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.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding (Meets Standard/Criteria)**	**Supporting Information**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	Applicable standards: - Portsmouth Zoning Ordinance (Variances recvd. July 15, 2025) - Portsmouth Site Plan Review Regulations
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	The project proposes the development of a gas station and convenience store, aligning with the current use.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	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.
4	Adequate protection for the		Groundwater recharge requirements are

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	quality of groundwater.	**Meets** **Does Not Meet**	met as the site is classified as "urban land".
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	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.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	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.
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	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.
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	The proposed gas station and convenience store will undergo fire code review within the Building Permit Process.
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	There are no wetlands on-site. Natural features are being protected although the current site is fully developed.
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	The site falls outside the City's Historic District
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	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.
12	Adequate traffic controls and traffic management measures to prevent an unacceptable	**Meets**	The project includes widening the existing sidewalk at the intersection of Woodbury Avenue and Gosling Road. This, along with

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	increase in safety hazards and traffic congestion off-site.	**Does Not Meet**	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.
13	Adequate insulation from external noise sources.	**Meets** **Does Not Meet**	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.
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	The existing 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.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	Outdoor seating is proposed adjacent to the convenience store. This, along with the proposed bike rack and sidewalks provide usable and functional open space.
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	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.
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	Plans have been reviewed by the Technical Advisory Committee, and the proposed use will be consistent with other uses in the area.
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	Landscaping is proposed throughout the site to provide both visual buffers and noise/air pollution buffers.

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

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

December 22, 2025

Peter Stith, Planning Manager
Portsmouth Planning & Sustainability
1 Junkins Avenue, 3rd 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 2nd, 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").**

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.***

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

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

Response to Technical Advisory Committee Comments **December 22, 2025**
1980 Woodbury Avenue - Colbea Enterprises, LLC – Tax Map 239 Lot 11
Project #LU-25-163

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 — Authorized Representative, Colbea Enterprises LLC — November 5, 2024 — Date

Witness — 11/5/24 — Date

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

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170 Commerce Way–Suite 102, Portsmouth, NH 03801
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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			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☑	Complete application form submitted via the City's web-based permitting program (2.5.2.1**(2.5.2.3A)**	Online Portal	N/A
☑	All application documents, plans, supporting documentation and other materials uploaded to the application form in viewpoint in digital Portable Document Format (PDF). One hard copy of all plans and materials shall be submitted to the Planning Department by the published deadline. **(2.5.2.8)**	Online Portal / Delivered on November 17, 2025	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Statement that lists and describes "green" building components and systems. **(2.5.3.1B)**	Cover Letter	
☑	Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1C)**	S-01 & C-04	N/A
☑	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1D)**	S-01	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	C-00	N/A
☑	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1F)**	Abutters List	N/A
☑	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**	C-00	N/A
☑	List of reference plans. **(2.5.3.1H)**	S-01	N/A
☑	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1I)**	C-01	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. **(2.5.4.1A)**	Required on all plan sheets	N/A
☑	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☑	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	S-01	N/A
☑	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☑	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	S-01	N/A
☑	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	C-00	N/A
☑	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	All Sheets	N/A
☑	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☑	Source and date of data displayed on the plan. **(2.5.4.2D)**	S-01	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	**1. Existing Conditions: (2.5.4.3A)** • Surveyed plan of site showing existing natural and built features; • Existing building footprints and gross floor area; • Existing parking areas and number of parking spaces provided; • Zoning district boundaries; • Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre; • Existing impervious and disturbed areas; • Limits and type of existing vegetation; • Wetland delineation, wetland function and value assessment (including vernal pools); • SFHA, 100-year flood elevation line and BFE data, as required.	S-01	
☑	**2. Buildings and Structures: (2.5.4.3B)** • Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation; • Elevations: Height, massing, placement, materials, lighting, façade treatments; • Total Floor Area; • Number of Usable Floors; • Gross floor area by floor and use.	C-04 and Architectural Elevations	
☑	**3. Access and Circulation: (2.5.4.3C)** • Location/width of access ways within site; • Location of curbing, right of ways, edge of pavement and sidewalks; • Location, type, size and design of traffic signing (pavement markings); • Names/layout of existing abutting streets; • Driveway curb cuts for abutting prop. and public roads; • If subdivision; Names of all roads, right of way lines and easements noted; • AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	C-04 & C-12	
☑	**4. Parking and Loading: (2.5.4.3D)** • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided).	C-04	
☑	**5. Water Infrastructure: (2.5.4.3E)** • Size, type and location of water mains, shut-offs, hydrants & Engineering data; • Location of wells and monitoring wells (include protective radii).	C-06	
☑	**6. Sewer Infrastructure: (2.5.4.3F)** • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period.	C-06	

☑	**7. Utilities: (2.5.4.3G)** • The size, type and location of all above & below ground utilities; • Size type and location of generator pads, transformers and other fixtures.	C-06	
☑	**8. Solid Waste Facilities: (2.5.4.3H)**		
	• The size, type and location of solid waste facilities.	C-06	
☑	**9. Storm water Management: (2.5.4.3I)** • The location, elevation and layout of all storm-water drainage. • The location of onsite snow storage areas and/or proposed off-site snow removal provisions. • Location and containment measures for any salt storage facilities • Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.	C-05	
☑	**10. Outdoor Lighting: (2.5.4.3J)** • Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.	Lighting Plan	
☑	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	Lighting Plan	
☑	**12. Landscaping: (2.5.4.3K)** • Identify all undisturbed area, existing vegetation and that which is to be retained; • Location of any irrigation system and water source.	C-07	
☑	**13. Contours and Elevation: (2.5.4.3L)** • Existing/Proposed contours (2 foot minimum) and finished grade elevations.	S-01 & C-05	
☑	**14. Open Space: (2.5.4.3M)** • Type, extent and location of all existing/proposed open space.	S-01 & C-04	
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	S-01	
☑	**16. Character/Civic District (All following information shall be included): (2.5.4.3P)** • Applicable Building Height (10.5A21.20 & 10.5A43.30); • Applicable Special Requirements (10.5A21.30); • Proposed building form/type (10.5A43); • Proposed community space (10.5A46).	C-04	
☑	**17. Special Flood Hazard Areas (2.5.4.3Q)** • The proposed development is consistent with the need to minimize flood damage; • All public utilities and facilities are located and construction to minimize or eliminate flood damage; • Adequate drainage is provided so as to reduce exposure to flood hazards.	N/A	

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Traffic Impact Study or Trip Generation Report, as required. **(3.2.1-2)**	Traffic Memo	
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Drainage Analysis Report	
☑	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	
☑	Stormwater Management and Erosion Control Plan. **(7.4)**	C-09	
☑	Inspection and Maintenance Plan **(7.6.5)**	Drainage Analysis Report	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	All local approvals, permits, easements and licenses required, including but not limited to: • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. **(2.5.3.2A)**		
☐	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: • Calculations relating to stormwater runoff; • Information on composition and quantity of water demand and wastewater generated; • Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; • Estimates of traffic generation and counts pre- and post-construction; • Estimates of noise generation; • A Stormwater Management and Erosion Control Plan; • Endangered species and archaeological / historical studies; • Wetland and water body (coastal and inland) delineations; • Environmental impact studies. **(2.5.3.2B)**		
☐	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			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**		
☐	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**		N/A
☐	For site plans that involve land designated as "Special Flood Hazard Areas" (SFHA) by the National Flood Insurance Program (NFIP) confirmation that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. **(2.5.4.2F)**		
☐	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**		N/A

Applicant's Signature: _____ **Date:** 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

Assessors Map		Abutter Name	Mailing Address
Map	Lot		
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, 3rd 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 (12th 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[1],. 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.

[1] ITE Trip Generation Handbook (3rd 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		
Existing Gas / Convenience						
Weekday AM Peak Hour Adjacent Street	26	26	83	83	218	**52**
Weekday PM Peak Hour Adjacent Street	32	32	95	95	254	**64**
Weekend SAT Peak Hour of the Generator	29	29	86	86	230	**58**
Proposed Gas / Convenience						
Weekday AM Peak Hour Adjacent Street	32	32	102	101	267	**64**
Weekday PM Peak Hour Adjacent Street	34	34	104	103	275	**68**
Weekend SAT Peak Hour of the Generator	34	35	104	104	277	**69**
Change in Trip Composition						
Weekday AM Peak Hour Adjacent Street	6	6	19	18	49	**12**
Weekday PM Peak Hour Adjacent Street	2	2	9	8	21	**4**
Weekend SAT Peak Hour of the Generator	5	6	18	18	47	**11**

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* In	Directional Split* Out	Directional Distribution In	Directional Distribution 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 IN	Trips OUT	Primary % In	Primary # In	Primary % Out	Primary # Out	Pass-By* % In	Pass-By* # In	Pass-By* % Out	Pass-By* # Out
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 In	Directional Split Out	Directional Distribution In	Directional Distribution 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 IN	Trips OUT	Primary % In	Primary # In	Primary % Out	Primary # Out	Pass-By* % In	Pass-By* # In	Pass-By* % Out	Pass-By* # Out
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
Weekday AM Peak Hour Adjacent Street	49		25	24
Weekday PM Peak Hour Adjacent Street	21		11	10
Weekend SAT Peak Hour of Generator	47		23	24
Weekday Daily	-188		-94	-94
Weekend (SAT) Daily	no existing data			

Change in Trip Composition

	Trips IN	Trips OUT	Primary	Primary # In	Primary	Primary # Out	Pass-By*	Pass-By* # In	Pass-By*	Pass-By* # 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	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

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	57
Weekday PM Peak Hour Adjacent Street	1.8	61.09	Rate	110	50%	50%	55	55
Weekend SAT Peak Hour of Generator	1.8	54.02	Rate	97	50%	50%	49	48
Weekday Daily	1.8	642.41	Rate	1156	50%	50%	578	578
Weekend (SAT) Daily	1.8		Rate	0		100%	0	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

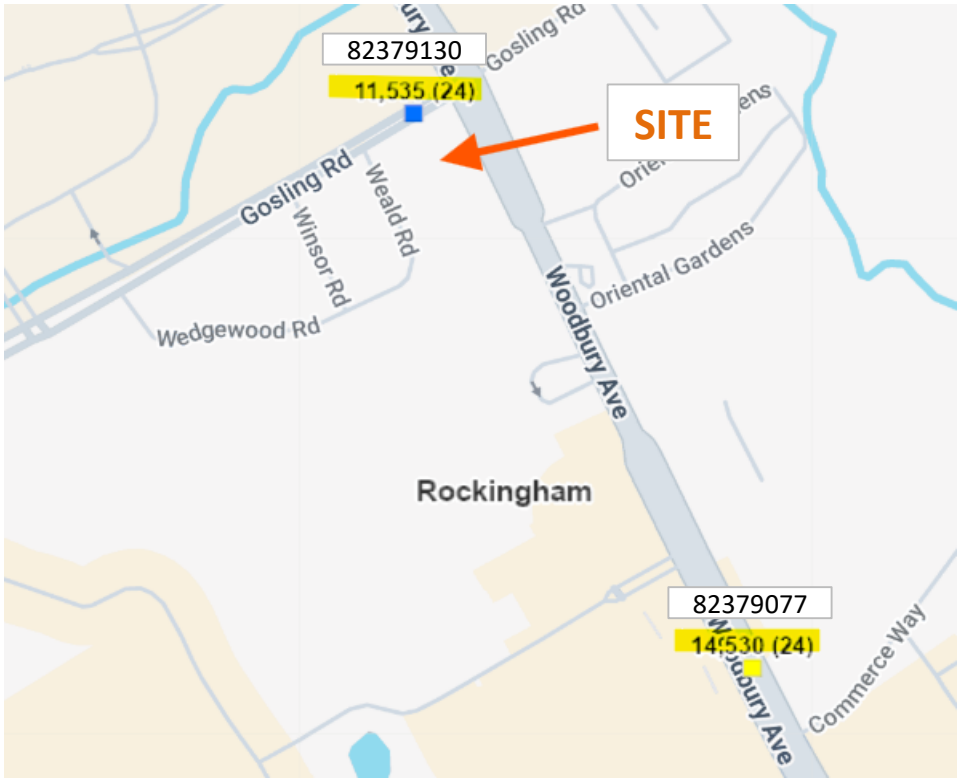
Based on ITE Trip Generation 12th Edition

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


82379130
11,535 (24)
SITE
Gosling Rd
Weald Rd
Winsor Rd
Wedgewood Rd
Woodbury Ave
Oriental Gardens
Rockingham
82379077
14,530 (24)
Commerce Way

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 %	D %	PA	BC	Src
2024	11,535[3]				10,680 (93%)	855 (7%)	Grown from 2023
2023	11,309[3]		11		10,505 (93%)	804 (7%)	Grown from 2022
2022	11,055	1,269	11		10,360 (94%)	695 (6%)	
2021	11,530[3]		12		10,481 (91%)	1,049 (9%)	Grown from 2020

VOLUME COUNT

Graphs/Rpts

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	✔

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	
AF Group	04 (2024)	Route	
GF Group	E (2024)	Active	Yes
Class Dist Grp	Default (2024)	Category	Short Count Class
Seas Clss Grp	Default (2024)		
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

STATION DATA

Directions: 2-WAY | NB | SB

AADT

Graph

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2024	14,530[3]				13,453 (93%)	1,077 (7%)	Grown from 2023
2023	14,245	1,418	10	51	13,563 (95%)	682 (5%)	
2022	16,032[3]		10	54	15,023 (94%)	1,009 (6%)	Grown from 2021
2021	15,733[3]		10	54	14,302 (91%)	1,431 (9%)	Grown from 2020

VOLUME COUNT

Graphs/Rpts

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	✔

Project #46077.16

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:

TFM Since 1968

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Contents

Table of Figures

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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[1] 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(l). Design standards were taken from the New Hampshire Stormwater Manual, December 2008[2].

	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

[1] HydroCAD version 10.00, HydroCAD Software Solutions LLC, Chocorua, NH, 2013.
[2] 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 or runoff in the two-year storm, where 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[3] 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.

[3] 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 15th, 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 [4] 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

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

Lower Confidence Limits

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

Upper Confidence Limits

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

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Northeast Regional Climate Center

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

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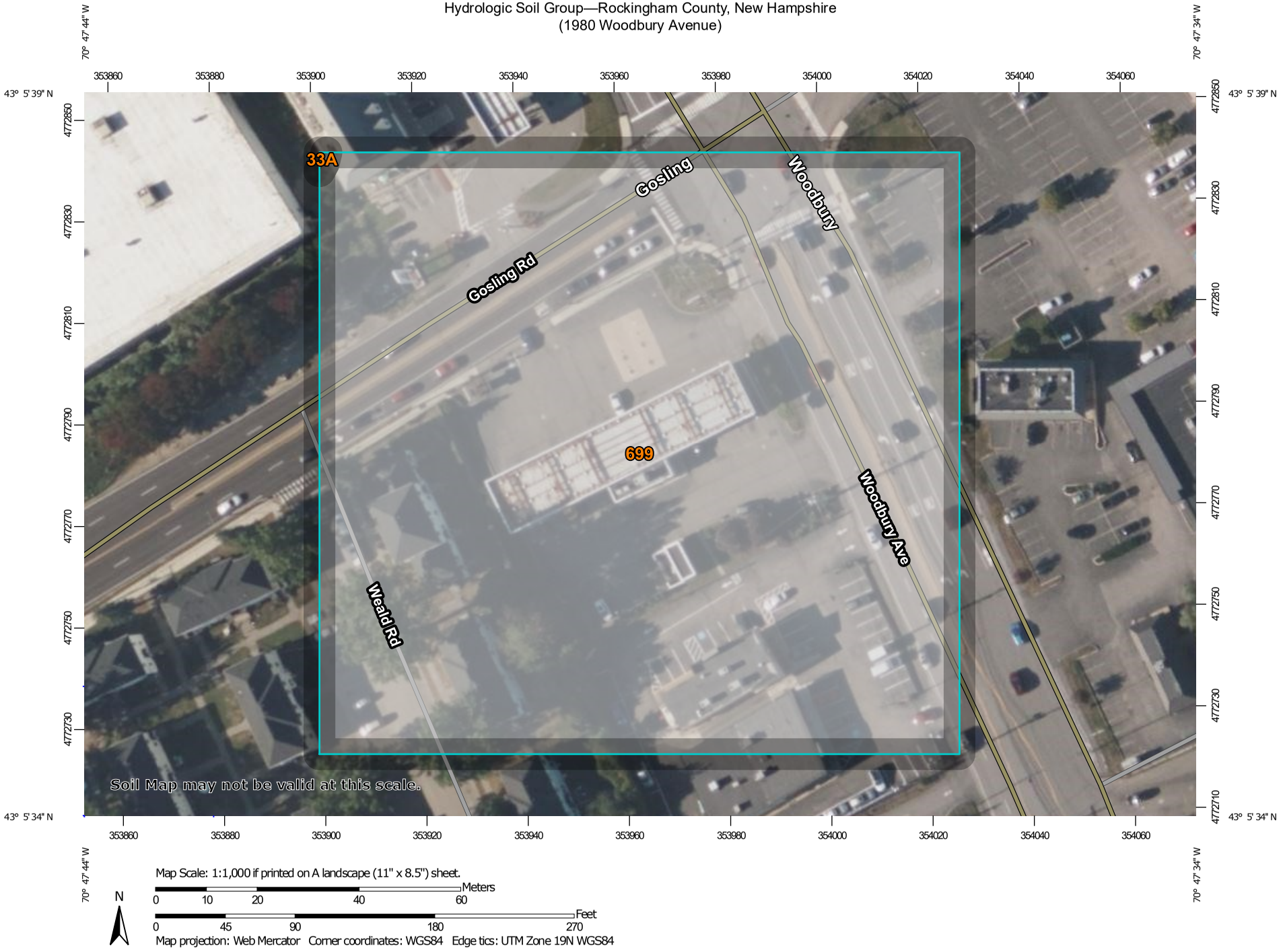
Hydrologic Soil Group—Rockingham County, New Hampshire
(1980 Woodbury Avenue)



Map Scale: 1:1,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 45 90 180 270

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil 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%
Totals for Area of Interest			**3.7**	**100.0%**

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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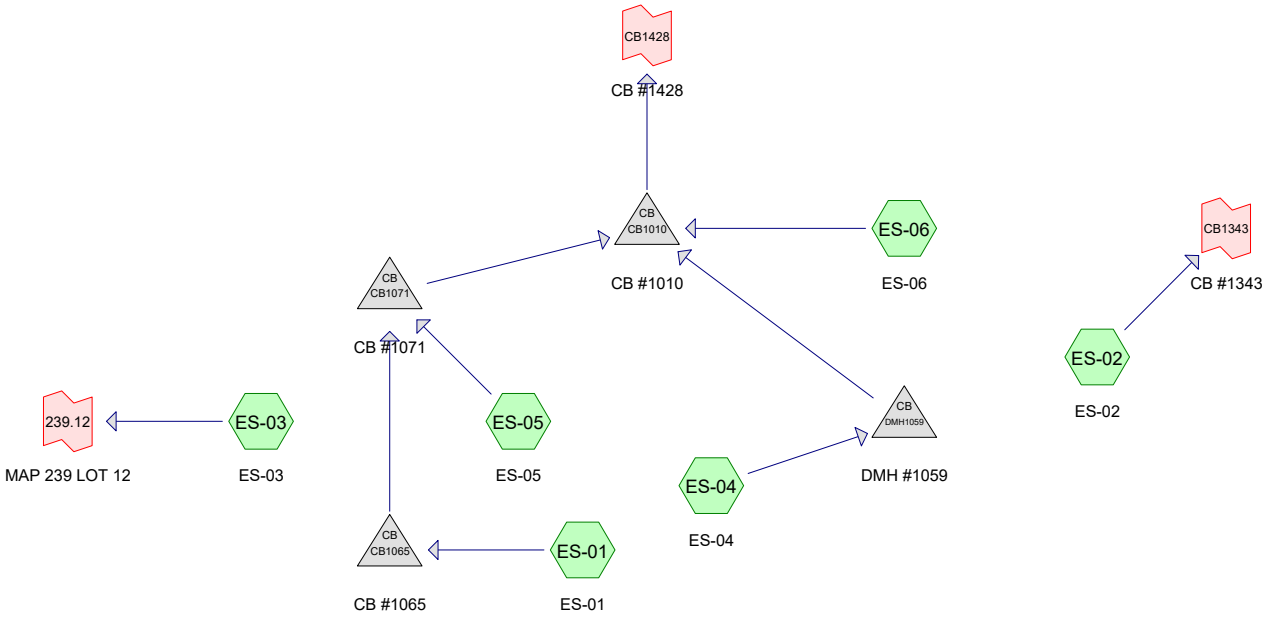
Pre-Development
Drainage



Subcat Reach Pond Link

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

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)
38,399	**93**	**TOTAL AREA**

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	
38,399		**TOTAL AREA**

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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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

Subcatchment ES-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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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		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
1.0	85	0.0200	1.43		**Sheet Flow, Sheet Flow 2** Smooth surfaces n= 0.011 P2= 3.67"
0.5	82	0.0200	2.87		**Shallow Concentrated Flow, Shallow Concentrated 1** Paved Kv= 20.3 fps
3.1					**Direct Entry, Direct Entry**
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		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
1.0	164	0.0190	2.80		**Shallow Concentrated Flow, Shallow Concentrated 1** Paved Kv= 20.3 fps
4.2					**Direct Entry, Direct Entry**
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 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	11	0.2200	0.31		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
5.4					**Direct Entry, Direct Entry**
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 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry**

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

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	77	0.0420	1.88		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.3					**Direct Entry, Direct Entry**
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		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.3					**Direct Entry, Direct Entry**
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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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

Peak Elev= 46.99' @ 12.09 hrs
Flood Elev= 53.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.40'	**10.0" Round Culvert** 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 > 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 > 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 > 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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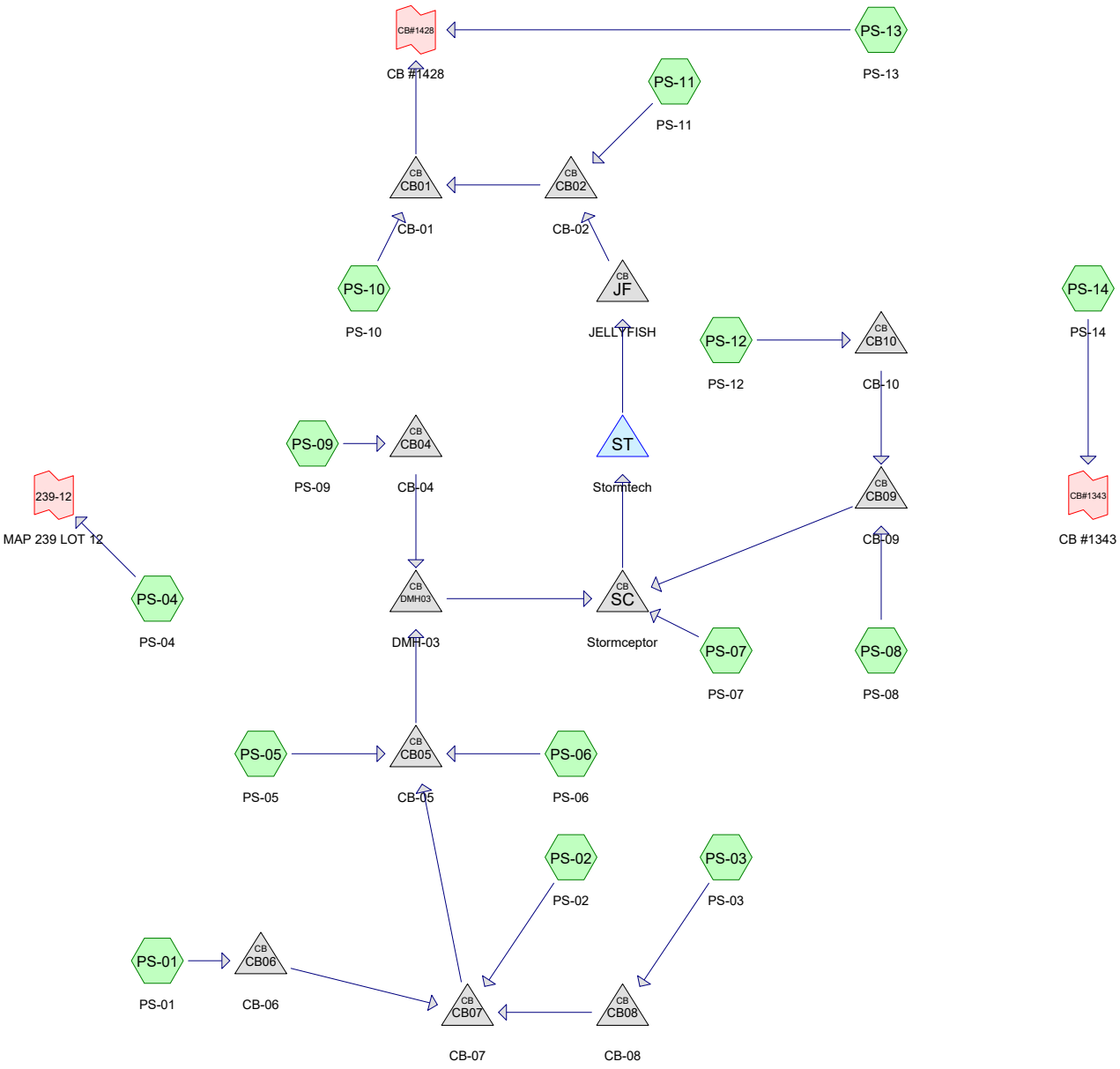
Post-Development Drainage



Subcat Reach Pond Link

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

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)
38,399	**93**	**TOTAL AREA**

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	
38,399		**TOTAL AREA**

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

Subcatchment PS-01: PS-01 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

Subcatchment PS-02: PS-02 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

Subcatchment PS-03: PS-03 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

Subcatchment PS-04: PS-04 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

Subcatchment PS-05: PS-05 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

Subcatchment PS-06: PS-06 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

Subcatchment PS-07: PS-07 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

Subcatchment PS-08: PS-08 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

Subcatchment PS-09: PS-09 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

Subcatchment PS-10: PS-10 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

Subcatchment PS-11: PS-11 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

Subcatchment PS-12: PS-12 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

Subcatchment PS-13: PS-13 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

Subcatchment PS-14: PS-14 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

Pond CB01: CB-01 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

Pond CB02: CB-02 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

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

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

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		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
0.5	31	0.0150	1.04		**Sheet Flow, Sheet Flow 2** Smooth surfaces n= 0.011 P2= 3.67"
3.5					**Direct Entry, Direct Entry**
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

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

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.2	100	0.0050	0.07		**Sheet Flow, Sheet Flow 1** 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					**Direct Entry, Direct Entry**

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		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.4					**Direct Entry, Direct Entry**
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"

Area (sf)	CN	Description
3,730	98	Roofs, HSG C
3,730		100.00% Impervious Area

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

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 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	90	0.0200	1.44		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.0					**Direct Entry, Direct Entry**
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 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	52	0.0150	1.15		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.2					**Direct Entry, Direct Entry**
6.0	52	Total			

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		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.4					**Direct Entry, Direct Entry**
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		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
5.3					**Direct Entry, Direct Entry**
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"

Area (sf)	CN	Description
1,742	98	Paved Parking, HSG C
1,742		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	83	0.0150	1.26		**Sheet Flow, Sheet Flow 1** Smooth surfaces n= 0.011 P2= 3.67"
4.9					**Direct Entry, Direct Entry**
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 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0500	0.20		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
0.8	138	0.0200	2.87		**Shallow Concentrated Flow, Shallow Concentrated 1** Paved Kv= 20.3 fps
3.1					**Direct Entry, Direct Entry**
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

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	30	0.0500	0.21		**Sheet Flow, Sheet Flow 1** Grass: Short n= 0.150 P2= 3.67"
0.2	13	0.0150	0.87		**Sheet Flow, Sheet Flow 2** Smooth surfaces n= 0.011 P2= 3.67"
3.4					**Direct Entry, Direct Entry**
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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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

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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.80'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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'	**12.0" Round Culvert** 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	**20.50'W x 32.23'L x 3.75'H Field A** 2,478 cf Overall - 837 cf Embedded = 1,641 cf x 40.0% Voids
#2A	45.80'	837 cf	**ADS_StormTech SC-800 +Cap** x 16 Inside #1 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'	**12.0" Round Culvert**

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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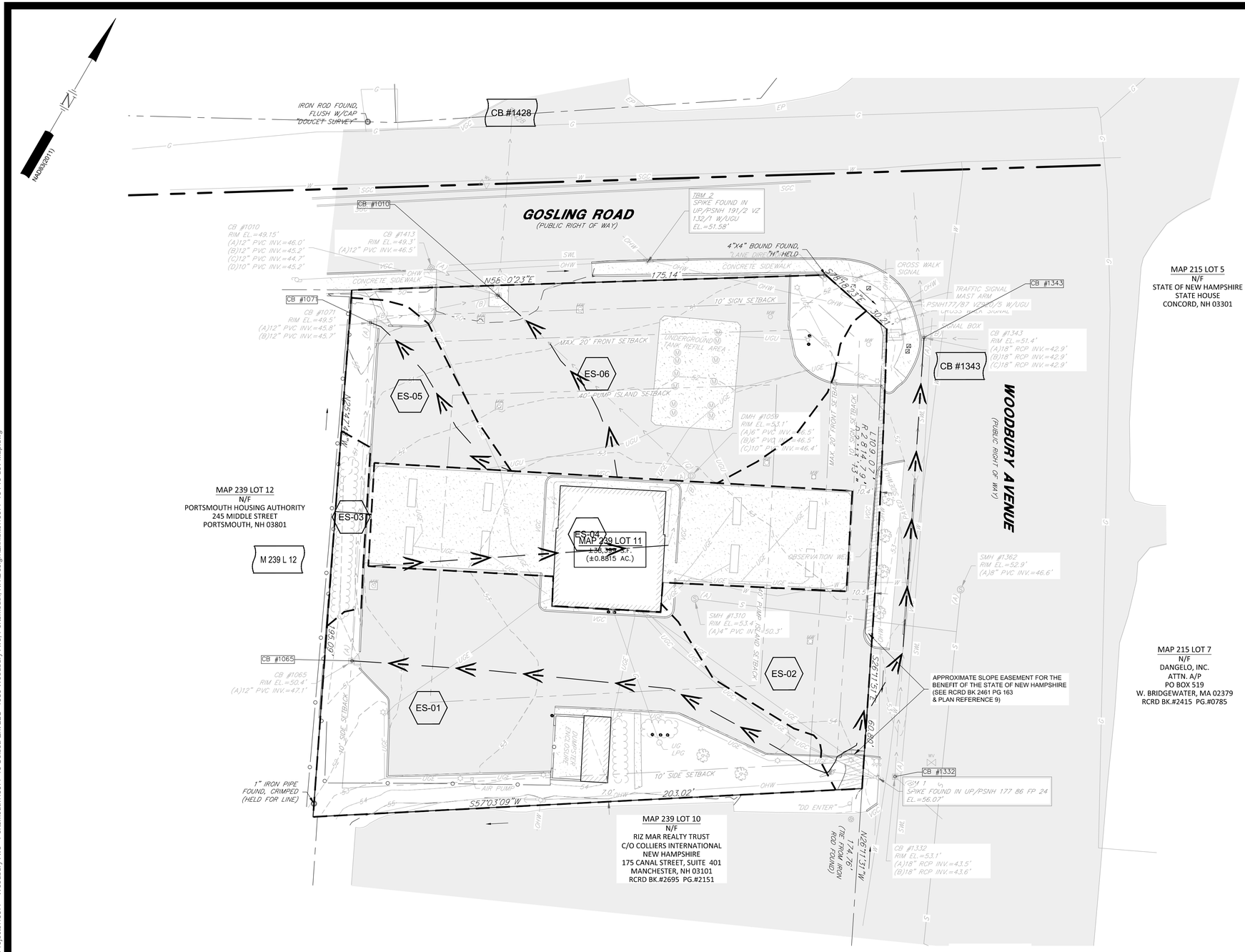


LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

HORIZONTAL SCALE 1"=20'
20 10 0 20

TAX MAP 239 LOT 11

PRE-DEVELOPMENT DRAINAGE MAP

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

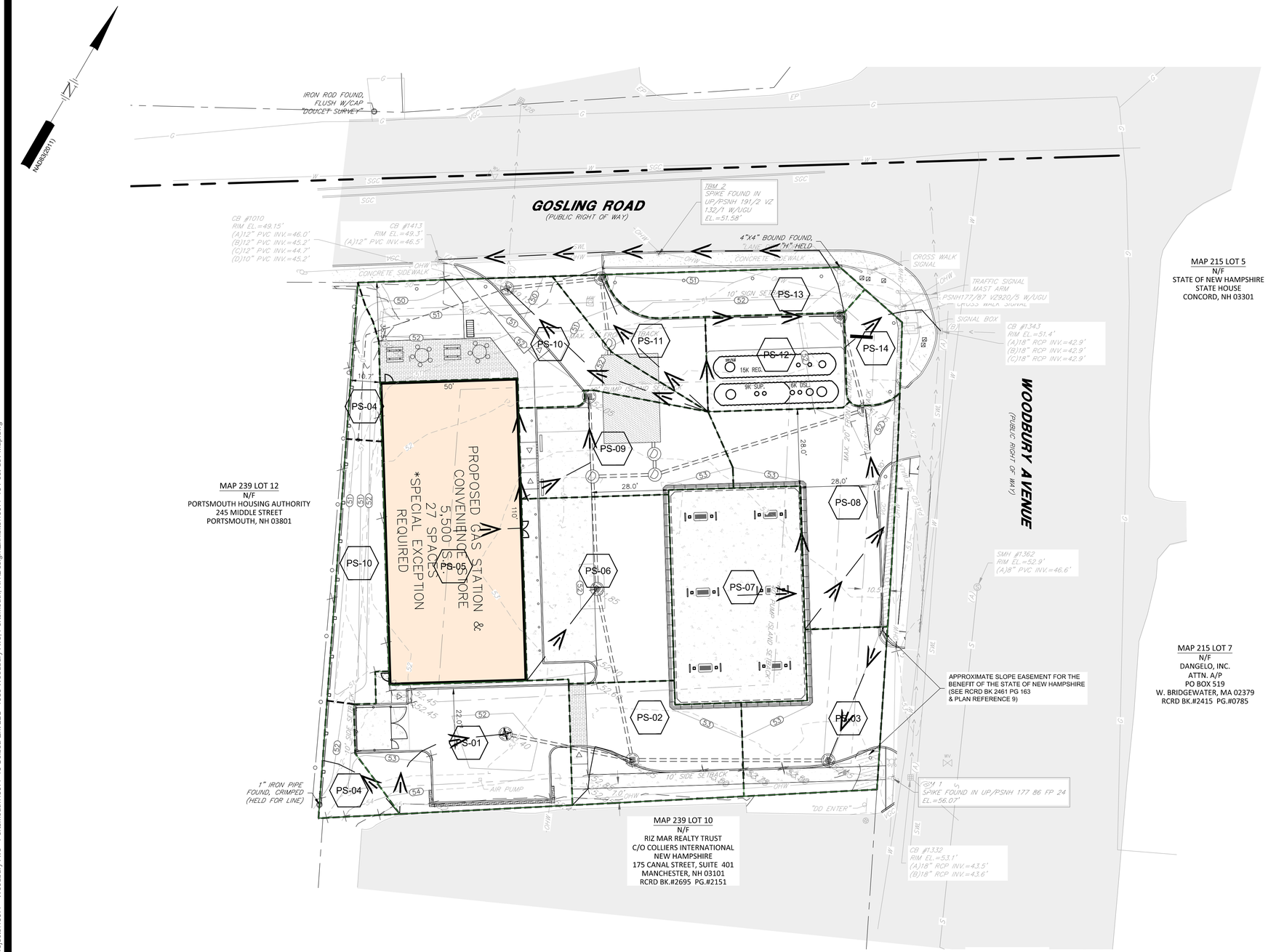
COLBEA ENTERPRISES, LLC

1"=40' (11"x17")
SCALE: 1"=20' (22"X34") **NOVEMBER 17, 2025**

REV	DATE	DESCRIPTION	DR	CK

Seacoast Division
TFM
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

FILE	46077.16	DR	JKC	FB	46077-16 PRE-DEV MAP	D-01
		CK	CRR	CADFILE		



LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- PS-1 — SUBCATCHMENT AREA
- PP-1 — POND, CULVERT, OR CATCH BASIN
- PR-1 — REACH

HORIZONTAL SCALE 1"=20'
20 10 0 20

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

REV	DATE	DESCRIPTION	DR	CK

DIG SAFE
CALL BEFORE YOU DIG
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Seacoast Division
TFM
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

FILE	DR	JKC	FB		
46077.16	CK	CRR	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:

TFM Since 1968

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Table of Contents

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:

	Frequency	***Inspect***	***Action***
Temporary Controls			
Stabilized Construction Entrance	Weekly	• Inspect adjacent roadway for sediment tracking • Inspect stone for sediment accumulation	• Sweep adjacent roadways as soon as sediment is tracked • Top dress with additional stone when necessary to prevent tracking
Litter/Trash Removal	Routinely	• Inspect site especially construction areas	• Remove debris and clean areas as necessary
Construction Dumpster Area	Routinely	• Dumpster Areas	• Remove any accumulated debris and dispose of properly
Silt Sock Barrier	Weekly and after measurable rainfall	• Inspect accumulated sediment level, rips and tears	• Repair or replace damaged lengths • Remove and dispose accumulated sediment once level reaches 1/3 of barrier
Inlet Protection	During construction and after measurable rainfall	• Inspect for accumulated sediment	• 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
Gravel	Spring and Fall	• Inspect gravel for ruts and depth	• Replace gravel as necessary, regrade as necessary to maintain design grades, remove any accumulated gravel washed from roadway

	Frequency	***Inspect***	***Action***
Permanent Controls			
Litter/Trash Removal	Routinely	• Inspect site	• Remove debris and clean areas as necessary
Dumpster Area Maintenance	Routinely	• Dumpster Areas	• Remove any accumulated debris and dispose of properly

	Frequency	***Inspect***	***Action***
Permanent Controls			
Landscaping and hardscaping (not including Bioretention Systems)	Spring	• Mulch/stone: Inspect mulch areas for trash and debris and thickness of mulch	• Remove weeds, invasive species, and debris. Top dress with new mulch or stone when necessary
	Spring	• Trees and Shrubs: Inspect for broken, weak or diseased branches and debris	• Prune to maintain shape to avoid splitting, remove broken, weak or diseased branches, replace as necessary
	As necessary	• Lawn	• Mow as required
	Spring and Fall	• Inspect landscaped areas for debris and litter	• Remove debris and litter as necessary
Conventional Pavement	Spring and Fall	• Inspect pavement for debris	• Sweeping as required
Stormtech® Chambers	Spring and Fall	• Inspect isolator row	• Remove accumulated sediment by the JetVac process when sediment reaches an average depth of 3 inches. See the attached Stormtech® Isolator® Row O&M Manual requirements in this document.
Drainage Inlets (Catch Basins / Drop Inlets)	Spring and Fall	• Inspect for sediment • Inspect for hydrocarbons • Inspect Hoods	• If sump is more than half full of sediment, remove sediment as necessary • Remove and dispose of properly • Repair and replace as necessary
Drainage Structures (Drain Manholes, Drain Cleanouts, Yard Drains, etc.)	Spring and Fall	• Inspect for accumulated sediment and debris	• Clean any material upon inspection and deposit of properly
Roof Gutters and Downspouts	Spring and Fall	• Inspect for accumulated sediment and debris	• Clean any material upon inspection and deposit of properly

	Frequency	*Inspect*	*Action*
Permanent Controls			
Grit/Oil/Water Separator	Quarterly	• Inspection for debris or sediment buildup • Inspect structure.	• Remove trash and debris and dispose properly • Remove floating oil, grease and petroleum substances using special vacuum hoses; treat as hazardous waste • Removal of sediment and dispose of properly. • Repair as necessary.

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

Attachment 1

Inspection and Maintenance Log

BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed (list items/comments)	Date of Cleaning/Repair	Performed By

ATTACHMENT 2

Deicing Log

Attachment 2

Deicing Log

Deicing Material Used	Amount of Deicing Material Applied	Date of Application	Logged By

APPENDIX A

Stormwater Inspection & Maintenance Plan

OPERATION AND MAINTENANCE PLAN

RESPONSIBLE PARTY

OWNER: COLBEA ENTERPRISES, LLC

ADDRESS: 695 GEORGE WASHINGTON HIGHWAY LINCOLN, RI

1. STORMWATER PRACTICES – SCHEDULE OF MAINTENANCE

THE FOLLOWING MEASURES WILL BE PERFORMED ANNUALLY; ONCE FOLLOWING SNOW-MELT (SPRING):

- PARKING LOT SWEEPING
- SNOW STORAGE AREAS (SAND AND CONTAMINANT REMOVAL)
- GRASS SWALES
- SHEET FLOW AREAS

THE FOLLOWING PRACTICES SHALL BE INSPECTED BI-ANNUALLY FOLLOWING SNOW-MELT (SPRING) AND ONCE FOLLOWING LEAF-DROP (FALL):

- CATCH BASINS/MANHOLES
- OUTLET PIPE/ROOF DRAINS
- STORMWATER BASINS

2. STORMWATER PRACTICES – MAINTENANCE GUIDELINES

PRETREATMENT PRACTICES

CATCH BASINS/MANHOLES
MAINTENANCE REQUIREMENTS:

- TO BE INSPECTED A LEAST TWICE ANNUALLY, ONCE FOLLOWING SNOW-MELT AND ONCE FOLLOWING LEAF-DROP AND CLEANED AS INDICATED BY INSPECTION.
- SEDIMENT SHOULD BE REMOVED ANNUALLY AND WHEN IT APPROACHES HALF THE SUMP DEPTH.
- INSPECT PIPE INLETS AND OUTLETS FOR BLOCKAGES AND REMOVE IF NECESSARY.
- IF FLOATING HYDROCARBONS ARE OBSERVED DURING AN INSPECTION, THE MATERIAL SHOULD BE REMOVED IMMEDIATELY BY SKIMMING, ABSORBENT MATERIALS, OR OTHER METHOD AND DISPOSED IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

CONVEYANCE PRACTICES

SHEET FLOW AREAS
MAINTENANCE REQUIREMENTS:

- INSPECT A LEAST ONCE ANNUALLY FOR DAMAGE, EROSION AND DETERIORATION.
- REPAIR DAMAGES IMMEDIATELY AND REFRESH WITH NEW PAVEMENT, ROCK, OR SEED AS NEEDED.

OUTLET PIPES/ROOF DRAINS
MAINTENANCE REQUIREMENTS:

- TO BE INSPECTED A LEAST TWICE ANNUALLY, ONCE FOLLOWING SNOW-MELT AND ONCE FOLLOWING LEAF-DROP AND CLEANED AS INDICATED BY INSPECTION
- CHECK PIPES FOR BLOCKAGES AND REMOVE SEDIMENT/BLOCKAGES
- INSPECT A LEAST ONCE ANNUALLY FOR DAMAGE, EROSION AND DETERIORATION.
- REPAIR DAMAGES IMMEDIATELY AND REFRESH WITH NEW ROCK OR SEED AS NEEDED.

3. CONTROL OF INVASIVE PLANTS

DURING MAINTENANCE ACTIVITIES, CHECK FOR THE PRESENCE OF INVASIVE PLANTS. IF INVASIVE PLANTS ARE FOUND, THEY SHALL BE CONTROLLED AND REMOVE IN A SAFE MANNER AS DESCRIBED ON THE FOLLOWING PAGES.

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. INVASIVE PLANTS CAN CAUSE HARM BY:

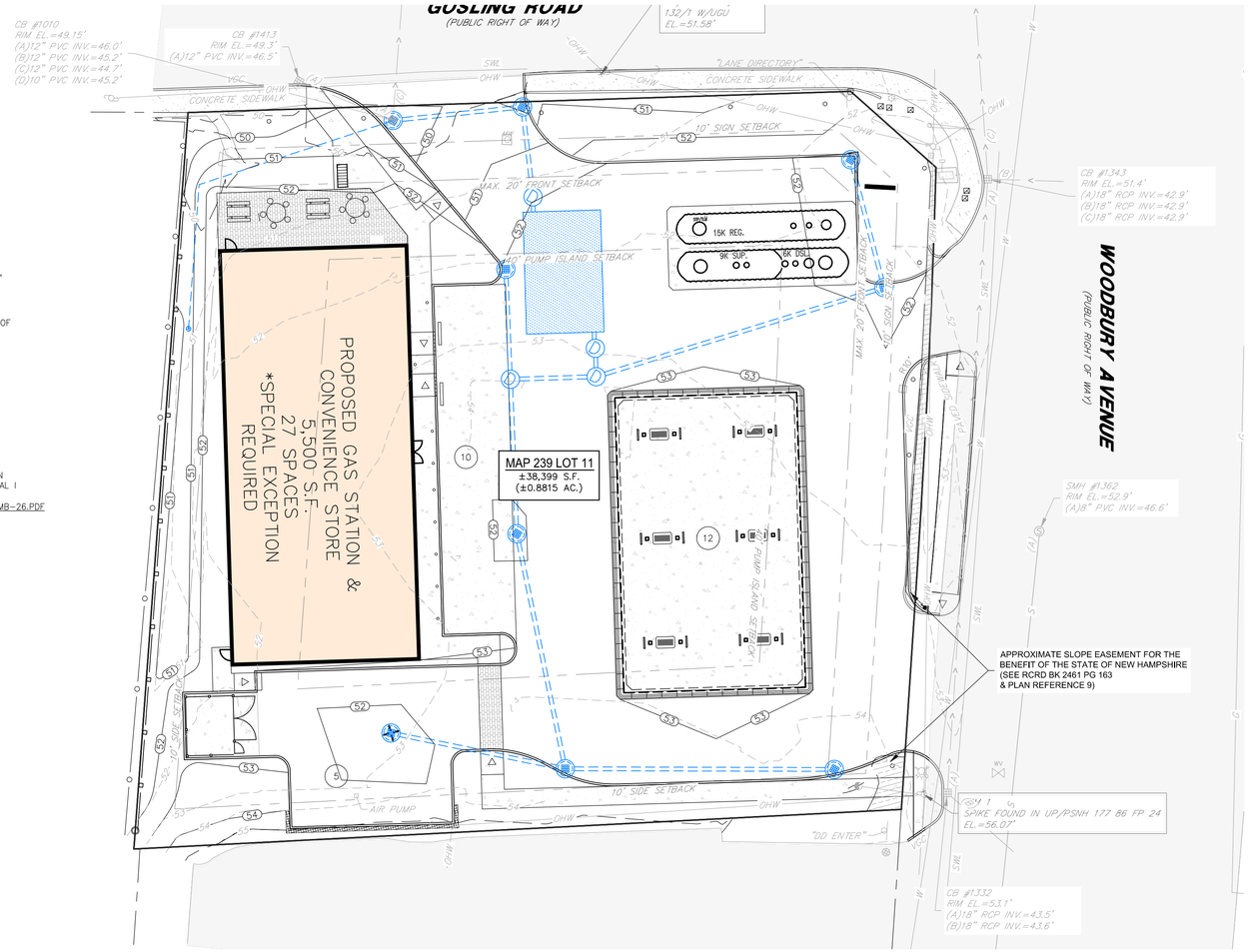
- BECOMING WEEDY AND OVERGROWN;
- KILLING ESTABLISHED SHADE TREES;
- OBSTRUCTING PIPES AND DRAINAGE SYSTEMS
- FORMING DENSE BEDS IN WATER
- LOWERING WATER LEVELS IN LAKES, STREAMS AND WETLANDS
- DESTROYING NATURAL COMMUNITIES
- PROMOTING EROSION ON STREAM BANKS AND HILLSIDES
- RESISTING CONTROL EXCEPT BY HAZARDOUS CHEMICALS.

4. DEICING PLAN

A DEICING LOG SHOULD BE IMPLEMENTED DURING WINTER MONTHS TO KEEP RECORDS OF THE SNOW/ICE MAINTENANCE NEEDED DURING STORM EVENTS. IT IS RECOMMENDED THAT A NEW HAMPSHIRE CERTIFIED GREEN SNOPRO SALT APPLICATOR BE EMPLOYED TO MANAGE THE SNOW AND ICE REMOVAL FOR THE SITE. ADDITIONAL I NFORMATION ON SALT REDUCTION INITIATIVES CAN BE OBTAINED AT:
HTTP://WWW.DES.NH.GOV/ORGANIZATION/DIVISIONS/WATER/WMB/WAS/SALT-REDUCTION-INITIATIVE/DOCUMENTS/WMB-26.PDF

DEICING LOG

DATE	OPERATOR	LOCATION	EVENT BEGAN	EVENT END	EVENT TYPE	TOTAL PRECIP.	PAVEMENT TEMP	TEMP. TREND	MATERIAL USED	AMOUNT USED	APPLICATION RATE



HORIZONTAL SCALE 1"=40'
40 20 0 40

SNOW REMOVAL & DE-ICING NOTES

1. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
2. WINTER MAINTENANCE SHALL BE PERFORMED BY A GREEN SNO-PRO CERTIFIED (OR FUNCTIONAL EQUIVALENT CERTIFICATION) CONTRACTOR.
3. SNOW MELT SEDIMENT WILL BE CAPTURED IN GRASS AREAS & CATCH BASIN SUMPS DURING SPRING SNOW MELT. PROPERTY OWNER SHALL INSPECT ONSITE SUMPS AND WATER QUALITY UNITS AND CONTRACT A VAC TRUCK SERVICE TO REMOVE ANY SEDIMENT. ALL SNOW MELT SEDIMENT IN LANDSCAPE AREAS SHALL BE SWEPT UP AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS FOR TRANSPORT AND DISPOSAL TO A PERMITTED LANDFILL.

STORMWATER SYSTEM ANNUAL REPORTING

THE LANDOWNER SHALL BE RESPONSIBLE FOR SUBMITTING AN ANNUAL REPORT TO THE DPW/EPD BY EACH YEAR THAT ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES ARE FUNCTIONING PER THE APPROVED STORMWATER MANAGEMENT PLAN AND I&M PLAN. THE INSPECTION AND MAINTENANCE LOG AND DEICING LOG SHALL BE INCLUDED WITH THE REPORT. THE ANNUAL REPORT SHALL NOTE IF ANY STORMWATER INFRASTRUCTURE HAS NEEDED ANY REPAIRS OTHER THAN ROUTINE MAINTENANCE AND THE RESULTS OF THOSE REPAIRS. IF THE STORMWATER INFRASTRUCTURE IS NOT FUNCTIONING PER THE APPROVED STORMWATER MANAGEMENT PLAN AND I&M PLAN, THE LANDOWNER SHALL MAKE ANY REPAIRS NECESSARY TO RESTORE THE FUNCTION AS DESIGNED WITHIN 90 DAYS OF DISCOVERING THE DEFICIENCY OR PROVIDE DOCUMENTATION TO DPW/EPD DESCRIBING WHY THE SYSTEM CANNOT BE REPAIRED WITHIN 90 DAYS AND A PROPOSED SCHEDULE FOR SUCH REPAIRS. THE LANDOWNER OF A SITE FOR WHICH A SOURCE CONTROL PLAN IS REQUIRED SHALL UPDATE THE SOURCE CONTROL PLAN AS NECESSARY TO REFLECT ANY CHANGES AND SUBMIT THE UPDATED SOURCE CONTROL PLAN TO DPW/EPD WITH ITS ANNUAL REPORT. IF NO CHANGES HAVE BEEN MADE, THE LANDOWNER SHALL DOCUMENT THIS IN THE ANNUAL REPORT. RECORDS MUST ALSO BE MADE AVAILABLE TO THE CITY OR DPW/EPD UPON REQUEST.

INSPECTION AND MAINTENANCE LOG

DATA	INSPECTOR	BMPs CHECKED	MAINTENANCE REQUIRED

TAX MAP 239 LOT 11

INSPECTION & MAINTENANCE 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

Seacoast Division
TFM
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

FILE	DR	JKC	FB		
46077.16	CK	CRR	CADFILE	46077-16 I&M PLAN	APPENDIX A

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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:

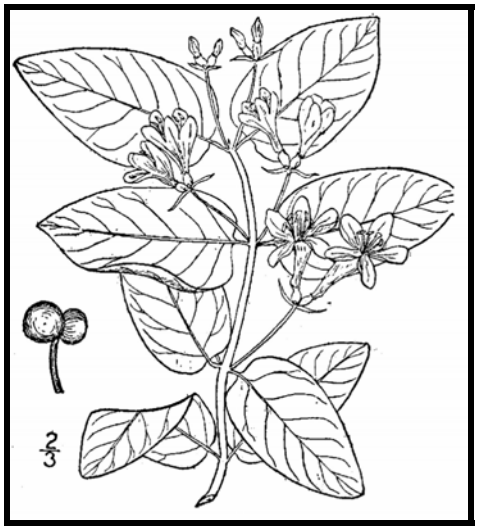
Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants,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

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

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



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

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

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

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

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

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

New Hampshire Regulations

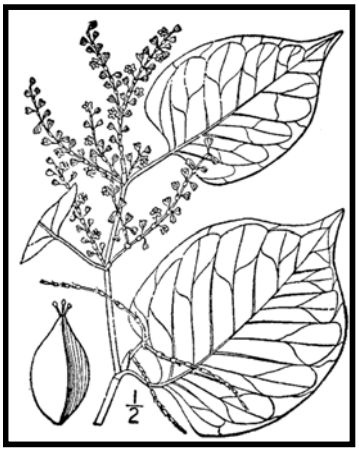
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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

How and When to Dispose of Invasives?

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

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



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

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

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

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

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

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

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

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

Suggested Disposal Methods for Non-Native Invasive Plants

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

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

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

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

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

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

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

January 2010

APPENDIX C

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

StormTech
Detention • Retention • Water Quality
An ADS company

Isolator® Row O&M Manual

THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™

ADS®

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.

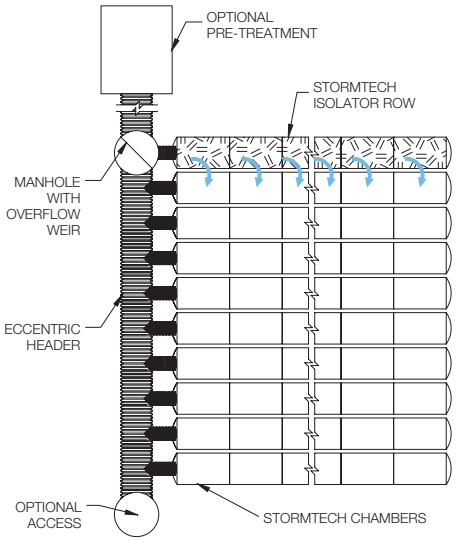
The Isolator Row is typically designed to capture the “first flush” and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed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

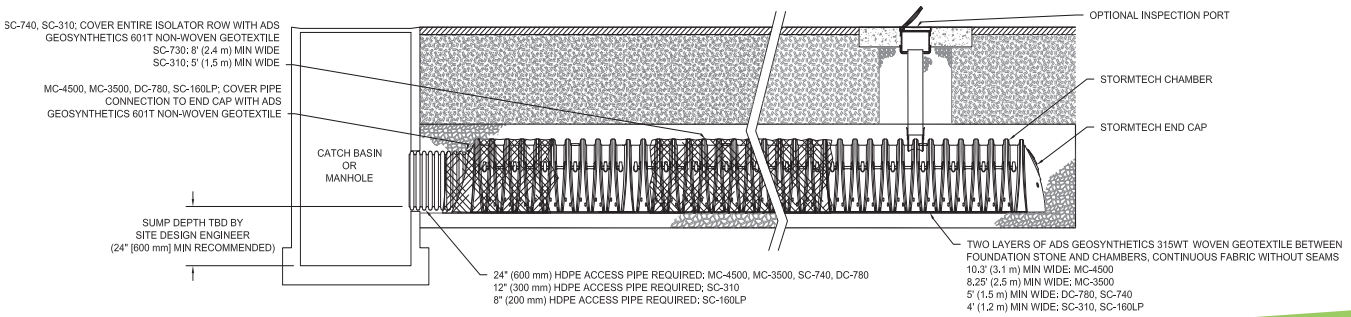
MAINTENANCE

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.



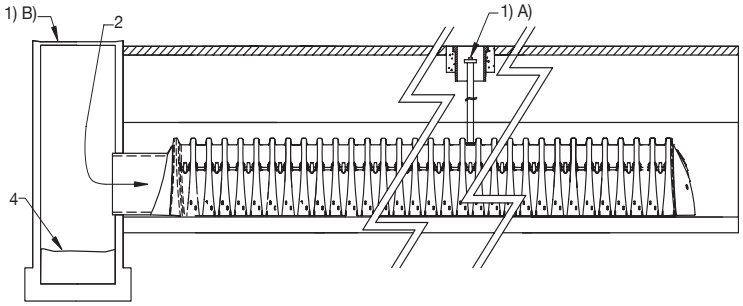
ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

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

StormTech® Detention • Retention • Water Quality
A division of ADS

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

Date	Stadia Rod Readings		Sediment Depth (1)-(2)	Observation/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of Sediment (2)			

December 09, 2025

Planning & Sustainability
Attn: Peter Britz
1 Junkins Avenue, 3rd Floor
Portsmouth, New Hamshire 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.

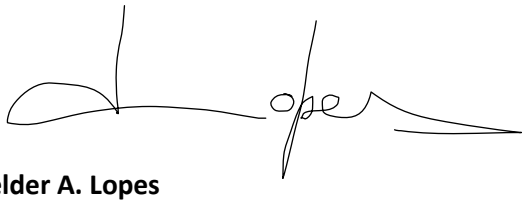
Water Conservation and Environmental Stewardship
Low-flow plumbing fixtures and water-conscious site strategies will be deployed to reduce potable water usage. Stormwater management design will align with local regulations and best practices to protect surrounding ecological conditions.

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.

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

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

By:_____
(name/title)

CITY

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:

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE
PORTSMOUTH, NEW HAMPSHIRE

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) 265-2535

ENVIRONMENTAL SERVICES
Tg2, 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) 527-7488
HUSEYIN SEVINCGIL

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

VICINITY PLAN

INDEX OF SHEETS

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
PORTSMOUTH PLANNING BOARD SITE PLAN REVIEW APPROVAL	-	-	-
PORTSMOUTH ZONING BOARD VARIANCE REQUEST	LU-25-39	7.15.2025	7.15.2027
NHDES SEWER CONNECTION PERMIT	-	-	-
NHDES OIL REMEDIATION & COMPLIANCE AST PERMIT	-	-	-
NHDES UNDERGROUND STORAGE TANK (UST) CONSTRUCTION	-	-	-

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**

DIG SAFE
811 OR 888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

Seacoast Division
TFM
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

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

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- STONE WALL
- RETAINING WALL
- SF SF SF — SILT FENCE
- SS SS SS — SILT SOCK
- XXXX — SOIL BOUNDARY
- LIMIT OF GRADING
- 100 — CONTOUR
- TC100.50 / BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- HEAVY DUTY PAVEMENT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- D — DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- W — WATER METER
- W — WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- G — GAS METER
- T — TELEPHONE MANHOLE
- E — ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- E — ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GENERAL NOTES

1. 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-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
2. 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.
3. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
4. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN EASEMENTS.
5. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
6. 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.
7. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
8. 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.
9. 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.
10. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
11. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
12. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    A. 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.
    B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES IN PROPOSED LAYOUT AND IN EXISTING FEATURES.
    C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    D. 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.
    E. 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.
    F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    G. 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.
    H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING ALL SITE WORK. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    J. 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 IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON 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.
    K. 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.
    L. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT AS REQUIRED BY PORTSMOUTH REGULATIONS.
    M. 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.
    N. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER:
        1) 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.
        2) IF ANY UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS WERE INSTALLED, FOR EACH SUCH SYSTEM:
            A) REPRESENTATIVE PHOTOGRAPHS OF THE SYSTEM AFTER COMPLETION BUT PRIOR TO BACKFILLING; AND
            B) A LETTER SIGNED BY THE ENGINEER WHO OBSERVED THE SYSTEM PRIOR TO BACKFILLING, THAT THE SYSTEM CONFORMS TO THE APPROVED PLANS AND SPECIFICATIONS.
        3) UPON COMPLETION OF CONSTRUCTION, WRITTEN CERTIFICATION THAT:
            A) ALL WORK HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
            B) 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

1. 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.
2. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
3. 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.
4. 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.
5. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
6. 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.
7. 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.
8. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
9. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER.
10. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
11. 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".
12. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
13. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
14. 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.
15. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
16. NO FILL SHALL BE PLACED IN ANY WETLAND AREA WITHOUT A WETLANDS PERMIT.
17. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
18. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
19. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%*	BELOW PAVED OR CONCRETE AREAS
95%**	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%**	BELOW 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.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. 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.
3. 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 BE 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.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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. ALL 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.
10. 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.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. 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.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

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

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

TAX MAP 239 LOT 11

NOTES & LEGEND

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

COLBEA ENTERPRISES, LLC

SCALE: **NOVEMBER 17, 2025**

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
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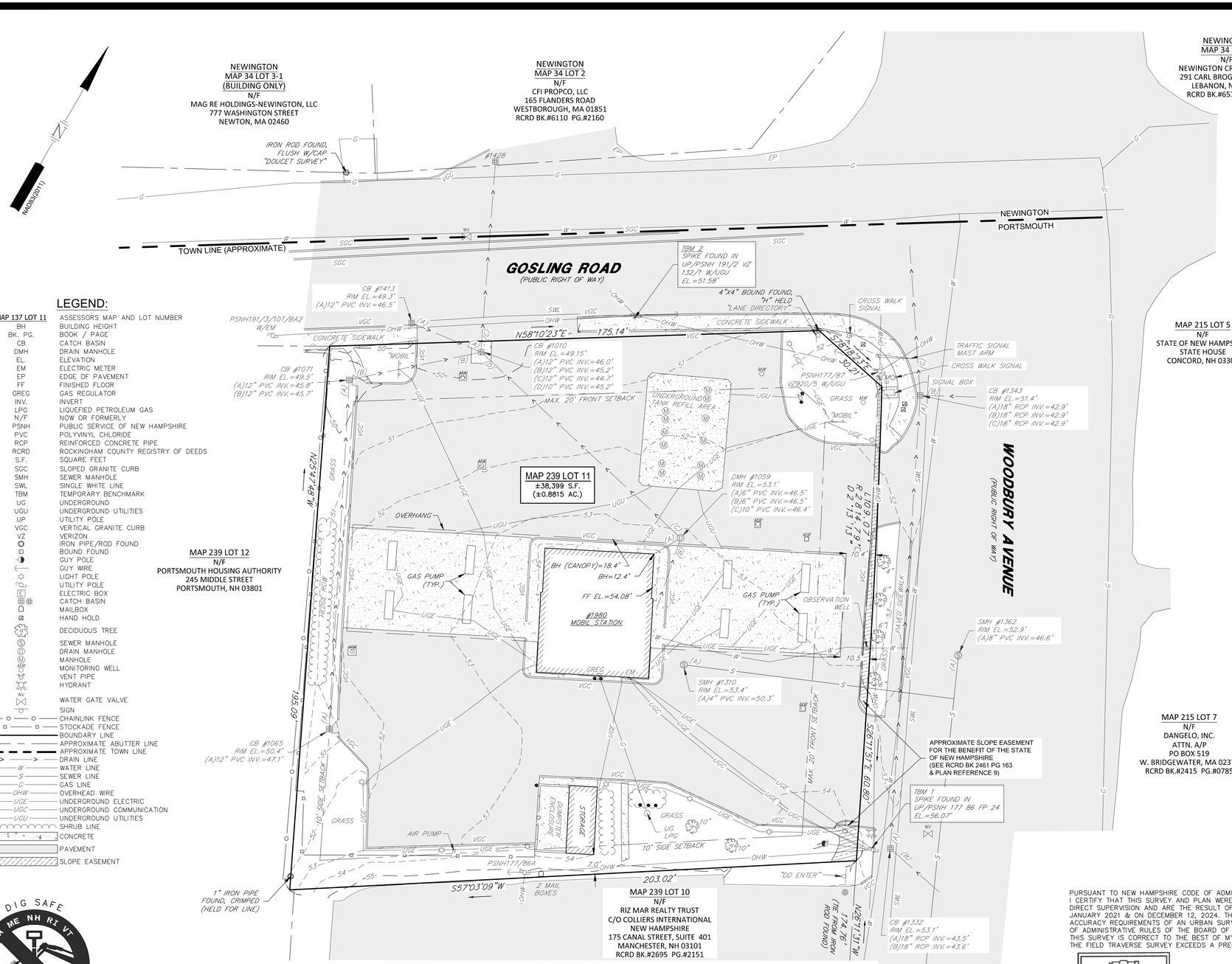
FILE	DR	CK	FB	CADFILE		
46077.16	JKC	CRR			46077-16_COVER&NOTES	C-01



LEGEND:

MAP 137 LOT 11	ASSESSORS MAP AND LOT NUMBER
BH	BUILDING HEIGHT
BK. PG.	BOOK / PAGE
CB	CATCH BASIN
DMH	DRAIN MANHOLE
EL.	ELEVATION
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
GREG	GAS REGULATOR
INV.	INVERT
LPG	LIQUEFIED PETROLEUM GAS
N/F	NOW OR FORMERLY
PSNH	PUBLIC SERVICE OF NEW HAMPSHIRE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
SGC	SLOPED GRANITE CURB
SMH	SEWER MANHOLE
SWL	SINGLE WHITE LINE
TBM	TEMPORARY BENCHMARK
UG	UNDERGROUND
UGU	UNDERGROUND UTILITIES
UP	UTILITY POLE
VGC	VERTICAL GRANITE CURB
VZ	VERIZON
	IRON PIPE/ROD FOUND
	BOUND FOUND
	GUY POLE
	GUY WIRE
	LIGHT POLE
	UTILITY POLE
	ELECTRIC BOX
	CATCH BASIN
	MAILBOX
	HAND HOLD
	DECIDUOUS TREE
	SEWER MANHOLE
	DRAIN MANHOLE
	MANHOLE
	MONITORING WELL
	VENT PIPE
	HYDRANT
	WATER GATE VALVE
	SIGN
	CHAINLINK FENCE
	STOCKADE FENCE
	BOUNDARY LINE
	APPROXIMATE ABUTTER LINE
	APPROXIMATE TOWN LINE
	DRAIN LINE
W	WATER LINE
S	SEWER LINE
G	GAS LINE
OHW	OVERHEAD WIRE
UGE	UNDERGROUND ELECTRIC
UGC	UNDERGROUND COMMUNICATION
UGU	UNDERGROUND UTILITIES
	SHRUB LINE
	CONCRETE
	PAVEMENT
	SLOPE EASEMENT

DIG SAFE
MA ME NH RI VT
811 TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

BUILDING COVERAGE CALCULATION:

BUILDINGS: 7,402 SF

TOTAL LOT AREA: 38,399 SF

7,402 SF / 38,399 SF = 0.193 X 100 = **19.3%**
(BUILDINGS / TOTAL LOT AREA = BUILDING COVERAGE)

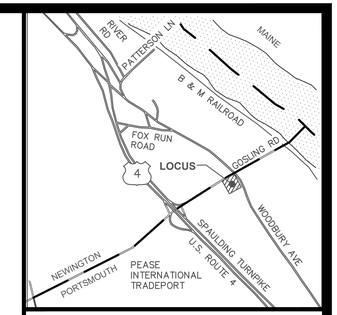
OPEN SPACE CALCULATION:

OPEN SPACE: (PERVIOUS AREAS) 7,284 SF

TOTAL LOT AREA: 38,399 SF

7,284 SF / 38,399 SF = 0.19 X 100 = **19.0%**
(OPEN SPACE SF / TOTAL LOT AREA = OPEN SPACE %)

20 10 0 20
Graphic Scale in Feet



LOCATION PLAN

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:	REQUIRED:	EXISTING:
MIN. DEVELOPMENT SITE AREA:	10,000SF***	38,399SF
MIN. LOT DEPTH:	NR	±200FT
MIN. STREET FRONTAGE:	100FT**	375.22FT
MIN. OPEN SPACE:	10%	19.0%
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

SEE THE CITY OF PORTSMOUTH ZONING ORDINANCE ARTICLE 5B FOR REGULATIONS/DEVELOPMENT STANDARDS
*PER PORTSMOUTH ZONING ORDINANCE SECTION 10.5B34.60 SMALL COMMERCIAL BUILDING
** PER 10.5B32.30 SPECIAL FRONTAGE REQUIREMENT. FRONTAGE ON WOODBURY AVENUE.
*** PER 10.5B42.40 GENERAL COMMERCIAL DEVELOPMENT

5. OWNER OF RECORD:
MAP 239 LOT 11:
COLBEA ENTERPRISES, LLC
695 GEORGE WASHINGTON HIGHWAY
LINCOLN, RI 02865
RCRD BK.#6281 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. IT 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-16 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 A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD 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 MCENEANEY 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 ANDERSON-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, N.H. IN FAVOR OF THE CITY OF PORTSMOUTH FOR CMA ENGINEERS, INC." BY JAMES VERRA AND ASSOCIATES, INC., DATED 7/27/2016, WITH REVISION 1 DATED 8/8/2016. 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.

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.

STATE OF NEW HAMPSHIRE
No. 01037
BRENDA M. KOLBOW
LICENSED LAND SURVEYOR
SIGNATURE

LICENSED LAND SURVEYOR

2025-01-14
DATE

REV.	DATE	DESCRIPTION	DR	CK

TAX MAP 239 LOT 11

EXISTING CONDITIONS PLAN

MOBIL STATION

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

COUNTY OF ROCKINGHAM

OWNED BY

COLBEA ENTERPRISES, LLC

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

JANUARY 14, 2025

Seacoast Division
TFM
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

FILE	46077-16	DR	PJT	FB	612	S-1
		CK	BMK	CADFILE	SEE MARGIN	

Jan 14, 2025 - 10:32am
\\TFM-BEDFORD\Projects\Civil-Survey\MISC Projects\46077 - Woodbury Ave - Portsmouth\46077-15 - Ogunquit Holdings - 1980 Woodbury Ave\Carlson Survey\Dwgs\46077-16 Survey.dwg

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

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

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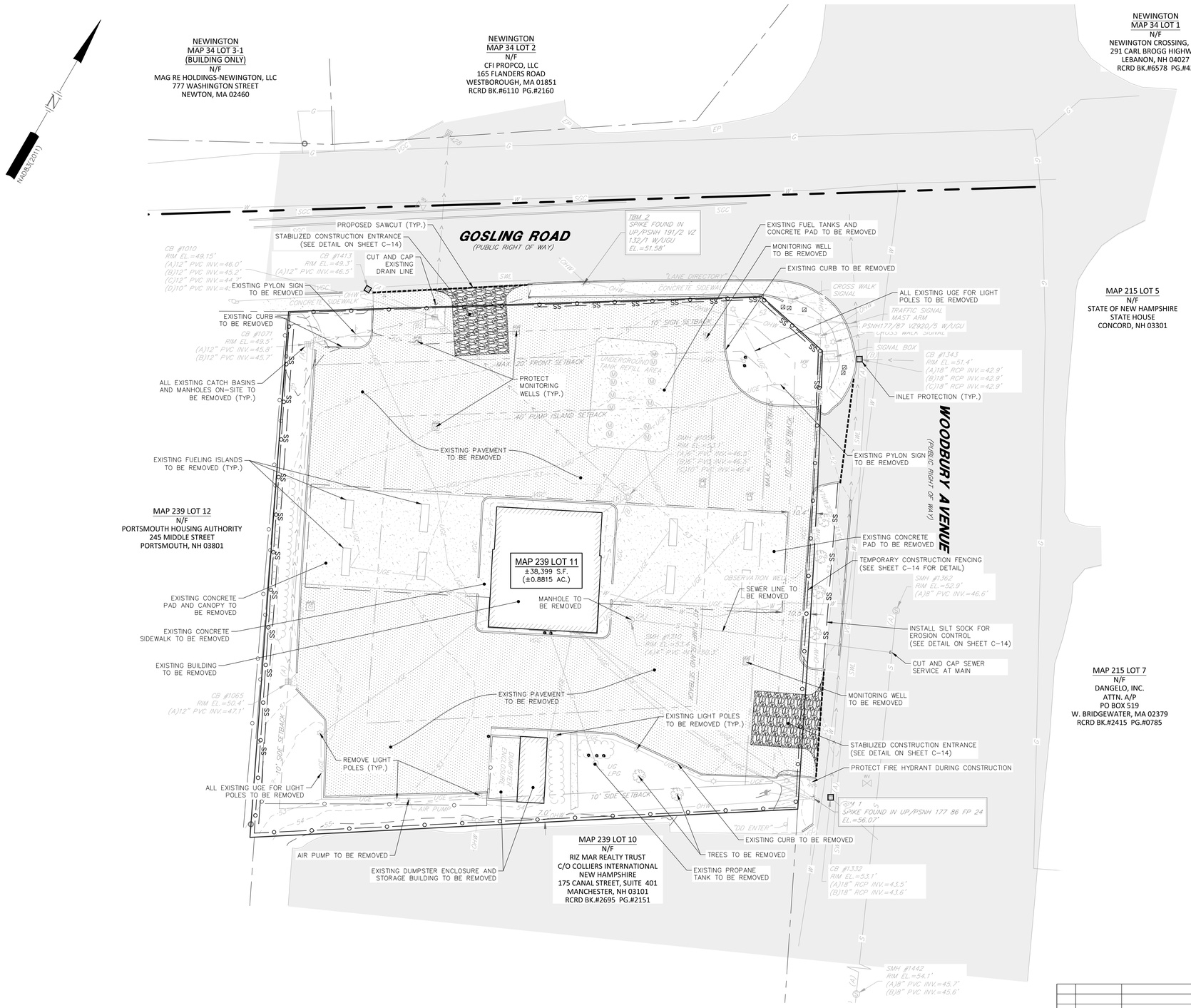
FILE	DR	JKC	FB	CADFILE	SHEET
46077.16	CK	CRR		46077-16_AERIAL	C-02

DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2025 - 10:45am
F:\MSC Projects\46077 - Woodbury Ave - Portsmouth\46077-16 Colbea Ent LLC- 1980 Woodbury Ave, Portsmouth, NH\Design\PRODUCTION DRAWINGS\46077-16_Aerial.dwg



HORIZONTAL SCALE 1"=20'
20 10 0 20

NOTES

1. SEE NOTES ON SHEET C-01.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
4. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
5. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
6. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
7. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
8. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARC 3800 RELATIVE TO INVASIVE SPECIES.

DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.

DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

1. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
2. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
4. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
5. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
6. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
7. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
8. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
9. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
10. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
11. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
13. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
14. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
15. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
17. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
18. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

TAX MAP 239 LOT 11

SITE PREPARATION & DEMOLITION 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
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

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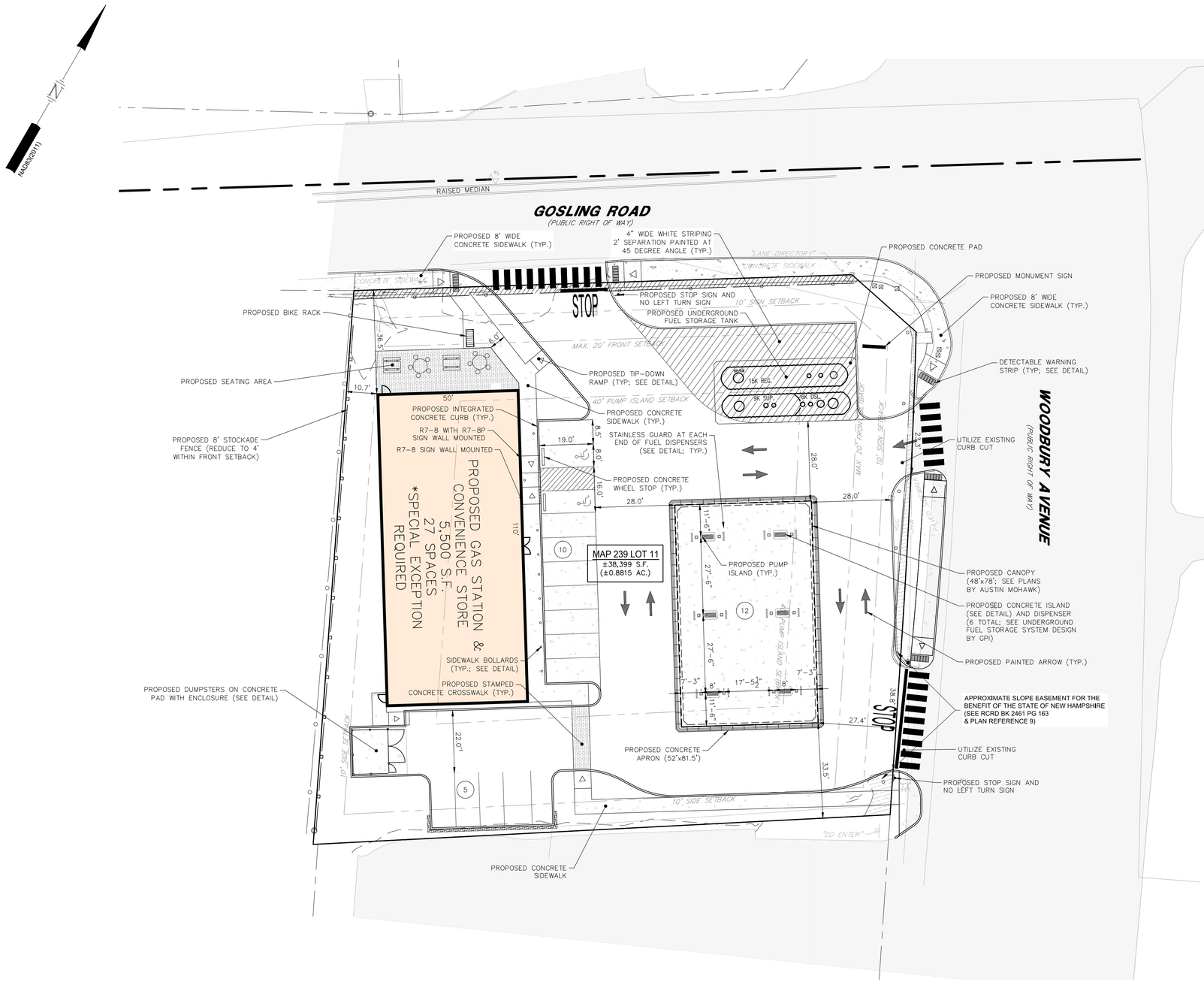
FILE	DR	CK	FB	CADFILE		
46077.16	JKC	CRR			46077-16_SITEPREP	C-03

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



SITE DATA

OWNER OF RECORD OF MAP 239 LOT 11: COLBEA ENTERPRISES, LLC – 695 GEORGE WASHINGTON HIGHWAY, LINCOLN, RI 02865
DEED REFERENCE TO PARCEL IS BK 6281 PG 2912
AREA OF PARCEL = 38,399± SF OR 0.8815± ACRES

ZONED: GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR (G1)
EXISTING USE: GAS STATION & CONVENIENCE STORE
PROPOSED USE: GAS STATION & CONVENIENCE STORE

THE PURPOSE OF THIS PLAN IS TO DEPICT CONSTRUCTION OF A 5,500 S.F. CONVENIENCE STORE AND GAS STATION WITH TWELVE FUELING STATIONS AT SIX FUELING ISLANDS. ASSOCIATED IMPROVEMENTS INCLUDE AND ARE NOT LIMITED TO PEDESTRIAN ACCESS, OUTDOOR SEATING, VEHICULAR ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, LIGHTING, AND LANDSCAPING.

TYPICAL HOURS OF OPERATION: 24 HOURS/DAY.

DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	38,399 SF (0.8815± AC)	38,399 SF (0.8815± AC)
LOT FRONTAGE	375.22 FT	375.22 FT
DEPTH	200 FT	200 FT
MINIMUM YARD DIMENSIONS:		
FRONT	0FT/20FT (MIN/MAX)	27.4 FT
SIDE	10 FT	10.7 FT
REAR	15 FT	N/A FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	40 FT	28.67 FT
BUILDING COVERAGE	70%	24.1%
BUILDING FOOTPRINT	10,000 SF	5,500 SF
COMMUNITY SPACE	3,839.90 S.F.	3,912 S.F.

PARKING REQUIREMENTS

PARKING SPACES (SEE CALCULATION)	16 SPACES	27 SPACES (INCL. 12 @ PUMPS)
ACCESSIBLE SPACES (REQ'D BY ADA)	1 SPACE	2 SPACES
STANDARD PARKING SPACE SIZE	8.5 FT X 19 FT	8.5 FT X 19 FT
AISLE WIDTH	24 FT	24 FT

PARKING CALCULATIONS

REQUIRED PARKING RATIO:
MOTOR VEHICLE SERVICE STATION: 2 SPACES + 1 SPACE/400 S.F.

TOTAL REQUIRED = 2 + 5,500 S.F. * 1 SPACE/400 S.F. = 16 SPACES

NOTES

1. SEE NOTES ON SHEET C-01.
2. ALL PARKING SPACE DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE PORTSMOUTH ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. SNOW SHALL NOT BE STOCKPILED IN STORMWATER BMP'S, WETLAND BUFFERS, OR WETLANDS. SEE SNOW STORAGE LOCATIONS. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR. SALT USE SHALL BE MINIMIZED ON ALL PAVED AREAS AND GREEN SNOWPRO CERTIFIED OPERATORS SHALL BE UTILIZED FOR WINTER MAINTENANCE.

TAX MAP 239 LOT 11

SITE LAYOUT 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

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Seacoast Division
TFM
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

FILE	DR	JKC	FB		
46077.16	CK	CRR	CADFILE	46077-16_SITELAYOUT	C-04

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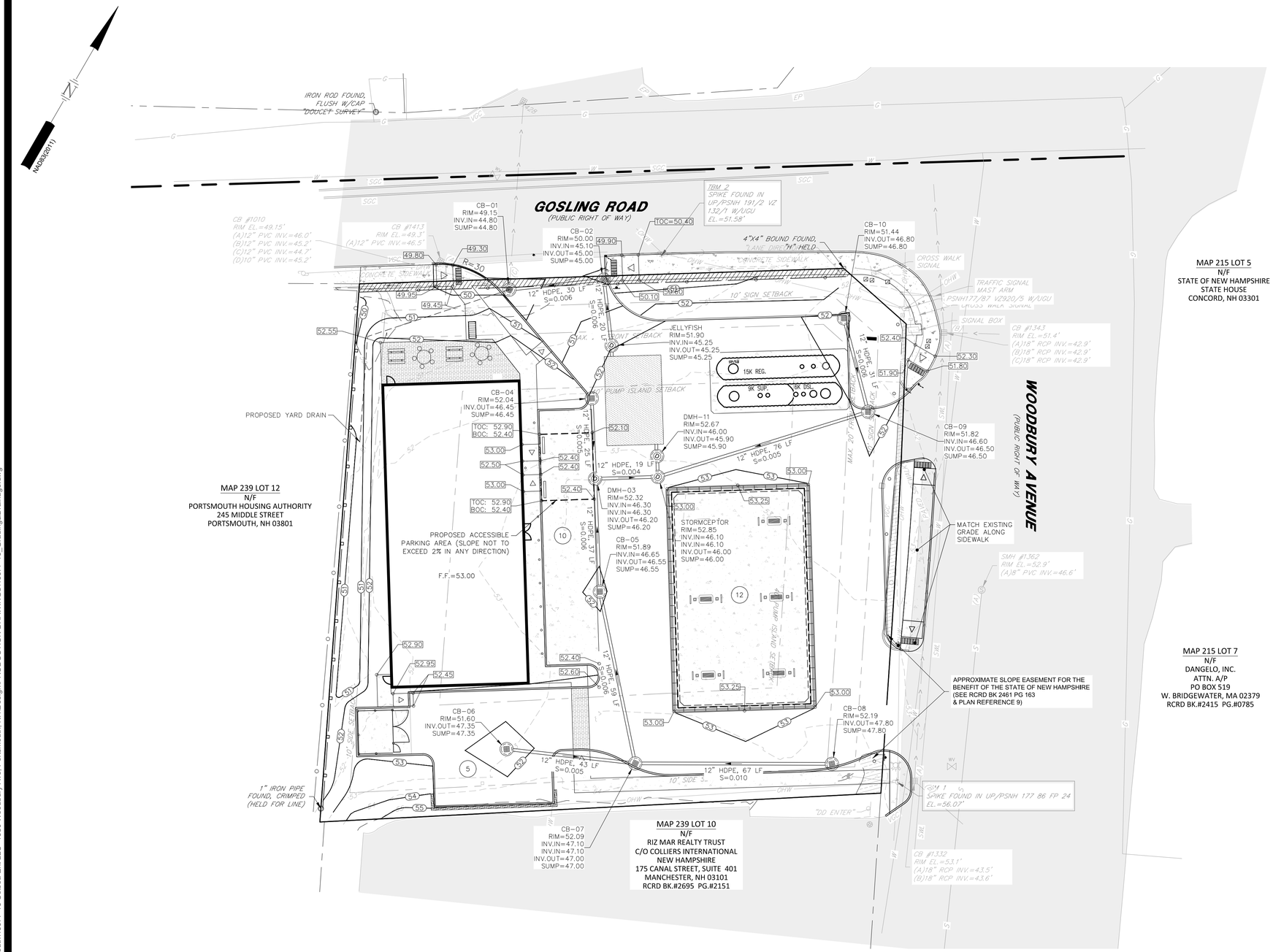

HORIZONTAL SCALE 1"=20'

20 10 0 20

NOTES

1. SEE NOTES ON SHEET C-01.
2. ALL DOORS AND GARAGE ENTRANCES SHALL BE AT FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED.
3. 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.
4. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
5. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
6. 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).
7. 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 = 52.04 INV.OUT = 46.45
CB-05	RIM = 51.89 INV.IN(CB-07) = 46.65 INV.OUT = 46.55
CB-06	RIM = 51.60 INV.OUT = 47.35
CB-07	RIM = 52.09 INV.IN(CB-08) = 47.10 INV.IN(CB-06) = 47.10 INV.OUT = 47.00
CB-08	RIM = 52.19 INV.OUT = 47.80
CB-09	RIM = 51.82 INV.IN(CB-10) = 46.60 INV.OUT = 46.50
CB-10	RIM = 51.44 INV.OUT = 46.80
DMH-03	RIM = 52.32 INV.IN(CB-05) = 46.30 INV.IN(CB-04) = 46.30 INV.OUT = 46.20
DMH-11	RIM = 52.67 INV.IN(Pipe - (15)) = 46.00 INV.OUT = 45.90
JELLYFISH	RIM = 51.90 INV.IN(Pipe - (18)) = 45.25 INV.OUT = 45.25
STORMCEPTOR	RIM = 52.85 INV.IN(CB-09) = 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

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SCALE: 1"=20' (22"X34") **NOVEMBER 17, 2025**

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Land Surveyors
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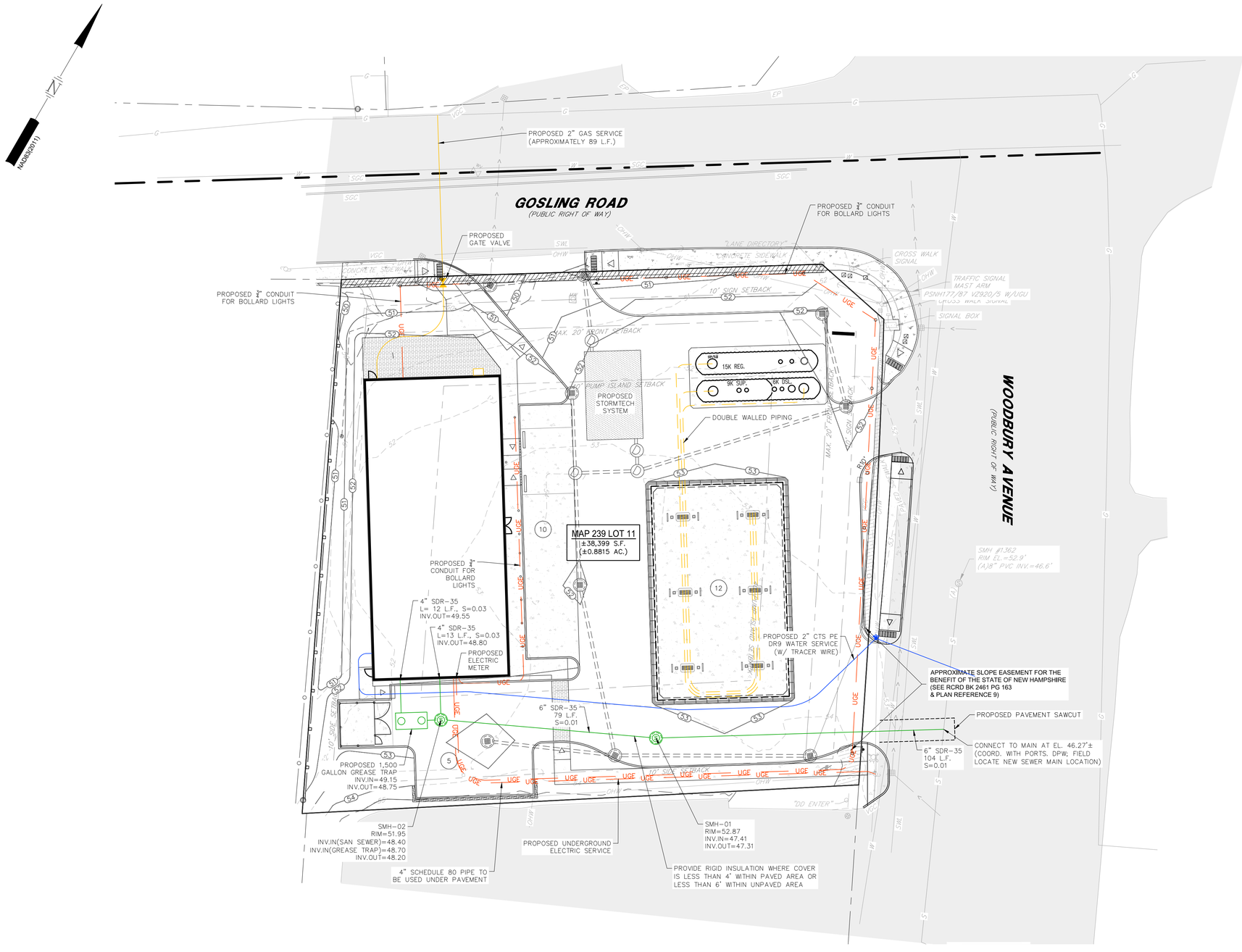
FILE					
46077.16	DR: JKC	FB	46077-16_GRADING&DRAINAGE	C-05
	CK: CRR	CADFILE		



NOTES

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

DRAINAGE	MUNICIPAL
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	UNITIL
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

COLBEA ENTERPRISES, LLC

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FILE		DR	JKC	FB		
	46077.16	CK	CRR	CADFILE	46077-16_UTILITY	C-06

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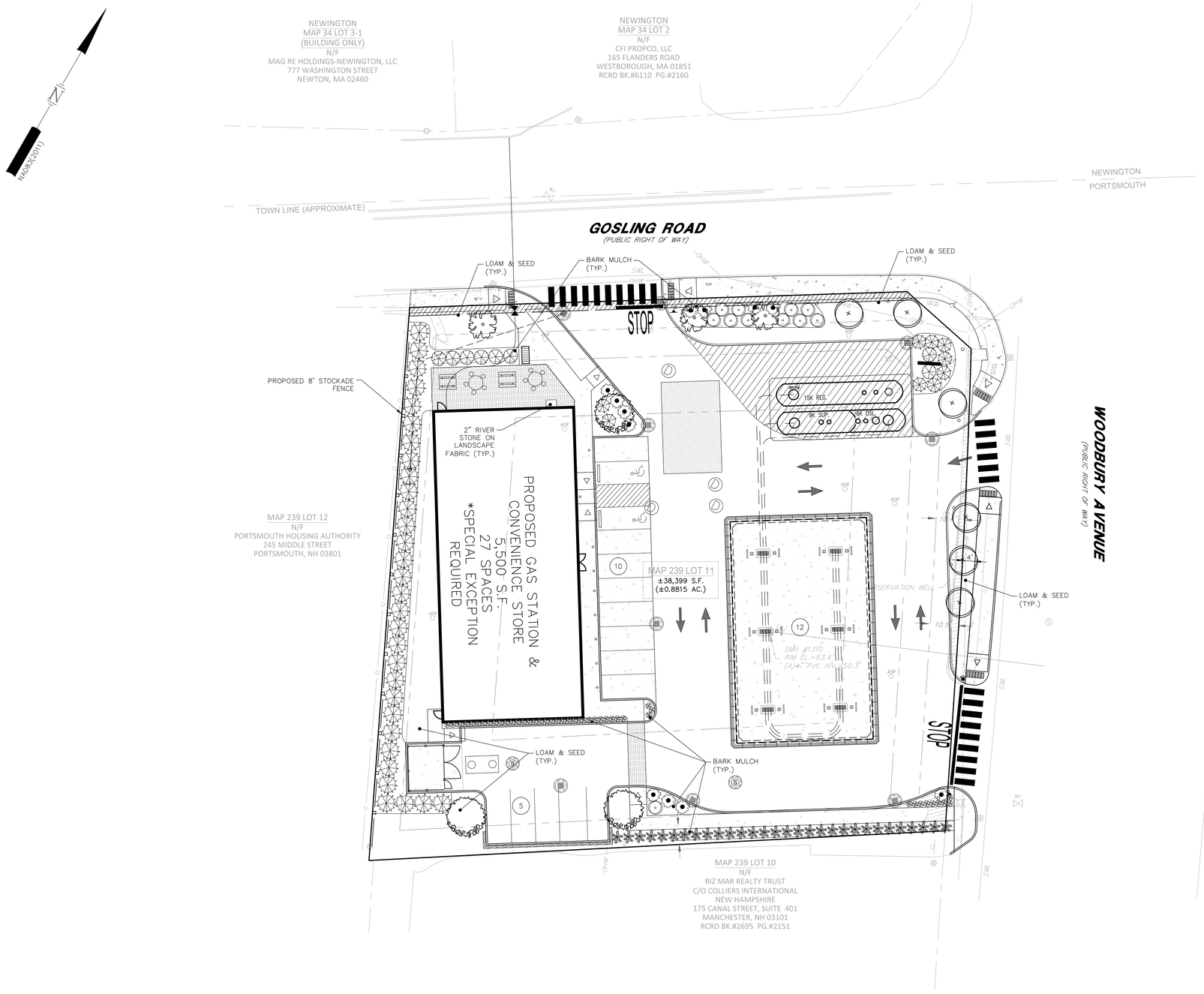

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS	MATURE HEIGHT/ SPREAD	GROWTH HABIT
	3	ACER R. 'BOWHALL' BOWHALL RED MAPLE	2" TO 2 1/2" CAL.	B&B	40' TO 60' 10' TO 15'	UPRIGHT
	3	AMELANCHIER X GRANDIFLORA 'ROBIN HILL' ROBIN HILL SERVICEBERRY	2" TO 2 1/2" CAL.	B&B	15' TO 20' 10' TO 15'	UPRIGHT
	6	MALUS 'RED JEWEL' RED JEWEL CRABAPPLE	2" TO 2 1/2" CAL.	B&B	10' TO 15' 8' TO 10'	UPRIGHT–OVAL
	9	CHAMAECYPRIS P. 'F. MOPS' MOP'S THREAD–LEAF FALSECYPRESS	3 GAL.	CONT.	3' TO 4' 5' TO 6'	MOUNDED
	12	JUNIPERUS HORIZONTALIS 'BAR HARBOR' BAR HARBOR JUNIPER	1 GAL.	CONT.	6" TO 12" 6' TO 8'	GROUNDCOVER
	30	PANICUM VIRGATUM 'SHENANDOAH' SHENANDOAH SWITCH GRASS	1 GAL.	CONT.	3' TO 4' 3' TO 4'	CLUMPING
	8	PHYSOCARPUS O. 'TINY WINE' TINY WINE NINEBARK	3 GAL.	CONT.	3' TO 4' 3' TO 4'	MOUNDED
	11	SPIRAEA B. 'ANTHONY WATERER' ANTHONY WATERER SPIREA	3 GAL.	CONT.	3' TO 4' 4' TO 5'	MOUNDED
	31	THUJA OCCIDENTALIS 'TECHNY' MISSION ARBORVITAE	5' TO 6'	B&B	10' TO 15' 6' TO 8'	PYRAMIDAL
	44	HEMEROCALLIS STELLA D'ORO STELLA D'ORO DAY LILY	1 GAL.	CONT.	18" 18"	GROUNDCOVER

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. 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.
4. 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.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. 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 UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. 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.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. ALL LANDSCAPED AREAS INCLUDING LAWNS SHALL BE PROVIDED WITH UNDERGROUND IRRIGATION. SEE IRRIGATION NOTES.
10. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
11. 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

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

IRRIGATION NOTES

1. THE IRRIGATION SYSTEM SHALL BE DESIGNED BY AN APPROVED IRRIGATION DESIGN/BUILD CONTRACTOR ACCEPTABLE TO THE OWNERS REPRESENATIVE.
2. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE IRRIGATION SYSTEM DESIGN AND SHOP DRAWINGS TO THE OWNER 30 DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING AND PROPOSED UTILITIES AND NOTIFY THE OWNER'S REPRESENTATIVE OF CONFLICTS.
4. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR A COMPLETE AND OPERABLE IRRIGATION SYSTEM AND SHALL FOLLOW ALL APPLICABLE CODES.
5. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF THE IRRIGATION SYSTEM'S BUILDING CONNECTION AND CONTROLS.
6. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS AND PRODUCT SPECIFICATIONS FOR INSTALLATION.

TAX MAP 239 LOT 11

LANDSCAPE PLAN

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

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46077.16	DR	JKC	FB		C–07
	CK	CRR	CADFILE 46077–16 LANDSCAPE PLAN		

LANDSCAPE NOTES

GENERAL

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2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
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4. 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.
5. 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.
6. 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 UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. 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.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. 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

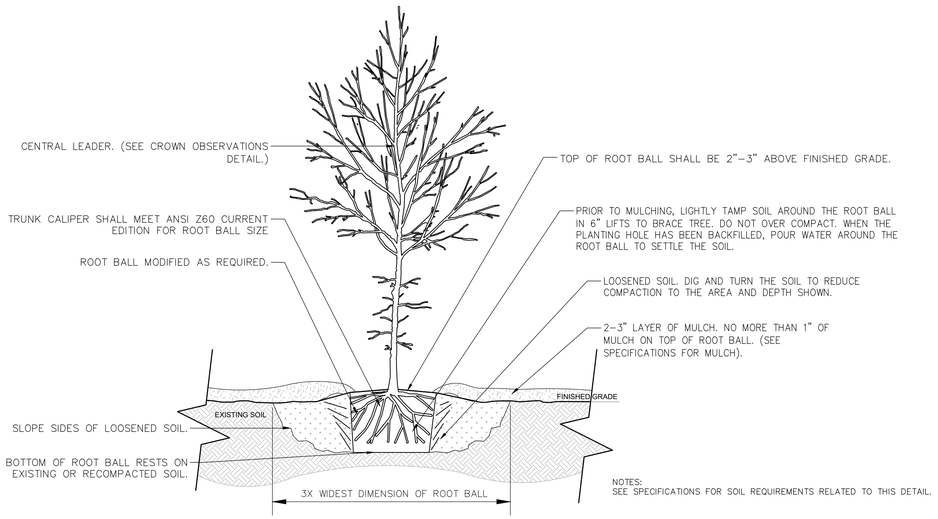
1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
3. 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, SUBSOIL, 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 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.
4. 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.
5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
7. 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

1. 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.
2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED 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.
3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
5. 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.
6. 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.
7. 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.)
8. TREEGATOR 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.
9. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
10. TREES TO REMAIN STAKED FOR 1 FULL GROWING SEASON.
11. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

SEEDING

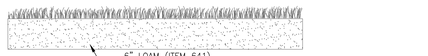
1. SLOPES UP TO AND INCLUDING 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA.
2. SLOPES STEEPER THAN 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA. SEE CIVIL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



SECTION VIEW

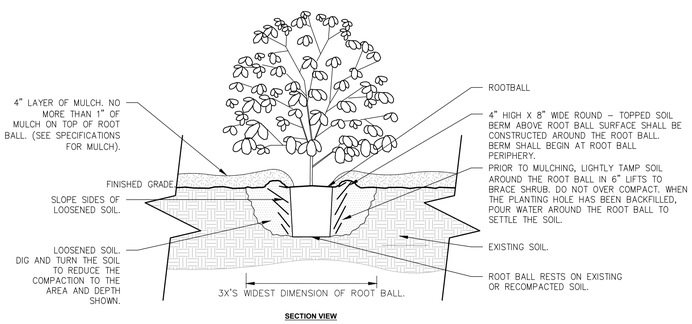
TREE WITH BERM

NOT TO SCALE



LOAM & SEED

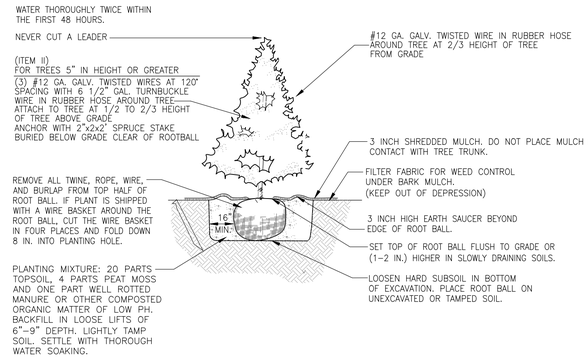
NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE



EVERGREEN PLANTING

NOT TO SCALE

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

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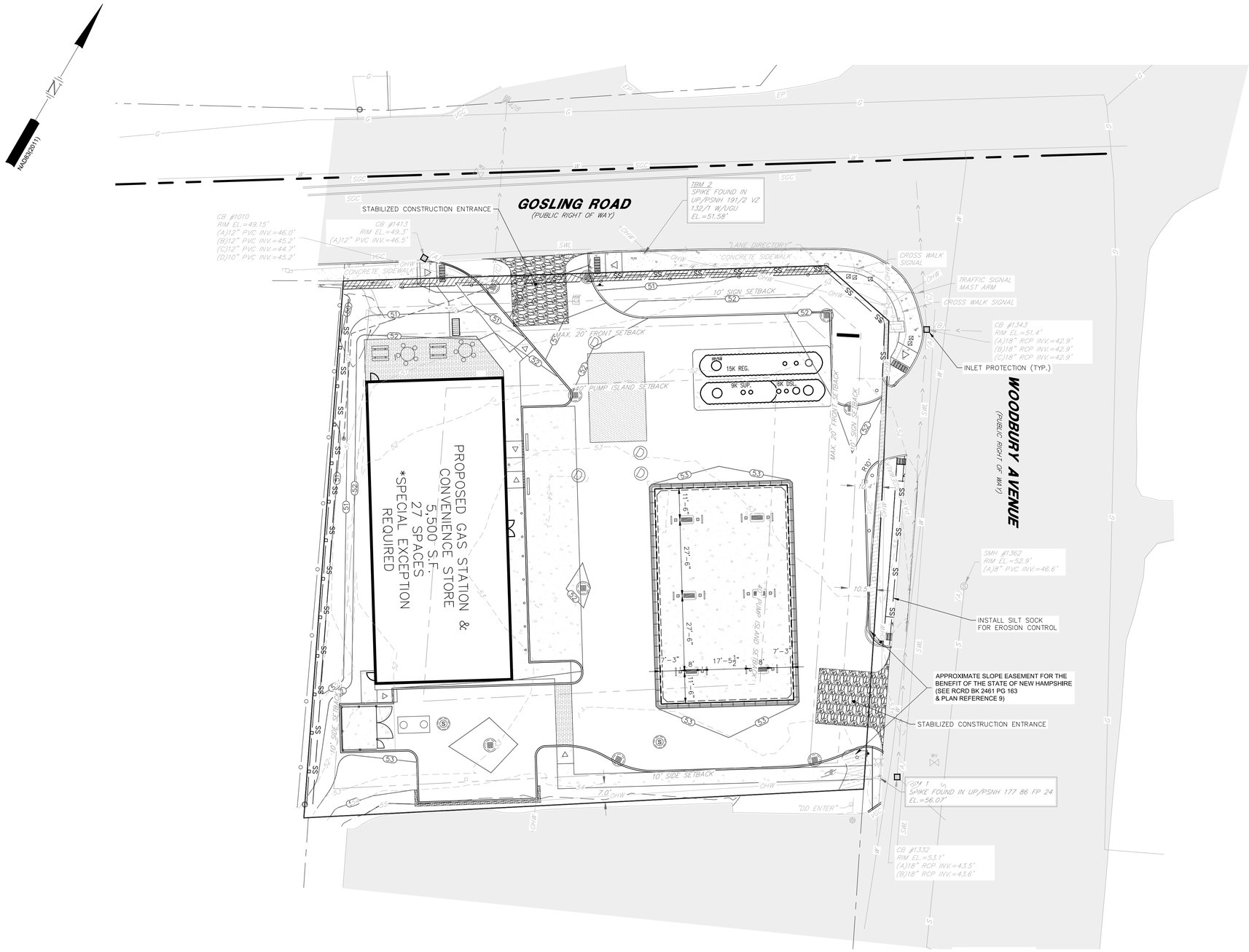
www.tfmoran.com

FILE	DR	JKC	FB		
46077.16	CK	CRR	CADFILE	46077-16 LANDSCAPE PLAN	C-08

DIG SAFE
CONTACT DIG SAFE - 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



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 eNOI 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 SEEDED 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. BASE 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
13. ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
14. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
15. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
16. 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**

HORIZONTAL SCALE 1"=20'

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Seacoast Division

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

DIG SAFE
CALL 811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2025 - 10:46am
F:\MSC Projects\46077 - Woodbury Ave - Portsmouth\46077-16 Colbea Ent LLC- 1980 Woodbury Ave, Portsmouth, NH\Design\PRODUCTION DRAWINGS\46077-16_Erosion.dwg

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	TMECC 02.02-B	2" SIEVE AND MIN. 60% GREATER THAN THE ⅜" SIEVE
MOISTURE CONTENT		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, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.

   B. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE 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 IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES 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 SEEDED.
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 RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER 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

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 LB. 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.
3. AFTER OCTOBER 15TH, INCOMPLETE PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWFALL AFTER EACH STORM EVENT.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

FOR SINGLE/DUPLEX FAMILY SUBDIVISIONS, WHEN LOT DEVELOPMENT IS NOT PART OF THE PERMIT, THEN LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

WASTE DISPOSAL

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

SPILL PREVENTION

1. MATERIAL MANAGEMENT PRACTICES
   THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:

   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

   A. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.

   B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

   C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

   D. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.

   E. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

   F. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

   HAZARDOUS PRODUCTS:
   THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

   A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

   B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.

   C. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

2. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

   PETROLEUM PRODUCTS:

   ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

   FERTILIZERS:
   FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

   PAINTS:
   ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

   CONCRETE TRUCKS:
   CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA DESIGNATED ON SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

F. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.

G. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

DUST CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

TAX MAP 239 LOT 11

EROSION CONTROL NOTES

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE
PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

COLBEA ENTERPRISES, LLC

SCALE: NTS **NOVEMBER 17, 2025**

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
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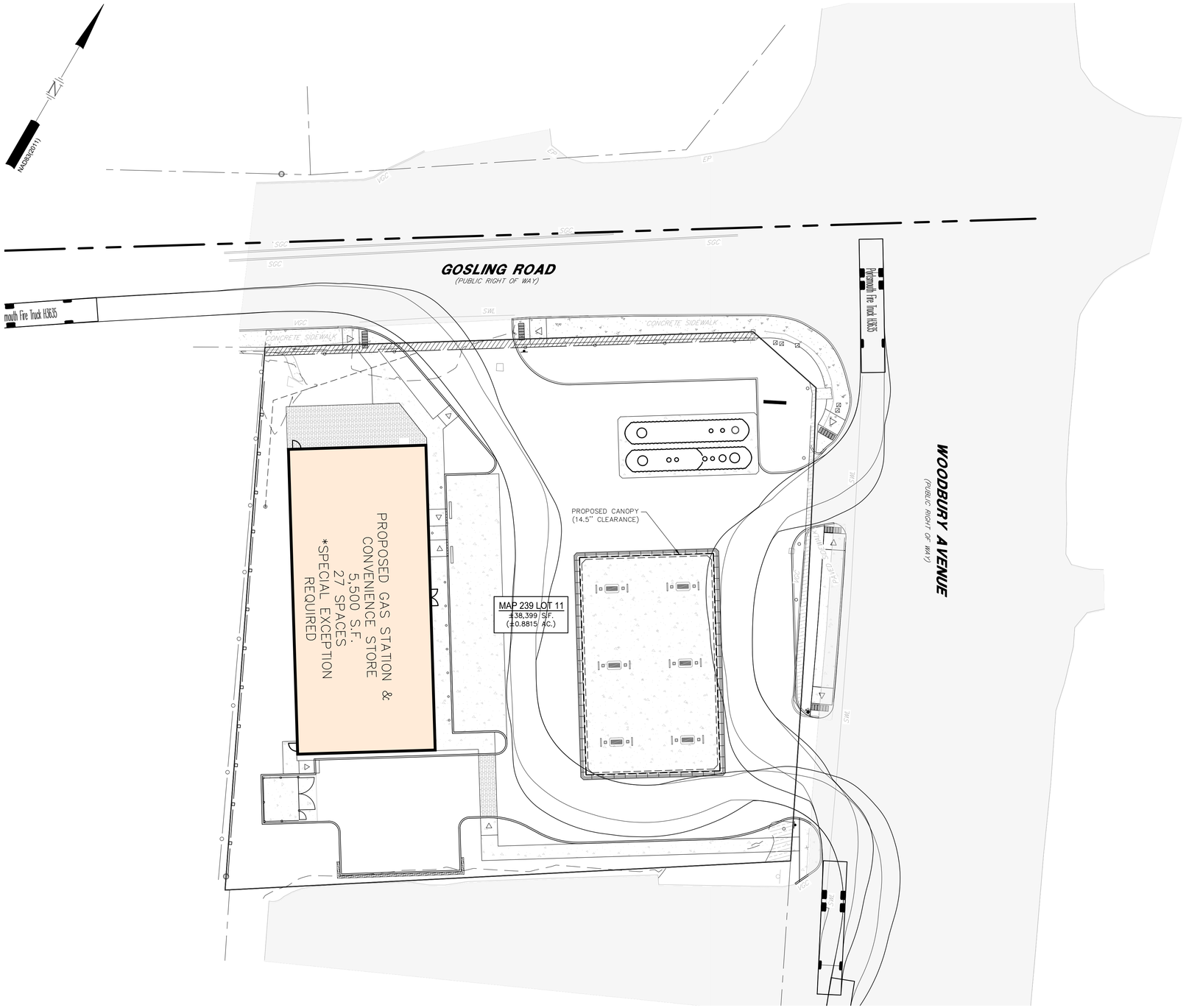
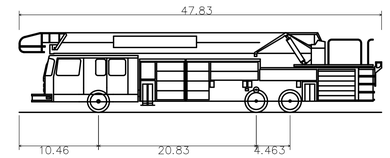
FILE					
46077.16	DR JKC FB	46077-16_EROSION	C-10
	CK CRR CADFILE		





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°

HORIZONTAL SCALE 1"=20'
20 10 0 20

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**

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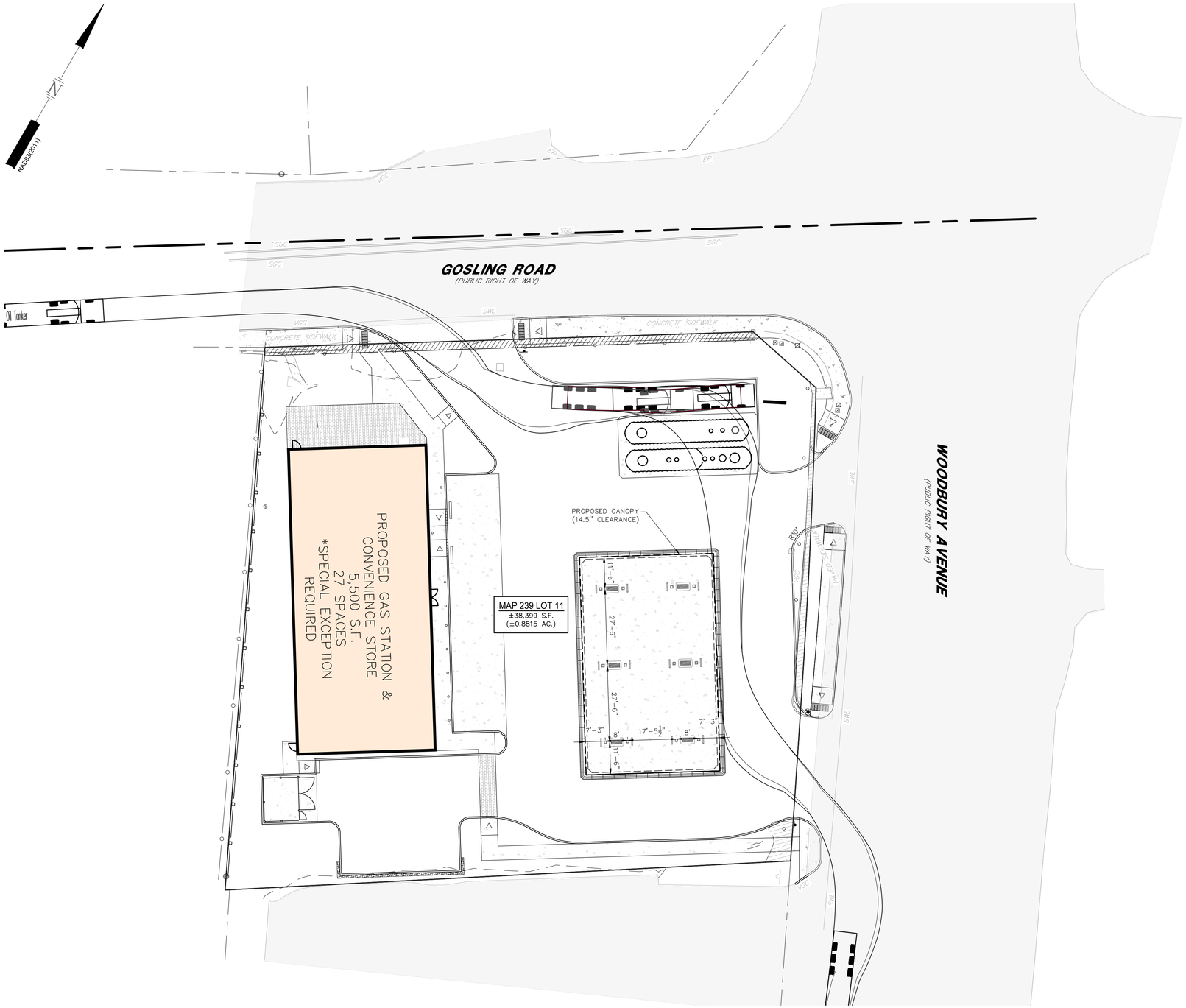
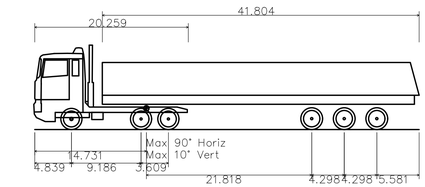
FILE		DR	JKC	FB		
	46077.16	CK	CRR	CADFILE	46077-16_TRUCKMOVE	EX-03

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION





Oil Tanker	
Overall Length	50.725ft
Overall Width	8.202ft
Overall Body Height	11.141ft
Min Body Ground Clearance	1.049ft
Max Track Width	8.202ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	21.325ft

HORIZONTAL SCALE 1"=20'
20 10 0 20

TAX MAP 239 LOT 11

TRUCK MOVEMENT PLAN

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

COLBEA ENTERPRISES, LLC

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FILE		DR	JKC	FB		
	46077.16	CK	CRR	CADFILE	46077-16_TRUCKMOVE	EX-04

Dec 23, 2025 - 10:47am
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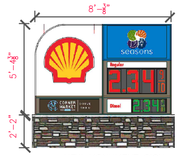
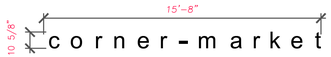


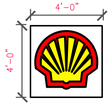
A NEW MONUMENT SIGN
AREA=61.15 S.F.
(QTY. 1)

C PROPOSED "SEASONS" SIGN
AREA=84 S.F.
(QTY. 1)



D PROPOSED "CORNER MARKET" SIGN
AREA=13.95 S.F.
(QTY. 1)

E PROPOSED CO-BRAND SIGN
AREA=20.16 S.F.
(QTY. 1)

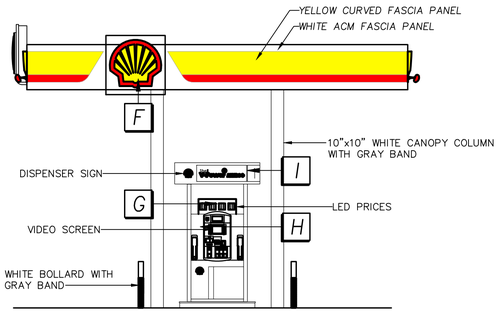


F PROPOSED PECTEN SIGN
AREA=16.0 S.F.
(QTY. 2)

G PROPOSED "WELCOME" SIGN
AREA=2.1 S.F.
(QTY. 1)

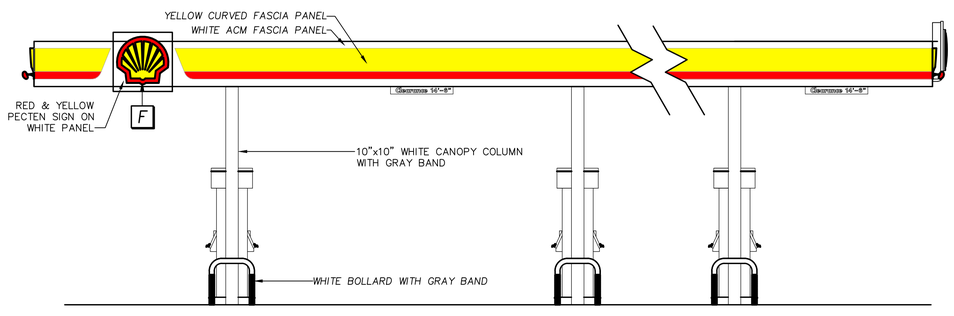
PROPOSED SIGN SCHEDULE

MARK	DESCRIPTION	SIZE	AREA (SF)	QUAN.	SIZE (SF)	ILLUMINATION	REMARKS	TYPE
		FREESTANDING SIGNS						
A	NEW MONUMENT SIGN	7'-7⅞" X 8'-3⅜"	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'-10⅝"	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 SOUTH CANOPY ELEVATION

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



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**

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION

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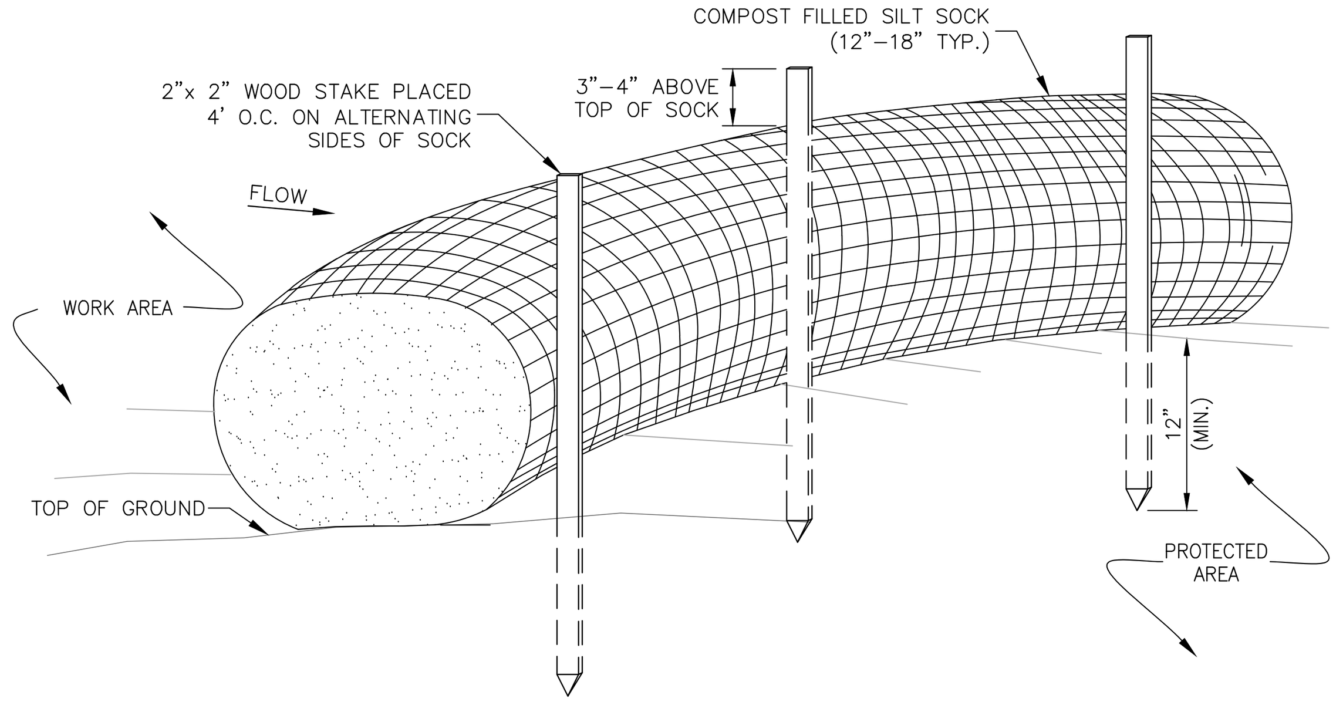
FILE	DR	JKC	FB	–	C-13
46077.16	CK	CRR	CADFILE	46077-16_SIGN	



NOTES

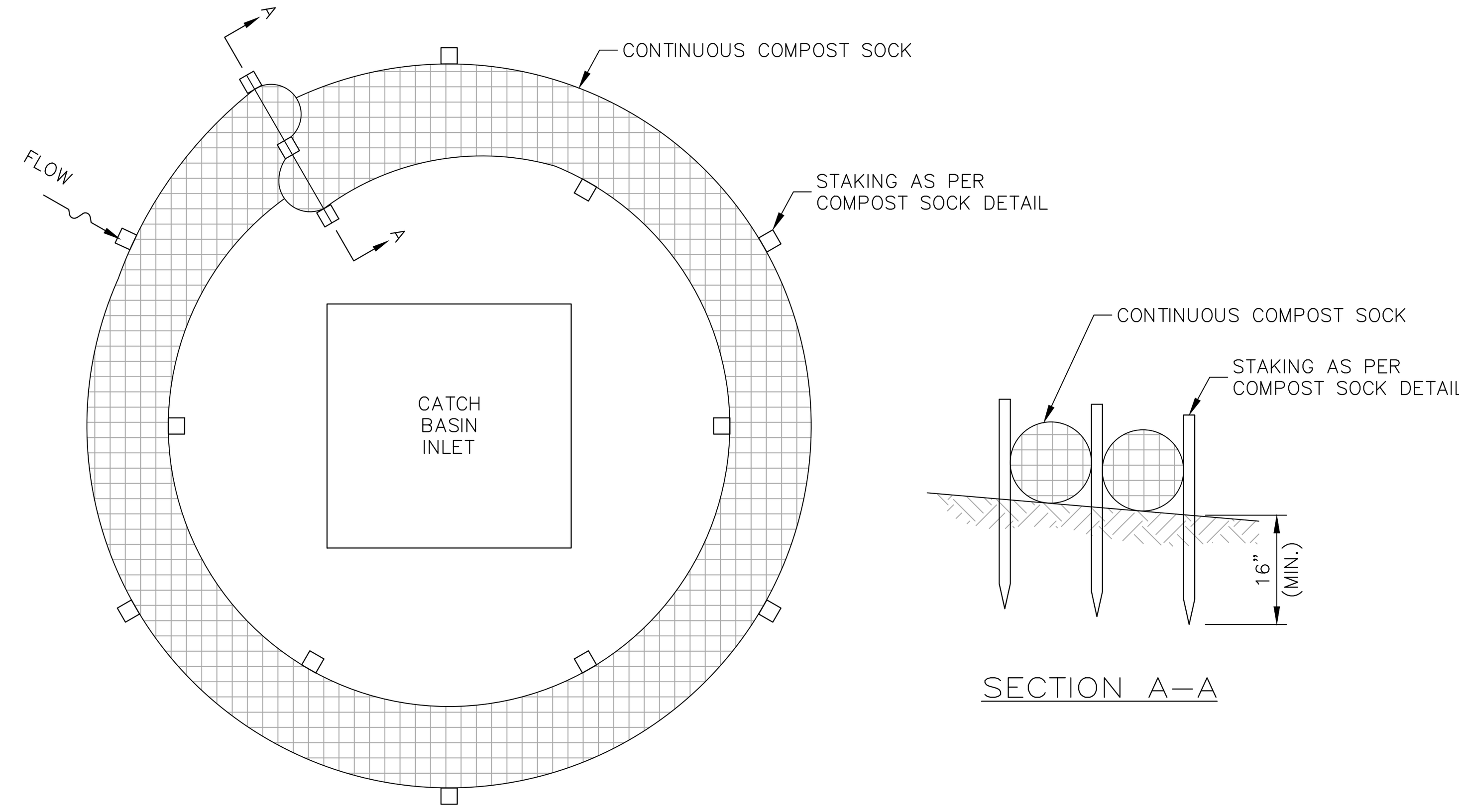
1. SILT SOCK SHALL BE FILTREXX® SILTSOXX® OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.

   SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.

   COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

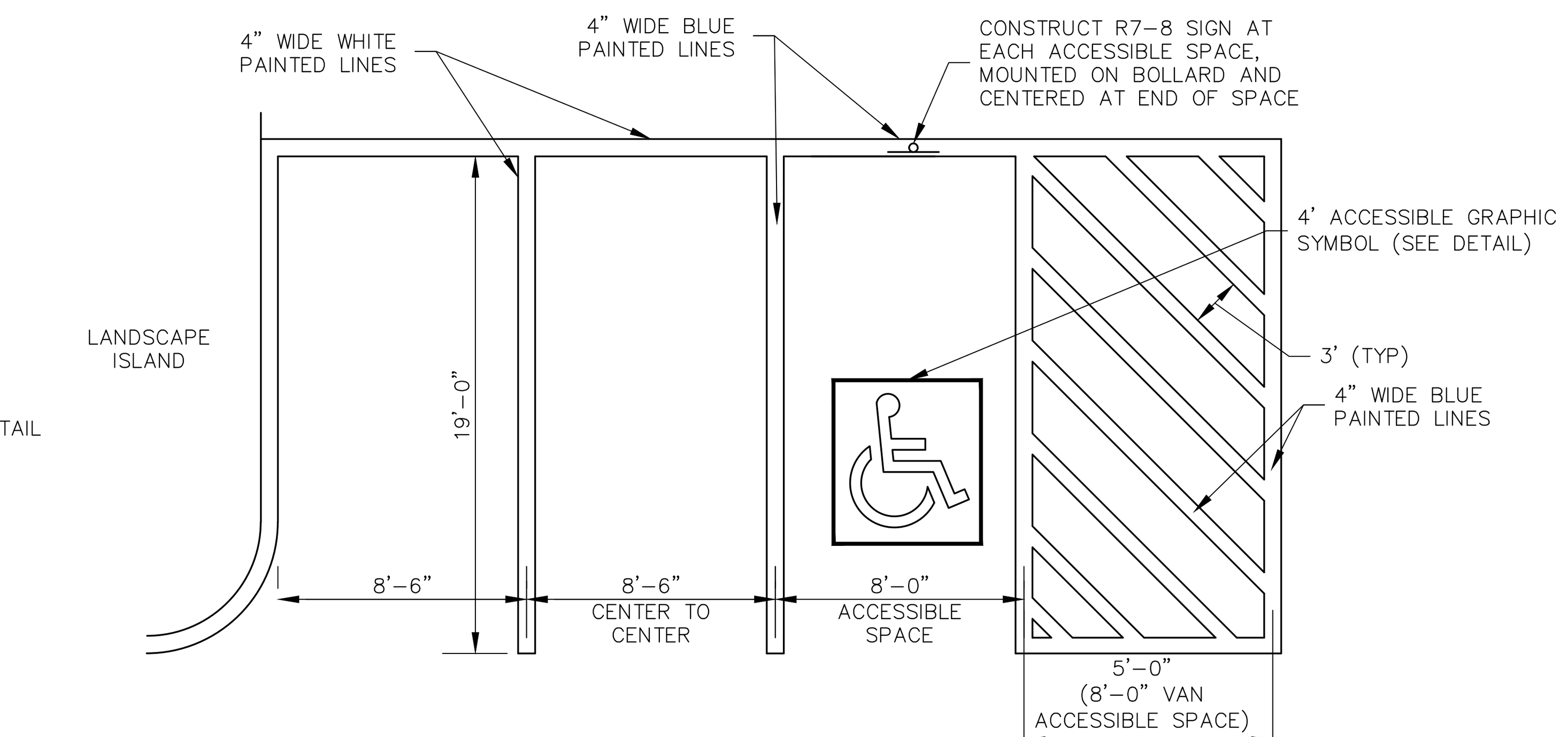
NOT TO SCALE



COMPOST SOCK INLET PROTECTION

AT CATCH BASIN

NOT TO SCALE



NOTE

1. TRAFFIC PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER AND SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". APPLY TWO COATS.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.
3. ALL PAINTED ISLANDS SHALL BE 4" WIDE DIAGONAL LINES AT 3'–0" OC BORDERED BY 4" WIDE LINES.
4. 2% MAXIMUM CROSS SLOPE ALLOWED IN ACCESSIBLE PARKING SPACES AND ACCESS AISLES.

TYPICAL PARKING LAYOUT

NOT TO SCALE

NOTES

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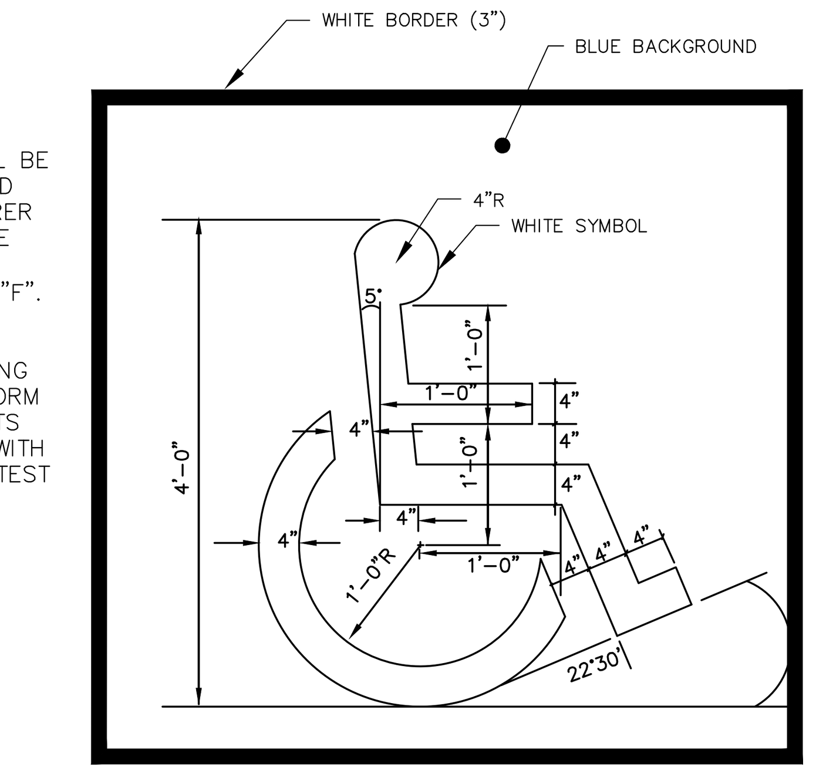
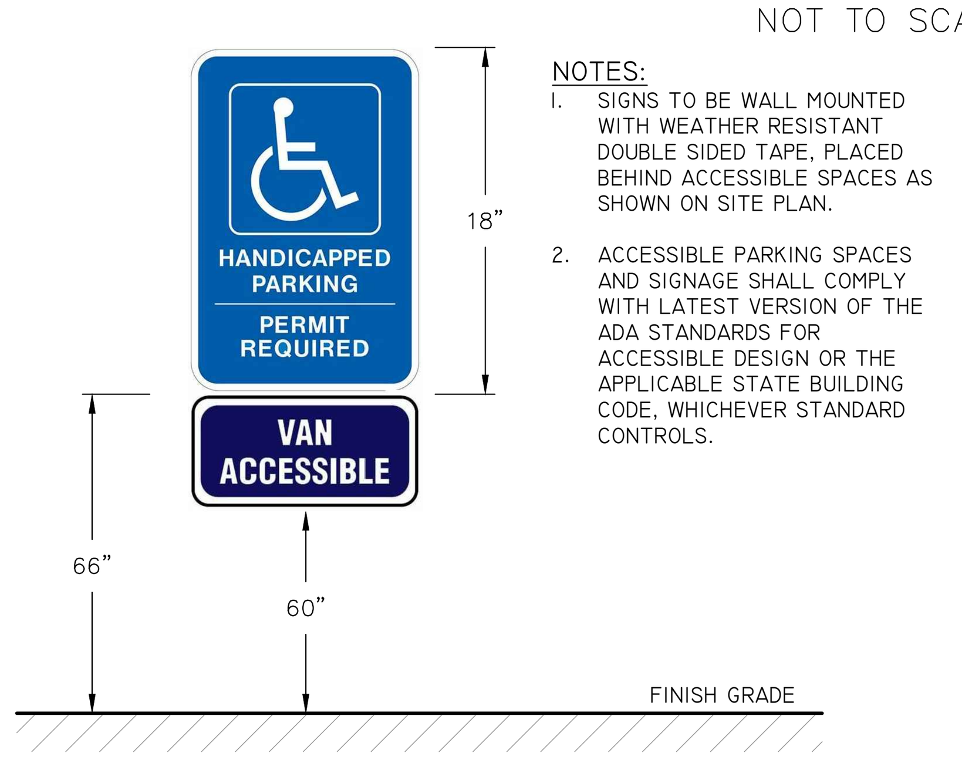
2. SYMBOLS AND PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.



ACCESSIBLE GRAPHIC SYMBOL

NOT TO SCALE

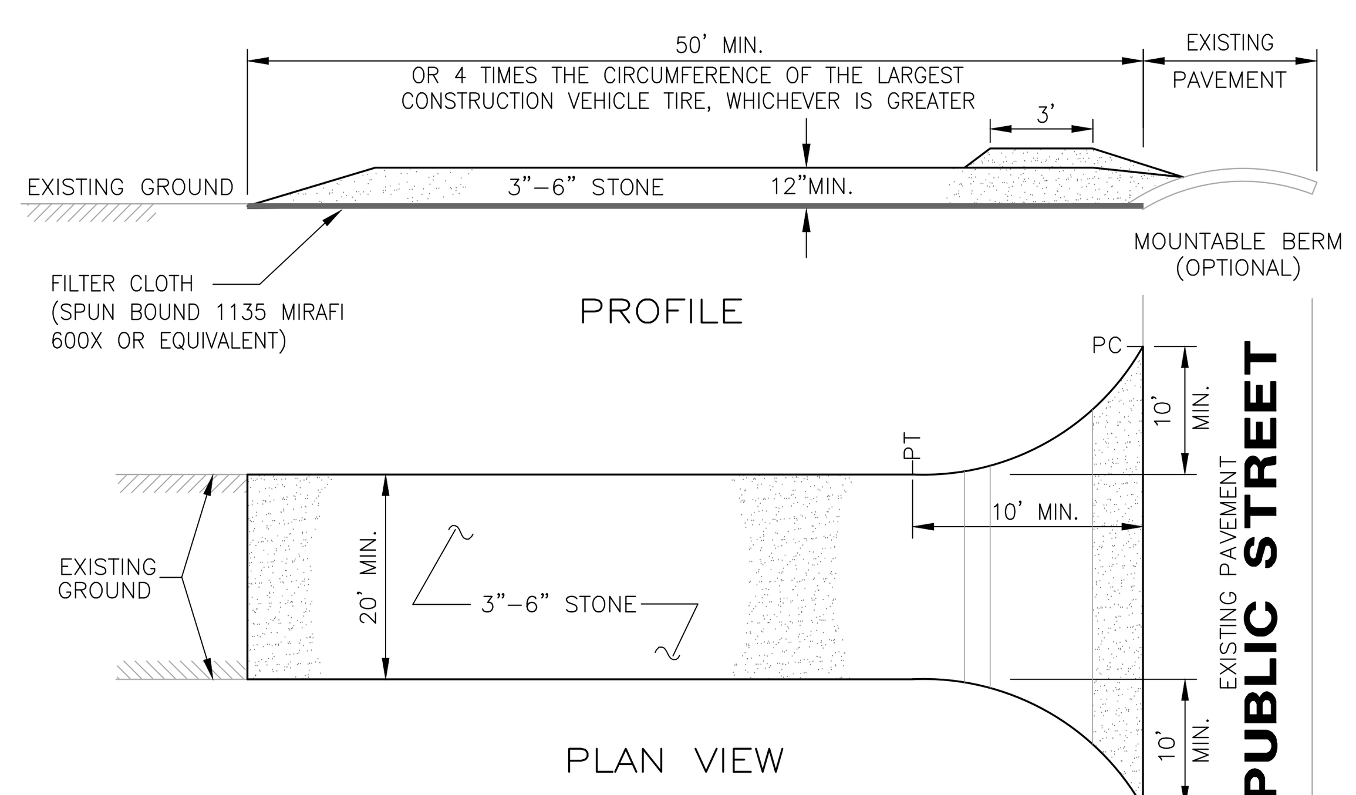


NOTES:

1. SIGNS TO BE WALL MOUNTED WITH WEATHER RESISTANT DOUBLE SIDED TAPE, PLACED BEHIND ACCESSIBLE SPACES AS SHOWN ON SITE PLAN.
2. ACCESSIBLE PARKING SPACES AND SIGNAGE SHALL COMPLY WITH LATEST VERSION OF THE ADA STANDARDS FOR ACCESSIBLE DESIGN OR THE APPLICABLE STATE BUILDING CODE, WHICHEVER STANDARD CONTROLS.

ADA SIGN DETAIL

NOT TO SCALE

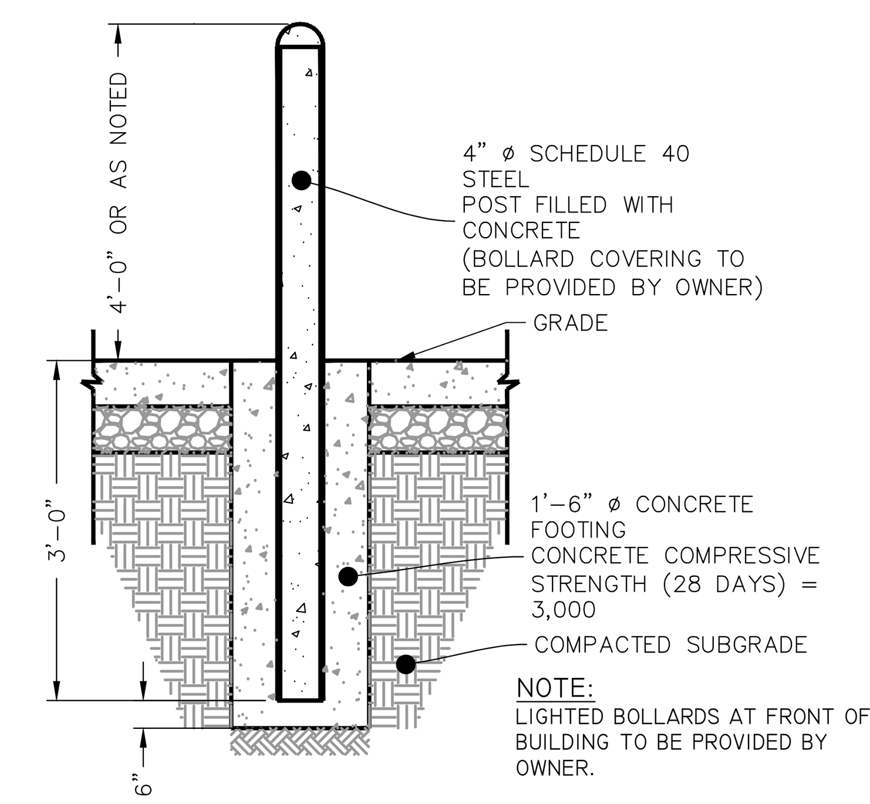


NOTES

1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABALIZED CONSTRUCTION ENTRANCE

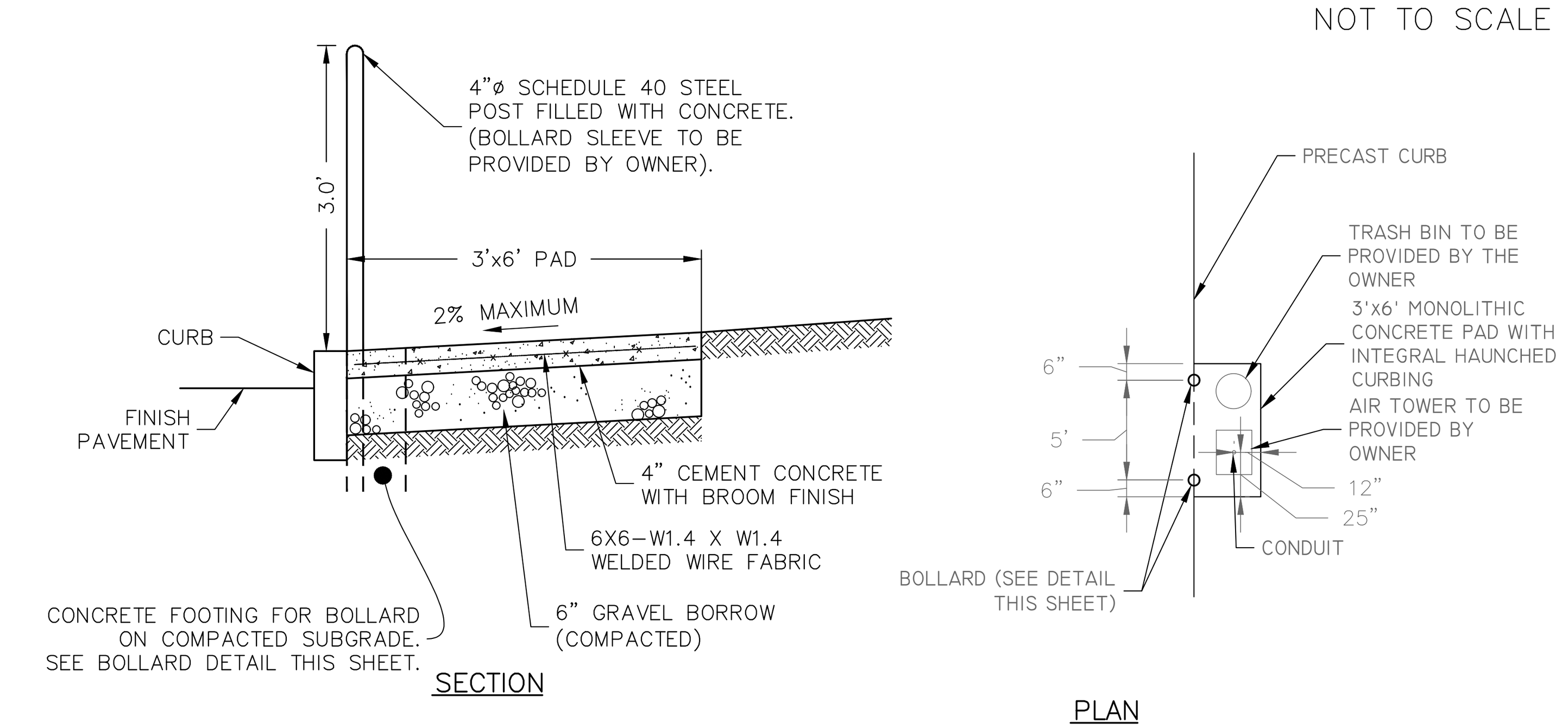
NOT TO SCALE



NOTE:
LIGHTED BOLLARDS AT FRONT OF BUILDING TO BE PROVIDED BY OWNER.

BOLLARD DETAIL

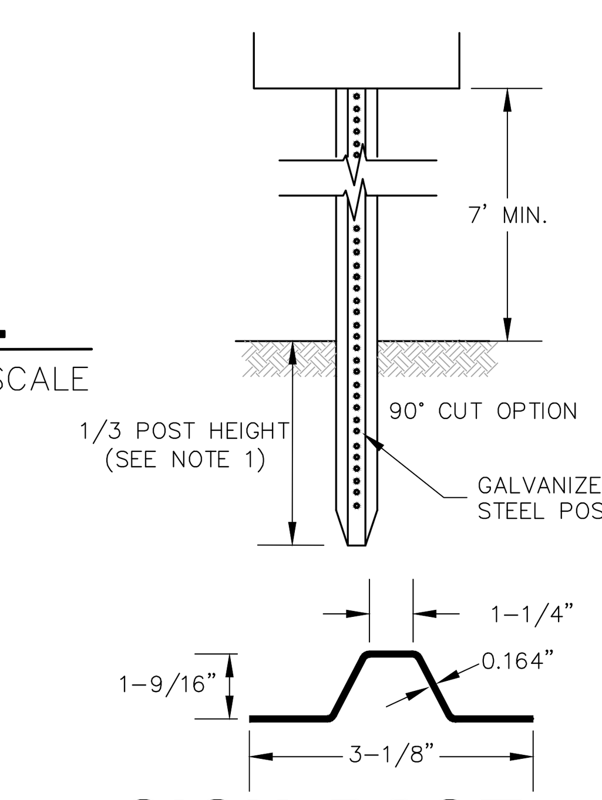
NOT TO SCALE



NOTES:
1. AIR TOWER AND SIGN INSTALLED BY OWNER.

AIR TOWER FOUNDATION DETAIL

NOT TO SCALE



LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN)
HOLES: 3/8" DIAMETER, 1" C–C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070 – 1080)
FINISH: SHALL BE PAINTED WITH 2 COATS OF AN APPROVED MEDIUM GREEN BAKED–ON OR AIR–DRIED PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

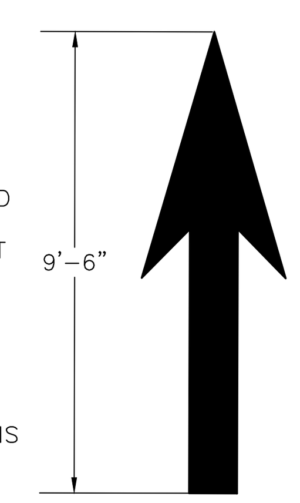
NOTE:
1. WHERE LEDGE APPLICATION EXISTS, DRILL & GROUT TO A MINIMUM OF 2'.
2. ALL SIGNAGE SHALL FOLLOW THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS AND NHDOT STANDARDS.
3. SIGN, HARDWARE, AND INSTALLATION SHALL CONFORM TO THE LATEST NHDOT STANDARD SPECIFICATIONS.

SIGN POST

NOT TO SCALE

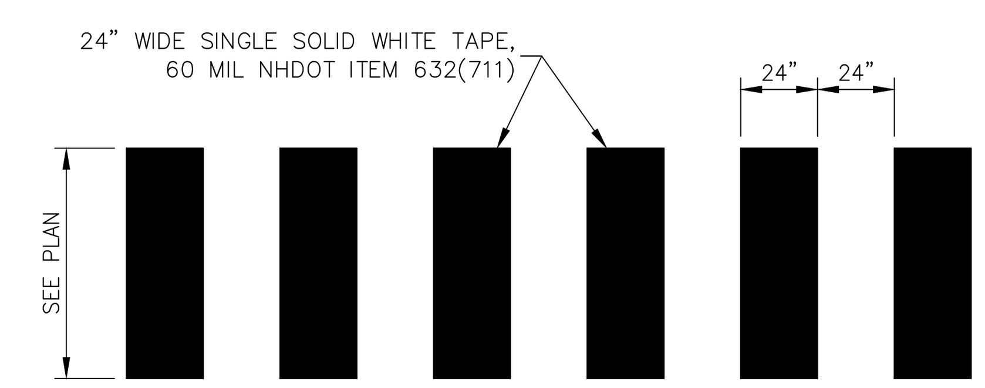
NOTES

1. TRAFFIC PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER AND SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". APPLY TWO COATS.
2. SYMBOLS AND PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.



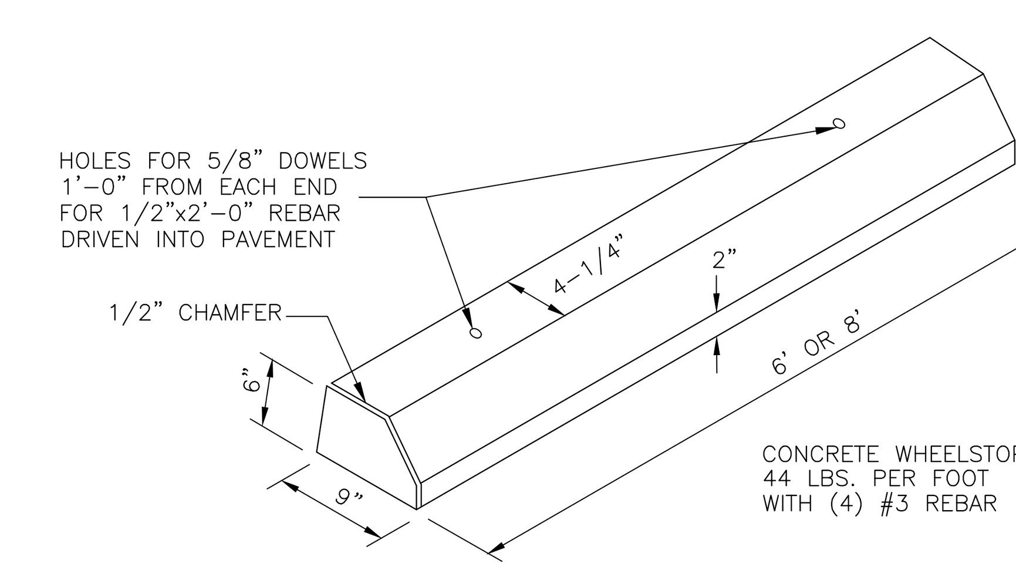
PAINTED ARROW

NOT TO SCALE



LADDER CROSSWALK

NOT TO SCALE

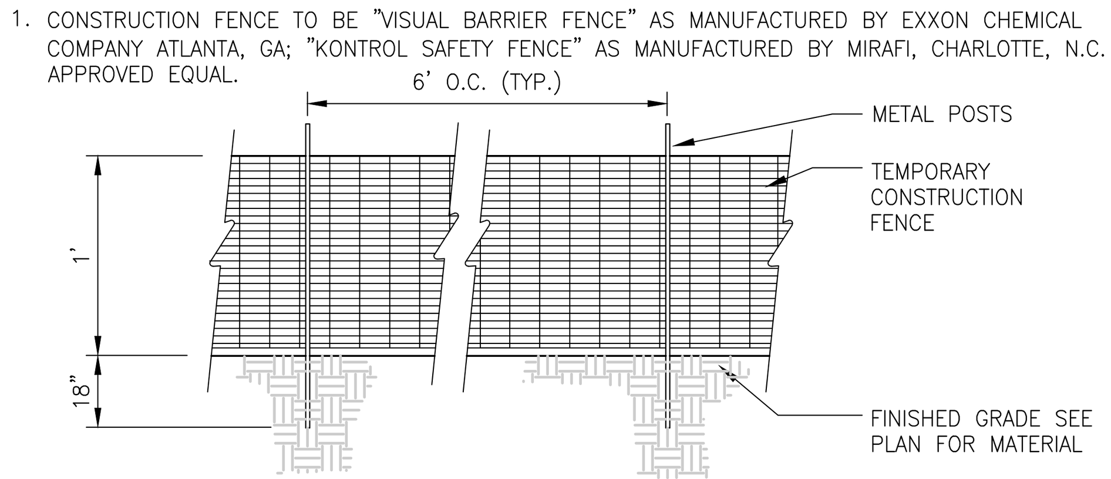


CONCRETE WHEEL STOP

NOT TO SCALE

NOTE

1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.



TEMPORARY CONSTRUCTION FENCE

NOT TO SCALE

TAX MAP 239 LOT 11

CONSTRUCTION DETAILS

PROPOSED GAS STATION & CONVENIENCE STORE

1980 WOODBURY AVENUE

PORTSMOUTH, NEW HAMPSHIRE

OWNED BY

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FILE	46077.16	DR JKC	FB	46077–16_DETAILS	C–14
		CK CRR	CADFILE		

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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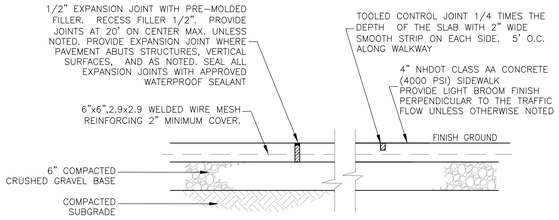
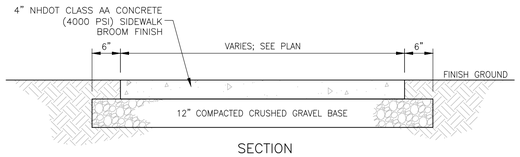
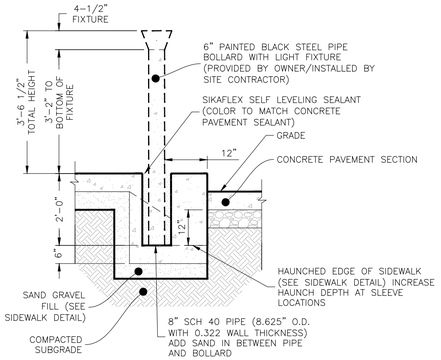




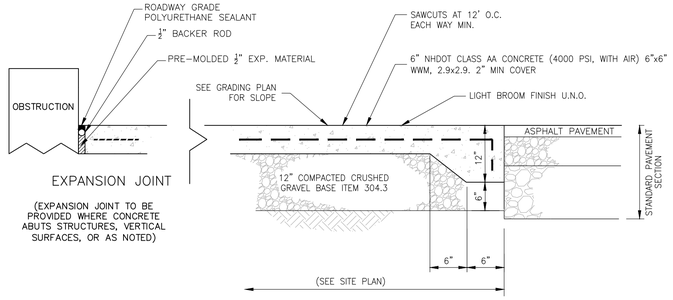
CONCRETE SIDEWALK

NOT TO SCALE



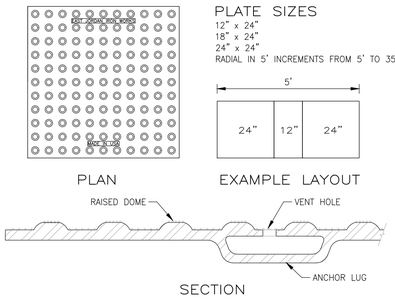
SIDEWALK LIGHTED BOLLARD DETAIL

NOT TO SCALE



LIGHT DUTY CONCRETE PAD

NOT TO SCALE



NOTES

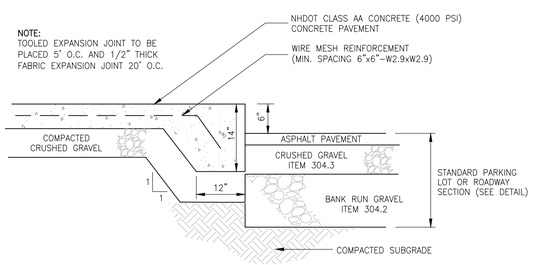
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. USE APPROPRIATE NUMBER AND SIZE OF PLATES TO FILL WIDTH OF WALK (SEE EXAMPLE). FOR CUSTOM SIZING CONTACT MANUFACTURER.
3. FINISH OPTIONS: NATURAL, BLACK ASPHALT DIP, RED, BLACK OR YELLOW COATED.

MANUFACTURER

EAST JORDAN IRON WORKS, INC.
301 SPRING STREET
P.O. BOX 439
EAST JORDAN, MI 49727-0439
(800) 626-4653
FAX (231) 536-4458
WWW.EJIW.COM

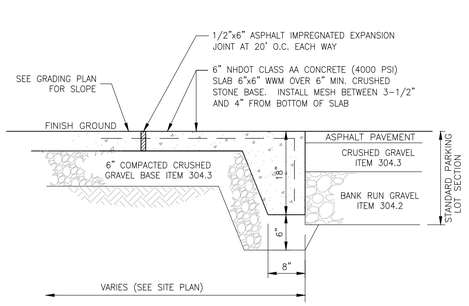
DETECTABLE WARNING PLATE

NHDOT ITEM 902.1 OR APPROVED EQUAL NOT TO SCALE



INTEGRATED CONCRETE CURB AT SIDEWALK

NOT TO SCALE

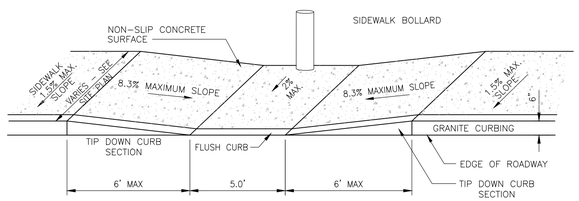


CONCRETE LOADING APRON

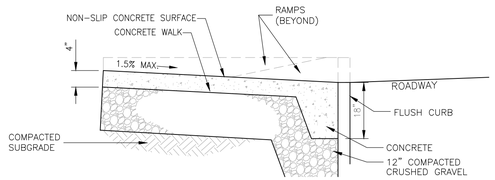
NOT TO SCALE

RAMP AT SIDEWALK INTERSECTION

NOT TO SCALE



STANDARD DUTY PAVEMENT



ACCESSIBLE RAMP RECESSED IN WALK

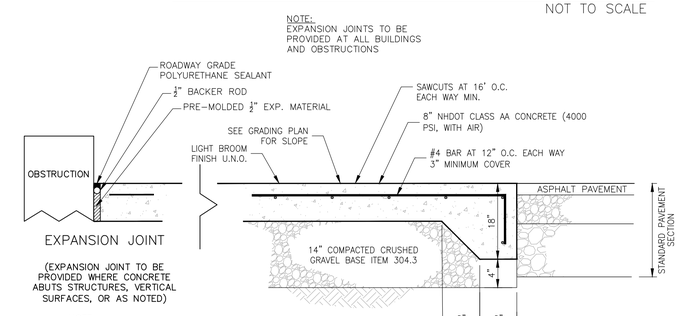
NOT TO SCALE

NOTES

1. SEE GRADING & EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
2. PROVIDE CLEAN BUTT TO EXISTING PAVEMENT– USE TACK COAT. A TACK COAT SHALL ALSO BE PLACED BETWEEN GRAVEL COURSE AND SUCCESSIVE LAYERS OF BITUMINOUS CONCRETE. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
3. REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
4. ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.
5. BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SECTION 401.
6. BITUMINOUS CONCRETE SHALL BE COMPACTED TO AT LEAST 92.5% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D2041 OR AASHTO T209. PLACEMENT TEMPERATURES OF BITUMINOUS CONCRETE MIXES, IN GENERAL, RANGE BETWEEN 270 AND 310 DEGREES FAHRENHEIT.
7. PAVEMENT BASE COURSE AGGREGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.3 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
8. PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOF ROLLED AND COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
9. THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.
10. ALL PARKING SPACES SHALL BE STANDARD DUTY. ALL OTHER LOCATIONS SHALL BE HEAVY DUTY.
11. ALL PAVEMENT TO MEET AASHTO H-20 LOADING.

PAVEMENT SECTIONS

NOT TO SCALE



HEAVY DUTY CONCRETE PAD

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**

REV	DATE	DESCRIPTION	DR	CK
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Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
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Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
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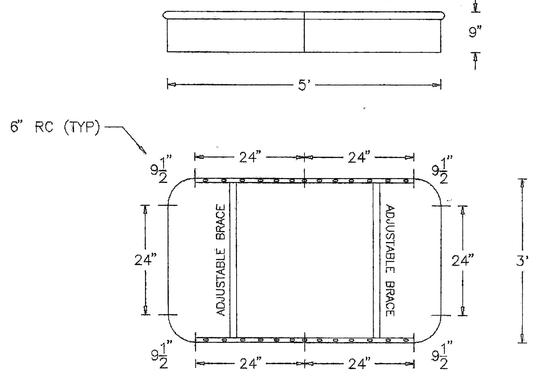
Fax (603) 431-0910
www.tfmoran.com

FILE		DR	JKC	FB		
	46077.16	CK	CRR	CADFILE	46077-16_DETAILS	C-15

STAINLESS STEEL



1 – UNIT REQUIRED

2 – 91" END PIECES – 9" REG.
FABRICATE THIS UNIT IN ONE PIECE

FOR: J.W. KENNEDY COMPANY

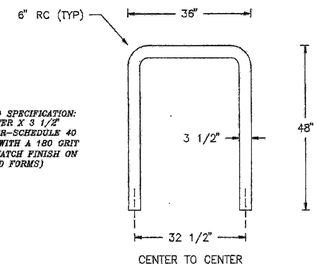
FABRICATED FROM: 12 GA. STAINLESS STEEL. TYPE #304, WITH A #4 POLISH ON MATERIAL.

BURTCO METAL SYSTEMS	DRAWING: 3' X 5'
	SCALE: NOT TO SCALE
DWG. BY: D. SHAUGHNESSY	DATE: 2020
CHK. BY: SAME	CUSTOMER: JOHN W. KENNEDY CO.
MATL: 12 GA. STAINLESS STEEL – 9" HIGH	

STAINLESS STEEL

36"W X 48"H

3" I.D. X 3 1/2" O.D. PIPE

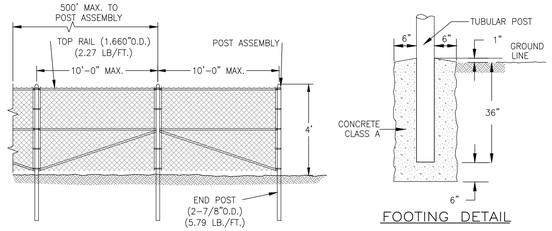


STAINLESS GUARD SPECIFICATION: 3" INSIDE DIAMETER X 3 1/2" OUTSIDE DIAMETER–SCHEDULE 40 STAINLESS PIPE WITH A 180 GRIT (#4 POLISH–TO MATCH FINISH ON STAINLESS ISLAND FORMS)

1 – UNIT REQUIRED

FOR: JOHN W. KENNEDY CO.

BURTCO METAL SYSTEMS	DRAWING: 36" X 48"
	SCALE: NOT TO SCALE
DWG. BY: D. SHAUGHNESSY	DATE: 2020
CHK. BY: SAME	CUSTOMER: JOHN W. KENNEDY CO.
MATL: SCHEDULE 40 STAINLESS STEEL PIPE	



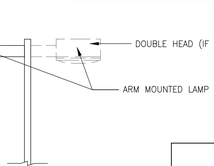
ELEVATION

FOOTING DETAIL

ALL END POSTS SHALL HAVE ONE BRACE
ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES, WITH A MAXIMUM SPACING OF BETWEEN POST ASSEMBLIES OF 500 FEET.

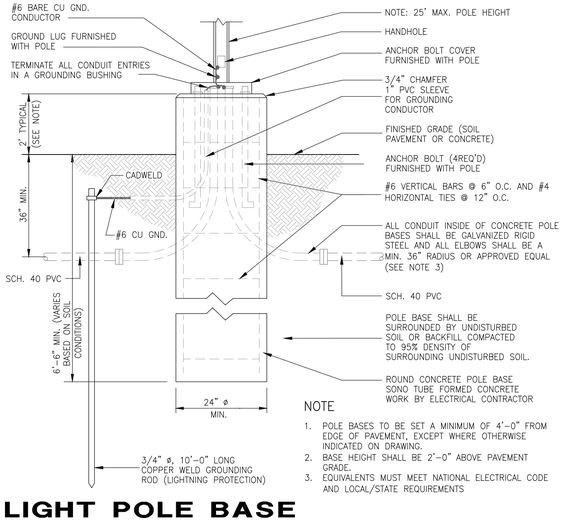
CHAIN LINK FENCE

NOT TO SCALE



TRASH ENCLOSURE GATE STOP

NOT TO SCALE

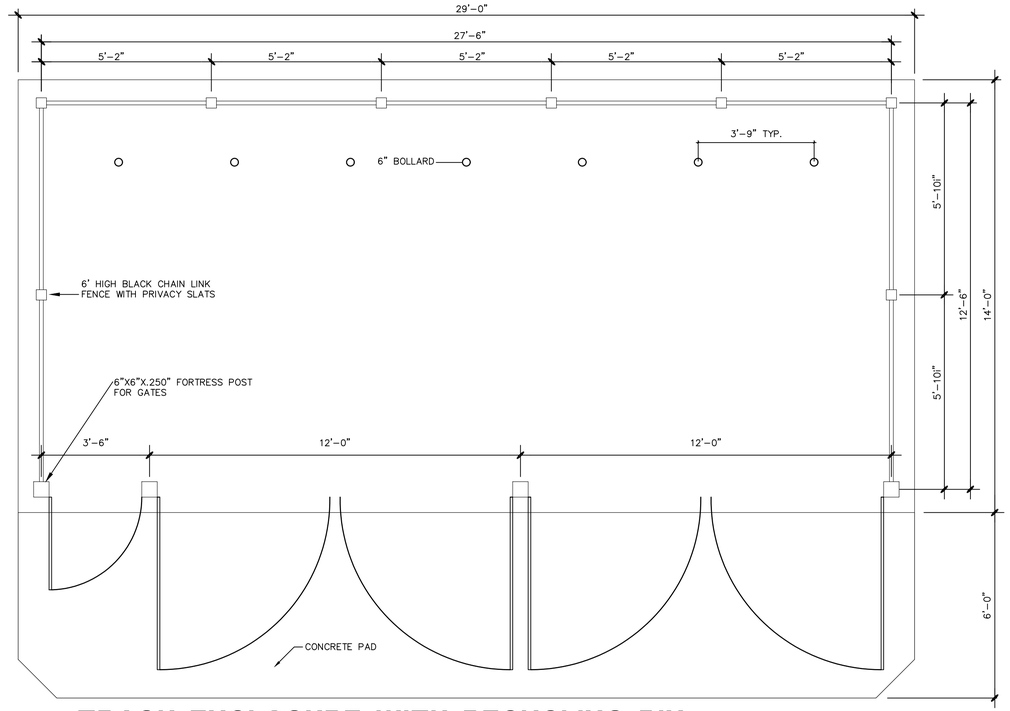


NOTE

1. POLE BASES TO BE SET A MINIMUM OF 4'–0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON DRAWING.
2. BASE HEIGHT SHALL BE 2'–0" ABOVE PAVEMENT GRADE.
3. EQUIVALENTS MUST MEET NATIONAL ELECTRICAL CODE AND LOCAL/STATE REQUIREMENTS

LIGHT POLE BASE

NOT TO SCALE

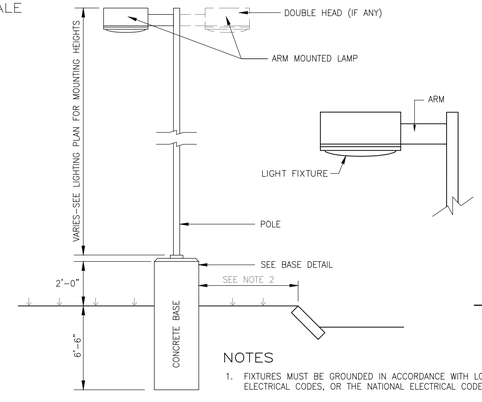


TRASH ENCLOSURE WITH RECYCLING BIN

NOT TO SCALE

NASHUA DUMPSTER ENCLOSURE (SAME PROPOSED FOR CURRENT SITE)

NOT TO SCALE



NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. POLE BASES TO BE SET A MINIMUM OF 4'–0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON DRAWING. BASE HEIGHT SHALL BE 2'–0" ABOVE PAVEMENT GRADE.
3. LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING–MOUNTED FIXTURES AT DOORWAYS, ETC. MAY BE REQUIRED.
4. SEE LIGHTING PLAN FOR FIXTURE SCHEDULE AND MOUNTING HEIGHTS.

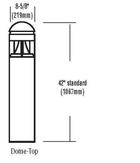
LIGHT POLE

NOT TO SCALE

LED BOLLARD LIGHT (XBVRD)

Crossover LED LIGHTING TECHNOLOGY

DIMENSIONS



U.S. and international patents pending

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - An array of 24 select high-brightness LEDs (5200K° CW), (3300K° WW), (4100K° NW),

REFLECTOR/DISTRIBUTION - Indirect. Photometric data is tested in accordance to IESNA Procedures.

HOUSING - Crown: Virtually tamper-proof concealed stainless steel fasteners in the cast aluminum crown assembly.

Lower Housing: One-piece, .322 inch seamless, extruded aluminum. Various heights are available in 6" increments starting at a minimum of 30" (maximum height is 60"). Lower housing attaches to cast aluminum base plate with four stainless steel roll pins.

OPTIONAL ROUGHNECK REINFORCEMENT - .375" thick zinc plated, steel base plate with welded U shaped reinforcement. 3/8" diameter 302 stainless steel roll pins with 10,000 lb. shear load.

LENS/GASKET - One-piece, clear acrylic lens enclosure fully gasketed at top and bottom edge

ANCHOR BOLTS - Requires four heavy-duty 3/8" x 10" galvanized steel anchor bolts.

ELECTRICAL - Universal voltage power supply (120-277 VAC, 50/60 Hz). 347-480V also available - 400mA is standard. Surge protector meets IEEE C62.41.2-2002, Scenario 1 Location Category C.

DRIVER - State-of-the-art driver technology designed specifically LSI LED light sources provides unsurpassed system efficiency. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Each fixture is finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, platinum plus, buff, white, graphite, satin verde green and metallic silver.

DECAL STRIPING - Color-coordinated decal is available in 9 standard decal colors or by custom order from a selection of hundreds. Decal is guaranteed for five years against peeling, cracking, or fading.

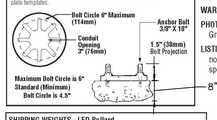
WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group *at lighting.apps@lsi-industries.com.*

LISTING - Listed to U.S. and Canadian safety standards. Suitable for wet locations. DLC - not all possible distributions are DLC approved. Please refer to LSI or DLC web site for specific listings.

BASE DETAIL

Note: Base plate dimensions may change without notice. Do not use for setting anchor bolts. Consult factory for base plate templates.



Also available in traditional light sources

SHIPPING WEIGHTS - LED Bollard

Catalog #	Est. Weight (kg/lbs.)	Length (mm/in.)	Width (mm/in.)	Height (mm/in.)
XBVRF	25/56	1318/51.875	311/12.25	2519/875
XBVFHD	25/56	1318/51.875	311/12.25	2519/875
Anchor Bolts (3/8" x 10")	1/set			

LIGHT OUTPUT - XBVR

Description	# of LEDS	Output Lumens	Watts
Cool White XBVRL ID	24	1338	38
Neutral White XBVRI ID	24	1224	38
Warm White XBVRE ID	24	866	38

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.

American Made · ETL Intertek Suitable for wet locations · ARRA Funding Compliant · DESIGNLIGHTS CONSORTIUM

Project Name _____ Fixture Type _____

Catalog # _____

08/21/12

BOLLARD LIGHT (DECORATIVE)

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**

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Seacoast Division
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
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170 Commerce Way, Suite 102
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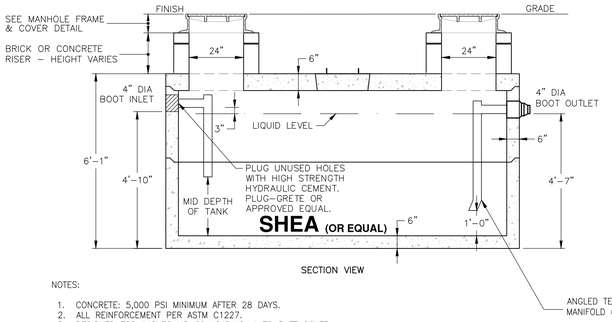
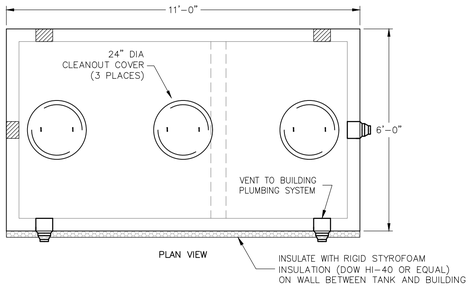
FILE	DR	JKC	FB		
46077.16	CK	CRR	CADFILE	46077-16_DETAILS	C–16

DIG SAFE SYSTEM, INC. CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



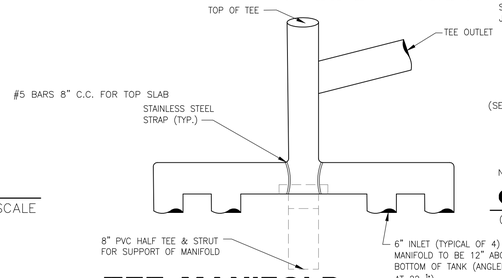


NOTES:

1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227.
3. DESIGNED FOR AASHTO HS–20 LOADING, 1 TO 5 FT COVER.
4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN
5. OPTIONAL BAFFLE WALL AVAILABLE.
6. GREASE TRAPS SHALL HAVE A MINIMUM DEPTH OF 4 FEET AND MINIMUM CAPACITY OF 1,000 GALLONS, AND SHALL HAVE SUFFICIENT CAPACITY TO PROVIDE AT LEAST A 36 HOUR DETENTION PERIOD FOR THE KITCHEN FLOW. KITCHEN FLOW SHALL BE CALCULATED IN ACCORDANCE WITH 310 CMR 15.203.
7. THE INLET TEE SHALL EXTEND TO THE MID DEPTH OF THE TANK. THE OUTLET TEE SHALL EXTEND TO WITHIN 12 INCHES OF THE BOTTOM OF THE TANK. TEES SHALL BE SCHEDULE 40 PVC AND PROPERLY SUPPORTED BY A HANGER, STRAP, OR OTHER DEVICE.
8. GREASE TRAPS SHALL BE PROVIDED WITH THREE (3) 20 INCH DIAMETER MANHOLE FRAMES AND COVERS TO GRADE.
9. PROVIDE VENT. CONNECT TO VENT IN BUILDING PLUMBING SYSTEM.

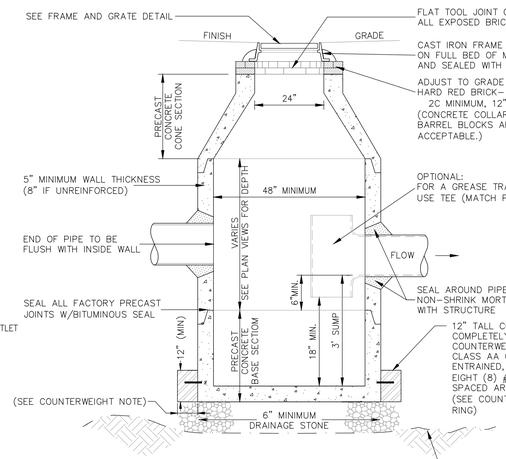
1,500 GALLON GREASE TRAP CHAMBER

NOT TO SCALE



TEE MANIFOLD

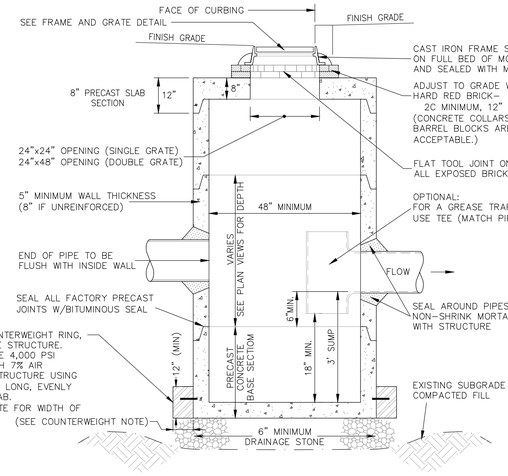
GREASE TRAP — SCALE AS NOTED



NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478

CATCH BASIN

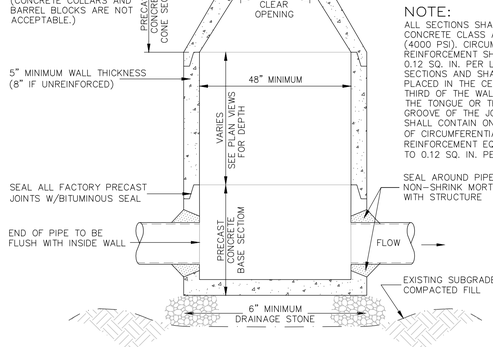
CONCENTRIC CONE — NOT TO SCALE



NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478

CATCH BASIN

SLAB TOP — NOT TO SCALE

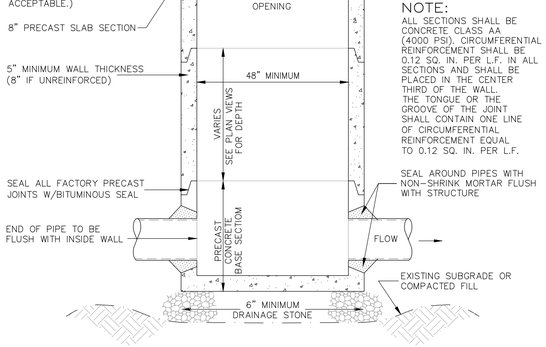


NOTE:
ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.

NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478

DRAIN MANHOLE

CONCENTRIC CONE — NOT TO SCALE



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NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478

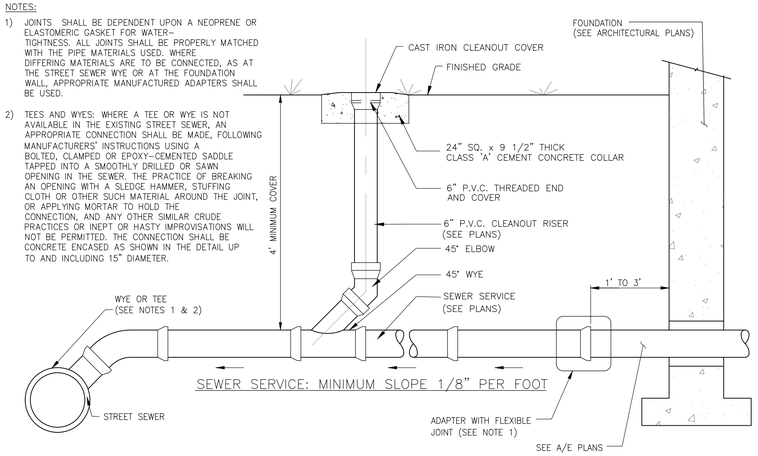
DRAIN MANHOLE

SLAB TOP — NOT TO SCALE

NOTES:

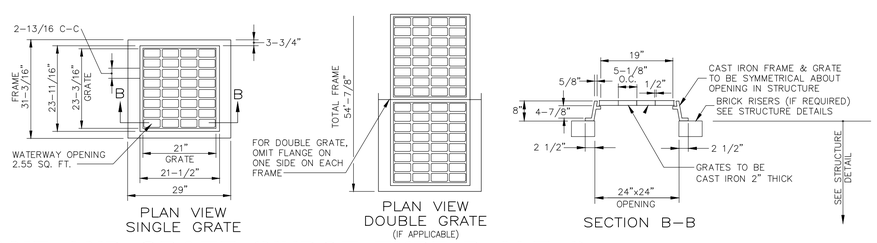
1) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER–TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

2) 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 IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL 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 & CLEANOUT

NOT TO SCALE



FRAME AND GRATE (NHDOT TYPE B ALT 1)

NOT TO SCALE

TAX MAP 239 LOT 11

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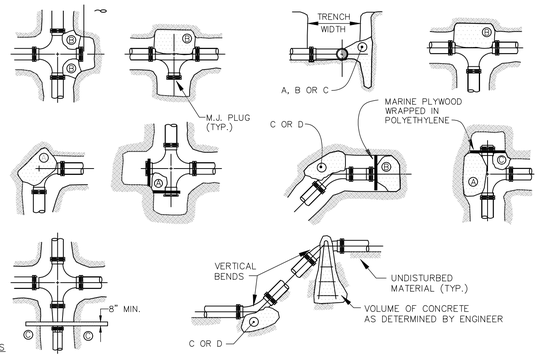
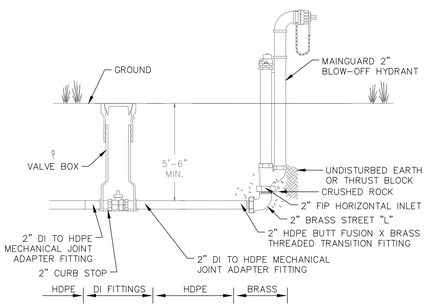


NOTES

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, ¾" 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

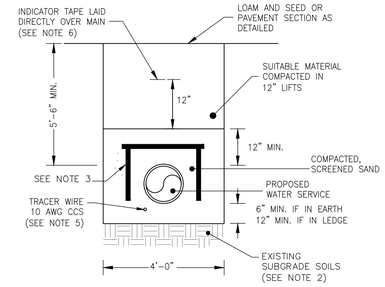


NOTES

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 ECLIPES #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" FIP 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 2-1/2" NST.
7. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE.
8. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.

BLOW OFF HYDRANT

NOT TO SCALE

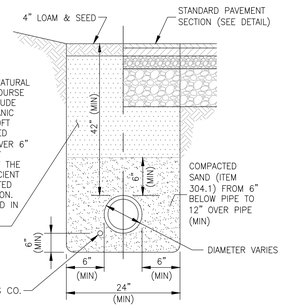


NOTES

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 PLACED 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.

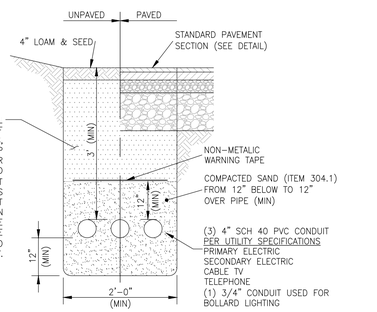
WATER TRENCH

NOT TO SCALE



GAS MAIN TRENCH

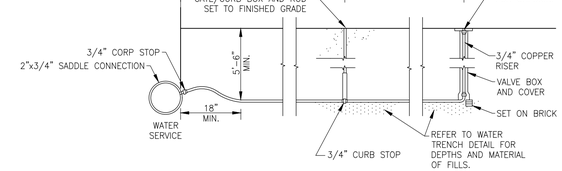
NOT TO SCALE



ELECTRIC/COMMUNICATIONS TRENCH

NOT TO SCALE

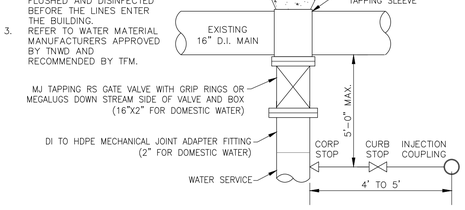
TEST PRESSURE = 200psi	REACTION TYPE	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL PIPE SIZE 4"	6"	8"	10"	12"
	A 90°	0.89	2.19	3.82	11.14	17.24
	B 180°	0.65	1.55	2.78	8.38	12.00
	C 45°	0.48	1.19	2.12	6.02	9.32
	D 22-1/2°	0.25	0.60	1.06	3.08	4.74
	E 11-1/4°	0.13	0.30	0.54	1.54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



SECTION VIEW

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.



PLAN VIEW

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 – TYLER OR APPROVED EQUAL
- WATER SERVICE SHALL BE CTS PE SDR9, MEETING THE REQUIREMENTS OF ASTM D2737, AWWA C901 AND NDF STANDARDS 14 AND 61 IN CONFORMANCE WITH THE TNWD STANDARD SPECIFICATIONS
- JOINT RESTRAINTS – GRIP RINGS BY ROMAC BY EJ PRESCOT 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 PRECSCOTT
- MECHANICAL JOINT ADAPTER FITTING – INTEGRIFUSE BY EJ PRESCOTT
- MECHANICAL JOINT RETAINER GLAND – FORD BY EJ PRESCOTT

WATER MATERIAL MANUFACTURERS

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**

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

Seacoast Division
TFM
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

FILE		DR	JKC	FB		
	46077.16	CK	CRR	CADFILE	46077-16_DETAILS	C-18

GENERAL NOTES

1. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.

3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06/AASHTO M199-93, RATED FOR HS-20 LOADING WITH CONCRETE STRENGTH OF 4000 PSI OR GREATER.

4. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.

5. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.

6. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.

7. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.

8. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

9. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:

   SIKAFLEX-12-SL

   SONNEBORN BUILING PRODUCTS-SONOLASTIC SL-1

10. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER, MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.

11. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.

    (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STARNDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
    (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
        1. THE INITIAL VACUUM GUAGE TEST PRESSURE SHALL BE 10 INCHES Hg.
        2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE;
           A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
           B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
           C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
    (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
    (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
    (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT

12. ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.

13. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.

    MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
    (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
    (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME

    CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".

14. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.

15. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.

16. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANNIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

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

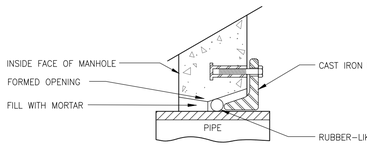
17. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WIbHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.

18. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.

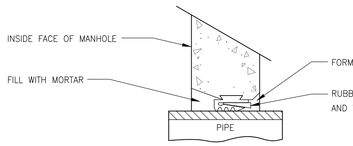
19. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:

    A. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
    B. CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
    C. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.
    D. ON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.

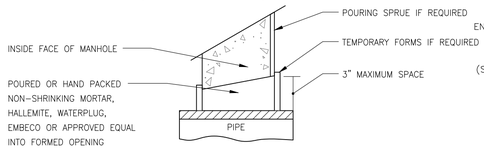
20. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.



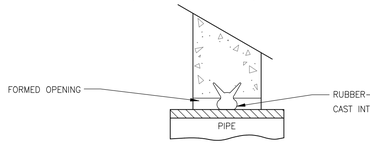
RES-SEAL
(OR ACCEPTABLE SUBSTITUTE)



PRESS-WEDGE II
(OR ACCEPTABLE SUBSTITUTE)



NON-SHRINKING MORTAR
(OR ACCEPTABLE SUBSTITUTE)



A-LOK
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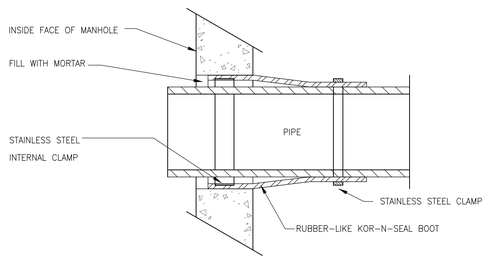
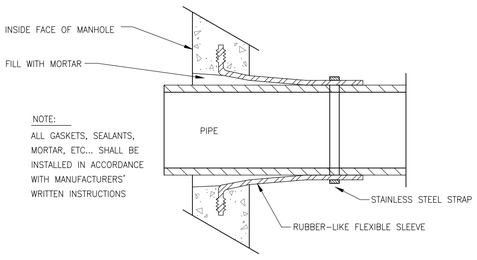


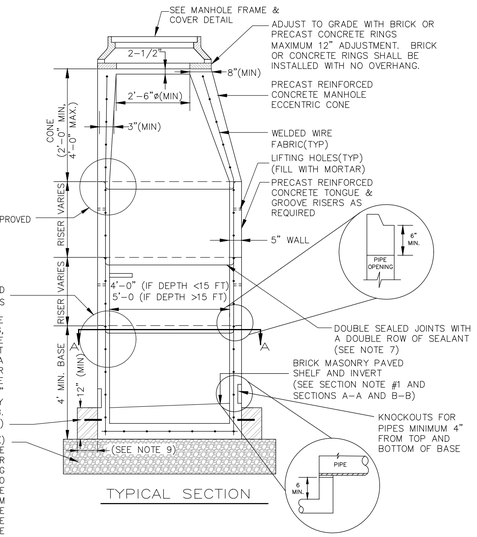
KOR-N-SEAL JOINT SLEEVE
(OR ACCEPTABLE SUBSTITUTE)



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
(OR ACCEPTABLE SUBSTITUTE)

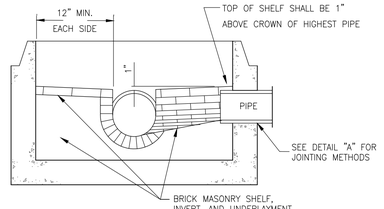
DETAIL "A" - PIPE TO MANHOLE JOINTS



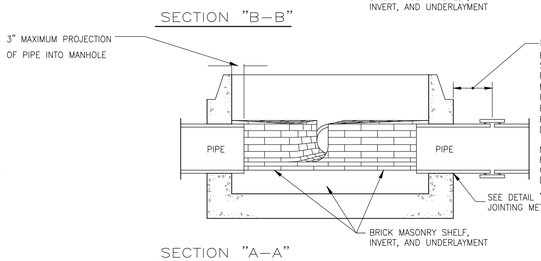
TYPICAL SECTION

NOTES:

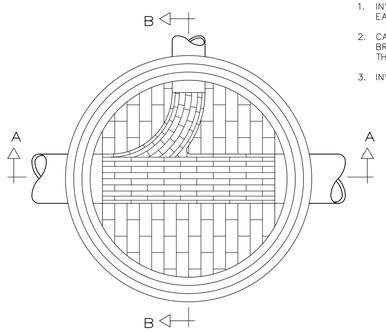
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE.
3. BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN.



SECTION "B-B"



SECTION "A-A"



TYPICAL MANHOLE - PLAN VIEW

NOTES
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
3. INVERT BRICKS SHALL BE LAID ON EDGE.

NOTES

1. UNDERLAYMENT OF MANHOLE INVERT AND SHELF SHALL BE BRICK MASONRY PER ENV-WQ 704.12(K).
2. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
3. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
4. INVERT BRICKS SHALL BE LAID ON EDGE.
5. PRECAST CONCRETE MANHOLES SHALL MEET AASHTO M199-93/ ASTM C478-90B, RATED FOR HS-20 LOADING WITH CONCRETE STRENGTH OF 4000 PSI OR GREATER.
6. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
7. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.

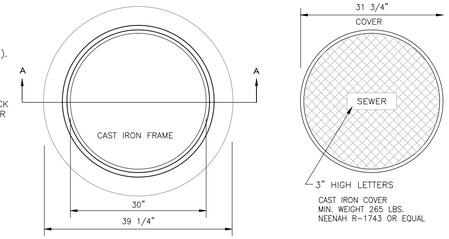
   ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

   STATE OF NEW HAMPSHIRE APPROVED PRODUCTS
   A) SIKAFLEX-12-SL
   B) SONNEBORN BUILDING PRODUCTS SONOLASTIC SL-1

   MANHOLE STEPS ARE PROHIBITED BY THE TOWN OF TILTON.

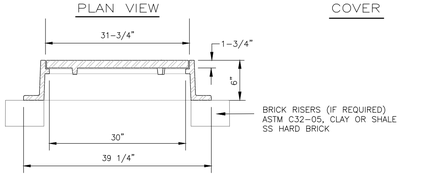
COUNTERWEIGHT NOTE:

1. 4' DIAMETER MANHOLES
   a. LESS THAN 4' DEEP MUST HAVE 6" WIDE COUNTERBALANCE RINGS.
   b. EQUAL TO OR GREATER THAN 4' AND LESS THAN 13' DEEP MUST HAVE 8" WIDE COUNTERBALANCE RINGS.
   c. EQUAL TO OR GREATER THAN 13' DEEP MUST HAVE 10" WIDE COUNTERBALANCE RINGS.
2. 5' DIAMETER MANHOLES
   d. LESS THAN 9' DEEP MUST HAVE 10" WIDE COUNTERBALANCE RINGS.
   e. EQUAL TO OR GREATER THAN 9' DEEP AND LESS THAN 18' DEEP MUST HAVE 12" WIDE COUNTERBALANCE RINGS.
   f. EQUAL TO OR GREATER THAN 18' DEEP MUST HAVE 14" WIDE COUNTERBALANCE RINGS.
3. 6' DIAMETER MANHOLES:
   a. LESS THAN 7' DEEP MUST HAVE 10" WIDE COUNTERBALANCE RINGS.
   b. EQUAL TO OR GREATER THAN 7' DEEP AND LESS THAN 10' DEEP MUST HAVE 12" WIDE COUNTERBALANCE RINGS.
   c. EQUAL TO OR GREATER THAN 10' DEEP AND LESS THAN 17' DEEP MUST HAVE 14" WIDE COUNTERBALANCE RINGS.
   d. EQUAL TO OR GREATER THAN 17' DEEP MUST HAVE 16" WIDE COUNTERBALANCE RINGS.



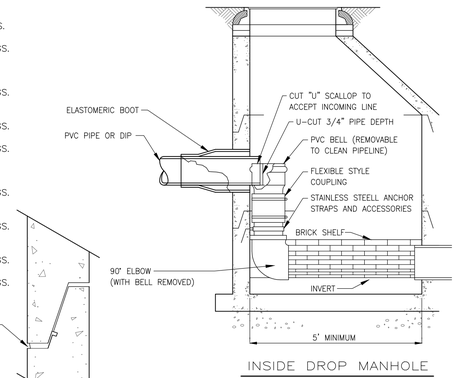
PLAN VIEW

COVER



SECTION A-A

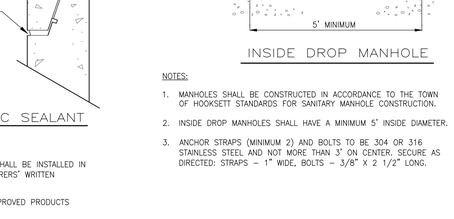
MANHOLE FRAME & COVER
HEAVY DUTY



INSIDE DROP MANHOLE

NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE TO THE TOWN OF HOOKSETT STANDARDS FOR SANITARY MANHOLE CONSTRUCTION.
2. INSIDE DROP MANHOLES SHALL HAVE A MINIMUM 5' INSIDE DIAMETER.
3. ANCHOR STRAPS (MINIMUM 2) AND BOLTS TO BE 304 OR 316 STAINLESS STEEL AND NOT MORE THAN 3' ON CENTER. SECURE AS DIRECTED: STRAPS - 1" WIDE, BOLTS - 3/8" X 2 1/2" LONG.



ELASTOMERIC SEALANT

NOTES:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

STATE OF NEW HAMPSHIRE APPROVED PRODUCTS
A) SIKAFLEX-12-SL
B) SONNEBORN BUILDING PRODUCTS SONOLASTIC SL-1

DETAIL "B" - HORIZONTAL JOINTS

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**

REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

Seacoast Division

TFM

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
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FILE	46077.16	DR	JKC	FB	46077-16_DETAILS	C-19
		CK	CRR	CADFILE		

DIG SAFE
811
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STANDARD MANHOLE
NOT TO SCALE

SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. 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

      2. JOINTS SEALS 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.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. 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.
      2. 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

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) 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 DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) 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 IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL 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.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED 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 DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. 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.

   B. 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.

   C. DRY FLUORESCENE 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.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

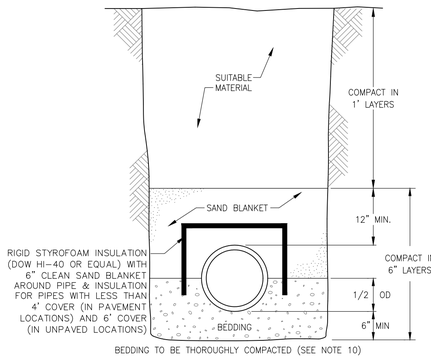
10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

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.

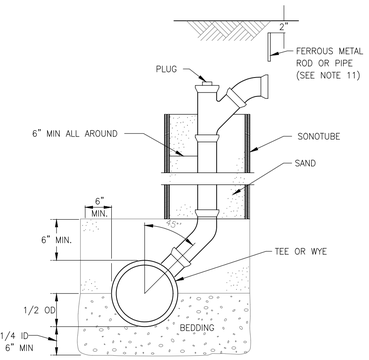
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

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

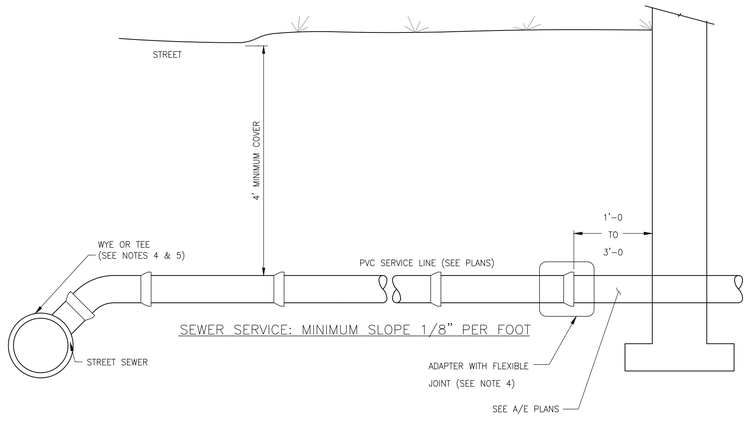
NOT TO SCALE



NOTES
1. BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.
2. SEE NOTE 12.

CHIMNEY

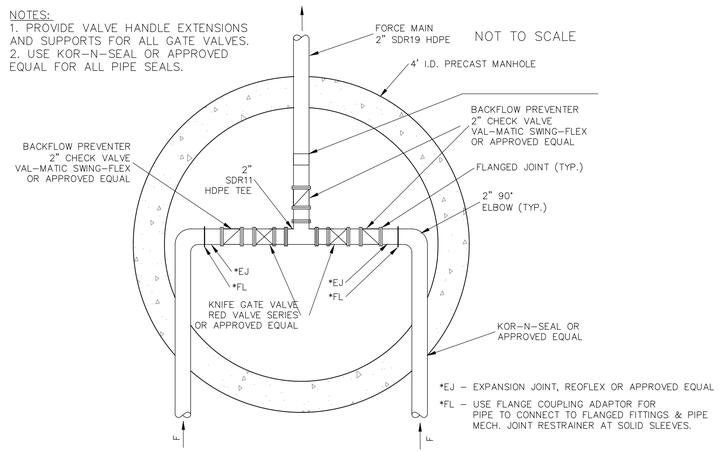
NOT TO SCALE



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.

NOT TO SCALE



*EJ – EXPANSION JOINT, REOFLEX OR APPROVED EQUAL

*FL – USE FLANGE COUPLING ADAPTOR FOR PIPE TO CONNECT TO FLANGED FITTINGS & PIPE MECH. JOINT RESTRAINER AT SOLID SLEEVES.

VALVE MANHOLE DETAIL

PUMP STATION NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. 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

3. 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.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. 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.

6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. 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.

8. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
9. 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 CONSTUCTION 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.

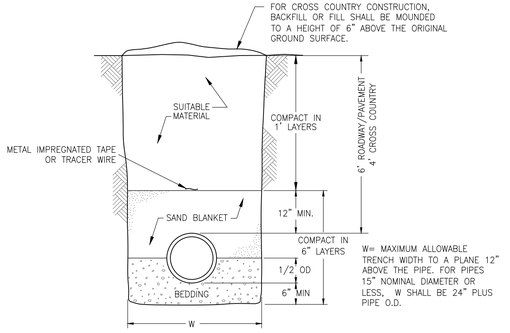
    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL 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 MOUNDED 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

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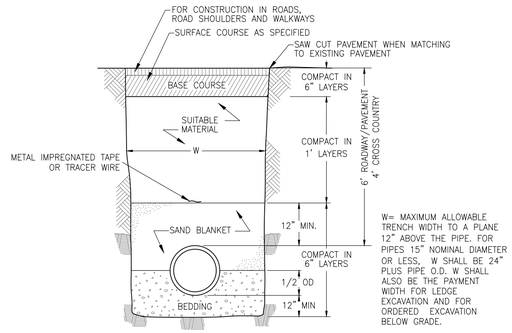

LEDGE CONSTRUCTION

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

1"=40' (11"x17")

SCALE: 1"=20' (22"X34") **NOVEMBER 17, 2025**

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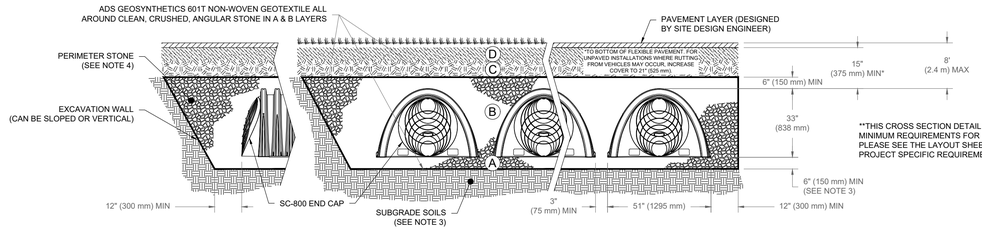
ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	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	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

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. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION 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".



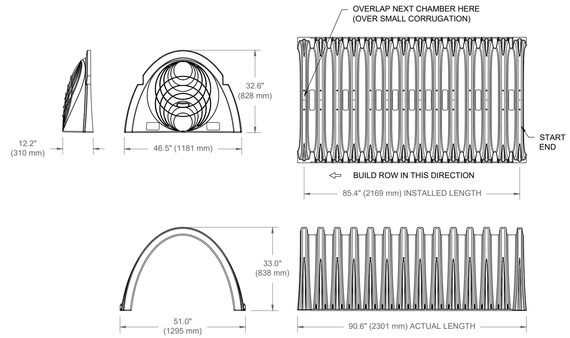
****THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION. PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS.**

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" (50 mm).
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%, 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

SC-800 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	78.4 CUBIC FEET	(2.22 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

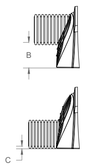
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	14.7 CUBIC FEET	(0.42 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (150 mm) STONE ABOVE AND BELOW CHAMBER, 3" (75 mm) BETWEEN CHAMBERS
**ASSUMES 6" (150 mm) STONE ABOVE AND BELOW END CAPS, 3" (75 mm) BETWEEN ROWS, 12" (300 mm) BEYOND END CAPS

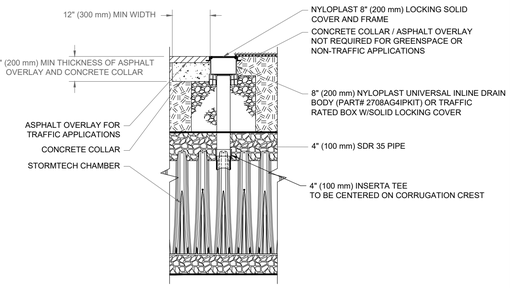
PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800ECEZ	24" (600 mm)	---	2.3" (58 mm)



NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-800 TECHNICAL SPECIFICATIONS

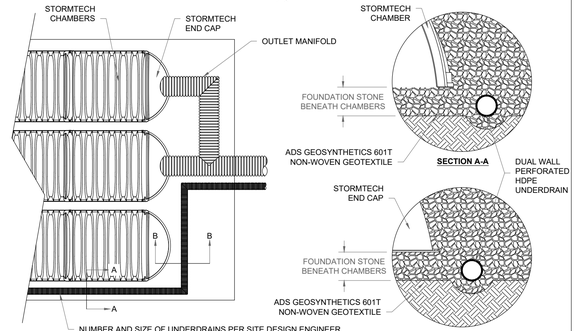


NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

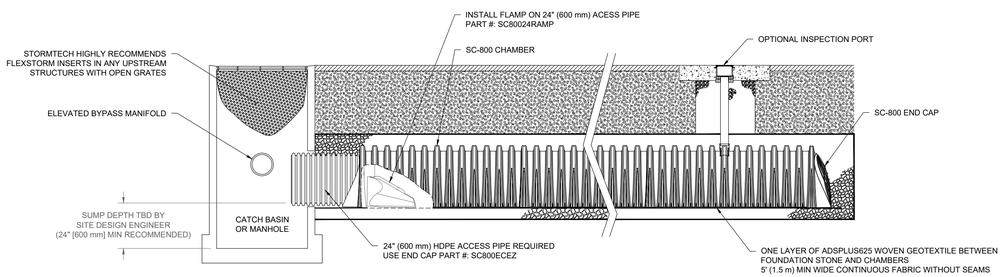
4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)
NTS

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

UNDERDRAIN DETAIL
NTS



5 UNDERDRAIN DETAIL



SC-800 ISOLATOR ROW PLUS DETAIL
NTS

3 SC-800 ISOLATOR ROW PLUS DETAIL

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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**

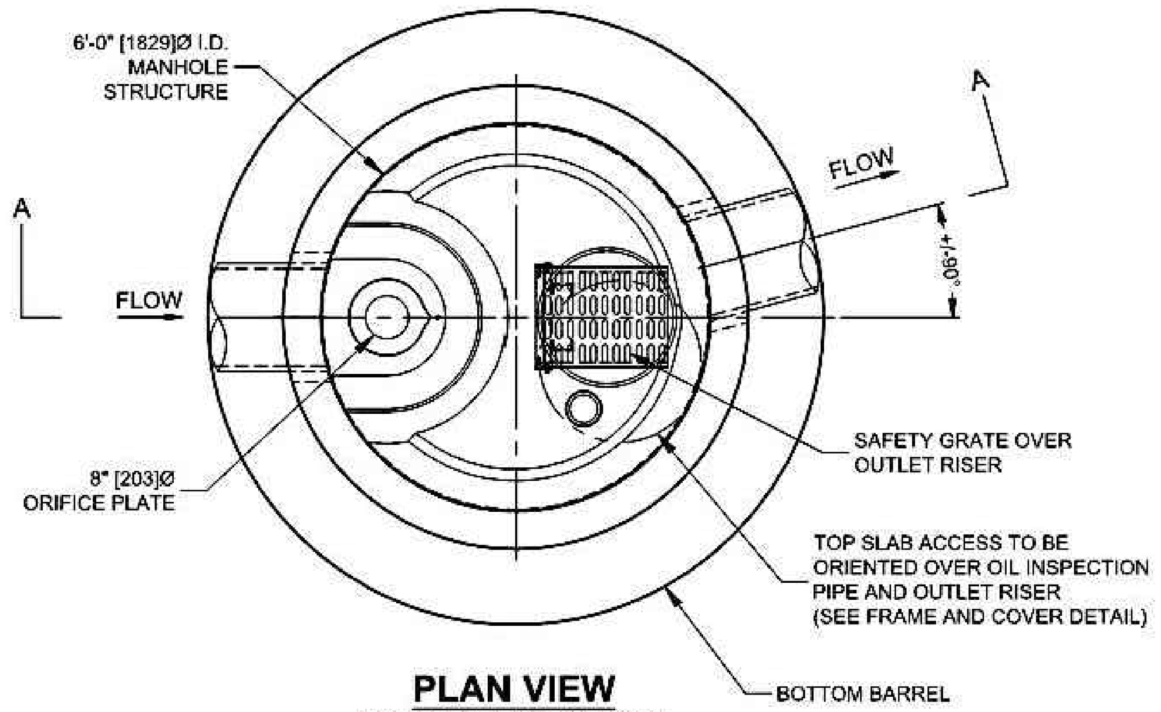
REV	DATE	DESCRIPTION	DR	CK
1	12/22/2025	REVISED PER TAC COMMENTS	JKC	CRR

Seacoast Division
TFM
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

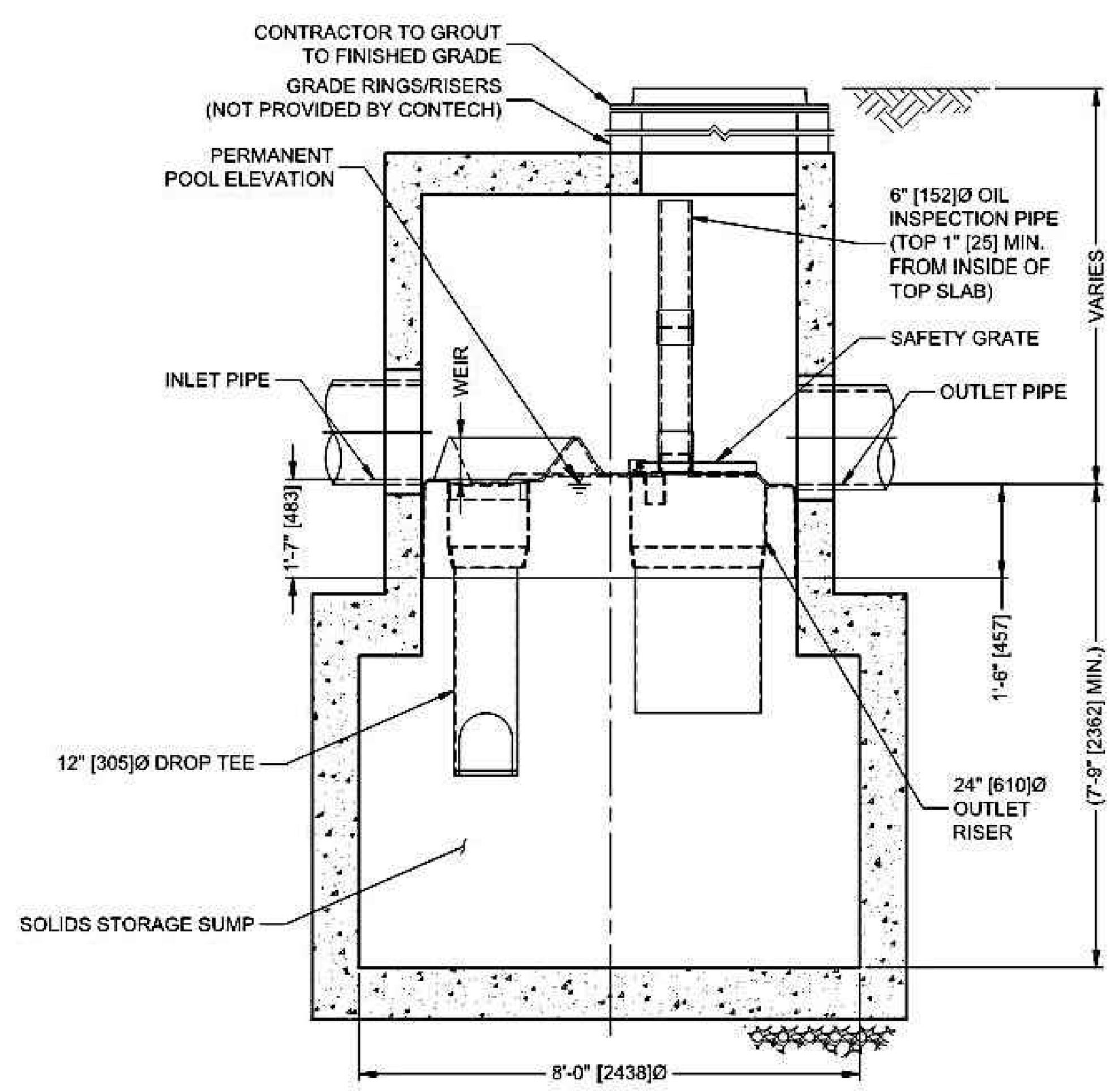
FILE	DR	CK		
46077.16	JKC	CRR	FB / CADFILE	46077-16_DETAILS

C-21

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



PLAN VIEW
TOP SLAB NOT SHOWN



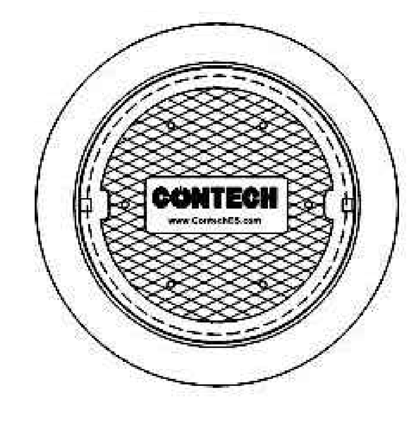
SECTION A-A

Stormceptor®

FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

STORMCEPTOR DESIGN NOTES

THE STANDARD STC2400 CONFIGURATION IS SHOWN.



FRAME AND COVER
(MAY VARY)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

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"

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 SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
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-FLOTATION 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.

CONTECH®
ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

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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FILE	46077.16	DR JKC	FB	46077-16_DETAILS	C-22
		CK CRR	CADFILE		

DIG SAFE
MA ME NH RI VT
CALL 811 TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2025 - 10:47am
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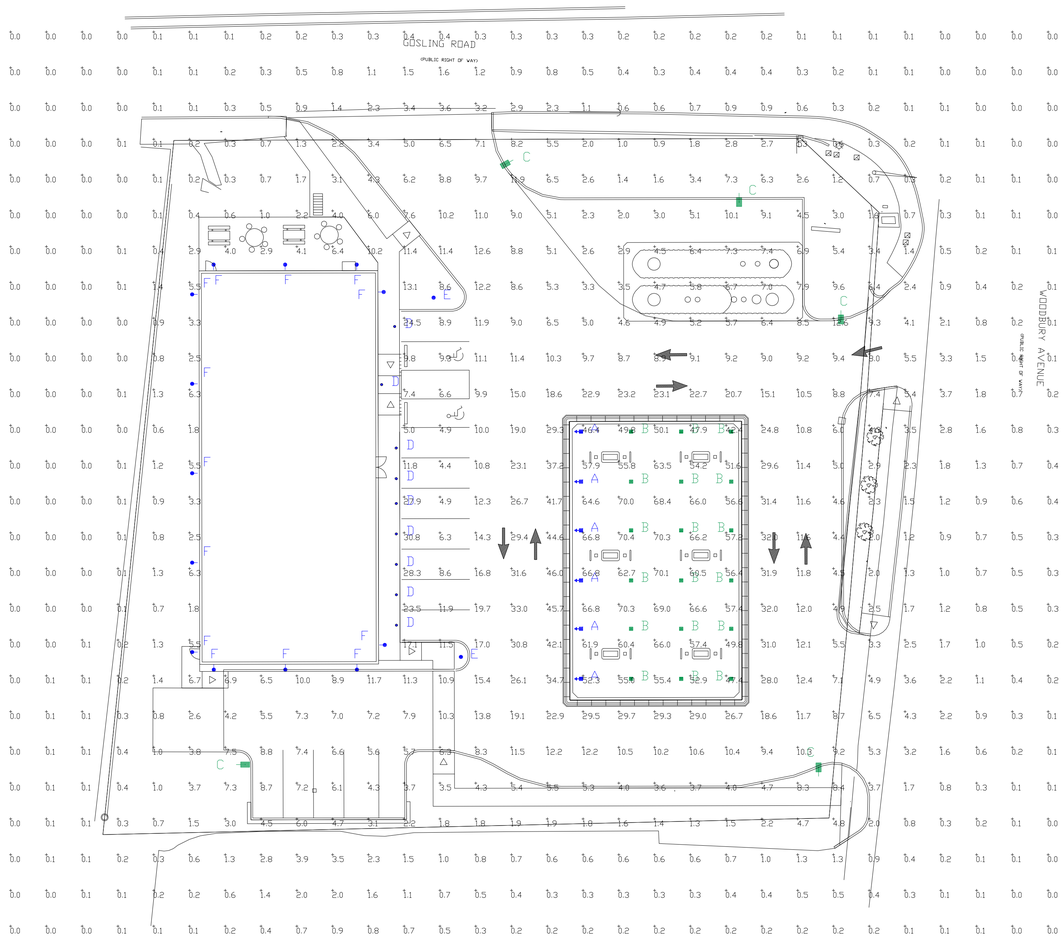


Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
ALL CALC POINTS	Illuminance	Fc	7.62	70.4	0.0	N.A.	N.A.	0
CANOPY	Illuminance	Fc	59.53	70.4	42.4	1.40	1.66	
INSIDE CURB	Illuminance	Fc	12.76	46.0	2.0	6.38	23.00	

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

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 mounting hardware or poles. 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 "U0" 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.

Total Project Watts
Total Watts = 4417.197

10000 ALLIANCE RD. CINCINNATI, OHIO 45242 USA
(513) 793-3200 • FAX (513) 793-4263

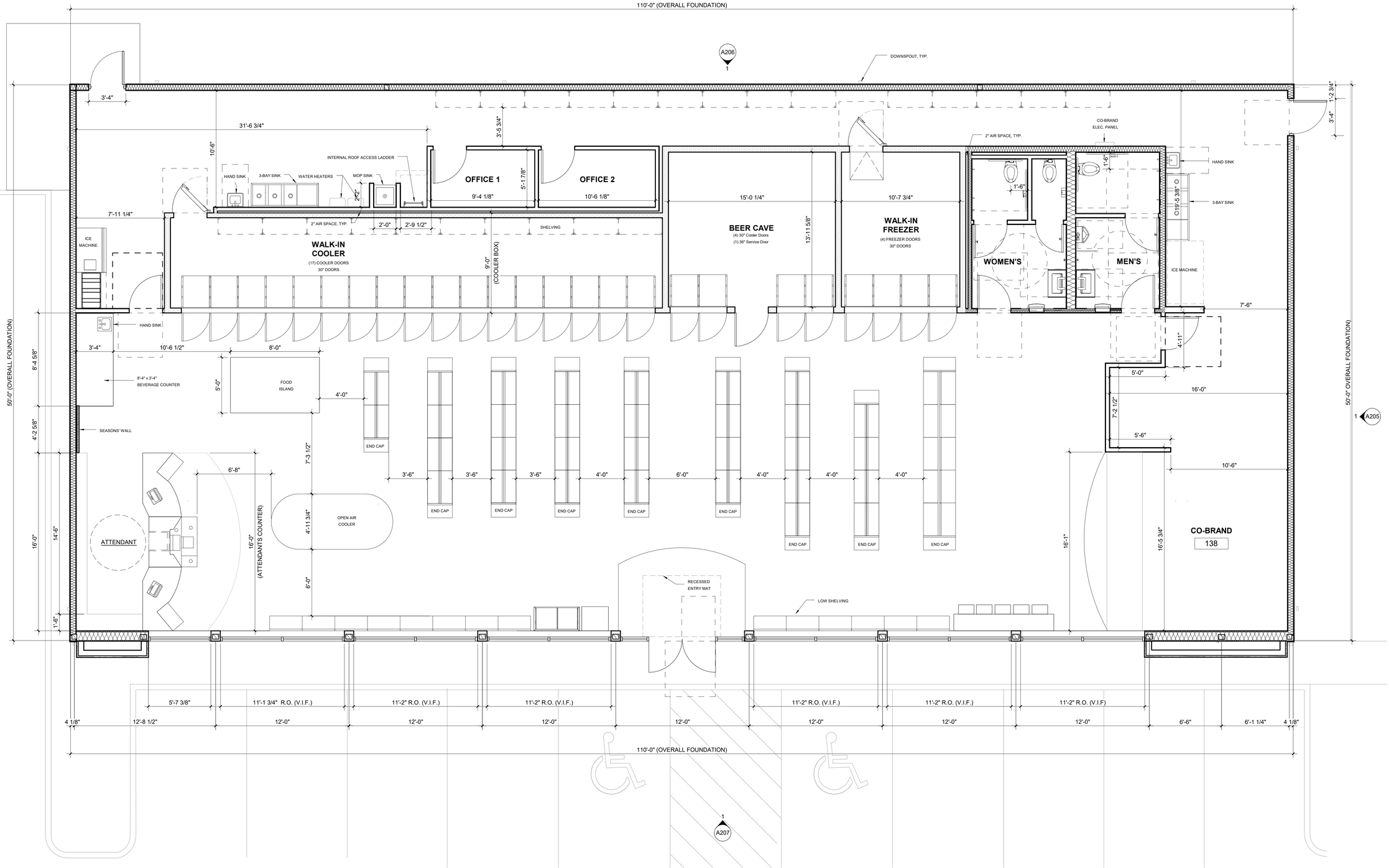
LIGHTING PROPOSAL LD-163588

SEASONS CORNER MARKET
WOODBURY AVE
PORTSMOUTH,NH

BY:MWE	DATE:11-14-25	REV:	SHEET 1 OF 1

SCALE: 1"=20' ARCH D

0 20



1 A101 FLOOR PLAN

1/4" = 1'-0"

HFA
HARRISON FRENCH & ASSOCIATES, LTD
t 508.528.0770
31 Hayward Street
Franklin, Massachusetts 02038
www.hfa-ae.com

COLBEA ENTERPRISES, LLC

1980 WOODBURY AVE
PORTSMOUTH, NH 03801

JOB NUMBER: 41-25-20000

ISSUE BLOCK		
1	PB PLANS	11/25/25

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

FLOOR PLAN

SHEET: A101

11/25/2025 12:49:03 PM
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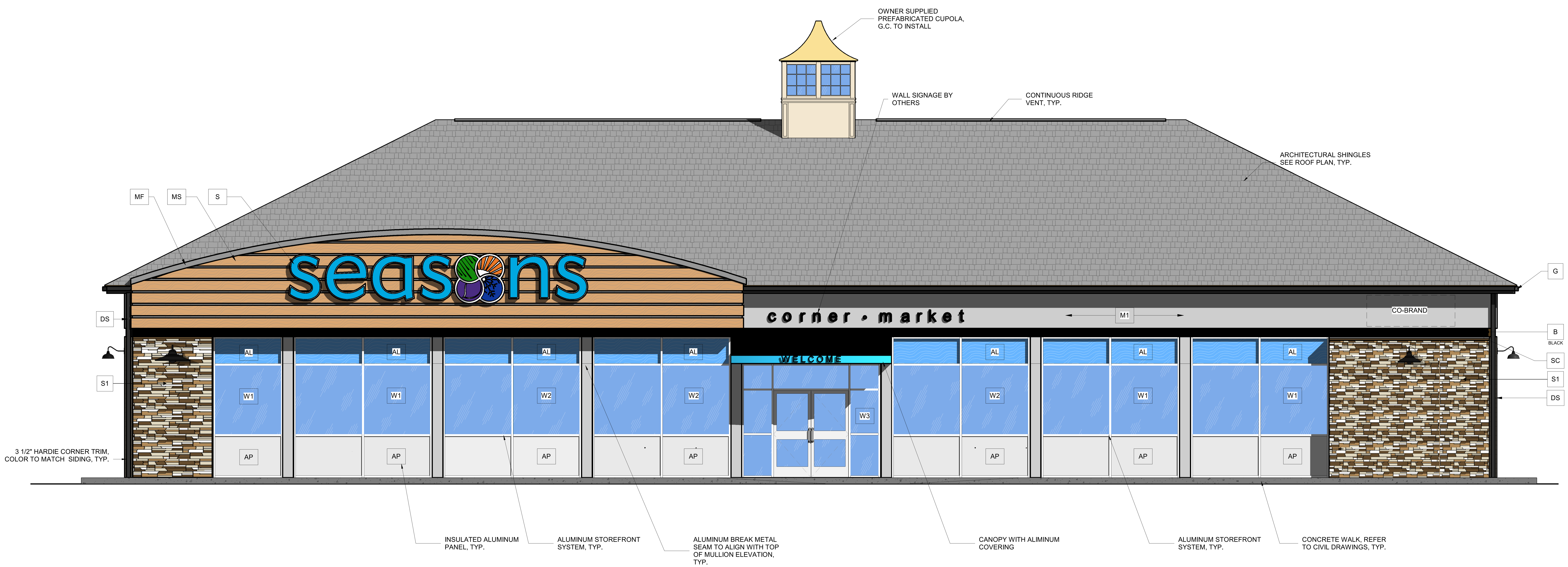
A101-FLOOR PLAN



1
A207
FRONT ELEVATION
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

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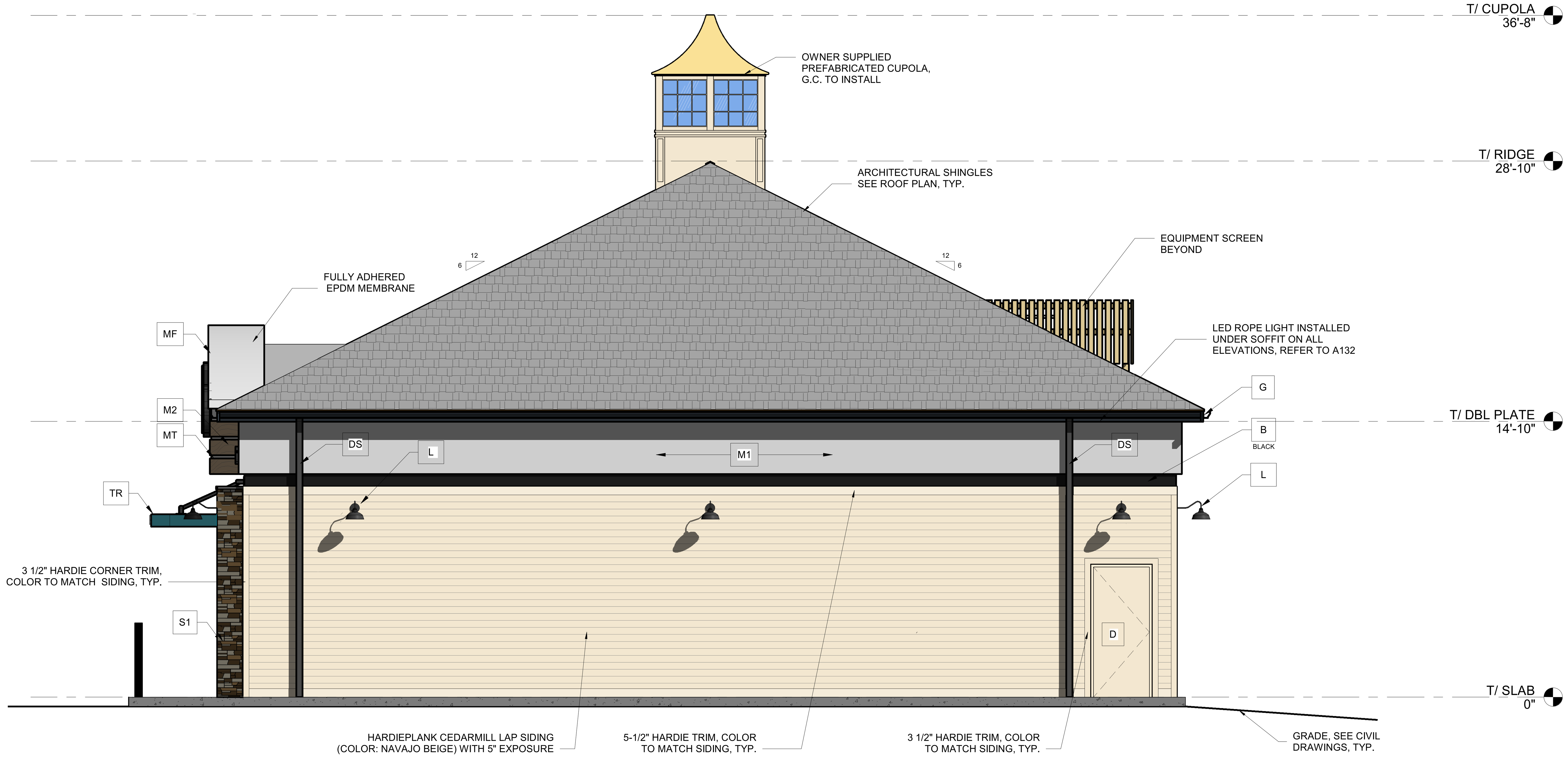
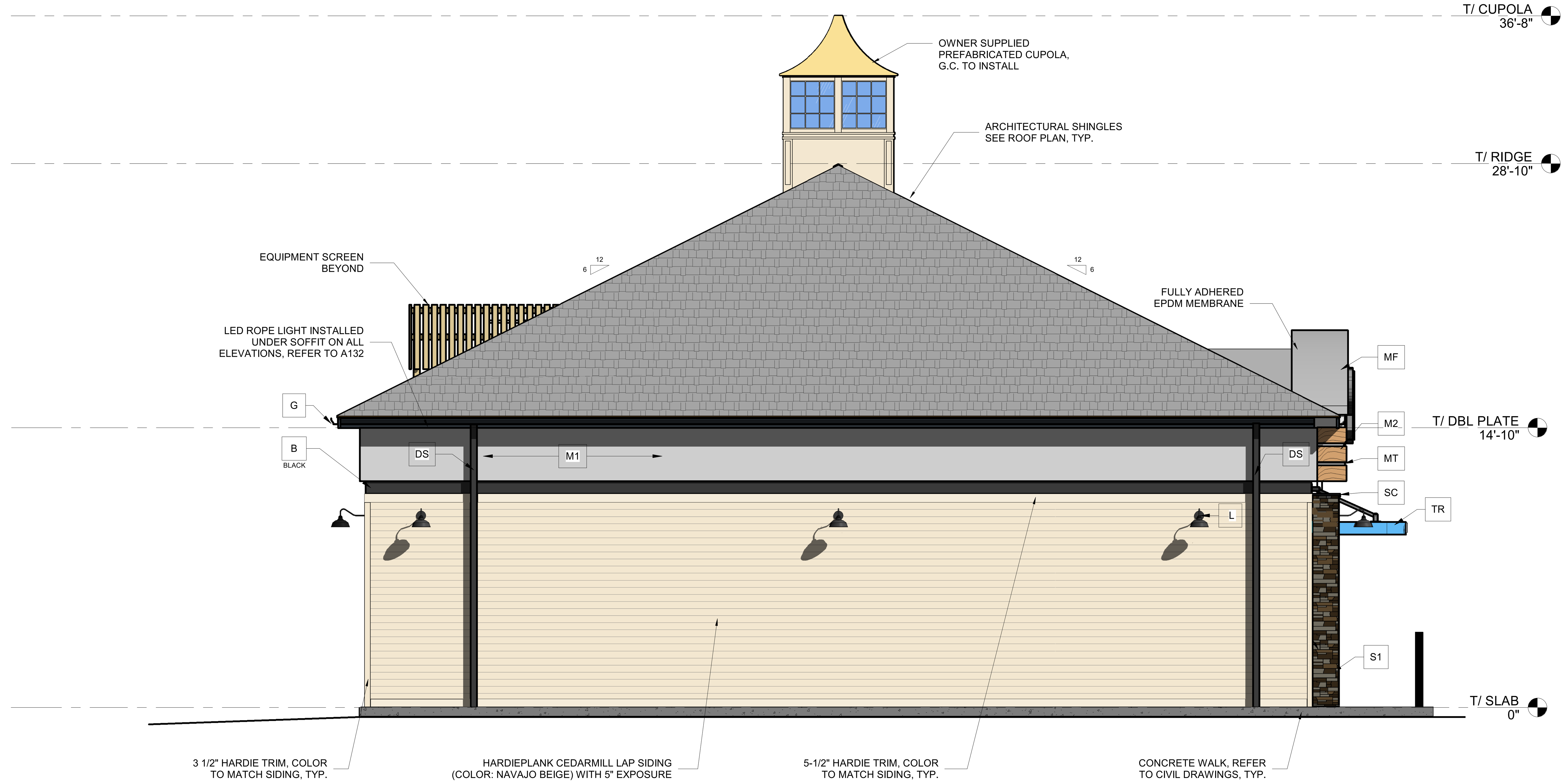
RENDERED EXTERIOR ELEVATIONS FRONT

SHEET:
A207



1 A205 RIGHT ELEVATION
1/4" = 1'-0"



2 A205 LEFT ELEVATION
1/4" = 1'-0"

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1	PB PLANS	11/25/25

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RENDERED EXTERIOR ELEVATIONS LEFT & RIGHT

SHEET:
A205

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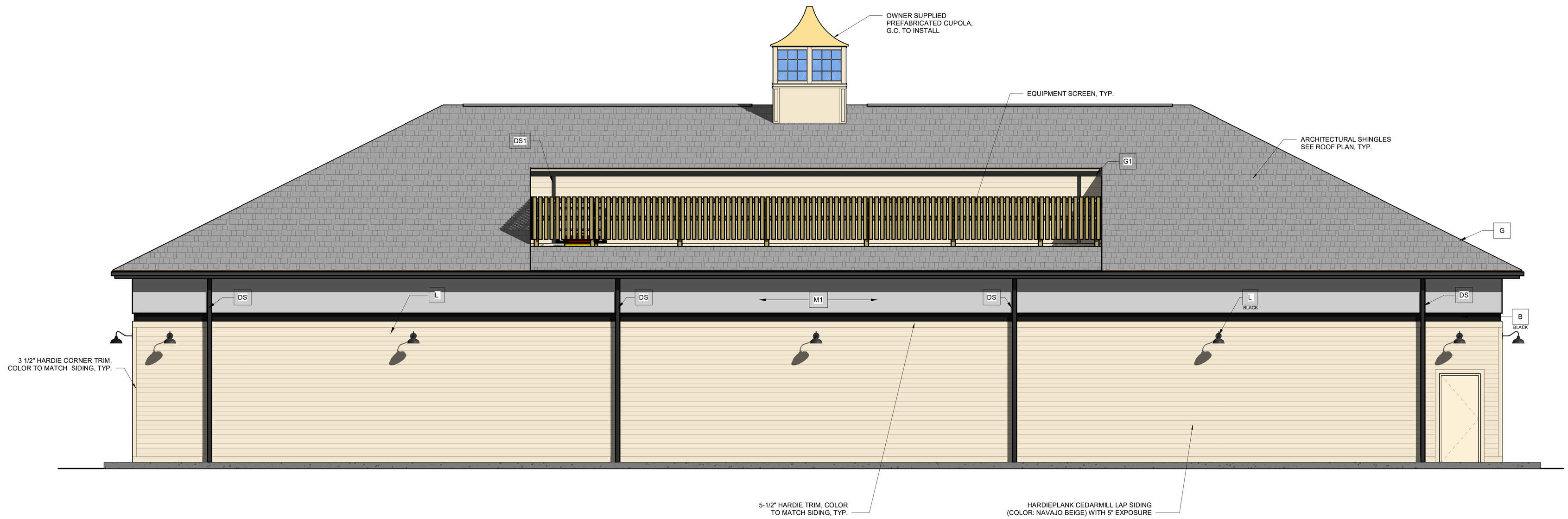
-A205-RENDERED EXTERIOR ELEVATIONS LEFT & RIGHT



1
A206

REAR ELEVATION

1/4" = 1'-0"

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ISSUE BLOCK

1	PB PLANS	11/25/25

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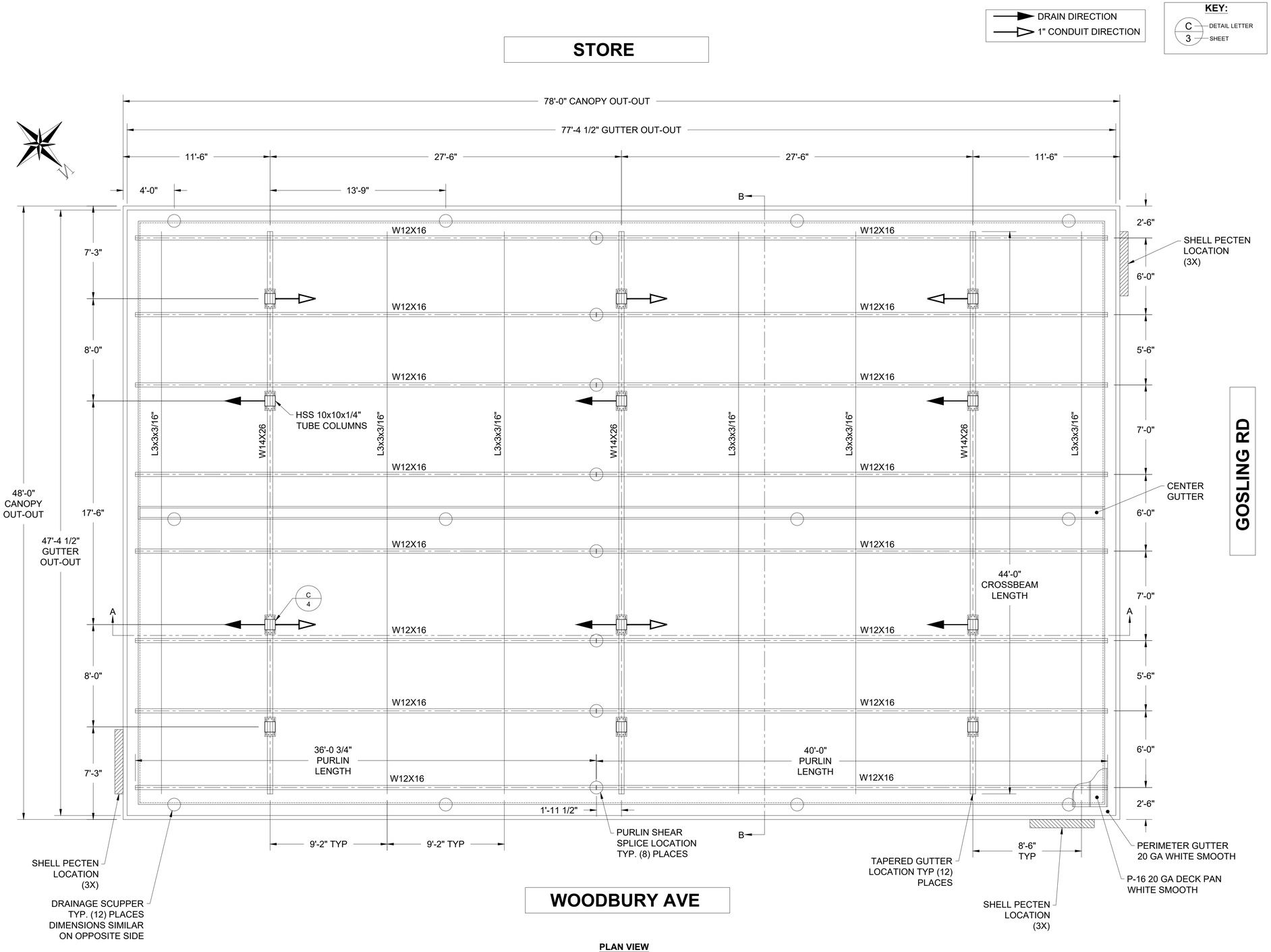
DOCUMENT DATE:	08/15/25

RENDERED EXTERIOR ELEVATIONS REAR

SHEET:
A206



PLAN VIEW

NOTE:
SECTIONS (A-A) AND (B-B) ARE ON PAGE (2)

STEEL NOTES:

1. ALL DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC SPECIFICATIONS DESIGN, FABRICATION, AND ERECTION OF COLD FORMED STEEL SECTIONS SHALL CONFORM TO THE LATEST AISI SPECIFICATIONS.

2. STRUCTURAL MATERIALS:
   WIDE FLANGE SECTIONS - ASTM A992 OR A572 GR 50 (Fy = 50 KSI)
   ANGLES/CHANNELS- ASTM A36 (Fy = 36 KSI)
   HOLLOW STRUCTURAL SECTIONS (TUBE) - ASTM A500 GR B (Fy = 46 KSI)
   PIPE SECTIONS - ASTM A53, GR. B (FY = 35 KSI)
   PLATES - ASTM A36 (Fy = 36 KSI)
   ROOF DECK - ASTM A653, GR. 40 (FY = 40 KSI), GALVANIZED (G60) WITH
   WITH BAKED ENAMEL FINISH
   STEEL OUTRIGGERS - ASTM A653 GR. CS (FY = 25 KSI), GALVANIZED (G90)
   PER ASTM 924
   STRUCTURAL BOLTS - ASTM F3125 GR A325
   ANCHOR BOLTS - ASTM F1554 GR. 55; (FY = 55 KSI)

3. WELDING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH LATEST ANSI/AWS D1.1.

4. FIELD CONNECTIONS SHALL BE BOLTED CONNECTIONS UNLESS SPECIFIED ON DRAWING.

5. ALL STRUCTURAL BOLTED CONNECTIONS SHALL USE ASTM F3125 GR 325 BOLTS. BOLTED JOINTS SHALL BE TIGHTENED TO SNUG TIGHT PER LATEST RCSC SPECIFICATION.

6. STRUCTURAL STEEL SHALL BE SHOP COATED WITH A RED-OXIDE RUST INHIBITIVE PRIMER. FIELD TOUCH-UP, FINISH PAINTING, AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE OWNER (UNLESS OTHERWISE SPECIFIED).

SPECIFIED DESIGN LOADS:

DESIGN LOADS PER 2021 NH STATE BLDG CODE (2021 IBC WITH NYS AMENDMENTS) REQUIREMENTS:

RISK CATEGORY II

CANOPY USE GROUP "M" / CONSTRUCTION TYPE II-B / MEETS REQUIREMENTS OF SECTION 406.7.2

ROOF LIVE LOAD = 30 PSF (ERECTION AND MAINTENANCE ONLY - NO PUBLIC ACCESS)

FLAT ROOF SNOW LOAD = 50 PSF
BASED ON GROUND SNOW LOAD = 50 PSF
Is = 1.0; Ce = 1.0; Ct = 1.2

WIND LOADS:
LATERAL = +/- 25 PSF (MWFRS)(USING 0.6 Wult FOR ASD)
UPLIFT = +/- 20 PSF (MWFRS)(USING 0.6 Wult FOR ASD)
BASED ON 115 MPH ULTIMATE WIND SPEED PER ASCE 7 EXPOSURE "B"
OPEN STRUCTURE (NO INTERNAL PRESSURE)

SEISMIC LOADS:
SITE CLASS "D" ASSUMED; SEISMIC DESIGN CATEGORY "C"
Ie = 1.0
Sds = 0.336G (Ss = 0.328, Fa = 1.538); Sd1 = 0.119G (S1 = 0.075, Fv = 2.4)
SEISMIC FORCE RESISTING SYSTEM IS NON-BLDG INVERTED PENDULUM - CANTILEVERED COLUMN, R = 2
Cs = Sds/(R/Ie) = 0.168; DESIGN BASE SHEAR V = Cs x W = 0.168W = 1.4 KIPS / COL (EQUIVALENT LATERAL FORCE PROCEDURE)

DEAD LOADS:
DECK / GUTTER / LIGHTS - 5 PSF
FASCIA - 15 PLF
STRUCTURAL STEEL - SELF WT
CONCRETE - 145 PCF

AUSTIN MOHAWK
engineered building systems

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TOLL FREE: 1.800.765.3110
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E-MAIL: info@austinmohawk.com

CERTIFIED BY:

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

STATE OF NEW HAMPSHIRE
LAWRENCE R PILON No. 9193 LICENSED PROFESSIONAL ENGINEER
25-071 12/5/25

JOB # -

QUOTE #	DRAWING #
Q251158	25-071

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

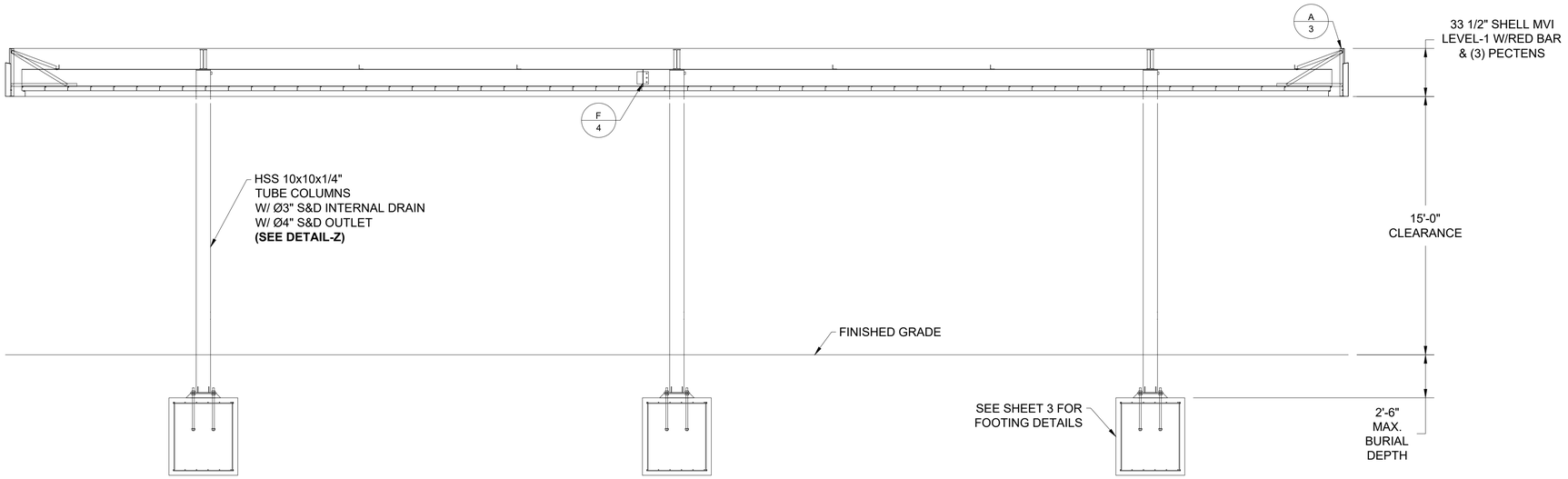
CUSTOMER: COLBEA

LOCATION: 1980 WOODBURY AVE PORTSMOUTH, NH

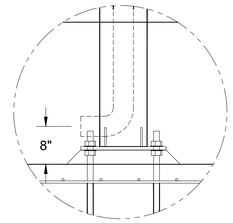
SCALE: N.T.S.	DRAWN BY: DWI
DATE: 11.18.25	SHEET: 1 OF 4

KEY:

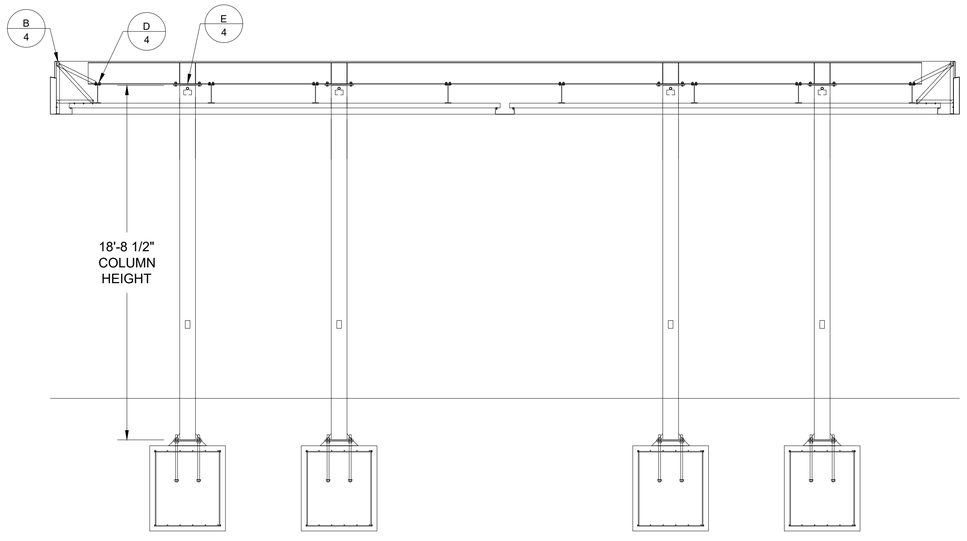
C — DETAIL LETTER
3 — SHEET



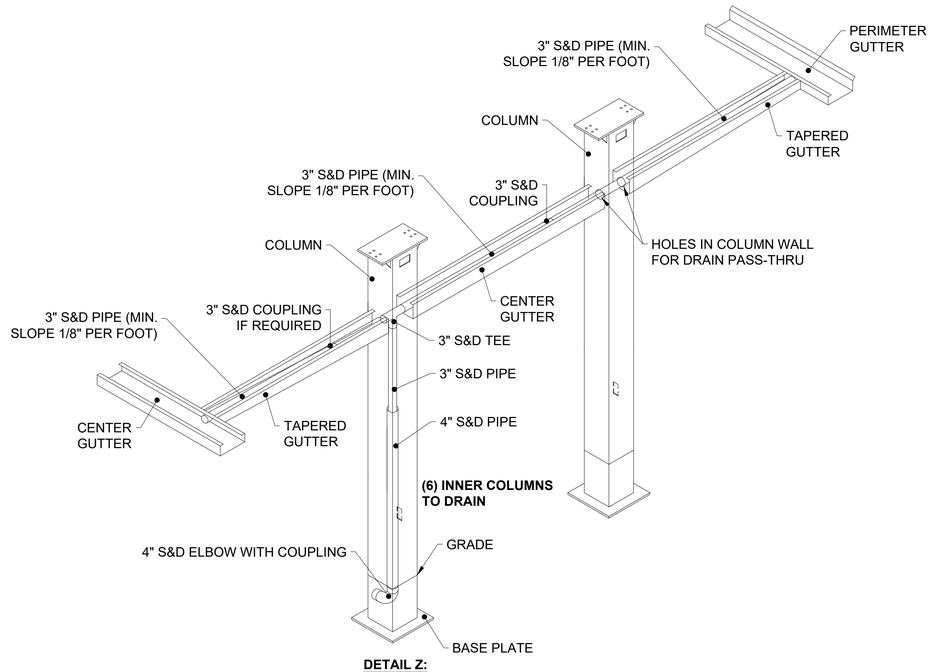
SECTION A-A



DRAIN ELEVATION DETAIL (TYP)



SECTION B-B



**DETAIL Z:
INTERNAL DRAIN
SYSTEM**

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JOB # -

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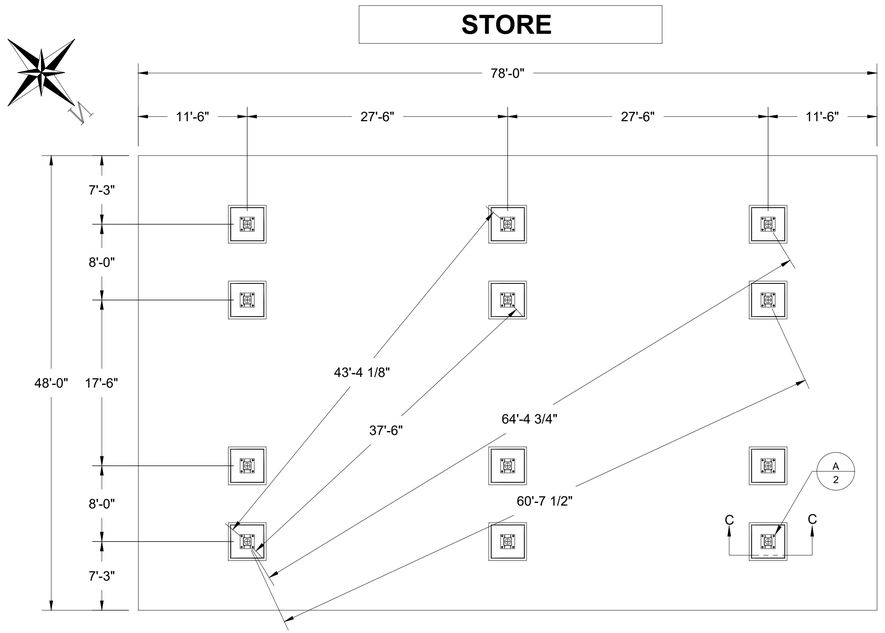
48'-0" X 78'-0" X 12 COLUMN CANOPY

CUSTOMER: COLBEA

LOCATION: 1980 WOODBURY AVE
PORTSMOUTH, NH

SCALE: N.T.S.	DRAWN BY: DWI
DATE: 11.18.25	SHEET: 2 OF 4



GOSLING RD

KEY:

C — DETAIL LETTER
3 — SHEET

FOOTING SPECIFICATIONS:

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

2) ALL FOOTINGS SHALL BE CAST ON LEVEL, UNDISTURBED SOIL OR ROCK OR PROPERLY COMPACTED SUBGRADE. BOTTOM OF FOOTING TO BE ABOVE WATER TABLE. FOOTING BASED ON MIN 2000 PSF SOIL BEARING CAPCITY 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.

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

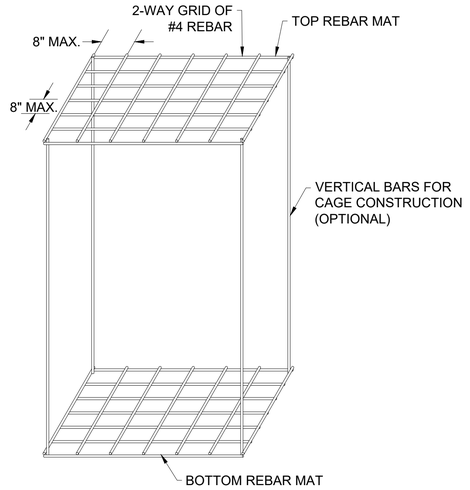
4) THE TOPS OF ALL FOOTINGS MUST BE AT THE SAME ELEVATION, OWNER / GENERAL CONTRACTOR SHALL PROVIDE BURIAL DEPTH FROM HIGH GRADE UNDER CANOPY. WHERE THE TOP OF THE FOOTINGS ARE AT DIFFERENT ELEVATIONS, THE OWNER / GENERAL CONTRACTOR SHALL PROVIDE THE CANOPY MANUFACTURER WITH ALL FOOTING AND GRADE ELEVATIONS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

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

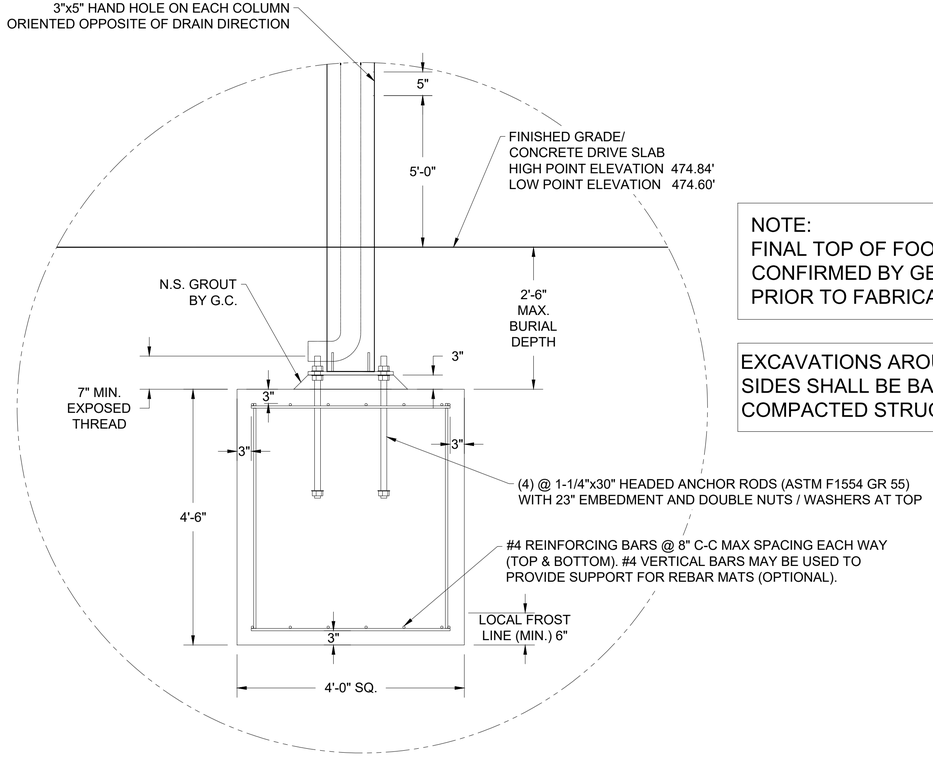
6) FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 DEFORMED BILLETSTEEL BARS.

7) 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.

8) 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.



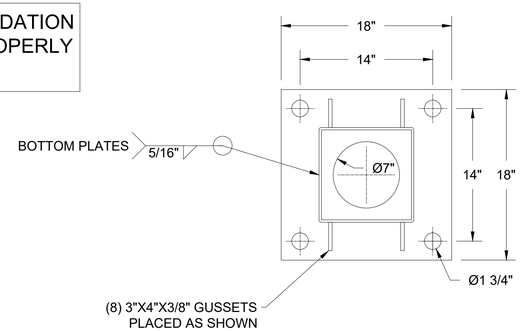
REBAR CAGE LAYOUT



SECTION C-C

NOTE:
FINAL TOP OF FOOTING ELEVATIONS TO BE CONFIRMED BY GENERAL CONTRACTOR PRIOR TO FABRICATION

EXCAVATIONS AROUND CANOPY FOUNDATION SIDES SHALL BE BACKFILLED WITH PROPERLY COMPACTED STRUCTURAL FILL



DETAIL A
BASEPLATE DETAIL
18X18X3/4"

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SCALE: N.T.S.	DRAWN BY: DWI
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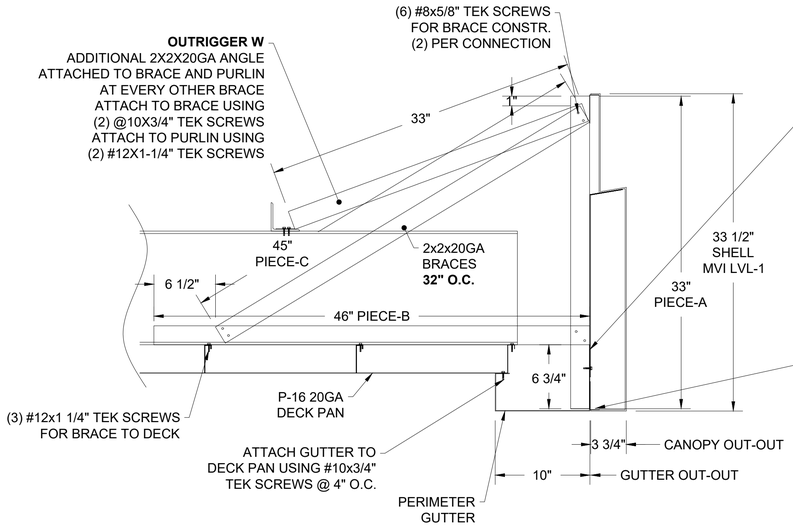
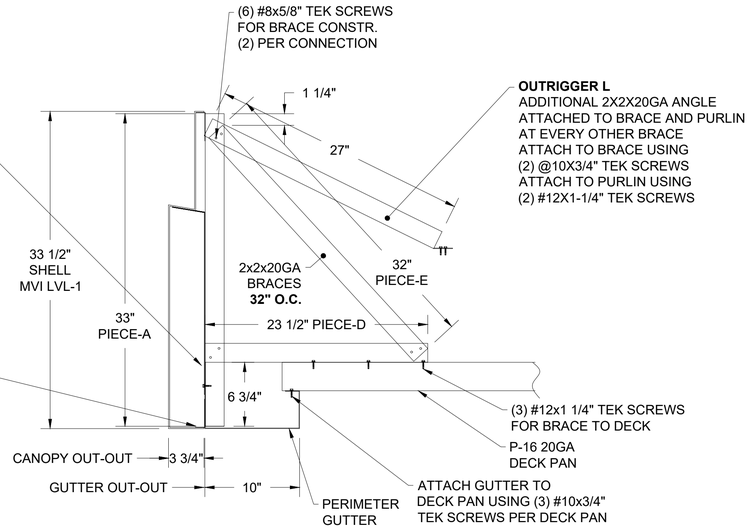


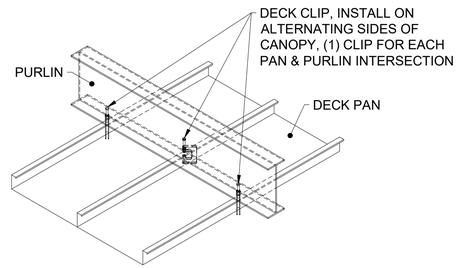
DETAIL A:
48'-0" SIDE FASCIA BRACE DETAIL

CAULK JOINT BETWEEN GUTTER TOP EDGE AND BACK OF GALV BACKER AROUND ENTIRE PERIMETER OF CANOPY

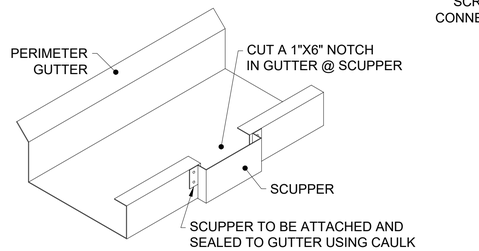
SEE SHELL INSTALL INSTRUCTIONS



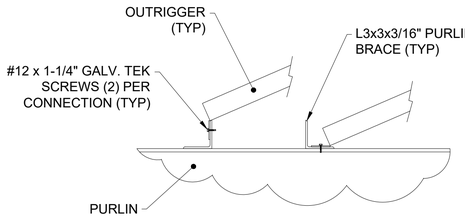
DETAIL B:
78'-0" SIDE FASCIA BRACE DETAIL



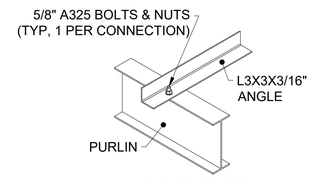
DECK CLIP DETAIL



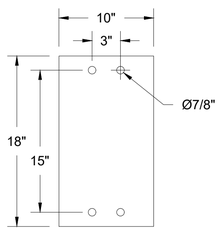
SCUPPER DETAIL



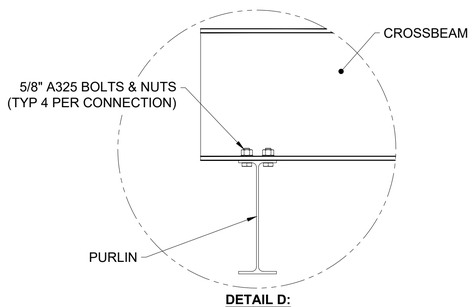
OUTRIGGER-W TO ANGLE CONNECTION OPTIONS



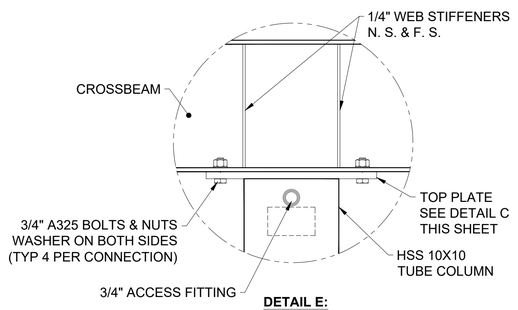
ANGLE BRACE DETAIL



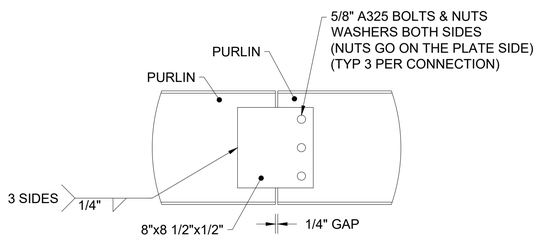
DETAIL C
10 X18X3/4"
TOP PLATE



DETAIL D:
PURLIN TO CROSSBEAM DETAIL



DETAIL E:
CROSSBEAM TO COLUMN DETAIL



DETAIL F:
PURLIN SHEAR SPLICE CONNECTION DETAIL

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