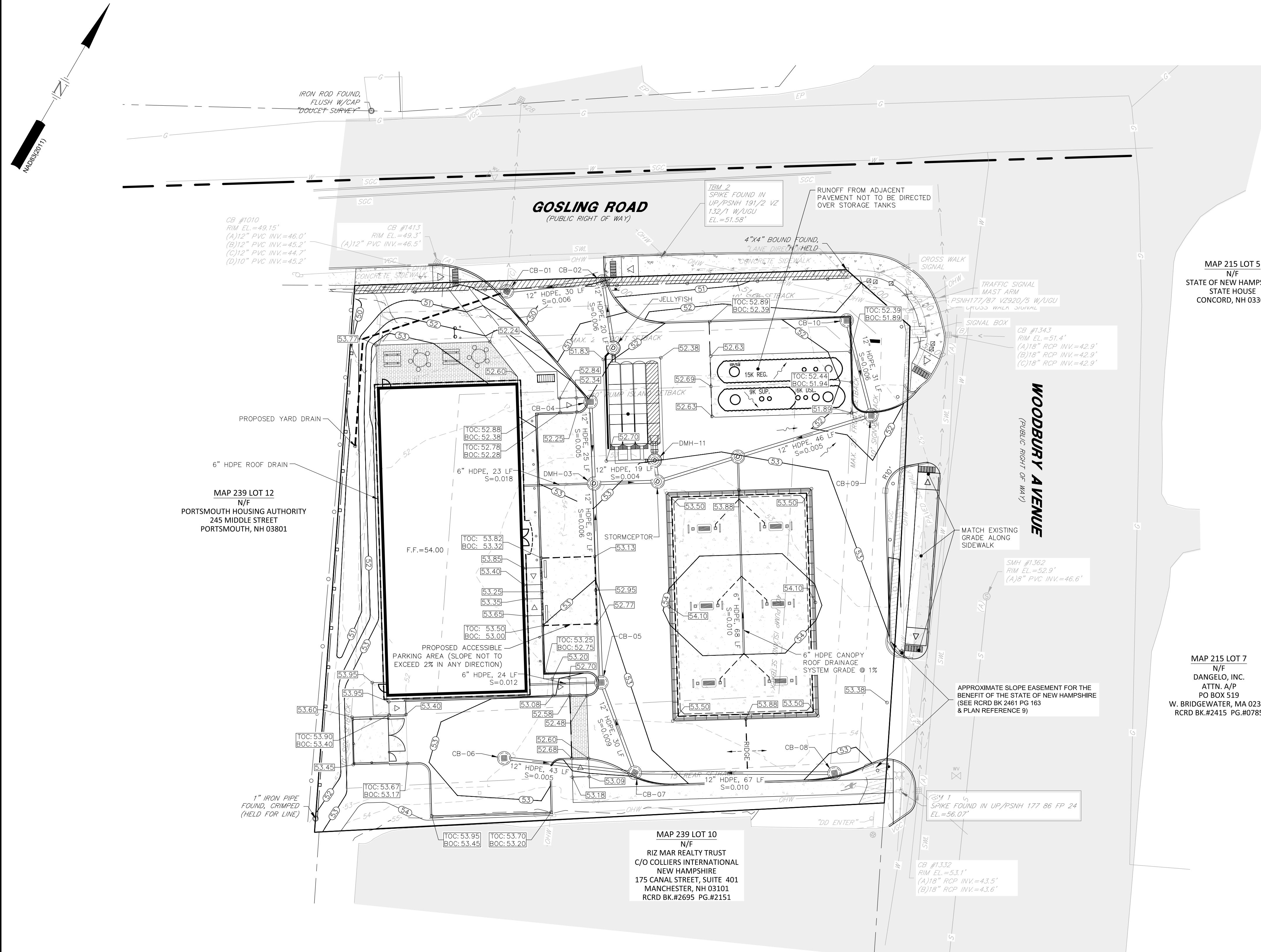


REV	DATE	DESCRIPTION	DR	CK
2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

FILE	46077.16	DR	JKC	FB	46077-16_SITEPREP	C-03
CK	CRR	CAFILE	DR	CK		







## NOTES

- SEE NOTES ON SHEET C-01.
- ALL DOORS AND GARAGE ENTRANCES SHALL BE AT FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED.
- PROPOSED SPOT GRADES ARE PROVIDED TO THE NEAREST 0.05'. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE FINISHED GRADES MEET ADA STANDARDS FOR WHEEL CHAIR RAMPS, ADA SPACES AND ACCESS AISLES, CROSSWALKS, SIDEWALKS, ETC.
- ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
- LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- DRAINAGE PIPES WITH LESS THAN 3' COVER SHALL BE INSULATED (SEE UTILITY TRENCH DETAIL) AND DRAINAGE CATCH BASINS WITH LESS THAN 3.5' OF COVER OVER INVERTS SHALL USE SLAB TOP CATCH BASIN (SEE DETAILS).
- THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND ARCHITECTURAL PLANS FOR SUBDRAINAGE SYSTEMS FOR THE BUILDING FOUNDATION. SUBDRAINAGE MUST DAYLIGHT OR TIE INTO THE STORMWATER MANAGEMENT SYSTEM.

STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB-01	RIM = 49.15 INV.IN(CB-02) = 44.80
CB-02	RIM = 50.00 INV.IN(JF) = 45.10 INV.OUT = 45.00
CB-04	RIM = 52.06 INV.OUT = 46.45
CB-05	RIM = 52.41 INV.IN(CB-07) = 46.70 INV.IN(ROOF DRAIN 2) = 46.70 INV.OUT = 46.70
CB-06	RIM = 52.20 INV.OUT = 47.35
CB-07	RIM = 52.62 INV.IN(CB-08) = 47.10 INV.IN(CB-06) = 47.10 INV.OUT = 47.00
CB-08	RIM = 52.75 INV.OUT = 47.80
CB-09	RIM = 51.67 INV.IN(CB-10) = 46.70 INV.OUT = 46.60
CB-10	RIM = 51.67 INV.OUT = 46.90
CB-12	RIM = 53.05 INV.IN(CB-09) = 46.35 INV.IN(CANOPY DRAIN) = 46.35 INV.OUT = 46.25
DMH-03	RIM = 52.79 INV.IN(CB-05) = 46.30 INV.IN(CB-04) = 46.30 INV.IN(ROOF DRAIN 1) = 46.30 INV.OUT = 46.20
DMH-11	RIM = 52.99 INV.IN(Pipe - (15)) = 46.00 INV.OUT = 45.90
JELLYFISH	RIM = 51.73 INV.IN(Pipe - (18)) = 45.25 INV.OUT = 45.25
STORMCEPTOR	RIM = 53.31 INV.IN(CB-09 (1)) = 46.10 INV.IN(DMH-03) = 46.10 INV.OUT = 46.00

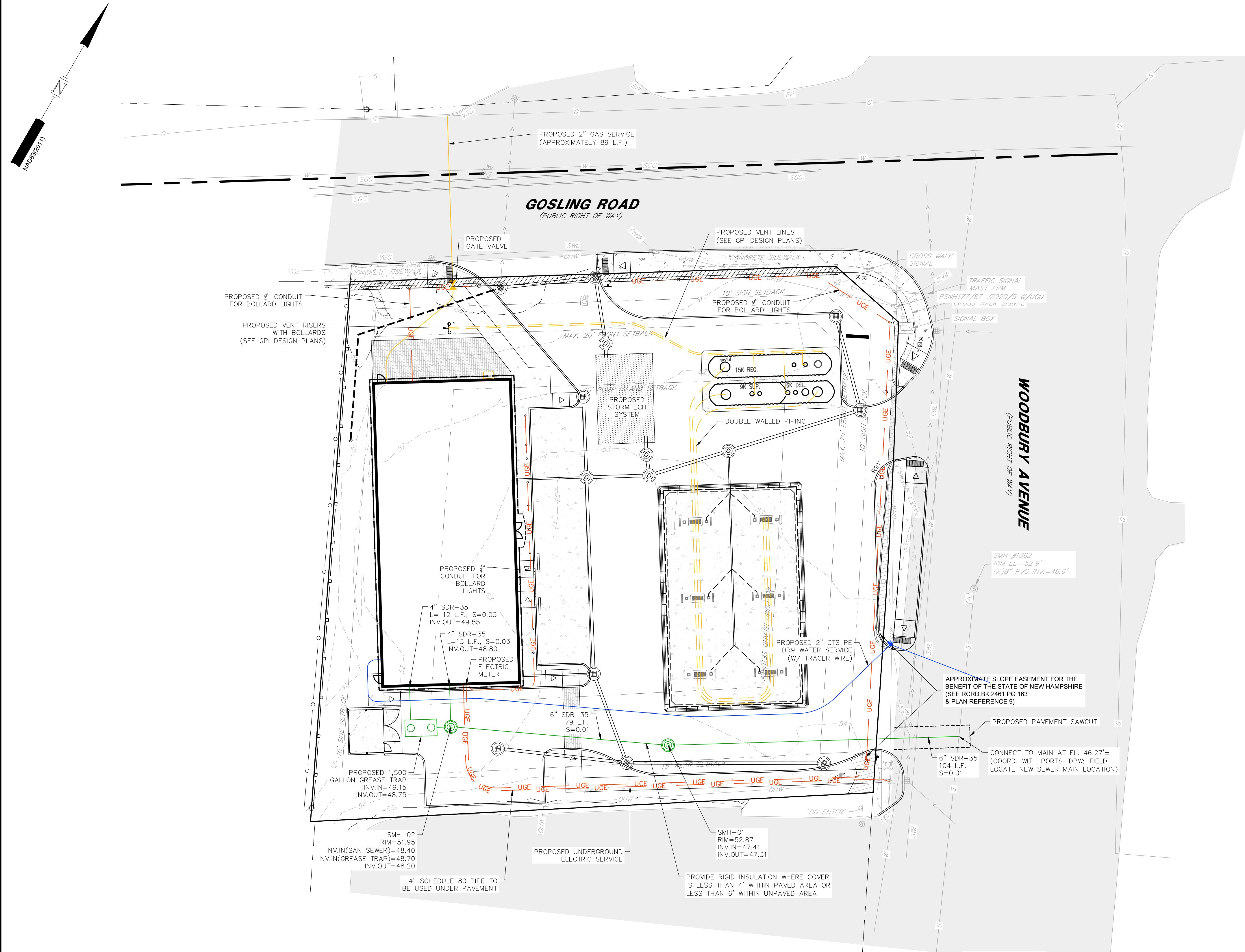
**TAX MAP 239 LOT 11**  
**GRADING & DRAINAGE PLAN**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
**OWNED BY**  
**COLBEA ENTERPRISES, LLC**

1"=40' (11"x17")  
 SCALE: 1"=20' (22'X34')

NOVEMBER 17, 2025

Seacoast Division		Civil Engineers	
TFM	®	Structural Engineers	170 Commerce Way, Suite 102
		Traffic Engineers	Portsmouth, NH 03801
		Land Surveyors	Phone (603) 431-2222
		Landscape Architects	Fax (603) 431-0910
		Scientists	www.tfmoran.com
F	46077.16	DR	JKC FB
CK	CRR	JKC CADFILE	46077-16_GRADING&DRAINAGE
EL		REV	C-05





## NOTES

1. SEE NOTES ON SHEET C-01.
2. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:
 

DRAINAGE	MUNICIPAL
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	UNUTIL
ELECTRIC	EVERSOURCE
TELEPHONE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.
CABLE	COMCAST XFINITY, CONSOLIDATED COMMUNICATIONS, VERIZON, ETC.

TAX MAP 239 LOT 11  
**UTILITY PLAN**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
**OWNED BY**  
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NOVEMBER 17, 2025

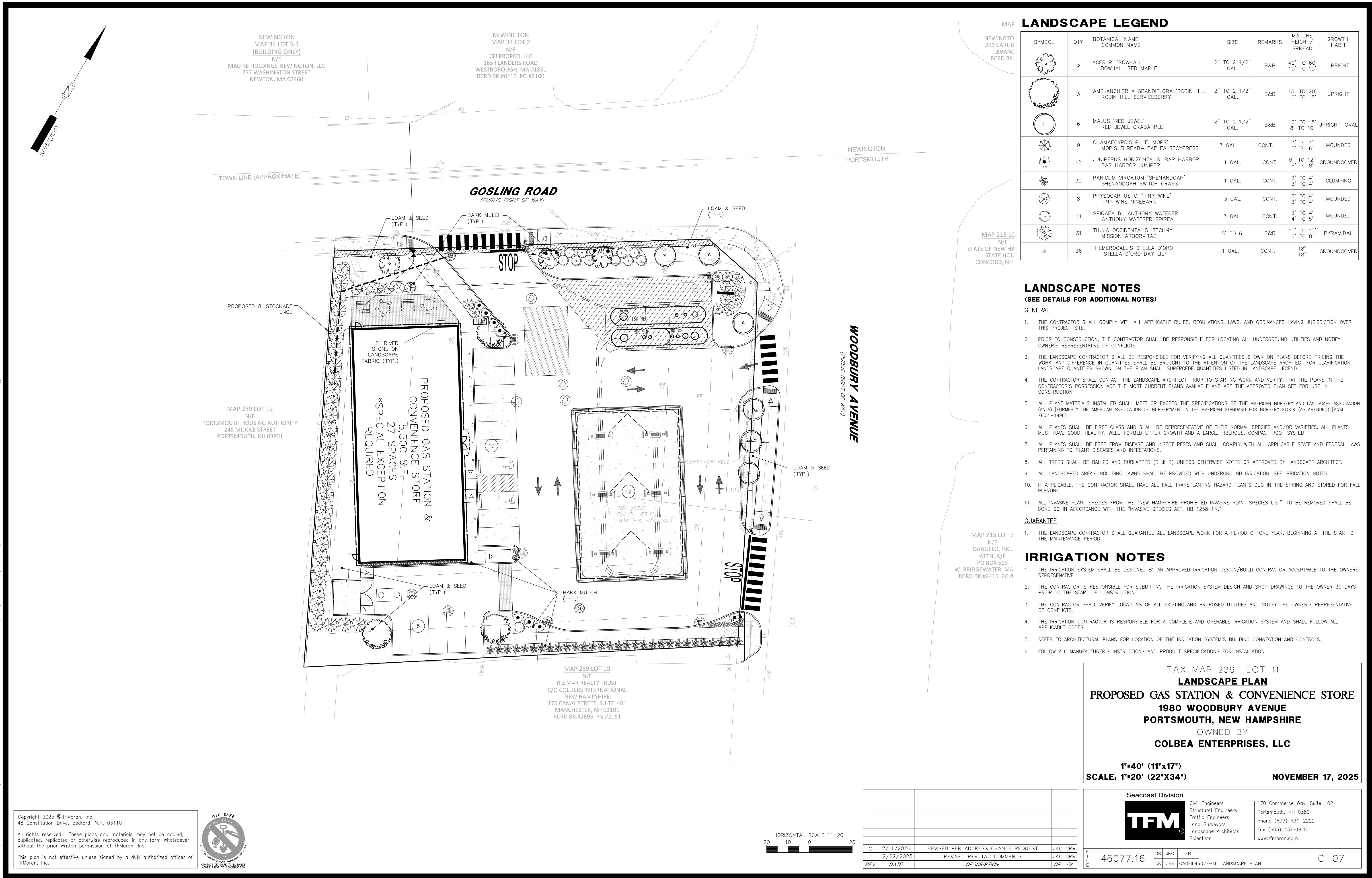


20 HORIZONTAL SCALE 1"=20' 20

REV	DATE	DESCRIPTION	DR	CK
2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

F	46077.16	DR	JKC	FB	46077-16.Utility	C-06
46077.16	CK	CRR	CADFILE			

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## LANDSCAPE NOTES

### GENERAL

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
- THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
- ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPRIGHT GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
- ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
- ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
- IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
- ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."

### GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

## LANDSCAPE SPECIFICATIONS

### SITE AND SOIL PREPARATION

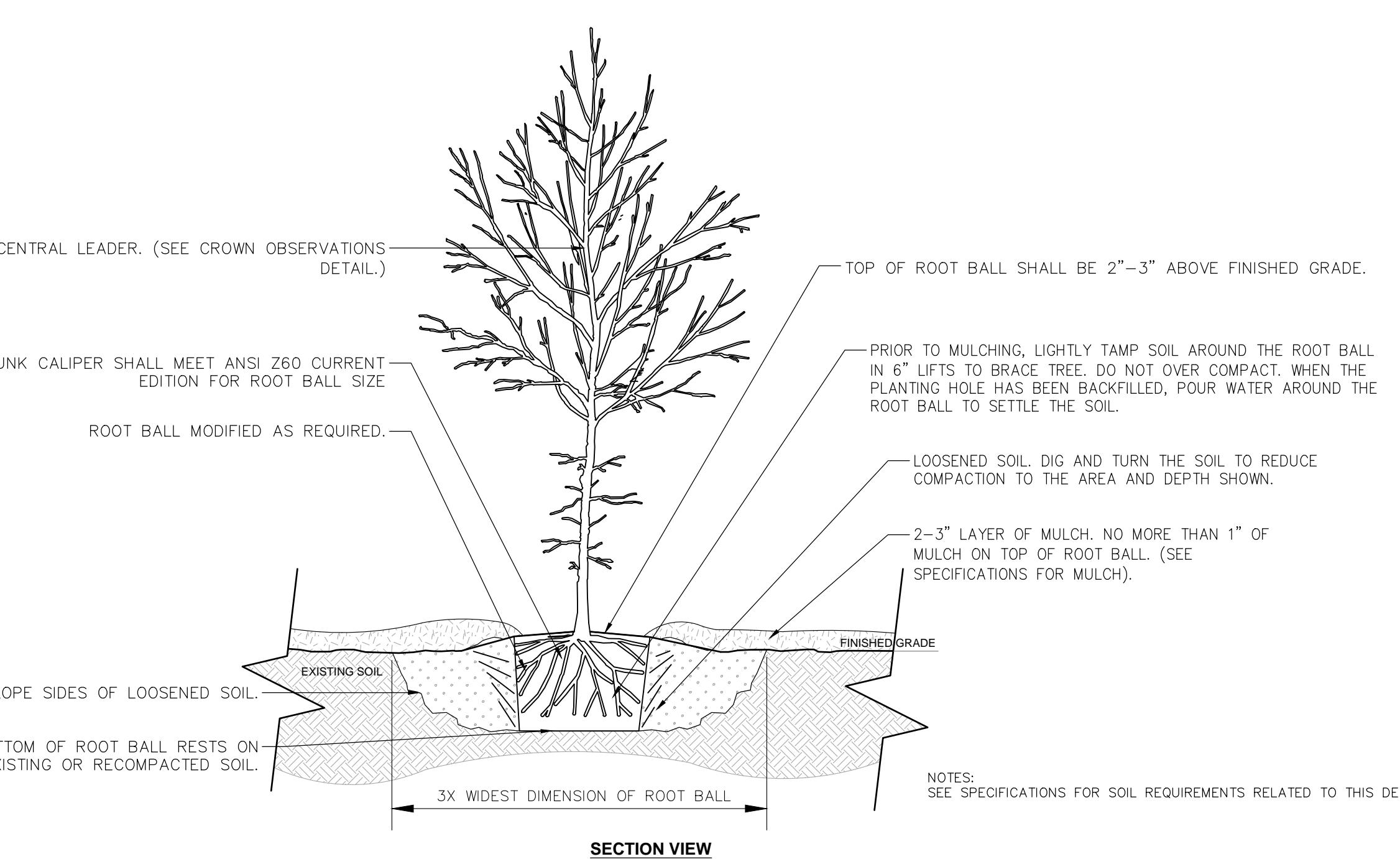
- WHEN CONDITIONS DETERMINAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
- ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPAKTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
- LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER. SURFACE ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.6. LOAM SHALL CONTAIN A MINIMUM OF THREE PERCENT (3%) AND A MAXIMUM OF TWENTY PERCENT (20%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A #000 NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
- NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
- SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
- APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
- THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

### PLANTING

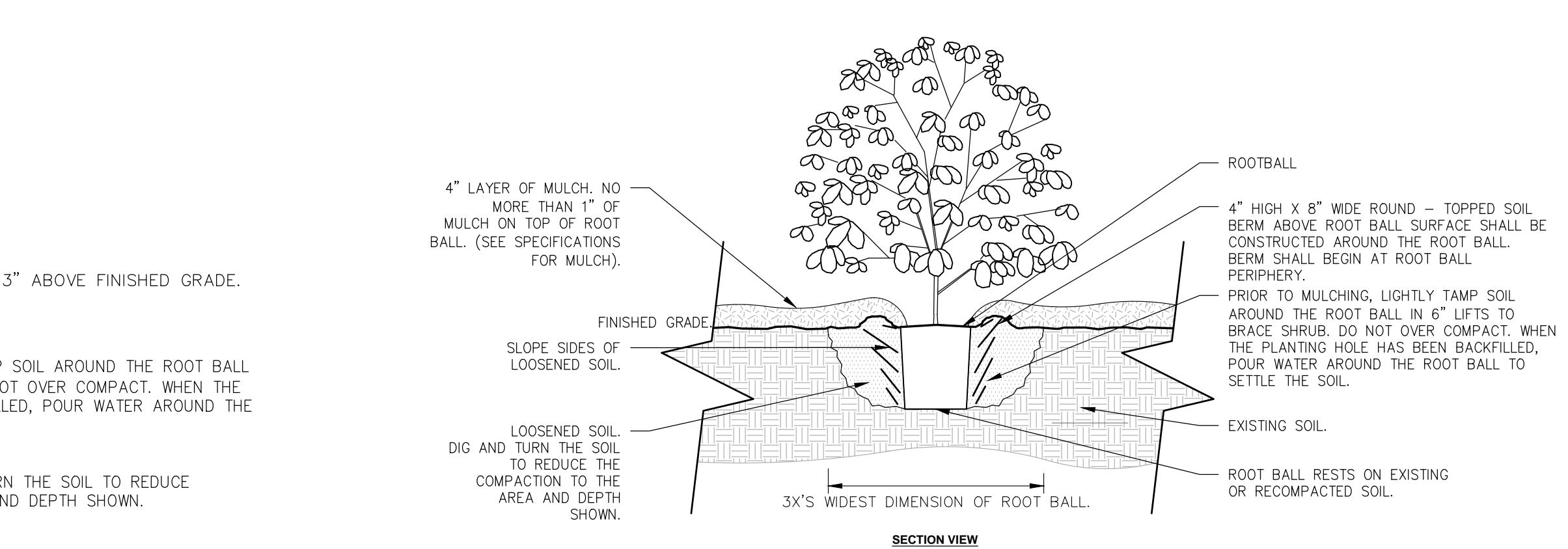
- EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
- ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACUTED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.
- DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
- FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
- DISH TOP OF BACKFILL TO ALLOW FOR MULCH - PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6" DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.
- MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"-2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.
- STAKE AND GUY TREES IMMEDIATELY AFTER PLANTING (TREE SUPPORT STAKES SHALL BE 2" X 3" X 8", WOOD STAKES, GUYING WIRE SHALL BE NO. 12 GAUGE GALVANIZED SOFT STEEL WIRE. HOSE FOR COVERING WIRE SHALL BE NEW OR USED TWO PLY RUBBER HOSE NOT LESS THAN 1/2 INCH INSIDE DIAMETER. (PLASTIC "CINCH-TIES" OR EQUIVALENT FASTENING DEVICE MAY BE AN ACCEPTABLE GUY WIRE AND HOSE PROTECTOR SUBSTITUTE.)
- TREECATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
- ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
- TREES TO REMAIN STAKED FOR 1 FULL GROWING SEASON.
- THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

### SEEDING

- SLOPES UP TO AND INCLUDING 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA.
- SLOPES STEEPER THAN 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA. SEE CIVIL FOR ADDITIONAL EROSION CONTROL MEASURES.
- GENERAL SEED WILL BE NH DOT SPECIFICATION SECTION 644, TABLE 644-1-PARK SEED TYPE 15, INCLUDING NOTES TO TABLE 1, 2 & 3.

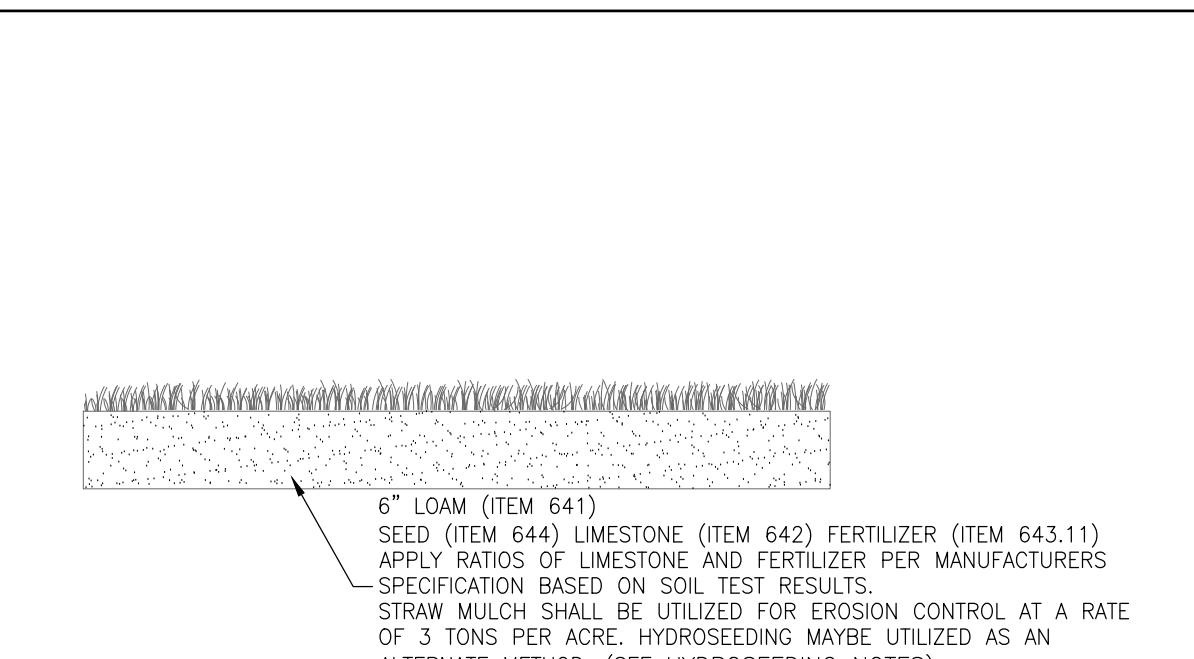


**TREE WITH BERM**



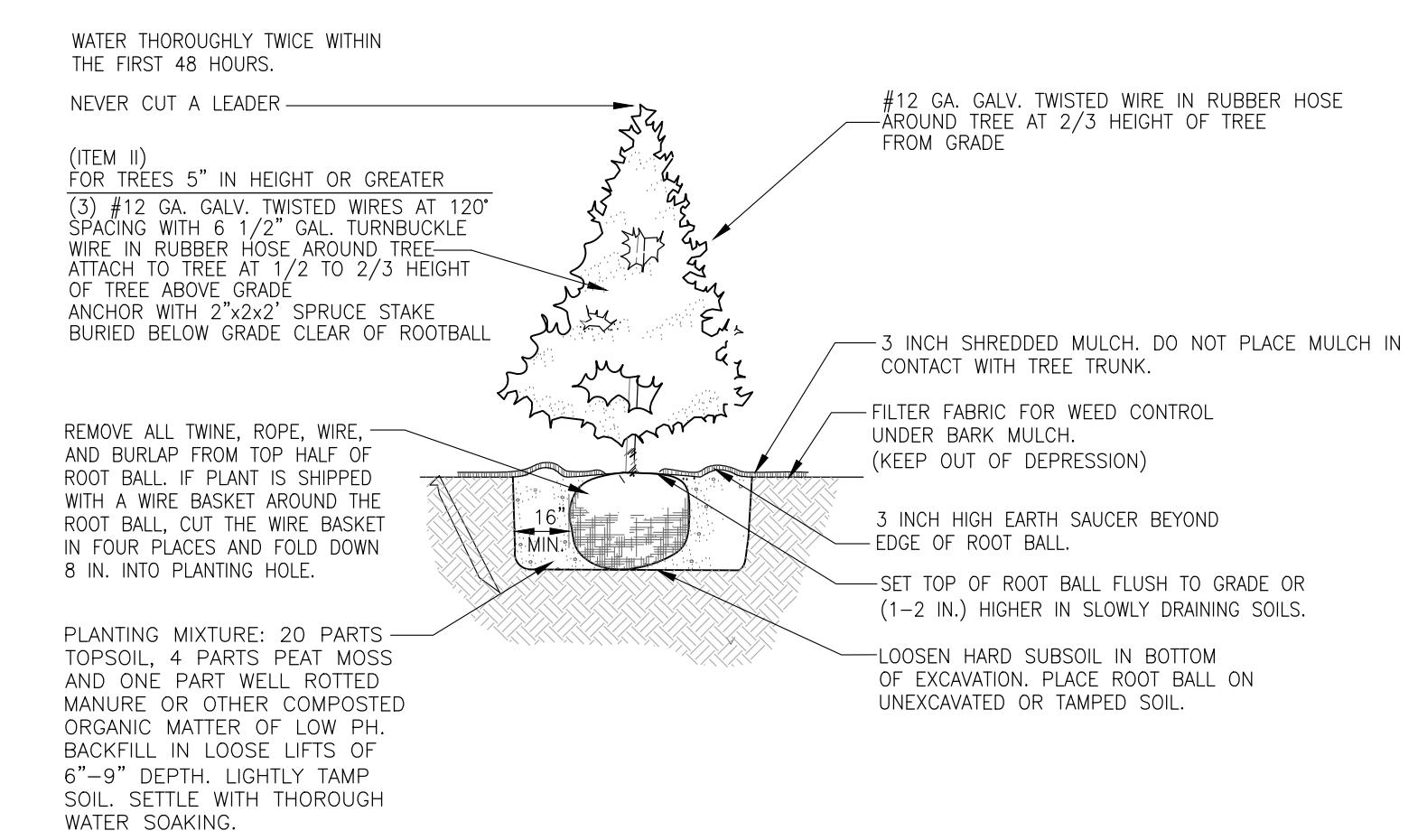
**SHRUB PLANTING**

NOT TO SCALE



**LOAM & SEED**

NOT TO SCALE



**EVERGREEN PLANTING**

NOT TO SCALE

20 HORIZONTAL SCALE 1"=20'

20 10 0 20

REV	DATE	REvised per Address Change Request	JKC	CRR
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1	12/22/2025	REvised per TAC Comments	JKC	CRR

REV	DATE	DESCRIPTION	DR	CK	FB	FILE	46077.16	DR	JKC	FB	FILE	46077-16 LANDSCAPE PLAN	C-08

TAX MAP 239 LOT 11

### LANDSCAPE DETAILS

#### PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

COLBEA ENTERPRISES, LLC

1"=40' (11'x17')

SCALE: 1"=20' (22'x34')

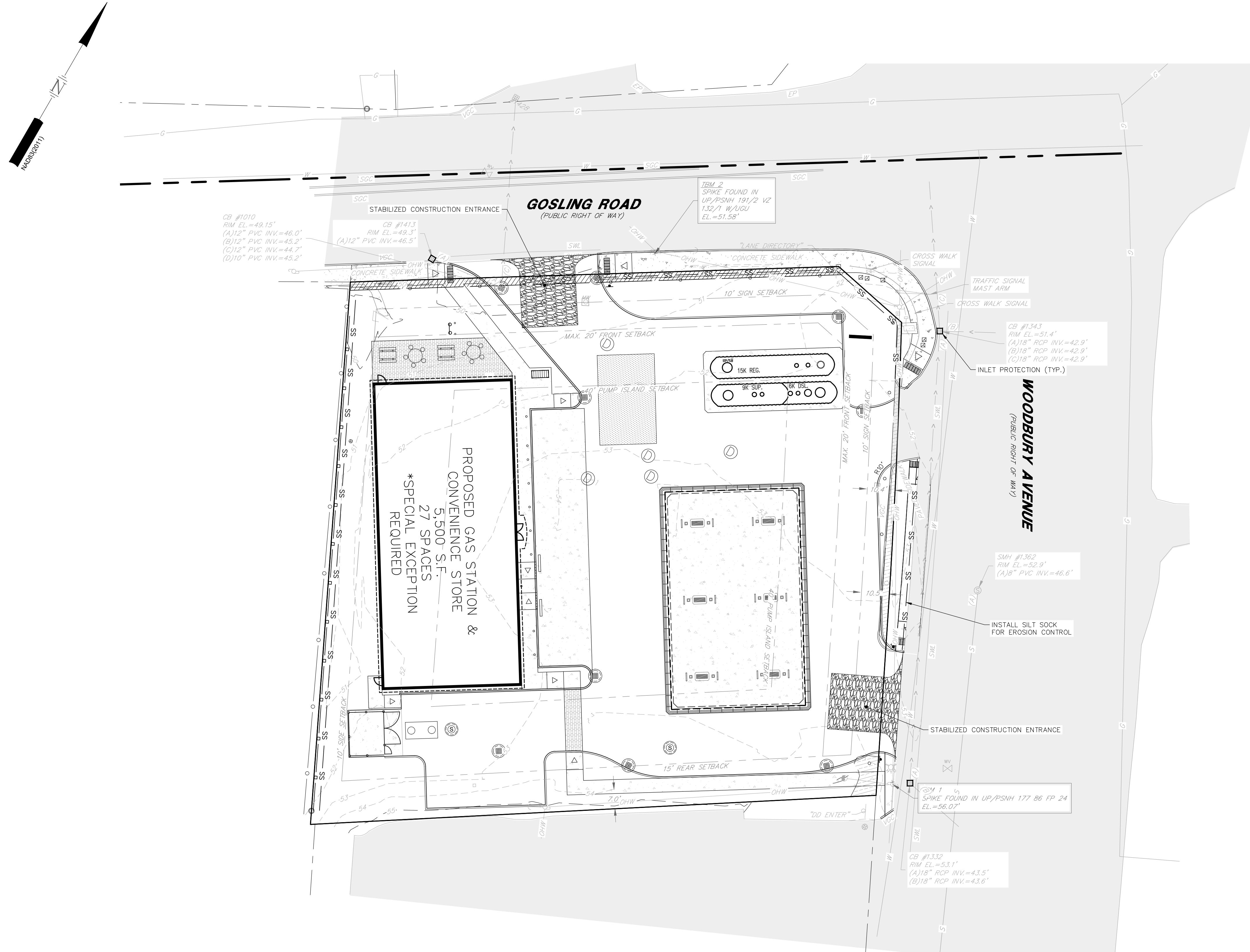
NOVEMBER 17, 2025

### Seacoast Division

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists



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20 HORIZONTAL SCALE 1"=20' 10 0 20

## NOTES

1. INSTALL SILT BARRIER ALONG THE PERIMETER OF THE AREA TO BE DISTURBED AS FIRST ORDER OF WORK.
2. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED. INLET PROTECTION BARRIERS SHALL BE IN PLACE AT ALL CATCH BASINS PRIOR TO THE DISTURBANCE OF SOIL.
3. DUST CONTROL SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IT SHALL BE ACCOMPLISHED BY THE UNIFORM APPLICATION OF CALCIUM CHLORIDE AT THE RATE OF 1-1/2 POUNDS PER SQUARE YARD BY MEANS OF A LIME SPREADER OR OTHER APPROVED METHOD. WATER MAY ALSO BE USED FOR DUST CONTROL, AND APPLIED BY SPRINKLING WITH WATER TRUCK DISTRIBUTORS, AS REQUIRED.
4. THE SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION IF THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. THE SITE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOT AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE FOR, OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
5. SILT PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THIS PLAN SET.
6. CONSTRUCT JUTE MATTING ON ALL SLOPES STEEPER THAN 3:1, DISTURBED AREAS SLOPING TOWARDS WETLANDS AND ALL LOCATIONS SHOWN ON PLAN.
7. INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAIN STORM OF 0.10" OR GREATER. REPAIR/MODIFY SILT BARRIER AS NECESSARY TO MAXIMIZE FILTER EFFICIENCY. REMOVE SEDIMENT WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
8. PROVIDE SILT BARRIERS AT THE BASE OF CUT AND FILL SLOPES UNTIL COMPLETION OF THE PROJECT OR UNTIL VEGETATION BECOMES ESTABLISHED ON SLOPES. EROSION PROTECTION BELOW FILL SLOPES SHALL BE PLACED IMMEDIATELY AFTER CLEARING, PRIOR TO EMBANKMENT CONSTRUCTION.
9. ALL DISTURBED AREAS SHALL BE REVEGETATED AS QUICKLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SEDED WITHIN 72 HOURS AFTER GRADING.
10. ALL WORK AREAS TO BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY PREDICTED SIGNIFICANT RAIN EVENT.
11. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A. BED COURSE GRAVELS WHICH MEET THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2, ARE INSTALLED IN AREAS TO BE PAVED
  - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
  - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED
  - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
12. ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
13. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
14. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
15. SEE ADDITIONAL NOTES NEXT SHEET.

TAX MAP 239 LOT 11  
**EROSION CONTROL PLAN**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

SCALE:

NOVEMBER 17, 2025

2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR			
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR			
REV	DATE	DESCRIPTION	DR	CK			

Seacoast Division		Civil Engineers		170 Commerce Way, Suite 102	
TFM	®	Traffic Engineers		Portsmouth, NH 03801	
		Land Surveyors		Phone (603) 431-2222	
		Landscape Architects		Fax (603) 431-0910	
		Scientists		www.tfmoran.com	

F 46077.16 DR JKC FB 46077-16\_EROSION C-09  
CK CRR CADFILE

**SOIL CHARACTERISTICS**

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF URBAN LAND, THE MAJORITY OF THE SOIL IS HSG TYPE C.

**DISTURBED AREA**

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 38,399 SQUARE FEET (0.8815 ACRES). CONSTRUCTION SHALL BE PHASED TO LIMIT DISTURBED AREAS TO LESS THAN 5 ACRES.

Critical Note: This drawing is provided for general guidance. All special erosion control measures must be executed in accordance with applicable current state and local regulations, approved SWPPP, and permit requirements.

**SEQUENCE OF MAJOR ACTIVITIES**

1. INSTALL PERIMETER CONTROLS, STABILIZED CONSTRUCTION ENTRANCE, AND TEMPORARY EROSION CONTROL MEASURES PER APPROVED SITE DEVELOPMENT PLANS, PERMITS, OR SWPPP IF REQUIRED, PRIOR TO EARTH MOVING OPERATIONS.
2. DEMOLISH EXISTING SITE WORK DESIGNATED FOR REMOVAL.
3. COMPLETE MAJOR GRADING OF SITE.
4. CONSTRUCT BUILDING PAD, STORMWATER SYSTEM, AND SITE UTILITIES.
5. CONSTRUCT PARKING AREAS.
6. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE ALL INLET PROTECTION, SILT BARRIERS, AND SEDIMENT THAT HAS BEEN TRAPPED BY THESE DEVICES.
7. CONSULT APPLICABLE REGULATIONS, PERMITS, CONDITIONS, AND APPROVED SWPPP FOR CONDITIONS RELATED TO NOTICE OF TERMINATION, IF REQUIRED.

**EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES**

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL 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. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

1. BASE COURSE GRAVELS, WHICH MEET THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2, HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

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 barriers. All storm drain inlets shall be provided with barrier filters. Stone riprap shall be provided at the outlets of drainage pipes where erosive velocities are encountered.

**OFF SITE VEHICLE TRACKING**

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.

**INSTALLATION, MAINTENANCE, AND INSPECTION OF EROSION AND SEDIMENT CONTROLS****A. GENERAL**

These are the general inspection and maintenance practices that will be used to implement the plan.

1. STABILIZATION OF ALL SWALES, DITCHES, AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
2. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. (5 AC MAX)
3. ALL CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH APPLICABLE REGULATIONS, PERMITS, AND CONDITIONS AND FOR PROJECTS REQUIRING A NPDES EPA CGP AND DISCHARGING TO A NON-SENSITIVE WATERBODY, AT LEAST EVERY 7 DAYS OR EVERY 14 DAYS AND AFTER A 0.25 INCHES RAIN EVENT OR GREATER.
4. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
5. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT BARRIER WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE BARRIER.
6. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
7. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
9. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE, AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

**B. FILTERS / BARRIERS****1. SILT SOCKS**

A. KNOTTED MESH NETTING MATERIAL SHALL BE DELIVERED TO SITE IN A 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" MATERIAL, FILLED WITH COMPOST CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
PH	TMECC 04.11-A	5.0 TO 8.0

PARTICLE SIZE	TEST	REQUIREMENTS
	TMECC 02.02-B	2" SIEVE AND MIN. 60% GREATER THAN THE 3" SIEVE

MOISTURE CONTENT	TEST	REQUIREMENTS
	STND TESTING	< 60%

MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN-MADE MATERIALS

MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.

B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.

C. SILT BARRIER SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.

2. SEQUENCE OF INSTALLATION

SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

**3. MAINTENANCE**

- A. SILT BARRIERS SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
- B. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.
- D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFIRM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

**C. MULCHING****1. TIMING**

IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS:

**A. APPLY MULCH PRIOR TO ANY STORM EVENT.**

THIS IS APPLICABLE WHEN WORKING WITHIN 100' OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.

**B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.**

THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA, WHERE THE LENGTH OF TIME VARIES WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.

**2. GUIDELINES FOR WINTER MULCH APPLICATION.**

WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

**3. MAINTENANCE**

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

**D. VEGETATIVE PRACTICE**

1. AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 4", THEN FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED THICKNESS AS SPECIFIED IN THESE PLANS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.

2. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER, AND OTHER FOREIGN MATERIAL, AS WELL AS STONES OVER 1" IN DIAMETER, SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE. THE LOAM SHALL BE RAKED SMOOTH AND EVEN.

3. THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRRREGULARITIES TO LOW POINTS.

4. SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.

5. ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEDED.

6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.

7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.

9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN IMMEDIATELY BEFORE SEEDING. THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4" AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.

10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEDED, AND ALL NOXIOUS WEEDS REMOVED.

12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER MAINTENANCE AND PROTECTION.

13. UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK. IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. FOR TEMPORARY PLANTINGS AFTER SEPTEMBER 30, TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

A. FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.

B. FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 500 POUNDS PER ACRE.

MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:  
WINTER RYE (FALL SEEDING) 2.5 LBS/1,000 SF  
OATS (SPRING SEEDING) 2.0 LBS/1,000 SF  
MULCH 1.5 TONS/ACRE

MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN-MADE MATERIALS

MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.

B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.

C. SILT BARRIER SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.

2. SEQUENCE OF INSTALLATION

SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

**E. CATCH BASIN INLET PROTECTION****1. INLET BASKET STRUCTURE**

A. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO DISTURBING PAVEMENT AND SHALL REMAIN IN PLACE AND MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

B. MOLD 6X6, 42" WIRE SUPPORT AROUND INLET FRAME AND GRATE AND EXTEND 6" BEYOND SIDES. SECURE FILTER FABRIC TO WIRE SUPPORT.

C. THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:

GRAB STRENGTH: 45 LB. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682)

MULLEN BURST STRENGTH: MIN. 60PSI (ASTM D774)

D. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 GPM.

E. THE INLET PROTECTION 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.

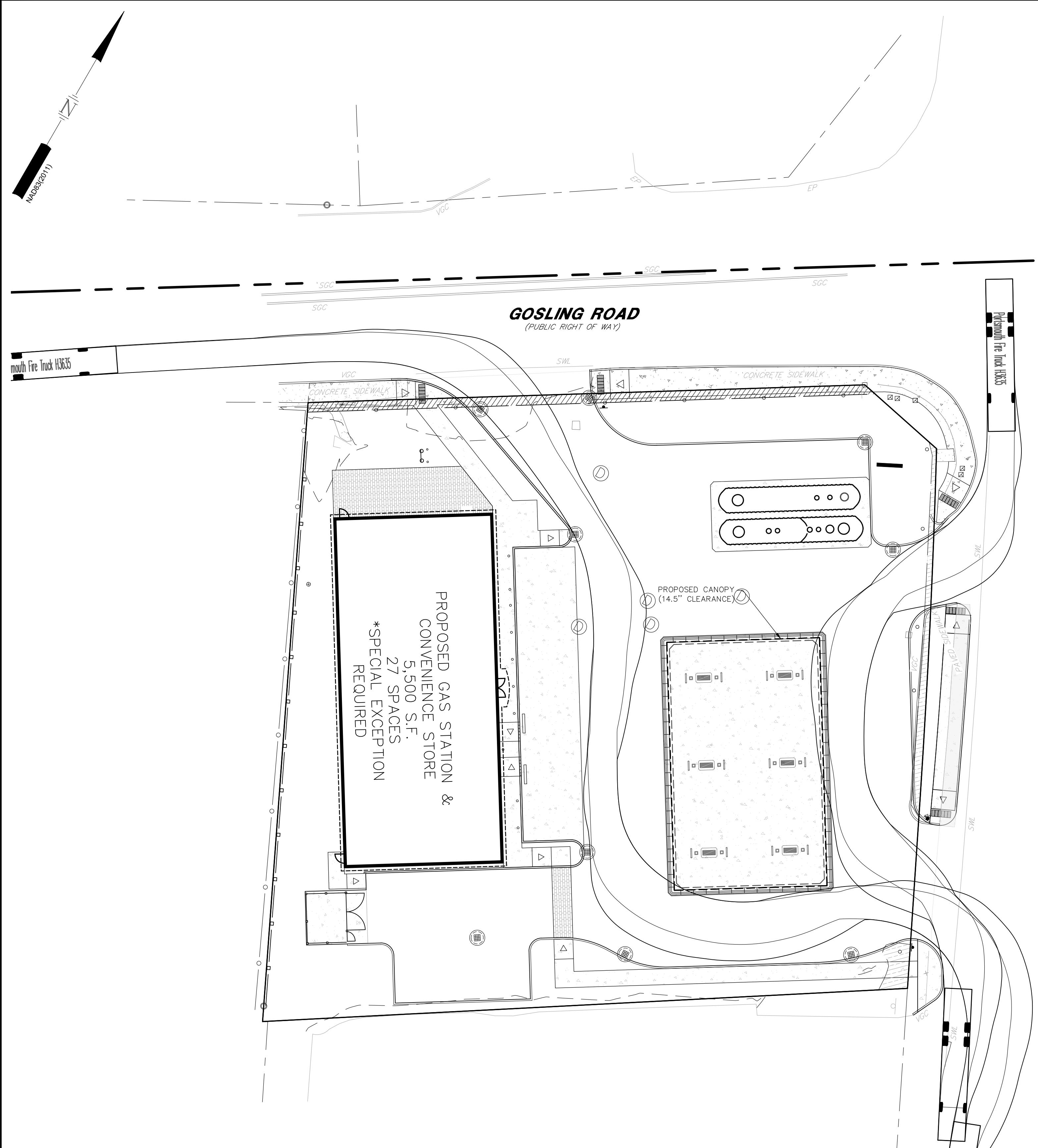
F. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

**F. WINTER CONSTRUCTION SEQUENCE**

1. ALL PROPOSED POST-DEVELOPMENT LANDSCAPED 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 PLACEMENT 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 WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

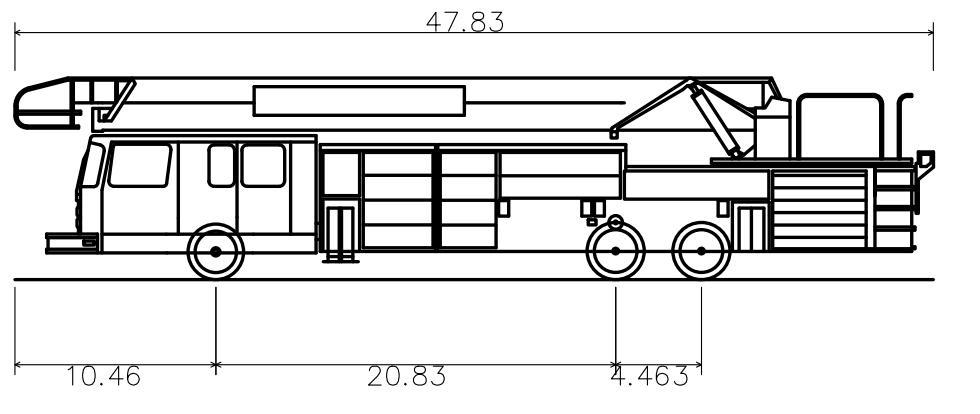
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20 10 0 20  
HORIZONTAL SCALE 1"=20'



Portsmouth Fire Truck H3635  
Overall Length 47.830ft  
Overall Width 8.500ft  
Overall Body Height 10.505ft  
Min Body Ground Clearance 0.935ft  
Max Track Width 8.500ft  
Lock-to-lock time 6.00s  
Max Steering Angle (Virtual) 38.00°

47.830ft  
8.500ft  
10.505ft  
0.935ft  
8.500ft  
6.00s  
38.00°

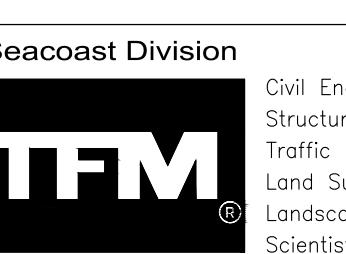
TAX MAP 239 LOT 11  
**TRUCK MOVEMENT PLAN**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

1"=40' (11"x17")  
SCALE: 1"=20' (22"X34")

NOVEMBER 17, 2025

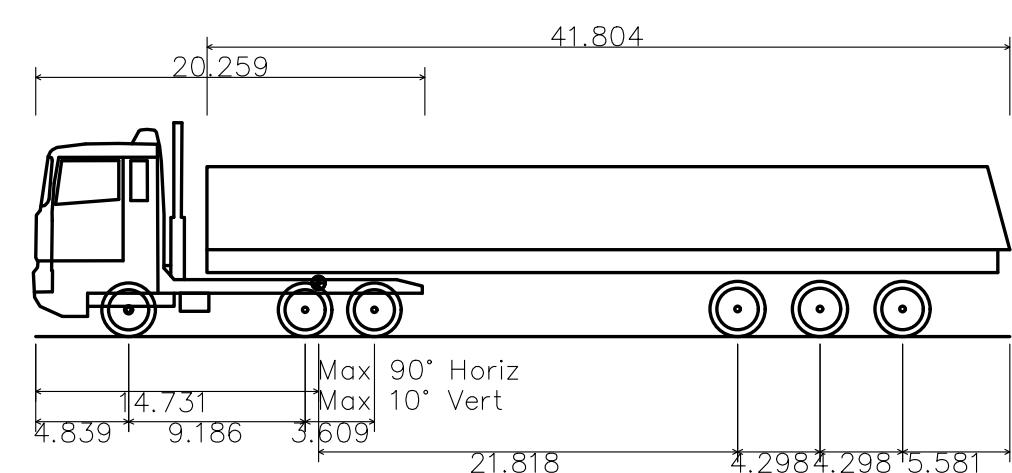
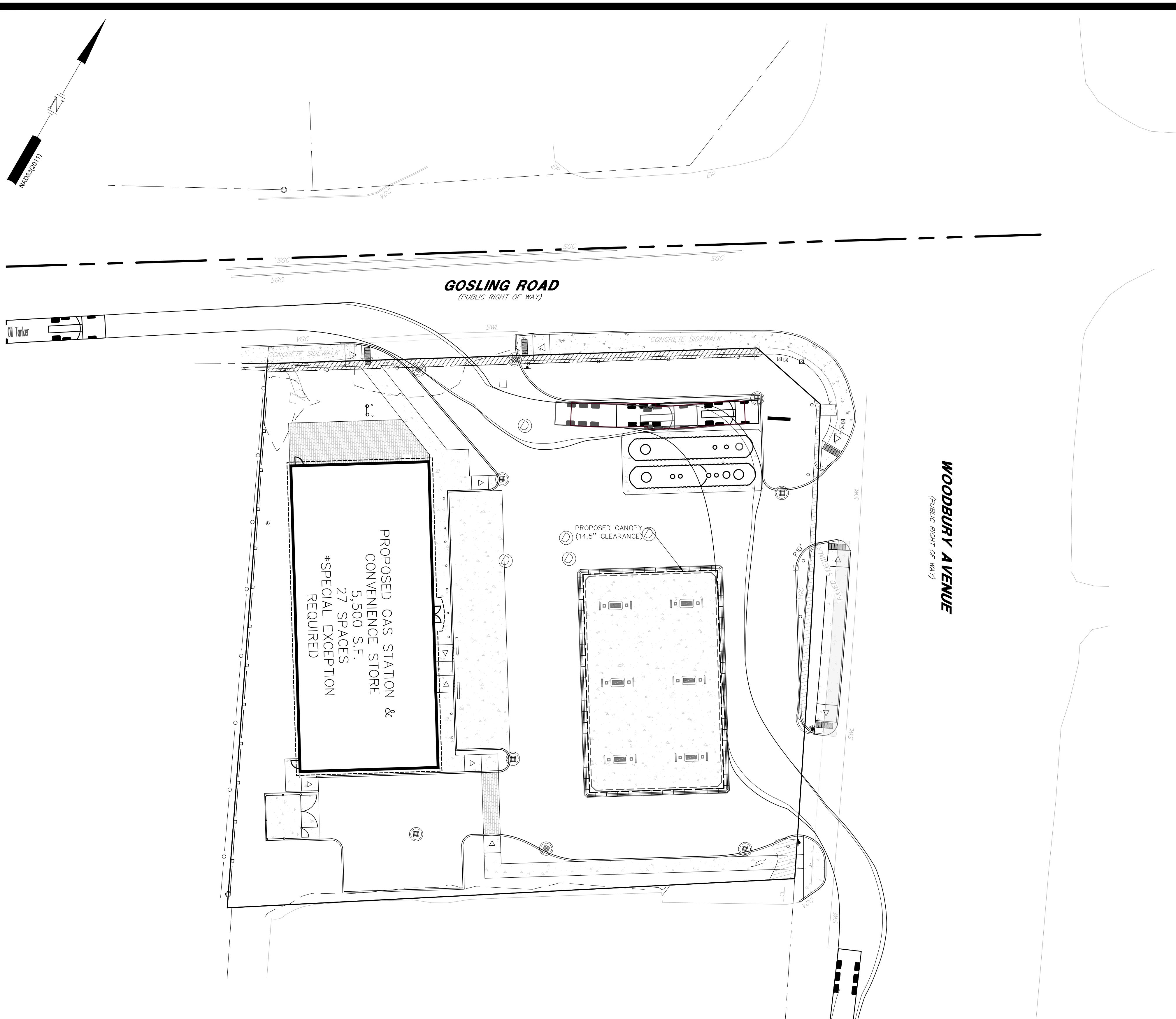
REV	DATE	DESCRIPTION	DR	CK
2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

FILE	46077.16	DR	JKC	FB	46077-16_TRUCKMOVE	EX-03
CK	CRR	CADFILE				



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

170 Commerce Way, Suite 102  
Portsmouth, NH 03801  
Phone (603) 431-2222  
Fax (603) 431-0910  
www.tfmoran.com



Oil Tanker  
Overall Length  
Overall Width  
Overall Body Height  
Min Body Ground Clearance  
Max Track Width  
Lock-to-lock time  
Curb to Curb Turning Radius

50.725 ft  
8.202 ft  
11.141 ft  
1.049 ft  
8.202 ft  
4.00 s  
21.325 ft

# WOODBURY AVENUE (PUBLIC RIGHT OF WAY)

TAX MAP 239 LOT 11  
**TRUCK MOVEMENT PLAN**  
**POSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

**1"=40' (11" x 17")**

W. T. LEWIS (LL.D.)

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(603) 431-0910  
fmorgan.com

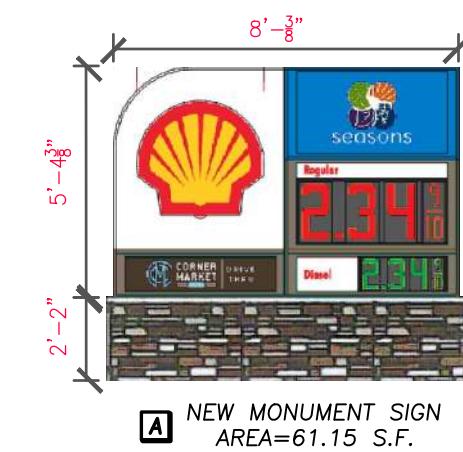
		<p><b>Seacoast Division</b></p> <p>Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists</p>		<p>170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 <a href="http://www.tfmoran.com">www.tfmoran.com</a></p>
<p>077.16</p>	DR	JKC	FB	<p>46077-16_TRUCKMOVE</p>
	CK	CRR	CADFILE	

Feb 12, 2026 - 10:16am  
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PRODUCTION DRAWINGS\46077-16 TruckMove.dwg

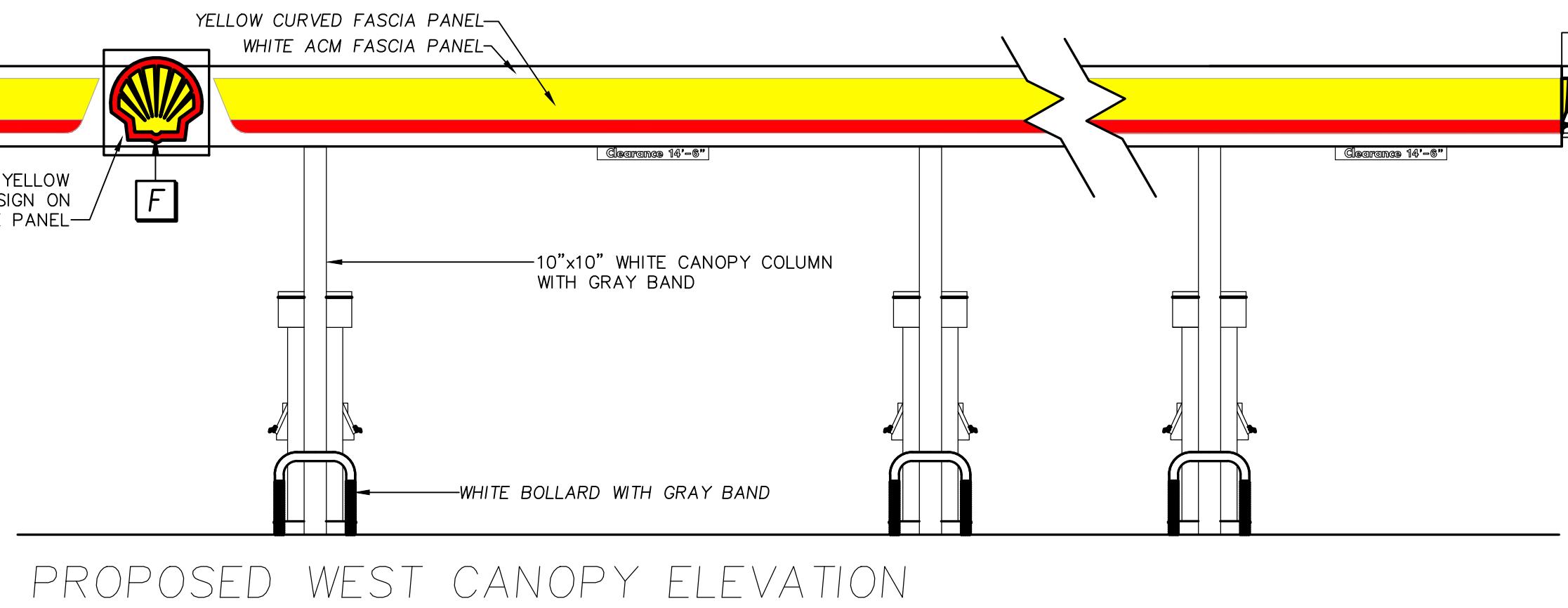
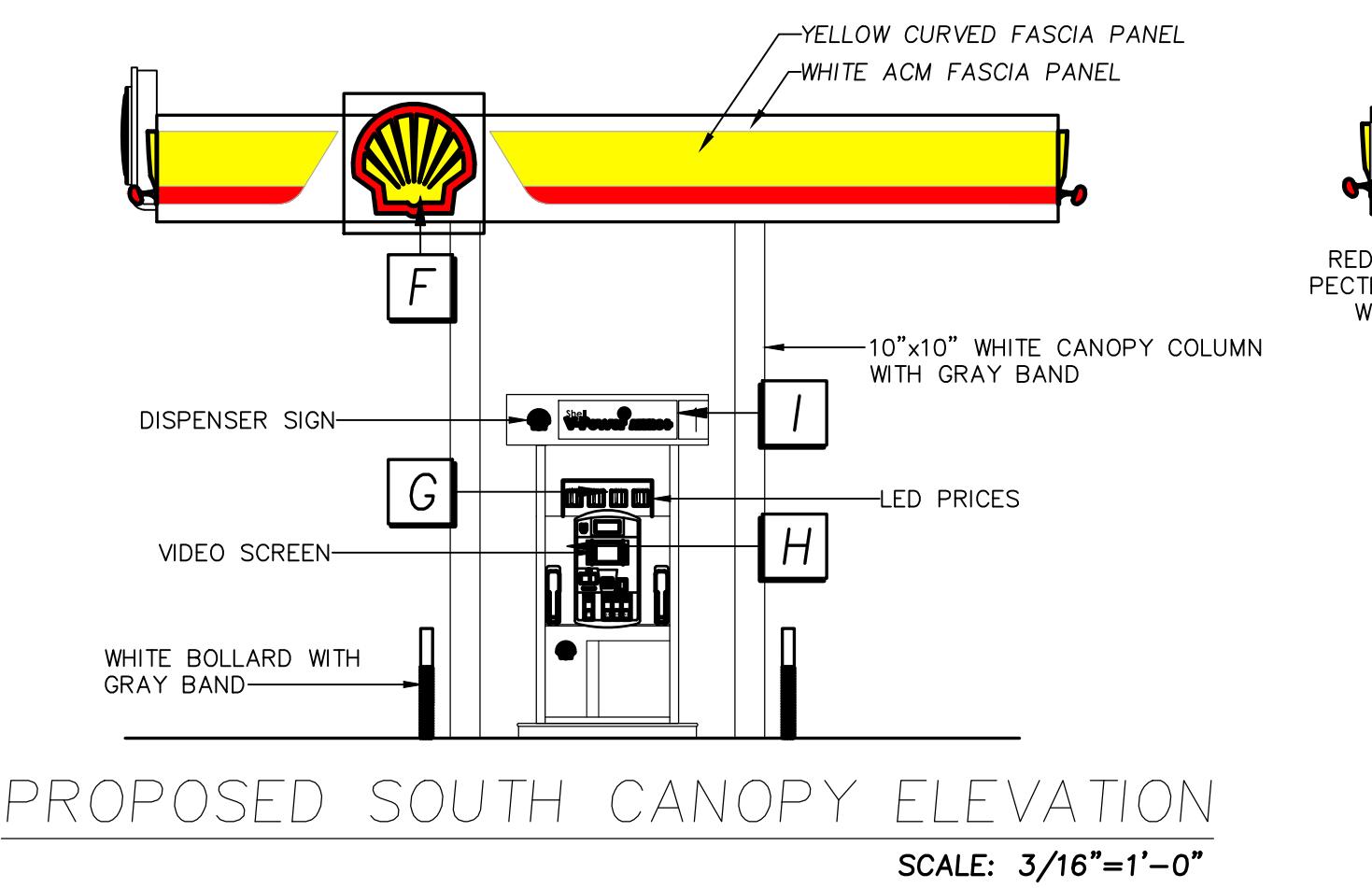
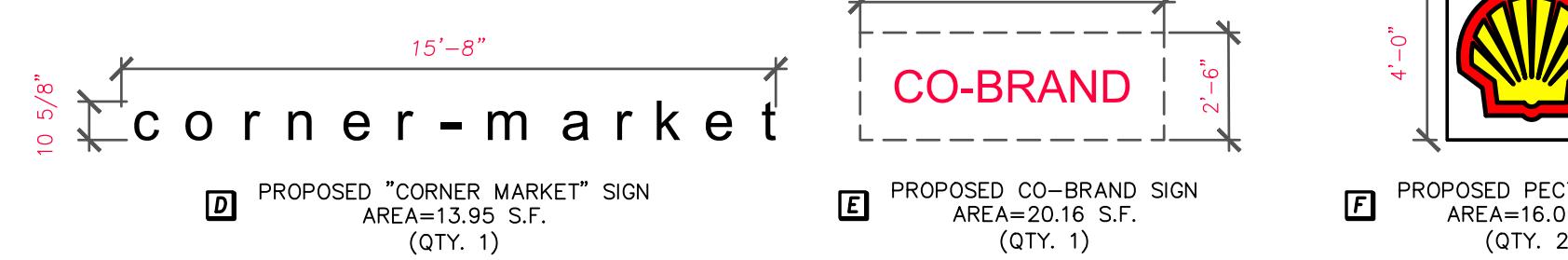
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PROPOSED SIGN SCHEDULE								
MARK	DESCRIPTION	SIZE	AREA (SF)	QUAN.	SIZE (SF)	ILLUMINATION	REMARKS	TYPE
FREESTANDING SIGNS								
A	NEW MONUMENT SIGN	7'-7" X 8'-3"	61.15	1	61.15	INT	NEW	GROUND
TOTAL FREESTANDING SIGNAGE: 61.15 S.F.								
WALL SIGNS								
C	"SEASONS" SIGN	24' X 3'-6"	84	1	84	INT	NEW	WALL
D	"CORNER MARKET" SIGN	15'-8" X 0'-10"	13.95	1	13.95	NON	NEW	WALL
E	CO-BRAND SIGN	7'-1" X 2'-6"	20.16	1	20.16	INT	NEW	WALL
F	PECTEN SIGN	4' X 4'	16.0	2	32.0	INT	NEW	WALL
G	"WELCOME" SIGN	6" X 4'-3"	2.1	1	2.1	NON	NEW	WALL
TOTAL WALL SIGNAGE: 152.21 S.F.								



PROPOSED WEST CANOPY ELEVATION

SCALE: 3/16"=1'-0"



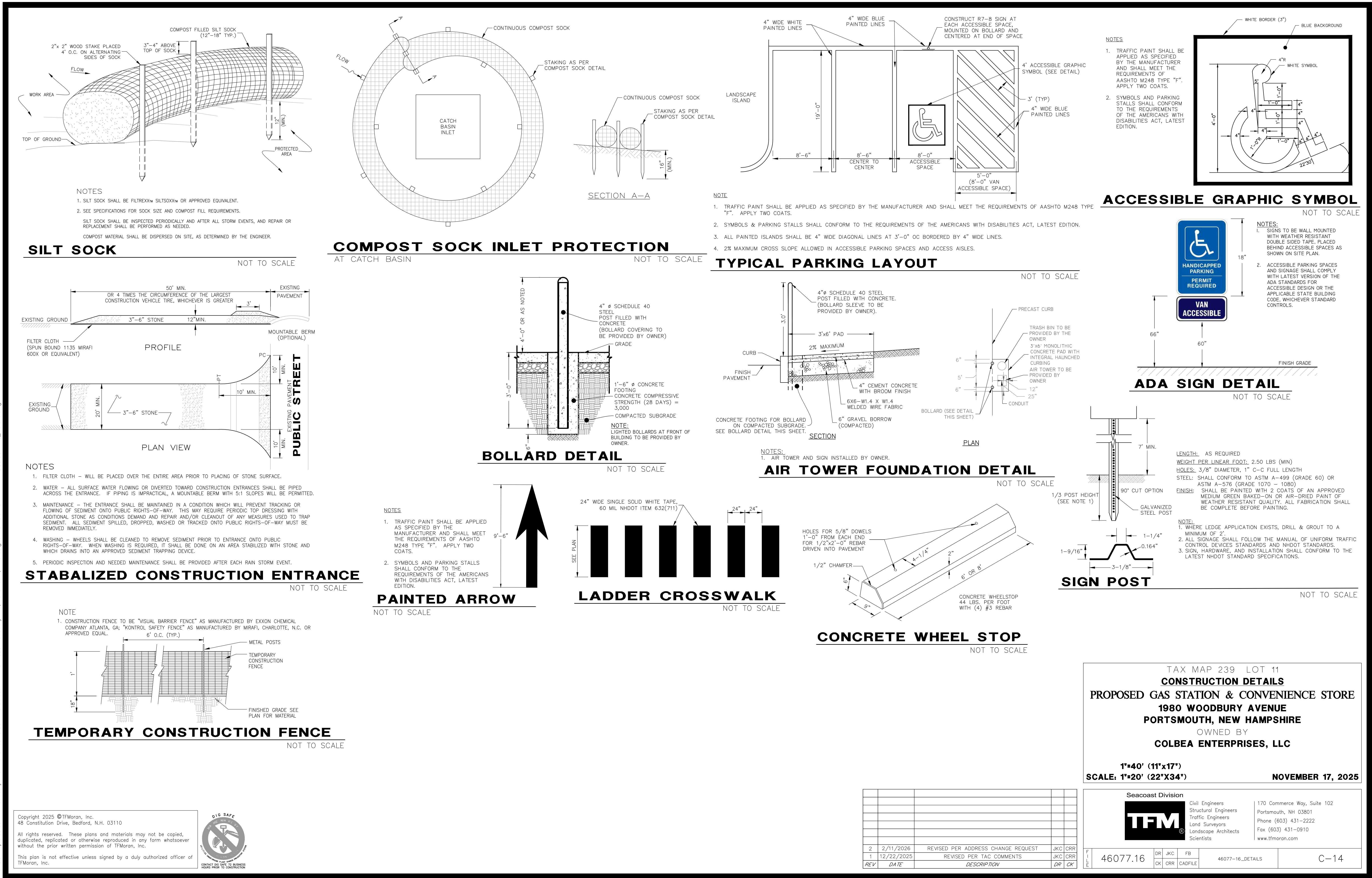
TAX MAP 239 LOT 11  
**SIGN PLAN**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

SCALE: NTS NOVEMBER 17, 2025

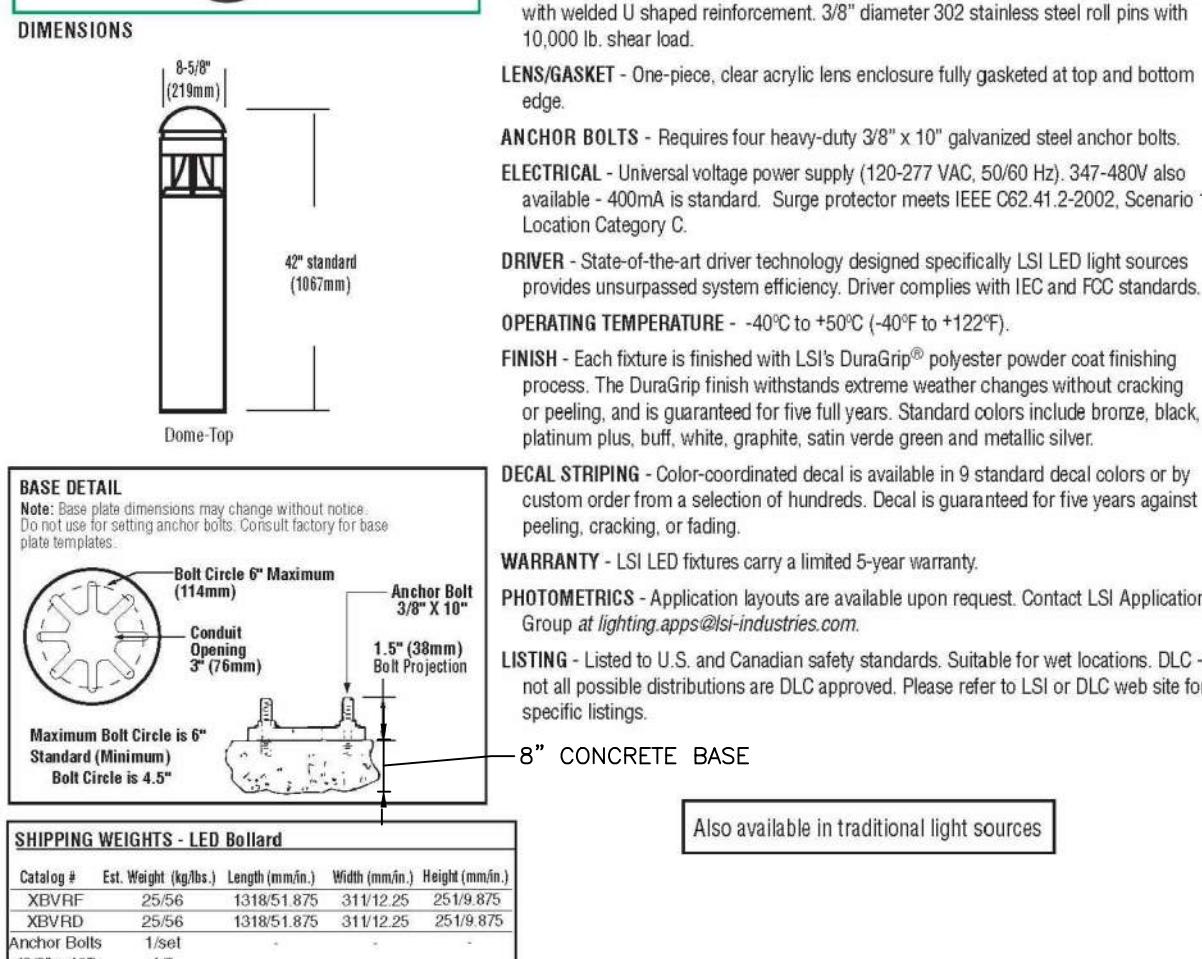
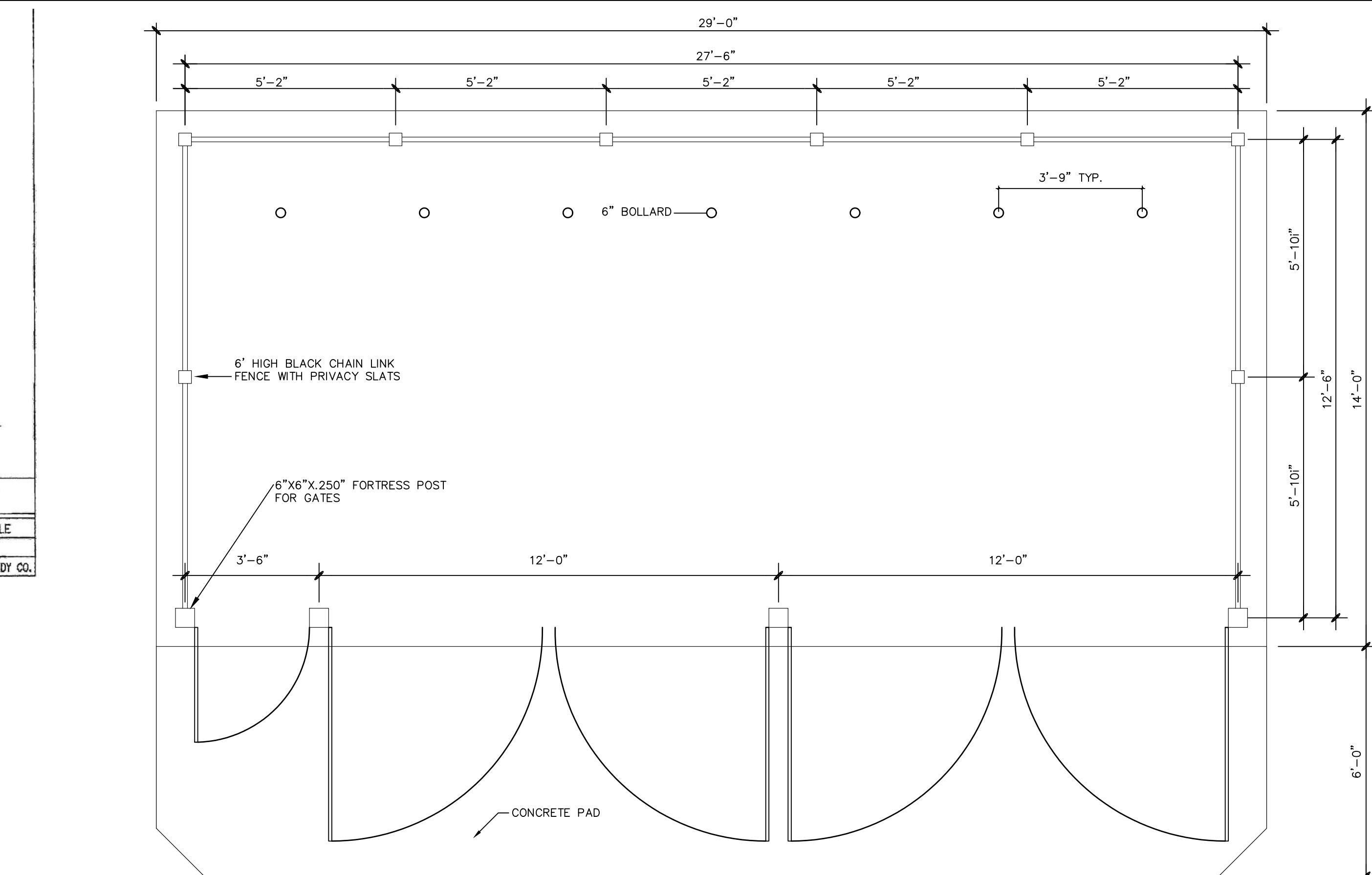
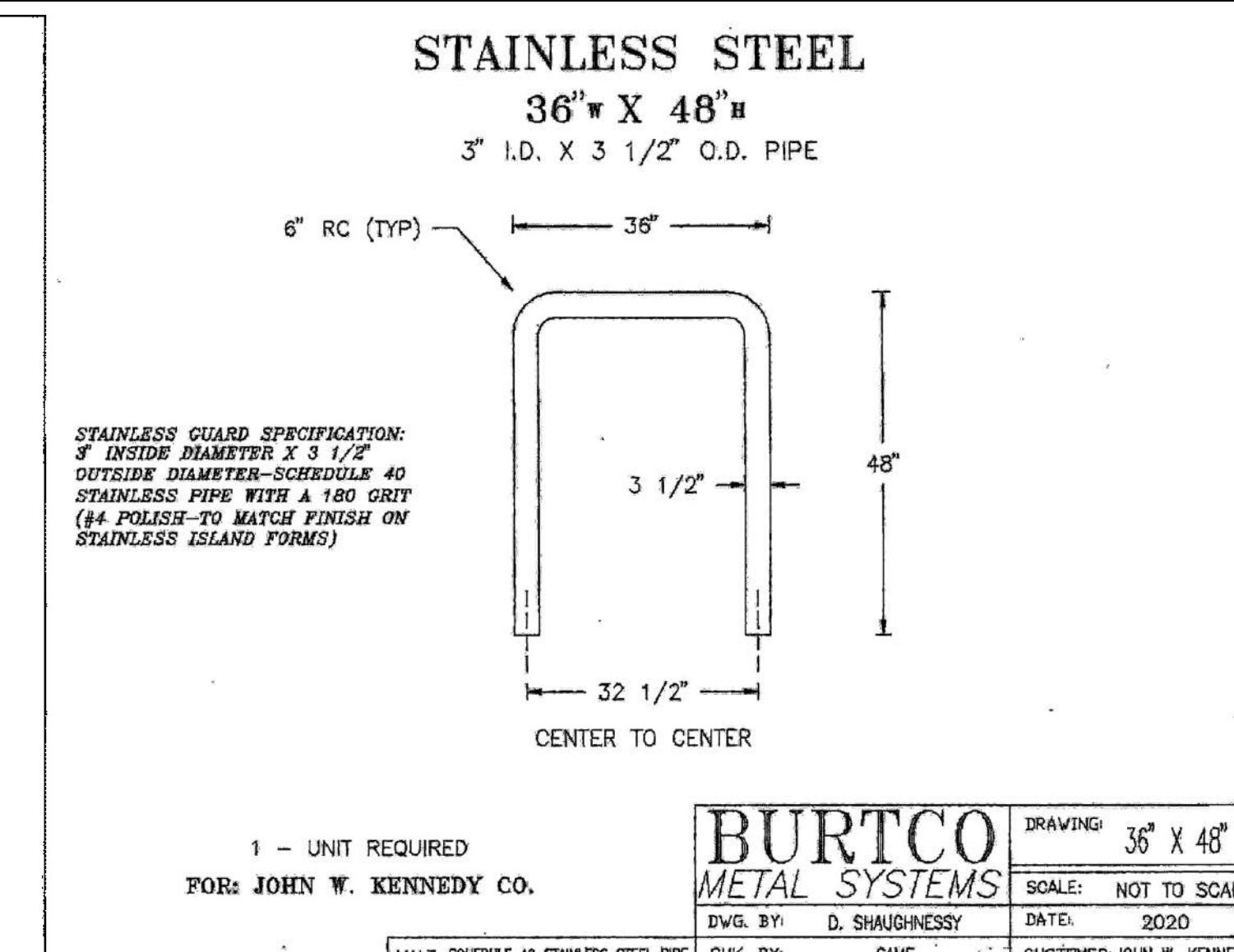
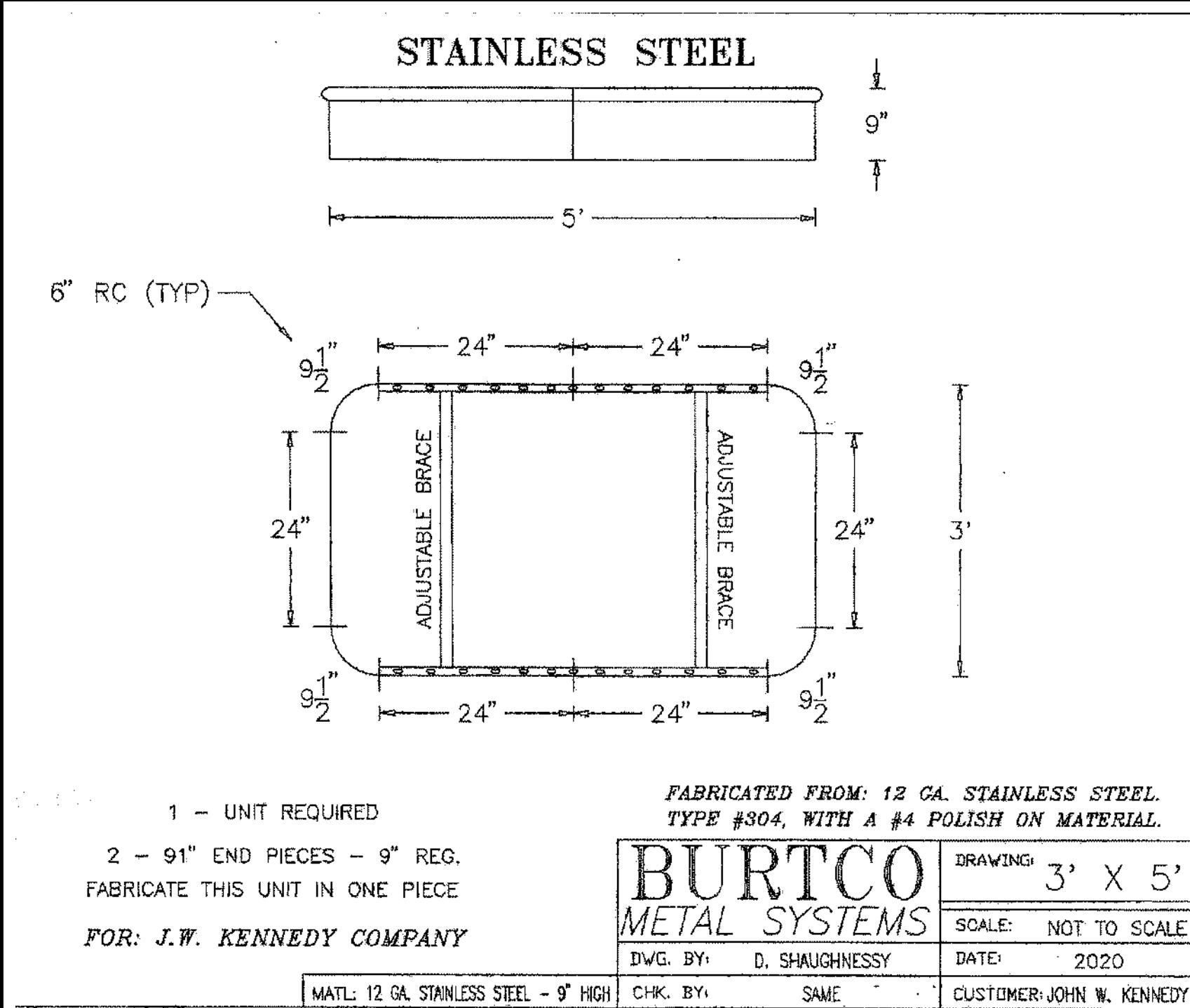
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1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

REV	DATE	DESCRIPTION	DR	CK

Seacoast Division		Civil Engineers		170 Commerce Way, Suite 102
TFM	®	Traffic Engineers		Portsmouth, NH 03801
		Land Surveyors		Phone (603) 431-2222
		Landscape Architects		Fax (603) 431-0910
		Scientists		www.tfmoran.com
F	46077.16	DR	JKC	—
E		CK	CRR	CADFILE
				46077-16_SIGN
				C-13

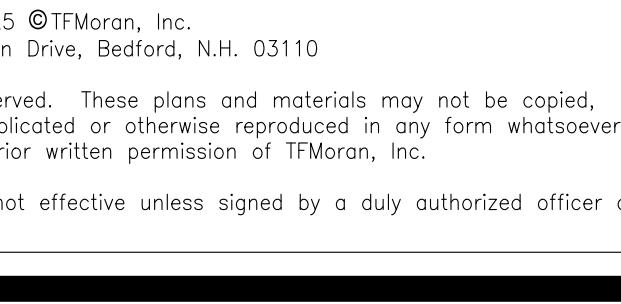






### BOLLARD LIGHT (DECORATIVE)

NOT TO SCALE

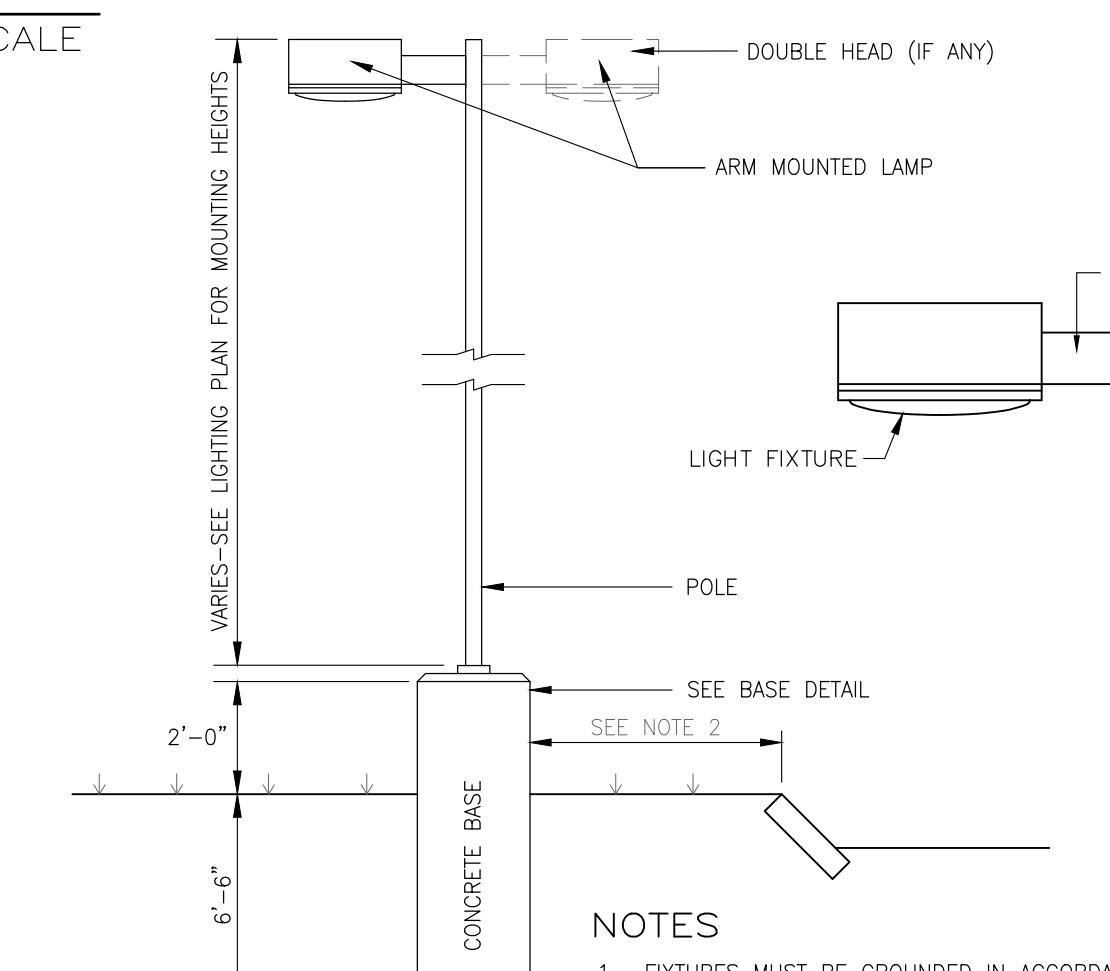


### LIGHT POLE BASE

NOT TO SCALE

### LIGHT POLE

NOT TO SCALE



### NASHUA DUMPSTER ENCLOSURE (SAME PROPOSED FOR CURRENT SITE)

NOT TO SCALE



### TAX MAP 239 LOT 11 CONSTRUCTION DETAILS

### PROPOSED GAS STATION & CONVENIENCE STORE 1980 WOODBURY AVENUE PORTSMOUTH, NEW HAMPSHIRE

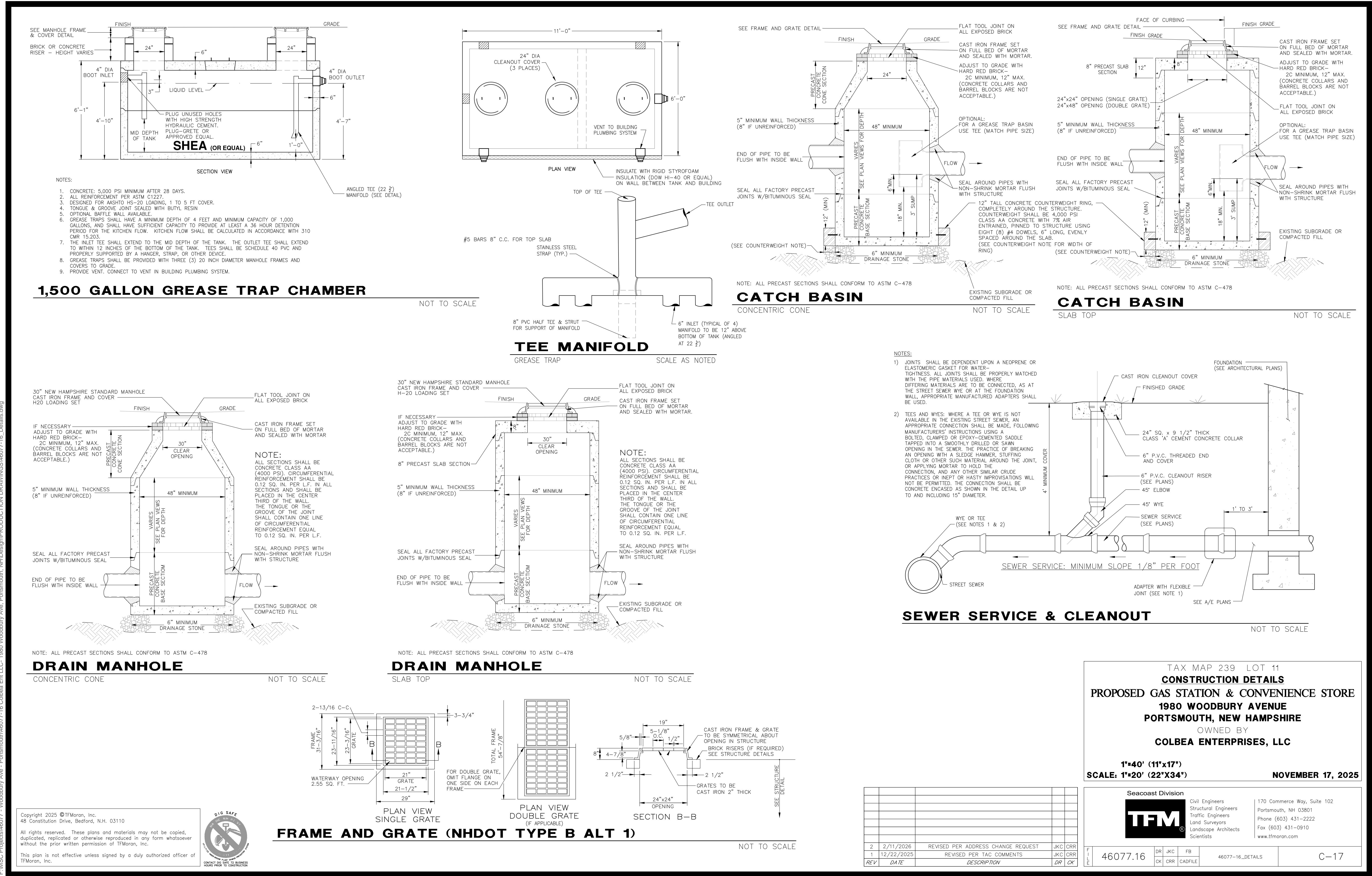
OWNED BY  
COLBEA ENTERPRISES, LLC

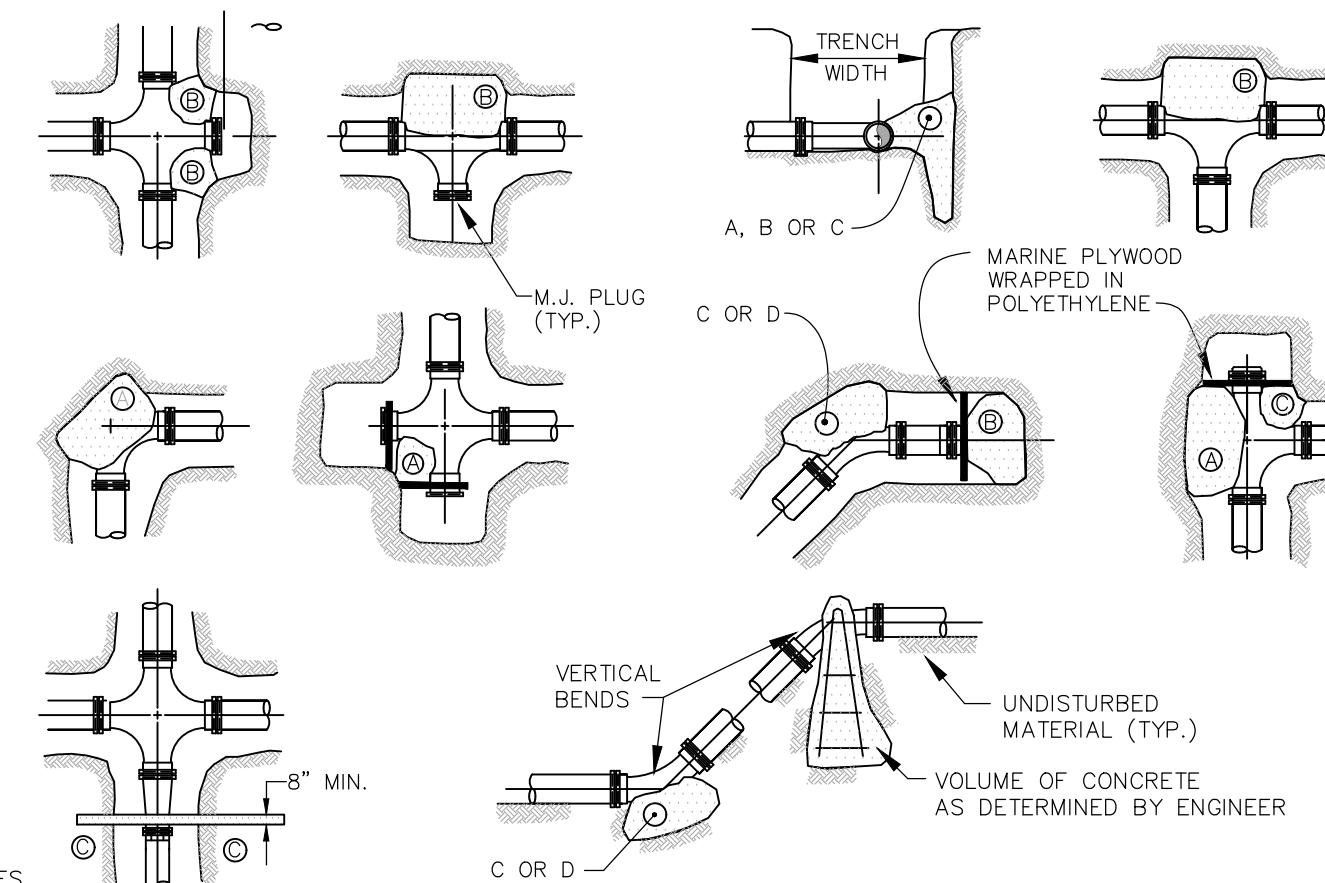
1"=40' (11"x17')  
SCALE: 1"=20' (22'X34')

NOVEMBER 17, 2025

Seacoast Division			
Civil Engineers	Structural Engineers	Traffic Engineers	170 Commerce Way, Suite 102
Portsmouth, NH 03801	Phone (603) 431-2222	Land Surveyors	
Fax (603) 431-0910		Landscape Architects	
www.tfmoran.com		Scientists	

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CK	CRR	CADFILE	46077-16_DETAILS	C-16



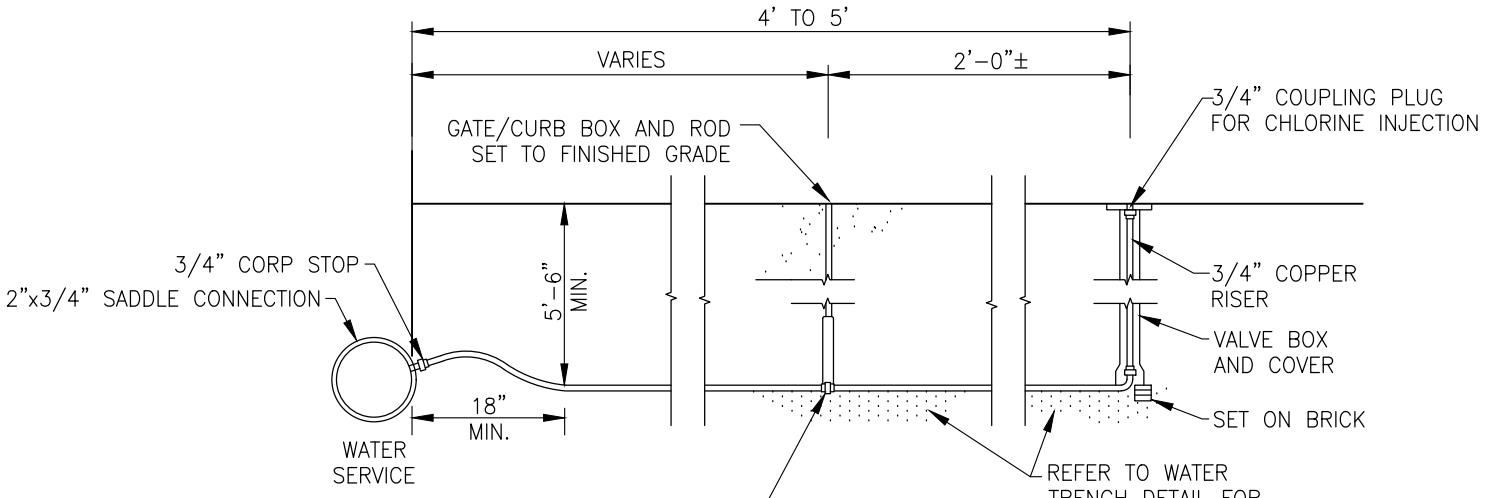


NOTES

1. A MINIMUM 2'x2'x4' PRECAST CONCRETE THRUST BLOCK WITH LIFT HOOKS SHALL BE USED.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TNWD ESTABLISHED RULES AND PROCEDURES.
4. MATERIAL SPECIFICATIONS:
  - A. CEMENT: ASTM C150, PORTLAND TYPE I/II
  - B. AGGREGATE: ASTM C33,  $\frac{3}{4}$ " INCH MAX SIZE
  - C. WATER: POTABLE
  - D. REINFORCING STEEL: ASTM A615, GRADE 60
  - E. WELDED WIRE FABRIC: ASTM A185
 F. NO CHEMICAL MIXTURES SHALL BE USED.

## THRUST BLOCKS

NOT TO SCALE



SECTION VIEW

TEST PRESSURE = 200psi	REACTION TYPE	PIPE SIZE				
		4"	6"	8"	10"	12"
A	90°	0.89	2.19	3.82	11.14	17.24
B	180°	0.65	1.55	2.78	8.38	12.00
C	45°	0.48	1.19	2.12	6.02	9.32
D	22-1/2°	0.25	0.60	1.06	3.08	4.74
E	11-1/4°	0.13	0.30	0.54	1.54	2.38

NOTES

1. CHLORINATION AND TESTING SHALL CONFORM TO AWWA C651.
2. DOMESTIC LINE MUST BE FLUSHED AND DISINFECTED BEFORE THE LINES ENTER THE BUILDING.
3. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.

## CHLORINE INJECTION CONNECTION

NOT TO SCALE

THE FOLLOWING ARE TNWD ACCEPTABLE MANUFACTURERS FOR WATER MATERIALS:

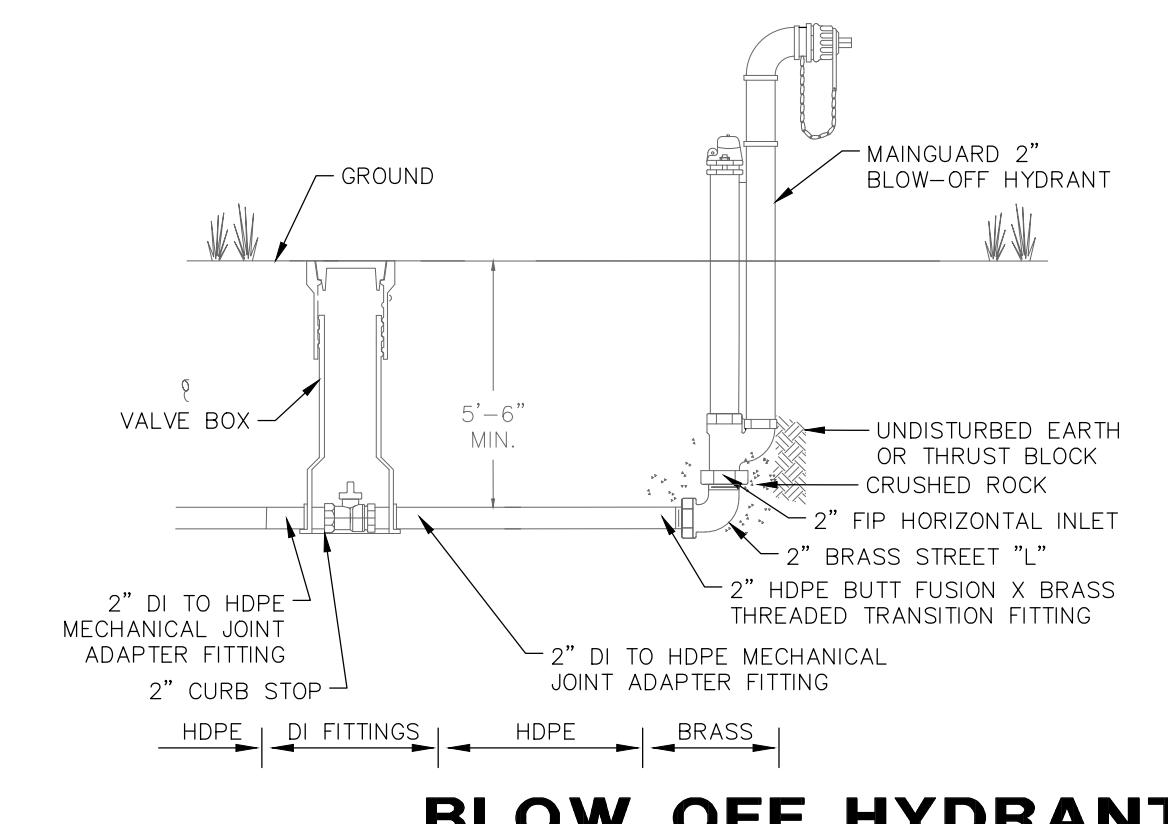
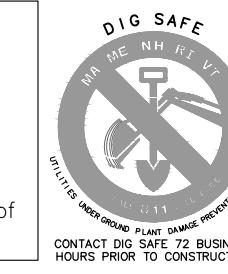
- DUCTILE IRON PIPE - ATLANTIC STATES, U.S. PIPE AND GRIFFIN
- DUCTILE IRON FITTINGS - TYLEN OR APPROVED EQUAL
- WATER SERVICE LINE BE CTS P-SDR9, MEETING THE REQUIREMENTS OF ASTM D-2737, AWWA C901 AND NDS STANDARDS 14 AND 61 IN CONFORMANCE WITH THE TNWD STANDARD SPECIFICATIONS
- JOINT RESTRAINTS - GRIP RINGS BY ROMAC OR MEGALUG BY EBBA
- BLOW-OFF HYDRANT - MAINGUARD BY EJ PRESCOTT
- BRASS CORPORATIONS, CURB STOPS, UNIONS, AND FITTINGS - FORD AND MCDONALD
- SADDLES - ROMAC 305-H BY EJ PRESCOTT, FORD, OR MUELLER BR1S

THE FOLLOWING ARE TFM-RECOMMENDED MANUFACTURERS FOR WATER MATERIALS:

- STAINLESS STEEL TAPPING SLEEVE - ROMAC SST BY EJ PRESCOTT
- MECHANICAL JOINT TAPPING SLEEVE - AMERICAN FLOW CONTROL BY EJ PRESCOTT
- MECHANICAL JOINT ADAPTER FITTING - INTEGRIFUSE BY EJ PRESCOTT
- MECHANICAL JOINT RETAINER GLAND - FORD BY EJ PRESCOTT

## WATER MATERIAL MANUFACTURERS

NOT TO SCALE

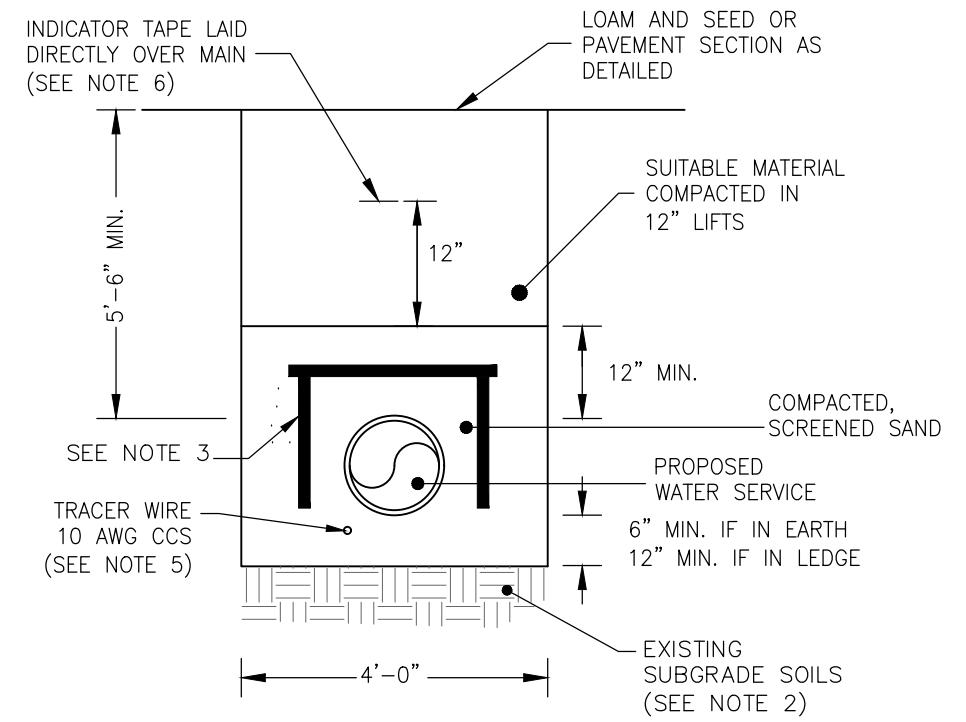


## BLOW OFF HYDRANT

NOT TO SCALE

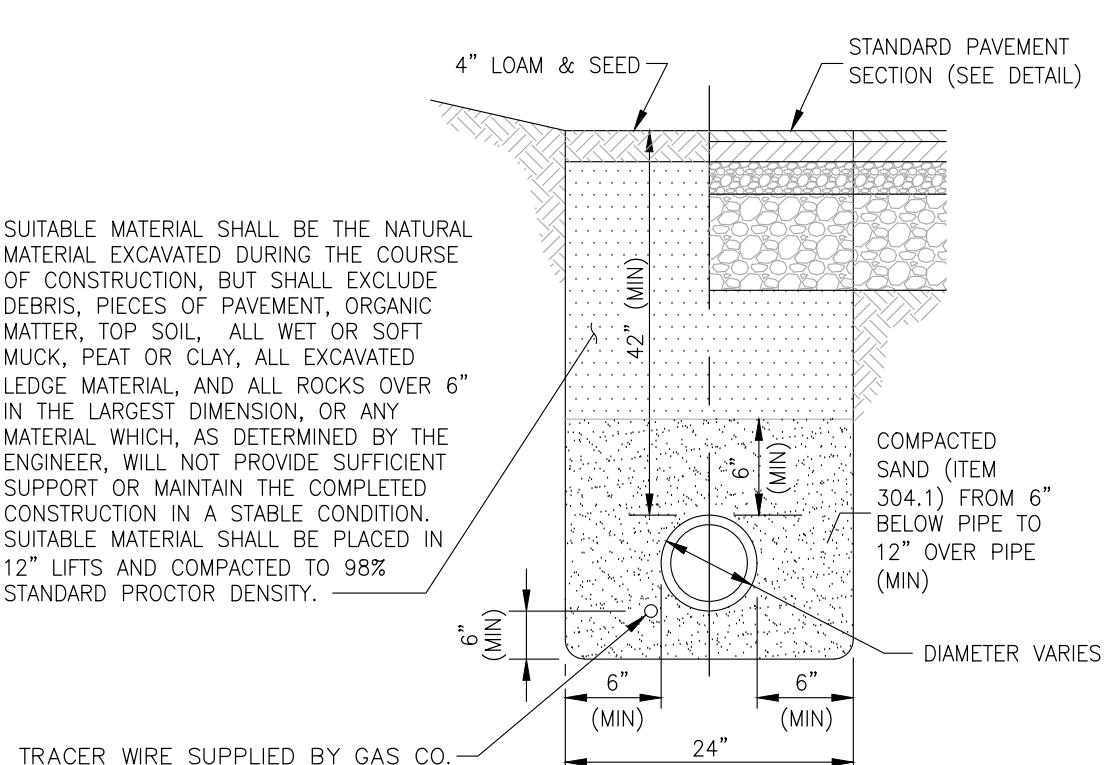
NOTES

1. BLOW-OFF HYDRANT SHALL BE LOCATED WITHIN LANDSCAPED AREA AND OUTSIDE OF THE RIGHT OF WAY.
2. BLOW-OFF HYDRANT SHALL BE A MAIN GARD 77 OR ECLIPS #2 AND MEET TNWD STANDARDS.
3. BLOW-OFF HYDRANT SHALL BE NON-FREEZING, SELF DRAINING TYPE, WITH A DEPTH OF BURY OF 5.5' SET UNDERGROUND IN A METER BOX.
4. BLOW-OFF HYDRANT SHALL BE FURNISHED WITH A 2" FIR INLET, A NON- TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT.
5. ALL OF THE WORKING PARTS SHALL BE BRONZE-TO-BRONZE DESIGN AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING.
6. OUTLET SHALL ALSO BE BRONZE AND 2"-2.5" IN DIAMETER.
7. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.
8. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.



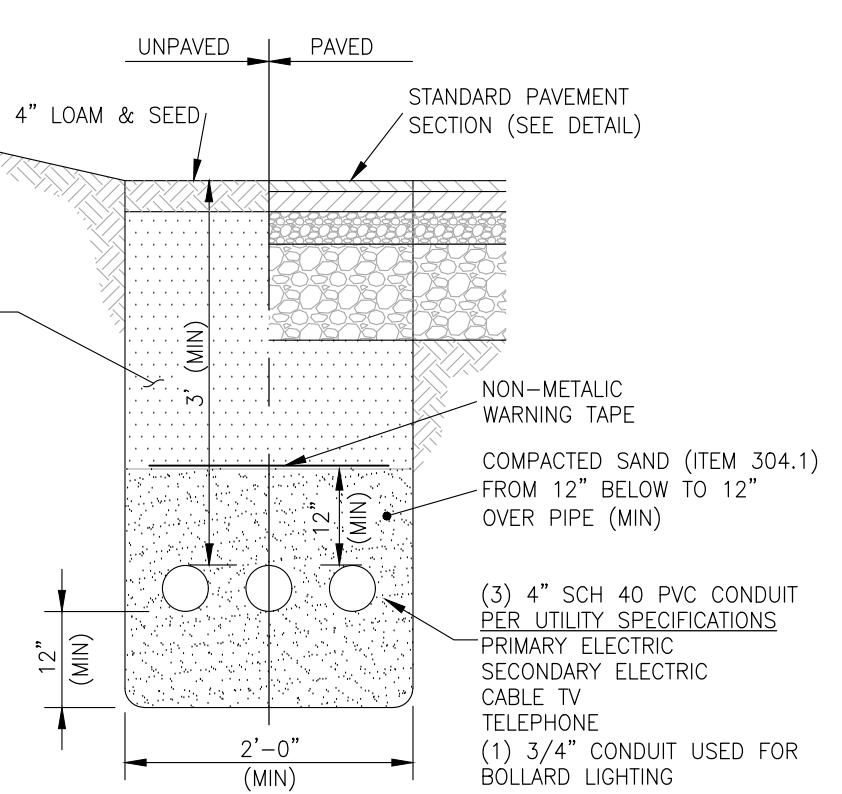
NOTES

1. ALL FITTINGS SHALL BE DR 9.
2. IN LOCATIONS WITH EXISTING FILL SOILS, THE EXISTING SUBGRADE SOILS AT THE BOTTOM OF THE TRENCH SHALL BE OVER-EXCAVATED 2' DEEP AND RECOMPACTED IN 12" LIFTS TO 95% MAXIMUM DENSITY. FOR SOIL PELLET BENEATH PROPOSED WATER LINES, AT LEAST 3 PROCTOR COMPACTION TESTS MUST BE CONDUCTED BY A QUALIFIED TECHNICIAN EVERY 50 FEET FOR EACH 12' LIFT.
3. SUITABLE FILL MATERIAL TO BE FREE OF DEBRIS WITH MAXIMUM AGGREGATE SIZE OF 6-INCHES, WITH NO MORE THAN 12% OF THE MATERIAL PASSING THE NO. 200 SIEVE, IN CONFORMANCE WITH TNWD STANDARD SPECIFICATIONS. COMPACTED IN 12" LIFTS TO 95% MAXIMUM DENSITY USING THE MODIFIED PROCTOR COMPACTION TEST.
4. RIGID STYROFOAM INSULATION (DOW HI-40 OR EQUAL) WITH 6" CLEAN SAND BLANKET AROUND WATER PIPE WHERE WATER AND DRAIN PIPE SEPARATION IS LESS THAN 18".
5. TRACER WIRE SPECIFIED FOR NON-METALLIC WATER LINES SHALL BE INSTALLED BELOW AND TO THE SIDE OF THE PIPE AND PER THE MANUFACTURER REQUIREMENTS. THEY SHALL BE 12 AWG, SOLID COPPER, POLYETHYLENE COATED. TRACER WIRE PRODUCT SHALL BE SELECTED FOR OPEN CUT INSTALLATION TECHNIQUE.
6. INDICATOR TAPE SHALL BE BLUE MARKING TAPE LABELED "WATER" IN THREE-INCH LETTERS AND SHALL BE INSTALLED 12-INCHES ABOVE THE 12-INCH SAND BLANKET.
7. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.



## GAS MAIN TRENCH

NOT TO SCALE



## ELECTRIC/COMMUNICATIONS TRENCH

NOT TO SCALE

TAX MAP 239 LOT 11  
**CONSTRUCTION DETAILS**  
**PROPOSED GAS STATION & CONVENIENCE STORE**  
**1980 WOODBURY AVENUE**  
**PORTSMOUTH, NEW HAMPSHIRE**  
OWNED BY  
**COLBEA ENTERPRISES, LLC**

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

NOVEMBER 17, 2025

2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR
REV	DATE	DESCRIPTION	DR	CK

Seacoast Division	Civil Engineers
<b>TFM</b> ®	Structural Engineers
	Traffic Engineers
	Land Surveyors
	Landscape Architects
	Scientists
170 Commerce Way, Suite 102	
Portsmouth, NH 03801	
Phone (603) 431-2222	
Fax (603) 431-0910	
www.tfmoran.com	

F	46077.16	DR	JKC	FB
E		CK	CRR	CADFILE
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C-18



## SEWER SERVICE NOTES

- MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.
- PIPE AND JOINT MATERIALS:
  - PLASTIC SEWER PIPE
    - PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

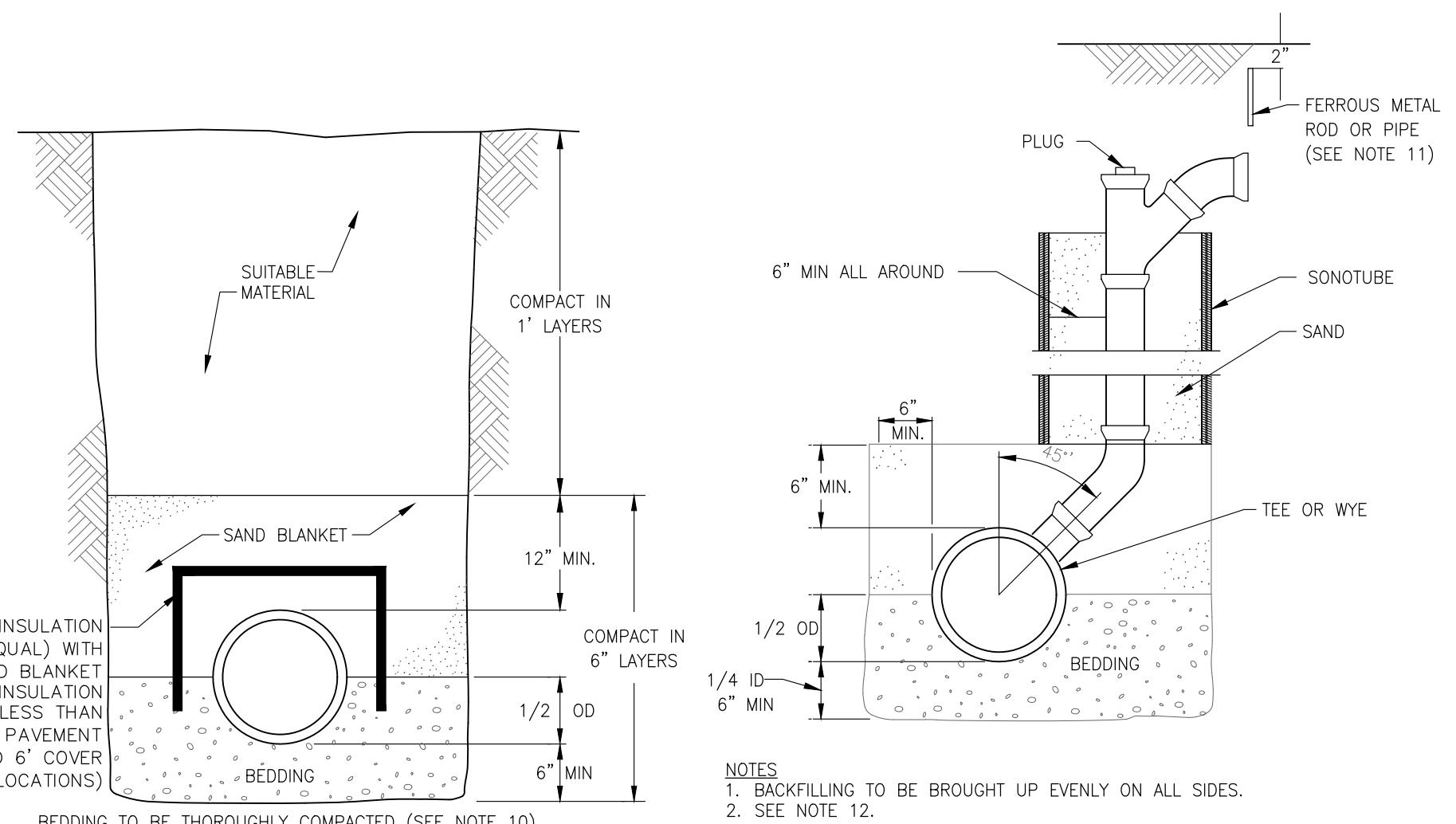
\*PVC: POLY VINYL CHLORIDE  
\*ABS: ACRYLONITRILE-BUTADIENE-STYRENE
  - JOINTS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
  - ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).
  - JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.
  - DUCTILE-IRON PIPE, FITTINGS AND JOINTS:
    - DUCTILE-IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE: A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
    - A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
    - JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
    - A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS
- DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERENT MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
- TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING. USE OF SIMILAR PRACTICES AS AND WITH THE SAME CARE AS BOLTING, STUFFING CLOTH OR OTHER SUCH MATERIALS AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.
- SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.
- THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DETERMINE THE TRENCH.
- TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)
  - AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
  - THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
  - DRY FLUORESCENT DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.
- LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.
- ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FLOOR DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
- WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING 1 INCH SCREEN  
90%-100% PASSING 3/4 INCH SCREEN  
20%-55% PASSING 3/8 INCH SCREEN  
0%-10% PASSING #4 SIEVE  
0%-5% PASSING #8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

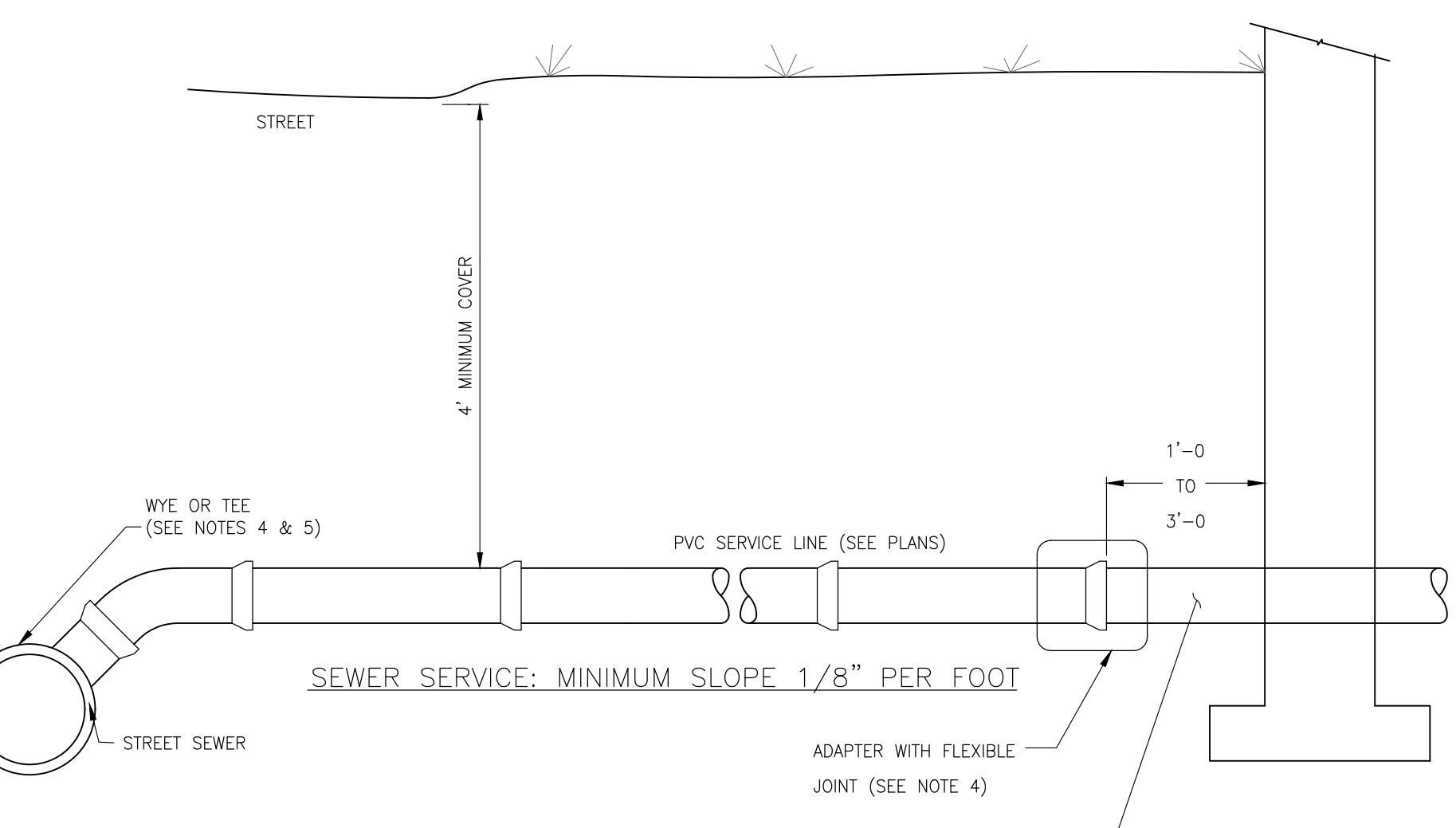
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.



## TRENCH CROSS-SECTION

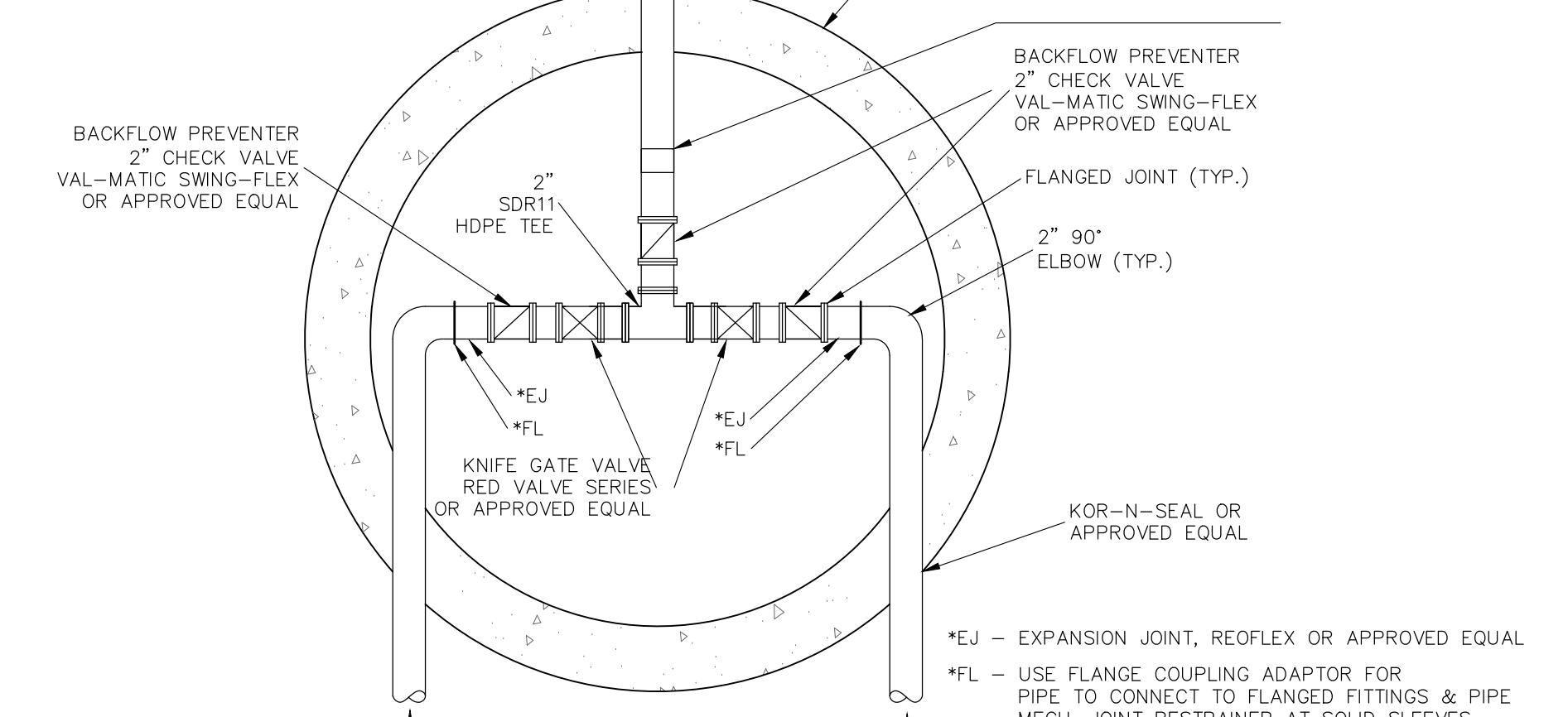
NOT TO SCALE



## SEWER SERVICE

### NOTES:

1. PROVIDE VALVE HANDLE EXTENSIONS AND SUPPORTS FOR ALL GATE VALVES.
2. USE KOR-N-SEAL OR APPROVED EQUAL FOR ALL PIPE SEALS.



## VALVE MANHOLE DETAIL

PUMP STATION

NOT TO SCALE

## GRAVITY SEWER NOTES

- MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
- PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:
 

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

\*PVC: POLY VINYL CHLORIDE
- PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
- JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(e)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
- DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA):
 

AWWA C151/A21.51-02 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536-84 (2004) DUCTILE IRON CASTINGS.

AWWA C151/A21.51-02 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
- CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
- PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
- JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
- DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:
 

ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

10. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
11. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
12. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5.0 PERCENT OF THE AVERAGE INSIDE DIAMETER.
13. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE, IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

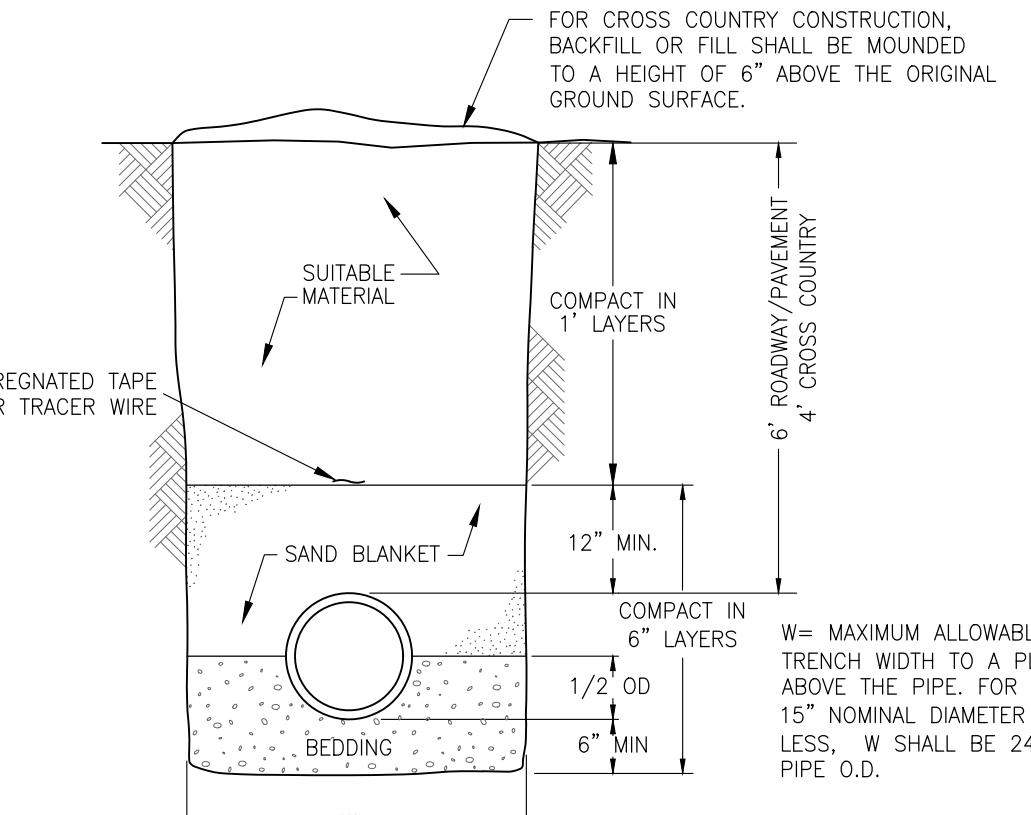
TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS 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 AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNTED 6-INCHES ABOVE ORIGINAL GROUND.

BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

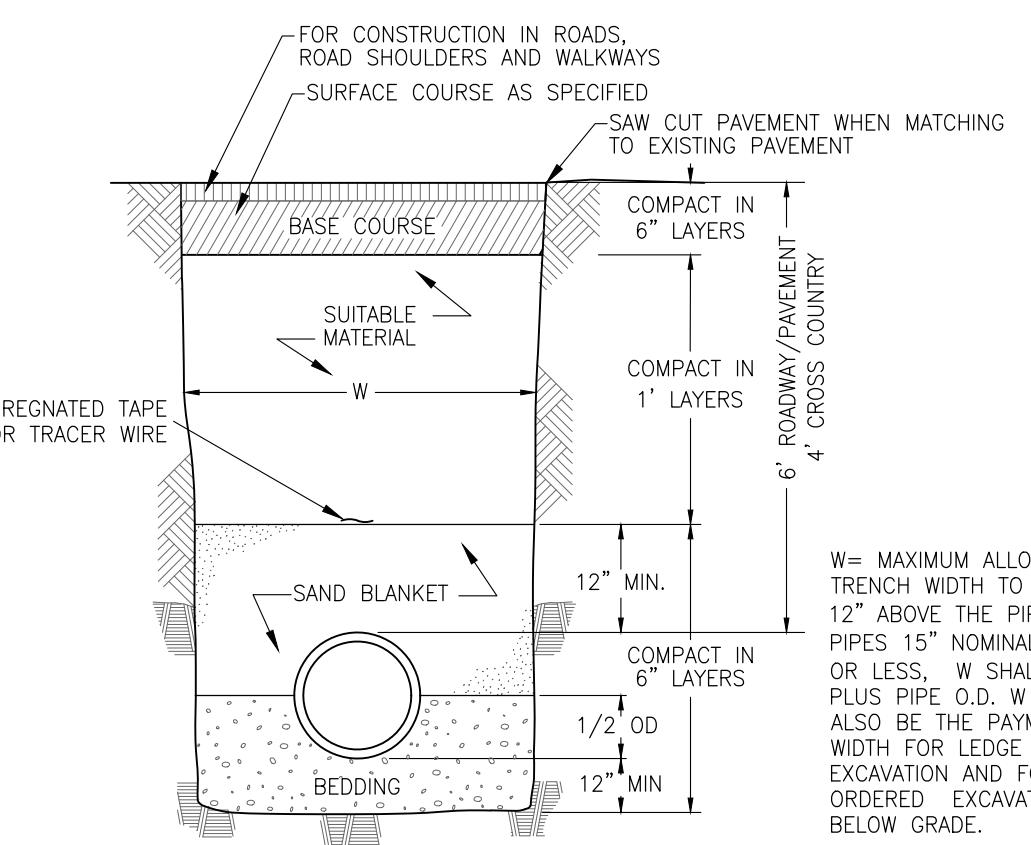
WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPE BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.



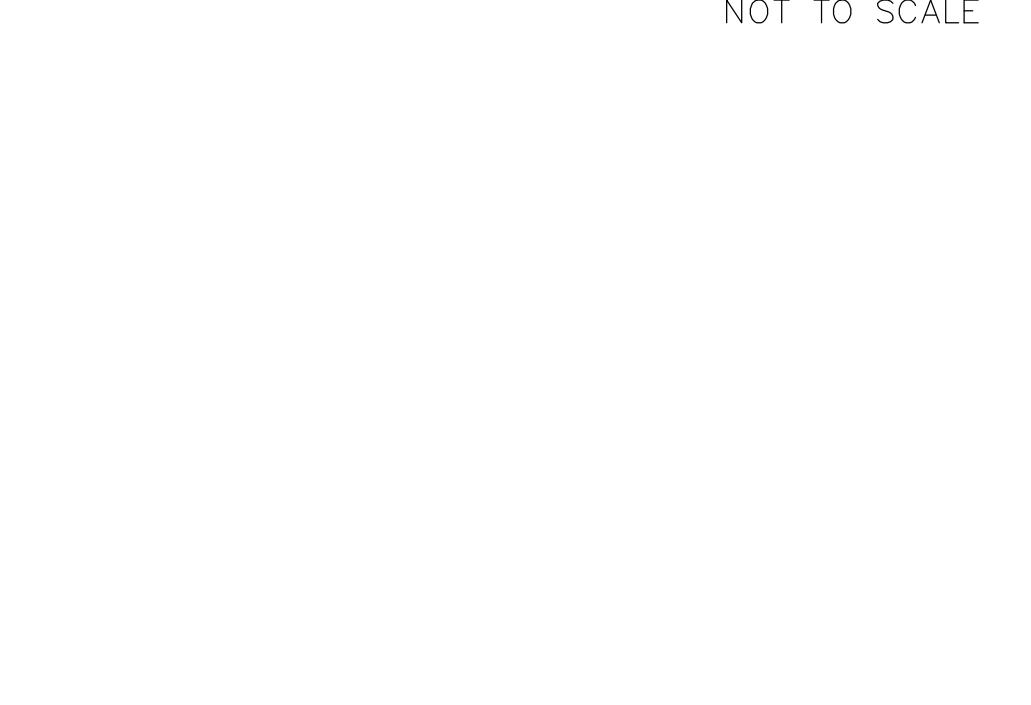
## EARTH CONSTRUCTION

NOT TO SCALE



## LEDGE CONSTRUCTION

NOT TO SCALE



## TAX MAP 239 LOT 11

## CONSTRUCTION DETAILS

### PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

COLBEA ENTERPRISES, LLC

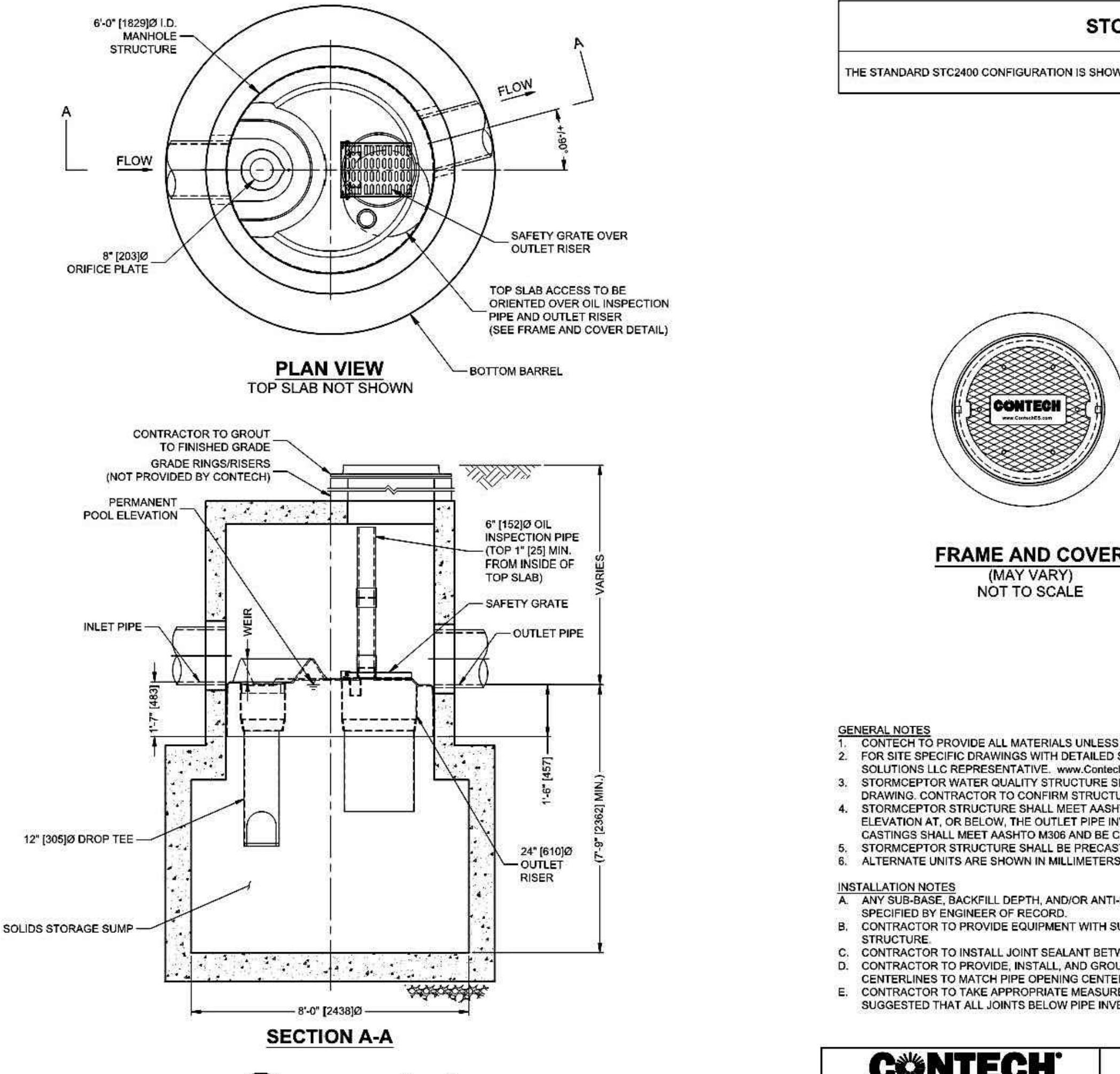
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REV	DATE	DESCRIPTION	DR	CK
2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
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FILE	46077.16	DR	JKC	FB	46077-16_DETAILS	C-20
		CK	CRR	CADFILE		

Civil Engineers	



STORMCEPTOR DESIGN NOTES																			
THE STANDARD STC2400 CONFIGURATION IS SHOWN.																			
<b>FRAME AND COVER</b> (MAY VARY) NOT TO SCALE																			
<b>SITE SPECIFIC DATA REQUIREMENTS</b>																			
<table border="1"> <thead> <tr> <th>STRUCTURE ID</th><th>STORMCEPTOR</th></tr> </thead> <tbody> <tr> <td>WATER QUALITY FLOW RATE (cfs [L/s])</td><td></td></tr> <tr> <td>PEAK FLOW RATE (cfs [L/s])</td><td>3.5 CFS</td></tr> <tr> <td>RETURN PERIOD OF PEAK FLOW (yrs)</td><td></td></tr> <tr> <td>RIM ELEVATION</td><td>52.85</td></tr> <tr> <td>PIPE DATA:</td><td>INVERT MATERIAL DIAMETER</td></tr> <tr> <td>INLET PIPE 1</td><td>46.10 HDPE 12"</td></tr> <tr> <td>INLET PIPE 2</td><td></td></tr> <tr> <td>OUTLET PIPE</td><td>46.10 HDPE 12"</td></tr> </tbody> </table>		STRUCTURE ID	STORMCEPTOR	WATER QUALITY FLOW RATE (cfs [L/s])		PEAK FLOW RATE (cfs [L/s])	3.5 CFS	RETURN PERIOD OF PEAK FLOW (yrs)		RIM ELEVATION	52.85	PIPE DATA:	INVERT MATERIAL DIAMETER	INLET PIPE 1	46.10 HDPE 12"	INLET PIPE 2		OUTLET PIPE	46.10 HDPE 12"
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NOTES / SPECIAL REQUIREMENTS:																			

**GENERAL NOTES**

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED STRUCTURE REPRESENTATIVE.
3. STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STORMCEPTOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0'-2" [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

**INSTALLATION NOTES**

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOATATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
- C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



**STC2400  
STORMCEPTOR  
STANDARD DETAIL**

**TAX MAP 239 LOT 11  
CONSTRUCTION DETAILS  
PROPOSED GAS STATION & CONVENIENCE STORE  
1980 WOODBURY AVENUE  
PORTSMOUTH, NEW HAMPSHIRE  
OWNED BY  
COLBEA ENTERPRISES, LLC**

**1"-40' (11"x17")  
SCALE: 1"-20' (22"X34")**

**NOVEMBER 17, 2025**

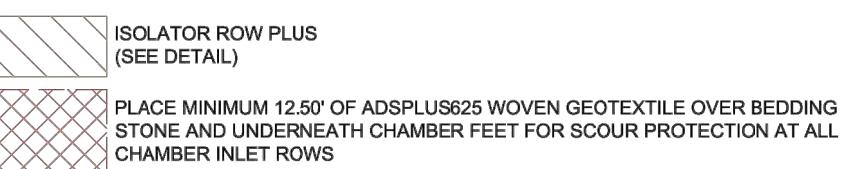
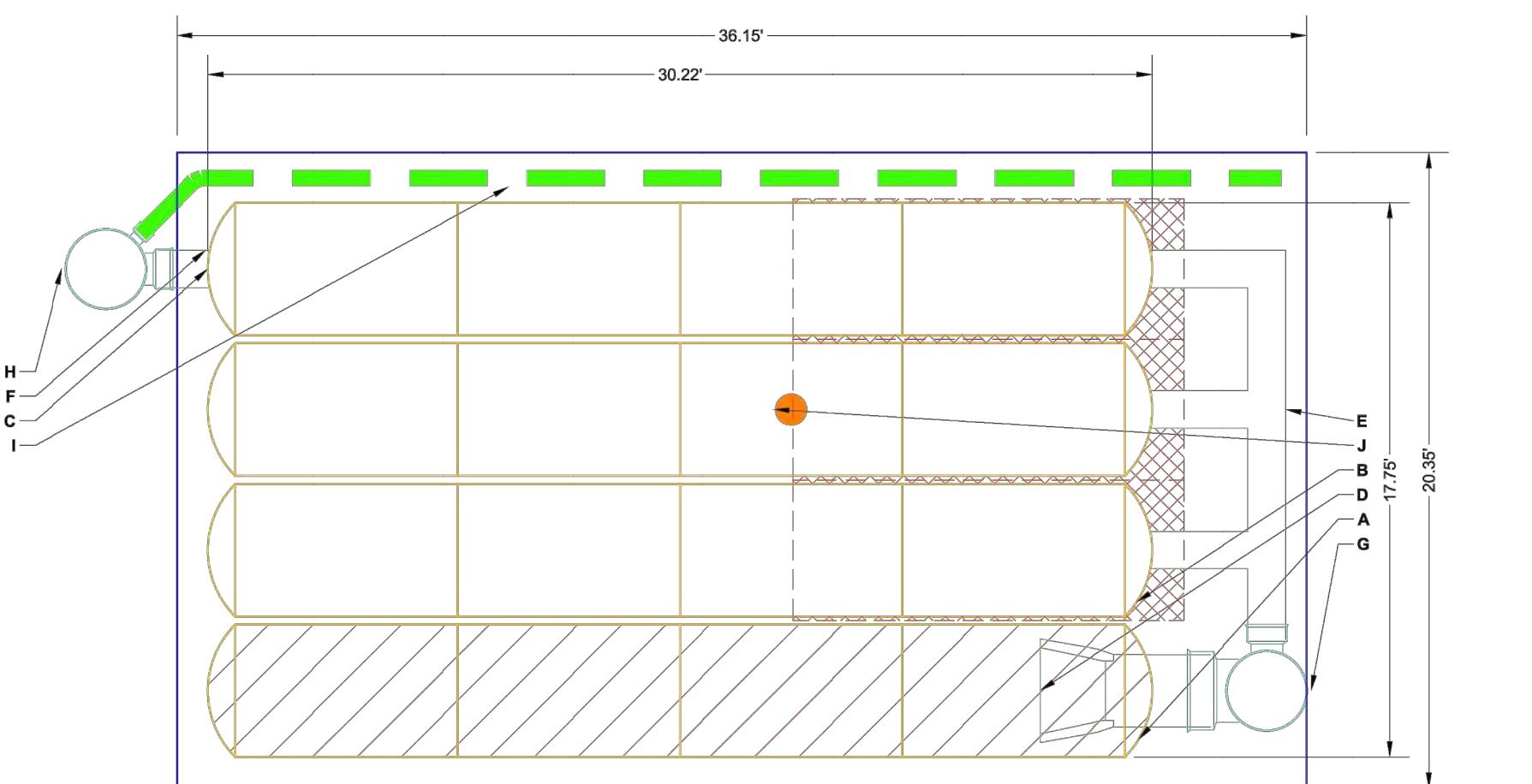
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2	2/11/2026	REVISED PER ADDRESS CHANGE REQUEST	JKC	CRR
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR
REV	DATE	DESCRIPTION	DR	CK

<b>Seacoast Division</b>	Civil Engineers	170 Commerce Way, Suite 102
<b>TFM</b> ®	Structural Engineers	Portsmouth, NH 03801
	Traffic Engineers	Phone (603) 431-2222
	Land Surveyors	Fax (603) 431-0910
	Landscape Architects	www.tfmoran.com
F	46077.16	DR JKC FB
E	CK CRR	CADFILE
I	46077-16_DETAILS	C-21

PROPOSED LAYOUT		PROPOSED ELEVATIONS		INVERT ABOVE BASE OF CHAMBER	
16 STORMTECH SC-800 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/PAVED):	56.55	PART TYPE	ITEM ON LAYOUT	DESCRIPTION
5 STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED/NO TRAFFIC):	50.00		A 24" BOTTOM PRE-FABRICATED EZ END CAP PART# SC800EPE0CEZ / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	
6 STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	49.80		B 12" TOP PRE-CORED END CAP, PART# SC800EPE12TPC / TYP OF ALL 12" TOP CONNECTIONS	
40 STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	49.80		C 12" PRE-CORED END CAP	
(PERIMETER STONE INCLUDED)	TOP OF SC-800 CHAMBER:	48.55		D INSTANT FLAMP ON 24" ACCESS PIPE / PART# SC80024RAMP	
(COVER STONE INCLUDED)	12" X 12" TOP MANIFOLD INVERT:	47.00		E 12" TOP ROW MANIFOLD, ADS N-12 PIPE CONNECTION	14.40"
(COVER STONE INCLUDED)	12" BOTTOM CONNECTION INVERT:	45.85		F 12" BOTTOM CONNECTION	1.80"
738 SYSTEM AREA (SF)	12" BOTTOM CONNECTION INVERT:	45.80		G 30" DIAMETER (24.00" SUMP MIN)	5.8 CFS IN
113.0 SYSTEM PERIMETER (ft)	BOTTOM OF SC-800 CHAMBER:	45.30		H 30" DIAMETER (DESIGN BY ENGINEER)	2.0 CFS OUT
155 (20% OVERAGE)	UNDERDRAIN INVERT:	45.30		I 5" DIA N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN	
	BOTTOM OF STONE:	45.30		J NYLONPLAST (OUTLET)	
				UNDERDRAIN	
				INSPECTION PORT	
				J 4" SEE DETAIL	



ISOLATOR ROW PLUS  
(SEE DETAIL)

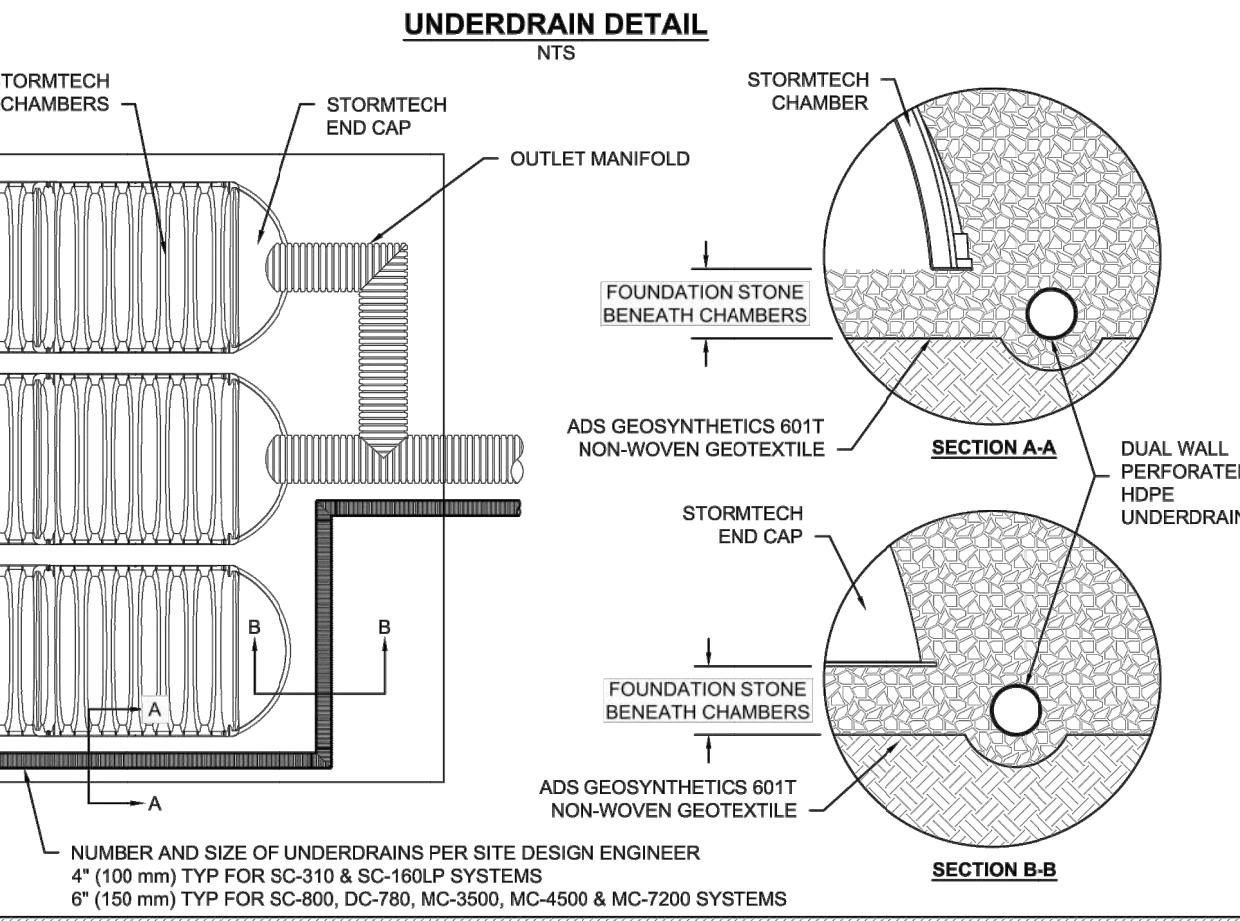
PLACE MINIMUM 12.50' OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING  
STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL  
CHAMBER INLET ROWS

THERMOPLASTIC LINER (SEE TECH NOTE #6.50 PROVIDED BY OTHERS /  
DESIGN BY OTHERS)

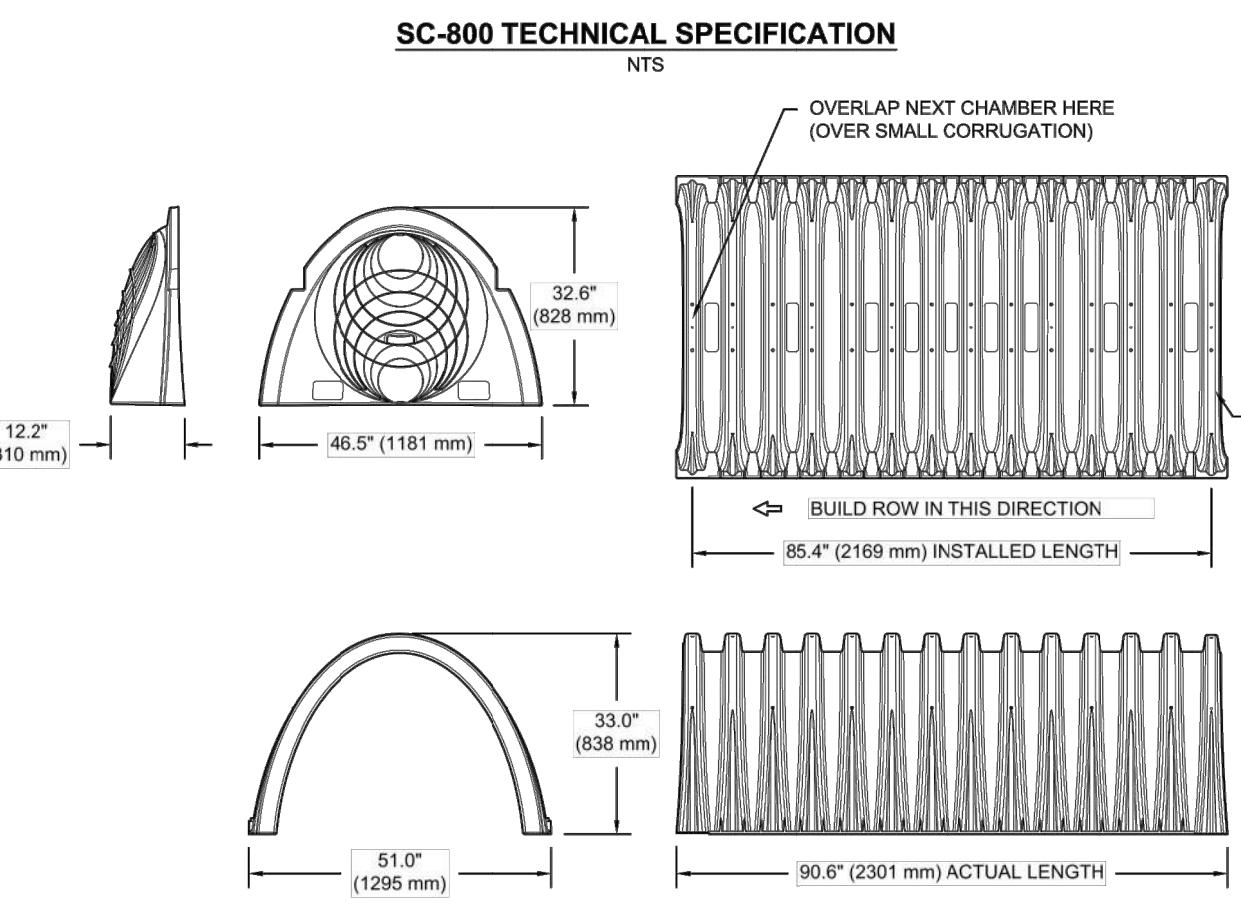
#### NOTES

THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.

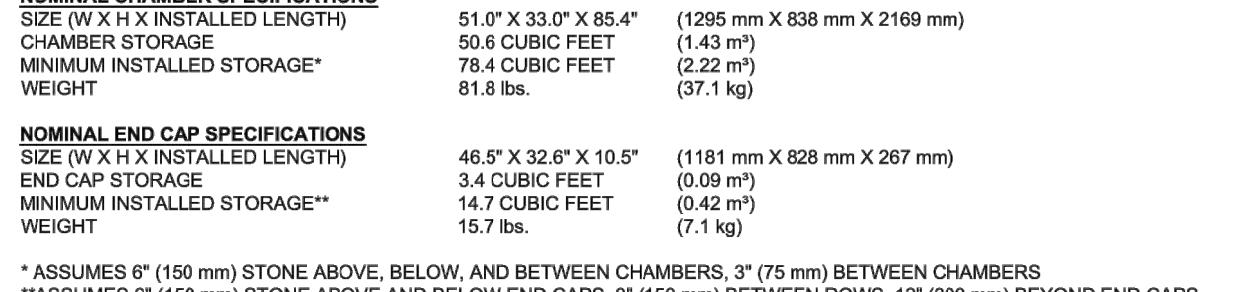
NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



5 UNDERDRAIN DETAIL



SC-800 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X ILLUSTRATED LENGTH)

CHAMBER STORAGE

MINIMUM INSTALLED STORAGE\*

WEIGHT

51.0" X 33.0" X 85.4" (1295 mm X 838 mm X 2169 mm)

50.6 CUBIC FEET (1.43 m<sup>3</sup>)

78.4 CUBIC FEET (2.22 m<sup>3</sup>)

81.8 lbs. (37.1 kg)

\* ASSUMES 8" (150 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS, 3" (75 mm) BETWEEN CHAMBERS

\*\* ASSUMES 8" (150 mm) STONE ABOVE AND BELOW END CAPS, 3" (150 mm) BETWEEN ROWS, 12" (300 mm) BEYOND END CAPS

PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	—
SC800EPE09TPC	10" (250 mm)	17.0" (432 mm)	1.0" (25 mm)
SC800EPE10TPC	12" (300 mm)	14.4" (366 mm)	—
SC800EPE12TPC	15" (375 mm)	11.3" (287 mm)	1.6" (41 mm)
SC800EPE15TPC	18" (450 mm)	8.0" (203 mm)	1.7" (43 mm)
SC800EPE16TPC	24" (600 mm)	—	2.0" (51 mm)
SC800EPE18TPC	NONE	—	2.3" (58 mm)
			SOLID END CAP

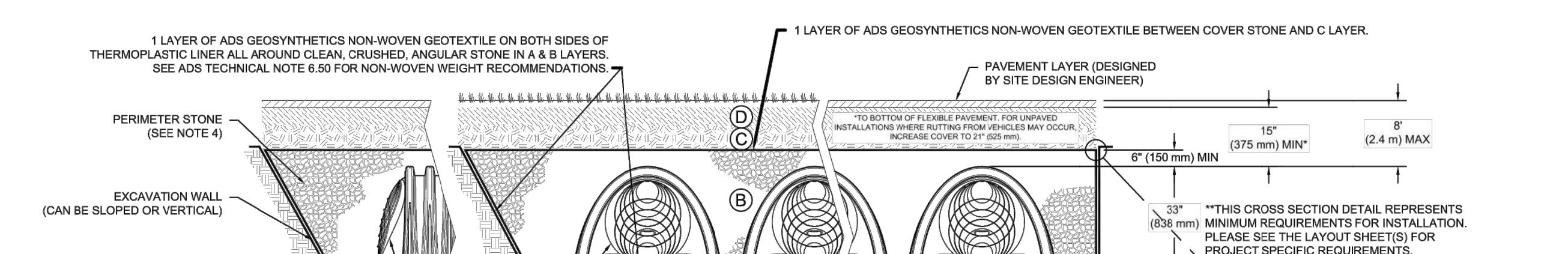
NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-800 TECHNICAL SPECIFICATION

#### ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBODIMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.	AASHTO M145 <sup>1</sup> A-1, A-2, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 89, 9, 10
B	EMBODIMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>2</sup>	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>2</sup>	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57

PLEASE NOTE:  
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".  
2. STANDARD COMPACTATION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPAKTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.  
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPAKATION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPAKATION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPAKATION REQUIREMENTS.  
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.  
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



#### NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2419 SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT<sup>2</sup>, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 SC-800 CROSS SECTION DETAIL

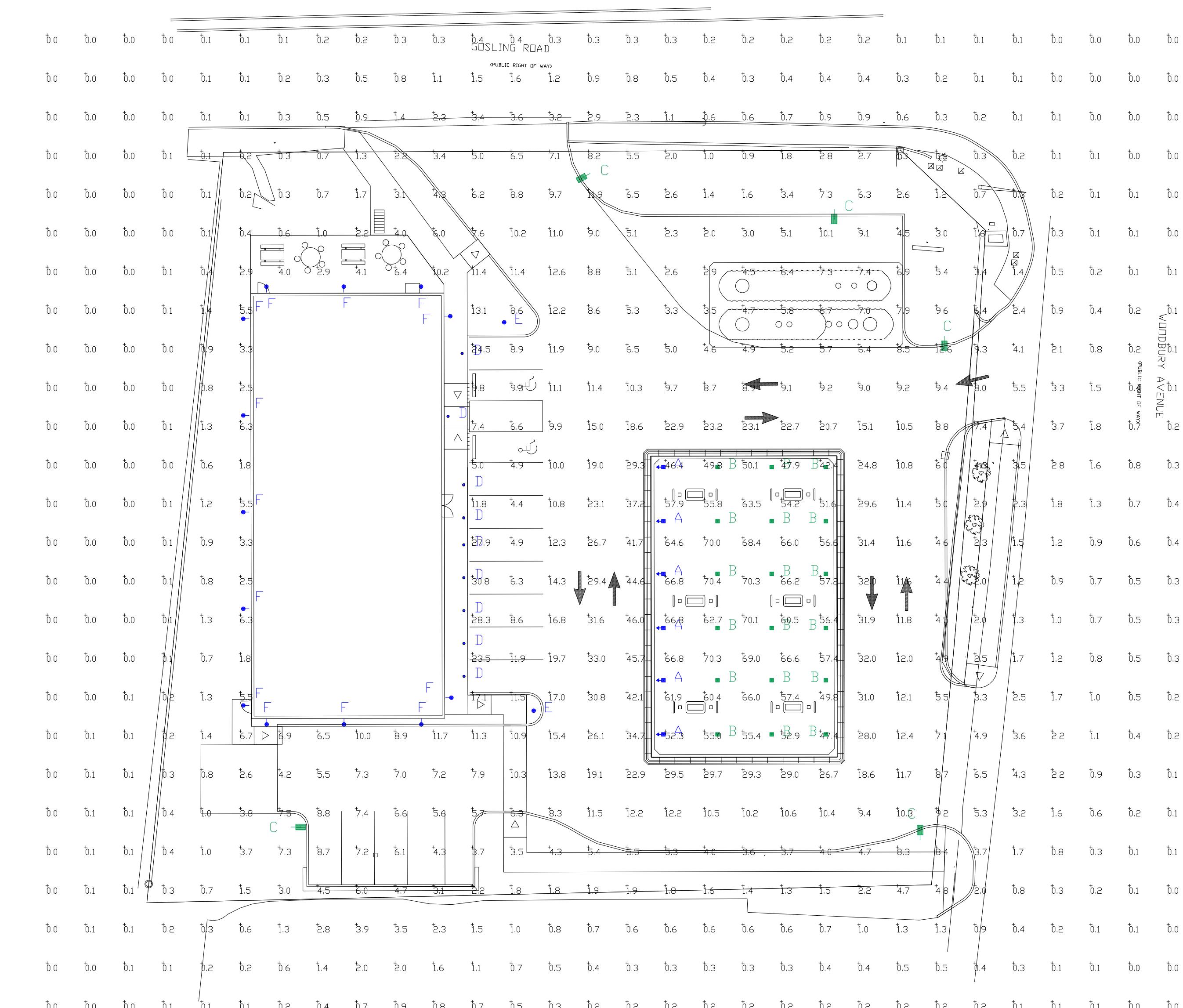
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SHEET	SHEET	SHEET	SHEET
1 OF 1	1 OF 1	1 OF 1	1 OF 1

StormTech<sup>®</sup>  
Chamber System

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ADS

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#### PHOTOMETRIC EVALUATION NOT FOR CONSTRUCTION

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include fixture height or part number. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

The IES no longer uses the Cutoff Classification System for LED fixtures. The IES classifies LED fixtures with the BUG rating which refers to the Backlight-Uplight-Glare system. An Uplight of '00' most closely matches the old Full Cutoff rating.

Dimensions of drawings that have been scaled or converted from PDF files or scanned /submitted images are approximate.



Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Mounting Height	LLF	Arr. Lum. Lumens	Arr. Watts	BUG Rating
6	18	A	Single	SCV-LED-23L-SCFT-50	15'	1.000	23422	187	B4-U0-G3
5	9	B	Single	SCV-LED-13L-SC-50	15'	1.000	14195	92	B3-U0-G1
+	2	C	Single	MRM-LED-18L-SIL-FT-50-70CRI-SINGLE	14' POLE+2' BASE	1.000	19324	135	B3-U0-G3
+	13	D	Single	XBVR-ID-LED-24-400-CW-UE	3.5'	1.000	1338	38	B1-U2-G1
+		E	Single	LXM4-PT-5W-LED-25L-50	14' POLE+2' BASE	1.000	27285	227.9	B5-U2-G3
+		F	Single	HBR-17L-40-GWT	10'	1.000	1563	12.8	B1-U1-G0

Total Project Watts  
Total Watts = 4417.197



LIGHTING PROPOSAL LD-163588

SEASONS CORNER MARKET  
WOODBURY AVE  
PORTSMOUTH, NH

BYMWE DATE:11-14-25 REV: SHEET 1  
SCALE: 1'-0" ARCH D 0 20



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## COLBEA ENTERPRISES, LLC

1980 WOODBURY AVE  
PORTSMOUTH, NH 03801  
JOB NUMBER: 41-25-2000

ISSUE BLOCK	
1	PB PLANS 11/25/25

CHECKED BY: HAL  
DRAWN BY: MJDC  
DOCUMENT DATE: 08/15/25



1 FRONT ELEVATION  
A207 1/4" = 1'-0"

NOTES:

1. REFER TO A601 FOR MATERIAL CALL OUT SPECIFICATION.
2. G.C. IS TO PROVIDE POWER & INSTALL OWNER UED LED ROPE LIGHT (LIGHT WRAPS 4 SIDES OF BUILDING). REFER TO REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION.
3. ALUMINUM STOREFRONT SYSTEM IS TO BE TEMPERED AS REQUIRED BY CODE. REFER TO "STOREFRONT MATERIAL SPECIFICATIONS" ON SHEET A601 FOR ADDITIONAL INFORMATION.
4. PROVIDE AND INSTALL (2) 8" x 16" SCREENED ALUMINUM VENTS ON BACK SIDE OF SEASONS' ARCH LOCATED AS HIGH AS POSSIBLE.
5. THE GUARDRAIL SYSTEM, COLUMNS, STL PLATES, STL SADDLES, FASCIA BOARDS AND WOOD BEAM AT THE EXTERNAL BASEMENT ACCESS STAIRS SHALL BE PAINTED BLACK

RENDERED  
EXTERIOR  
ELEVATIONS  
FRONT

SHEET:  
A207

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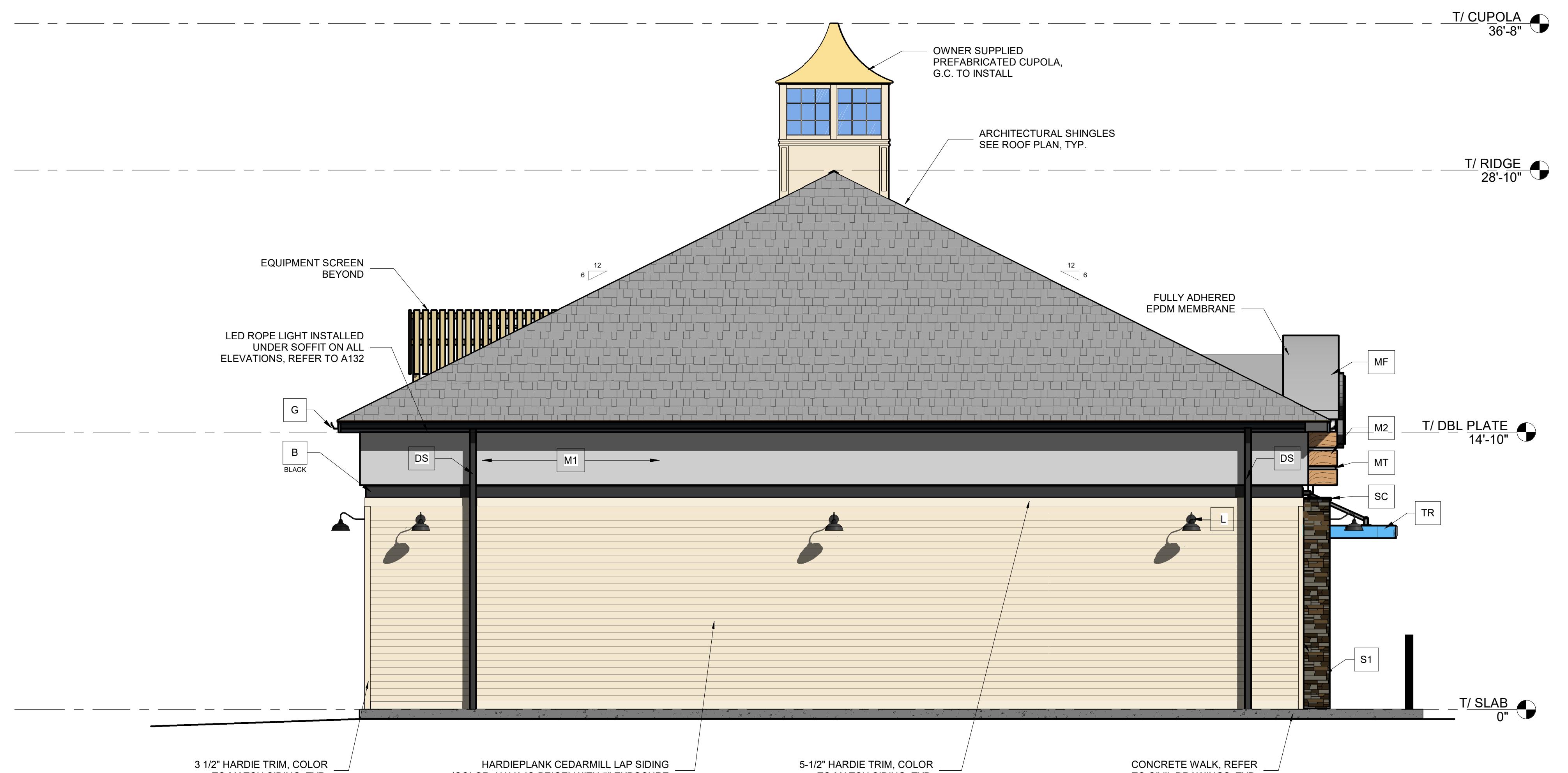
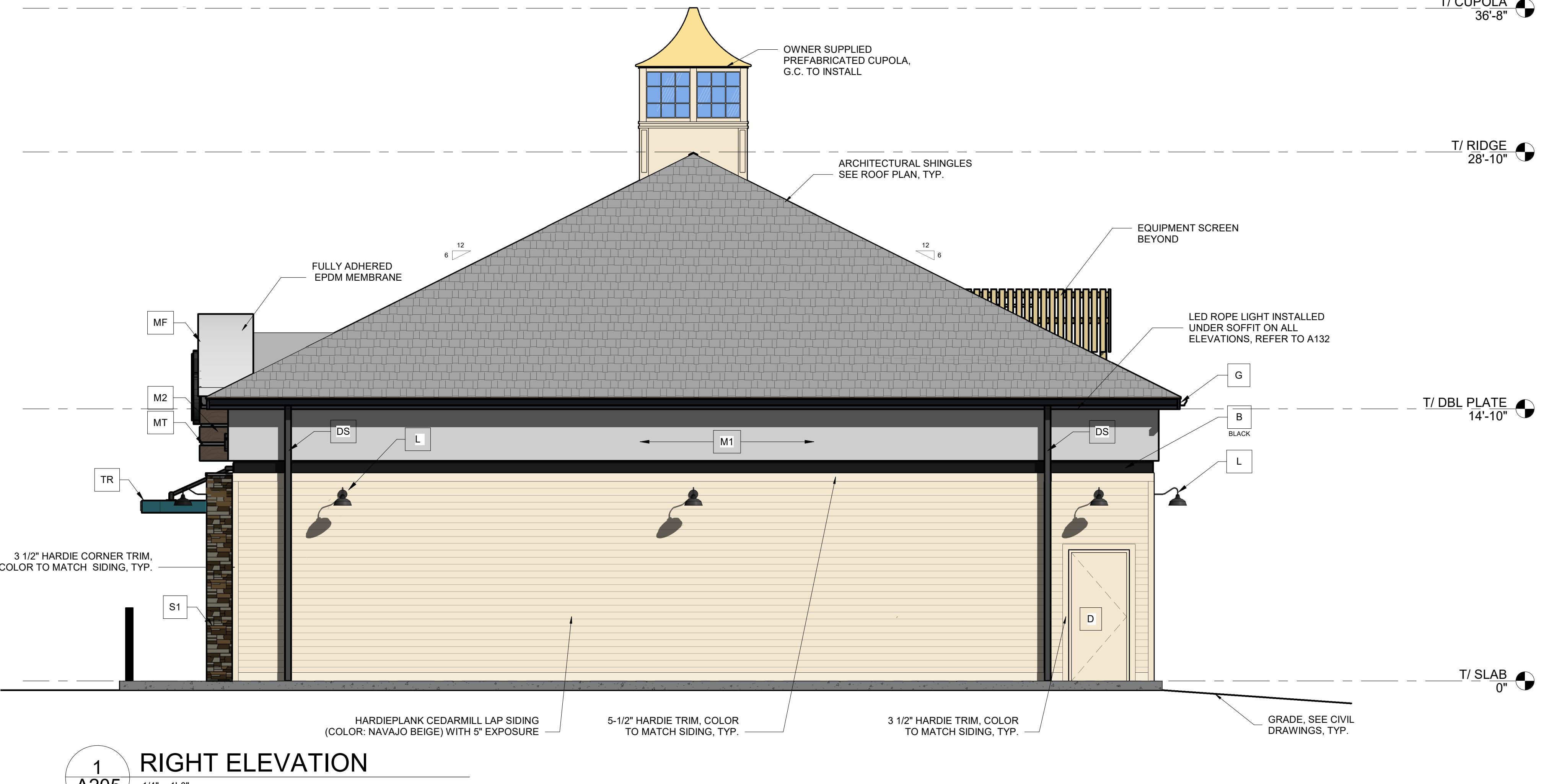
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LLC**  
1980 WOODBURY AVE  
PORTSMOUTH, NH 03801  
JOB NUMBER: 41-25-2000

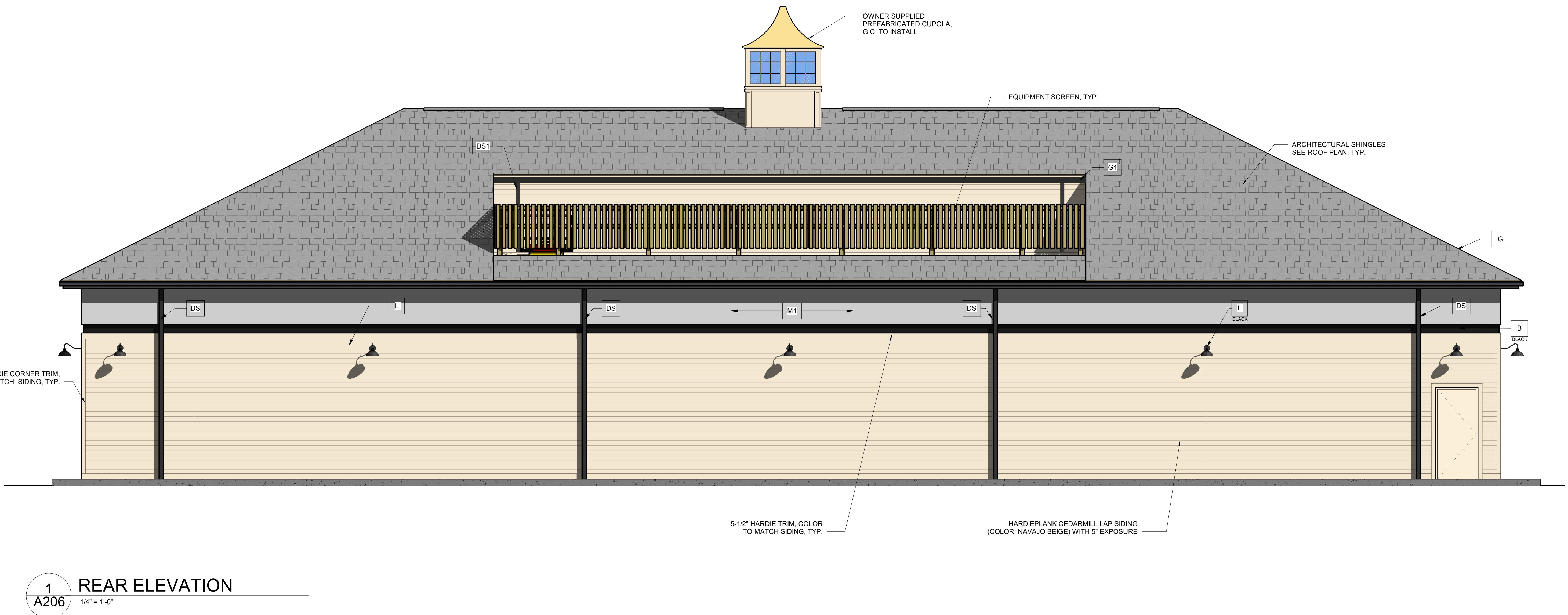
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1 PB PLANS 11/25/25

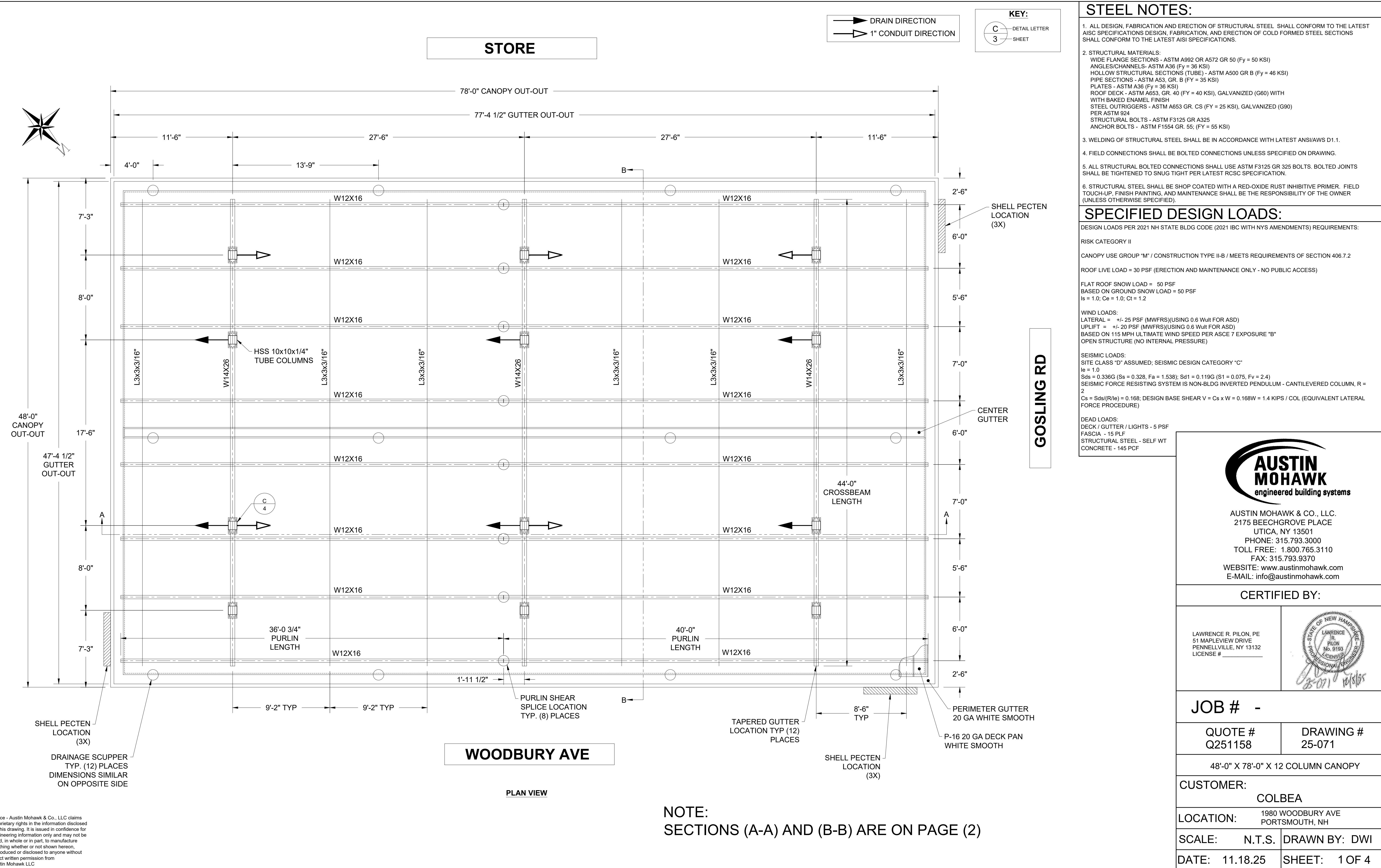
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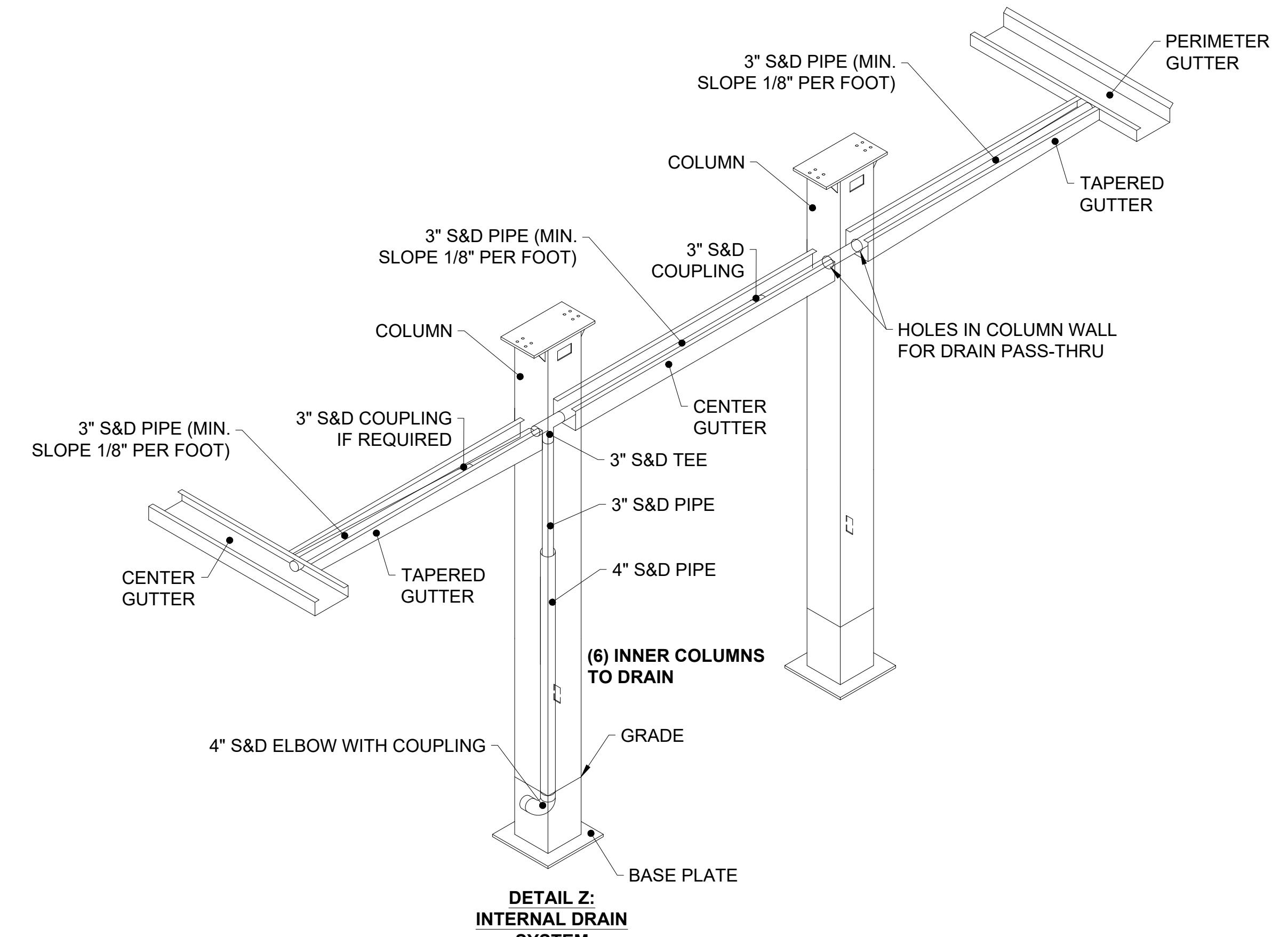
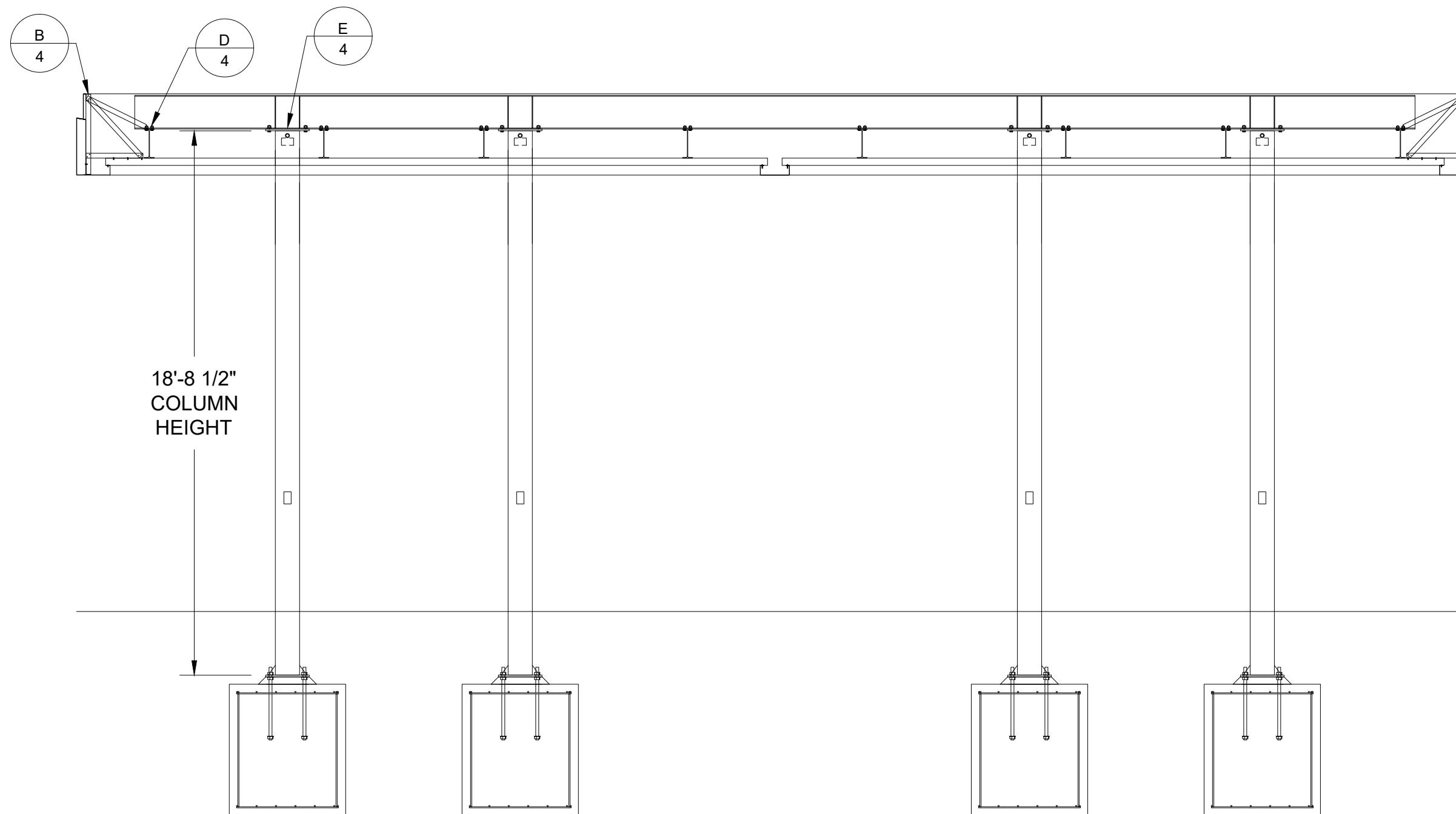
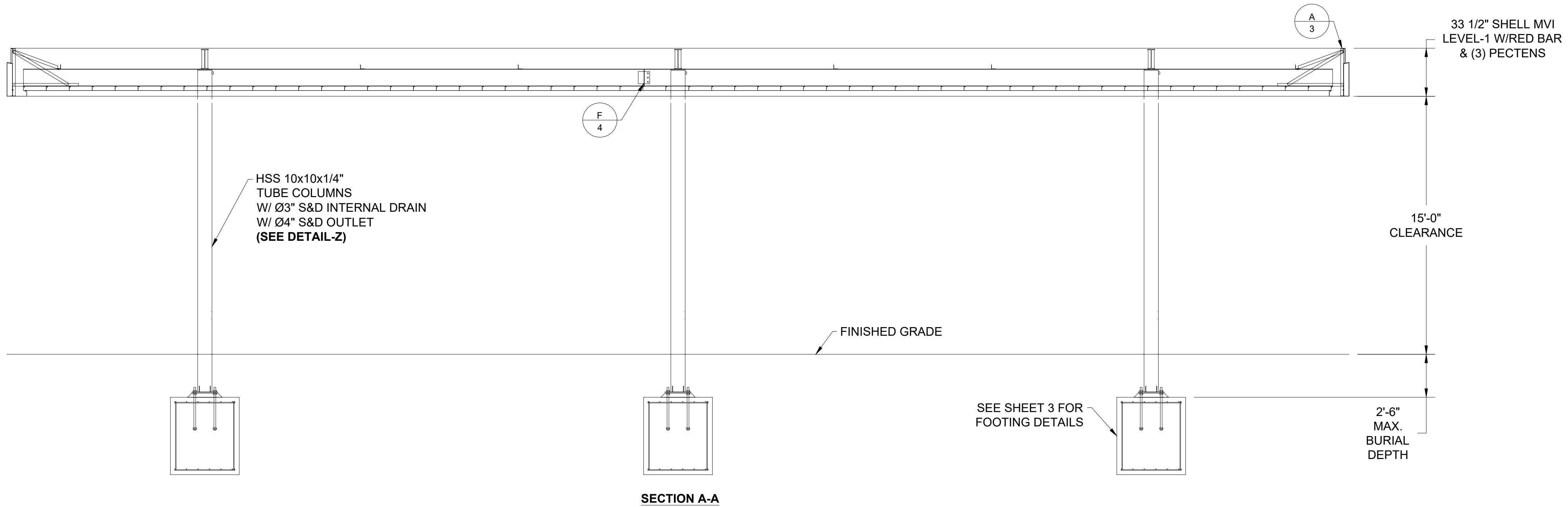
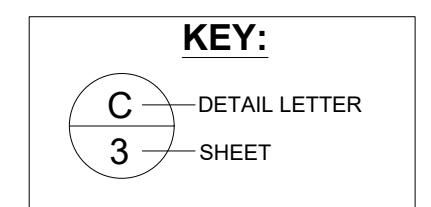
RENDERED EXTERIOR  
ELEVATIONS  
LEFT & RIGHT

SHEET:  
**A205**

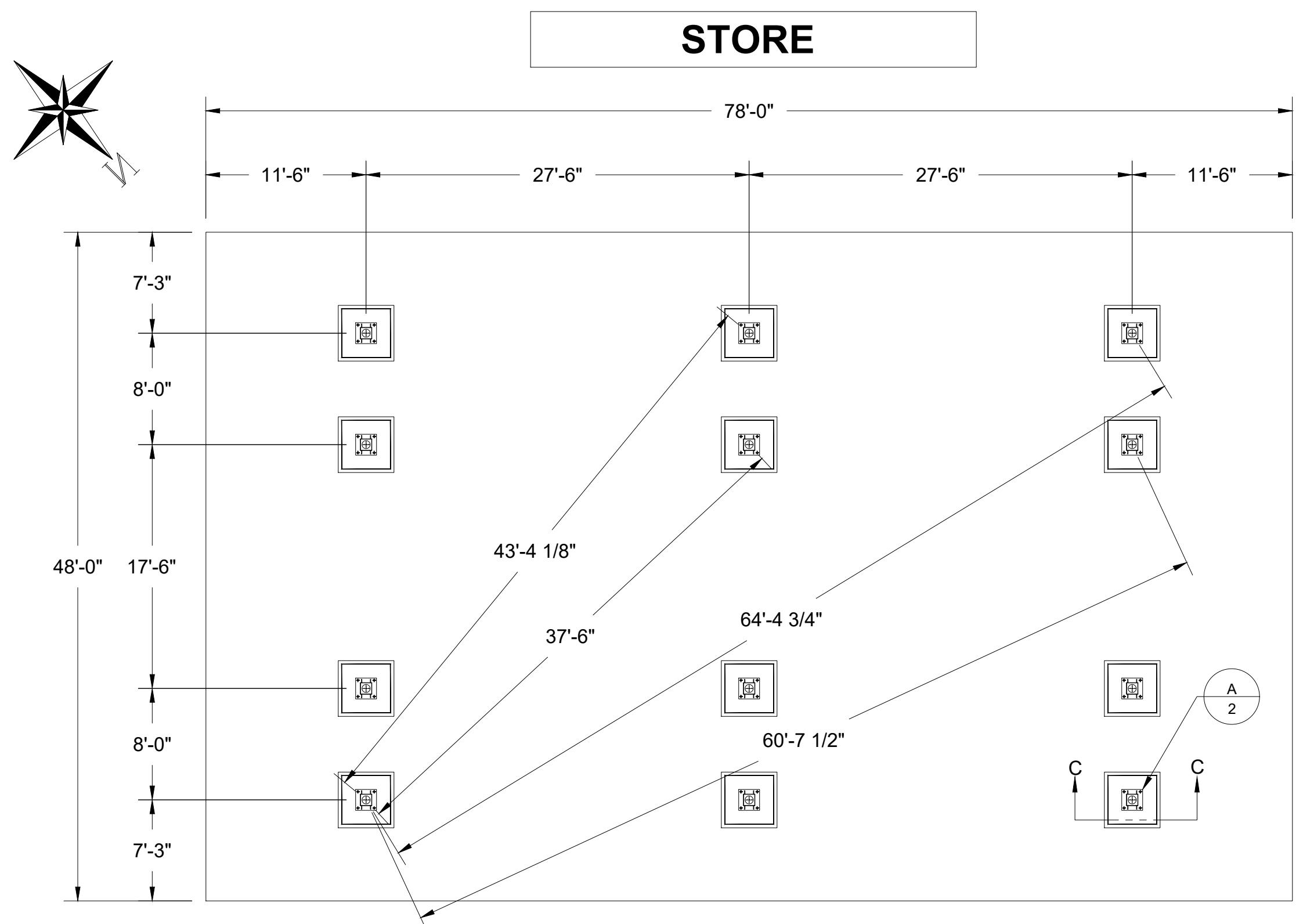








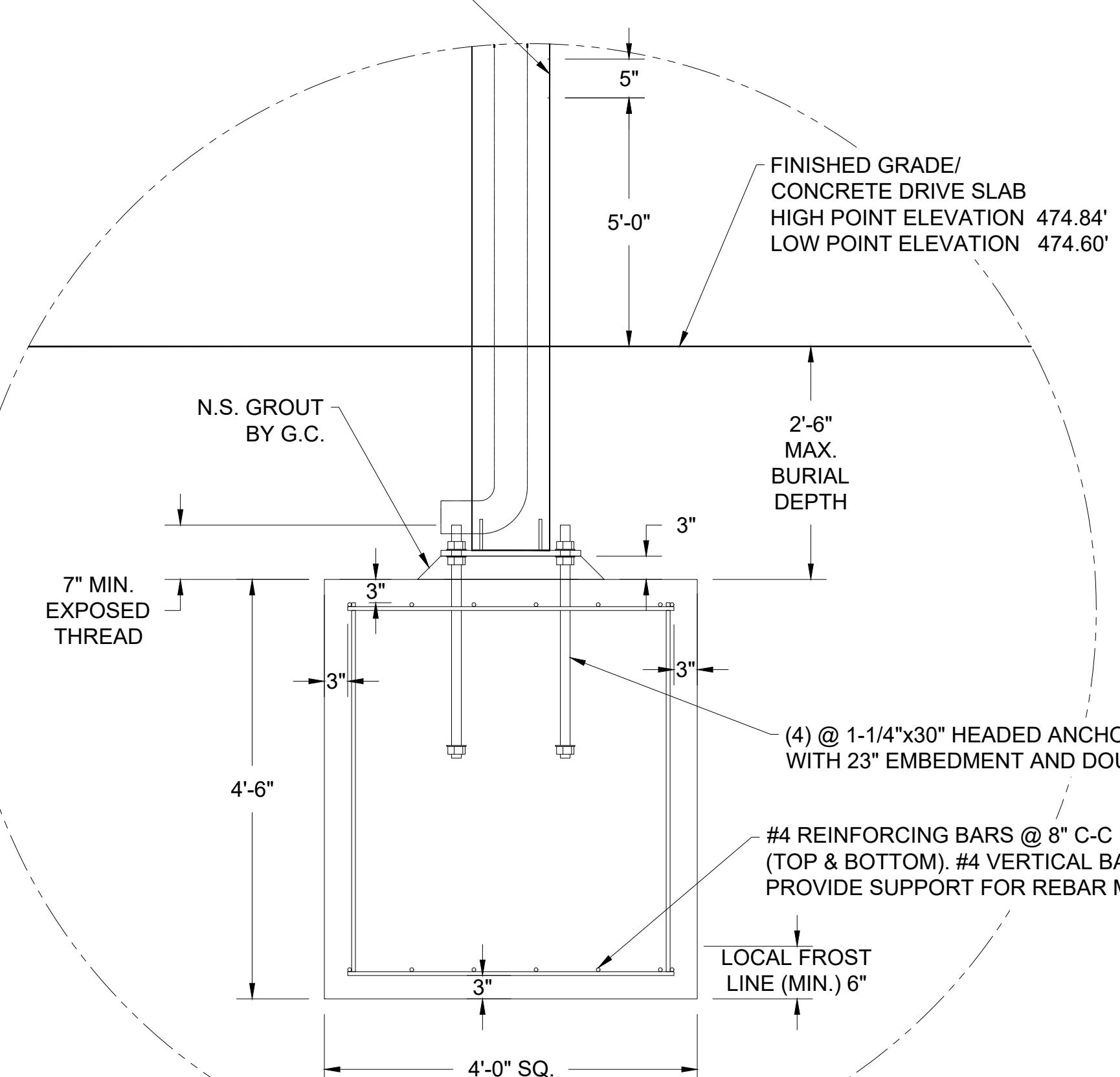
AUSTIN MOHAWK & CO., LLC. 2175 BEECHGROVE PLACE UTICA, NY 13501 PHONE: 315.793.3000 TOLL FREE: 1.800.765.3110 FAX: 315.793.9370 WEBSITE: <a href="http://www.austinmohawk.com">www.austinmohawk.com</a> E-MAIL: <a href="mailto:info@austinmohawk.com">info@austinmohawk.com</a>	
<b>CERTIFIED BY:</b>	
LAWRENCE R. PILON, PE 51 MAPLEVIEW DRIVE PENNELLVILLE, NY 13132 LICENSE # <u>9193</u>	
<b>JOB #</b> - <u>25-071</u>	
<b>QUOTE #</b> Q251158	<b>DRAWING #</b> 25-071
48'-0" X 78'-0" X 12 COLUMN CANOPY	
<b>CUSTOMER:</b> COLBEA	
<b>LOCATION:</b> 1980 WOODBURY AVE PORTSMOUTH, NH	
<b>SCALE:</b> N.T.S.	<b>DRAWN BY:</b> DWI
<b>DATE:</b> 11.18.25	<b>SHEET:</b> 2 OF 4



# GOSLING RD

# WOODBURY AVE

3" x 5" HAND HOLE ON EACH COLUMN  
ORIENTED OPPOSITE OF DRAIN DIRECTION



## SECTION C

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## FOOTING SPECIFICATIONS:

# KEY:

OWNER / GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FOOTING AND ANCHOR BOLT INSTALLATION

ALL FOOTINGS SHALL BE CAST ON LEVEL, UNDISTURBED SOIL OR ROCK OR PROPERLY COMPAKTED SUBGRADE. BOTTOM OF FOOTING TO BE ABOVE WATER TABLE. FOOTING BASED ON MIN 2000 PSF SOIL BEARING CAPACITY AND 150 PSF PER FOOT OF DEPTH LATERAL BEARING CAPACITY AFTER SITE SOIL IMPROVEMENT HAS BEEN IMPLEMENTED. OWNER/GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL SOIL PARAMETERS.

FOOTING CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. FOOTING DESIGN SHALL BE IN ACCORDANCE WITH ACI 318.

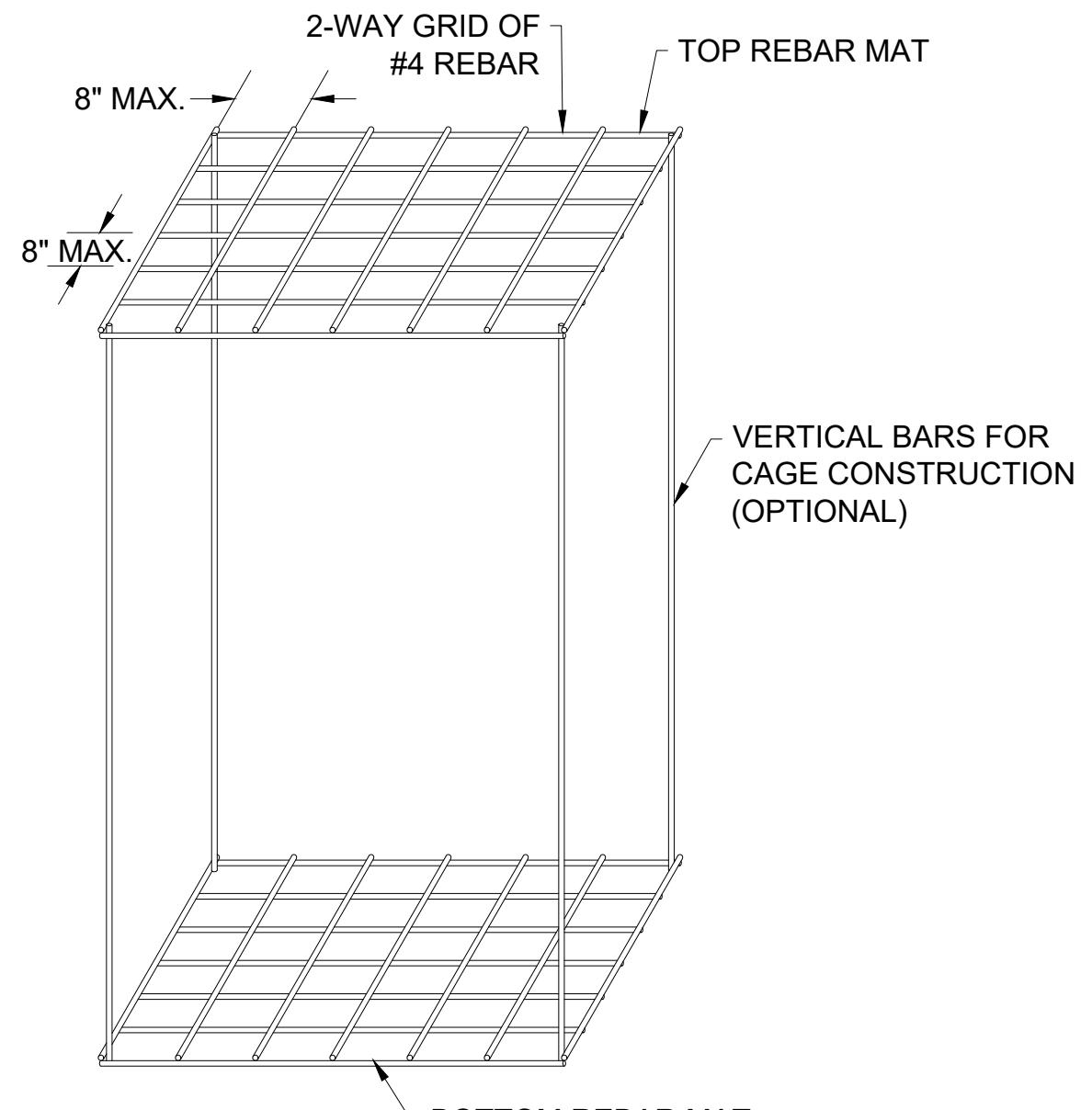
THE TOPS OF ALL FOOTINGS MUST BE AT THE SAME ELEVATION, OWNER / GENERAL CONTRACTOR SHALL PROVIDE BURIAL DEPTH FROM HIGH GRADE UNDER CANOPY. WHERE THE TOP OF THE FOOTINGS ARE AT DIFFERENT ELEVATIONS, THE OWNER / GENERAL CONTRACTOR SHALL PROVIDE THE CANOPY MANUFACTURER WITH ALL FOOTING AND GRADE ELEVATIONS PRIOR TO CANOPY FABRICATION. VARIATIONS IN DESIGN ELEVATIONS MAY RESULT IN INADEQUATE CLEARANCE AND UNDER SIZED FOOTINGS.

OWNER / GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING NON-SHRINK GROUT UNDER ALL COLUMN BASES AFTER CANOPY IS LEVELED AND SECURED.

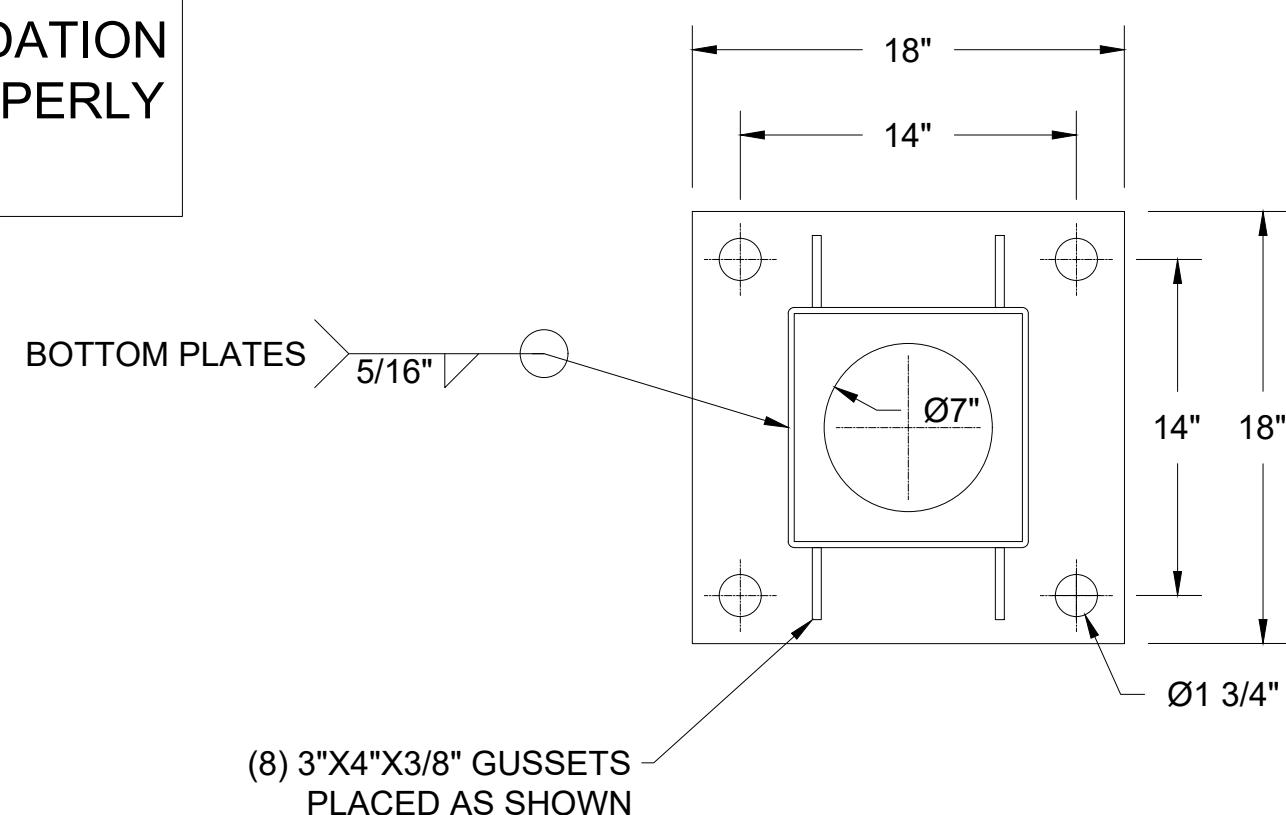
FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 DEFORMED BILLETSTEEL BARS.

FOOTINGS ARE ASSUMED TO BE CONSTRAINED BY CONCRETE FUEL ISLAND AND /OR CONCRETE DRIVE SLAB AT GRADE. WHERE THIS CONDITION DOES NOT EXIST, THE OWNER SHALL NOTIFY CANOPY FABRICATOR.

ANCHOR BOLTS SHALL BE PLACED IN ACCORDANCE WITH THIS DRAWING. TEMPLATES SHALL BE USED TO ENSURE PROPER PLACEMENT OF ANCHOR BOLTS. ANCHOR BOLTS ARE TO BE INSTALLED SUCH THAT A MINIMUM OF 7" OF THREAD IS EXPOSED ABOVE TOP OF FOOTING. BOTTOM OF THREADS SHALL NOT END MORE THAN 3/4" ABOVE TOP OF FOOTER.



# REBAR CAGE LAYOUT



# DETAIL A

## **BASEPLATE DETAIL**

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### **18X18X3/4"**



AUSTIN MOHAWK & CO., LLC.  
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WEBSITE: [www.austinmohawk.com](http://www.austinmohawk.com)  
E-MAIL: [info@austinmohawk.com](mailto:info@austinmohawk.com)

## CERTIFIED BY:

LAWRENCE R. PILON, PE  
51 MAPLEVIEW DRIVE  
PENNELLVILLE, NY 13132  
LICENSE #

A circular registration stamp with a decorative outer border. The text "STATE OF NEW HAMPSHIRE" is at the top, and "PROFESSIONAL ENGINEER - 3" is at the bottom. The center contains "LAWRENCE R. PILON", "No. 9193", and "LICENSED". The date "12/8/95" is written in the bottom right corner of the stamp area.

JOB # -

QUOTE #	DRAWING #
Q251158	25-071

48'-0" X 78'-0" X 12 COLUMN CANOPY

**CUSTOMER:**  
**COLBEA**

LOCATION: 1980 WOODBURY AVE  
PORTSMOUTH, NH

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DATE: 11.18.25 SHEET: 3 OF 4

