

COLBEA ENTERPRISES, LLC SITE PLAN

SP# 09-23

STAFF REPORT

September 11, 2024

SITE: 91, 95, 97 Lowell Road, 7 Atwood Avenue, 14 Brenton Avenue, Map 198 / Lots 11, 12, 14, 15, 16

ZONING: Business (B)

PURPOSE OF PLAN: To depict the construction of a proposed gas station/convenience store consisting of 6 dispenser islands for a total of 12 fueling stations, along with a proposed car wash. Associated improvements include but are not limited to: access, grading, storm water management, utilities, lighting, and landscaping.

PLAN UNDER REVIEW:

Gas Station/Convenience Store/Car Wash, Non-Residential Site Plan, Map 198 Lots 11, 12, 14, 15, 16, 91-97 Lowell Road, Hudson, NH; prepared by: TF Moran, 170 Commerce Way, Suite 102, Portsmouth, NH 03801; prepared for: Colbea Enterprises, LLC. 695 George Washington Highway, Lincoln, RI 02865; consisting of 34 sheets and general notes 1-19 on Sheet C-01; dated December 13, 2023; last revised July 18, 2024.

ATTACHMENTS:

- 1) Project Application and Associated Waiver Requests, prepared by TF Moran, dated December 13, 2023 – Attachment “**A**”.
- 2) Peer Review, prepared by Fuss & O’Neill dated January 12, 2024 – Attachment “**B**”.
- 3) Peer Review, prepared by Fuss & O’Neill dated August 12, 2024 – Attachment “**C**”.
- 4) Department Comments – Attachment “**D**”.
- 5) Applicant Response letters to Peer Review Comments dated January 12, 2024 & Department Comments, prepared by TF Moran – Attachment “**E**”.
- 6) ZBA Variances, granted June 27, 2024 – Attachment “**F**”.
- 7) Drainage Analysis Report, prepared by TF Moran, Last revised July 18, 2024 – Attachment “**G**”.
- 8) Traffic Impact and Access Study, prepared by TF Moran, Revised December 12, 2023 – Attachment “**H**”.
- 9) CAP Fee worksheet – Attachment “**I**”.

WAIVERS REQUESTED:

- 1) 193-10. (G) – Design Criteria.
- 2) 193-10. (F) – Design Criteria.
- 3) 275-9.A.(1) – Final application Acceptance
- 4) 276-11.1.B. (12). (c) – General Plan Requirements.
- 5) 176-11.1.B. (25) – General Plan Requirements.

APPLICATION TRACKING:

- December 13, 2023 – Site Plan application received.
- May 24, 2024 – Response letter and revised Site Plan received.
- June 27, 2024 – Variances granted by Zoning Board of Adjustment.
- July 18, 2024 – 2nd Response letter and revised Site Plan received.
- August 12, 2024 – 2nd Peer Review received.
- September 6, 2024 – 3rd Response letter and revised Site Plan received.
- September 11, 2024 – Public Hearing scheduled.

COMMENTS & RECOMMENDATIONS:

BACKGROUND

The site is approximately 3.4 acres and is located in the Business zone. The proposed site currently consists of five parcels: Map 198 /Lots 11, 12, 14, 15, & 16, which the applicant wishes to consolidate. Two garages and a single family residence are currently located on site, two of which are to be razed as part of construction. The site is served by municipal water and sewer. The site is not located within any flood zones, and does not contain any known wetlands.

The applicant proposes building a 12-pump gas station with a 5,400 SF convenience store with drive-thru window, alongside a 2,700 SF automatic carwash. Along the front of the site are four proposed EV charging stations, with six vacuum stations proposed for the back of the site.

The applicant has applied for and received three variances related to signage and advertising, whose decisions can be found in **Attachment “F”**. In addition, the applicant has submitted requests for three waivers, those being: 193-10(G) – Design Criteria, 276-11.1.B. (12). (c) – General Plan Requirements, and 176-11.1.B. (25) – General Plan Requirements. More information related to the waivers may be found below.

PEER REVIEW

The project has been reviewed by Fuss & O’Neill twice, with the second round of comments being completed August 12, 2024. The applicant has not submitted a response to these comments at this time due to the short turnaround. The following comments remain outstanding, and full comments maybe be found in **Attachment “B”** and **Attachment “C”**. 23 Comments remain outstanding, and 3 require Town input as of Revision Two review (**Attachment “C”**).

Of note, Fuss & O’Neill concurs with the conclusions of the applicant regarding traffic for the site, that being minimal to no impact on Lowell Road traffic. Proposed for this area is the extension of Belknap Road to connect at Lowell and Birch, but this change in the traffic pattern would primarily reduce left-hand traffic from County Road onto Lowell and not negatively impact site access.

The applicant has submitted a response to comments dated August 12, 2024, however this response and site plan revision arrived after the deadline for staff review and consideration. The updated materials will be provided at the next meeting date.

DEPARTMENT COMMENTS

Town departments were first queried for comments in December 2003, with revisions and a response letter being issued by the applicant on July 28, 2024 (**Attachment “E”**). No department comments remain outstanding at this time. Full Comments may be found in **Attachment “D”**.

WAIVERS REQUESTED

The applicant has submitted five waivers at this time:

- 1) 193-10. (G) – One driveway per parcel – the applicant claims that the addition of a second driveway will help in traffic flow through the site. In addition, the parcels in total contain four curb cuts at this time, which the applicant proposes cutting down to three.
- 2) 193-10. (F) – Driveway width – the applicant states that the proposal cuts down the existing 100’ curb cut to 62’, and that this width is required to maintain safer access to Atwood Avenue while retaining access to the existing garage and paved area.
- 3) 275-9.A.(1) – Stormwater runoff rates – the applicant states that the stormwater management features have been designed to help relieve flooding concerns in the area, and have been done in conjunction with Hudson DPW.
- 4) 276-11.1.B. (12). (c) – Residential use buffer – The applicant states that despite being within the business district, the site is abutted by residential homes on three sides. Due to this, enforcement of the 100’ buffer would generate significant hardship in any sort of site development for business uses.
- 5) 276-11.1.B.(25) – Parking or travel in side and rear setbacks – the applicant states that travel within the side setback is required in order for the site to be laid out in the safest way possible, and that the incursion is minimal being only 5’.

RECOMMENDATIONS

Staff recommends opening of a public hearing and discussion of the waivers and materials provided. It is recommended that the Board determine whether any additional studies would be required prior to making a final decision. Staff recommends consideration of the waivers requested, prior to potential approval of said waivers.

DRAFT MOTIONS:

MOTION TO DEFER:

I move to defer the site plan application for Gas Station/Convenience Store/Car Wash, Non-Residential Site Plan, Map 198 Lots 11, 12, 14, 15, 16, 91-97 Lowell Road, to date certain, _____, 2024.

Motion by: _____ Second: _____ Carried/Failed: _____

MOTIONS TO GRANT WAIVERS:

I move to grant a waiver from **§193-10.(G)**, Design Criteria, to allow for the construction of two driveways, where normally one is permitted, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

I move to grant a waiver from **§193-10.(F)**, Design Criteria, to allow for the construction of a driveway 62’ in width, where normally 50’ is the maximum allowed, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

I move to grant a waiver from **§275-9.A.(1)**, Final Application Acceptance, to allow for excess drainage beyond prior existing rates, where normally no increase in rates is allowed, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

I move to grant a waiver from **§276-11.1.B.(12).(c)**, General Plan Requirements, to allow improvements within 100’ of a residential property, where normally no improvements would be allowed, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

I move to grant a waiver from **§276-11.1.B. (25)**, General Plan Requirements, to allow for parking and travel in the side and rear setbacks, where normally no parking or travel would be allowed, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

MOTION TO CONTINUE:

I move to continue the site plan application for Gas Station/Convenience Store/Car Wash, Non-Residential Site Plan, Map 198 Lots 11, 12, 14, 15, 16, 91-97 Lowell Road, to date certain, _____, 2024.

Motion by: _____ Second: _____ Carried/Failed: _____

MOTION TO APPROVE:

I move to approve the site plan application for the Site Plan entitled: Gas Station/Convenience Store/Car Wash, Non-Residential Site Plan, Map 198 Lots 11, 12, 14, 15, 16, 91-97 Lowell Road,

Hudson, NH; prepared by: TF Moran, 170 Commerce Way, Suite 102, Portsmouth, NH 03801; prepared for: Colbea Enterprises, LLC. 695 George Washington Highway, Lincoln, RI 02865; consisting of 34 sheets and general notes 1-19 on Sheet C-01; dated December 13, 2023; last revised July 18, 2024; and:

That the Planning Board finds that this application complies with the Zoning Ordinances with consideration to the variances granted, and with the Land Use Regulations with consideration of the waivers granted; and for the reasons set forth in the written submissions, together with the testimony and factual representations made by the applicant during the public hearing;

Subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporated into the Development Agreement, which shall be recorded at the HCRD, together with the Site Plan-of-Record and all agreed upon easement deeds, which shall be favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan.
2. A cost allocation procedure (CAP) amount of \$45,252.00 shall be paid prior to the issuance of a Certificate of Occupancy.
3. Prior to the issuance of a final certificate of occupancy, an L.L.S. Certified "As-Built" site plan shall be provided to the Town of Hudson Land Use Department, confirming that the site conforms to the Planning Board approved Site Plan.
4. Prior to the Planning Board endorsement of the Plan, it shall be subject to final administrative review by Town Planner and Town Engineer.
5. Prior to application for a building permit, the Applicant shall schedule a pre-construction meeting with the Town Engineer.
6. Construction activities involving the subject lot shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday. No exterior construction activities shall be allowed on Sundays.
7. Hours of refuse removal shall be exclusive to the hours between 7:00 A.M. and 7:00 P.M., Monday through Friday only.

Motion by: _____ Second: _____ Carried/Failed: _____



Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

December 13, 2023

Timothy Malley, Chairman
 Hudson Planning Department
 12 School Street
 Hudson, NH 03051

RE: Site Plan Application
91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lot 11, 12, 14, 15, & 16
Project #18149.00

Dear Mr. Malley:

On behalf of our client, Colbea Enterprises, LLC, please find a Site Plan Application submission relative to the above-referenced project. The following materials are included in this submission:

- **Check for Site Plan Review Fee Paid to “Town of Hudson” (\$3,647.81);**
- **Site Plan Application (2 copies);**
- **Abutter’s List (2 copies);**
- **Abutter’s List (2 sets of labels);**
- **Traffic Impact and Access Study (2 copies);**
- **Drainage Analysis (1 copy); and**
- **Site Development Plans entitled “Site Development Plans, Tax Map 198 Lot 11, 12, 14, 15, 16, Proposed Gas Station and Convenience Store, 91-97 Lowell Road, Hudson, New Hampshire”, prepared by TFMoran, Inc., dated December 13, 2023, (5 copies at 22”x34, 15 copies at 11”x17”).**

Project Description

The project includes the development of a Gas Station and Convenience Store with six fueling islands for a total of 12 pumps and a car wash on 91-97 Lowell Road. The existing Tax Map 198 Lot 11, 12, 14, 15, 16 is approximately 3.40 acres and currently contains two garages and a residential building. During the application process, the client intends to merge the existing five lots into a single lot. The site is within the Business Zone and is adjacent to the intersection of Lowell Road and Atwood Avenue.

The proposed project is to construct a single story 5,400 s.f. building with a co-tenant with drive-thru. Associated improvements include and are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes a 5,400 SF building footprint and total 74,663 SF of impervious area upon the property and approximately 95,663 SF of disturbance to facilitate the development.





Hudson Site Plan Application

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lot 11, 12, 14, 15, 16
Project #18149.00

December 13, 2023

The development is proposed outside the Wetland and 50' Wetland Buffer located west of the development. The project does not propose any wetland or wetland buffer impacts. The project will be undergoing additional review by Zoning Board of Appeals, NHDES Sewer, NHDES Alteration of Terrain (AoT), and EPA's NOI for Construction General Permit.

Based on our review of the Town of Hudson's Site Plan Review Regulations, we are requesting relief in the form of waivers from the following sections as part of this submission.

Waiver Request #1

Requirement: Site Plan Regulations Section 193-10(G): Only one driveway per parcel having adequate frontage, as required by chapter 334, zoning, is allowed, except in the case of two-unit residential buildings (duplexes), one driveway shall be allowed.

Reason for Waiver: To help improve on-site traffic flow and safety, the design benefits from two different access points. The original concept plan had shown two curb cuts along Lowell Road, however based on discussions with Town staff and due to the existing traffic patterns on Lowell Road, it was recommended we have one curb cut on Lowell Road (to be located at the northern portion of the site). In the existing conditions, there are two curb cuts on Lowell Road and two on Atwood Ave, and in the proposed conditions there is one on Lowell Road and two on Atwood Ave (as a result of the project, one existing curb cut on Lowell Road is being removed).

Waiver Request #2

Requirement: Site Plan Regulations Section 276-11.1(12)(c): In all zoning districts other than the general (g) and the general-one zoning districts, where a commercial or industrial use or zoning district, there shall be a one-hundred-foot distance between the residential use or zoning district and any improved part of the nonresidential development.

Reason for Waiver: Despite the site falling fully within the Business District, the site is surrounded on three sides (N., W., & S.) by residential uses. There are residential homes along Atwood Ave, Temple Street, and the lot to the North along Lowell Road. The lot to the north along Lowell Road is a residential use within Business District. The required 100' buffer creates a hardship as it would impact a significant portion of the site.

Waiver Request #3

Requirement: Site Plan Regulations Section 276-11.1(12)(c): No parking area or travelway shall be proposed within the area between the side lot lines or rear lot lines and the corresponding setback lines. The planning board may allow use of such areas for parking or travelways, provided that an equal amount of frontage green area is added to the minimum green area required or where shared access is required.

Reason for Waiver: There is one area on-site where the proposed development encroaches on a side setback. Near the exit of the proposed car wash, the proposed sidewalk and travel way extend approximately 5' into the side setback. This layout for the car wash exit was chosen as it provided the safest interaction between the car wash, bypass lane, and drive-thru lane.



Hudson Site Plan Application
91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lot 11, 12, 14, 15, 16
Project #18149.00

December 13, 2023

We respectfully request that we be placed on the upcoming agenda for the Planning Board meeting on January 10, 2024.

If you have any questions or concerns, please do not hesitate to contact us.

Respectfully,
TFMoran, Inc.

Christopher Rice
Principal/Senior Project Manager



*Town of Hudson
12 School Street
Hudson, NH 03501*

SITE PLAN APPLICATION

Revised July 24, 2023

The following information must be filed with the Planning Department *at the time of filing a site plan application*:

1. One (1) original completed application with original signatures, and one (1) copy.
2. Three (3) full plan sets (sheet size: 22" x 34").
3. One (1) original copy of the project narrative, and one (1) copy.
4. A list of direct abutters and a list of indirect abutters, and two (2) sets of mailing labels for abutter notifications.
5. All of the above application materials, including plans, shall also be submitted in electronic form as a PDF.
6. All plans shall be folded and all pertinent data shall be attached to the plans with an elastic band or other enclosure.

The following information is required to be filed with the Planning Department *no later than 10:00 A.M., Tuesday ONE WEEK prior to the scheduled Planning meeting. The purpose of these materials is hardcopy distribution to Planning Board members, not review. Any plan revisions that require staff review must be submitted no later than 10:00A.M., Tuesday TWO WEEKS prior to the scheduled Planning meeting. Depending on the complexity of changes, more time may be required for review. Please contact the Town Planner if you have any questions on this matter.*

1. Submission of fifteen (15) 11" X 17" plan sets, revised if applicable.
2. Submission of two (2) full plan sets (sheet size: 22" x 34"), if revised.
3. All of the above application materials, including plans, shall also be submitted in electronic form as a PDF.

Note: Prior to filing an application, it is recommended to schedule an appointment with the Town Planner.

SITE PLAN APPLICATION

Date of Application: December 13, 2023 Tax Map #: 198 Lot #: 11, 12, 14, 15, & 16

Site Address: 91-97 Lowell Road Hudson, NH

Name of Project: Proposed Gas Station & Convenience Store

Zoning District: Business General SP#: _____
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:

DEVELOPER:

Name: Colbea Enterprises, LLC

Address: 695 George Washington Highway

Address: Lincoln, RI 02865

Telephone # (401) 943-0005 x356

Email: mgazdacko@seasonscornermarket.com

PROJECT ENGINEER:

SURVEYOR:

Name: Christopher Rice

Brenda Kolbow

Address: 170 Commerce Way, Suite 102

170 Commerce Way, Suite 102

Address: Portsmouth, NH 03801

Portsmouth, NH 03801

Telephone # (603) 431-2222

(603) 431-2222

Email: crice@tfmoran.com

bkolbow@tfmoran.com

PURPOSE OF PLAN:

The purpose of this plan is to depict construction of a proposed gas station, convenience store consisting of 6 dispenser islands for a total of 12 fueling stations, along with a proposed car wash. Associated improvements include but are not limited to access, grading, stormwater management, utilities, lighting, and landscaping.

(For Town Use Only)		
Routing Date: _____	Deadline Date: _____	Meeting Date: _____
_____ I have no comments _____ I have comments (attach to form)		
_____ Title: _____	Date: _____	
(Initials)		
Department: _____		
Zoning: ___ Engineering: ___ Assessor: ___ Police: ___ Fire: ___ DPW: ___ Consultant: ___		

SITE DATA SHEETPLAN NAME: Proposed Gas Station & Convenience StorePLAN TYPE: SITE PLANLEGAL DESCRIPTION: MAP 198 LOT 11, 12, 14, 15, & 16DATE: December 13, 2023-----
Location by Street: 91-97 Lowell RoadZoning: BusinessProposed Land Use: CommercialExisting Use: VacantSurrounding Land Use(s): Commercial (N, NE), Residential (S, SW)Number of Lots Occupied: 5 (Lots to be merged)

Existing Area Covered by Building: _____

Existing Buildings to be removed: _____

Proposed Area Covered by Building: _____

Open Space Proposed: _____

Open Space Required: 40%Total Area: S.F.: 147,966 Acres: 3.3968Area in Wetland: 0 s.f. Area Steep Slopes: _____Required Lot Size: 30,000 s.f.Existing Frontage: 241.97' along Lowell Road
225.35' along Atwood Avenue
219.16' along Temple StreetRequired Frontage: 150 ft

Building Setbacks:	<u>Required*</u>	<u>Proposed</u>
Front:	<u>50'</u>	<u>157'</u>
Side:	<u>15'</u>	<u>59.9'</u>
Rear:	<u>15'</u>	<u>159.1'</u>

SITE DATA SHEET

(Continued)

Flood Zone Reference: Flood Zone X (NFIP FIRM Map 33011C0518D)

Width of Driveways: 30', 24'

Number of Curb Cuts: Two (1 on Lowell Road, 1 on Atwood Ave.)

Proposed Parking Spaces: 48

Required Parking Spaces: 48

Basis of Required Parking (Use): See parking calculation on Sheet C-03

Dates/Case #/Description/Stipulations
of ZBA, Conservation Commission,
NH Wetlands Board Actions: Zoning Relief will be requested for
(Attach stipulations on separate sheet) proposed signage. Submittal and hearing
are pending.

Waiver Requests

<i>Town Code Reference:</i>	<i>Regulation Description:*</i>
<u>193-10(G.)</u>	<u>Only one driveway per parcel...</u>
<u>276-11.1(12)(c)</u>	<u>There shall be a 100' distance between</u> <u>the residential use or zoning district...</u>
<u>276-11.1(25)</u>	<u>No parking area or travelway shall be</u> <u>proposed within the area between the side lot</u> <u>lines and corresponding lot lines...</u>

*See Project Narrative and Sheet C-00 for full regulation description.

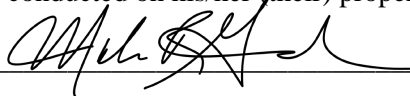
(For Town Use Only)

Data Sheets Checked By: _____ Date: _____

SITE PLAN APPLICATION AUTHORIZATION

I hereby apply for *Site Plan* Review and acknowledge I will comply with all of the Ordinances of the Town of Hudson, New Hampshire State Laws, as well as any stipulations of the Planning Board, in development and construction of this project. I understand that if any of the items listed under the *Site Plan* specifications or application form are incomplete, the application will be considered rejected.

Pursuant to RSA 674:1-IV, the owner(s) by the filing of this application as indicated above, hereby given permission for any member of the Hudson Planning Board, the Town Planner, the Town Engineer, and such agents or employees of the Town or other persons as the Planning Board may authorize, to enter upon the property which is the subject of this application at all reasonable times for the purpose of such examinations, surveys, tests and inspections as may be appropriate. The owner(s) release(s) any claim to or right he/she (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests and/or inspections conducted on his/her (their) property in connection with this applications.

Signature of Owner:  Date: 12/8/2023

Print Name of Owner: COLBEA ENTERPRISES, LLC (by Michael Gazdacko, Director of Construction & Maintenance)

- ❖ If other than an individual, indicate name of organization and its principal owner, partners, or corporate officers.

Signature of Developer: _____ Date: _____

Print Name of Developer: _____

- ❖ The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The individual in charge of the project must notify the Code Enforcement Officer/Building Inspector within two (2) working days of any change.

SCHEDULE OF FEES**A. REVIEW FEES:**

<u>1. Site Plan Use</u>	<u>Project Size/Fee</u>	
Multi-Family	\$105.00/unit for 3-50 units \$78.50/unit for each additional unit over 50	\$ _____
Commercial/Semi Public/Civic or Recreational	\$157.00/1,000 sq. ft. for first 100,000 sq.ft. (bldg. area): \$78.50/1,000 sq.ft. thereafter.	\$ <u>1,271.70</u>
Industrial	\$150.00/1,000 sq.ft for first 100,000 sq.ft. (bldg. area); \$78.50/1,000 sq.ft thereafter.	\$ _____
No Buildings	\$30.00 per 1,000 sq.ft. of proposed developed area	\$ _____

CONSULTANT REVIEW FEE: (Separate Check)

Total _____ acres @ \$600.00 per acre, or \$1,250.00,
whichever is greater. \$ 2,038.08

This is an estimate for cost of consultant review. The fee is expected to cover the amount. A complex project may require additional funds. A simple project may result in a refund.

LEGAL FEE:

The applicant shall be charged attorney costs billed to the Town for the Town's attorney review of any application plan set documents.

B. POSTAGE:

<u>11</u> Direct Abutters Applicant, Professionals, etc. as required by RSA 676:4.1.d @\$5.01 (or Current Certified Mail Rate)	\$ <u>55.11</u>
<u>12</u> Indirect Abutters (property owners within 200 feet) @\$0.66 (or Current First Class Rate)	\$ <u>7.92</u>

C. TAX MAP UPDATING FEE: (FLAT FEE) \$ 275.00

TOTAL \$ 3,647.81

SCHEDULE OF FEES
(Continued)

(For Town Use)	
AMOUNT RECEIVED: \$ _____	DATE RECEIVED: _____
RECEIPT NO.: _____	RECEIVED BY: _____

NOTE: fees below apply only upon plan approval, not collected at time of application.

D. RECORDING:

*****The applicant shall be responsible for the recording of the approved plan, and all documents as required by an approval, at the Hillsborough County Registry of Deeds (HCRD), located at 19 Temple Street, Nashua, NH 03061. Additional fees associated with recording can be found at HCRD.*****

E. COST ALLOCATION PROCEDURE AMOUNT CONTRIBUTION AND OTHER IMPACT FEE PAYMENTS:

To be determined by the Planning Board at time of plan approval and shall be paid by the applicant at the time of submittal of the Certificate of Occupancy Permit requests.

*****The applicant shall be responsible for all fees incurred by the town for processing and review of the applicant’s application, plan and related materials.*****



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists



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, 91-97 Lowell Road, Hudson, NH, known as Tax Map 198, Lots 11, 12, 14, 15, & 16. I hereby appoint TFMoran, Inc. as my agent to act on my behalf in the review process, to include any required signatures.

Client Name

12/8/2023

Date

Witness

12/8/2023

Date



**TOWN OF HUDSON
SITE PLAN REVIEW CHECKLIST**

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request

Relevant Regulations:

§ 276-11.1 General Plan Requirements

§§ 275-8 – 275-9 Site Plan Requirements

- | | <u>Y</u> | <u>P</u> | <u>W</u> | |
|-----|-------------------------------------|--------------------------|--------------------------|--|
| 1. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A list of the names and addresses of the owner(s) of the property, the applicant(s), and all abutters as indicated in the office of the Town Assessor records not more than five (5) days prior to the day of filing [§ 276-11.1.A.] |
| 2. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Sets of plans and copies as indicated on application. |
| 3. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Scale no smaller than 50 feet to the inch (1" = 50') [§ 276-11.1.B.(2)] |
| 4. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Title block in the lower right-hand corner of the plan, containing: [§ 276-11.1.B.(3)] |
| 5. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Title, including the term "site plan" or "subdivision plan" |
| 6. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The name for whom the plan was prepared |
| 7. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Preparer of the plan |
| 8. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The scale(s) of the plan |
| 9. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Date of the plan |
| 10. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Appropriate revision block |
| 11. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Approval block (2"x6") located on the lower left corner of each sheet, with the required language and signature lines [§ 276-11.1.B.(4) & § 289-27.A] |
| 12. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A space (2"x1.5") adjacent to the approval block containing the required statement [§ 276-11.1.B.(5)] |
| 13. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Owner's printed name and address and signature [§ 276-11.1.B.(6)] |
| 14. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Name and address of all abutting property owners [§ 276-11.1.B.(7)] |
| 15. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A locus plan at one inch equals 1,000 feet (1" = 1,000') [§ 276-11.1.B.(8)] |

Notes

(Continue next page)

**TOWN OF HUDSON
SITE PLAN REVIEW CHECKLIST**

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request

- | | <u>Y</u> | <u>P</u> | <u>W</u> | |
|-----|-------------------------------------|--------------------------|--------------------------|--|
| 16. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Boundary of the entire parcel held in single ownership with boundary dimensions and bearings [§ 276-11.1.B.(9)] |
| 17. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Error of closure shown and certified by a licensed land surveyor |
| 18. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - North point arrow |
| 19. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Zoning classification note of the tract and location of the zoning district boundaries if the property is located in two or more zoning district [§ 276-11.1.B.(10)] |
| 20. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location of all buildings within 50 feet of the tract [§ 276-11.1.B.(15)] |
| 21. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location of roadways, driveways, travel areas or parking areas within 200 feet of the tract, in accordance with § 276-11.1.B.(16) |
| 22. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Existing topography at two-foot contour intervals of that portion of the tract being proposed for development from a topographic survey and contours on the remainder of the tract from a reliable plan source [§ 276-11.1.B.(17)] |
| 23. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Proposed topography at two-foot contour intervals [§ 276-11.1.B.(18)] |
| 24. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A note identifying the Tax Map and Lot Number of the tract [§ 276-11.1.B.(19)] |
| 25. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location of all existing buildings (including size and height), driveways, sidewalks, parking spaces, loading area, open spaces, large trees, open drainage courses, signs, exterior lighting, service areas, easements landscaping and other pertinent items. [§ 276-11.1.B.(20)] |
| 26. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location of all proposed construction, buildings, structures, pavement, etc. [§ 276-11.1.B.(21)] |
| 27. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A green area shown between the right-of-way line and any pavement, gravel or structure meeting the required minimum width [§ 276-11.1.B.(22)] |
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Note any pertinent highway projects. [§ 276-11.1.B.(23)] |

Notes

(Continue next page)

**TOWN OF HUDSON
SITE PLAN REVIEW CHECKLIST**

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable (please explain)

- | | <u>Y</u> | <u>P</u> | <u>W</u> | <u>NA</u> | |
|-----|-------------------------------------|--------------------------|--------------------------|-------------------------------------|---|
| 30. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location of all building setback lines as required by Chapter 334, Zoning, and setback lines as required by § 276-11.1.B.(12). |
| 31. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location size and character of all signs or a note* stating "All signs are subject to approval by the Hudson Zoning Administrator prior to installation thereof." [§ 276-11.1.B.(13)]
*The discrepancy on the note language is correct – reference to the Planning Board in the regulations is outdated. |
| 32. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The location, detail and character of all exterior lighting or a note stating: "There will be no exterior lighting." [§ 276-11.1.B.(14)] |
| 33. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required open space, including the calculation showing the requirement is met [§ 276-11.1.B.(24)] |
| 34. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Parking space calculation showing and a statement stating the required parking spaces are provided [§ 275-8.C.(2) & (3)] |
| 35. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required dimensions for parking space [§ 275-8.C.(4)] |
| 36. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required dimensions for aisle/access drive [§ 275-8.C.(5)] |
| 37. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required off-street loading spaces [§ 275-8.C.(6)] |
| 38. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required landscaping for the parking lot, including calculation shown the planting requirement is met [§ 275-8.C.(7)] |
| 39. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Required screening for visual separation of incompatible uses [§ 275-8.C.(8)] |
| 40. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Handicap accessibility provided in accordance with the latest ADA Regulations [§ 275-8.C.(11)] |
| 41. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Stormwater Management Plan [§ 275-9.A] |
| 42. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Traffic Study, if required [§ 275-9.B] |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | - Noise Study, if required [§ 275-9.C] |

Notes

(Continue next page)

TOWN OF HUDSON
SITE PLAN REVIEW CHECKLIST

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable (please explain)

- | | <u>Y</u> | <u>P</u> | <u>W</u> | <u>NA</u> | |
|-----|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|---|
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | - Fiscal Impact Study, if required [§ 275-9.D] |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | - Utility Study [§ 275-9.E] |
| 46. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Copies of any proposed or existing easements, covenants, deed restrictions or any other similar document pertinent to the Site Plan [§ 275-9.F] |
| 47. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A copy of all applicable Town, state, county or federal approvals or applications [§ 275-9.G] |
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | - Environmental Impact Study, if required [§ 275-9.I] |

Notes

(End of checklist)

LOT MERGER APPLICATION FOR TAX ASSESSMENT AND LAND USE PURPOSES

TOWN OF HUDSON, NEW HAMPSHIRE

The undersigned, Colbea Enterprises, LLC (type or print name here) is / are the owner(s) of lots or parcels shown on the Town Tax Maps as follows:

Tax Map 198 Lot 11 Tax Map 198 Lot 15
Tax Map 198 Lot 12 Tax Map 198 Lot 16
Tax Map 198 Lot 14 Tax Map _____ Lot _____

The undersigned requests that the Town of Hudson Planning Board combine the above described parcels or lots into one parcel or one lot to be known as, Tax Map 198, Lot 12 for tax assessment, and land use purposes.

The undersigned acknowledges and agrees that the merged lots or parcels shall be shown as a single lot or single parcel on the Town Tax map and shall be one lot or one parcel for land use purposes. The Town of Hudson will assess the merged lots or merged parcels as a single lot or a single parcel.

If at any time the undersigned, or its heirs, legatees, successors and assigns of the undersigned wish to subdivide the merged lot or merged parcel, subdivision approval must be obtained from the Town of Hudson Planning Board under the Town of Hudson Subdivision of Land Regulations.

The undersigned agrees that the approval of this application shall be filed at the expense of the undersigned in the Hillsborough County Registry of Deeds.

Dated this 5 day of September, 2024.


LANDOWNER

(SIGN HERE)

LANDOWNER (SIGN HERE)

Authorized Rep, Colbea Enterprises LLC

(TYPE OR PRINT NAME)

(TYPE OR PRINT NAME)

This application for the merger of lots for tax assessment and land use purposes is approved by action of the Town of Hudson Planning Board. This application shall be recorded in the Hillsborough County Registry of Deeds.

Dated this _____ day of _____, 20____.

(SIGN HERE)
CHAIRPERSON
HUDSON PLANNING BOARD

(TYPE OR PRINT NAME)



January 12, 2024

Mr. Jay Minkarah
Acting Town Planner
Town of Hudson
12 School Street
Hudson, NH 03051

Re: Town of Hudson Planning Board Review
91-97 Lowell Road Gas Site Plan, Lowell Road
Tax Map 198 Lot 11, 12, 14, 15 & 16; Acct. #1350-061
Reference No. 20030249.234

Dear Mr. Minkarah:

Fuss & O'Neill (F&O) has reviewed the first submission of the materials received on December 14, 2023, related to the above-referenced project. Authorization to proceed was received on December 28, 2023. A list of items reviewed is enclosed. The scope of our review is based on the Site Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

We have included a copy of Fuss & O'Neill's evaluation of the checklist for your reference. We note that several items could not be verified by Fuss & O'Neill and require action by the Town.

The project appears to consist of consolidating five lots, demolishing most of the existing buildings on those lots, and constructing a gas station with convenience store, drive-thru and car wash. Proposed improvements to the site also include the construction of parking areas, landscaping, drainage, utilities, and other associated site improvements. The site is to be serviced by public water and sewer systems.

The following items are noted:

1. Site Plan Review Codes (HR 275)

- a. Hudson Regulation (HR) 275-6.C. There currently are no sidewalks abutting the site. The applicant has proposed adding a five-foot wide asphalt sidewalk along Lowell Road. No sidewalks are proposed along Atwood Avenue.
- b. HR 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the proposed buildings, tanks, or gas pump area. The applicant has shown a proposed fire hydrant next to the proposed fueling area.
- c. HR 275-6.T. The applicant is proposing off-site improvements that include drainage along Lowell Road to the north of the site and continuing down Birch Street. We recommend that the applicant add notes to the Off-Site Drainage Plan regarding restoration of the areas after installation and provide details such as a trench patch detail. Also the plans are not detailed enough to show the Town's Right-of-Way line. The applicant should confirm

50 Commercial Street
Manchester, NH
03101
† 603.668.8223
800.286.2469
www.fando.com

California
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Mr. Jay Minkarah
January 12, 2024
Page 2 of 7

and show that all work to be performed is within the Town Right-of-Way.

- d. HR 275-8.C.(2)(a) and Zoning Ordinance (ZO) 334-15.A. The applicant has provided parking calculations on the plan set which show that 48 parking spaces are required for the gas pump, convenience store and drive-thru uses and that 48 spaces are provided.
- e. HR 275-8.C.(6). The applicant has shown one loading area on the plan set, which meets the minimum requirement.
- f. HR 275-9.C.(11). The applicant has provided two handicap accessible parking spaces for the site which meets the minimum requirement.
- g. HR 275-9.F. The applicant did not provide copies of easements and deeds as part of the package received for review. No easements are shown on the Existing Conditions plan or the proposed plans.

2. Administrative Review Codes (HR 276)

- a. HR 276-11.1.B.(6). The applicant should add the owner's signature to the plan set for the final approval copy.
- b. HR 276-11.1.B.(12)(c). The applicant has requested a waiver for the 100-foot setback from a residential use or residential zoning. The applicant has noted that even though the site is zoned business, the property is abutted on three sides by residential uses.
- c. HR 276-11.1.B.(20). The applicant has not provided the size and height of the existing building on the plan set.
- d. HR 276-11.1.B.(22). The applicant has kept an existing building that is within the setback and green space along Atwood Avenue. The intent/use for this building is not noted on the plan set.
- e. HR 276-11.1.B.(25). The applicant has requested a waiver for the travel way five feet within the side setback in front of the car wash building.

3. Driveway Review Codes (HR 275-6.B/Chapter 193)

- a. HR 193.10.E. The applicant has provided a statement in the Traffic Study stating that adequate sight distance is provided for the proposed driveways. The applicant should review the sight distance looking north on Lowell Road from the site driveway as there appears to be some shrubs at the abutting lot that could impact sight distance.
- b. HR 193.10.F. We note that the applicant has proposed keeping the existing driveway that accompanies the existing building along Atwood Avenue. We note that this driveway width exceeds the 50 feet allowed by the Regulation and is approximately 100 feet wide.
- c. HR 193.10.G. The applicant has proposed two new site driveways and one existing driveway for the site. The applicant has requested a waiver for the additional driveway locations.

4. Traffic (HR 275-9.B)

- a. HR 275-9.B. Fuss & O'Neill, Inc. has reviewed the Traffic Impact and Access Study prepared by TF Moran (TFM) dated December 12, 2023 for the proposed gas station/convenience store development at 157 Lowell Road in Hudson, New Hampshire (Tax Map 198 Lots 11, 12, 14, 15 and 16). The project proposes the development of a

Mr. Jay Minkarah
January 12, 2024
Page 3 of 7

5,400 square foot (sf) convenience store with a drive-thru window, 12 vehicle fueling positions (vfp) and an automatic car wash. Access and egress to the site will be provided via a proposed driveway on the west side of Lowell Road just north of its intersection with Atwood Avenue. A secondary driveway will be provided along Atwood Avenue.

The procedures that the TFM report uses are reasonable, with the appropriate seasonal and Covid adjustment factors used to determine base conditions, and proper ITE trip generation rates used for the gas station and convenience store uses. While the ITE information used for the gas station and convenience store uses is correct, it appears that the automated car wash is not accounted for in the trip generation estimates. The ITE trip generation publication has trip generation data for an automated car wash use, albeit a low sample size of data, which was not used or acknowledged in the report. It is doubtful that the consideration of the automated car wash would have a significant impact on the conclusion of the report.

The analysis properly determines new trips versus pass-by trips generated by the site and applies them to the roadway network using a reasonable distribution. The analysis also properly analyzes current and future years for No-Build and Build conditions.

Delays and queues along Lowell Road are mostly unchanged because of the project, and both proposed site driveways function acceptably under all analyzed scenarios. Most of the trips generated by the proposed site are expected to be pass-by trips, with only approximately one new trip per minute being added to the corridor from the development.

Overall, we concur with the TF Moran report's conclusion that the proposed development will have no significant impacts on the Lowell Road corridor and adjacent roadways.

5. Utility Design/Conflicts

- a. HR 275-9.E. & 276-13. The applicant should review the need to cap the existing utility connections at the property line since the installation of new connections is proposed for the site. We recommend that the applicant provide ties and GPS locations for these caps to the Town once this work is completed.
- b. HR 275-9.E. & 276-13. The applicant should show any existing sewer connections or septic tanks for the existing buildings and provide information on how they are to be removed or capped.
- c. HR 275-9.E. & 276-13. The only existing utility connection shown to the building proposed to remain on Atwood Avenue is overhead electrical/communication. The applicant should confirm this service is to remain and that no other services will be connected to this building.
- d. HR 275-9.E & 276-13. The applicant has proposed to connect the sewer service for the site to a manhole on Lowell Road. The applicant should provide the existing invert information of this manhole so that the new connection invert can be evaluated. The applicant should also provide a detail for the trench patch of Lowell Road.

Mr. Jay Minkarah
January 12, 2024
Page 4 of 7

- e. HR 275-9.E & 276-13. The applicant should provide more information regarding how the car wash will make use of the proposed reclaim tanks. There are no connections shown back to the car wash building from those tanks and no details are provided for those tanks.
- f. HR 275-9.E & 276-13. The applicant should provide more information regarding expected sewer flows from the proposed car wash. We note that the Town of Hudson's sewer discharge is treated by the Nashua Wastewater Treatment Plant and flow allocations may be limited, therefore all water reduction efforts should be considered.
- g. HR 275-9.E & 276-13. We note that commercial car wash operations have been included by the EPA in future PFAS regulations. The applicant can expect that the Town of Hudson will likely require the car wash use to be permitted as part of their Industrial Pretreatment Program. This program will eventually require effluent sampling for PFAS and the cost of that sampling will be the burden of the owner.
- h. HR 275-9.E & 276-13. The applicant should review with the Town to confirm the availability of sufficient water flow to accommodate the car wash use.
- i. HR 275-9.E & 276-13. The applicant has labelled SMH-04 on two separate manholes on plan sheet C-08. One of these should be SMH-05.
- j. HR 275-9.E & 276-13. There are several drainage crossings of the sewer pipe between SMH-03 and SMH-04. This run of sewer pipe is not shown on a sewer profile. The applicant should confirm that there are no conflicts between drainage and sewer in this area and that there is adequate separation between these utilities.
- k. HR 275-9.E & 276-13. The proposed underground electric line conflicts with several stormwater features within the site. The applicant should review and adjust the proposed UGE locations.
- l. HR 275-9.E & 276-13. The applicant should provide a hydrant detail in the plan set.
- m. The Utility Plans include call outs and leaders for various drainage pipes but those pipes are not shown on those plans.

6. Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- a. HR 275-9.A.(5). The plans and drainage report should be stamped by a licensed professional engineer.
- b. HR 275. The applicant should have the plans stamped by a wetlands scientist.
- c. HR 275-6.F. and 290-5.A.4. The applicant should provide the calculations or additional reasoning as to the omitted groundwater recharge, and review with the Town if this requires a waiver.
- d. HR 275-9.A.1. The applicant should review with the Town if a waiver is required for the increase in peak runoff and volume at POI-05.
- e. HR 275-9.A4 & 290-5. The applicant should provide, at a minimum, the HydroCAD node listings for all storms required.
- f. HR 290-5.A.1. & 290-5.A.3. The applicant should provide language in the Drainage Analysis Report stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.
- g. HR 290-5.A. The applicant should provide the required GRV worksheets.

Mr. Jay Minkarah

January 12, 2024

Page 5 of 7

- h. HR 290-5.A.9. & 11. The applicant should provide the required BMP worksheets illustrating ESHWT, Infiltration Feasibility Reports, and other NHDES design criteria.
- i. HR 290-5.A.9. & 11. The applicant should review the definition of a "High Load Area" within the NHDES AoT regulations and note if this will have any effect on the stormwater runoff leaving the site.
- j. HR 290-5.A.9. & 11. The applicant should provide design details to illustrate the subsurface systems design information and outlet information.
- k. HR 290-5.A.12. The applicant should provide an I&M manual for general site maintenance as well as project specific BMPs.
- l. HR 290-5.A.12. Given the proposed use of automotive fueling facilities, gas and other fluids will be present onsite. Spill prevention kits and a general spill prevention plan should be provided to the Town for their review and acceptance.
- m. HR 290-5.B.1.b. The applicant should provide support materials or calculations showing the required 80% TSS and 50% TP pollutant removals.
- n. HR 290-5.B.2.a. The applicant should provide calculations showing the required treatment of at least 30% of the existing impervious cover and 50% of proposed additional impervious cover.
- o. HR 290-6.A.8. The applicant should ensure the plans note a pre-construction meeting is required with the Town Engineer.
- p. HR 290-6.A.9. The applicant should ensure the disturbed area timeframes are listed upon the plan set.
- q. HR 290-7.A.6. The applicant should provide information as to how the stormwater system is designed to account for frozen ground conditions.
- r. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.
- s. HR 290-10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain Permit being requested to ensure NHDES comments do not alter drainage design/calculations.
- t. HR 290-10.A. The Erosion Control Plan notes approximately 104,000 square feet of disturbance. The applicant should note if this area includes the disturbance within Lowell Road for the proposed drainage upgrades down to Second Brook.
- u. The Structure Tables on plan sheet C-06 are very faint and difficult to read.
- v. The applicant should clarify how the canopy over the fuel pumps is proposed to drain. The plans do not show a connection to closed drainage and there are no downspouts shown.
- w. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements. The applicant has noted that the project has been designed to meet MS4 requirements.
- x. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning

Mr. Jay Minkarah
January 12, 2024
Page 6 of 7

environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact this review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.

7. Zoning (ZO 334)

- a. ZO 334-17 & 334-21. The subject parcel is located within the Business (B) zoning district and the applicant has noted this on the plans. The proposed automotive fuel station with general retail use is allowed within the district.
- b. ZO 334-35. The applicant has shown the wetlands and buffer area on the plan set. We note that part of the site is within the wetlands buffer, and that no development or disturbance is proposed within this buffer.
- c. ZO 334-58. The applicant has shown sign locations and details on the plan. The applicant has also noted the need for a Zoning Variance for the proposed signage.
- d. ZO 334-83 and HR 218-4.E. The applicant has noted that the site is located within an Area of Minimal Flooding on the National Flood Insurance Program Flood Insurance Rate Map.

8. Erosion Control/Wetland Impacts

- a. The applicant should show the proposed location for the stabilized construction entrance on the plan set.
- b. The applicant has noted that the Town of Hudson shall reserve the right to require any additional erosion control measures as needed.

9. Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(7). The applicant has provided interior landscape parking lot calculations. We note that the applicant should review the shrub calculations because it appears that they used the lower amount required. The requirement would be greater if they used one shrub per 200 square feet of paved area.
- b. HR 275-8.C.(8). The applicant has proposed new landscaping areas along the site including some dense evergreen groupings to be considered screening. We note that a lot of dense vegetation exists to the north of the site that is proposed to remain.
- c. HR 276-11.1.B.(14). The applicant has provided a lighting plan. We note that at the north and west sides of the site, the plan shows greater than 0.2 and up to 0.7 footcandles at the lot property lines. Due to the residential uses of these sites, the applicant should review the design to reduce these amounts wherever practical.
- d. The applicant should note the hours of operation of the site and the lighting.
- e. The applicant should review the proposed lighting and landscaping plans as several lights appear to be very close to proposed trees.

Mr. Jay Minkarah
January 12, 2024
Page 7 of 7

10. State and Local Permits (HR 275-9.G.)

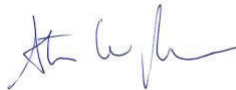
- a. HR 275-9.G. The applicant has listed required permits and their status on the plan set.
- b. HR 275-9.G. The applicant did not provide copies of any applicable Town, State or Federal approvals or permits already received in the review package.
- c. HR 275-9.G. The applicant did not include any details for the underground storage tanks or concrete pad. The plans note that final design is to be by others.
- d. Additional local and state permitting may be required.

11. Other

- a. ETGTD Section 565.1.1. The applicant is reminded of Town of Hudson requirements for the importing of off-site fill materials for use in constructing this project. We could not locate a note regarding this requirement on the plans, and it is recommended that these requirements be stated for the Contractors attention.
- b. The applicant should review the scale of sheet C-02. It appears that the plan scale is 1"=30' but a scale of 1"=20' is noted.
- c. The applicant should review the plans and correct several overwrites/drafting conflicts.
- d. The applicant should clarify what the proposed structure is behind the existing building that is to remain. Is this a retaining wall, a fence, etc.? The applicant should provide a detail for this feature.

Please feel free to call if you have any questions.

Very truly yours,



Steven W. Reichert, P.E.

SWR:

Enclosure

cc: Town of Hudson Engineering Division – File
TF Moran, Inc. – crice@tfmoran.com

August 12, 2024



50 Commercial Street, Suite 2S
Manchester, NH 03101
603.668.8223
www.fando.com

Mr. Jay Minkarah
Acting Town Planner
Town of Hudson
12 School Street
Hudson, NH 03051

Re: Town of Hudson Planning Board Review
91-97 Lowell Road Gas Site Plan, Lowell Road
Tax Map 198 Lot 11, 12, 14, 15 & 16; Acct. #1350-061
Reference No. 20030249.234

Dear Mr. Minkarah:

Fuss & O'Neill (F&O) has reviewed the second submission of the materials received between May 30 and July 22, 2024, related to the above-referenced project. Authorization to proceed was received on July 26, 2024. A list of items reviewed is enclosed. The scope of our review is based on the Site Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

The project appears to consist of consolidating five lots, demolishing most of the existing buildings on those lots, and constructing a gas station with convenience store, drive-thru and car wash. Proposed improvements to the site also include the construction of parking areas, landscaping, drainage, utilities, and other associated site improvements. The site is to be serviced by public water and sewer systems.

The following items have outstanding issues:

1. Site Plan Review Codes (HR 275)

- c. *Former Fuss & O'Neill Comment: HR 275-6.T. The applicant is proposing off-site improvements that include drainage along Lowell Road to the north of the site and continuing down Birch Street. We recommend that the applicant add notes to the Off-Site Drainage Plan regarding restoration of the areas after installation and provide details such as a trench patch detail. Also the plans are not detailed enough to show the Town's Right-of-Way line. The applicant should confirm and show that all work to be performed is within the Town Right-of-Way.*

Current Fuss & O'Neill Comment: The applicant has added a note to the plan stating that all work to be performed is within the Town Right-of-Way and added a trench patch detail to the plan set. We note that the Town is currently soliciting consultants for redesigning the intersection of Birch Street and Lowell Road, and that design may impact the proposed off-site improvements shown. The applicant should coordinate with the Town Engineer regarding proposed improvements, or confirm that this coordination has already taken place.

2. Administrative Review Codes (HR 276)

- a. *Former Fuss & O'Neill Comment: HR 276-11.1.B.(6). The applicant should add the owner's signature to the plan set for the final approval copy.*

Current Fuss & O'Neill Comment: The applicant has noted that the signature will be added to the final plan.

- d. *Former Fuss & O'Neill Comment: HR 276-11.1.B.(22). The applicant has kept an existing building that is within the setback and green space along Atwood Avenue. The intent/use for this building is not noted on the plan set.*

Current Fuss & O'Neill Comment: The applicant has stated that the building will be used as storage, but we were unable to find this note on the plan.

3. Driveway Review Codes (HR 275-6.B/Chapter 193)

- a. *Former Fuss & O'Neill Comment: HR 193.10.E. The applicant has provided a statement in the Traffic Study stating that adequate sight distance is provided for the proposed driveways. The applicant should review the sight distance looking north on Lowell Road from the site driveway as there appears to be some shrubs at the abutting lot that could impact sight distance.*

Current Fuss & O'Neill Comment: The applicant has confirmed that the shrub is impeding the sight distance as stated. The applicant should work with the Town/abutter to resolve this issue before the site is complete. We note that the Town may want to add this item to the Conditions of Approval or make it a condition of the Certificate of Occupancy.

- b. *Former Fuss & O'Neill Comment: HR 193.10.F. We note that the applicant has proposed keeping the existing driveway that accompanies the existing building along Atwood Avenue. We note that this driveway width exceeds the 50 feet allowed by the Regulation and is approximately 100 feet wide.*

Current Fuss & O'Neill Comment: The applicant has proposed removing pavement to reduce the driveway width to 62 feet which still exceeds maximum width allowed by the Regulation. The applicant should review the need for a waiver for this requirement.

5. Utility Design/Conflicts

- a. *Former Fuss & O'Neill Comment: HR 275-9.E. & 276-13. The applicant should review the need to cap the existing utility connections at the property line since the installation of new connections is proposed for the site. We recommend that the applicant provide ties and GPS locations for these caps to the Town once this work is completed.*

Current Fuss & O'Neill Comment: The applicant has noted on the plans that the existing utilities should be capped as required. We recommend that applicant note that ties and GPS locations for these caps should be provided to the Town once this work is completed.

- d. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant has proposed to connect the sewer service for the site to a manhole on Lowell Road. The applicant should provide the existing invert information of this manhole so that the new connection invert can be evaluated. The applicant should also provide a detail for the trench patch of Lowell Road.*

Current Fuss & O'Neill Comment: The applicant has provided the pavement patch detail and has stated the existing invert information provided by the Town. The applicant should add this invert information to the plan.

- f. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant should provide more information regarding expected sewer flows from the proposed car wash. We note that the Town of Hudson's sewer discharge is treated by the Nashua Wastewater Treatment Plant and flow allocations may be limited, therefore all water reduction efforts should be considered.*

Current Fuss & O'Neill Comment: The applicant has provided flow inflation showing water usage of approximately 9,100 gallons per day. We note that the applicant should be aware that the Town may require a sewer flow allocation purchase (currently \$3.53 per gallon). The applicant should also be prepared to meet the discharge requirements of the Sewer Use Ordinance Section 2.3.

6. Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- a. *Former Fuss & O'Neill Comment: HR 275-9.A.(5). The plans and drainage report should be stamped by a licensed professional engineer.*

Current Fuss & O'Neill Comment: The applicant has stated that the plans and report will be stamped prior to final submission.

- b. *Former Fuss & O'Neill Comment: HR 275. The applicant should have the plans stamped by a wetlands scientist.*

Current Fuss & O'Neill Comment: The applicant has noted that the plans will be stamped prior to final submission.

- d. *Former Fuss & O'Neill Comment: HR 275-9.A.1. The applicant should review with the Town if a waiver is required for the increase in peak runoff and volume at POI-05.*

Current Fuss & O'Neill Comment: The applicant has stated that they will request a waiver for the increase. We note that the applicant has not noted the waiver request on the plan with the other waivers.

- h. *Former Fuss & O'Neill Comment: HR 290-5.A.9. & 11. The applicant should provide the required BMP worksheets illustrating ESHWT, Infiltration Feasibility Reports, and other NHDES design criteria.*

Current Fuss & O'Neill Comment: The applicant has provided BMP worksheets for the Infiltration Basin and Stormtech System 02. BMP worksheets for all Stormtech systems should be provided. Also, we note that in comparing the HydroCAD, infiltration is not accounted for within Stormtech Systems 03, 04, and 05. The plans do not show that these systems are lined, nor do they have test pit data for the systems. The applicant should provide additional information to these systems to account for ESHWT and infiltration.

- j. *Former Fuss & O'Neill Comment: HR 290-5.A.9. & 11. The applicant should provide design details to illustrate the subsurface systems design information and outlet information.*

Current Fuss & O'Neill Comment: The applicant should provide the Stormtech units individual design criteria on the plan set in order for the contractor to construct the systems; including but not limited to elevations, depth of stone, number of chambers, number of end units, clean out port locations, etc. We note ADS will design a CAD file for the project ensuring that the systems meet sizing and design requirements. Also, if the Stormtech Systems are to be lined with an impervious liner, the applicant should list the type of impermeable liner proposed upon the plan.

- k. *Former Fuss & O'Neill Comment: HR 290-5.A.12. The applicant should provide an I&M manual for general site maintenance as well as project specific BMPs.*

Current Fuss & O'Neill Comment: The applicant should provide specific project information/features upon the I&M manual provided to ensure that all drainage structures/items are addressed during Inspection and maintenance.

- l. *Former Fuss & O'Neill Comment: HR 290-5.A.12. Given the proposed use of automotive fueling facilities, gas and other fluids will be present onsite. Spill prevention kits and a general spill prevention plan should be provided to the Town for their review and acceptance.*

Current Fuss & O'Neill Comment: The applicant should provide the Spill Prevention Plan to the Town for review.

- m. *Former Fuss & O'Neill Comment: HR 290-5.B.1.b. The applicant should provide support materials or calculations showing the required 80% TSS and 50% TP pollutant removals.*

Current Fuss & O'Neill Comment: The applicant should provide project specific pollutant loading calculations. We note that UNH Stormwater Center (UNHSC) has created a universal MS4 SCM Performance Calculator that is applicable to most projects and can be downloaded at <https://scholars.unh.edu/stormwater/120/>.

- n. *Former Fuss & O'Neill Comment: HR 290-5.B.2.a. The applicant should provide calculations showing the required treatment of at least 30% of the existing impervious cover and 50% of proposed additional impervious cover.*

Current Fuss & O'Neill Comment: The applicant should provide this impervious ground cover information within the Drainage Report.

- q. *Former Fuss & O'Neill Comment: HR 290-7.A.6. The applicant should provide information as to how the stormwater system is designed to account for frozen ground conditions.*

Current Fuss & O'Neill Comment: The intent of this comment is to ensure that proposed surface infiltration still occurs during frozen ground conditions. The applicant should review the need for design items such as a stone wick to ensure infiltration is not impeded during frozen ground conditions.

- t. *Former Fuss & O'Neill Comment: HR 290-10.A. The Erosion Control Plan notes approximately 104,000 square feet of disturbance. The applicant should note if this area includes the disturbance within Lowell Road for the proposed drainage upgrades down to Second Brook.*

Current Fuss & O'Neill Comment: The applicant should provide the total land disturbance required for the project to be completed.

- v. *Former Fuss & O'Neill Comment: The applicant should clarify how the canopy over the fuel pumps is proposed to drain. The plans do not show a connection to closed drainage and there are no downspouts shown.*

Current Fuss & O'Neill Comment: The applicant should provide additional information as to the proposed roof runoff. Is the runoff to be collected into downspouts or is it to sheet off the canopy without collection?

9. Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. *Former Fuss & O'Neill Comment: HR 275-8.C.(7). The applicant has provided interior landscape parking lot calculations. We note that the applicant should review the shrub calculations because it appears that they used the lower amount required. The requirement would be greater if they used one shrub per 200 square feet of paved area.*

Current Fuss & O'Neill Comment: The applicant has added additional shrubs to the plan and has noted the requirement is now 183 shrubs. We note that the applicant has noted that 183 shrubs have been provided but there only appears to be 182 shrubs on the plan and legend.

- c. *Former Fuss & O'Neill Comment: HR 276-11.1.B.(14). The applicant has provided a lighting plan. We note that at the north and west sides of the site, the plan shows greater than 0.2 and up to 0.7 footcandles at the lot property lines. Due to the residential uses of these sites, the applicant should review the design to reduce these amounts wherever practical.*

Current Fuss & O'Neill Comment: The applicant has stated that the plans have been revised to reduce the lighting at the property line. We note that a revised lighting plan was not provided for review therefore the reduction could not be confirmed.

- e. *Former Fuss & O'Neill Comment: The applicant should review the proposed lighting and landscaping plans as several lights appear to be very close to proposed trees.*

Current Fuss & O'Neill Comment: The applicant has stated that the plans have been revised. We note that a revised Lighting Plan was not received for review.

The following items require Town evaluation or input:

2. Administrative Review Codes (HR 276)

- b. **Former/Current Fuss & O'Neill Comment:** HR 276-11.1.B.(12)(c). The applicant has requested a waiver for the 100-foot setback from a residential use or residential zoning. The applicant has noted that even though the site is zoned business, the property is abutted on three sides by residential uses.
- e. **Former/Current Fuss & O'Neill Comment:** HR 276-11.1.B.(25). The applicant has requested a waiver for the travel way five feet within the side setback in front of the car wash building.

3. Driveway Review Codes (HR 275-6.B/Chapter 193)

- c. *Former Fuss & O'Neill Comment: HR 193.10.G. The applicant has proposed two new site driveways and one existing driveway for the site. The applicant has requested a waiver for the additional driveway locations.*

Current Fuss & O'Neill Comment: The applicant has listed this waiver request on the plan set.

The following items are resolved or have no further Fuss & O'Neill input:

1. Site Plan Review Codes (HR 275)

- a. *Former Fuss & O'Neill Comment: Hudson Regulation (HR) 275-6.C. There currently are no sidewalks abutting the site. The applicant has proposed adding a five-foot wide asphalt sidewalk along Lowell Road. No sidewalks are proposed along Atwood Avenue.*
- b. *Former Fuss & O'Neill Comment: HR 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the proposed buildings, tanks, or gas pump area. The applicant has shown a proposed fire hydrant next to the proposed fueling area.*

- d. *Former Fuss & O'Neill Comment: HR 275-8.C.(2)(a) and Zoning Ordinance (ZO) 334-15.A. The applicant has provided parking calculations on the plan set which show that 48 parking spaces are required for the gas pump, convenience store and drive-thru uses and that 48 spaces are provided.*
- e. *Former Fuss & O'Neill Comment: HR 275-8.C.(6). The applicant has shown one loading area on the plan set, which meets the minimum requirement.*
- f. *Former Fuss & O'Neill Comment: HR 275-9.C.(11). The applicant has provided two handicap accessible parking spaces for the site which meets the minimum requirement.*
- g. *Former Fuss & O'Neill Comment: HR 275-9.F. The applicant did not provide copies of easements and deeds as part of the package received for review. No easements are shown on the Existing Conditions plan or the proposed plans.*

Current Fuss & O'Neill Comment: The applicant has confirmed that the site has no existing easements. No further Fuss & O'Neill comment.

2. Administrative Review Codes (HR 276)

- c. *Former Fuss & O'Neill Comment: HR 276-11.1.B.(20). The applicant has not provided the size and height of the existing building on the plan set.*

Current Fuss & O'Neill Comment: The applicant has added the existing height on the plan. No further Fuss & O'Neill comment.

4. Traffic (HR 275-9.B)

- a. *Former Fuss & O'Neill Comment: HR 275-9.B. Fuss & O'Neill, Inc. has reviewed the Traffic Impact and Access Study prepared by TF Moran (TFM) dated December 12, 2023 for the proposed gas station/convenience store development at 157 Lowell Road in Hudson, New Hampshire (Tax Map 198 Lots 11, 12, 14, 15 and 16). The project proposes the development of a 5,400 square foot (sf) convenience store with a drive-thru window, 12 vehicle fueling positions (vfp) and an automatic car wash. Access and egress to the site will be provided via a proposed driveway on the west side of Lowell Road just north of its intersection with Atwood Avenue. A secondary driveway will be provided along Atwood Avenue.*

The procedures that the TFM report uses are reasonable, with the appropriate seasonal and Covid adjustment factors used to determine base conditions, and proper ITE trip generation rates used for the gas station and convenience store uses. While the ITE information used for the gas station and convenience store uses is correct, it appears that the automated car wash is not accounted for in the trip generation estimates. The ITE trip generation publication has trip generation data for an automated car wash use, albeit a low sample size of data, which was not used or acknowledged in the report. It is doubtful that the consideration of the automated car wash would have a significant impact on the conclusion of the report.

The analysis properly determines new trips versus pass-by trips generated by the site and applies them to the roadway network using a reasonable distribution. The analysis also properly analyzes current and future years for No-Build and Build conditions.

Delays and queues along Lowell Road are mostly unchanged because of the project, and both proposed site driveways function acceptably under all analyzed scenarios. Most of the trips generated by the proposed site are expected to be pass-by trips, with only approximately one new trip per minute being added to the corridor from the development.

Overall, we concur with the TF Moran report's conclusion that the proposed development will have no significant impacts on the Lowell Road corridor and adjacent roadways.

Current Fuss & O'Neill Comment: The applicant has noted that they believe nearly all car wash users will buy gas or convenience items and therefore would have no effect on the traffic study outcomes. No further Fuss & O'Neill comment.

5. Utility Design/Conflicts

- b. *Former Fuss & O'Neill Comment: HR 275-9.E. & 276-13. The applicant should show any existing sewer connections or septic tanks for the existing buildings and provide information on how they are to be removed or capped.*
Current Fuss & O'Neill Comment: The applicant has noted the location and the removal requirement on the plan. No further Fuss & O'Neill comment.
- c. *Former Fuss & O'Neill Comment: HR 275-9.E. & 276-13. The only existing utility connection shown to the building proposed to remain on Atwood Avenue is overhead electrical/communication. The applicant should confirm this service is to remain and that no other services will be connected to this building.*
Current Fuss & O'Neill Comment: The applicant has added a water and sewer connection to this building on the plan set and noted that the existing electric will remain. No further Fuss & O'Neill comment.
- e. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant should provide more information regarding how the car wash will make use of the proposed reclaim tanks. There are no connections shown back to the car wash building from those tanks and no details are provided for those tanks.*
Current Fuss & O'Neill Comment: The applicant has added the connections to the plan set. No further Fuss & O'Neill comment.
- g. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. We note that commercial car wash operations have been included by the EPA in future PFAS regulations. The applicant can expect that the Town of Hudson will likely require the car wash use to be permitted as part of their Industrial Pretreatment Program. This program will eventually require effluent sampling for PFAS and the cost of that sampling will be the burden of the owner.*
Current Fuss & O'Neill Comment: The applicant has acknowledged the requirement. No further Fuss & O'Neill comment.
- h. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant should review with the Town to confirm the availability of sufficient water flow to accommodate the car wash use.*
Current Fuss & O'Neill Comment: The applicant has confirmed that they will coordinate with the Town. No further Fuss & O'Neill comment.
- i. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant has labelled SMH-04 on two separate manholes on plan sheet C-08. One of these should be SMH-05.*
Current Fuss & O'Neill Comment: The applicant has revised the labeling. No further Fuss & O'Neill comment.
- j. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. There are several drainage crossings of the sewer pipe between SMH-03 and SMH-04. This run of sewer pipe is not shown on a sewer profile. The applicant should confirm that there are no conflicts between drainage and sewer in this area and that there is adequate separation between these utilities.*
Current Fuss & O'Neill Comment: The applicant has added additional profiles to confirm there are no conflicts. No further Fuss & O'Neill comment.
- k. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The proposed underground electric line conflicts with several stormwater features within the site. The applicant should review and adjust the proposed UGE locations.*
Current Fuss & O'Neill Comment: The applicant has revised the electrical layout. No further Fuss & O'Neill comment.
- l. *Former Fuss & O'Neill Comment: HR 275-.9.E & 276-13. The applicant should provide a hydrant detail in the plan set.*
Current Fuss & O'Neill Comment: The applicant has provided the hydrant detail. No further Fuss & O'Neill comment.
- m. *Former Fuss & O'Neill Comment: The Utility Plans include call outs and leaders for various drainage pipes but those pipes are not shown on those plans.*
Current Fuss & O'Neill Comment: The applicant has revised the plan for clarity. No further Fuss & O'Neill comment.

6. Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- c. *Former Fuss & O'Neill Comment: HR 275-6.F. and 290-5.A.4. The applicant should provide the calculations or additional reasoning as to the omitted groundwater recharge, and review with the Town if this requires a waiver.*
Current Fuss & O'Neill Comment: The applicant has provided the requested information. No further Fuss & O'Neill comment.
- e. *Former Fuss & O'Neill Comment: HR 275-9.A4 & 290-5. The applicant should provide, at a minimum, the HydroCAD node listings for all storms required.*
Current Fuss & O'Neill Comment: The applicant has provided a Node Listing for all Storms required. No further Fuss & O'Neill comment.
- f. *Former Fuss & O'Neill Comment: HR 290-5.A.1. & 290-5.A.3. The applicant should provide language in the Drainage Analysis Report stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.*
Current Fuss & O'Neill Comment: The applicant has provided LID wording in the Drainage Report. No further Fuss & O'Neill comment.
- g. *Former Fuss & O'Neill Comment: HR 290-5.A. The applicant should provide the required GRV worksheets.*
Current Fuss & O'Neill Comment: The applicant has provided GRV worksheet. No further Fuss & O'Neill comment.
- i. *Former Fuss & O'Neill Comment: HR 290-5.A.9. & 11. The applicant should review the definition of a "High Load Area" within the NHDES AoT regulations and note if this will have any effect on the stormwater runoff leaving the site.*
Current Fuss & O'Neill Comment: The applicant has reviewed "High Load Area" definition. No further Fuss & O'Neill comment.
- o. *Former Fuss & O'Neill Comment: HR 290-6.A.8. The applicant should ensure the plans note a pre-construction meeting is required with the Town Engineer.*
Current Fuss & O'Neill Comment: The applicant has provided the note on the plan. No further Fuss & O'Neill comment.
- p. *Former Fuss & O'Neill Comment: HR 290-6.A.9. The applicant should ensure the disturbed area timeframes are listed upon the plan set.*
Current Fuss & O'Neill Comment: The applicant has provided the requested information on the plan. No further Fuss & O'Neill comment.
- r. *Former Fuss & O'Neill Comment: HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.*
Current Fuss & O'Neill Comment: The applicant has acknowledged the requirement. No further Fuss & O'Neill comment.
- s. *Former Fuss & O'Neill Comment: HR 290-10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain Permit being requested to ensure NHDES comments do not alter drainage design/calculations.*
Current Fuss & O'Neill Comment: The applicant has noted that this will be a Condition of Approval. No further Fuss & O'Neill comment.
- u. *Former Fuss & O'Neill Comment: The Structure Tables on plan sheet C-06 are very faint and difficult to read.*
Current Fuss & O'Neill Comment: The applicant has updated the plan. No further Fuss & O'Neill comment.
- w. *Former Fuss & O'Neill Comment: The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements. The applicant has noted that the project has been designed to meet MS4 requirements.*

- x. *Former Fuss & O'Neill Comment: Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact this review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.*

7. Zoning (ZO 334)

- a. *Former Fuss & O'Neill Comment: ZO 334-17 & 334-21. The subject parcel is located within the Business (B) zoning district and the applicant has noted this on the plans. The proposed automotive fuel station with general retail use is allowed within the district.*
- b. *Former Fuss & O'Neill Comment: ZO 334-35. The applicant has shown the wetlands and buffer area on the plan set. We note that part of the site is within the wetlands buffer, and that no development or disturbance is proposed within this buffer.*
- c. *Former Fuss & O'Neill Comment: ZO 334-58. The applicant has shown sign locations and details on the plan. The applicant has also noted the need for a Zoning Variance for the proposed signage.*
- d. *Former Fuss & O'Neill Comment: ZO 334-83 and HR 218-4.E. The applicant has noted that the site is located within an Area of Minimal Flooding on the National Flood Insurance Program Flood Insurance Rate Map.*

8. Erosion Control/Wetland Impacts

- a. *Former Fuss & O'Neill Comment: The applicant should show the proposed location for the stabilized construction entrance on the plan set.*
Current Fuss & O'Neill Comment: The applicant has added the location to the plan. No further Fuss & O'Neill comment.
- b. *Former Fuss & O'Neill Comment: The applicant has noted that the Town of Hudson shall reserve the right to require any additional erosion control measures as needed.*

9. Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- b. *Former Fuss & O'Neill Comment: HR 275-8.C.(8). The applicant has proposed new landscaping areas along the site including some dense evergreen groupings to be considered screening. We note that a lot of dense vegetation exists to the north of the site that is proposed to remain.*
- d. *Former Fuss & O'Neill Comment: The applicant should note the hours of operation of the site and the lighting.*
Current Fuss & O'Neill Comment: The applicant has noted on the plans that the site will be open 24 hours. No further Fuss & O'Neill comment.

10. State and Local Permits (HR 275-9.G.)

- a. *Former Fuss & O'Neill Comment: HR 275-9.G. The applicant has listed required permits and their status on the plan set.*
- b. *Former Fuss & O'Neill Comment: HR 275-9.G. The applicant did not provide copies of any applicable Town, State or Federal approvals or permits already received in the review package.*
- c. *Former Fuss & O'Neill Comment: HR 275-9.G. The applicant did not include any details for the underground storage tanks or concrete pad. The plans note that final design is to be by others.*
- d. *Former Fuss & O'Neill Comment: Former Fuss & O'Neill Comment: Additional local and state permitting may be required.*

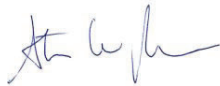
Mr. Jay Minkarah
August 12, 2024
Page 9 of 9

11. Other

- a. *Former Fuss & O'Neill Comment: ETGTD Section 565.1.1. The applicant is reminded of Town of Hudson requirements for the importing of off-site fill materials for use in constructing this project. We could not locate a note regarding this requirement on the plans, and it is recommended that these requirements be stated for the Contractors attention.*
Current Fuss & O'Neill Comment: The applicant has added this information to the plan. No further Fuss & O'Neill comment.
- b. *Former Fuss & O'Neill Comment: The applicant should review the scale of sheet C-02. It appears that the plan scale is 1"=30' but a scale of 1"=20' is noted.*
Current Fuss & O'Neill Comment: The plan scale has been revised. No further Fuss & O'Neill comment.
- c. *Former Fuss & O'Neill Comment: The applicant should review the plans and correct several overwrites/drafting conflicts.*
Current Fuss & O'Neill Comment: The applicant has revised the plans. No further Fuss & O'Neill comment.
- d. *Former Fuss & O'Neill Comment: The applicant should clarify what the proposed structure is behind the existing building that is to remain. Is this a retaining wall, a fence, etc.? The applicant should provide a detail for this feature.*
Current Fuss & O'Neill Comment: The applicant has noted that this is a proposed retaining wall. No further Fuss & O'Neill comment.

Please feel free to call if you have any questions.

Very truly yours,



Steven W. Reichert, P.E.

SWR:

Enclosure

cc: Town of Hudson Engineering Division – File
TF Moran, Inc. – crice@tfmoran.com

SITE PLAN APPLICATION

Date of Application: December 13, 2023 Tax Map #: 198 Lot #: 11, 12, 14, 15, & 16

Site Address: 91-97 Lowell Road Hudson, NH

Name of Project: Proposed Gas Station & Convenience Store

Zoning District: Business General SP#: 09-23
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:

Name: Colbea Enterprises, LLC

Address: 695 George Washington Highway

Address: Lincoln, RI 02865

Telephone # (401) 943-0005 x356

Email: mgazdacko@seasonscornermarket.com

DEVELOPER:

PROJECT ENGINEER:

Name: Christopher Rice

Address: 170 Commerce Way, Suite 102

Address: Portsmouth, NH 03801

Telephone # (603) 431-2222

Email: crice@tfmoran.com

SURVEYOR:

Brenda Kolbow

170 Commerce Way, Suite 102

Portsmouth, NH 03801

(603) 431-2222

bkolbow@tfmoran.com

PURPOSE OF PLAN:

The purpose of this plan is to depict construction of a proposed gas station, convenience store consisting of 6 dispenser islands for a total of 12 fueling stations, along with a proposed car wash. Associated improvements include but are not limited to access, grading, stormwater management, utilities, lighting, and landscaping.

(For Town Use Only)		
Routing Date: <u>12/18/23</u>	Deadline Date: <u>12/26/23</u>	Meeting Date: <u>TBD</u>
_____ I have no comments <input checked="" type="checkbox"/> I have comments (attach to form)		
<u>DRH</u> (Initials)	Title: <u>Fire Marshal</u>	Date: <u>12/19/23</u>
Department: _____		
Zoning: _____	Engineering: _____	Assessor: _____
Police: _____	Fire: <input checked="" type="checkbox"/>	DPW: _____
Consultant: _____		



TOWN OF HUDSON

FIRE DEPARTMENT

INSPECTIONAL SERVICES DIVISION



12 SCHOOL STREET, HUDSON, NEW HAMPSHIRE 03051

Emergency 911
Business 603-886-6005
Fax 603-594-1142

Scott Tice
Chief of Department

TO: Town Planner

FR: David Hebert
Fire Marshal

DT: December 19, 2023

RE: 91-97 Lowell Road

Provide fire flow readings on existing fire hydrants on Lowell Road in vicinity of proposed gas station/convenience store to verify the flow rate conforms to 2018 NFPA 1, chapter 18 for water supply.

Provide dimensions between existing hydrants and proposed fire hydrant inside the proposed site

David Hebert
Fire Marshal

Dubowik, Brooke

From: Hebert, David
Sent: Tuesday, June 4, 2024 9:45 AM
To: Dubowik, Brooke; Twardosky, Jason; Dhima, Elvis; Sullivan, Christopher
Subject: RE: 91-97 Lowell Road Response to Comments

My comments have not been addressed. They need to determine the fire flow and the distances between hydrants



Dave Hebert
Fire Marshal
Hudson Fire Department
Inspectional Services Division

Town of Hudson | 12 School Street | Hudson, NH 03051
603-886-6005 (Main) | 603-816-1271 (Direct)

Dubowik, Brooke

From: Twardosky, Jason
Sent: Wednesday, December 27, 2023 11:20 AM
To: Dubowik, Brooke; Dhima, Elvis; Gradert Benjamin; Hebert, David; Kirkland, Donald; McElhinney, Steven; Michaud, Jim; Sullivan, Christopher; Malley, Tim
Subject: RE: DEP TSIGN OFF - SP# 09-23 Lowell Rd. Gas Station Site Plan

I have been having some email problems so this did not get out yesterday.

I have one comment.

- 1) A sewer inspection manhole will be placed at the property line.
-

Dubowik, Brooke

From: Kirkland, Donald
Sent: Monday, December 18, 2023 4:29 PM
To: Dubowik, Brooke
Cc: Dhima, Elvis
Subject: RE: DEP TSIGN OFF - SP# 09-23 Lowell Rd. Gas Station Site Plan

The applicant shall provide oil separators on Cbs discharging to infiltration basins or the stormtech system.

Don Kirkland, P.E.
Civil Engineer

Town of Hudson, NH
12 School Street
Hudson, NH 03051
Phone: (603) 886-6008
Mobile: (603) 809-0229



Dubowik, Brooke

From: Dhima, Elvis
Sent: Monday, December 18, 2023 4:18 PM
To: Dubowik, Brooke
Cc: Gradert Benjamin; Hebert, David; Kirkland, Donald; McElhinney, Steven; Michaud, Jim; Sullivan, Christopher; Malley, Tim; Twardosky, Jason
Subject: RE: DEP TSIGN OFF - SP# 09-23 Lowell Rd. Gas Station Site Plan

Please see below

1. Applicant shall provide sight distance plan and profile for both proposed entrances
2. Applicant shall propose and provide drainage improvements along Lowell and Birch Street. Currently this area is experiencing known drainage issues

E

Elvis Dhima, P.E.
Town Engineer

12 School Street
Hudson, NH 03051
Phone: (603) 886-6008
Mobile: (603) 318-8286



Dubowik, Brooke

From: Dhima, Elvis
Sent: Wednesday, July 24, 2024 5:37 PM
To: Dubowik, Brooke
Cc: Jay Minkarah; Gradert Benjamin; Twardosky, Jason
Subject: RE: 91-97 Lowell Road Submittal

Brooke

All Engineering and DPW comments have been addressed

E

Elvis Dhima, P.E.
Town Engineer

12 School Street
Hudson, NH 03051
Phone: (603) 886-6008



SITE PLAN APPLICATION

Date of Application: December 13, 2023 Tax Map #: 198 Lot #: 11, 12, 14, 15, & 16

Site Address: 91-97 Lowell Road Hudson, NH

Name of Project: Proposed Gas Station & Convenience Store

Zoning District: Business General SP#: 09-23
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:

DEVELOPER:

Name: Colbea Enterprises, LLC

Address: 695 George Washington Highway

Address: Lincoln, RI 02865

Telephone # (401) 943-0005 x356

Email: mgazdacko@seasonscornermarket.com

PROJECT ENGINEER:

SURVEYOR:

Name: Christopher Rice

Brenda Kolbow

Address: 170 Commerce Way, Suite 102

170 Commerce Way, Suite 102

Address: Portsmouth, NH 03801

Portsmouth, NH 03801

Telephone # (603) 431-2222

(603) 431-2222

Email: crice@tfmoran.com

bkolbow@tfmoran.com

PURPOSE OF PLAN:

The purpose of this plan is to depict construction of a proposed gas station, convenience store consisting of 6 dispenser islands for a total of 12 fueling stations, along with a proposed car wash. Associated improvements include but are not limited to access, grading, stormwater management, utilities, lighting, and landscaping.

(For Town Use Only)

Routing Date: 12/18/23 Deadline Date: 12/26/23 Meeting Date: TBD

_____ I have no comments ^ I have comments (attach to form)

CJS Title: ZONING ADMINISTRATION Date: 6-6-24
(Initials)

Department: _____

Zoning: Engineering: Assessor: Police: Fire: DPW: Consultant:

SITE PLAN APPLICATION

Date of Application: December 13, 2023 Tax Map #: 198 Lot #: 11, 12, 14, 15, & 16

Site Address: 91-97 Lowell Road Hudson, NH

Name of Project: Proposed Gas Station & Convenience Store

Zoning District: Business General SP#: 09-23
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:

Name: Colbea Enterprises, LLC

Address: 695 George Washington Highway

Address: Lincoln, RI 02865

Telephone # (401) 943-0005 x356

Email: mgazdacko@seasonscornermarket.com

DEVELOPER:

PROJECT ENGINEER:

Name: Christopher Rice

Address: 170 Commerce Way, Suite 102

Address: Portsmouth, NH 03801

Telephone # (603) 431-2222

Email: crice@tfmoran.com

SURVEYOR:

Brenda Kolbow

170 Commerce Way, Suite 102

Portsmouth, NH 03801

(603) 431-2222

bkolbow@tfmoran.com

PURPOSE OF PLAN:

The purpose of this plan is to depict construction of a proposed gas station, convenience store consisting of 6 dispenser islands for a total of 12 fueling stations, along with a proposed car wash. Associated improvements include but are not limited to access, grading, stormwater management, utilities, lighting, and landscaping.

(For Town Use Only)		
Routing Date: <u>12/18/23</u>	Deadline Date: <u>12/26/23</u>	Meeting Date: <u>TBD</u>
<input checked="" type="checkbox"/> I have no comments <input type="checkbox"/> I have comments (attach to form)		
<u>(Initials)</u>	Title: <u>Chief Assessor</u>	Date: <u>12-18-23</u>
Department: _____		
Zoning: ___ Engineering: ___ Assessor: ___ Police: ___ Fire: ___ DPW: ___ Consultant: ___		



TOWN OF HUDSON

Land Use Division



12 School Street • Hudson, New Hampshire 03051 • Tel: 603-886-6008 • Fax: 603-594-1142

Zoning SP# 09-23 Review

December 20, 2023

1. The sign package will need a variance. (Going to Zoning on June 27, 2024)
2. Are the setbacks right along Temple?

Chris Sullivan
Zoning Administrator/Code Enforcement Officer
(603) 816-1275
csullivan@hudsonnh.gov

NOTE: this determination may be appealed to the Hudson Zoning Board of Adjustment within 30 days of the receipt of this letter.

Dubowik, Brooke

From: McElhinney, Steven
Sent: Thursday, December 21, 2023 7:26 AM
To: Dubowik, Brooke
Subject: RE: DEP TSIGN OFF - SP# 09-23 Lowell Rd. Gas Station Site Plan

No comment



Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

May 24, 2024

Mr. Jay Minkarah
 Acting Town Planner
 Town of Hudson
 12 School Street
 Hudson, NH 03051

**RE: TFM Response to Comments & Rev 1 Submission
 91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
 Project #1350-061**

Dear Mr. Minkarah:

On behalf of our client, Colbea Enterprises, LLC, TF Moran, Inc. (TFM) respectfully submits the following letter in response to the comments made by Fuss & O'Neill, in the letter titled "Town of Hudson Planning Board Review", for Planning Board Application #1350-061, dated January 12, 2024. The following materials are included in this revised submission:

- **Fuss & O'Neill Review Letter, dated January 12, 2024 (1 copy);**
- **Drainage Analysis (1 copy); and**
- **Site Development Plans entitled "Site Development Plans, Tax Map 198 Lot 11, 12, 14, 15, 16, Proposed Gas Station, Convenience Store & Car Wash, 91-97 Lowell Road, Hudson, New Hampshire", prepared by TFMoran, Inc., dated December 13, 2023, revised May 24, 2024 (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:

1. Site Plan Review Codes (HR 275)

- a. Hudson Regulation (HR) 275-6.C. There currently are no sidewalks abutting the site. The applicant has proposed adding a five-foot wide asphalt sidewalk along Lowell Road. No sidewalks are proposed along Atwood Avenue.
 - i. ***Following discussions with the town, it was determined that a 5' wide asphalt sidewalk be provided as a part of any future plans in the area.***
- b. HR 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the proposed buildings, tanks, or gas pump area. The applicant has shown a proposed fire hydrant next to the proposed fueling area.
 - i. ***Noted. No response required.***
- c. HR 275-6.T. The applicant is proposing off-site improvements that include drainage along Lowell Road to the north of the site and continuing down Birch Street. We





TFM Response to Comments & Rev 1 Submission

May 24, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
Project #1350-061

recommend that the applicant add notes to the Off-Site Drainage Plan regarding restoration of the areas after installation and provide details such as a trench patch detail. Also, the plans are not detailed enough to show the Town's Right-of-Way line. The applicant should confirm and show that all work to be performed is within the Town Right-of-Way.

- i. **All proposed work is to be performed within the right-of-way. This has been noted on Sheet OS-01. A pavement trench patch detail has been included on C-22.**
- d. HR 275-8.C.(2)(a) and Zoning Ordinance (ZO) 334-15.A. The applicant has provided parking calculations on the plan set which show that 48 parking spaces are required for the gas pump, convenience store and drive-thru uses and that 48 spaces are provided.
 - i. **Noted. No response required.**
- e. HR 275-8.C.(6). The applicant has shown one loading area on the plan set, which meets the minimum requirement.
 - i. **Noted. No response required.**
- f. HR 275-9.C.(11). The applicant has provided two handicap accessible parking spaces for the site which meets the minimum requirement.
 - i. **Noted. No response required.**
- g. HR 275-9.F. The applicant did not provide copies of easements and deeds as part of the package received for review. No easements are shown on the Existing Conditions plan or the proposed plans.
 - i. **There are no existing easements associated with this site.**

2. Administrative Review Codes (HR 276)

- a. HR 276-11.1.B.(6). The applicant should add the owner's signature to the plan set for the final approval copy.
 - i. **The owner's signature will be added to the plan at time of the final submittal.**
- b. HR 276-11.1.B.(12)(c). The applicant has requested a waiver for the 100-foot setback from a residential use or residential zoning. The applicant has noted that even though the site is zoned business, the property is abutted on three sides by residential uses.
 - i. **Noted. No response required.**
- c. HR 276-11.1.B.(20). The applicant has not provided the size and height of the existing building on the plan set.
 - i. **The height of the tallest existing building has been added to the Dimensional Requirements on Sheet C-03.**
- d. HR 276-11.1.B.(22). The applicant has kept an existing building that is within the setback and green space along Atwood Avenue. The intent/use for this building is not noted on the plan set.



TFM Response to Comments & Rev 1 Submission
 91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
 Project #1350-061

May 24, 2024

- i. *The intent of the garage being kept is for storage use. This will provide additional space for car wash storage or convenience store needs. This has been noted on the Site Layout Plan (Sheet C-03).*
- e. HR 276-11.1.B.(25). The applicant has requested a waiver for the travel way five feet within the side setback in front of the car wash building.
 - i. *Noted. No response required.*

3. Driveway Review Codes (HR 275-6.B/Chapter 193)

- a. HR 193.10.E. The applicant has provided a statement in the Traffic Study stating that adequate sight distance is provided for the proposed driveways. The applicant should review the sight distance looking north on Lowell Road from the site driveway as there appears to be some shrubs at the abutting lot that could impact sight distance.
 - i. *As it currently exists, the minimum sight distance can be achieved to the right however not to the left. There is a shrub within the right-of-way which, if removed, would allow for proper sight distance to the left.*
- b. HR 193.10.F. We note that the applicant has proposed keeping the existing driveway that accompanies the existing building along Atwood Avenue. We note that this driveway width exceeds the 50 feet allowed by the Regulation and is approximately 100 feet wide.
 - i. *The Site Preparation and Demolition Plan has been revised to call for approximately 38 feet of driveway frontage along Atwood Avenue to be removed. This reduces the driveway width from approximately 100 feet to approximately 62 feet.*
- c. HR 193.10.G. The applicant has proposed two new site driveways and one existing driveway for the site. The applicant has requested a waiver for the additional driveway locations.
 - i. *Noted. No response required.*

4. Traffic (HR 275-9.B)

HR 275-9.B. Fuss & O'Neill, Inc. has reviewed the Traffic Impact and Access Study prepared by TF Moran (TFM) dated December 12, 2023 for the proposed gas station/convenience store development at 157 Lowell Road in Hudson, New Hampshire (Tax Map 198 Lots 11, 12, 14, 15 and 16). The project proposes the development of a 5,400 square foot (sf) convenience store with a drive-thru window, 12 vehicle fueling positions (vfp) and an automatic car wash. Access and egress to the site will be provided via a proposed driveway on the west side of Lowell Road just north of its intersection with Atwood Avenue. A secondary driveway will be provided along Atwood Avenue.



TFM Response to Comments & Rev 1 Submission

May 24, 2024

**91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
Project #1350-061**

The procedures that the TFM report uses are reasonable, with the appropriate seasonal and Covid adjustment factors used to determine base conditions, and proper ITE trip generation rates used for the gas station and convenience store uses. While the ITE information used for the gas station and convenience store uses is correct, it appears that the automated car wash is not accounted for in the trip generation estimates. The ITE trip generation publication has trip generation data for an automated car wash use, albeit a low sample size of data, which was not used or acknowledged in the report. It is doubtful that the consideration of the automated car wash would have a significant impact on the conclusion of the report.

The analysis properly determines new trips versus pass-by trips generated by the site and applies them to the roadway network using a reasonable distribution. The analysis also properly analyzes current and future years for No-Build and Build conditions.

Delays and queues along Lowell Road are mostly unchanged because of the project, and both proposed site driveways function acceptably under all analyzed scenarios. Most of the trips generated by the proposed site are expected to be pass-by trips, with only approximately one new trip per minute being added to the corridor from the development.

Overall, we concur with the TF Moran report's conclusion that the proposed development will have no significant impacts on the Lowell Road corridor and adjacent roadways.

Noted. TFMoran feels that nearly all car wash users also buy gas or convenience items in the same trip and agrees that there would be no effect on the traffic study outcomes.

5. Utility Design/Conflicts

- a. HR 275-9.E. & 276-13. The applicant should review the need to cap the existing utility connections at the property line since the installation of new connections is proposed for the site. We recommend that the applicant provide ties and GPS locations for these caps to the Town once this work is completed.
 - i. ***Existing utilities are to be cut and capped. The existing leach field for the home along Atwood Ave is to be removed.***
- b. HR 275-9.E. & 276-13. The applicant should show any existing sewer connections or septic tanks for the existing buildings and provide information on how they are to be removed or capped.
 - i. ***The existing septic tank, leach field, and associated vents behind the existing home are to be removed. The location is to be verified in the field.***
- c. HR 275-9.E. & 276-13. The only existing utility connection shown to the building proposed to remain on Atwood Avenue is overhead electrical/communication. The



TFM Response to Comments & Rev 1 Submission

May 24, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
Project #1350-061

applicant should confirm this service is to remain and that no other services will be connected to this building.

- i. ***The remaining building along Atwood Ave will be served by electric, water, and sewer connections. The existing electric will remain and the proposed connections for water and sewer have been detailed on Sheet C-08 and C-09.***
- d. HR 275-.9.E & 276-13. The applicant has proposed to connect the sewer service for the site to a manhole on Lowell Road. The applicant should provide the existing invert information of this manhole so that the new connection invert can be evaluated. The applicant should also provide a detail for the trench patch of Lowell Road.
 - i. ***The invert at the manhole on Lowell Road is 6.3' below grade (via Hudson Engineering) which puts the invert at el. 144.00.***
- e. HR 275-.9.E & 276-13. The applicant should provide more information regarding how the car wash will make use of the proposed reclaim tanks. There are no connections shown back to the car wash building from those tanks and no details are provided for those tanks.
 - i. ***The utility plan has been revised to reflect a connection from the exterior reclaim tanks to a reclaim system tank within the building. This connection will be 2" sch. 80 PVC.***
- f. HR 275-.9.E & 276-13. The applicant should provide more information regarding expected sewer flows from the proposed car wash. We note that the Town of Hudson's sewer discharge is treated by the Nashua Wastewater Treatment Plant and flow allocations may be limited, therefore all water reduction efforts should be considered.
 - i. ***The following estimated water use is based on using the Washworld Razor Double Barrel In-Bay Car Wash.***
 - ***Water used per vehicle: 65 gallons***
 - ***Estimate vehicle traffic per year: 20,000 cars***
 - ***Estimated peak daily traffic: 140 cars***
 - ***Estimated peak daily water usage: $140 \times 65 = 9,100$ gallons per day***
- g. HR 275-.9.E & 276-13. We note that commercial car wash operations have been included by the EPA in future PFAS regulations. The applicant can expect that the Town of Hudson will likely require the car wash use to be permitted as part of their Industrial Pretreatment Program. This program will eventually require effluent sampling for PFAS and the cost of that sampling will be the burden of the owner.
 - i. ***Noted. No response provided.***
- h. HR 275-.9.E & 276-13. The applicant should review with the Town to confirm the availability of sufficient water flow to accommodate the car wash use.
 - i. ***Noted. Sufficient water flow will be coordinated with the Town.***
- i. HR 275-.9.E & 276-13. The applicant has labelled SMH-04 on two separate manholes on plan sheet C-08. One of these should be SMH-05.



TFM Response to Comments & Rev 1 Submission

May 24, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16

Project #1350-061

- i. *The referenced callout on Sheet C-08 has been revised from C-04 to C-05.*
- j. HR 275-.9.E & 276-13. There are several drainage crossings of the sewer pipe between SMH-03 and SMH-04. This run of sewer pipe is not shown on a sewer profile. The applicant should confirm that there are no conflicts between drainage and sewer in this area and that there is adequate separation between these utilities.
 - i. *A sewer profile for the segment between SMH-03 and SMH-04 has been developed and is included on Sheet C-10b.*
- k. HR 275-.9.E & 276-13. The proposed underground electric line conflicts with several stormwater features within the site. The applicant should review and adjust the proposed UGE locations.
 - i. *The underground electric line has been revised to avoid conflicts with the proposed stormwater features.*
- l. HR 275-.9.E & 276-13. The applicant should provide a hydrant detail in the plan set.
 - i. *A fire hydrant and gate valve detail has been added to Sheet C-22.*
- m. The Utility Plans include call outs and leaders for various drainage pipes, but those pipes are not shown on those plans.
 - i. *The proposed drainage pipes have been added to Sheet C-08 & C-09. They have been grayed out to allow for focus on proposed utilities.*

6. Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- a. HR 275-9.A.(5). The plans and drainage report should be stamped by a licensed professional engineer.
 - i. *The plans and drainage report will be stamped by a licensed professional at the time of final plan submittal. This will be done to avoid confusion between the final plans and prior versions.*
- b. HR 275. The applicant should have the plans stamped by a wetlands scientist.
 - i. *The wetland scientist stamp will also be added to the final plan submission similar to the above comment.*
- c. HR 275-6.F. and 290-5.A.4. The applicant should provide the calculations or additional reasoning as to the omitted groundwater recharge, and review with the Town if this requires a waiver.
 - i. *Using the groundwater recharge volume (GRV) calculation, as outlined in Env-Wq 1507.04, requires 1,977 cf of storage for infiltration. Two infiltration basins are proposed with a combined storage below outlets of 6,796 cf. This provides enough storage to meet the minimum GRV calculation.*
- d. HR 275-9.A.1. The applicant should review with the Town if a waiver is required for the increase in peak runoff and volume at POI-05.
 - i. *A waiver request will be submitted for the increase in peak runoff and volume at POI-05.*



TFM Response to Comments & Rev 1 Submission

May 24, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16

Project #1350-061

- e. HR 275-9.A4 & 290-5. The applicant should provide, at a minimum, the HydroCAD node listings for all storms required.
 - i. *The HydroCAD node listings for all storms required have been included in the revised drainage report.*
- f. HR 290-5.A.1. & 290-5.A.3. The applicant should provide language in the Drainage Analysis Report stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.
 - i. *Language has been added to the Drainage Analysis Report speaking to the benefits of Low Impact Design and what LID techniques were implemented in this project.*
- g. HR 290-5.A. The applicant should provide the required GRV worksheets.
 - i. *A GRV calculation worksheet has been added to the drainage analysis.*
- h. HR 290-5.A.9. & 11. The applicant should provide the required BMP worksheets illustrating ESHWT, Infiltration Feasibility Reports, and other NHDES design criteria.
 - i. *The BMP worksheets for all proposed infiltration BMPs have been included in the Drainage Analysis Report.*
- i. HR 290-5.A.9. & 11. The applicant should review the definition of a “High Load Area” within the NHDES AoT regulations and note if this will have any effect on the stormwater runoff leaving the site.
 - i. *The proposed use does qualify as a “High Load Area”. Measures have been taken throughout the site to ensure proper handling of regulated substances. The proposed fuel storage is located on the northern side of the site providing buffers greater than 50 feet from surface water, 75 feet from any private wells, and 400 feet from public water supply wells.*
- j. HR 290-5.A.9. & 11. The applicant should provide design details to illustrate the subsurface systems design information and outlet information.
 - i. *Details for the proposed stormtech chambers are included on Sheet C-25, 26, & 27.*
- k. HR 290-5.A.12. The applicant should provide an I&M manual for general site maintenance as well as project specific BMPs.
 - i. *An Inspection and Maintenance Manual has been included in the revised Drainage Analysis Report.*
- l. HR 290-5.A.12. Given the proposed use of automotive fueling facilities, gas and other fluids will be present onsite. Spill prevention kits and a general spill prevention plan should be provided to the Town for their review and acceptance.
 - i. *Noted. A spill prevention plan will be provided with the final submittal.*
- m. HR 290-5.B.1.b. The applicant should provide support materials or calculations showing the required 80% TSS and 50% TP pollutant removals.
 - i. *The pollutant removal data published in the New Hampshire Stormwater Manual has been included in the revised Drainage Analysis Report.*



TFM Response to Comments & Rev 1 Submission
 91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
 Project #1350-061

May 24, 2024

- n. HR 290-5.B.2.a. The applicant should provide calculations showing the required treatment of at least 30% of the existing impervious cover and 50% of proposed additional impervious cover.
 - i. *The proposed stormwater systems provide treatment to 90% of the proposed pavement through the use of jellyfish filters, stormceptors, or infiltration. Approximately 31% of the existing impervious surface has been removed as a part of this development.*
- o. HR 290-6.A.8. The applicant should ensure the plans note a pre-construction meeting is required with the Town Engineer.
 - i. *A note requiring a pre-construction meeting has been added to Sheet C-01 (Note 3).*
- p. HR 290-6.A.9. The applicant should ensure the disturbed area timeframes are listed upon the plan set.
 - i. *Construction is expected to take 6-9 months. The timeline of construction has yet to be determined. This has been noted on Sheet C-14.*
- q. HR 290-7.A.6. The applicant should provide information as to how the stormwater system is designed to account for frozen ground conditions.
 - i. *Throughout the site, drainage pipes with less than 3' of cover shall be insulated to provide protection from frozen ground conditions. Also, a majority (72%) of the runoff areas contributing to the proposed BMP's is impervious which would not be impacted by frozen ground conditions.*
- r. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.
 - i. *Noted. The Bond or Escrow will be coordinated with the Town Engineer when needed.*
- s. HR 290-10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain Permit being requested to ensure NHDES comments do not alter drainage design/calculations.
 - i. *The Town will be sent a copy of the AoT Application when it is submitted to NHDES.*
- t. HR 290-10.A. The Erosion Control Plan notes approximately 104,000 square feet of disturbance. The applicant should note if this area includes the disturbance within Lowell Road for the proposed drainage upgrades down to Second Brook.
 - i. *This does not include off-site disturbance for drainage improvements. This has been noted on Sheet C-14.*
- u. The Structure Tables on plan sheet C-06 are very faint and difficult to read.
 - i. *The structure tables have been revised to improve legibility.*
- v. The applicant should clarify how the canopy over the fuel pumps is proposed to drain. The plans do not show a connection to closed drainage and there are no downspouts shown.



TFM Response to Comments & Rev 1 Submission
 91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
 Project #1350-061

May 24, 2024

- i. *As currently designed, the runoff from the fueling canopy is directed to the four surrounding catch basins. The canopy drainage may be tweaked as plans are finalized.*
- w. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements. The applicant has noted that the project has been designed to meet MS4 requirements.
 - i. *Noted. No response required.*
- x. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact this review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.
 - i. *Noted. No response required.*

7. Zoning (ZO 334)

- a. ZO 334-17 & 334-21. The subject parcel is located within the Business (B) zoning district and the applicant has noted this on the plans. The proposed automotive fuel station with general retail use is allowed within the district.
 - i. *Noted. No response required.*
- b. ZO 334-35. The applicant has shown the wetlands and buffer area on the plan set. We note that part of the site is within the wetlands buffer, and that no development or disturbance is proposed within this buffer.
 - i. *Noted. No response required.*
- c. ZO 334-58. The applicant has shown sign locations and details on the plan. The applicant has also noted the need for a Zoning Variance for the proposed signage.
 - i. *Noted. No response required.*
- d. ZO 334-83 and HR 218-4.E. The applicant has noted that the site is located within an Area of Minimal Flooding on the National Flood Insurance Program Flood Insurance Rate Map.
 - i. *Noted. No response required.*



TFM Response to Comments & Rev 1 Submission
 91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
 Project #1350-061

May 24, 2024

8. Erosion Control/Wetland Impacts

- a. The applicant should show the proposed location for the stabilized construction entrance on the plan set.
 - i. *The stabilized construction entrance has been added to Sheet C-13.*
- b. The applicant has noted that the Town of Hudson shall reserve the right to require any additional erosion control measures as needed.
 - i. *Noted. No response required.*

9. Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(7). The applicant has provided interior landscape parking lot calculations. We note that the applicant should review the shrub calculations because it appears that they used the lower amount required. The requirement would be greater if they used one shrub per 200 square feet of paved area.
 - i. *The shrub calculation has been revised to reflect the greater number of shrubs required and shrub planting has been increased to meet said requirements.*
- b. HR 275-8.C.(8). The applicant has proposed new landscaping areas along the site including some dense evergreen groupings to be considered screening. We note that a lot of dense vegetation exists to the north of the site that is proposed to remain.
 - i. *Noted. No response required.*
- c. HR 276-11.1.B.(14). The applicant has provided a lighting plan. We note that at the north and west sides of the site, the plan shows greater than 0.2 and up to 0.7 footcandles at the lot property lines. Due to the residential uses of these sites, the applicant should review the design to reduce these amounts wherever practical.
 - i. *The proposed lighting has been revised to reduce the total footcandles at the property lines.*
- d. The applicant should note the hours of operation of the site and the lighting.
 - i. *The proposed hours of operation have been listed on Sheet C-03. Lighting will match the proposed hours of operation.*
- e. The applicant should review the proposed lighting and landscaping plans as several lights appear to be very close to the proposed trees.
 - i. *The lighting conflicts with proposed landscaping have been revised.*

10. State and Local Permits (HR 275-9.G.)

- a. HR 275-9.G. The applicant has listed required permits and their status on the plan set.
 - i. *Noted. No response required.*



TFM Response to Comments & Rev 1 Submission

May 24, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16

Project #1350-061

- b. HR 275-9.G. The applicant did not provide copies of any applicable Town, State or Federal approvals or permits already received in the review package.
 - i. *As additional Town, State, and Federal Applications are submitted, copies will be delivered to the Town.*
- c. HR 275-9.G. The applicant did not include any details for the underground storage tanks or concrete pad. The plans note that final design is to be by others.
 - i. *The design of underground storage tanks is still being finalized. It will be submitted to the town following completion.*
- d. Additional local and state permitting may be required.
 - i. *Noted.*

11. Other

- a. ETGTD Section 565.1.1. The applicant is reminded of Town of Hudson requirements for the importing of off-site fill materials for use in constructing this project. We could not locate a note regarding this requirement on the plans, and it is recommended that these requirements be stated for the Contractors attention.
 - i. *Notes applicable to off-site material from the Hudson Technical Guidelines have been added to Sheet C-01 as Note K. and L. under "Contractors General Responsibilities".*
- b. The applicant should review the scale of sheet C-02. It appears that the plan scale is 1"=30' but a scale of 1"=20' is noted.
 - i. *The scale has been revised to reflect the proper scale.*
- c. The applicant should review the plans and correct several overwrite/drafting conflicts.
 - i. *The sheet set has been reviewed for overwrite/drafting conflicts.*
- d. The applicant should clarify what the proposed structure is behind the existing building that is to remain. Is this a retaining wall, a fence, etc.? The applicant should provide a detail for this feature.
 - i. *The proposed retaining wall has been called out on Sheet C-05.*



TFM Response to Comments & Rev 1 Submission
91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
Project #1350-061

May 24, 2024

We trust that the above responses satisfy the concerns expressed in the Town of Hudson'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.

A handwritten signature in blue ink, appearing to read 'Jason Cook', is positioned below the company name.

Jason Cook, EIT
Civil Project Engineer

JKC/crr



Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

July 18, 2024

Brooke Dubowik, Administrative Aide
 Hudson Planning Department
 12 School Street
 Hudson, NH 03051

RE: TFM Response to Comments & Rev 2 Submission
91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16
Project #01350-061

Dear Ms. Dubowik:

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 Town of Hudson, in letters/comments provided by various departments within the Town of Hudson for Planning Board Application #09-23, dated December 13, 2023. The following materials are included in this revised submission:

- **Town Staff Review Letters (1 copy of each);**
- **Partial Drainage Report (Report Narrative and HydroCAD Calculations; 1 copy);**
- **Site Development Plans entitled “Site Development Plans, Tax Map 198 Lots 11, 12, 14, 15, & 16, Gas Station/Convenience Store/Car Wash, 91-97 Lowell Road, Hudson, New Hampshire”, prepared by TFMoran, Inc., dated December 13, 2023, revised July 18, 2024 (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:

Department of Public Works

1. A sewer inspection manhole will be placed at the property line.
 - a. ***Revisions have been made to the proposed sewer service. There is now a sewer inspection manhole at the property line.***

Engineering Department

1. Applicant shall provide sight distance plan and profile for both proposed entrances.
 - a. ***Sight distance plans have been created and added to the sheet set as Sheet C-28 and C-29.***
2. Applicant shall propose and provide drainage improvements along Lowell and Birch Street. Currently the area is experiencing known drainage issues.
 - a. ***Sheet OS-01, “Off Site Drainage”, details proposed improvements to combat drainage issues along Lowell Road north of the project site and along Birch Street.***





TFM Response to Comments & Rev 2 Submission

July 18, 2024

91-97 Lowell Road – Colbea Enterprises, LLC – Tax Map 198 Lots 11, 12, 14, 15, 16

Project #01350-061

3. The applicant shall provide oil separators on CB's discharging to infiltration basins or the stormtech system.
 - a. *Note 10 on sheet C-07 has been added to call for oil separators to all catch basins discharging to Infiltration System 01 and Stormtech System 02. An oil water separator has been added to both Catch Basin details.*

Fire Marshal

1. Provide fire flow readings on existing fire hydrants on Lowell Road in vicinity of proposed gas station/convenience store to verify the flow rate conforms to 2018 NFPA 1, chapter 18 for water supply.
 - a. *A hydrant flow test form has been submitted to the town to verify flow rates for the abutting fire hydrant. When results are received, we will forward to the town.*
2. Provide dimensions between existing hydrants and proposed fire hydrant inside the proposed site.
 - a. *The proposed hydrant is approximately 227 feet from the existing hydrant adjacent to the property along Lowell Road. This note has been added to the Utility Plan (Sheet C-08).*

Zoning Administration

1. The sign package will need a variance. (Going to Zoning on June 27, 2024)
 - a. *Relief was granted by the Zoning Board of Adjustment on June 27, 2024. This is noted on the Cover Sheet (C-00).*
2. Are the setbacks right along Temple?
 - a. *Per the Code of the Town of Hudson, NH Article 334 Attachment 4, the principal building setback requirement for boundary lines along arterial and collector roadways and local roadways is 50 feet. The principal building setback requirement for side boundary lines is 15 feet. Accordingly, our plans show the boundary line along Temple Street runs 219.16 feet from Atwood Avenue with a 50' setback, then turns 10.83 feet and 119.55 feet alongside boundary lines with 15' setbacks.*

We trust that the above responses satisfy the concerns expressed in the Town of Hudson'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.

A handwritten signature in blue ink, appearing to read 'Jason Cook', is positioned above the printed name.

Jason Cook
Civil Project Engineer

143

FEES:	\$10.69
SURCHARGE:	\$2-
CASH:	

Mary Ann Crowell
Register of Deeds, Hillsborough County

Hudson Zoning Board

Send recorded copy to:

TOWN OF HUDSON
ZONING BOARD OF ADJUSTMENT
12 School Street, Hudson, New Hampshire 03051

NOTICE OF DECISION

Map 198 Lots 011, 012, 014, 015, 016, Zone B (Business), Case # 198-012 c.

ZBA Decision 06/27/2024

VARIANCE – GRANTED

Property Owner: Colbea Enterprises, LLC, 695 George Washington Highway, Lincoln, RI 02865

Legal Representative: Christopher Drescher, Esq., Cronin, Bisson & Zalinsky P.C.
722 Chestnut Street, Manchester, NH 03104

Property Location: 91-97 Lowell Road, Hudson, NH 03051

Action sought: A Variance to allow several directional and directory signs to be larger than three (3) SF where no greater than three (3) square feet in area is permitted and do not contain any additional advertising or messages other than incidental corporate or institutional symbols or logos.

Zoning Ordinance Article XII: Signs; §334-68, Directional and directory signs

Action granted: After consideration of the testimony, recognition that there was no public feedback, review of the Proposed Sign Schedule on the proposed Site Development Plans prepared by TFM (T.F. Moran) dated April 18, 2024 and marked as Exhibit 1, recognition that the signs included with this Variance are Sign I, Dispenser Signs which will be posted on the gas dispenser pumps and measure 3.1 SF and are sized per manufacturer's specification; Sign T, one flip open/close sign measuring 3.7 SF for the carwash; and Sign S, carwash enter and exit measuring 5.1 SF; and after review of the criteria for the granting of a variance and determining that each of the requirements have been satisfied, motion made, seconded and voted 5:0 to grant the Variance.

NOTES: (1) All representations of fact or intention made by the applicant during testimony before the Zoning Board of Adjustment relative to the obtaining of this relief shall be considered conditions of this approval, regardless of the fact that such facts or intentions may not have been specifically stated as stipulations of the motion. For details of specific discussion relative to this decision, please consult the public minutes recorded during this hearing. (2) In accordance with RSA 674:33 and Hudson Town Code §334-82, variances and special exceptions shall be valid if exercised within two (2) years from the date of approval by the Zoning Board of Adjustment.

Gary M. Daddario, ZBA Chairman

7/22/24

Date

Christopher J. Sullivan, Zoning Administrator

7/19/24

Date

FEES:	\$ 10.69
SURCHARGE:	2.00
CASH:	—

A43

Hudson Zoning Board

Doc # 240023664 07/31/2024 02:15:54 PM
Book 9791 Page 760 Page 1 of 1

Mary Ann Crowell
Register of Deeds, Hillsborough County

Send recorded copy to:

TOWN OF HUDSON
ZONING BOARD OF ADJUSTMENT
12 School Street, Hudson, New Hampshire 03051

NOTICE OF DECISION

Map 198 Lots 011, 012, 014, 015, 016, Zone B (Business), Case # 198-012 b.

ZBA Decision 06/27/2024

VARIANCE – GRANTED

Property Owner: Colbea Enterprises, LLC, 695 George Washington Highway, Lincoln, RI 02865

Legal Representative: Christopher Drescher, Esq., Cronin, Bisson & Zalinsky P.C.
722 Chestnut Street, Manchester, NH 03104

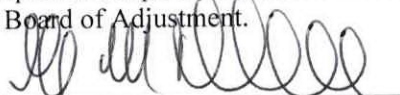
Property Location: 91-97 Lowell Road, Hudson, NH 03051

Action sought: A Variance to allow a freestanding “pylon” sign with 146.9 SF where a maximum size of 100 square feet is permitted; and to allow five (5) freestanding signs where each individual site may have no more than one (1) freestanding pole or ground sign.

Zoning Ordinance Article XII: Signs; §334-64A and §334-64, Freestanding business and industrial signs


Action granted: After consideration of the testimony, recognition that there was no public feedback regarding the signs, aerial views of the site and surrounding area, review of the Proposed Sign Schedule on the proposed Site Development Plans prepared by TFM (T.F. Moran) dated April 18, 2024 and marked as Exhibit 1, sample display of the signs, recognition that height of the pylon is five (5’) shorter than what is allowed but wider to include the various businesses within the site to be in a larger font and more easily readable to travelers on Lowell Road considering the obstruction to the site presented by the abutting properties to its north and south and recognition that the additional freestanding signs within the site are needed by the various businesses within the site and serve to protect safety and after review of the criteria for the granting of a variance and determining that each of the requirements have been satisfied, motion made, seconded and voted 5:0 to grant the Variance.

NOTES: (1) All representations of fact or intention made by the applicant during testimony before the Zoning Board of Adjustment relative to the obtaining of this relief shall be considered conditions of this approval, regardless of the fact that such facts or intentions may not have been specifically stated as stipulations of the motion. For details of specific discussion relative to this decision, please consult the public minutes recorded during this hearing. (2) In accordance with RSA 674:33 and Hudson Town Code §334-82, variances and special exceptions shall be valid if exercised within two (2) years from the date of approval by the Zoning Board of Adjustment.



Gary M. Daddario, ZBA Chairman

7/22/24
Date



Christopher J. Sullivan, Zoning Administrator

7/19/24
Date

For Registry of Deed use only:

FEES:	#10.69
SURCHARGE:	2.00
CASH:	—

A43

Hudson Zoning Board

Doc # 240023663 07/31/2024 02:15:53 PM
 Book 9791 Page 759 Page 1 of 1
 Mary Ann Crowell
 Register of Deeds, Hillsborough County

Send recorded copy to:

TOWN OF HUDSON
 ZONING BOARD OF ADJUSTMENT
 12 School Street, Hudson, New Hampshire 03051

NOTICE OF DECISION

Map 198 Lots 011, 012, 014, 015, 016, Zone B (Business), Case # 198-012 a.

ZBA Decision 06/27/2024

VARIANCE – GRANTED

Property Owner: Colbea Enterprises, LLC, 695 George Washington Highway, Lincoln, RI 02865

Legal Representative: Christopher Drescher, Esq., Cronin, Bisson & Zalinsky P.C.
722 Chestnut Street, Manchester, NH 03104

Property Location: 91-97 Lowell Road, Hudson, NH 03051

Action sought: A Variance to allow three (3) Business and Industrial wall signs where only one (1) is permitted.

Zoning Ordinance Article XII: Signs; §334-63, Business and industrial building signs

Action granted: After consideration of the testimony, recognition that there was no public feedback regarding the sign, aerial views of the site and surrounding area, review of the Proposed Sign Schedule on the proposed Site Development Plans prepared by TFM (T.F. Moran) dated April 18, 2024 and marked as Exhibit 1, recognition that each sign speaks to a specific business and the total of the three (3) proposed signs does not exceed the total allowed square feet permitted in the Ordinance; and after review of the criteria for the granting of a variance and determining that each of the requirements have been satisfied, motion made, seconded and voted 5:0 to grant the Variance with the stipulation that the signage to be as as presented on the Proposed Sign Schedule and shown on Front Rendered Bldg. Elevation, Sheet A200.

NOTES: (1) All representations of fact or intention made by the applicant during testimony before the Zoning Board of Adjustment relative to the obtaining of this relief shall be considered conditions of this approval, regardless of the fact that such facts or intentions may not have been specifically stated as stipulations of the motion. For details of specific discussion relative to this decision, please consult the public minutes recorded during this hearing. (2) In accordance with RSA 674:33 and Hudson Town Code §334-82, variances and special exceptions shall be valid if exercised within two (2) years from the date of approval by the Zoning Board of Adjustment.

Gary M. Daddario, ZBA Chairman

7/22/24

Date

Christopher J. Sullivan, Zoning Administrator

7/19/24

Date

DRAINAGE ANALYSIS REPORT

F O R

Proposed Gas Station & Convenience Store

**91-97 Lowell Road
Hudson, New Hampshire**

Tax Map 198, Lot 11, 12, 14, 15, & 16

**Owned by
Colbea Enterprises, LLC**

**December 13, 2023
Last revised July 18, 2024**

Prepared By:



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

(This Page Is Intentionally Blank)

Contents

1.0 - SUMMARY & PROJECT DESCRIPTION	1
2.0 - CALCULATION METHODS	1
3.0 - EXISTING SITE CONDITIONS	2
4.0 - PRE-DEVELOPMENT CONDITIONS	2
5.0 - POST-DEVELOPMENT CONDITIONS	2
6.0 - REGULATORY COMPLIANCE	4
7.0 - LOW IMPACT DEVELOPMENT	4
8.0 - BEST MANAGEMENT PRACTICES	5
8.1 - TEMPORARY PRACTICES	5
8.2 - PERMANENT PRACTICES	6
8.3 - BEST MANAGEMENT PRACTICE EFFICIENCIES.....	6
9.0 - CONCLUSION	6
APPENDIX A - EXTREME PRECIPITATION RATES	9
APPENDIX B - SITE-SPECIFIC SOIL SURVEY & NRCS WEB SOIL REPORT	11
APPENDIX C - TEST PIT LOGS & INFILTRATION TEST DATA	13
APPENDIX D - PRE-DEVELOPMENT CALCULATIONS	15
APPENDIX E - PRE-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)	2
APPENDIX F - POST-DEVELOPMENT CALCULATIONS	2
APPENDIX G - POST-DEVELOPMENT CALCULATIONS (10-YEAR STORM EVENT)	2
APPENDIX H - PRE AND POST-DEVELOPMENT DRAINAGE PLANS	2
APPENDIX I - BEST MANAGEMENT PRACTICES WORKSHEETS	2
APPENDIX J - INSPECTION AND MAINTENANCE MANUAL	4

Table of Figures

Table 1 - 24-Hour Rainfall Rates.....	1
Table 2 - Pre and Post- Development Peak Runoff Rate Comparison.....	3
Table 3 - Pre and Post- Development Peak Runoff Volume Comparison	4

(This Page Is Intentionally Blank)

1.0 - SUMMARY & PROJECT DESCRIPTION

The project includes the development of a gas station, convenience store, and car wash on 91-97 Lowell Road. The existing Tax Map 198 Lots 11, 12, 14, 15, & 16 is approximately 3.3968 acres and currently contains two garages and a residential home. The site is within the Business Zone and is bordered on three sides by Lowell Road, Atwood Avenue, and Temple Street.

The proposed project is to construct a 5,400 s.f. single story building with a car wash and gas station. Associated improvements include and are not limited to access, grading, utilities, stormwater management system, lighting, and landscaping. The project proposes a total of 8,100 SF building footprint and total 74,663 SF of impervious area within the property lines and approximately 95,663 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 or have negligent increase, reduces, 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 10.00¹ 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 Hudson Site Plan Review Regulations were used to determine the storm-event intensities, see Table 1. Design standards were taken from the New Hampshire Stormwater Manual, December 2008².

24-HOUR RAINFALL RATES	
Storm-Event (year)	Northeast Regional Climate Center Extreme Precipitation (in)
2	2.96
10	4.46
25	5.64
50	6.74

Table 1 – 24-Hour Rainfall Rates

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

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.

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 in accordance with the Site-Specific Soil Survey (see Appendix B for detail and soil locations). The Site-Specific Soil Survey identifies the soils within the disturbed project area as primarily Windsor loamy sand and Udorthents, sandy (HSG A). These soils are classified as moderately well excessively well drained.

All other areas that contribute runoff to the project site are identified per the NRCS Web Soil (see Appendix B for detail and soil locations). The soil is composed of Hinckley loamy sand. This soil is classified as excessively drained.

Eight test pits and infiltration tests, at least two in/near each basin area, were conducted. In nearly all test pit locations. Infiltration tests were determined per Ksat testing using a Compact Constant Head Permeameter (Amoozemeter) per Env-Wq 1504.14(d). Though infiltration tests were performed at each test pit, the separation from the Estimated Seasonal Highwater Table (ESHW) was only able to be obtained in two locations, the subsurface infiltration basin in the southerly most parking area and the infiltration Basin abutting Atwood Ave. The highest Estimated Seasonal High-Water Table (ESWT) observed were: elevation 153.4 (TP-7) at the infiltration basin adjacent to Atwood Ave and elevation 152.25.0 (TP-4) at Subsurface Infiltration Basin #2.

4.0 - PRE-DEVELOPMENT CONDITIONS

The pre-development condition is characterized by six subcatchments composing one watershed, which flows towards the tidal perennial stream, which ultimately discharges to the Merrimack River. Pre-development subcatchment areas are depicted on the attached plan entitled "Pre-Development Drainage Map," see Appendix H.

Stormwater runoff from the site primarily infiltrates into the excessively drained soils on-site. The remaining stormwater runoff discharges towards Temple (POI-1), Tax Map 197 Lot 51 (POI-2), Atwood Avenue (POI-3), Tax Map 198 Lot 13 (POI-4), Lowell Road (POI-5), or Tax Map 198 Lot 17 (POI-6).

In the pre-development condition, the total impervious area is 10,067 SF over a total drainage analysis area of 147,973 SF.

5.0 - POST-DEVELOPMENT CONDITIONS

The post-development condition is characterized by six watersheds divided into many subcatchment areas. Post-development subcatchment areas are depicted on the attached plan entitled "Post-Development Drainage Map," see Appendix H.

In the post-development condition, the total impervious area is 74,663 SF over a total drainage analysis area of 147,973 SF. Impervious area from the project consists of a 5,400 SF footprint gas station and convenience store, 2,700 SF footprint Car wash, 4,440 SF of gas islands and

associated improvements. Five <BMP'S> are proposed to treat and mitigate the stormwater runoff from the impact of the new impervious area from the proposed development.

Eight test pits and infiltration tests, at least two in each basin area, were conducted. In nearly all test pit locations. Infiltration tests were determined per K_{sat} testing using a Compact Constant Head Permeameter (Amoozemeter) per Env-Wq 1504.14(d). For the two areas being used for infiltration, the design K_{sat} were 5 in/hr. (TP-7 and TP-8) for the infiltration basin and 3.5 in/hr. (TP-03 and TP-04) for the subsurface infiltration basin.

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
POI-1	Pre	0.0	0.1	0.3	0.7
	Post	0.0	0.0	0.0	0.1
POI-2	Pre	0.0	0.0	0.1	0.2
	Post	0.0	0.0	0.0	0.1
POI-3	Pre	0.4	0.7	0.9	1.2
	Post	0.2	0.4	0.6	0.7
POI-4	Pre	0.0	0.0	0.1	0.1
	Post	0.0	0.0	0.0	0.0
POI-5	Pre	0.0	0.1	0.2	0.6
	Post	0.1	0.2	0.3	1.0
POI-6	Pre	0.0	0.0	0.1	0.3
	Post	0.0	0.0	0.1	0.2

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
POI-1	Pre	41
	Post	0
POI-2	Pre	0
	Post	0
POI-3	Pre	1,113
	Post	617
POI-4	Pre	38
	Post	0
POI-5	Pre	25
	Post	3,743
POI-6	Pre	1
	Post	33

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

The proposed project reduces peak rates or insignificant increases of runoff compared to existing conditions for all storm events. 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.

The largest increase occurs where the entrance meets Lowell Road. Though the increase is minimal, the Town has expressed concern about the existing drainage along this road. Per discussion with the Town, Colbea Enterprise has offered to extend the drainage down this road and Birch Street to Second Brook. This entails approximately 520 lf of additional drainage.

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

6.0 – REGULATORY COMPLIANCE

The project meets the stricter of the stormwater standards identified in the New Hampshire Department of Environmental Services (DES) Env-Wq 1500 Alteration of Terrain Regulations and Town stormwater management regulations.

7.0 – LOW IMPACT DEVELOPMENT

Low impact development is a stormwater management approach which prioritizes the treatment of stormwater runoff close to the source before reaching nearby surface waters

while also limiting disturbance during site development. As a part of the proposed project, multiple infiltration practices are proposed to collect runoff from impervious surfaces. There is an above ground bioretention basin with an outlet control structure to collect runoff and allow for infiltration before outletting during larger storms. The remaining infiltration and detention basins are composed of subsurface Stormtech Chambers. The development was designed to limit the total impervious area and the underground chambers are introduced as a method to limit the total disturbed area. Priority was given to the existing woodland and vegetated area with the aboveground bioretention basin placed in a previously disturbed area.

8.0 – BEST MANAGEMENT PRACTICES

Best Management Practices will be developed in accordance with the New Hampshire Stormwater Manual, Volumes Two and Three, December 2008³ 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.

8.1 – 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.
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.

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.

9. After November 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.

8.2 – 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.

8.3 – 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 Town 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 a 90% TSS removal efficiency, 60% TN removal efficiency, and 65% TP efficiency.

Contech Jellyfish Filter Stormwater Treatment systems have an 89% TSS removal efficiency, 51% TN removal efficiency, and 59% TP efficiency.

All the stormwater entering the BMP's Contech Jellyfish Filter systems are pretreated with deep sump catch basins and Stormceptors. The deep sumps help to settle sediment and prevent clogging of treatment areas. Underground Storage System #3 receives only roof runoff and does not need pretreatment.

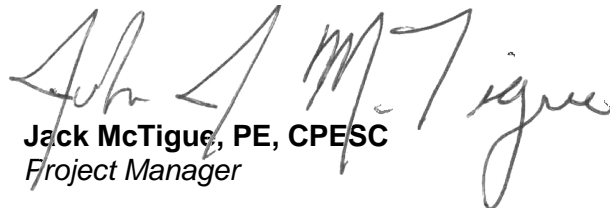
9.0 – CONCLUSION

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 Alteration of Terrain Bureau and Town stormwater management regulations. The project has been designed in accordance with NHDES and

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.

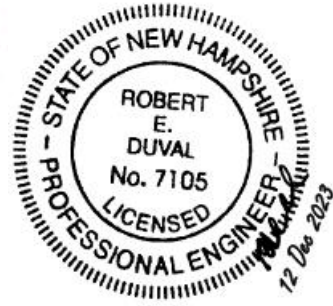
Town regulations. There is little change in the flow characteristics of the site. The proposed project has been designed to pose no adverse effects on surrounding properties.

Respectfully,
TFMoran, Inc. Seacoast Division



Jack McTigue, PE, CPESC
Project Manager

Traffic Report



Traffic Impact and Access Study

Proposed Gas Station / Convenience Store
157 Lowell Road
Hudson, New Hampshire

TFM Project #18149.00

December 12, 2023

Prepared for:
Colbea Enterprises, LLC

Submitted to:
Town of Hudson

Prepared by:



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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



TABLE OF CONTENTS

1.	Introduction	1
	<i>Proposal, Scope of Study</i>	
2.	Existing Conditions	3
	<i>Descriptions of Roadways and Intersections</i>	
3.	Background Volumes	6
	<i>Seasonal Adjustment, Covid Adjustment, Signal Timing, Balance Base Diagrams – 2023</i>	
4.	No-Build Volumes	9
	<i>Growth Factor, Other Developments No-Build Diagrams – 2024, 2034</i>	
5.	Trip Generation	14
	<i>Proposed Trips: Table 1</i>	
6.	Trip Composition, Distribution and Assignment	14
	<i>Composition, Distribution New Trip Composition: Table 2 Site Trip Assignment Diagrams</i>	
7.	Build Volumes	22
	<i>Build Diagrams – 2024, 2034</i>	
8.	Level of Service / Queue Analysis	27
	<i>Level of Service Analysis, Study Area Queue Analysis, Methodology Signal Timing Level of Service & Queue Analysis Summary AM Peak Hour (2023/2024/2034): Table 3 PM Peak Hour (2023/2024/2034): Table 4</i>	
9.	Sight Distance	32
10.	Accident Evaluation	32
	<i>Crash Data Summary: Table 5</i>	
11.	Conclusion	33

APPENDIX

APPENDICES

APPENDIX A	<u>Trip Generation</u>
APPENDIX B	<u>Distribution</u>
APPENDIX C	<u>Volume Adjustments</u> <ul style="list-style-type: none">• Covid Factor• Seasonal Adjustment• PHF• Growth Rate
APPENDIX D	<u>Other Developments</u> <ul style="list-style-type: none">• Distribution & Diagrams• ProRata• Calcs & Backup
APPENDIX E	<u>Volumes (AM/PM)</u> <ul style="list-style-type: none">• Calculations• Balance• ProRata
APPENDIX F	<u>AM Synchro</u> <ul style="list-style-type: none">• BASE 2023• NoBuild – 2024, 2034• Build – 2024, 2034
APPENDIX G	<u>PM Synchro</u> <ul style="list-style-type: none">• BASE 2023• NoBuild – 2024, 2034• Build – 2024, 2034.
APPENDIX H	<u>Crash Data</u> <ul style="list-style-type: none">• Data from Hudson PD
APPENDIX I	<u>Turning Movement Counts</u> <ul style="list-style-type: none">• PDI• Town GRIDSMART
APPENDIX J	<u>Signal Timing References</u>
APPENDIX K	<u>Plan</u> <ul style="list-style-type: none">• Site Layout Plan



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Traffic Impact and Access Study

Proposed Gas Station/Convenience Store with Car Wash

157 Lowell Road

Hudson, New Hampshire

December 12, 2023

TFM# 18149.00

1. Introduction:

TFMoran Inc. has completed this traffic impact and access study to determine the traffic impacts associated with this site development proposal of a convenience store/gas station with drive-thru window and automatic car wash. The objective of the study are:

- To estimate trip generation and distribution for the proposed use to perform capacity analysis for the project study area
- To determine potential traffic impacts of the proposed development use
- To provide recommendations for operational improvements within the study area to mitigate the proposed development's traffic impacts

Proposal

This site development project includes the development of a 5,400 sf convenience store with a drive-thru window, 12 vehicle fueling positions (vfp), and an automatic car wash. There are two full access driveways, one on Lowell Road and the other connecting to Atwood Avenue.

The existing site (Map 198 Lots 11, 12, 14, 15 & 16) is within the Business Zone and is bordered on three sides by Lowell Road, Atwood Avenue and Temple Street. The Lots are about 3.4 acres and contain two garages and a residential home.

Scope of Study – Per traffic scoping meeting with Town on April 19, 2023.

At the traffic scoping meeting held at the Hudson Town offices with Town Staff, F&O reviewer and TFM, it was agreed that this study would consider the following conditions:

Analysis Periods:

- Weekday AM and PM roadway peak hours

Covid/Stay-at-Home Volume Adjustments:

- New count volumes will be adjusted by a Covid/Stay-at-Home factor, if necessary, per NHDOT methodology.
- Volumes used from Langan Target study are already adjusted.

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

Background growth:

- 1% average annual growth rate

Seasonal Adjustment:

- NHDOT Group 4 data for seasonal adjustment

Opening Year/Future Year:

- 2024/2034

Other Developments:

- Hudson Logistics Center (updated for Target).

Site Trip Generation/Composition:

- Trip Generation and Composition is based on the current ITE Trip Generation 11th Edition
 - LUC 945 Convenience Store/Gas Station
 - Primary/Pass-By Link distribution will be based on ITE

Site Trip Distribution

- Prorated based on existing volumes

Study Area Intersections:

- a. Lowell Road at Central Street
- b. Lowell Road at County Road (N)
- c. Lowell Road at Site Driveway
- d. Lowell Road at County Road (S)
- e. Lowell Road at Atwood Ave.
- f. Atwood Ave at Site Driveway
- g. Lowell Road at Pelham Road

2. Existing Conditions:

Description of Roadways and Intersections:

Roadways

Lowell Road (NH3A)

- **Classification.** Lowell Road (NH3A) is a Town-maintained north-south arterial roadway. The north end of Lowell Road terminates at Central Street and to the south the roadway ends at the junction of Dracut Road and River Road.
- **Lane widths and usage.** In the study area, the roadway provides a 3-lane section with an 11-foot wide two-way left turn lane (TWLTL) in the center from Pelham Road up to Central Street. Typical lane width is 12 feet with 4-foot wide shoulders.
- **Pedestrian facilities.** There is a sidewalk along the east side of the roadway from Central Street to Birch Street.
- **Signage.** The speed limit is posted at 30 mph within the study area. Other traffic signage includes lane use, TWLTL signs, directional signs, street name signs and stop signs at major driveways and intersections. Pavement markings consist of a center TWLTL and shoulder markings in fair condition.
- **Lighting.** Roadway lighting is present along the roadway.
- **Adjacent uses and driveways.** Adjacent uses include various commercial and small business properties and residential.

Central Street

- **Classification.** Central Street is a Town of Hudson minor arterial roadway that provides east-west travel from Nashua to Windham.
- **Lane widths and usage.** The roadway generally provides one 12' travel lane in each direction in the study area, with turn lanes and intersections, and 2-6' wide paved shoulders.
- **Pedestrian facilities.** There are sidewalks on both sides of the street in the study area.
- **Signage.** The posted speed limit is 30 mph. There are lane use signs, NH Route Signs, Do Keep Right signs and Street signs. Pavement markings consist of double-yellow centerline and white shoulder markings.
- **Lighting.** Cobra-head roadway lighting is generally provided at intersections.
- **Road conditions.** The roadway is generally flat with closed drainage and normal crown throughout. The pavement is in fair to good condition.
- **Adjacent uses and driveways.** Residential.

County Road

- **Classification.** County Road is a local loop roadway. Both ends are connected to Lowell Road.
- **Lane widths and usage.** The roadway provides two way travel with varying widths.
- **Pedestrian facilities.** There are no sidewalks in the study area.
- **Signage.** The speed limit is 30 mph. There is a stop sign at each end, and in the center where the road intersects Belknap Road. There is only double yellow centerline striping along the roadway.
- **Lighting.** No roadway lighting.

- Road conditions. The roadway is generally flat with minimal curves, open drainage, and normal crown throughout. The pavement is in fair condition with cracking and pavement patches.
- Adjacent uses and driveways. Residential.

Atwood Avenue

- Classification. Atwood Avenue is a Town-maintained local dead-end roadway that provides east-west access connected to Lowell Road. The following descriptions apply within the study area.
- Lane widths and usage. In the project vicinity, the roadway generally provides two 12' travel lanes in each direction with no paved shoulders.
- Pedestrian facilities. There are no sidewalks within the study area.
- Signage. There is a road name sign but no other signage. There are no pavement markings.
- Lighting. Cobra-head roadway lighting is provided at the Lowell Road intersection.
- Road conditions. The roadway is level and straight, with closed drainage and normal crown. The pavement is in fair to good condition.
- Adjacent uses and driveways. Adjacent uses include various and small business properties and residential.

Pelham Road

- Classification. Pelham Road is a Town-maintained east-west collector roadway that begins at Lowell Road and heads east into residential areas.
- Lane widths and usage. In the study area, the roadway provides two 11-foot wide travel lanes in each direction with 4-foot shoulders.
- Pedestrian facilities. There are sidewalks on both sides of the road from Lowell Road extending about 500' eastward.
- Signage. The speed limit is posted at 30 mph within the study area. Other traffic signage includes directional signs, street name signs and stop signs at major driveways.
- Lighting. No roadway lighting.
- Adjacent uses and driveways. Adjacent uses include various commercial and small business properties, residential and an elementary school.

Intersections

Lowell Road at Central Street

- Traffic Control. This is an existing 3-way signalized intersection. Central Street forms the eastbound and westbound approaches and Lowell Road is the southbound approach.
- Pedestrian facilities. There are sidewalks on all sides of the streets.
- Approaches. The EB approach has an exclusive left turn lane and a through lane. The WB approach provides both right and left turn lanes. The NB approach has a right turn lane and a through lane. Each approach has a concrete median dividing entering and exiting vehicles.
- Signage. "Keep Right", land use signs and street name signs are the only signs present on all approaches of the intersection.

- Lighting. Cobra-head style lighting is provided at and approaching the intersection.
- Roadway condition. Existing roadway is in good condition through the intersection.
- Signal Timing. Existing data provided by Town GRIDSMART.

Lowell Road at County Road (N)

- Traffic Control. This is an existing 3-way unsignalized intersection. However, there are multiple driveways that also access Lowell Road in very close vicinity to this intersection. Lowell Road forms the NB and SB approaches. County Road (N) forms the WB approach.
- Pedestrian facilities. There is a sidewalk on the east side of Lowell Road.
- Approaches. Each approach accommodates two way traffic. The NB and SB approaches have a TWLTL in the center. The WB approach is a single lane accommodating all turns.
- Signage. There is a stop sign on the WB approach and street name sign.
- Lighting. Cobra-head style lighting is provided at the SE corner.
- Roadway condition. Existing roadways in good condition.

Lowell Road at County Road (S)

- Traffic Control. This is an existing 3-way unsignalized intersection. Lowell Road forms the NB and SB approaches. County Road (S) forms the WB approach.
- Pedestrian facilities. None.
- Approaches. Each approach accommodates two way traffic. The NB and SB approaches have a TWLTL in the center. The WB approach is a single lane accommodating all turns.
- Signage. There is a stop sign on the WB approach and street name sign.
- Lighting. Cobra-head style lighting is provided NW of the intersection.
- Roadway condition. Existing roadways in good condition.

Lowell Road at Atwood Avenue

- Traffic Control. This is an existing 3-way unsignalized intersection. Lowell Road forms the NB and SB approaches. Atwood Avenue is a dead-end and forms the EB approach.
- Pedestrian facilities. None.
- Approaches. Each approach accommodates two way traffic. The NB and SB approaches have a TWLTL in the center. The EB approach is a single lane accommodating all turns.
- Signage. There is a street name sign on a nearby telephone pole.
- Lighting. Cobra head lighting is provided on the NW corner.
- Roadway condition. Existing roadways in good condition.

Lowell Road at Pelham Road

- Traffic Control. This is an existing 3-way signalized intersection. Lowell Road forms the NB and SB approaches. Pelham Road forms the WB approach.
- Pedestrian facilities. Pedestrian crosswalk and pushbutton-actuated ped signals are provided at the westbound approach, with an exclusive all-red pedestrian phase. Sidewalks provided on the east side of Lowell Road and both sides of Pelham Road.
- Approaches. The WB approaches consist of a left turn lane and a right turn lane. The NB approach has one shared right-turn/thru lane. The SB approach provides an exclusive left turn lane and a thru lane.

- Signage. Street name, "Right turn on Red" signage and school signs are present at the intersection.
- Lighting. Cobra-head style lighting is provided at the NE and SW corners of the intersection.
- Roadway condition. Existing roadway is in good condition through the intersection.
- Signal Timing. Existing data provided by Town GRIDSMART.

3. Background Volumes:

To quantify existing Base peak hour traffic volumes within the study area, turning movement counts were taken at the study intersections and data was provided by the Town of Hudson. These counts are tabulated in the Appendix.

Counts were taken at the following intersections on Thursday May 4, 2023 during the hours of 7AM to 9AM, 2PM to 6PM:

- Lowell Road at County Road (N)
- Lowell Road at County Road (S)
- Lowell Road at Atwood Avenue

24hr GRIDMART data provided by the Town on Thursday May 4, 2023 at the following intersections:

- Lowell Road at Central Street
- Lowell Road at Pelham Road

Seasonal Adjustment.

To account for seasonal variations, the data was seasonally adjusted upward by a factor of 3% during May to reflect the estimated park month traffic volume.

COVID/Stay-at Home Adjustment.

The NHDOT methodology to adjust traffic volumes to pre-pandemic levels involves using MS2 count station data from three nearby permanent stations. This data is then averaged for pre- and post-Covid volumes for one month, to develop an adjustment factor for each peak hour.

These calculations show that volumes in May 2023 are still below the May 2019 volumes; thus, the Base condition volumes for weekdays are adjusted by -7.4% during the AM Peak hour and -5.2% for the PM Peak hour.

Signal Timings

Existing signal timing is based on Town of Hudson GRIDSMART data provided. The timings are attached in the appendix.

Balance

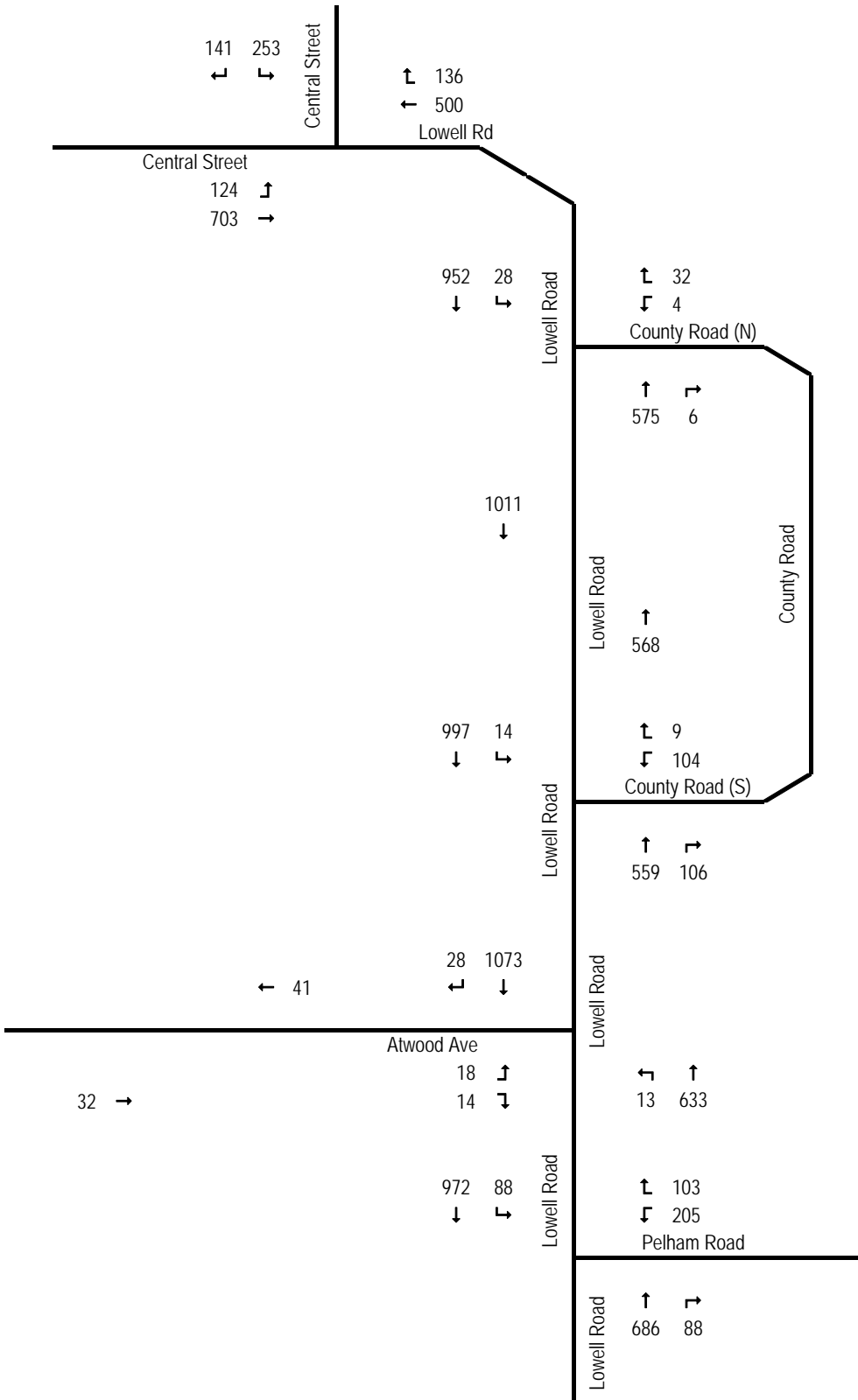
Volumes were balanced along Loudon Road between the County Road (S) intersection and the Atwood Avenue intersection.

The Base volumes are shown in the following figures:

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2023 BASE
AM Peak Hour

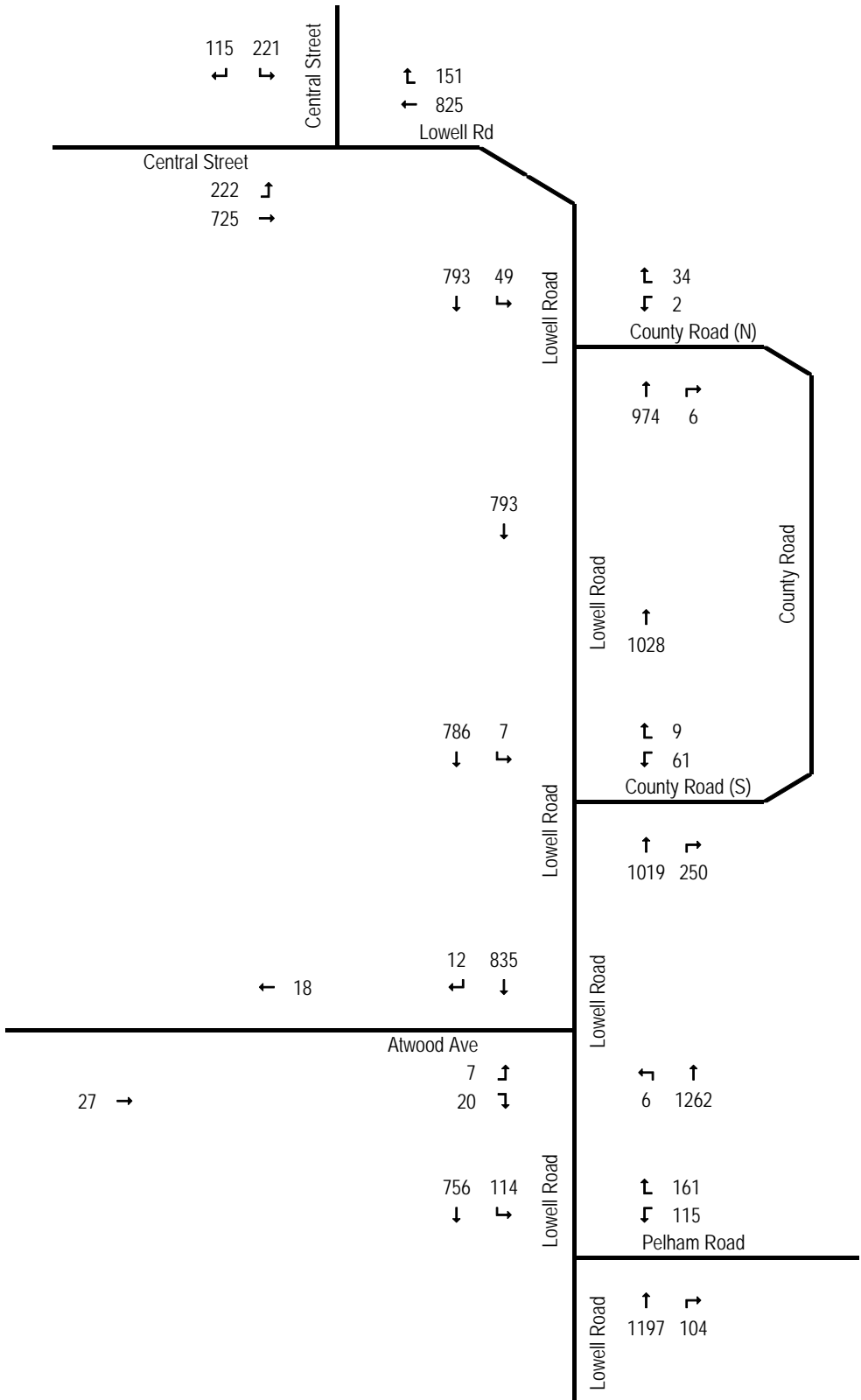
XX Volumes



Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2023 BASE
PM Peak Hour

XX Volumes



4. No-Build Volumes:

To establish No-Build traffic volumes for this study, the following adjustments were made to the Covid- and seasonally adjusted 2023 Base volumes:

Growth Factor.

A 1% compound annual growth rate was used to account for general population growth and possible traffic generated by smaller future developments in the area. No-build volumes for the opening and future years (2024, 2034) are presented in the following figures.

Other Developments.

Per the scoping meeting, one approved development was identified as generating traffic volumes that should be accounted for in the no-build volumes for this traffic study. This development, as well as the trip generation methodology for the peak hours, are described below and data and distribution are in the Appendix:

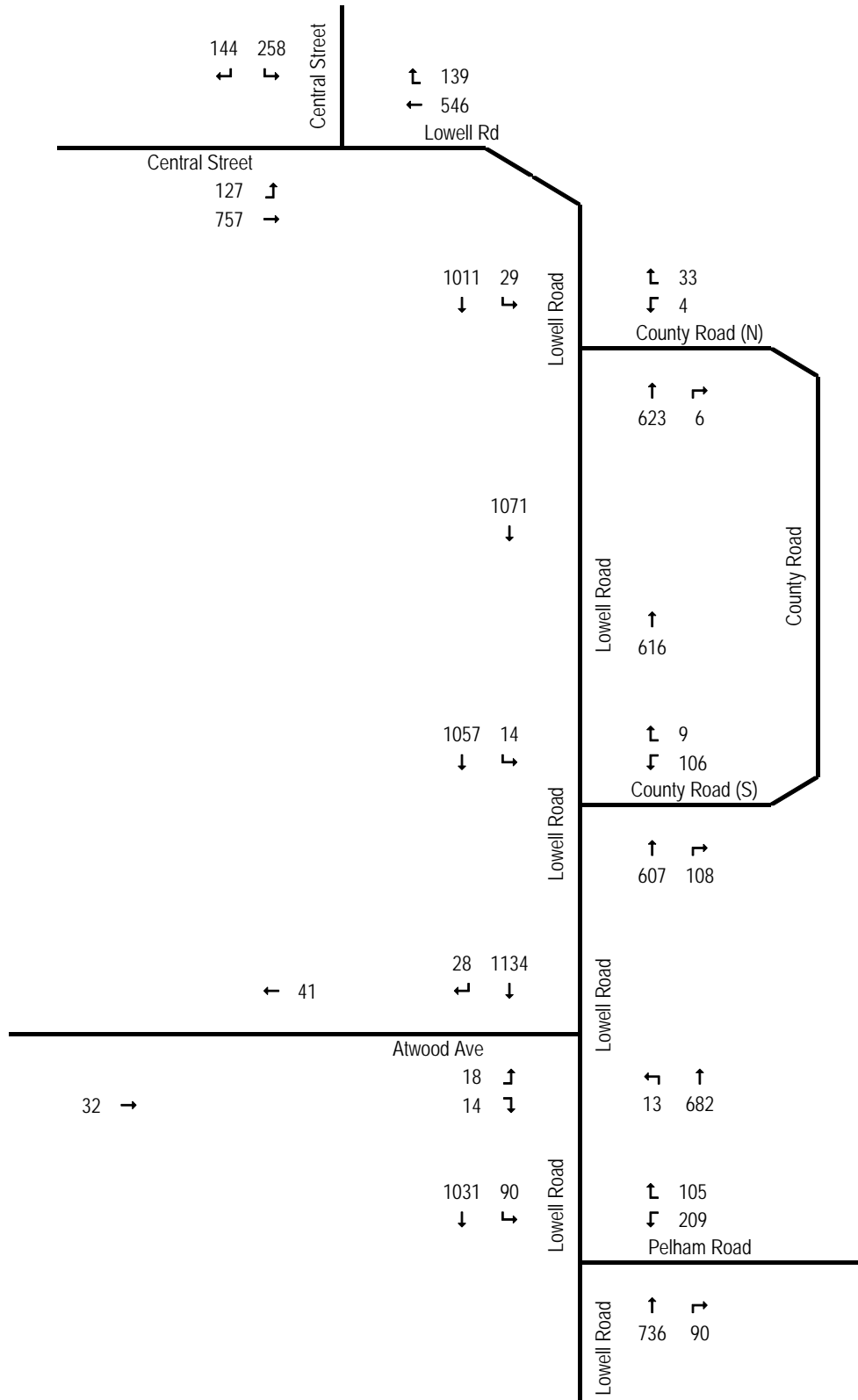
- Hudson Logistics Center (Target), Hudson NH – 43 Lowell Road:
This project was amended in September 2022 for a fulfillment center warehouse (Target) that is a 42% reduction in trips from the previously approved distribution hub project (Amazon). This facility is a link in the Tenant's supply chain and will not serve customers directly. Previously approved mitigation improvements are still being proposed.

The total no-build volumes for the opening (2024) and future (2034) years are presented in the figures below.

Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

2024 NoBUILD
 AM Peak Hour

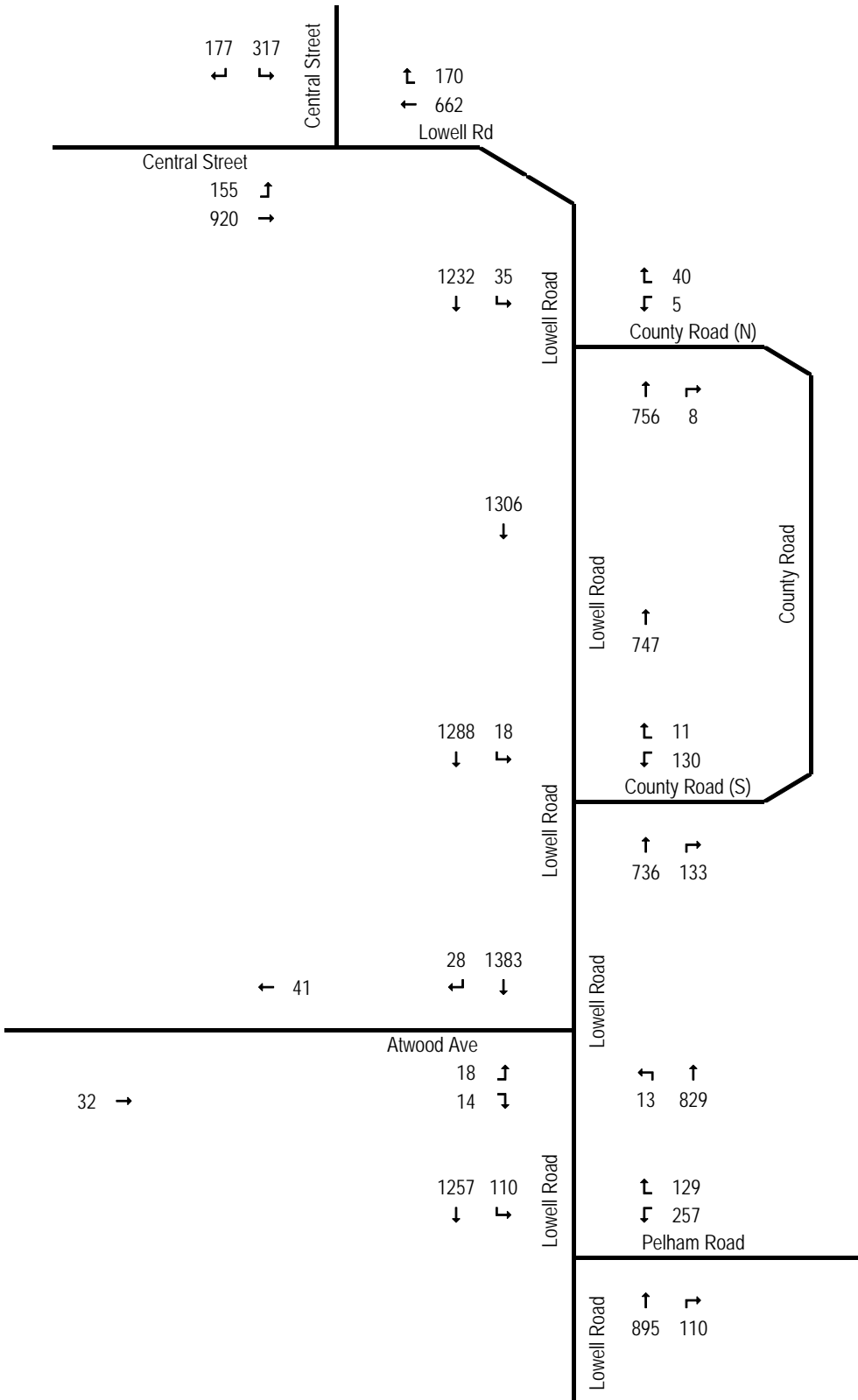
XX Volumes



Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2034 NoBUILD
AM Peak Hour

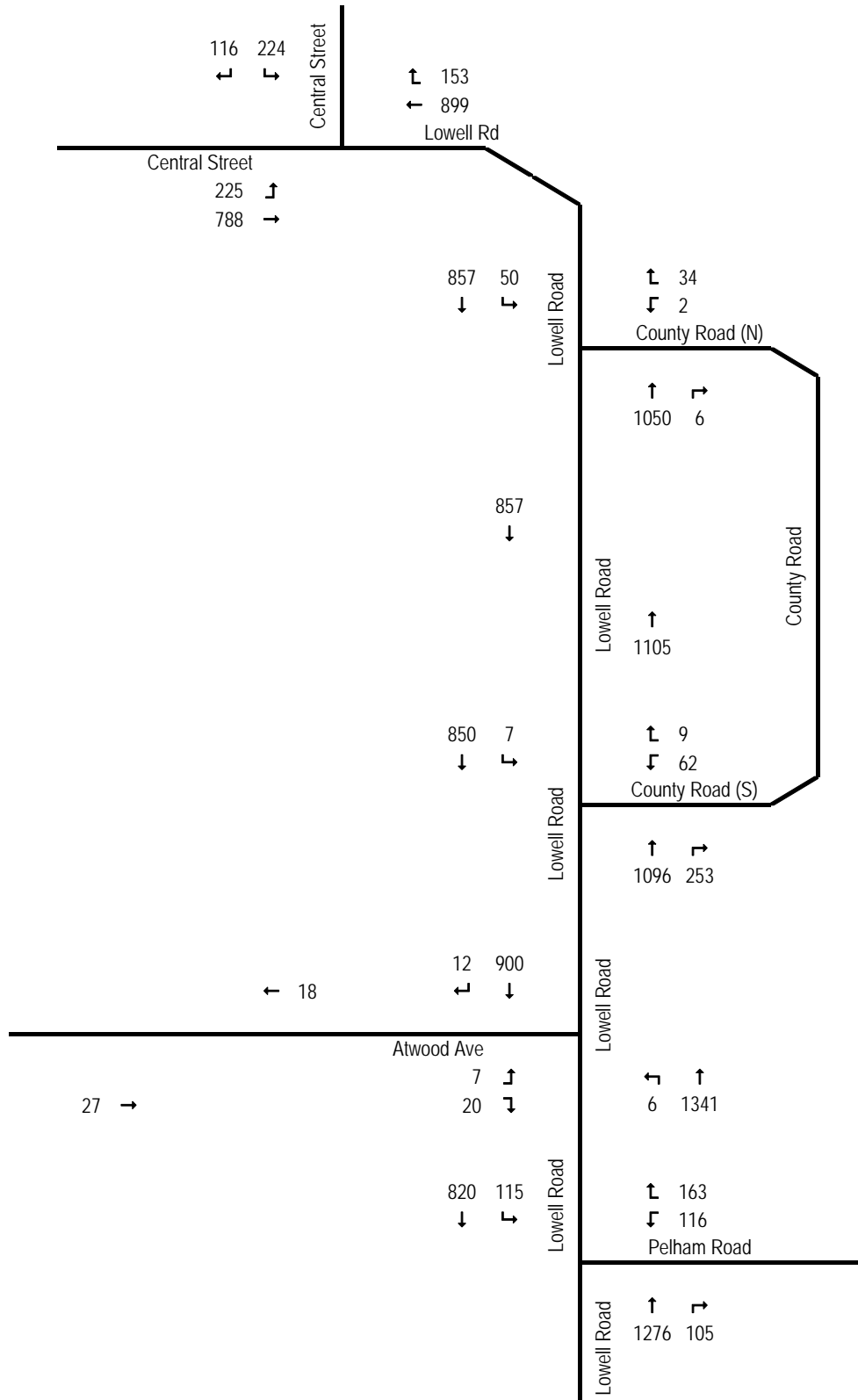
XX Volumes



Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

2024 NoBUILD
 PM Peak Hour

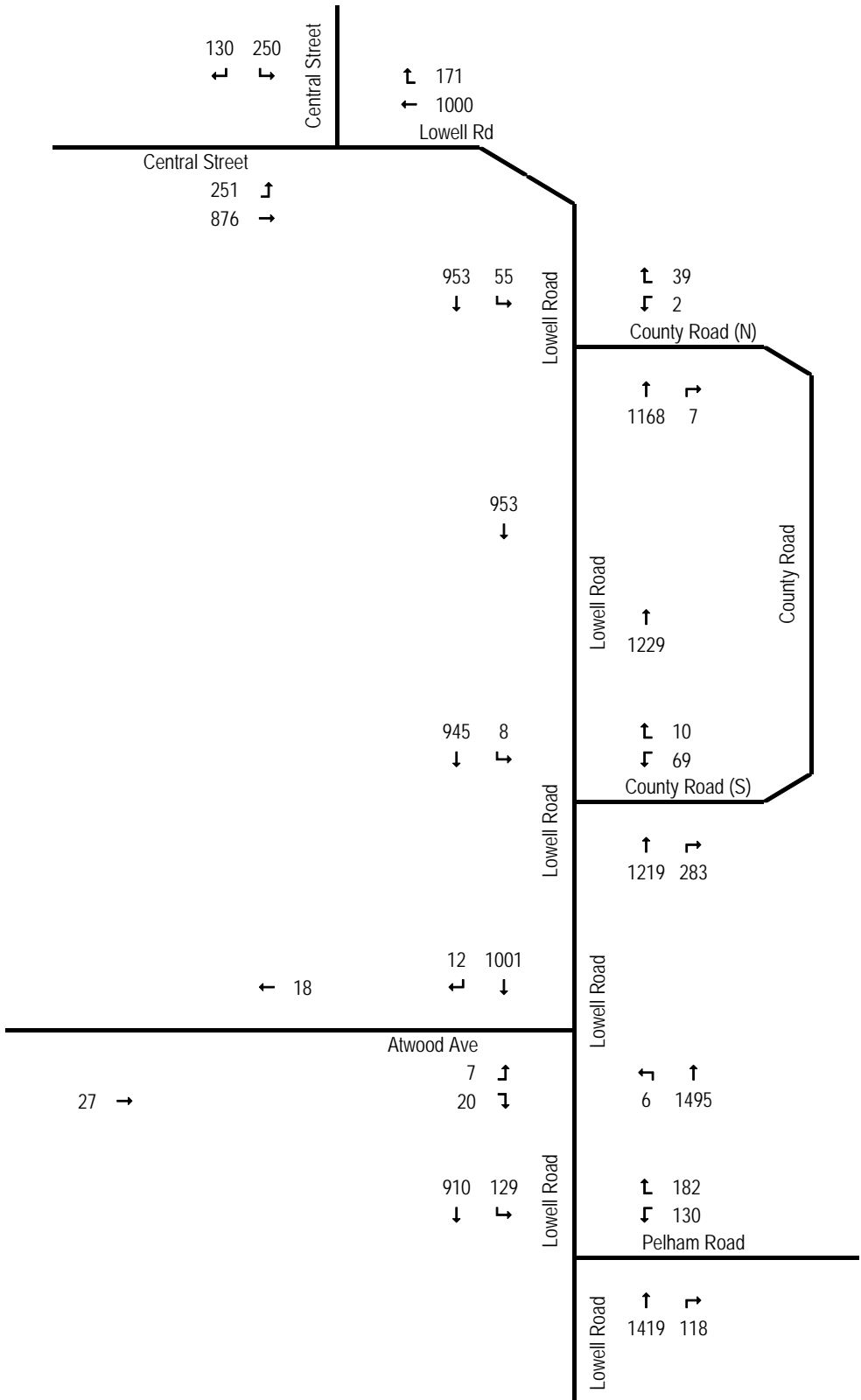
XX Volumes



Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2034 NoBUILD
PM Peak Hour

XX Volumes



5. Trip Generation:

Proposed Trips

Using standard trip generation rates published by the Institute of Transportation Engineers (ITE 11th Edition), Land Use Code 945 Convenience Store/Gas Station was used to calculate the vehicle trips for the proposed Site Development. Given the location and nearby residential density, the site is likely to be highly convenience goods-oriented as well as fuel-oriented. There is another gas/convenience store about 700' north of the site with only 8 vfp and a convenience store only 1/3 the size as proposed on the Atwood Ave site. Therefore, fuel positions were selected as the appropriate LUC 945 sub-category, with store size (4 – 5.5 ksf) as independent variable. The car wash use is expected to be an accessory to the gas/convenience as it is unlikely many trips will be made primary for a car wash only. Table 1 shows the total trip generation for the proposed development. See Table 2 in section 6 for New Trips. Calculations are attached in the appendix.

Table 1 – Trip Generation (Per ITE 11th)

Land Use 945	In	Out	Total
Proposed 5.4 ksf Convenience Store/Gas Station – GFA (4 - 5.5k): 16 vfp			
Weekday AM Peak Hour Adjacent Street	153	152	305
Weekday PM Peak Hour Adjacent Street	147	147	294

6. Trip Composition, Distribution and Assignment:

Composition

Based on ITE guidance¹, site generated trips can be broken down into three categories: primary trips, pass-by trips, and diverted-linked trips.

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 Lowell Road. Diverted-Linked trips are attracted from other nearby roadways and require a diversion to access the generator. In this study, there are no diverted links.

For this site, a significant proportion of Pass-By trips would be expected. A new List of Pass-By rates was published with the ITE Trip Generation Manual, 11th Edition. For LUC 945, new rates were published showing 76% pass-by in the AM peak hour and 75% pass-by in the PM peak hour. See the following composition in Table 2.

Table 2: New Trip Composition

	Non Pass-By		Pass-By		Total Trips at Site	New Trips on Road
	In	Out	In	Out		
Weekday AM Peak Hour Adjacent Street	37	36	116	116	305	73
Weekday PM Peak Hour Adjacent Street	37	37	110	110	294	74

Distribution

New trips were distributed through the network using prorata existing travel patterns. Most of the trips are expected to use the main driveway at Lowell Road. However, the secondary

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

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

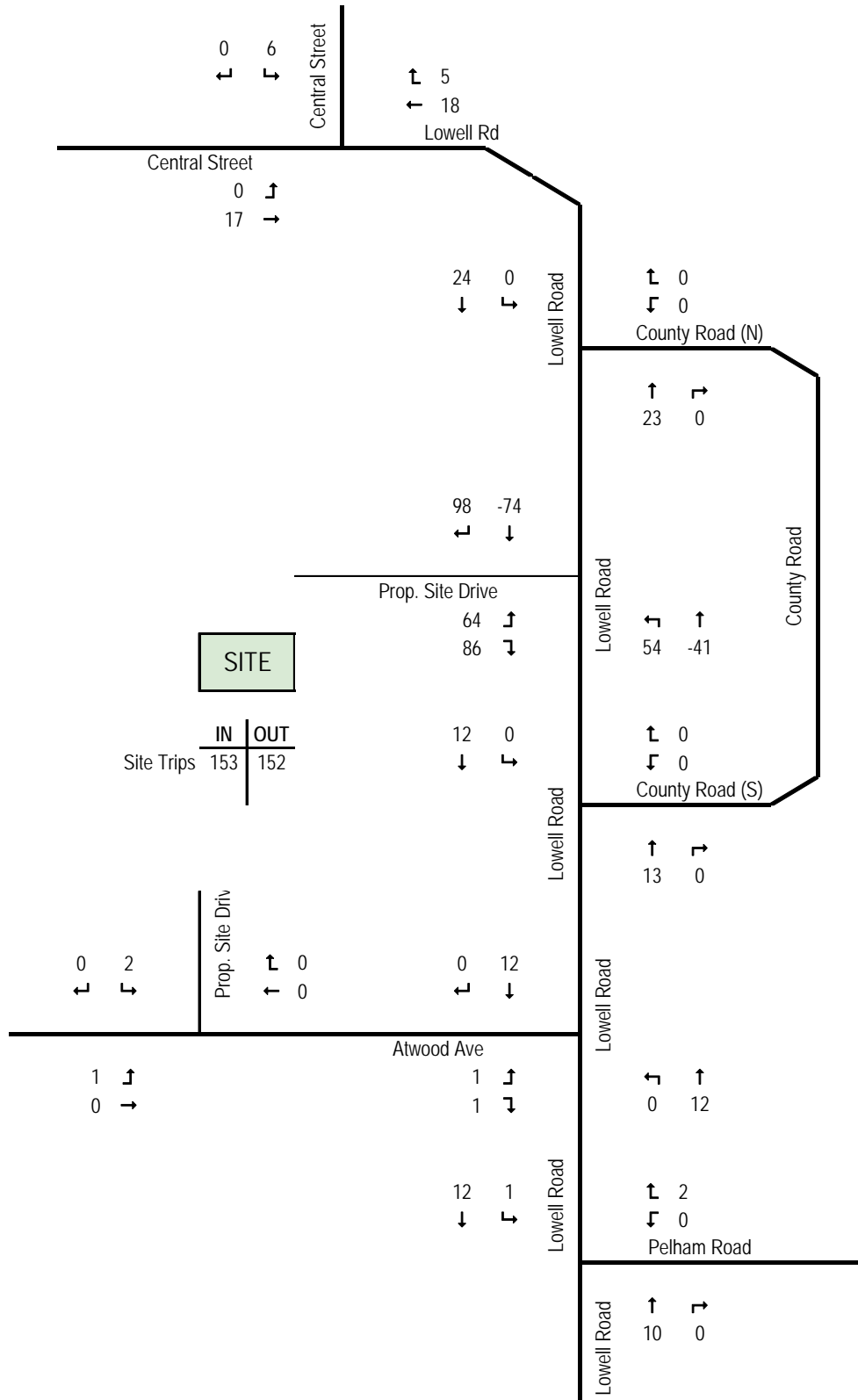
access onto Atwood Lane is an option for all vehicles accessing the site. We have calculated several trips using Atwood Ave into the distribution model to allow for some level of analysis of these intersections. Utilization is expected to be low, but some increase in trips will be accounted for.

The trips generated by the proposed development were added to the No-Build volumes throughout the study area to produce the build volumes. Worksheets detailing the distribution of the site-generated trips are included in the appendix. The results of these distribution calculations are shown in the following figures:

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

SITE TRIPS
AM Peak Hour

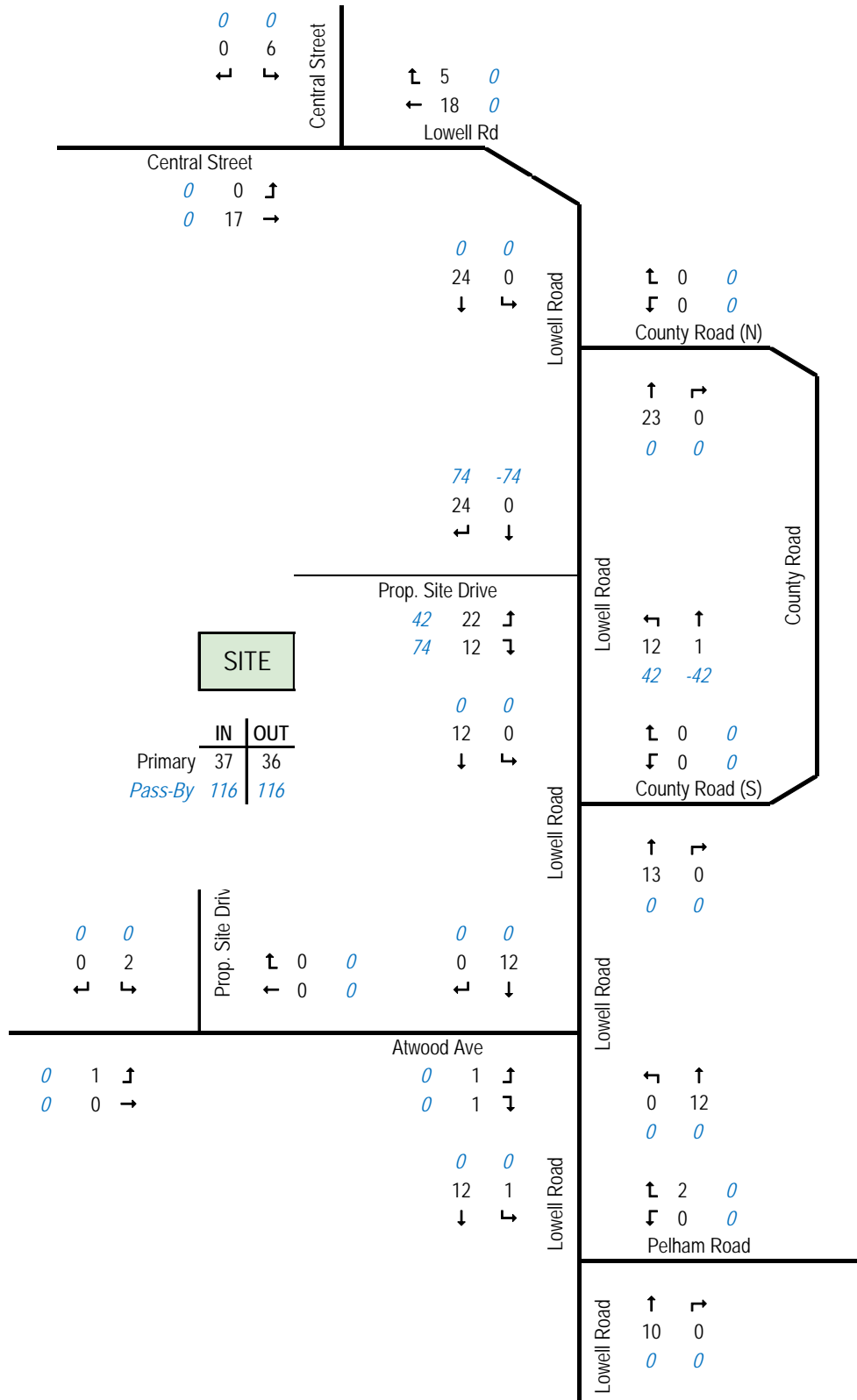
XX Site Trip



Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

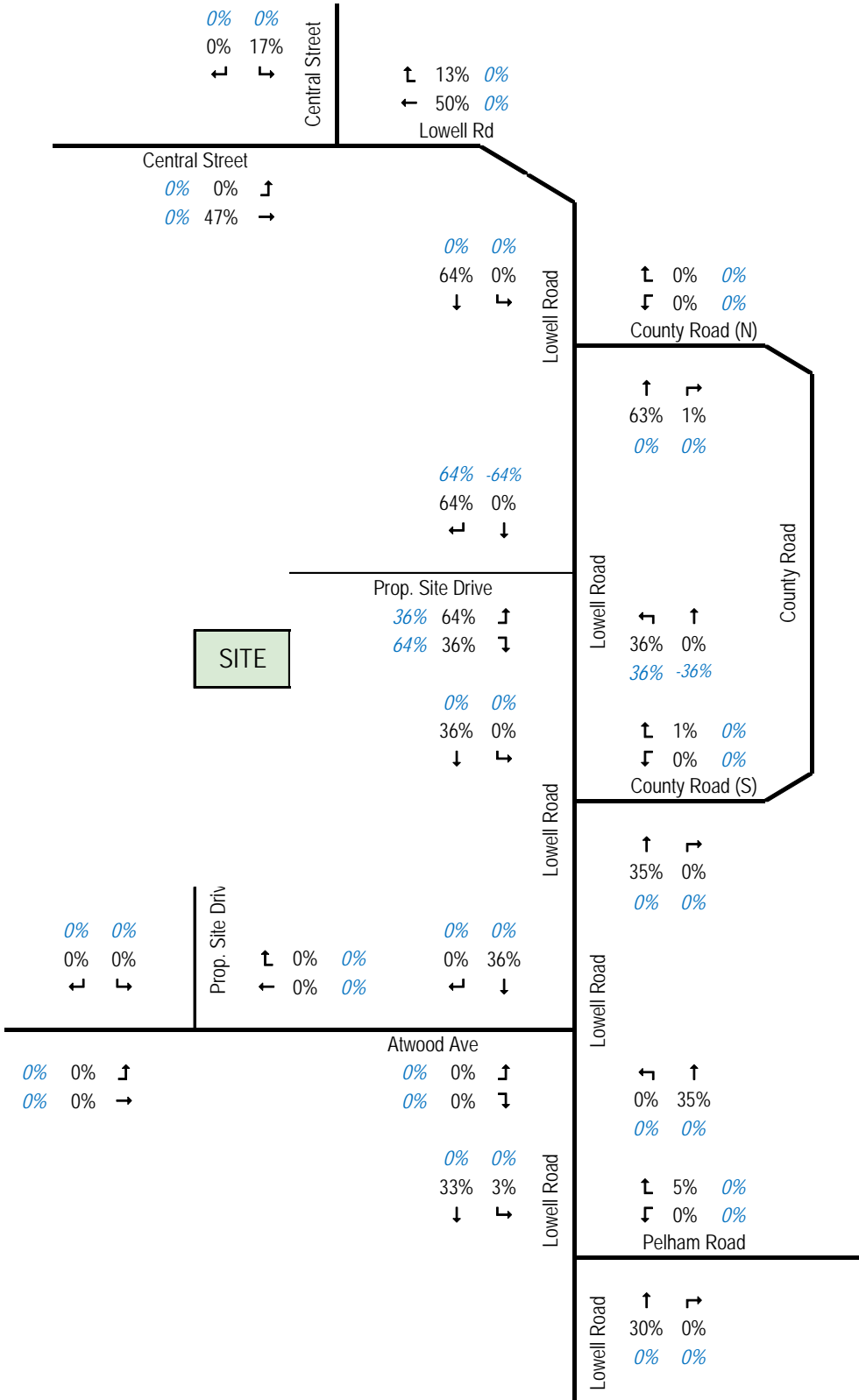
SITE TRIP ASSIGNMENT
 AM Peak Hour

XX Primary Site Trips
 XX Pass-By Site Trips



SITE TRIP DISTRIBUTION
AM Peak Hour

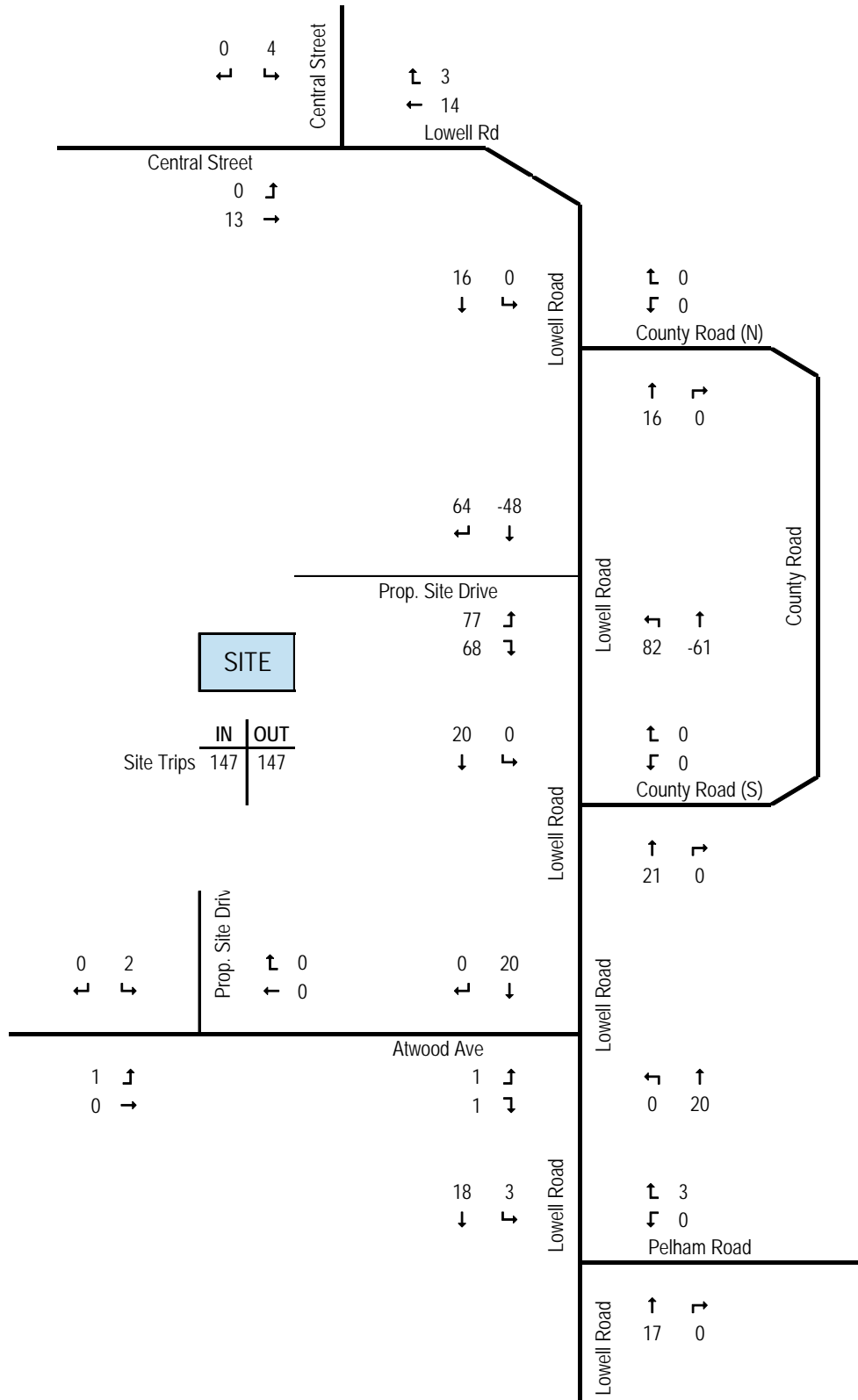
XX Primary Site Trips
XX Pass-By Site Trips



Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

SITE TRIPS
 PM Peak Hour

XX Site Trip



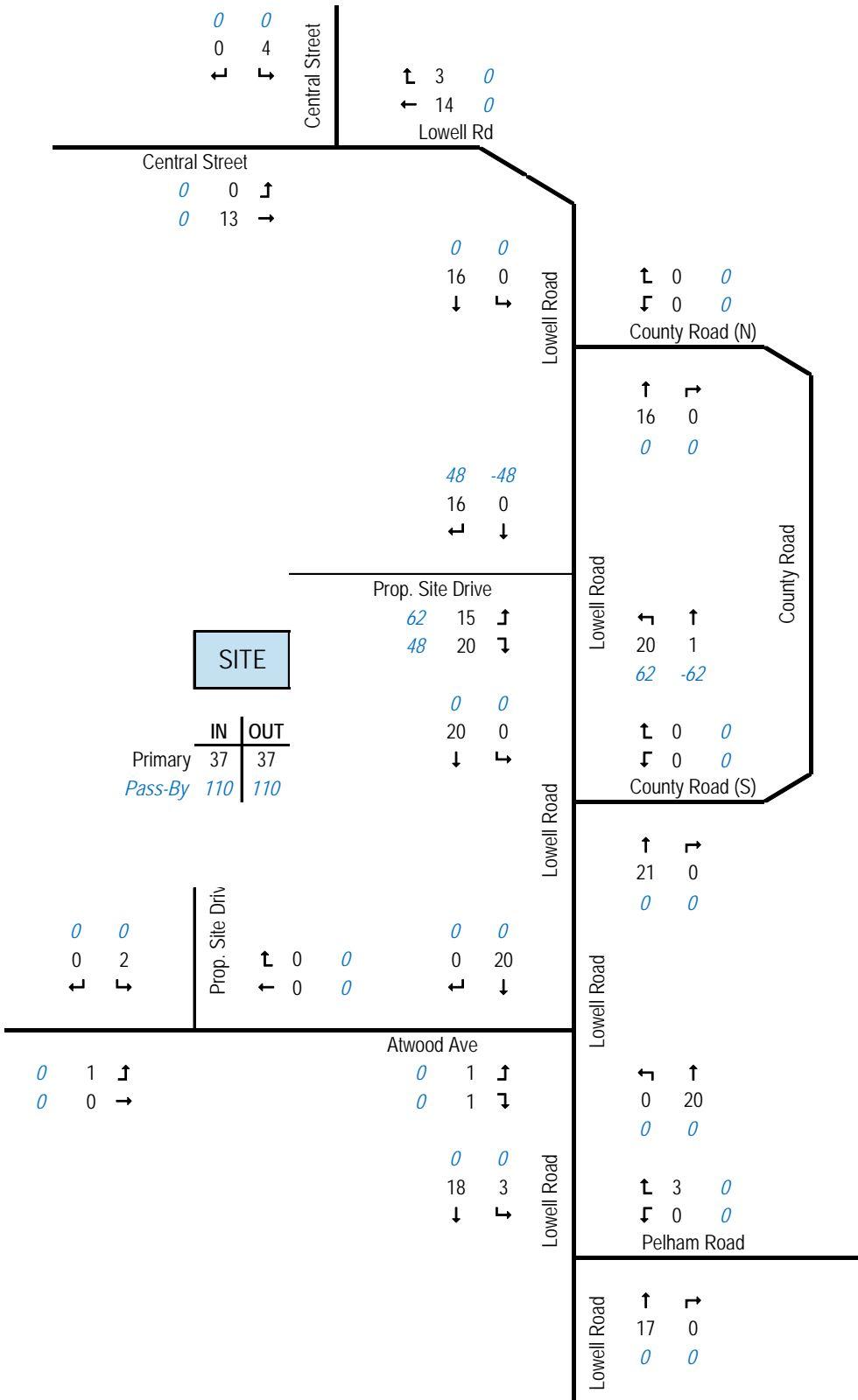
	IN	OUT
Site Trips	147	147

SITE

Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

SITE TRIP ASSIGNMENT
 PM Peak Hour

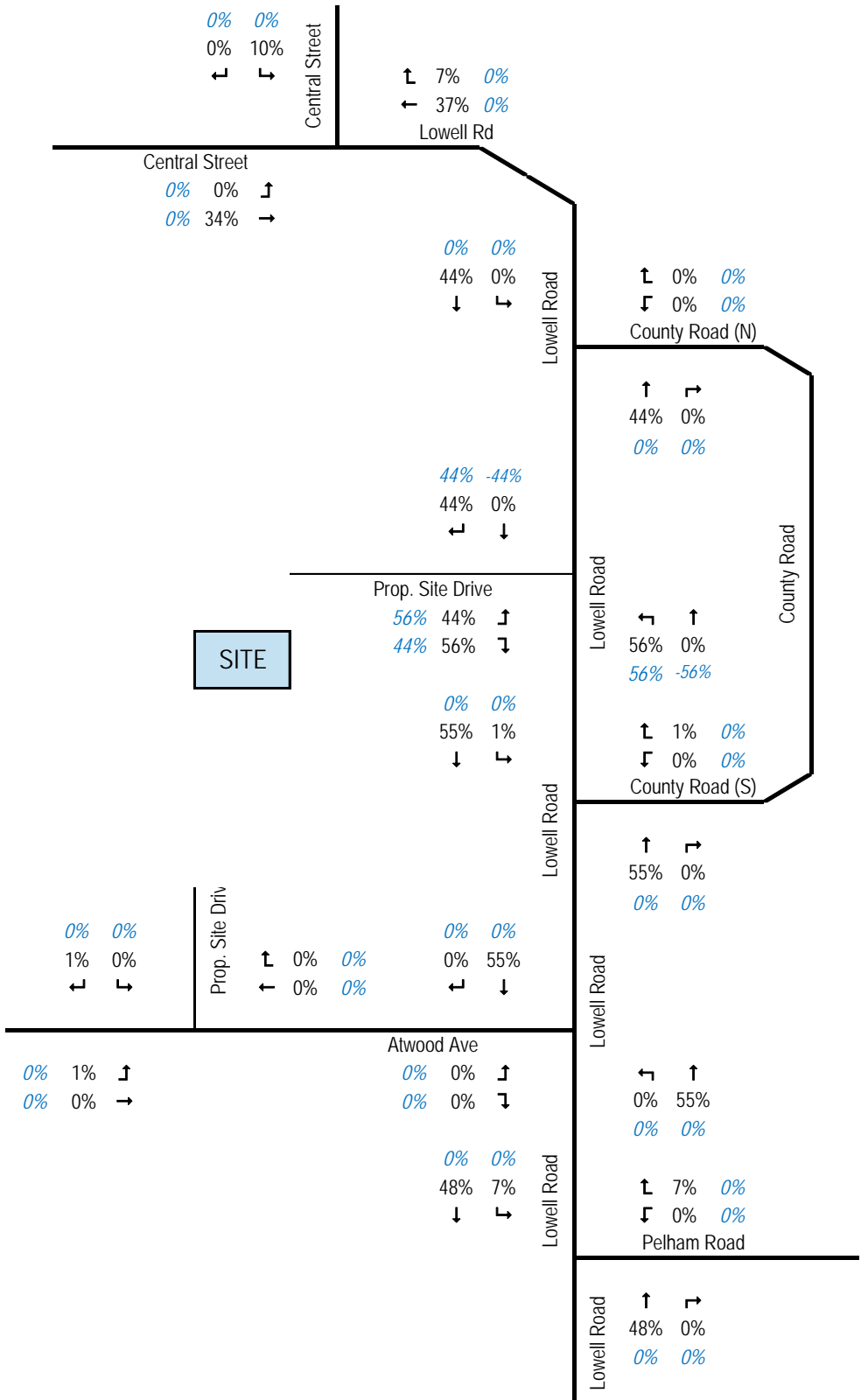
XX Primary Site Trips
 XX Pass-By Site Trips



Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

SITE TRIP DISTRIBUTION
PM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips



7. Build Volumes:

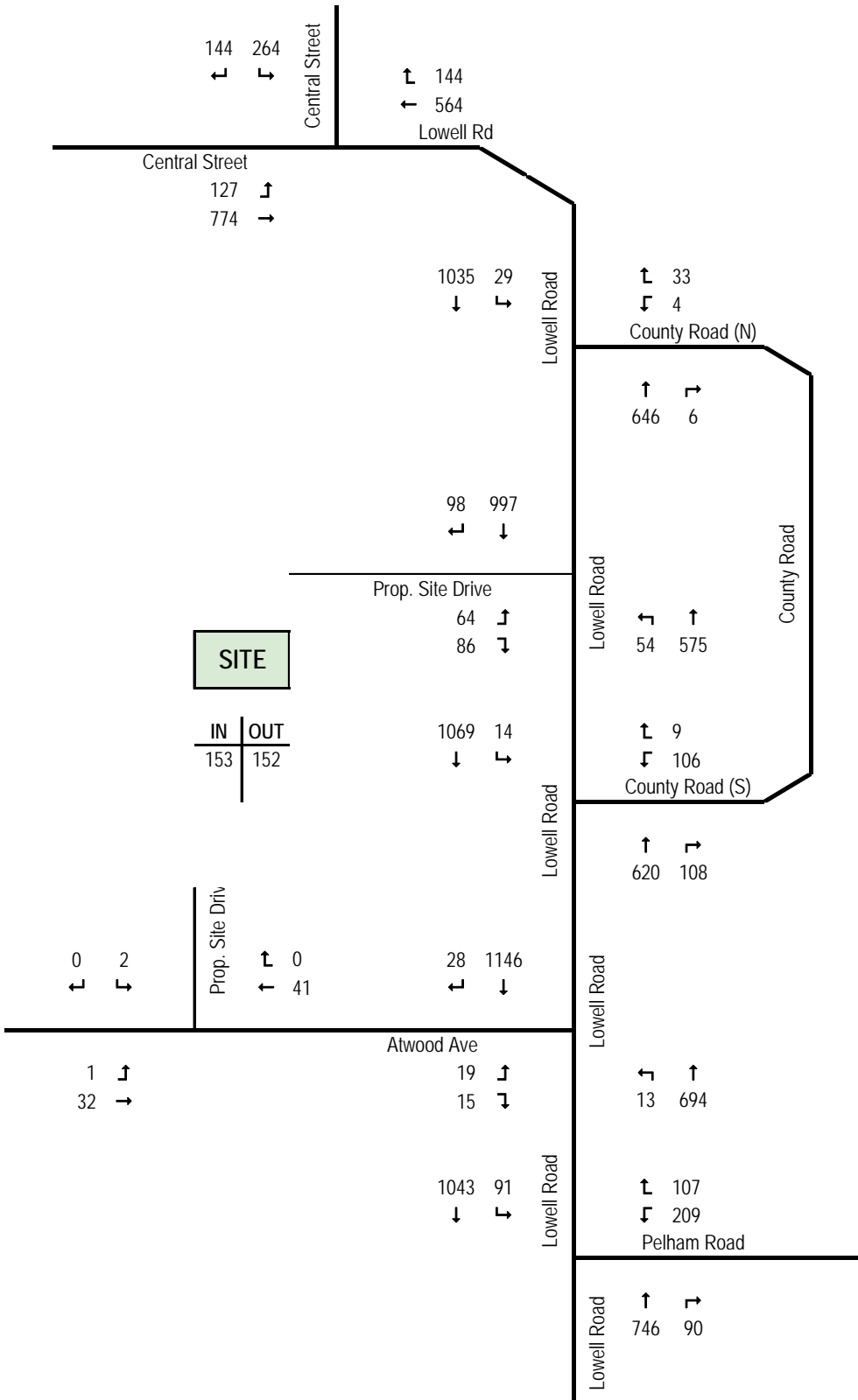
The site trips generated by the development were added to No-Build traffic volumes throughout the study area to produce Build diagrams for the development.

2024 and 2034 diagrams are shown on the following pages for each peak hour:

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2024 BUILD
AM Peak Hour

XX Volumes



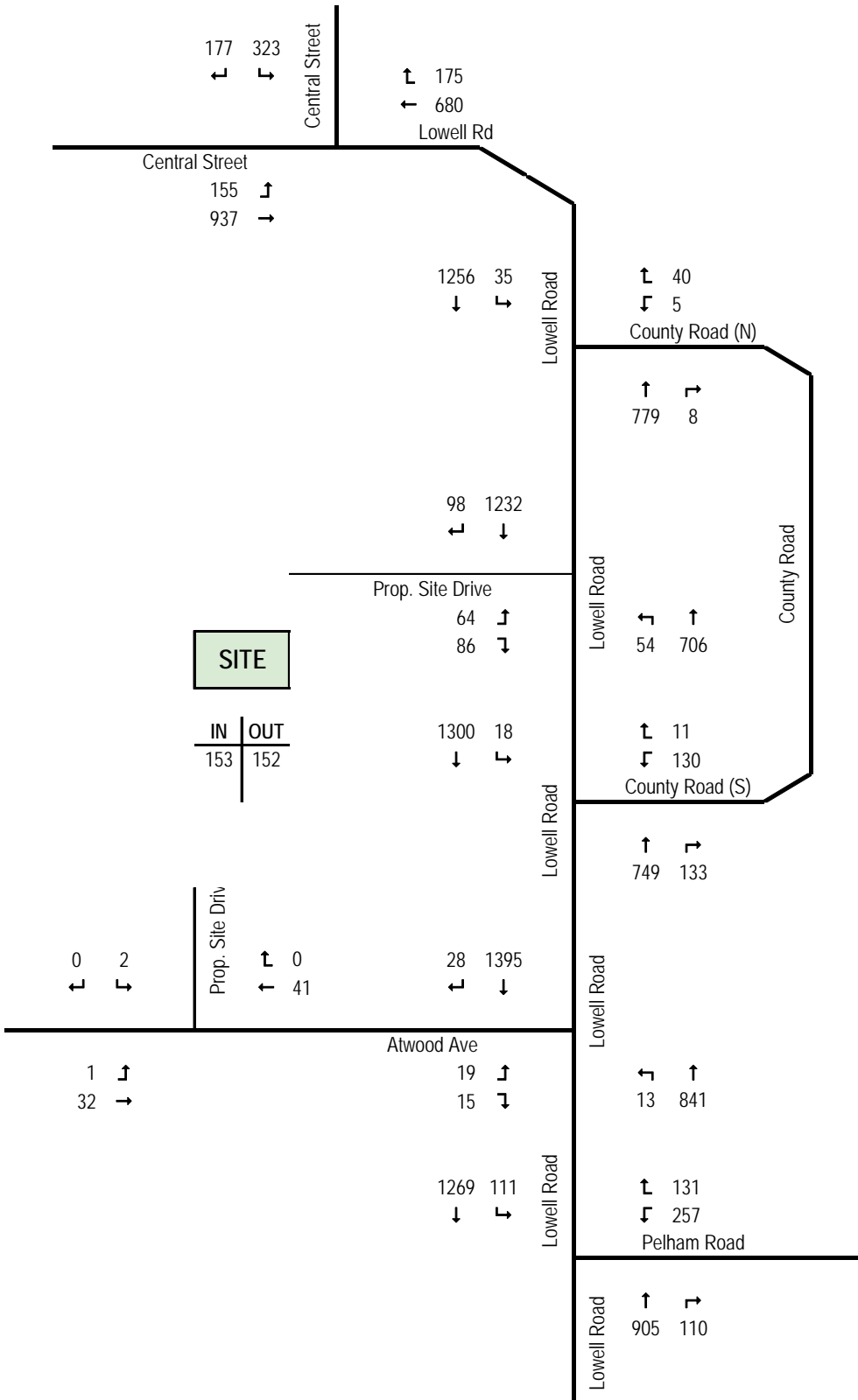
SITE

IN	OUT
153	152

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2034 BUILD
AM Peak Hour

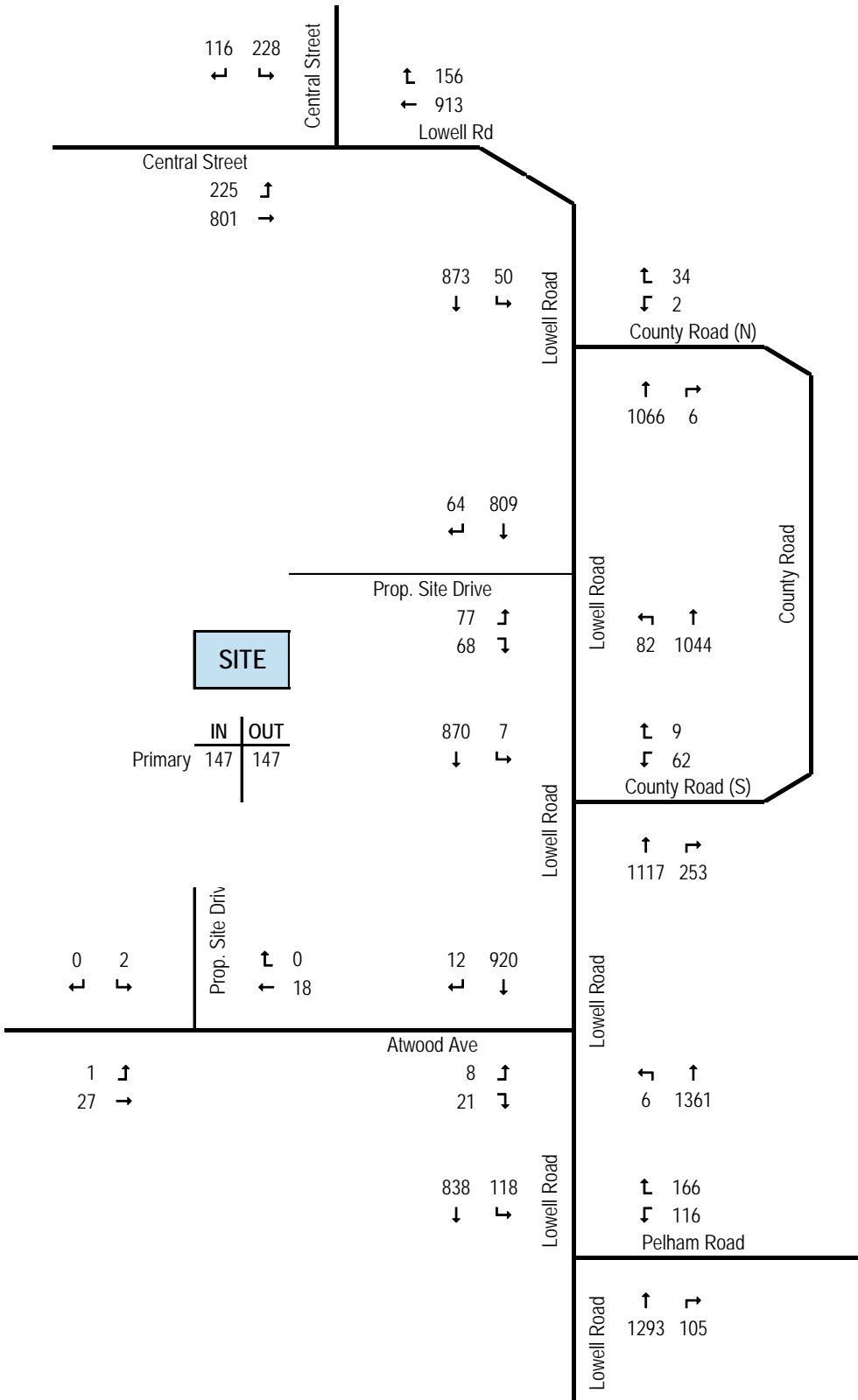
XX Volumes



Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

2024 BUILD
PM Peak Hour

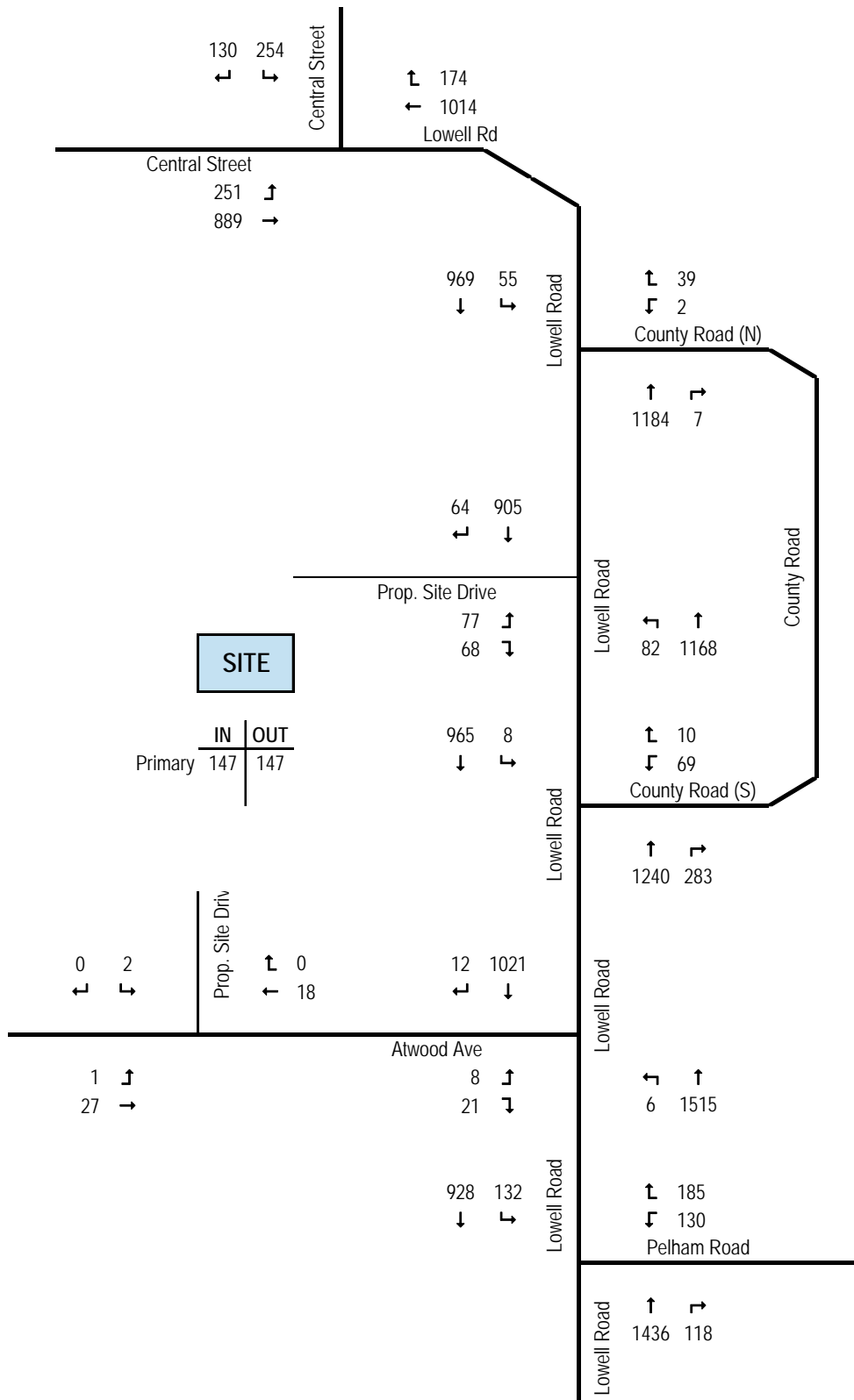
XX Volumes



Traffic Impact and Access Study,
 Proposed Gas Station/Convenience Store with Car Wash
 157 Lowell Road, Hudson NH

2034 BUILD
 PM Peak Hour

XX Volumes



8. Level of Service Analysis:

Level of Service Analysis:

Level of service (LOS) is a qualitative description of operational conditions within a traffic stream measured in terms of control delay, a function of capacity, degree of saturation, and delay associated with traffic signals and "STOP" signs. Control delay includes initial deceleration, delay approaching a control device, stopped delay, queue move-up time, and acceleration delay from a stopped condition. The relationship between control delay and LOS is shown in the following table.

Level of Service (LOS)	Signalized Control Delay (sec)	Unsignalized Control Delay (sec)
A	≤10.0	≤10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	Over 80.0	Over 50.0

Study Area.

Analyses were performed for the study area intersections previously described, that is:

- | | |
|-----------------------------------|--------------------------------|
| 3. Lowell Road at Central Street | 7. Lowell Road at Atwood Ave. |
| 4. Lowell Road at County Road (N) | 8. Atwood Ave at Site Driveway |
| 5. Lowell Road at Site Driveway | 9. Lowell Road at Pelham Road |
| 6. Lowell Road at County Road (S) | |

Queue Analysis.

Vehicle queue lengths are determined by the capacity of the movement under study and the volume of traffic processed by the intersection during the analysis period. It is standard practice to report the 95th percentile queue, that is, the queue that will be exceeded no more than 5% of the time during the peak periods.

Methodology.

Trafficware "Synchro" v11 software was used to analyze signalized and unsignalized intersections (based on HCM 2000) within the study area intersections during the weekday AM and PM peak hours.

Signal Timing.

Signal timings are based on data provided by the Town of Hudson as shown in the table below and provided in the Appendix.

Signal Timing Data Sources

Lowell Road at Central Street	AM/PM	Town GRIDSMART
Lowell Road at County Road (N)	AM/PM	Unsignalized
Lowell Road at County Road (S)	AM/PM	Unsignalized
Lowell Road at Atwood Avenue	AM/PM	Unsignalized
Lowell Road at Pelham Road	AM/PM	Town GRIDSMART

Volume to capacity (v/c) ratios, Level of Service (LOS), delays and queue results are summarized in the following tables:

12 December 2023

Traffic Impact and Access Study,
Proposed Gas Station/Convenience Store with Car Wash
157 Lowell Road, Hudson NH

Table 3. Level of Service Analysis Summary (2023/2024/2034) – AM Peak Hour

Movement	2023 BASE AM				2024 NoBuild AM				2024 Build AM				2034 NoBuild AM				2034 Build AM				
	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	
3: Lowell Road at Central Street [Signalized]																					
OVERALL	0.74	19.3	B	---	0.78	20.9	C	---	0.80	22.2	C	---	0.93	34.8	C	---	0.96	39.4	D	---	
EB L	0.54	34.2	C	147	0.57	37.2	D	150	0.58	38.1	D	150	0.71	47.4	D	180	0.71	48.0	D	180	
EB T	0.68	12.3	B	303	0.71	13.1	B	347	0.72	13.3	B	362	0.83	16.8	B	526	0.84	17.4	B	552	
WB T	0.69	20.4	C	334	0.72	21.3	C	378	0.73	21.6	C	397	0.81	24.9	C	510	0.83	25.7	C	532	
WB R	0.09	3.9	A	11	0.09	3.8	A	11	0.10	3.8	A	12	0.12	3.9	A	17	0.12	3.9	A	18	
SBL	0.77	37.1	D	293	0.81	43.0	D	302	0.87	51.0	D	321	1.10	>80	F	406	1.18	>80	F	424	
SBR	0.11	15.9	B	22	0.11	17.5	B	22	0.13	18.2	B	28	0.21	21.6	C	56	0.23	22.2	C	61	
4: Lowell Road at County Road (N) [Unsignalized]																					
OVERALL	---	0.5	A	---	---	0.5	---	---	---	0.5	A	---	---	0.6	A	---	---	0.6	A	---	
WB L/R	0.10	14.5	B	9	0.11	15.3	C	10	0.12	15.7	C	10	0.17	18.7	C	15	0.18	19.3	C	16	
NB T/R	0.38	0.0	A	0	0.42	0.0	A	0	0.43	0.0	A	0	0.50	0.0	A	0	0.52	0.0	A	0	
SBL	0.03	9.2	A	3	0.04	9.4	A	3	0.04	9.5	A	3	0.05	10.1	B	4	0.05	10.2	B	4	
SB T	0.63	0.0	A	0	0.67	0.0	A	0	0.68	0.0	A	0	0.81	0.0	A	0	0.83	0.0	A	0	
5: Lowell Road at Proposed Site Drive [Unsignalized]																					
OVERALL	---	---	---	---	---	---	---	---	---	2.6	A	---	---	---	---	---	---	3.4	A	---	
EB L/R	---	---	---	---	---	---	---	---	0.40	28.0	D	47	---	---	---	---	0.57	45.5	E	82	
NB L	---	---	---	---	---	---	---	---	0.10	11.9	B	9	---	---	---	---	0.13	14.0	B	11	
NB T	---	---	---	---	---	---	---	---	0.38	0.0	A	0	---	---	---	---	0.46	0.0	A	0	
SB T/R	---	---	---	---	---	---	---	---	0.72	0.0	A	0	---	---	---	---	0.87	0.0	A	0	
6: Lowell Road at County Road (S) [Unsignalized]																					
OVERALL	---	2.1	A	---	---	2.3	A	---	---	2.4	A	---	---	6.5	A	---	---	6.7	A	---	
WB L/R	0.49	31.5	D	63	0.54	36.8	E	74	0.55	38.0	E	76	0.92	>50	F	174	0.94	>50	F	179	
NB T/R	0.43	0.0	A	0	0.46	0.0	A	0	0.47	0.0	A	0	0.56	0.0	A	0	0.56	0.0	A	0	
SBL	0.02	9.7	A	2	0.02	10.1	B	2	0.02	10.2	B	2	0.04	11.7	B	3	0.04	11.8	B	3	
SB T	0.67	0.0	A	0	0.71	0.0	A	0	0.71	0.0	A	0	0.86	0.0	A	0	0.87	0.0	A	0	

^a Volume-to-capacity ratio - ^b Average control delay (sec/veh) - ^c Level of service - ^d 95th percentile queue in feet

Table 3 cont. Level of Service Analysis Summary (2023/2024/2034) – AM Peak Hour

Movement	2023 BASE AM				2024 NoBuild AM				2024 Build AM				2034 NoBuild AM				2034 Build AM				
	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	
7: Atwood Avenue at Proposed Site Driveway [Unsignalized]																					
OVERALL	---	---	---	---	---	---	A	---	---	0.3	A	---	---	---	---	---	---	0.3	A	---	
EB L/T	---	---	---	---	---	---	A	0	0.00	0.2	A	0	---	---	---	---	0.00	0.2	A	0	
WB T/R	---	---	---	---	---	---	A	0	0.03	0.0	A	0	---	---	---	---	0.03	0.0	A	0	
SB L/R	---	---	---	---	---	---	A	0	0.00	8.9	A	0	---	---	---	---	0.00	8.9	A	0	
8: Lowell Road at Atwood Avenue [Unsignalized]																					
OVERALL	---	0.6	A	---	---	0.6	A	---	---	0.7	A	---	---	0.7	A	---	---	0.8	A	---	
EB L/R	0.19	24.4	C	17	0.21	26.7	D	19	0.22	27.5	D	20	0.29	39.5	E	29	0.31	41.1	E	31	
NB L	0.02	11.5	B	2	0.02	12.0	B	2	0.02	12.0	B	2	0.03	14.0	B	2	0.03	14.1	B	2	
NB T	0.38	0.0	A	0	0.41	0.0	A	0	0.42	0.0	A	0	0.50	0.0	A	0	0.51	0.0	A	0	
SB T/R	0.74	0.0	A	0	0.78	0.0	A	0	0.78	0.0	A	0	0.94	0.0	A	0	0.95	0.0	A	0	
9: Lowell Road at Pelham Road [Signalized]																					
OVERALL	0.77	23.7	C	---	0.82	25.3	C	---	0.82	25.0	C	---	1.01	47.8	D	---	1.02	49.3	D	---	
WB L	0.80	69.8	E	292	0.80	70.1	E	296	0.81	71.7	E	296	0.90	>80	F	415	0.90	>80	F	415	
WB R	0.10	35.0	C	69	0.10	34.6	C	71	0.11	36.4	D	72	0.17	40.5	D	98	0.17	40.5	D	100	
NB T/R	0.73	21.2	C	567	0.79	24.1	C	647	0.77	22.0	C	663	0.88	26.9	C	1041	0.89	27.9	C	1089	
SB L	0.49	58.9	E	236	0.49	58.7	E	240	0.57	62.9	E	244	1.40	>80	F	293	1.41	>80	F	295	
SB T	0.74	11.5	B	686	0.79	13.4	B	806	0.80	13.5	B	837	0.98	35.7	D	1574	0.99	38.1	D	1598	

^a Volume-to-capacity ratio - ^b Average control delay (sec/veh) - ^c Level of service - ^d 95th percentile queue in feet

Table 4. Level of Service Analysis Summary (2023/2024/2034) – PM Peak Hour

Movement	2023 BASE PM				2024 NoBuild PM				2024 Build PM				2034 NoBuild PM				2034 Build PM			
	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d
3: Lowell Road at Central Street [Signalized]																				
OVERALL	0.89	29.6	C	---	0.95	37.8	D	---	0.96	40.7	D	---	1.05	58.3	E	---	1.07	62.4	E	---
EB L	0.88	67.2	E	305	0.90	72.5	E	310	0.90	72.7	E	310	1.00	>80	F	357	1.01	>80	F	357
EB T	0.58	8.4	A	312	0.63	9.2	A	365	0.64	9.6	A	377	0.70	11.1	B	454	0.71	11.6	B	470
WB T	0.94	38.4	D	823	1.02	57.8	E	942	1.04	64.4	E	965	1.15	>80	F	1103	1.17	>80	F	1129
WB R	0.11	4.1	A	20	0.11	4.1	A	22	0.12	4.2	A	22	0.13	4.2	A	26	0.13	4.2	A	27
SBL	0.76	48.3	D	243	0.77	50.0	D	250	0.79	52.6	D	271	0.83	55.9	E	302	0.86	60.5	E	320
SBR	0.10	22.9	C	47	0.13	23.5	C	58	0.14	23.4	C	60	0.18	23.7	C	78	0.19	23.7	C	80
4: Lowell Road at County Road (N) [Unsignalized]																				
OVERALL	---	0.8	A	---	---	0.8	A	---	---	0.8	A	---	---	1.0	A	---	---	1.0	A	---
WB L/R	0.18	20.2	C	16	0.20	22.3	C	18	0.20	22.8	C	19	0.27	27.4	D	27	0.28	28.1	D	27
NB T/R	0.60	0.0	A	0	0.65	0.0	A	0	0.66	0.0	A	0	0.72	0.0	A	0	0.73	0.0	A	0
SBL	0.08	10.7	B	6	0.08	11.1	B	7	0.08	11.2	B	7	0.10	12.0	B	9	0.10	12.1	B	9
SB T	0.50	0.0	A	0	0.54	0.0	A	0	0.55	0.0	A	0	0.60	0.0	A	0	0.61	0.0	A	0
5: Lowell Road at Proposed Site Drive [Unsignalized]																				
OVERALL	---	---	---	---	---	---	---	---	---	2.5	A	---	---	---	---	---	---	2.7	A	---
EB L/R	---	---	---	---	---	---	---	---	0.47	30.6	D	59	---	---	---	---	0.50	35.0	D	67
NB L	---	---	---	---	---	---	---	---	0.13	10.7	B	11	---	---	---	---	0.14	11.5	B	12
NB T	---	---	---	---	---	---	---	---	0.68	0.0	A	0	---	---	---	---	0.70	0.0	A	0
SB T/R	---	---	---	---	---	---	---	---	0.57	0.0	A	0	---	---	---	---	0.63	0.0	A	0
6: Lowell Road at County Road (S) [Unsignalized]																				
OVERALL	---	2.2	A	---	---	3.6	A	---	---	4.1	A	---	---	11.6	B	---	---	13.2	A	---
WB L/R	0.57	>50	F	73	0.76	>50	F	106	0.81	>50	F	115	1.35	>50	F	195	1.45	>50	F	205
NB T/R	0.79	0.0	A	0	0.84	0.0	A	0	0.86	0.0	A	0	0.94	0.0	A	0	0.95	0.0	A	0
SBL	0.04	21.6	C	3	0.05	26.5	D	4	0.05	27.9	D	4	0.08	39.7	E	6	0.08	42.0	E	7
SB T	0.50	0.0	A	0	0.54	0.0	A	0	0.56	0.0	A	0	0.60	0.0	A	0	0.62	0.0	A	0

^a Volume-to-capacity ratio - ^b Average control delay (sec/veh) - ^c Level of service - ^d 95th percentile queue in feet

Table 4 cont. Level of Service Analysis Summary (2023/2024/2034) – PM Peak Hour

Movement	2023 BASE PM				2024 NoBuild PM				2024 Build PM				2034 NoBuild PM				2034 Build PM				
	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	v/c ^a	Del ^b	LOS ^c	Q ^d	
7: Atwood Avenue at Proposed Site Driveway [Unsignalized]																					
OVERALL	---	---	---	---	---	---	---	---	---	0.5	A	---	---	---	---	---	---	0.5	A	---	
EB L/T	---	---	---	---	---	---	---	---	---	0.00	A	0	---	---	---	---	---	0.00	0.2	A	0
WB T/R	---	---	---	---	---	---	---	---	---	0.01	A	0	---	---	---	---	---	0.01	0.0	A	0
SB L/R	---	---	---	---	---	---	---	---	---	0.00	A	0	---	---	---	---	---	0.00	8.8	A	0
8: Lowell Road at Atwood Avenue [Unsignalized]																					
OVERALL	---	0.7	A	---	---	0.8	A	---	---	0.9	A	---	---	1.2	A	---	---	---	1.6	A	---
EB L/R	0.25	29.4	D	24	0.31	37.4	E	31	0.37	43.2	E	39	0.48	>50	F	53	0.57	>50	F	66	
NB L	0.01	9.9	A	1	0.01	10.2	B	1	0.01	10.3	B	1	0.01	10.7	B	1	0.01	10.8	B	1	
NB T	0.81	0.0	A	0	0.86	0.0	A	0	0.87	0.0	A	0	0.96	0.0	A	0	0.97	0.0	A	0	
SB T/R	0.55	0.0	A	0	0.59	0.0	A	0	0.60	0.0	A	0	0.65	0.0	A	0	0.67	0.0	A	0	
9: Lowell Road at Pelham Road [Signalized]																					
OVERALL	1.01	61.5	E	---	1.07	76.8	E	---	1.08	>80	F	---	1.19	>80	F	---	1.20	>80	F	---	
WB L	0.63	63.9	E	176	0.64	63.9	E	178	0.64	63.9	E	178	0.66	64.2	E	193	0.66	64.2	E	193	
WB R	0.25	41.4	D	139	0.28	41.8	D	152	0.29	41.9	D	158	0.36	42.7	D	192	0.37	42.9	D	197	
NB T/R	1.14	96.3	F	1810	1.21	>80	F	1979	1.23	>80	F	2016	1.35	>80	F	2309	1.36	>80	F	2345	
SB L	0.63	63.5	E	254	0.64	64.1	E	257	0.65	65.1	E	263	0.77	77.6	E	311	0.79	>80	F	319	
SB T	0.54	5.1	A	338	0.59	5.7	A	397	0.60	5.9	A	415	0.66	7.3	A	528	0.68	7.5	A	554	

^a Volume-to-capacity ratio - ^b Average control delay (sec/veh) - ^c Level of service - ^d 95th percentile queue in feet

9. Sight Distance:

The proposed driveways have adequate sight distance based on grade and distance to adjacent intersections. The site driveway on Lowell Road provides more than 300' of view of oncoming traffic in both directions. Atwood Avenue is a dead-end roadway and vehicles will have view of the entire roadway from the driveway.

10. Accident Evaluation:

Crash data requested for the study intersections was received from the Hudson Police Department from January 1, 2020 to July 25, 2023 and is provided in the Appendix. A summary of the crash data is provided below in Table 4.

Table 5 – Crash Data Summary

	Lowell Road at Central St (Signalized)	Lowell Road at County Rd (N&S) (Unsignalized)	Lowell Road at Atwood Ave (Unsignalized)	Lowel Road at Pelham Rd (Signalized)
CRASH FREQUENCY				
Total Crashes	11	22	4	14
Crashes / Year (Ave)	3.1	3.1	1.2	4.0
CRASH SEVERITY				
Property Damage Only	1	7	2	0
Injury	4	8	0	1
Fatalities	0	0	0	0
CRASH TYPE				
Vehicle vs Vehicle	11	21	4	14
Vehicle vs Bicyclist	0	1	0	0
ADVERSE CONDITIONS				
Dry	10	19	3	12
Wet	1	1	1	2
Snow	0	1	0	0
Slush	0	1	0	0

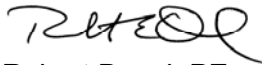
11. Conclusion:

This study shows that traffic from this development proposal is primarily composed of pass-by trips and adds approximately one new trip per minute during peak hours. Therefore, only minor impacts are caused to study area intersections.

- Delays and queues along Lowell Road are essentially unchanged (overall LOS D or better, one car or less added to queues) in all scenarios.
- Both proposed site driveways function acceptably in all scenarios.
- Failing left turns at intersections along Lowell Road are due to existing volumes, not impacts from this project.
- Adding one new trip per minute to corridor intersections results in added queue lengths of one car or less for all movements.

We therefore conclude that the site driveways will operate acceptably, and this proposal will have no significant negative impacts on the Lowell Road and adjacent roadways.

Respectfully Submitted,
TFMORAN, INC.



Robert Duval, PE
Chief Engineer



TOWN OF HUDSON

Planning Department



12 School Street · Hudson, New Hampshire 03051 · Tel: 603-886-6008 · Fax: 603-594-1142

CAP FEE WORKSHEET - 2024

Date: 09-11-24 Zone # 1 Map/Lot: 198-011-000
91-97 Lowell Road

Project Name: Colbea Enterprises LLC

Proposed ITE Use #1: Gas Station

Proposed Building Area (square footage): 5,400 S.F.

CAP FEES: (ONE CHECK NEEDED)

1.	(Bank 09) 2070-701	(\$3,771 x 12 Pump) Gas Pumps Traffic Improve (Zone 1)	\$ <u>45,252.00</u>
		Total CAP Fee	\$ <u>45,252.00</u>

Check should be made payable to the Town of Hudson.

Thank you,
Brooke Dubowik
Administrative Aide

GENERAL INFORMATION

OWNER/APPLICANT

MAP 198 LOT 11, 12, 14, 15, 16
COLBEA ENTERPRISES, LLC
695 GEORGE WASHINGTON HIGHWAY
LINCOLN, RI 02802
(401) 490-2209

RESOURCE LIST

PLANNING/ZONING DEPARTMENT

12 SCHOOL STREET
HUDSON, NH 03051
(603) 886-6008

CONSERVATION COMMISSION

12 SCHOOL STREET
HUDSON, NH 03051
000-000-0000
WILLIAM COLLINS, CHAIRMAN

INSPECTION SERVICES DEPT.

12 SCHOOL SCHOOL
HUDSON, NH 03051

CODE ENFORCEMENT

12 SCHOOL SCHOOL
HUDSON, NH 03051
(603) 886-6008
CHRIS SULLIVAN

PUBLIC WORKS

2 CONSTITUTION DRIVE
HUDSON, NH 03051
(603) 886-6018
JAY TWARDOSKY

POLICE DEPARTMENT

1 CONSTITUTION DRIVE
HUDSON, NH 03051
(603) 886-6011
TAD DIONNE, POLICE CHIEF

FIRE DEPARTMENT

39 FERRY STREET
HUDSON, NH 03051
(603) 886-6021
SCOTT TICE, FIRE CHIEF

NHDES AOT

29 HAZEN DRIVE; PO BOX 95
CONCORD, NH 03302
603-271-3501

LIBERTY UTILITIES

116 NORTH MAIN STREET
CONCORD, NH 03301
(603) 782-2321
ANDREW MORGAN, MANAGER III

ASSOCIATED PROFESSIONALS

ARCHITECT

HARRISON FRENCH & ASSOCIATES
31 HAYWARD STREET, SUITE E-1
FRANKLIN, MA 02038
(401) 265-2535
STEVE PEDRO, SR. ARCHITECT

GEOTECHNICAL SERVICES

SW COLE ENGINEERING, INC.
13 DELTA DRIVE, UNIT 8
LONDONDERRY, NH 03053
(603) 716-2111 x4965
COURTNEY MATTISON, PE

TRAFFIC ENGINEER

TFMORAN INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
(603) 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 FUEL STORAGE SYSTEM

GPI - GREENMAN PEDERSEN, INC.
21 DANIEL SQUARE, 2ND FLOOR
PORTSMOUTH, NH 03801
(603) 527-7488
HUSEYIN SEVINGCIL

CANOPY DESIGN

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

UNDERGROUND FUEL STORAGE SYSTEM

GPI - GREENMAN PEDERSEN, INC.
21 DANIEL SQUARE, 2ND FLOOR
PORTSMOUTH, NH 03801
(603) 527-7488
HUSEYIN SEVINGCIL

VARIANCES

THE FOLLOWING RELIEF WAS RECEIVED FROM THE TOWN OF HUDSON ZONING BOARD OF ADJUSTMENT ON JUNE 27, 2024:

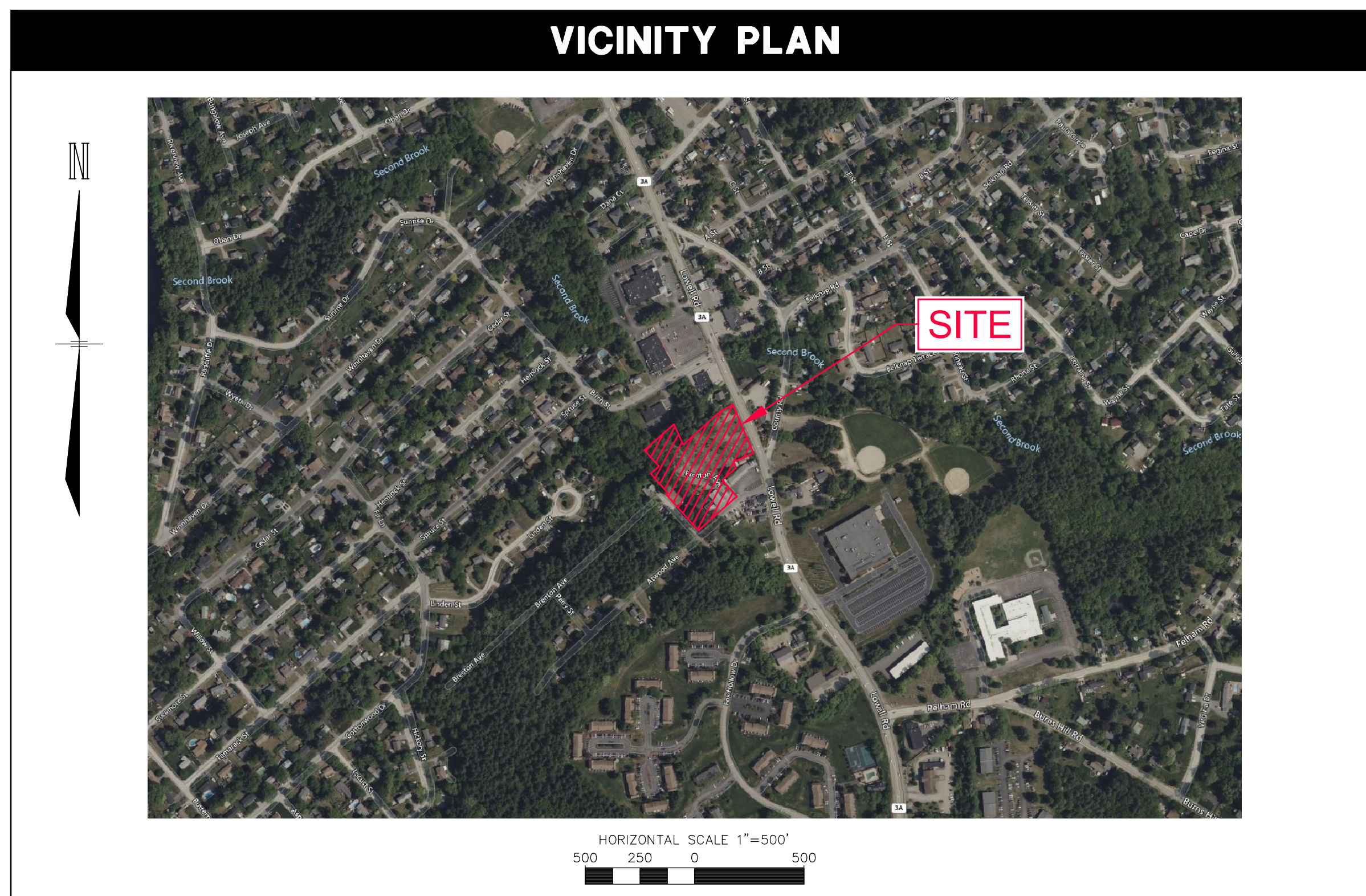
- TOWN OF HUDSON ZONING ORDINANCE ARTICLE XII: SIGNS; SECTION 334-63
A VARIANCE TO ALLOW THREE (3) BUSINESS AND INDUSTRIAL WALL SIGNS WHERE ONLY ONE (1) IS PERMITTED.
- TOWN OF HUDSON ARTICLE XII: SIGNS; SECTION 334-64A AND SECTION 334-64
A VARIANCE TO ALLOW A FREESTANDING "PYLON" SIGN WITH 146.9 SQUARE FEET WHERE A MAXIMUM SIZE OF 100 SQUARE FEET IS PERMITTED AND; TO ALLOW FIVE (5) FREESTANDING SIGNS WHERE EACH INDIVIDUAL SITE MAY HAVE NO MORE THAN ONE (1) FREESTANDING POLE OR GROUND SIGN.
- TOWN OF HUDSON ZONING ORDINANCE ARTICLE XII: SIGNS; SECTION 334-68
A VARIANCE TO ALLOW SEVERAL DIRECTIONAL AND DIRECTORY SIGNS TO BE LARGER THAN THREE (3) S.F. WHERE NO GREATER THAN THREE (3) SQUARE FEET IN AREA IS PERMITTED AND DO NOT CONTAIN ANY ADDITIONAL ADVERTISING OR MESSAGES OTHER THAN INCIDENTAL CORPORATE OR INSTITUTIONAL SYMBOLS OR LOGOS.

PROPOSED GAS STATION, CONVENIENCE STORE & CAR WASH

**91-97 LOWELL ROAD
HUDSON, NEW HAMPSHIRE**

**DECEMBER 13, 2023
(LAST REVISED JULY 18, 2024)**

VICINITY PLAN



INDEX OF SHEETS

SHEET	SHEET TITLE
C-00	COVER
C-01	NOTES & LEGEND
S-01	EXISTING CONDITIONS PLAN
S-02	AERIAL PLAN
C-02	SITE PREPARATION & DEMOLITION PLAN
C-03	OVERALL SITE LAYOUT PLAN
C-04 & C-05	SITE LAYOUT PLANS
C-06 & C-07	GRADING & DRAINAGE PLANS
C-08 & C-09	UTILITY PLANS
C-10A & C-10B	UTILITY PROFILE (SEWER)
C-11	LANDSCAPE PLAN
C-12	LANDSCAPE DETAILS
C-13	EROSION CONTROL PLAN
C-14	EROSION CONTROL NOTES
C-15	SIGNAGE PLAN & ELEVATIONS
C-16 & C-17	WB-62 TRUCK MOVEMENT PLAN & FIRE TRUCK MOVEMENT PLAN
C-18 TO C-27	DETAILS FOR MAJOR SITE WORK ITEMS
C-28 & C-29	SIGHT DISTANCE PLANS
OS-01	OFFSITE DRAINAGE PLAN

REFERENCE PLANS BY ASSOCIATED PROFESSIONALS

- LIGHTING PLAN (BY LSI)
- ARCHITECTURAL ELEVATIONS (BY HFA)
- CANOPY PLANS (BY AUSTIN MOHAWK)

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
HUDSON PLANNING BOARD SITE PLAN REVIEW APPROVAL	-	-	-
HUDSON ZONING BOARD VARIANCE REQUEST (SIGNS - ARTICLE XII)	198-012	6/27/2024	-
NHDES AOT PERMIT	-	-	-
NHDES SEWER CONNECTION PERMIT	-	-	-
NHDES OIL REMEDIATION & COMPLIANCE AST PERMIT	-	-	-
HUDSON DRIVEWAY PERMIT	-	-	-
EPA NPDES ENOI CGP & SWPPP	-	-	-

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF HUDSON GENERAL LEGISLATION SITE REVIEW REGULATIONS ARE BEING REVIEWED BY THE PLANNING BOARD:

- TOWN OF HUDSON GENERAL LEGISLATION CHAPTER 193 - DRIVEWAYS SECTION 193-10(G). ONLY ONE DRIVEWAY PER PARCEL HAVING ADEQUATE FRONTAGE, AS REQUIRED BY CHAPTER 334, ZONING, IS ALLOWED, EXCEPT IN THE CASE OF TWO-UNIT RESIDENTIAL BUILDINGS (DUPLICES), ONE DRIVEWAY SHALL BE ALLOWED.
- TOWN OF HUDSON GENERAL LEGISLATION CHAPTER 276 ADMINISTRATIVE REQUIREMENTS AND DEFINITIONS SECTION 276-11.1(12)(G). IN ALL ZONING DISTRICTS OTHER THAN THE GENERAL (G) AND THE GENERAL-ONE ZONING DISTRICTS, WHERE A COMMERCIAL OR INDUSTRIAL USE OR ZONING DISTRICT, THERE SHALL BE A ONE-HUNDRED-FOOT DISTANCE BETWEEN THE RESIDENTIAL USE OR ZONING DISTRICT AND ANY IMPROVED PART OF THE NONRESIDENTIAL DEVELOPMENT.
- TOWN OF HUDSON GENERAL LEGISLATION CHAPTER 276 ADMINISTRATIVE REQUIREMENTS AND DEFINITIONS SECTION 276-11.1(25). NO PARKING AREA OR TRAVELWAY SHALL BE PROPOSED WITHIN THE AREA BETWEEN THE SIDE LOT LINES OR REAR LOT LINES AND THE CORRESPONDING SETBACK LINES. THE PLANNING BOARD MAY ALLOW USE OF SUCH AREAS FOR PARKING OR TRAVELWAYS, PROVIDED THAT AN EQUAL AMOUNT OF FRONTAGE GREEN AREA IS ADDED TO THE MINIMUM GREEN AREA REQUIRED OR WHERE SHARED ACCESS IS REQUIRED.

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
COVER
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW 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 18149.00 DR JKC FB
CK CRR CADFILE 18149-00_COVER C-00

LEGEND

PROPOSED

Table listing various proposed features and their corresponding symbols, including property lines, easements, baselines, floodplains, edges of waterbody, setbacks, roads, pavements, buildings, fences, and parking symbols.

PROPOSED

Table listing various proposed utilities and structures and their corresponding symbols, including concrete, gravel, heavy duty pavement, construction entrance, snow storage, riprap, inlet protection, flow arrows, drainage lines, catch basins, and manholes.

ABBREVIATIONS

Table of abbreviations categorized into GENERAL and UTILITIES, listing terms like ABAN, AC, ADJ, APPROX, BC, BIT, BK/PG, BLDG, BMP, BS, BW, CONC, COORD, DIA, ELEV, EP, EXIST, FFE, FND, HP, INV, IT, L, LF, LSA, MAX, MIN, N/F, NHFG, NTS, OC, ON CENTER, PAVE, PERF, PROP, R, R&D, R&R, REM, RET, RIM, ROW, S, SF, TEM, TO, TP, TW, TYP, UG, WCR, W, CB, CATCH BASIN, CIP, CAST IRON PIPE, CMP, CORRUGATED METAL PIPE, CO, CLEANOUT, 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.

GENERAL NOTES

- 1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER...
3. AN ON-SITE PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE TOWN ENGINEER OR DESIGNATED REPRESENTATIVE...
4. THE SITE LAYOUT PLAN SHALL BE RECORDED IN THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
5. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS.
6. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER...
7. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500.
8. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
9. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
10. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
11. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
12. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN.
13. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
14. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
15. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES.
16. 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.
17. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
18. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
19. CONTRACTOR'S GENERAL RESPONSIBILITIES:
A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS...
B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR 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.
E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST, AND UNSIGHTLY DEBRIS.
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.
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 INSTALLATION OF ALL SITE ELEMENTS.
J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE.
K. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING, CONTAINING, AND DULY REMOVING ALL CONSTITUENTS OF CONCERN BROUGHT TO THE SITE BY CONTRACTOR, SUBCONTRACTORS, SUPPLIER, OR ANYONE ELSE FOR WHOM CONTRACTOR IS RESPONSIBLE.
L. CONTRACTOR SHALL NOT IMPORT ANY FILL OVER THE AMOUNT OF 10 CUBIC YARDS CUMULATIVE TOTAL PER SOURCE TO ANY JOB SITE.
M. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS.
N. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
O. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER TOWN REGULATIONS.

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, BEING, 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.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO TOWN OF HUDSON STANDARDS AND SPECIFICATIONS.
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.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:
PRIVATE SEWER
MUNICIPAL SEWER
MUNICIPAL WATER
MUNICIPAL GAS
LIBERTY UTILITIES EVERSOURCE
CONSOLIDATED COMMUNICATIONS
CONSOLIDATED COMMUNICATIONS
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. 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 AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

GRADING & DRAINAGE NOTES

- 1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. 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.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ACCESS DRIVE AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. 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 AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

SITE DEVELOPMENT PLANS

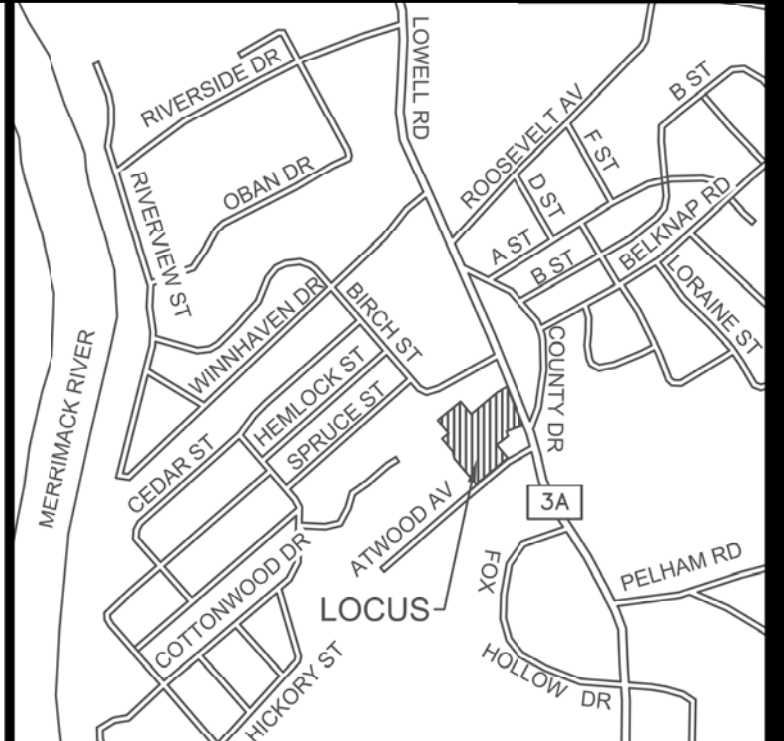
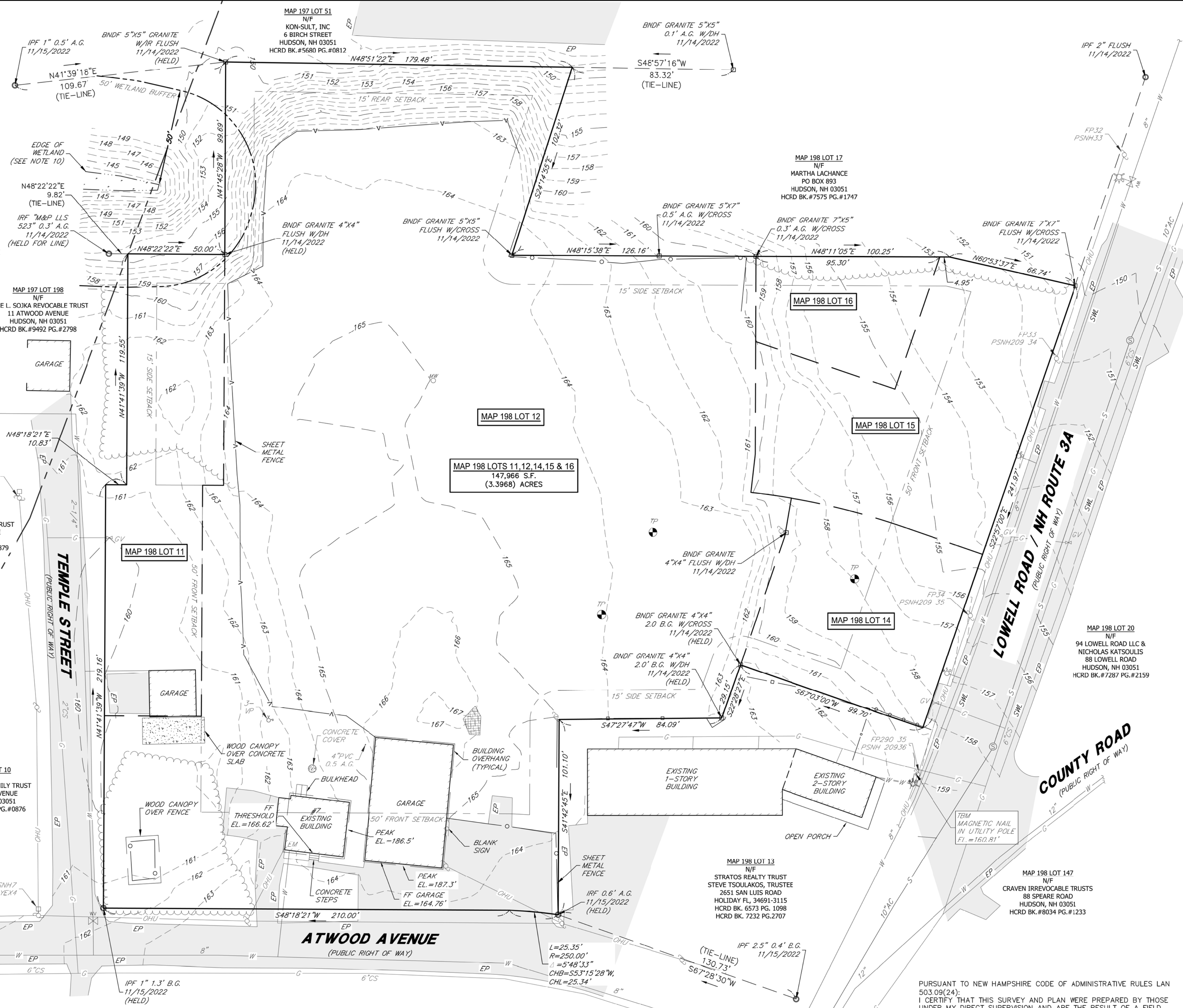
TAX MAP 198 LOTS 11, 12, 14, 15, & 16
NOTES & LEGEND
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR COLBEA ENTERPRISES, LLC

Table with columns for SCALE (NTS), DATE (DECEMBER 13, 2023), and a revision table with columns for REV, DATE, DESCRIPTION, DR, CK.

LEGEND

Table with 2 columns: Symbol and Description. Includes items like AC (ASBESTOS CEMENT PIPE), A.G. (ABOVE GRADE), BK./PG. (BOOK NO./PAGE NO.), etc.

Table with 2 columns: Symbol and Description. Includes items like OHU (OVERHEAD UTILITIES), W (WATER LINE), G (GAS LINE), S (SEWER LINE), etc.



NOTES:

- 1. THE PARCELS ARE LOCATED IN THE BUSINESS (B) ZONING DISTRICT AND PARTIALLY WITHIN THE WETLANDS CONSERVATION OVERLAY DISTRICT.
2. THE PARCELS ARE SHOWN ON THE TOWN OF HUDSON ASSESSORS MAP 198 AS LOTS 11, 12, 14, 15 & 16.
3. THE PARCELS ARE LOCATED IN FLOOD ZONE X (AREAS OF MINIMAL FLOODING) AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) HILLSBOROUGH COUNTY, NEW HAMPSHIRE, PANEL 518 OF 701, MAP NUMBERS 33011C0518D WITH EFFECTIVE DATE OF SEPTEMBER 25, 2009.
4. OWNERS OF RECORD: MAP 198 LOTS 11, 12, 14, 15 & 16 COLBEA ENTERPRISES, LLC 695 GEORGE WASHINGTON HIGHWAY LINCOLN, RI 02885 HCRD BK.#8896 PG.#1847
5. ZONING DIMENSIONAL REQUIREMENTS: B MINIMUM LOT AREA: 30,000 S.F. WITH TOWN WATER AND SEWER WITHOUT TOWN WATER OR SEWER 43,560 S.F. MINIMUM LOT FRONTAGE: LOCAL ROADWAYS WITH TOWN WATER AND SEWER 150' ARTERIAL AND COLLECTOR 150' PRINCIPAL BUILDING SETBACK REQUIREMENTS: ARTERIAL AND COLLECTOR ROADWAYS FRONT 50' SIDE 15' REAR 15' LOCAL ROADWAYS FRONT 50' SIDE 15' REAR 15'
6. PARCEL AREA: MAP 198 LOTS 11, 12, 14, 15, & 16 147,966 S.F. (3.3968) ACRES
7. HORIZONTAL DATUM IS NAD83 (2011). THE VERTICAL DATUM IS NAVD88. THE CONTOUR INTERVAL IS 1 FOOT.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE BOUNDARY, TOPOGRAPHY AND CURRENT SITE FEATURES OF MAP 198 LOTS 11, 12, 14, 15 & 16.
9. FIELD SURVEY COMPLETED BY TCE & RJB IN NOVEMBER & DECEMBER 2022 USING A LEICA TS-16, A TOPCON HIRER AND A CARLSON RT-4 DATA COLLECTOR.
10. WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON NOVEMBER 11, 2022 BY JASON R. AUBE CWS #313. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE U.S. CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012). THE PRESENCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST, VERSION 3.3, 2016, PUBLISHED BY THE ARMY CORPS OF ENGINEERS. THE HYDRIC SOILS COMPONENT OF THE DELINEATION WAS DETERMINED USING THE NH HYDRIC SOILS TECHNICAL COMMITTEE'S "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND", VERSION 4, 2017, PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
11. THE INTENT OF THIS PLAN IS TO SHOW LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT ATTEMPTED TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
12. UTILITIES SHOWN HEREON ARE BASED ON OBSERVED EVIDENCE AND RECORD PLANS. THEY ARE APPROXIMATE LOCATIONS ONLY. CONTACT DIG SAFE @ 1-888-DIGSAFE TO VERIFY UTILITIES.
13. A PORTION OF BRENTON STREET WAS ABANDONED BY THE TOWN OF HUDSON BY TOWN WARRANT PUBLISHED BY THE NASHUA TELEGRAPH ON FEBRUARY 25, 1960. (SEE PLAN REFERENCES 1 & 7).

EASEMENT NOTE:

TAX MAP 198 LOT 16 IS SUBJECT TO AND HAS THE BENEFIT OF A RIGHT OF WAY TO LOWELL ROAD. SEE HCRD BK. 8011 PG. 644.

TAX MAP 198 LOTS 11, 12, 14, 15 & 16 EXISTING CONDITIONS PLAN SEASONS MARKET LOWELL ROAD (NH ROUTE 3A)/ATWOOD AVENUE/TEMPLE STREET HUDSON, NEW HAMPSHIRE COUNTY OF HILLSBOROUGH OWNED BY COLBEA ENTERPRISES, LLC

SCALE: 1" = 30' (22x34) 1" = 60' (11x17) FEBRUARY 9, 2023

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

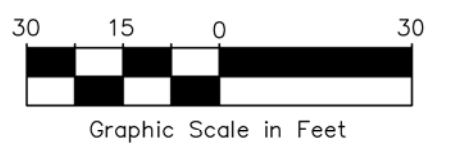
Table with columns: REV, DATE, DESCRIPTION, DR, CK. Row 1: 18149-00, DR, ID, FB, 591, S-1

PLAN REFERENCES:

- 1. "PLAN OF LAND IN: HUDSON, N.H. 'ELMHURST' OWNED BY WM. J. COUGHLIN ESQ." DATED JUNE, 1897; BY FRANCIS A. TRACY, CE". HCRD PLAN #301.
2. "SUBDIVISION OF LAND OF CANFIELD REALTY, INC. 89 LOWELL RD." BY F.G. SPRAGUE, C.E., DATED MAY 1980. HCRD PLAN #17061.
3. "REVISED SITE PLAN 99-101 LOWELL RD. PHASE II" BY F.G. SPRAGUE, C.E., DATED AUG. 1984. HCRD PLAN #17349.
4. "SUBDIVISION PLAN - LOT 149/MAP 45 & LOT 116-2/MAP 44 LINDEN STREET ESTATES OFF COTTONWOOD DRIVE HUDSON, NEW HAMPSHIRE PREPARED FOR: LITCHFIELD PROPERTIES" BY MAYNARD & PAQUETTE, INC., DATED AUGUST 1, 1988. HCRD PLAN #23215.
5. "BOUNDARY AND CONSOLIDATION PLAN - MAP 45/ LOTS 162, 162-1, 166-1 & 169 ATWOOD AVENUE HUDSON, NEW HAMPSHIRE PREPARED FOR: ETCHSTONE PROPERTIES, INC. AND JAYRON REALTY, INC." BY MAYNARD & PAQUETTE, INC., DATED JULY 19, 1996. HCRD PLAN #28102.
6. "BOUNDARY PLAN MAP 198 / LOTS 11, 12, 14, 15 & 16 ERIC C. SOLKA & 91-95 LOWELL ROAD, LLC 91, 95, 97 LOWELL ROAD, 5-7 ATWOOD AVENUE & 14 BRENTON AVENUE TOWN OF HUDSON HILLSBOROUGH COUNTY, NEW HAMPSHIRE" BY SANDFORD SURVEYING AND ENGINEERING, DATED 9-07-15. HCRD PLAN #39005.
7. "ALTA/ACSM LAND TITLE SURVEY MAP 198 / LOTS 11, 12, 14, 15 & 16 91, 95, 97 LOWELL ROAD, 5 - 7 ATWOOD ROAD & 14 BRENTON AVENUE TOWN OF HUDSON HILLSBOROUGH COUNTY, NEW HAMPSHIRE" BY SANDFORD SURVEYING AND ENGINEERING DATED JUNE 26, 2015 WITH REVISION 1 DATED JANUARY 22, 2016. PLAN NOT RECORDED.



Copyright 2023 © TFMoran, Inc. 48 Constitution Drive, Bedford, N.H. 03110 All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc. This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



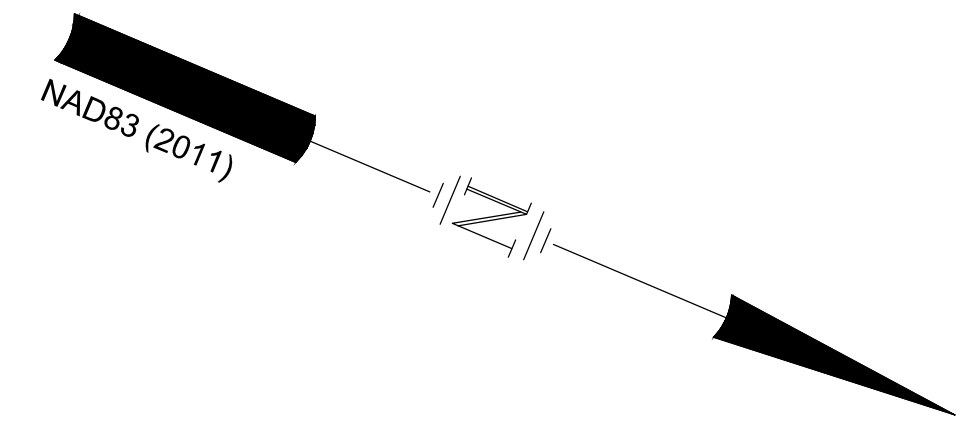
MAP 198 LOT 4 N/F DILLON-JAMES PROPERTIES, LLC 199R CENTRAL STREET HUDSON, NH 03051 HCRD BK.#8613 PG.#2649

Table with columns: REV, DATE, DESCRIPTION, DR, CK. Row 1: REV, DATE, DESCRIPTION, DR, CK



LICENSED LAND SURVEYOR

2-9-2023 DATE



SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
AERIAL PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=200' (11"x17")
SCALE: 1"=100' (22"x34") **DECEMBER 13, 2023**

Jul 18, 2024 - 12:18pm \\tfrn-bedford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00 Aerial.dwg

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

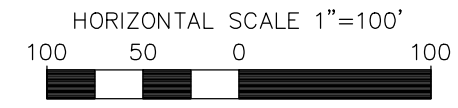
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

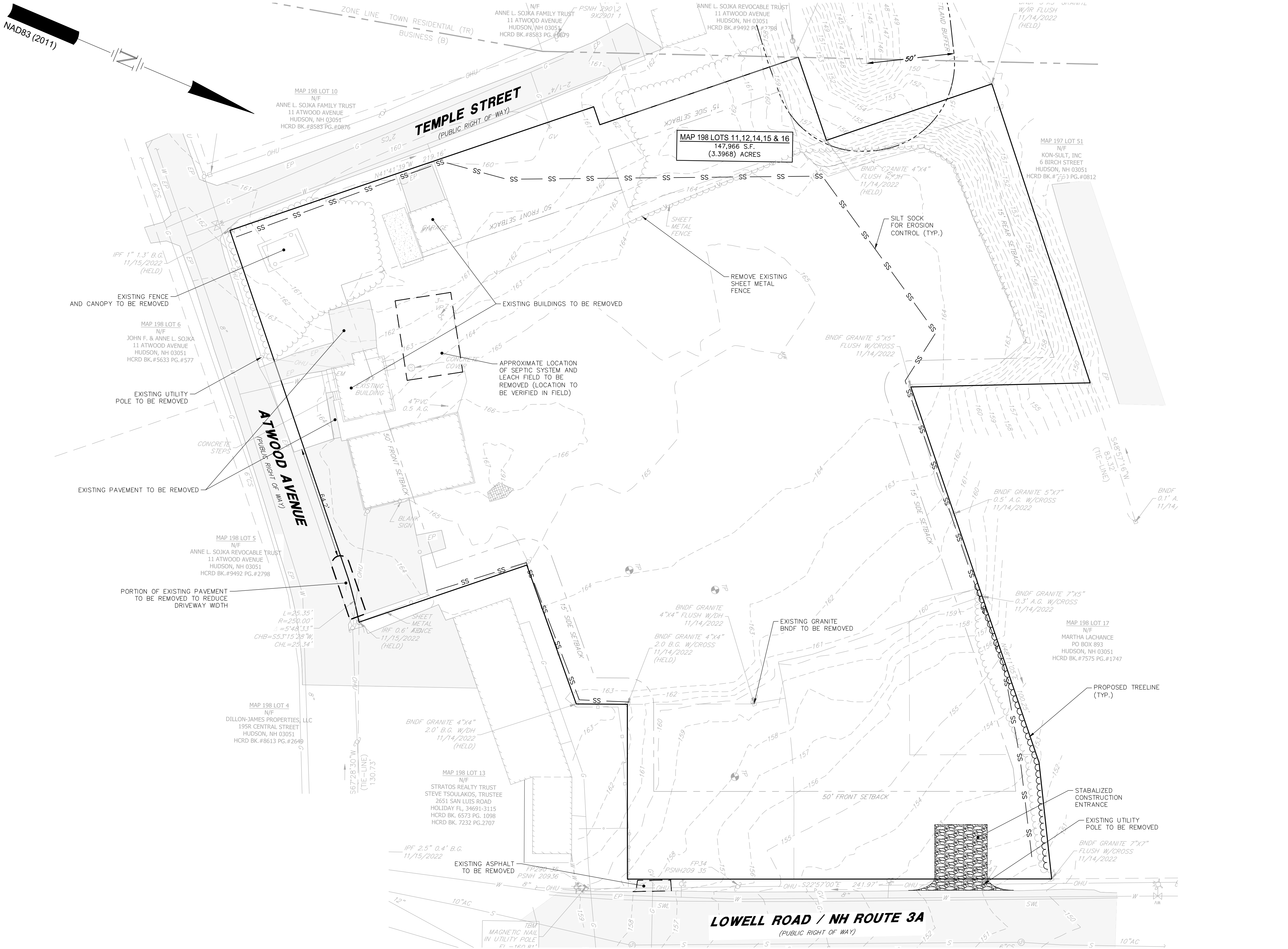
All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

		Seacoast Division		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
		DR	JKC		
FILE	18149.00	CK	CRR	CADFILE	18149-00 AERIAL
					S-02



- ### NOTES
- SEE NOTES ON SHEET C-01.
 - 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.
 - THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
 - THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
 - EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
 - CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
 - 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.
 - 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 ARG 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 DURING ANY STAGE OF CONSTRUCTION. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE 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.
- DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED, IF NECESSARY, AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
 - INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
 - STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
 - DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
 - 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).
 - 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.
 - 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.
 - CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
 - CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
 - BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
 - 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.
 - INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
 - CONSTRUCT PROPOSED ACCESS RIVES, INFILTRATION BASINS AND DRAINAGE SWALES, ALL DITCHES, SWALES, AND INFILTRATION BASINS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
 - COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
 - 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.
 - REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
 - 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.
 - SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
SITE PREPARATION & DEMOLITION PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11'x17')
SCALE: 1"=30' (22'x34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND _____

SECRETARY _____ SIGNATURE DATE _____

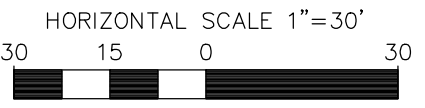
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

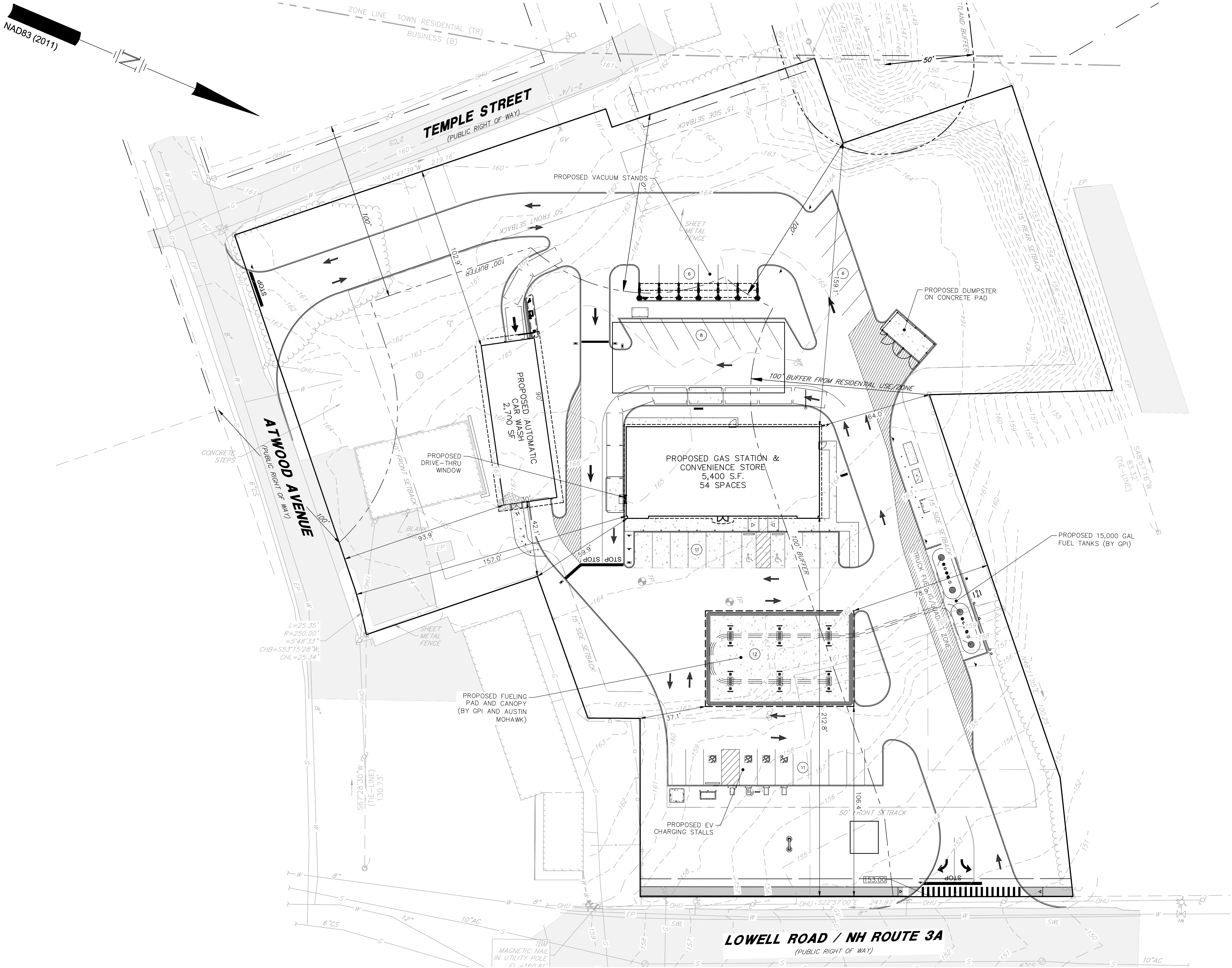
All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW 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			
18149.00	DR JKC CK CRR	FB CADFILE	C-02



SITE DATA

OWNER OF RECORD OF MAP 198 LOT 11, 12, 14, 15, 16: COLBEA ENTERPRISES, LLC - 695 GEORGE WASHINGTON HIGHWAY, LINCOLN, R.I. 02802
 DEED REFERENCE TO PARCEL IS BK 8896 PG 1847
 AREA OF PARCEL = 147,966± SF OR 3.3968± ACRES

ZONED: BUSINESS
 EXISTING USE: COMMERCIAL/RESIDENTIAL
 PROPOSED USE: GAS STATION/CONVENIENCE STORE WITH DRIVE-THRU AND CAR WASH

THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A SINGLE STORY, 5,400 S.F. GAS STATION AND CONVENIENCE STORE, ALONG WITH A FUELING CANOPY (CONSISTING OF SIX DISPENSER ISLANDS FOR A TOTAL OF 12 FUELING STATIONS). WITHIN THE BUILDING IS A CO-TENANT OF 637 S.F. WITH A DRIVE-THRU WINDOW. IN ADDITION, A 2,700 S.F. AUTOMATIC CAR WASH BUILDING IS PROPOSED.

TYPICAL HOURS OF OPERATION: 24 HRS.

DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	30,000 SF (0.69± AC)	148,104 SF (3.4± AC)
LOT FRONTAGE	150 FT	>150 FT
MINIMUM YARD DIMENSIONS:		
FRONT	50 FT	157 FT
SIDE	15 FT	59.9 FT
REAR	15 FT	159.1 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	50 FT	<50 FT (22.54 EXISTING)
LOT COVERAGE	60%	47.3±%
MINIMUM LANDSCAPE BUFFER:		
BUFFER FRONT	35 FT	35 FT
BUFFER SIDE	15 FT	5 FT *WAIVER REQUIRED
BUFFER REAR	15 FT	>15 FT
MINIMUM RESIDENTIAL BUFFER:	50 FT	5 FT *WAIVER REQUIRED
MINIMUM OPEN SPACE	40%	49.5±%

PARKING REQUIREMENTS

	REQUIRED:	PROVIDED:
PARKING SPACES (SEE CALCULATION)	48 SPACES	54 SPACES
ACCESSIBLE SPACES (REQ'D BY ADA)	2 SPACES	2 SPACES
PARKING SPACE SIZE	10 FT X 20 FT	10 FT X 20 FT
aisle WIDTH	24 FT	24 FT

PARKING CALCULATIONS

REQUIRED PARKING RATIO:		
AUTOMOTIVE FUEL STATION:	1 SPACE/PUMP PLUS 1 SPACE/EMPLOYEES	
FAST FOOD W/ DRIVE-THRU:	1 SPACE/100 S.F.	
RETAIL:	1 SPACE/200 S.F.	
CAR WASH:	NO REQUIREMENTS (PER PLANNING BOARD)	
TOTAL REQUIRED = 12 PUMPS * 1 SPACE/PUMP	= 12	SPACES +
5 EMPLOYEES * 1 SPACE/1 EMPLOYEES	= 5	SPACES +
540 S.F. * 1 SPACE/100 S.F.	= 6	SPACES +
4,860 S.F. * 1 SPACE/200 S.F.	= 25	SPACES
TOTAL	= 48	SPACES

NOTES

- SEE NOTES ON SHEET C-01.
- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
- LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE HUDSON ZONING ORDINANCE AND SITE PLAN REGULATIONS.
- 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 BASIN CLEAR.

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

OVERALL SITE LAYOUT PLAN

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11"x17')

SCALE: 1"=30' (22"x34')

DECEMBER 13, 2023

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND

SECRETARY _____ SIGNATURE DATE _____

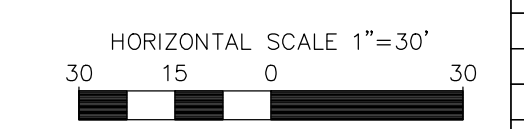
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

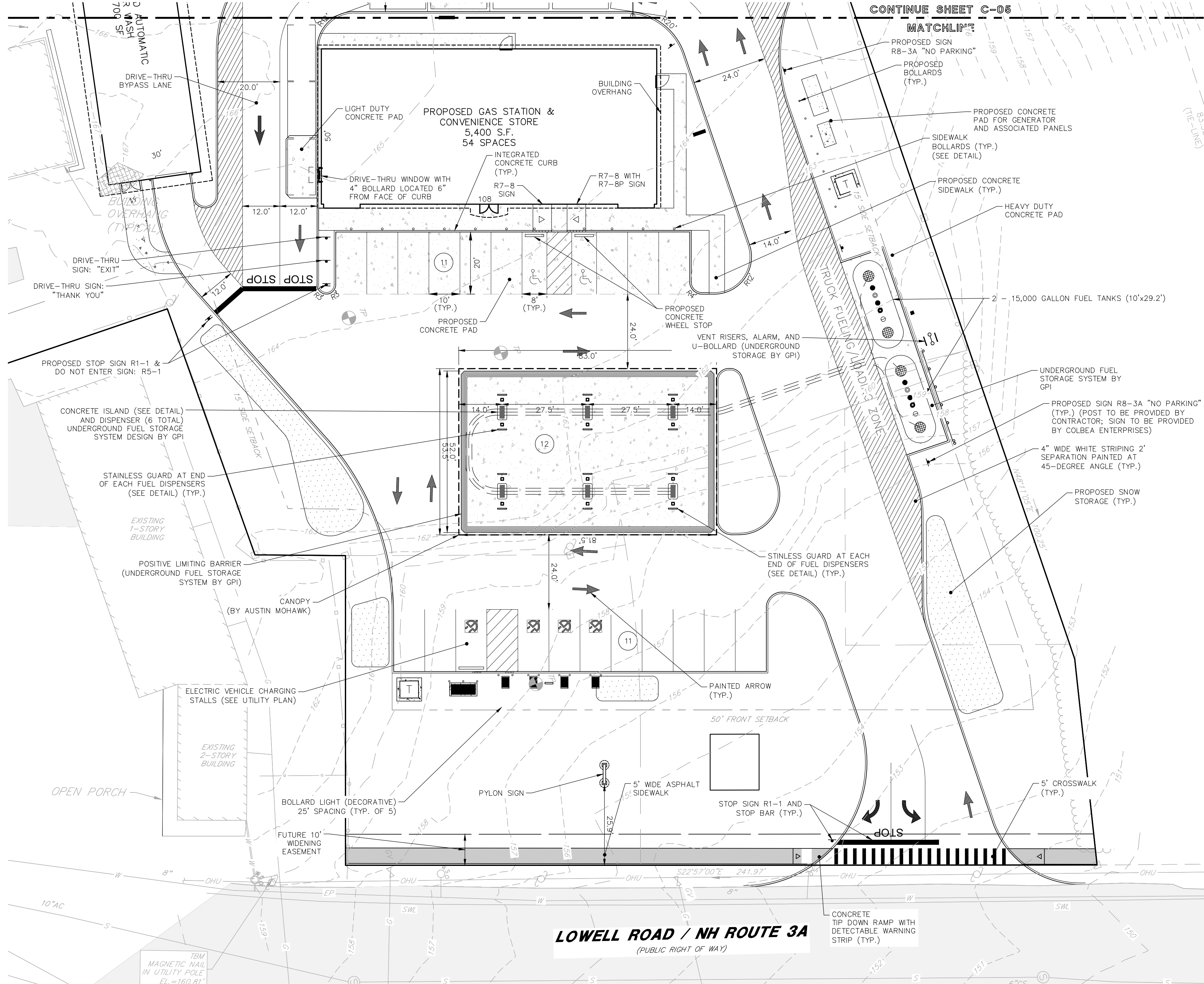
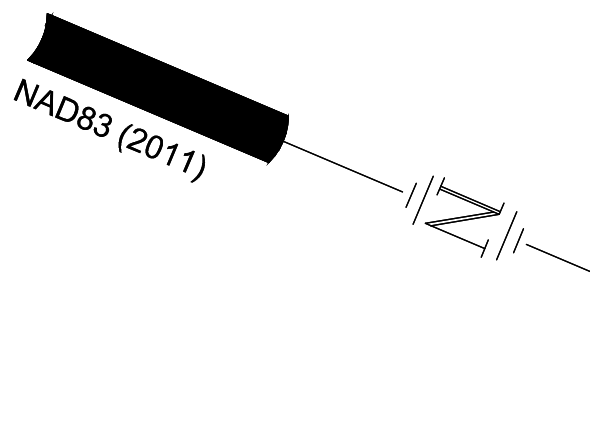
Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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

FILE 18149.00 DR JKC FB
 CK CRR CADFILE 18149-00_OVERALL SITE PLAN

C-03

Jul 18, 2024 - 12:19pm
 \\fr-beford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00_Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Overall Site Plan.dwg



NOTES

- SEE NOTES ON SHEET C-01.
- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
- LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE HUDSON ZONING ORDINANCE AND SITE PLAN REGULATIONS.
- 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 ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR.
- ALL SIGNS ARE SUBJECT TO APPROVAL BY THE HUDSON ZONING ADMINISTRATOR PRIOR TO INSTALLATION THEREOF.

ID	SIGN	SIZE (INCHES)		DESIGN (COLORING, TEXT SIZE, SPACING, SHAPE, RETROREFLECTIVITY, ETC.)	NO. OF SIGNS
		WIDTH	HEIGHT		
R1-1		30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	6
R7-8 ¹		12	18		
R7-8P ²		18	9		
R8-3A		24	30		
R5-1		30	30		

- NOTE:
1. HANDICAP PARKING SIGNS SHALL BE IN ACCORDANCE WITH TOWN OR HUDSON STANDARDS AND ADA REGULATIONS.
2. PER ADA STANDARDS, A "VAN ACCESSIBLE" PLAQUE DOES NOT RESTRICT USE OF ACCESSIBLE SPACES TO VAN USERS ONLY.

SITE DEVELOPMENT PLANS
TAX MAP 198 LOTS 11, 12, 14, 15, & 16
SITE LAYOUT PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11'X17')
SCALE: 1"=20' (22'X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

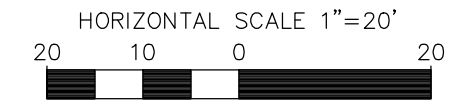
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REGULATION REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 © TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

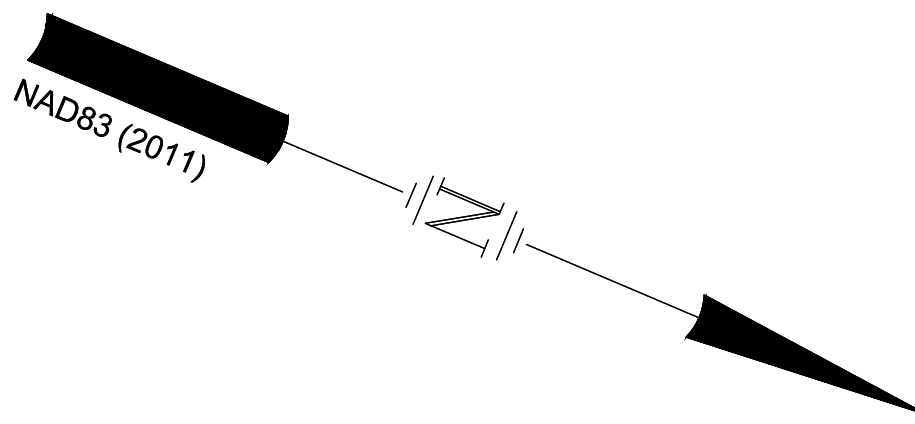
Seacoast Division

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

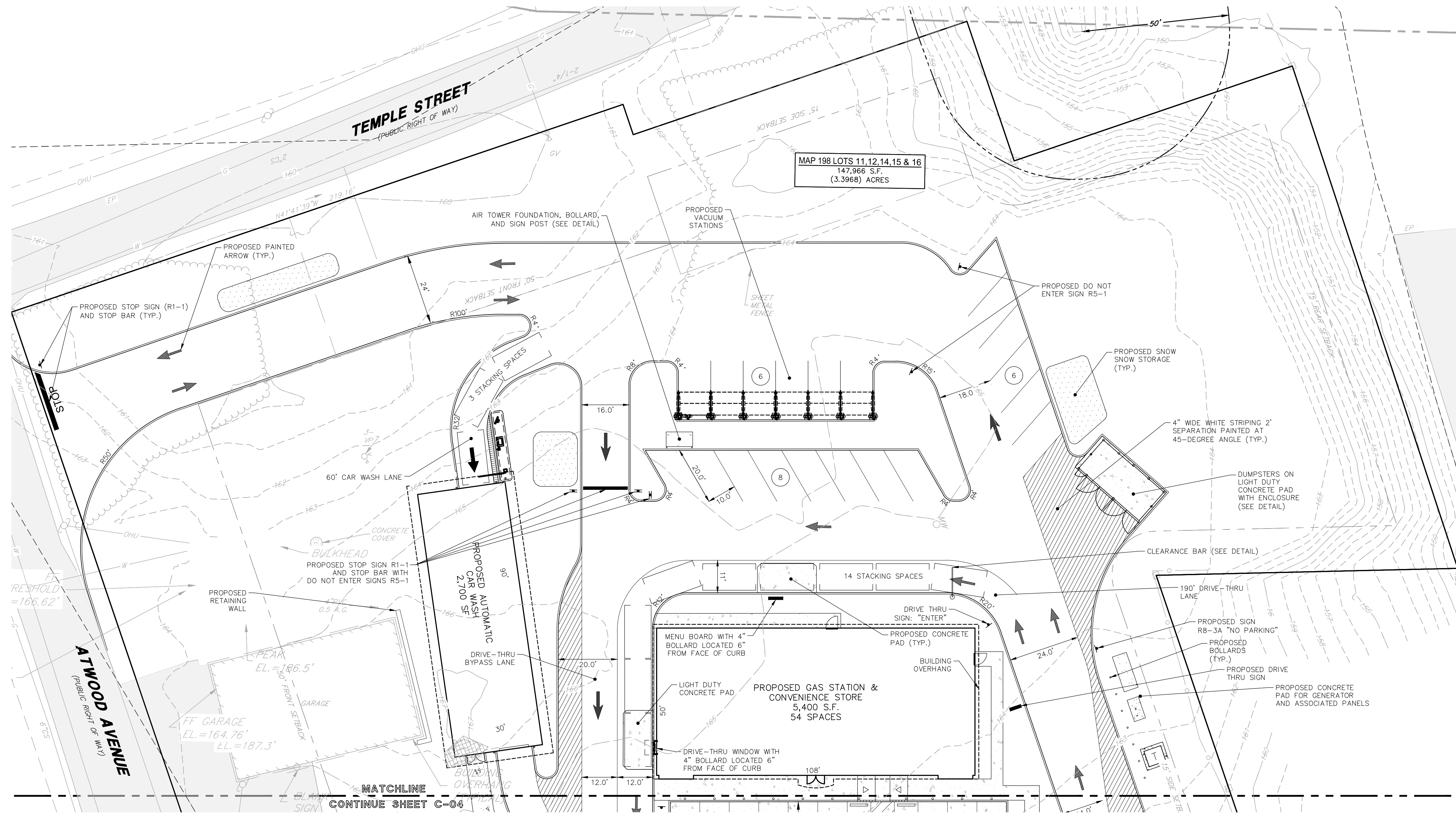
FILE 18149.00 DR JKC FB
CK CRR CADFILE 18149-00_SITE LAYOUT PLAN C-04

Jul 18, 2024 - 12:19pm
\\fr-beford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00_Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Site Layout Plan.dwg



NOTES

- SEE NOTES ON SHEET C-01.
- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
- LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE HUDSON ZONING ORDINANCE AND SITE PLAN REGULATIONS.
- 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.
- ALL SIGNS ARE SUBJECT TO APPROVAL BY THE HUDSON ZONING ADMINISTRATOR PRIOR TO INSTALLATION THEREOF.



MAP 198 LOTS 11, 12, 14, 15 & 16
147,966 S.F.
(3.3968) ACRES

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
SITE LAYOUT PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11'X17')
SCALE: 1"=20' (22'X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

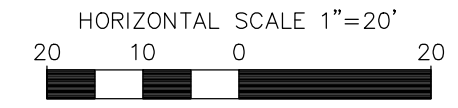
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

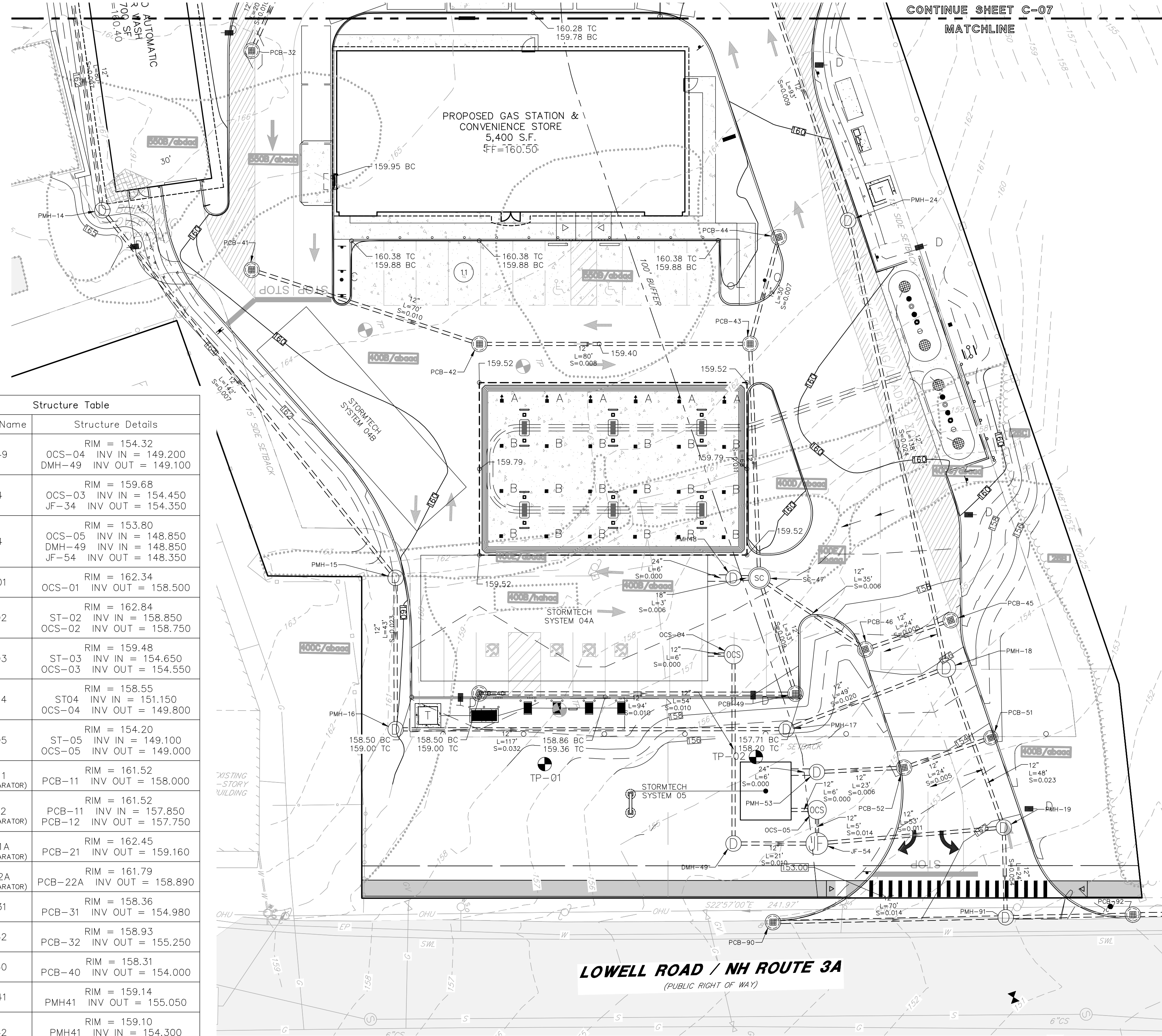
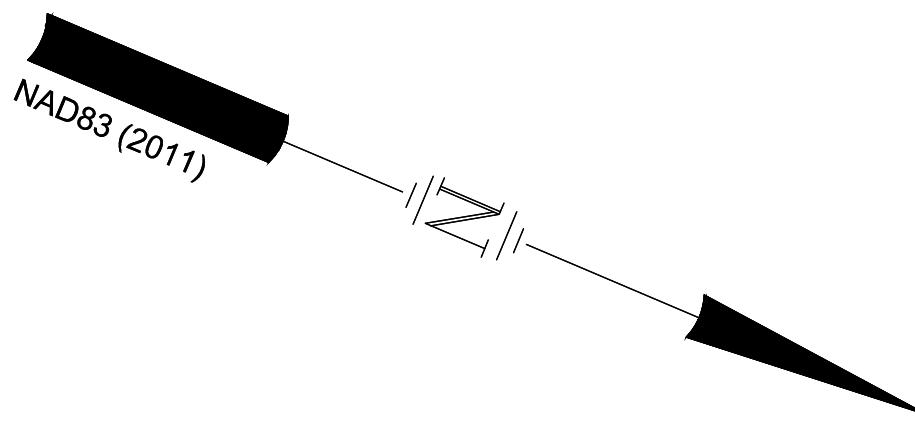
Seacoast Division

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

18149.00 DR JKC FB
CK CRR CADFILE 18149-00_SITE LAYOUT PLAN C-05

Jul 18, 2024 - 12:19pm \\fmr-beford4\projects\civil\survey\MSC Projects\18149-Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Site Layout Plan.dwg



SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)				
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	SLOPE CLASS	DRAINAGE CLASS
26B	WINDSOR LOAMY SAND	A	0-8%	EXCESSIVELY
26C	WINDSOR LOAMY SAND	A	8-15%	EXCESSIVELY
26D	WINDSOR LOAMY SAND	A	15-25%	EXCESSIVELY
26E	WINDSOR LOAMY SAND	A	25%+	EXCESSIVELY
400B/abaaa	UDORTHERTS, SANDY	A	0-8%	EXCESSIVELY
400C/abaaa	UDORTHERTS, SANDY	A	8-15%	EXCESSIVELY
400D/abaaa	UDORTHERTS, SANDY	A	15-25%	EXCESSIVELY
400E/abaaa	UDORTHERTS, SANDY	A	25%+	EXCESSIVELY
400B/hbhaa	UDORTHERTS, SANDY	A	0-8%	UNDETERMINABLE
500B/abdad	UDORTHERTS, BEDROCK SUBSTRATUM	D	0-8%	EXCESSIVELY
550B/abeab	UDORTHERTS, BEDROCK SUBSTRATUM	B	0-8%	EXCESSIVELY

NOTES

- SEE NOTES ON SHEET C-01.
- ALL DOORS SHALL BE AT FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED.
- PROPOSED SPOT GRADES ARE PROVIDED TO THE NEAREST 0.05. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE FINISHED GRADES MEET ADA STANDARDS FOR WHEEL CHAIR RAMPS, HANDICAP SPACES AND ACCESS AISLES, CROSSWALKS, SIDEWALKS, ETC.
- ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
- LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- ALL PROPOSED DRAINAGE PIPES SHALL BE 12" AND HDPE, UNLESS OTHERWISE NOTED ON THE PLAN.
- DRAINAGE PIPES WITH LESS THAN 3' COVER SHALL BE INSULATED (SEE UTILITY TRENCH DETAILS) AND DRAINAGE CATCH BASINS WITH LESS THAN 3.5' OF COVER OVER INVERTS SHALL USE SLAB TOP CATCH BASIN (SEE DETAILS).
- THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND ARCHITECTURAL PLANS FOR SUBDRAINAGE SYSTEMS FOR THE BUILDING FOUNDATION. SUBDRAINAGE MUST DAYLIGHT OR TIE INTO THE STORMWATER MANAGEMENT SYSTEM. COORDINATE SUBDRAINAGE SYSTEM DESIGN WITH THE ENGINEER OF RECORD.

Structure Table	
Structure Name	Structure Details
PCB-46	RIM = 156.32 PCB-45 INV IN = 152.950 PCB-46 INV OUT = 152.850
PCB-49	RIM = 157.76 PCB-40 INV IN = 153.050 PCB-49 INV OUT = 152.950
PCB-51	RIM = 153.65 PCB-51 INV OUT = 149.650
PCB-52	RIM = 153.64 PCB-51 INV IN = 149.500 PCB-52 INV OUT = 149.400
PCB-90	RIM = 153.08 PCB-91 INV OUT = 147.000
PCB-92	RIM = 151.28 PMH-91 INV IN = 145.500 PCB92 INV OUT = 145.900
PMH-13	RIM = 161.02 OCS-01 INV IN = 158.350 PMH-13 INV OUT = 158.250
PMH-14	RIM = 161.34 PMH-13 INV IN = 157.650 PMH-14 INV OUT = 157.550
PMH-15	RIM = 160.77 PMH-14 INV IN = 156.550 PMH-15 INV OUT = 156.450
PMH-16	RIM = 160.68 PMH-15 INV IN = 155.350 PMH-16 INV OUT = 155.250
PMH-17	RIM = 156.34 PMH-16 INV IN = 151.400 PMH-17 INV OUT = 151.300
PMH-18	RIM = 155.78 PMH-17 INV IN = 150.250 PMH-24 INV IN = 149.000 PMH-18 INV OUT = 148.900
PMH-19	RIM = 152.02 PMH-18 INV IN = 147.700 JF-54 INV IN = 147.700 PMH-19 INV OUT = 147.600
PMH-21B	RIM = 163.67 PCB-21 INV IN = 158.860 Pipe - (73) INV OUT = 158.760
PMH-22B	RIM = 162.78 PCB-22A INV IN = 158.760 PMH-22B INV OUT = 158.760
PMH-23	RIM = 160.19 OCS-02 INV IN = 156.000 JF-34 INV IN = 153.550 PMH-23 INV OUT = 153.450
PMH-24	RIM = 159.58 PMH-23 INV IN = 152.550 PMH-24 INV OUT = 152.450
PMH-33	RIM = 159.45 PCB-32 INV IN = 155.000 PMH-33 INV OUT = 154.560
PMH-53	RIM = 154.63 PCB-52 INV IN = 149.250 PMH-53 INV OUT = 149.010
PMH-91	RIM = 151.11 PCB-91 INV IN = 146.000 PMH-19 INV IN = 146.100 PMH-91 INV OUT = 145.900

Structure Table	
Structure Name	Structure Details
DMH-49	RIM = 154.32 OCS-04 INV IN = 149.200 DMH-49 INV OUT = 149.100
JF-34	RIM = 159.68 OCS-03 INV IN = 154.450 JF-34 INV OUT = 154.350
JF-54	RIM = 153.80 OCS-05 INV IN = 148.850 DMH-49 INV IN = 148.850 JF-54 INV OUT = 148.350
OCS-01	RIM = 162.34 OCS-01 INV OUT = 158.500
OCS-02	RIM = 162.84 ST-02 INV IN = 158.850 OCS-02 INV OUT = 158.750
OCS-03	RIM = 159.48 ST-03 INV IN = 154.650 OCS-03 INV OUT = 154.550
OCS-04	RIM = 158.55 ST04 INV IN = 151.150 OCS-04 INV OUT = 149.800
OCS-05	RIM = 154.20 ST-05 INV IN = 149.100 OCS-05 INV OUT = 149.000
PCB-11 (WITH OIL SEPARATOR)	RIM = 161.52 PCB-11 INV OUT = 158.000
PCB-12 (WITH OIL SEPARATOR)	RIM = 161.52 PCB-11 INV IN = 157.850 PCB-12 INV OUT = 157.750
PCB-21A (WITH OIL SEPARATOR)	RIM = 162.45 PCB-21 INV OUT = 159.160
PCB-22A (WITH OIL SEPARATOR)	RIM = 161.79 PCB-22A INV OUT = 158.890
PCB-31	RIM = 158.36 PCB-31 INV OUT = 154.980
PCB-32	RIM = 158.93 PCB-32 INV OUT = 155.250
PCB-40	RIM = 158.31 PCB-40 INV OUT = 154.000
PCB-41	RIM = 159.14 PMH41 INV OUT = 155.050
PCB-42	RIM = 159.10 PMH41 INV IN = 154.300 PCB-42 INV OUT = 154.200
PCB-43	RIM = 159.10 PCB-42 INV IN = 153.500 PCB-44 INV IN = 153.500 PCB-43 INV OUT = 153.400
PCB-44	RIM = 159.14 PCB-44 INV OUT = 153.750
PCB-45	RIM = 156.93 PCB-45 INV OUT = 153.100

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
GRADING & DRAINAGE PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11"X17')
SCALE: 1"=20' (22"X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

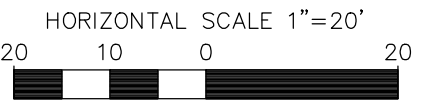
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

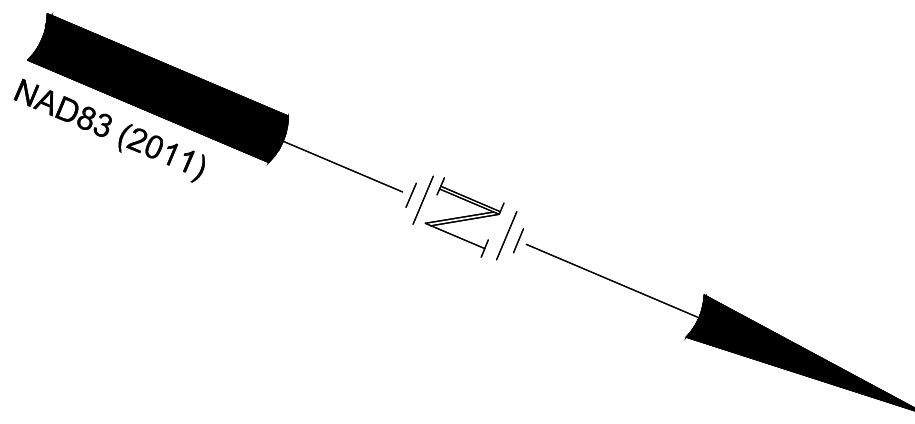
TFM

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

18149.00 DR JKC FB
 CK CRR CADFILE 18149-00_GRADING & DRAINAGE C-06

Jul 18, 2024 - 12:20pm \\fr-beford4\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Grading & Drainage.dwg

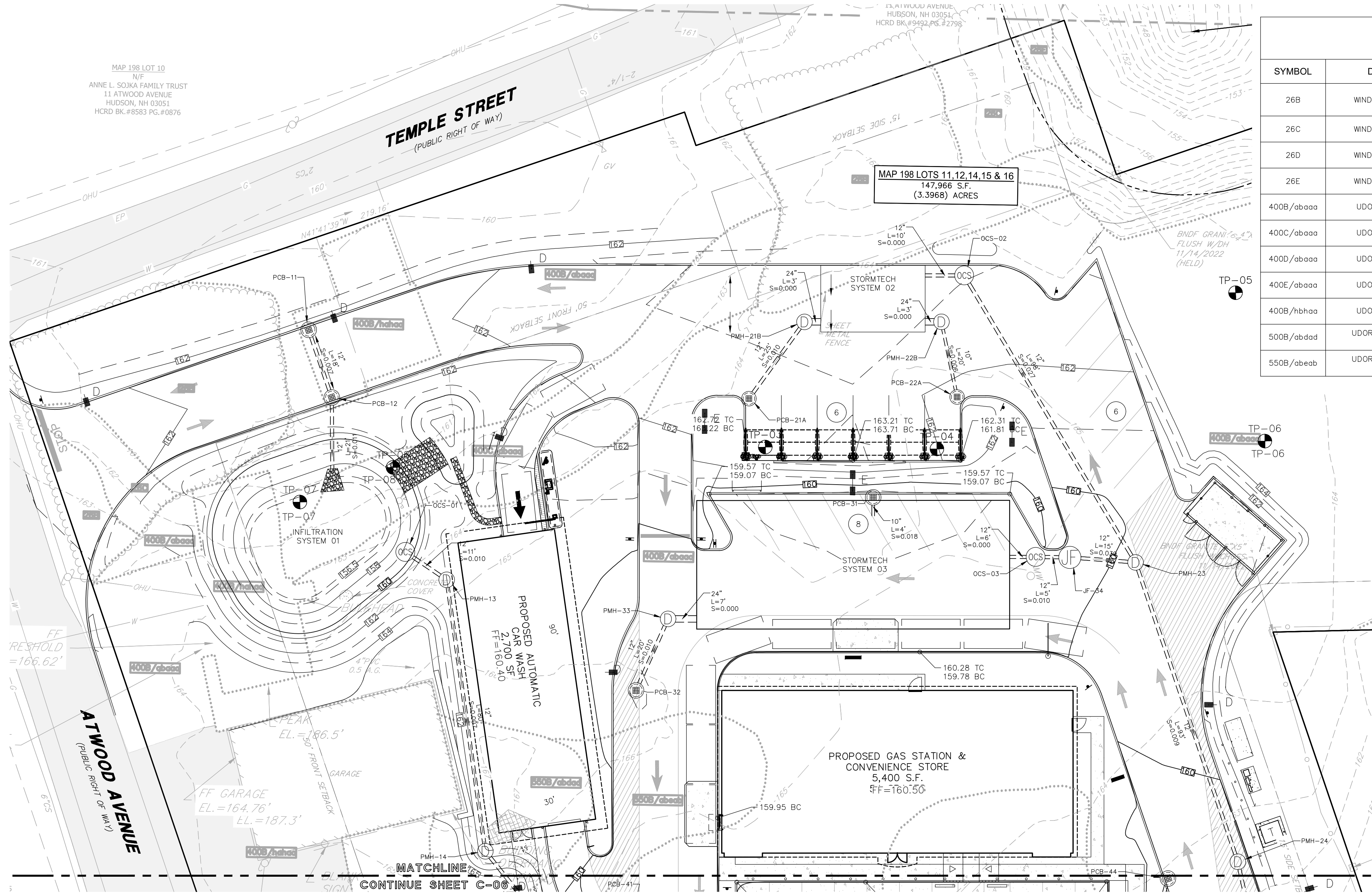


MAP 198 LOT 10
N/F
ANNE L. SOJKA FAMILY TRUST
11 ATWOOD AVENUE
HUDSON, NH 03051
HCRD BK.#8583 PG.#0876

TEMPLE STREET
(PUBLIC RIGHT OF WAY)

MAP 198 LOTS 11, 12, 14, 15 & 16
147,968 S.F.
(3.3968) ACRES

- TEST PIT #1
0 - 14" 10YR 3/2 Very Dark Grayish Brown, Sandy Loom, Massive, Friable, Homogenous
14 - 35" 10YR 5/4 Yellowish Brown, Loom, Massive, Friable, Few Rounded Stones, Homogenous
35 - 62" 10YR 7/4 Very Pale Brown, Fine Sand, Single Grained, Very Friable, Homogenous
62 - 107" 10YR 5/4 Yellowish Brown, Medium Sand, Many Stones, Heterogenous, Inclusions of Coarse Sand, Saturation at Depth, Redoximorphic Features Common (10R 4/6 Red), Heterogenous
REDOX OBS: Many @ 62" Below Grade 10R 4/6 Red
107" Below Grade, ESHWT: 62" Below Grade
Roots: Many 14" Below Grade, No Refusal
- Test Pit # 2
0 - 55" 10YR 2/2 Very Dark Brown, Sandy Loom, Massive, Very Friable, Anthropogenic Detritus, Fill, Heterogenous
55 - 72" 10YR 6/2 Light Brownish Gray, Fine Sand, Many Gravels, Very Firm, Homogenous, Stratified
72 - 111" 10YR 5/4 Yellowish Brown, Medium Sand, Single Grained, Heterogenous, Many Stones, Many Gravels, Inclusions of Coarse Sand, Redoximorphic Features Common (2.5Y 7/6 Yellow)
REDOX OBS: Common @ 62" Below Grade 10R 4/6 Red
OBSWT: None Obs, ESHWT: 72" Below Grade
Roots: Common 5" Below Grade, Ledge: NR
- Test Pit # 3
0 - 8" 10YR 3/3 Dark Brown, Sandy Loom, Massive, Friable, Many Gravels, Many Stones, Anthropogenic Detritus, Inclusions of Loom (10YR 3/2 Very Dark Grayish Brown), Heterogenous
8 - 115" 10YR 7/2 Light Gray, Very Fine Sand, Single Grained, Slightly Firm, Many Gravels, Common Stones, False Water Table, Heterogenous
REDOX OBS: N/A
OBSWT: None Obs, ESHWT: None Obs
Roots: common 8" Below Grade, Ledge: NR
- Test Pit # 4
0 - 9" 10YR 4/4 Dark Yellowish Brown, Sandy Loom, Massive, Very Friable, Many Gravels, Few Stones, Heterogenous
9 - 78" 10YR 7/4 Very Pale Brown, Very Fine Loomy Sand, Massive, Homogenous, Many Gravels, Slightly Firm
78 - 117" 10YR 7/1 Light Gray, Fine Sand, Single Grained, Many Rounded Stones, Firm, Homogenous
REDOX OBS: N/A
OBSWT: None Obs, ESHWT: None Obs
Roots: Common 6" Below Grade, Ledge: NR
- Test Pit # 5
0 - 20" 10YR 4/4 Dark Yellowish Brown, Sandy Loom, Massive, Friable, Few Gravels, Few Stones, Heterogenous
20 - 34" 10YR 2/2 Very Dark Brown, Loom, Massive, Slightly Firm, Odorless, Homogenous
34 - 53" 10YR 6/3 Pale Brown, Fine Sand, Single Grained, Inclusions of Loom (10YR 2/2 Very Dark Brown), Few Stones, Heterogenous
53 - 106" 10YR 5/6 Yellowish Brown, Medium Sand, Single Grained, Many Stones, Many Gravels, Loose, Homogenous
REDOX OBS: None Obs, N/A, ESHWT: None Obs
Roots: Common 34" Below Grade, Ledge: NR
- Test Pit # 6
0 - 6" 10YR 4/3 Brown, Sandy Loom, Massive, Very Friable, Few Stones, Homogenous
6 - 12" 10YR 7/3 Very Pale Brown, Very Fine Sand, Single Grained, Friable, Few Stones, Homogenous
12 - 24" 10YR 7/3 Very Pale Brown, Fine Sand, Single Grained, Friable, Many Stones, Many Gravels, Heterogenous
24 - 108" 10YR 6/2 Light Brownish Gray, Fine Loomy Sand, Massive, Many Gravels, Common Stones, Slightly Firm, Decaying Stone, Homogenous
REDOX OBS: None Obs
OBSWT: None Obs, ESHWT: None Obs
Roots: Common 24" Below Grade, Ledge: NR
- Test Pit # 7
0 - 23" 10YR 4/3 Brown, Sandy Loom, Massive, Very Friable, Few Stones, Homogenous
23 - 36" 10YR 2/2 Very Dark Brown, Sandy Loom, Massive, Friable, Few Gravels, Many Roots, Homogenous
36 - 46" 10YR 5/6 Yellowish Brown, Loomy Sand, Massive, Friable, Common Roots, Few Gravels, Homogenous
46 - 94" 10YR 7/2 Light Gray, Fine Sand, Single Grained, Loose, Inclusions of Silt (Gley 1 6/N Gray), Heterogenous
94 - 96" 10YR 6/3 Pale Brown, Fine Sand, Single Grained, Loose, Features (10R 4/6 Red), Homogenous
REDOX OBS: Common @ 94" Below Grade 10R 4/6 Red
OBSWT: None Obs, ESHWT: 94"
Roots: Common 48" Below Grade, Ledge: NR
- Test Pit # 8
0 - 21" 10YR 4/6 Dark Yellowish Brown, Sandy Loom, Massive, Very Friable, Few Stones, Heterogenous
21 - 38" 10YR 7/3 Very Pale Brown, Fine Sand, Single Grained, Loose, Homogenous
38 - 72" 10YR 6/3 Pale Brown, Sandy Loom, Massive, Many Gravels, Many Stones, Few Boulders, Heterogenous
72 - 110" 10YR 6/2 Light Brownish Gray, Loomy Sand, Massive, Firm, Few Boulders, Many Gravels, Heterogenous
REDOX OBS: N/A
OBSWT: None Obs, ESHWT: None Obs
Roots: Common 50" Below Grade, Ledge: NR



SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)				
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	SLOPE CLASS	DRAINAGE CLASS
26B	WINDSOR LOAMY SAND	A	0-8%	EXCESSIVELY
26C	WINDSOR LOAMY SAND	A	8-15%	EXCESSIVELY
26D	WINDSOR LOAMY SAND	A	15-25%	EXCESSIVELY
26E	WINDSOR LOAMY SAND	A	25%+	EXCESSIVELY
400B/abaaa	UDORTHERTS, SANDY	A	0-8%	EXCESSIVELY
400C/abaaa	UDORTHERTS, SANDY	A	8-15%	EXCESSIVELY
400D/abaaa	UDORTHERTS, SANDY	A	15-25%	EXCESSIVELY
400E/abaaa	UDORTHERTS, SANDY	A	25%+	EXCESSIVELY
400B/hbhaa	UDORTHERTS, SANDY	A	0-8%	UNDETERMINABLE
500B/abdad	UDORTHERTS, BEDROCK SUBSTRATUM	D	0-8%	EXCESSIVELY
550B/abeab	UDORTHERTS, BEDROCK SUBSTRATUM	B	0-8%	EXCESSIVELY

- NOTES**
- SEE NOTES ON SHEET C-01.
 - ALL DOORS SHALL BE AT FINISHED FLOOR ELEVATION UNLESS OTHERWISE NOTED.
 - PROPOSED SPOT GRADES ARE PROVIDED TO THE NEAREST 0.05. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE FINISHED GRADES MEET ADA STANDARDS FOR WHEEL CHAIR RAMPS, HANDICAP SPACES AND ACCESS AISLES, CROSSWALKS, SIDEWALKS, ETC.
 - ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
 - LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
 - ALL PROPOSED DRAINAGE PIPES SHALL BE 12" AND HDPE, UNLESS OTHERWISE NOTED ON THE PLAN.
 - DRAINAGE PIPES WITH LESS THAN 3' COVER SHALL BE INSULATED (SEE UTILITY TRENCH DETAIL) AND DRAINAGE CATCH BASINS WITH LESS THAN 3.5' OF COVER OVER INVERTS SHALL USE SLAB TOP CATCH BASIN (SEE DETAILS).
 - THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND ARCHITECTURAL PLANS FOR SUBDRAINAGE SYSTEMS FOR THE BUILDING FOUNDATION. SUBDRAINAGE MUST DAYLIGHT OR TIE INTO THE STORMWATER MANAGEMENT SYSTEM. COORDINATE SUBDRAINAGE SYSTEM DESIGN WITH THE ENGINEER OF RECORD.
 - OIL SEPARATORS SHALL BE INSTALLED ON CATCH BASINS DISCHARGING TO INFILTRATION SYSTEM 01 AND STORMTECH SYSTEM 02 (SEE DETAIL).

SITE DEVELOPMENT PLANS
TAX MAP 198 LOTS 11, 12, 14, 15, & 16
GRADING & DRAINAGE PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11"X17')
SCALE: 1"=20' (22"X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

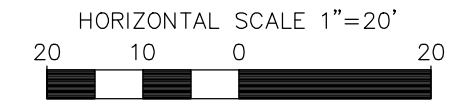
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



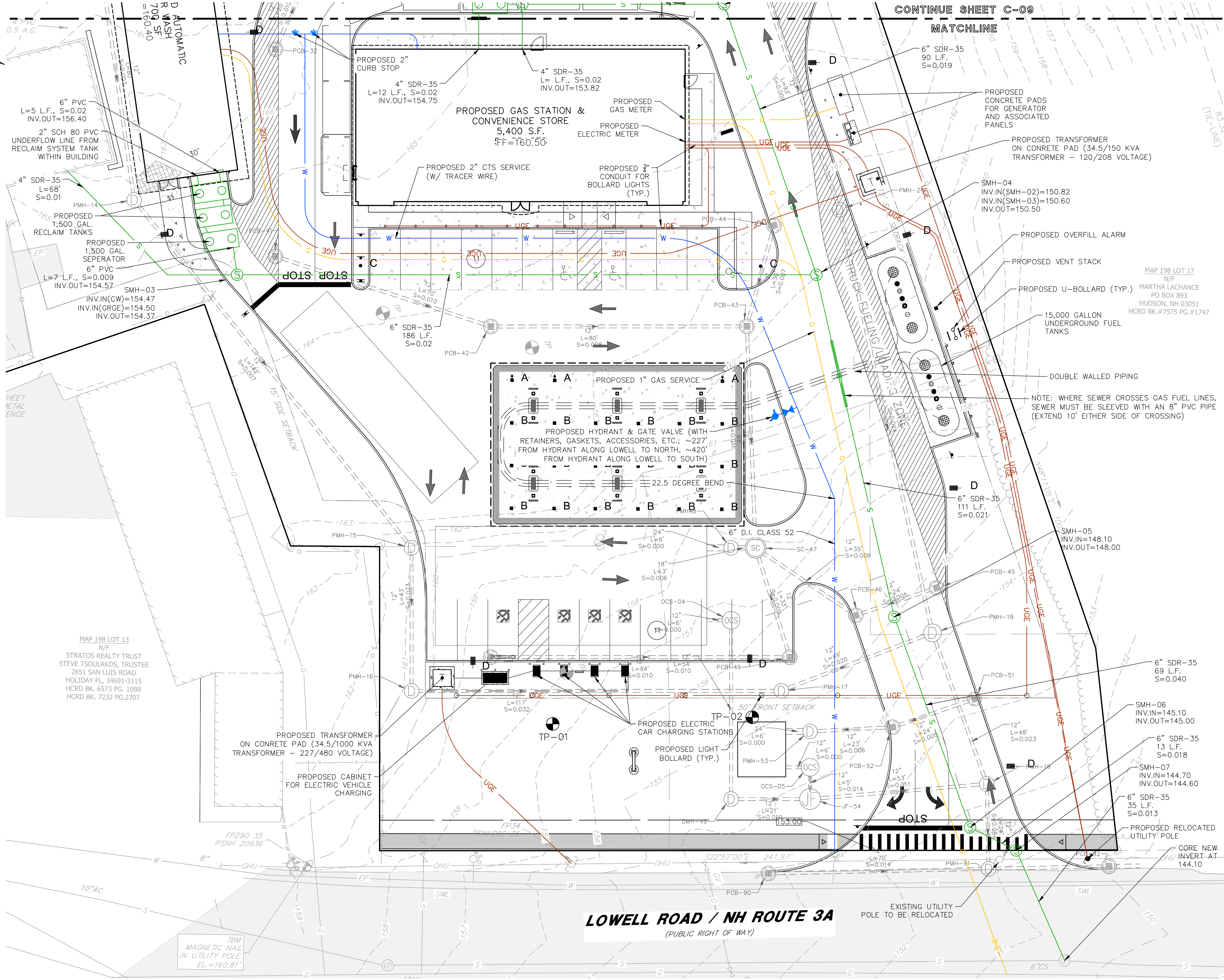
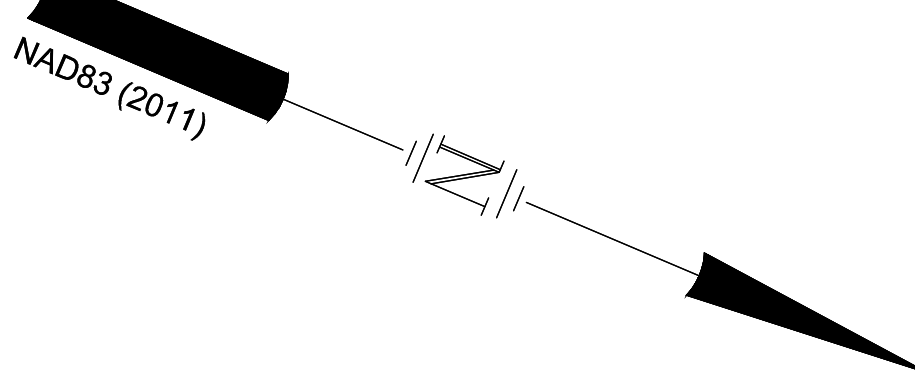
REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

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

18149.00
CADFILE: 18149-00_GRADING & DRAINAGE
C-07

Jul 18, 2024 - 12:20pm
\\fr-beford04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Grading & Drainage.dwg



- NOTES**
- SEE NOTES ON SHEET C-01.
 - THE NATIONAL FIRE PROTECTION AGENCY AND NEW HAMPSHIRE FIRE CODE REQUIRES FIRE HYDRANTS TO BE NO MORE THAN 500 FEET APART AND AT LEAST ONE FIRE HYDRANT WITHIN 400 FEET OF THE BUILDING IN AREAS WHERE BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS ARE PRESENT.

LEGEND	
	S SEWER LINE
	FM SEWER FORCE MAIN LINE
	W WATER LINE
	G GAS LINE
	OHE OVERHEAD UTILITY LINE
	UGE UNDERGROUND UTILITY LINE

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

UTILITY PLAN

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11"X17')

SCALE: 1"=20' (22"X34')

DECEMBER 13, 2023

Jul 18, 2024 - 12:20pm \\lfm-beford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00_Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_UTILITY.dwg

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND

SECRETARY _____ SIGNATURE DATE _____

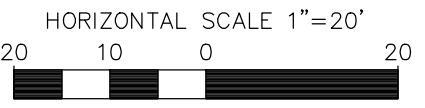
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 © TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

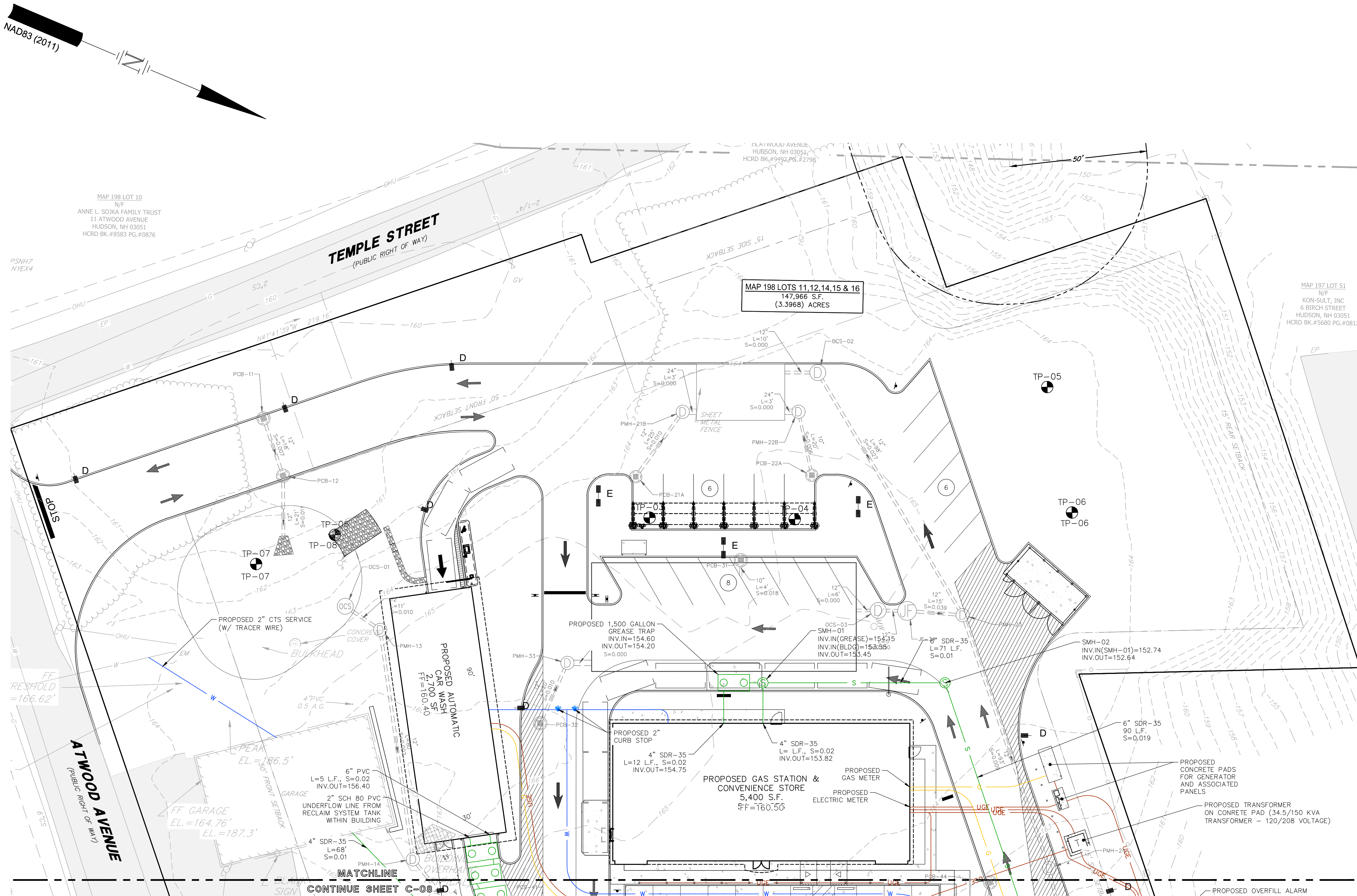
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.tfmoran.com

18149.00 DR JKC FB
CK CRR CADFILE 18149-00_UTILITY

C-08

NOTES

1. SEE NOTES ON SHEET C-01.



SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
UTILITY PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11'X17')
SCALE: 1"=20' (22'X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

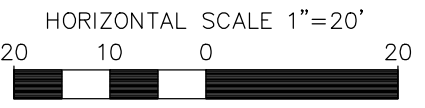
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REGULATION REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

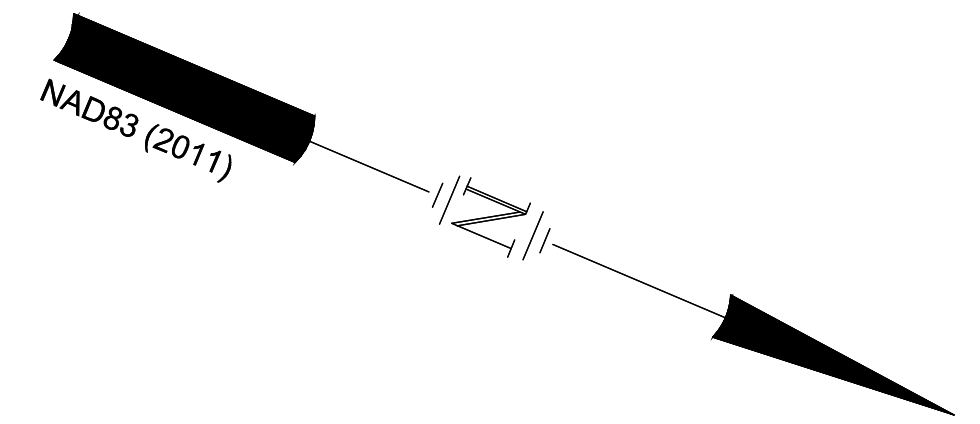
Seacoast Division

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

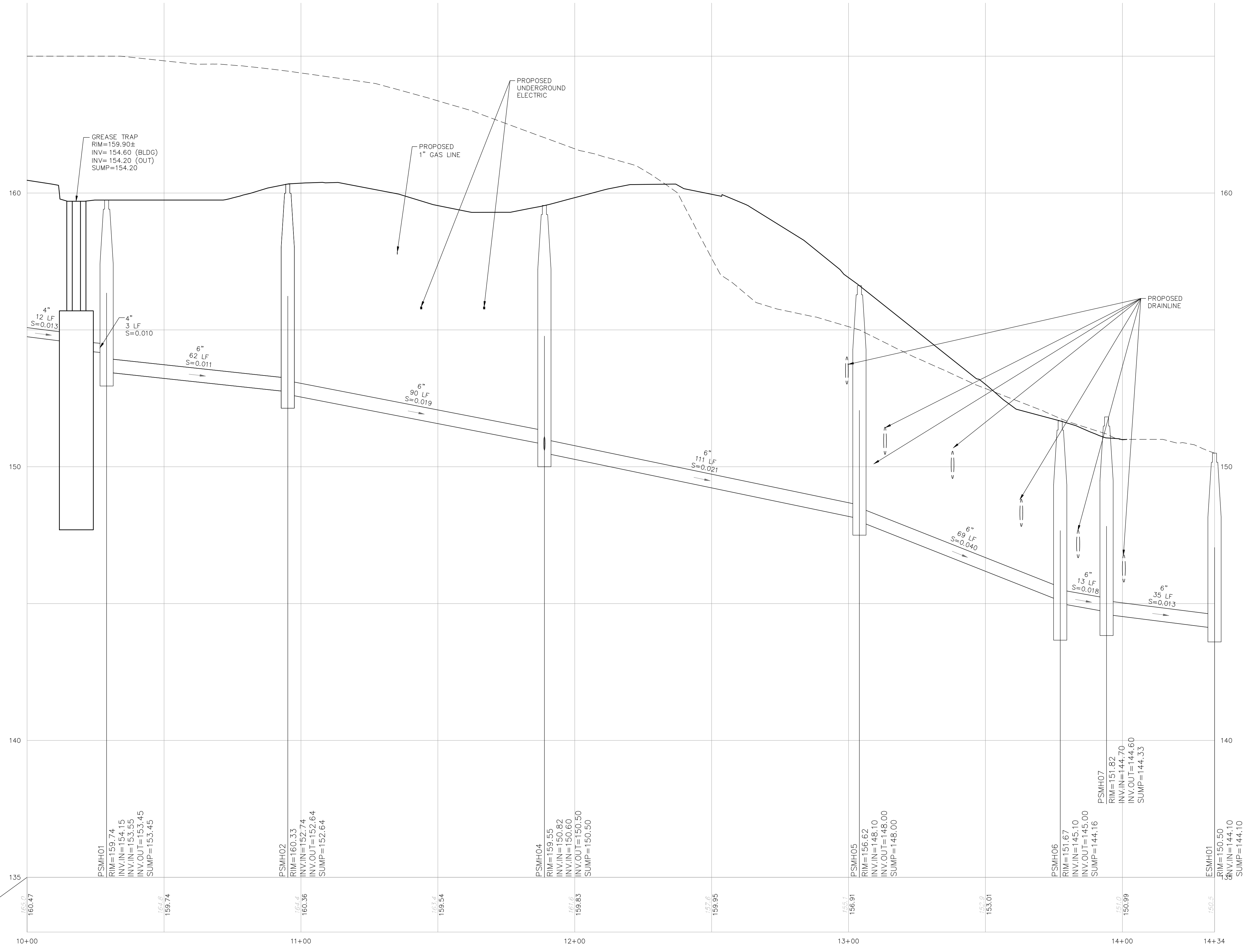
18149.00 DR JKC FB
 CK CRR CADFILE 18149-00_UTILITY C-09

Jul 18, 2024 - 12:20pm
 \\fmr-beford04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_UTILITY.dwg



SEWER STRUCTURE TABLE

GREASE TRAP RIM=159.90± INV=154.60 (BLDG) INV=154.20 (OUT) SUMP=154.20	SMH-04 RIM=160.00± INV=150.82 (IN) INV=150.50 (OUT)	SMH-07 RIM=151.80± INV=144.70 (IN) INV=144.60 (OUT)
SMH-01 RIM=159.90± INV=154.14 (GREASE) INV=153.55 (BLDG) INV=153.45	SMH-05 RIM=156.60± INV=148.10 (IN) INV=148.00 (OUT)	
SMH-02 RIM=160.30± INV=152.74 (IN) INV=152.64 (OUT)	SMH-06 RIM=151.40± INV=145.10 (IN) INV=145.00 (OUT)	



PSW01

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
UTILITY PROFILE (SEWER)
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11'X17')
SCALE: 1"=20' (22'X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

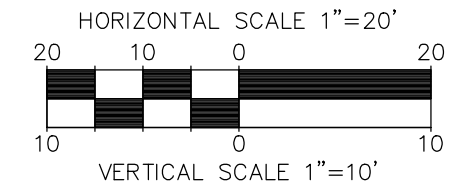
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

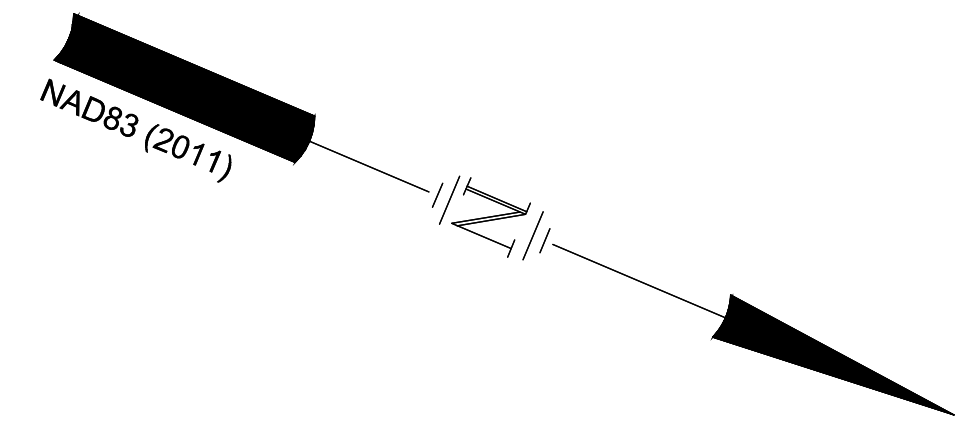
Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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

18149.00	DR	JKC	FB	-
	CK	CRR	CADFILE	18149-00_SEWER PROFILE

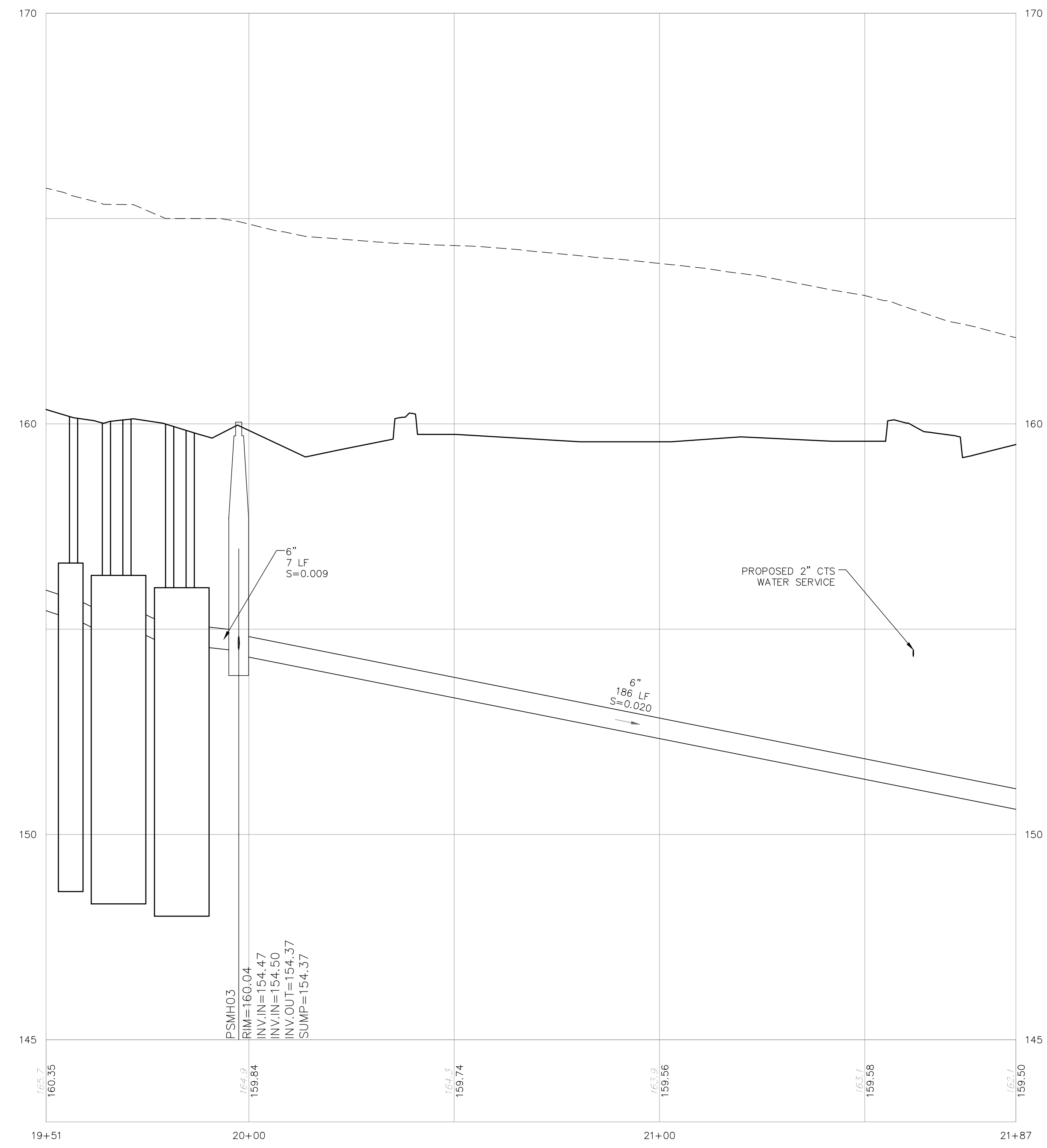
C-10A

Jul 18, 2024 - 12:21pm \\tfm-bdfor4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Sewer Profile.dwg



SEWER STRUCTURE TABLE

SMH-04
 RIM=160.00±
 INV=150.82 (IN)
 INV=150.50 (OUT)



PSW02

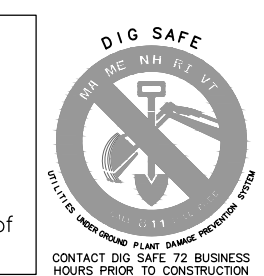
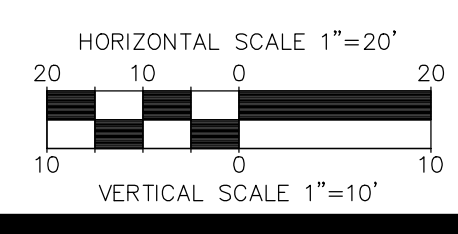
SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
UTILITY PROFILE (SEWER)
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11"X17')
SCALE: 1"=20' (22"X34') **DECEMBER 13, 2023**

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR



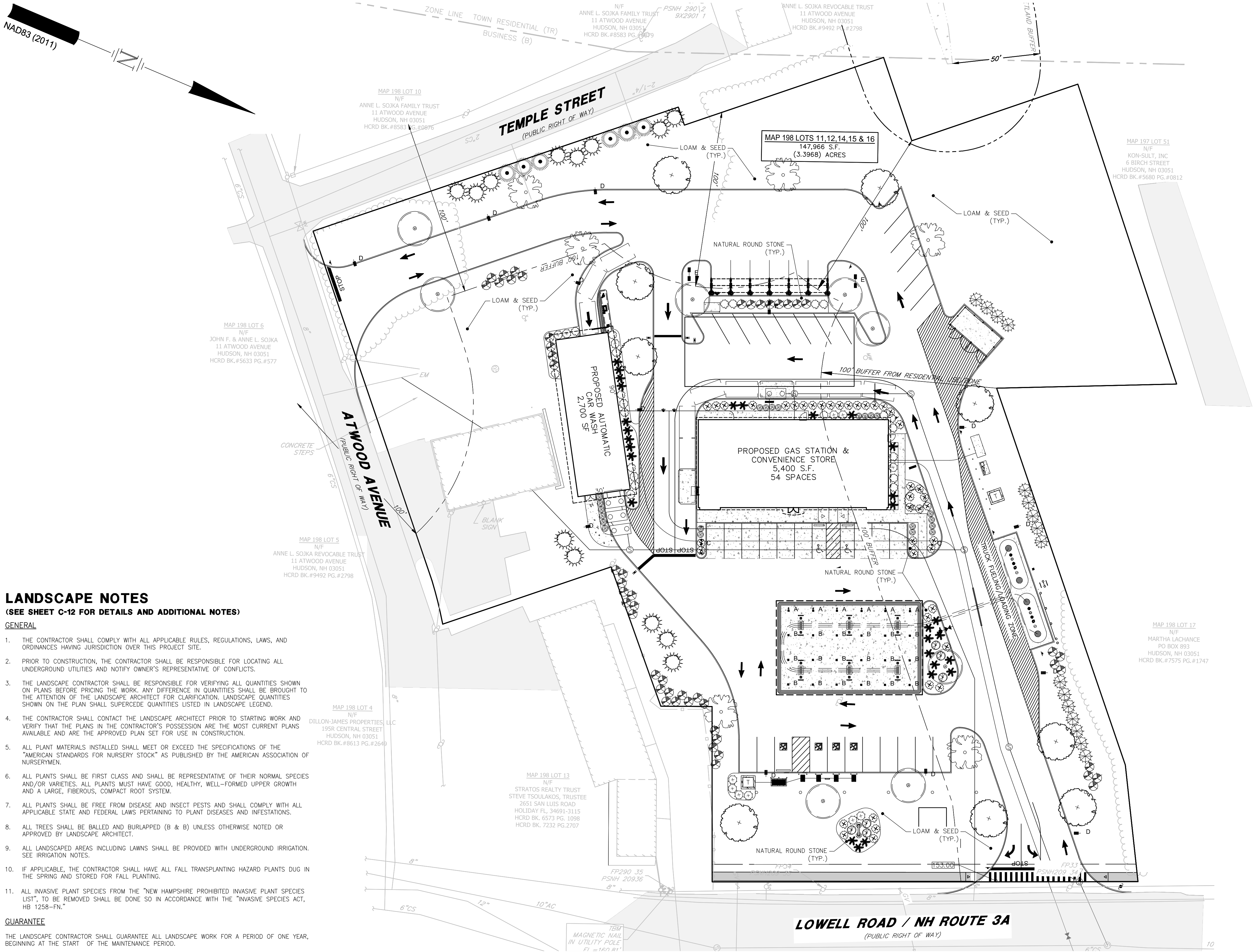
Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110
 All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
 This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____
 SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

Jul 18, 2024 - 12:21pm
 \\fmr-bdfor04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Sewer Profile.dwg



LANDSCAPE LEGEND

SYMBOL (TREES)	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	6	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" TO 3" CAL.	B&B
	9	QUERCUS RUBRA RED OAK	2 1/2" TO 3" CAL.	B&B
	8	ULMUS AMERICANA 'PRINCETON' PRINCETON AMERICAN ELM	2 1/2" TO 3" CAL.	B&B
	6	PICEA GLAUCA WHITE SPRUCE	6' TO 7'	B&B
	13	PINUS STROBUS WHITE PINE	6' TO 7'	B&B
	16	THUJA P. 'GREEN GIANT' WESTERN GREEN GIANT ARBORVITAE	5' TO 6'	B&B
	1	AMELANCHIER CANADENSIS SHADBLow SERVICEBERRY	4' TO 5' MULTI-STEM	B&B
SYMBOL (SHRUBS)	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	22	CALAMAGROSTIS A. 'KARL FOERSTER' KARL FOERSTER FEATHER REED GRASS	3 GAL.	CONT.
	50	FORSYTHIA 'LYNWOOD GOLD' LYNWOOD GOLD FORSYTHIA	3 GAL.	CONT.
	15	ILEX G. 'DENSEA' DENSEA INKBERRY	3 GAL.	CONT.
	41	JUNIPERUS H. 'PLUMOSA COMPACTA' YOUNGTOWN JUNIPER	3 GAL.	CONT.
	19	JUNIPERUS C. 'SEAGREEN' SEAGREEN JUNIPER	3 GAL.	CONT.
	6	PINUS MUGO 'PUMILIO' DWARF MUGO PINE	5 GAL.	CONT.
	29	SPIRAEA X B. 'ANTHONY WATERER' ANTHONY WATERER SPIREA	3 GAL.	CONT.

LANDSCAPE REQUIREMENTS

- INTERIOR PARKING LANDSCAPE AREA REQUIREMENTS:**
(275-8.C(7) OF SITE PLAN REG.'S)
INTERIOR PARKING LOT: 10% LANDSCAPE AREA REQUIRED.
TOTAL PAVED PARKING AREAS = 36,691 SF (10%) = 3,669 SF
REQUIRED: 3,669 SF
PROVIDED: 3,837 SF (10.4%)
- REQUIRED SHADE TREES:** 1 TREE PER 1,600 SF OR 1 TREE PER 5 SPACES, WHICHEVER IS GREATER.
TOTAL PAVED PARKING AREA = 36,691 SF / 1,600 SF = 23 TREES
REQUIRED: 23 SHADE TREES
PROVIDED: 24 SHADE TREES
- REQUIRED SHRUBS:** 1 SHRUB PER 200 SF OR 1 SHRUB PER 1.6 SPACES.
TOTAL PARKING = 55 SPACES (1.6) = 88 SHRUBS OR 36,691 SF / 200 SF = 183 SHRUBS
REQUIRED: 183 SHRUBS
PROVIDED: 183 SHRUBS
- LANDSCAPE SCREENING REQUIREMENTS:**
(275-8.C(8) OF SITE PLAN REG.'S)
SCREENING SHALL BE PROVIDED FOR VISUAL SEPARATION OF INCOMPATIBLE USES. SCREENING SHALL BE REQUIRED BETWEEN PARKING OR LOADING AREAS AND, IF PRESENT, AN ADJACENT RESIDENTIAL ZONE. SCREENING MAY ALSO BE REQUIRED BETWEEN ADJACENT NONRESIDENTIAL SITES.
PROVIDED: 34 EVERGREEN TREES

LANDSCAPE NOTES

- (SEE SHEET C-12 FOR DETAILS AND ADDITIONAL NOTES)
- GENERAL**
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
 - THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
 - THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
 - ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
 - ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
 - ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
 - ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
 - ALL LANDSCAPED AREAS INCLUDING LAWNS SHALL BE PROVIDED WITH UNDERGROUND IRRIGATION. SEE IRRIGATION NOTES.
 - IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
 - ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."
- GUARANTEE**
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

LANDSCAPE PLAN

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11"x17')

SCALE: 1"=30' (22"x34')

DECEMBER 13, 2023

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND _____

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 © TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

DIG SAFE

CONTACT ONE WEEK BEFORE COMMENCING CONSTRUCTION

HORIZONTAL SCALE 1"=30'

30 15 0 30

2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR
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

18149.00

DR JKC FB
CK CRR CADFILE 18149-00_LANDSCAPE

C-11

Jul 18, 2024 - 12:21 pm
\\fr-beford04\projects\civil\survey\MSC Projects\18149-Lowell Rd-Hudson\18149-00_Colbea - Seacoast Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Landscape.dwg

LANDSCAPE NOTES

SITE AND SOIL PREPARATION

- WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
- ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
- LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. 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.
- NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
- SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
- APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
- THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

- ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.
- SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:

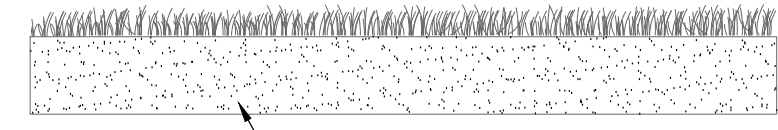
- 33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
- 42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
- 21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
- 4% REDTOP (MIN. 5 LBS/ACRE)

TEMPORARY LAWN MIX (MIN. 47 LBS/ACRE)

- 100% ANNUAL RYE

PLANTING

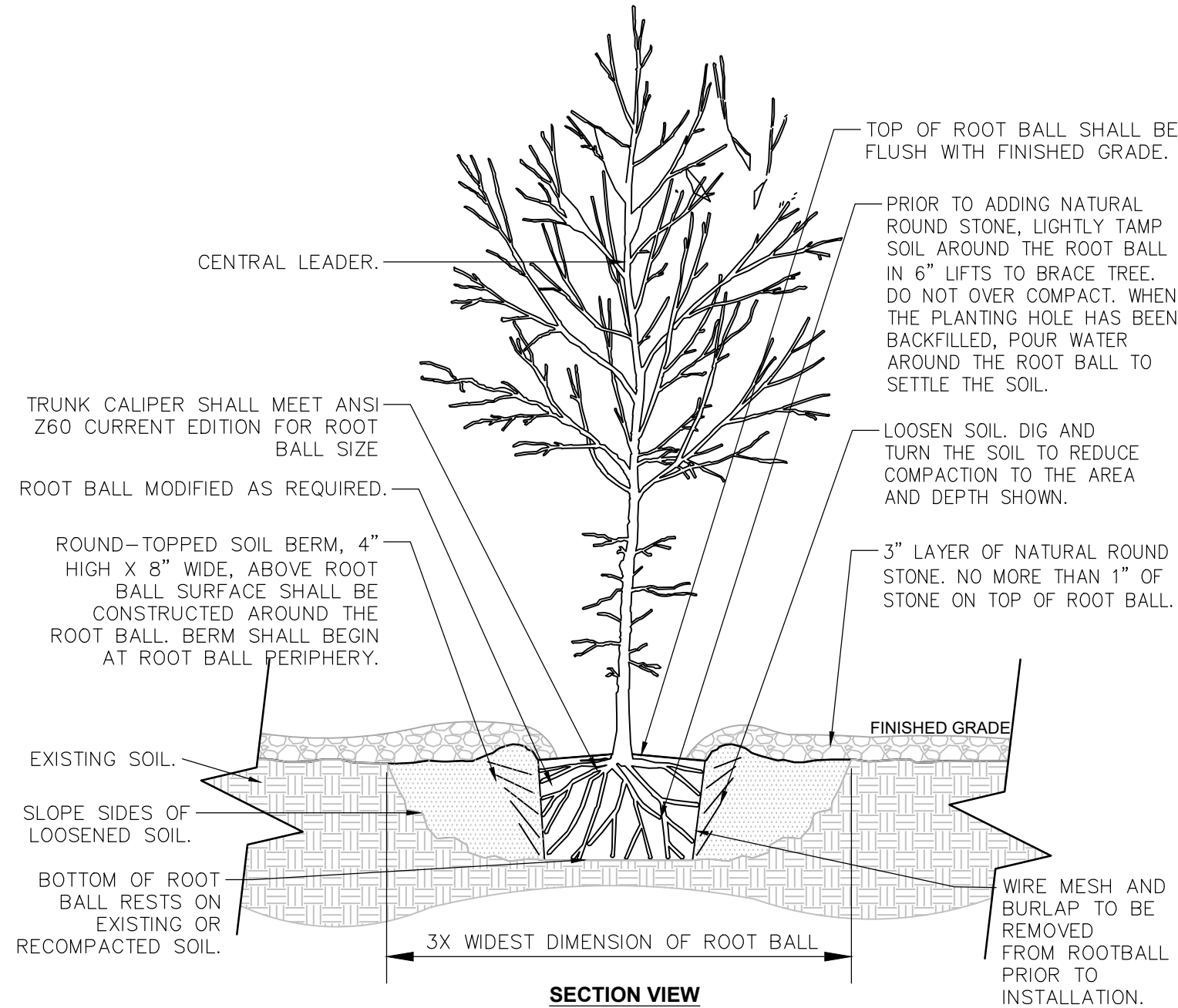
- EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
- ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES 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.
- DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
- FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
- 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.
- ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
- THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.



6" LOAM (ITEM 641)
SEED (ITEM 644)
LIMESTONE (ITEM 642)
FERTILIZER (ITEM 643.11)
MULCH (ITEM 645.111)

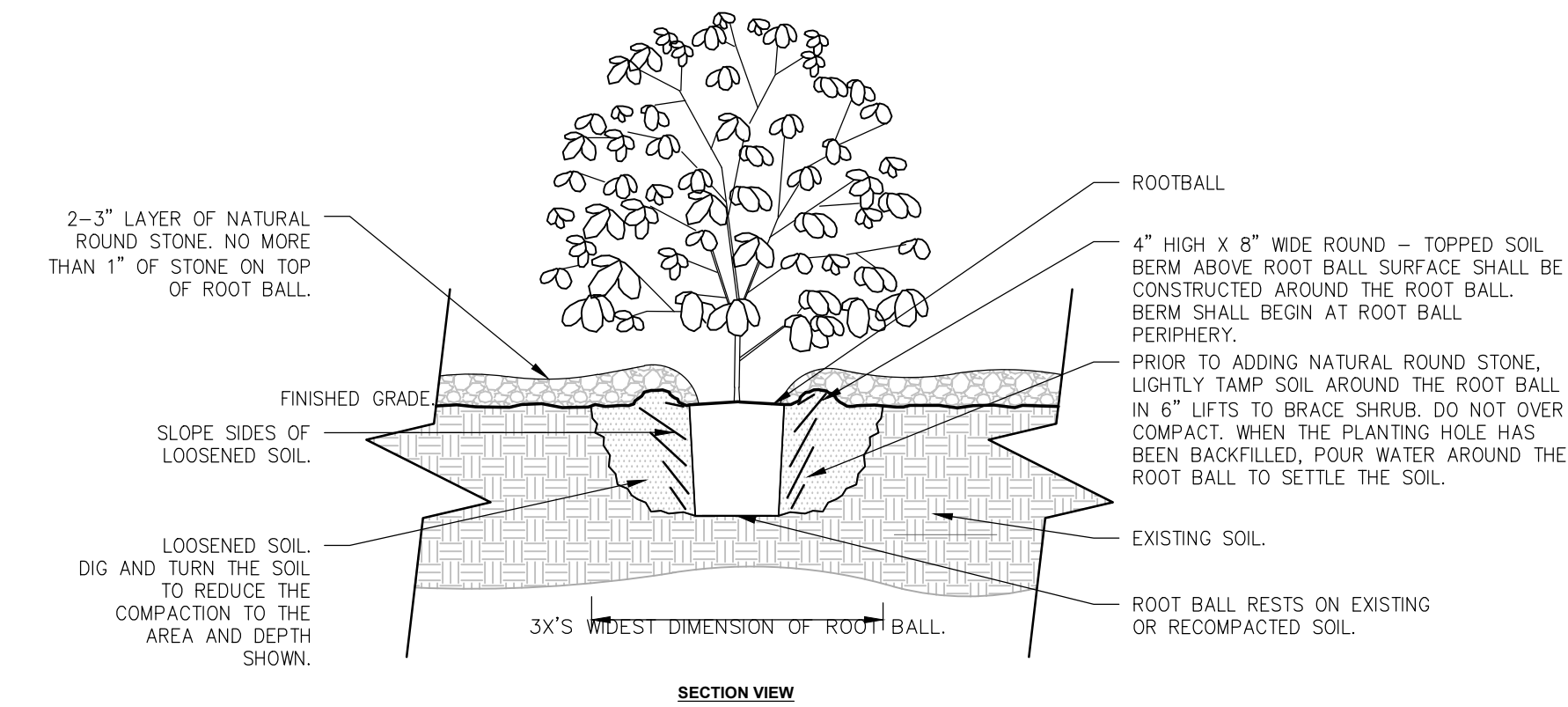
LOAM & SEED

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
LANDSCAPE DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS

DECEMBER 13, 2023

Seacoast Division



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

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

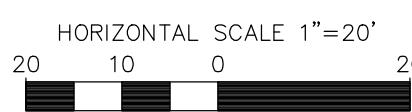
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

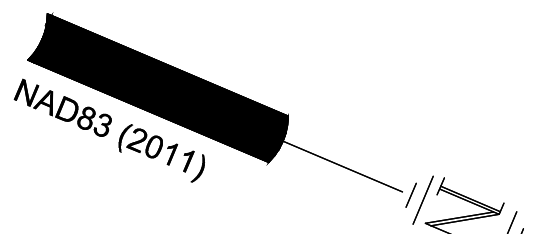
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



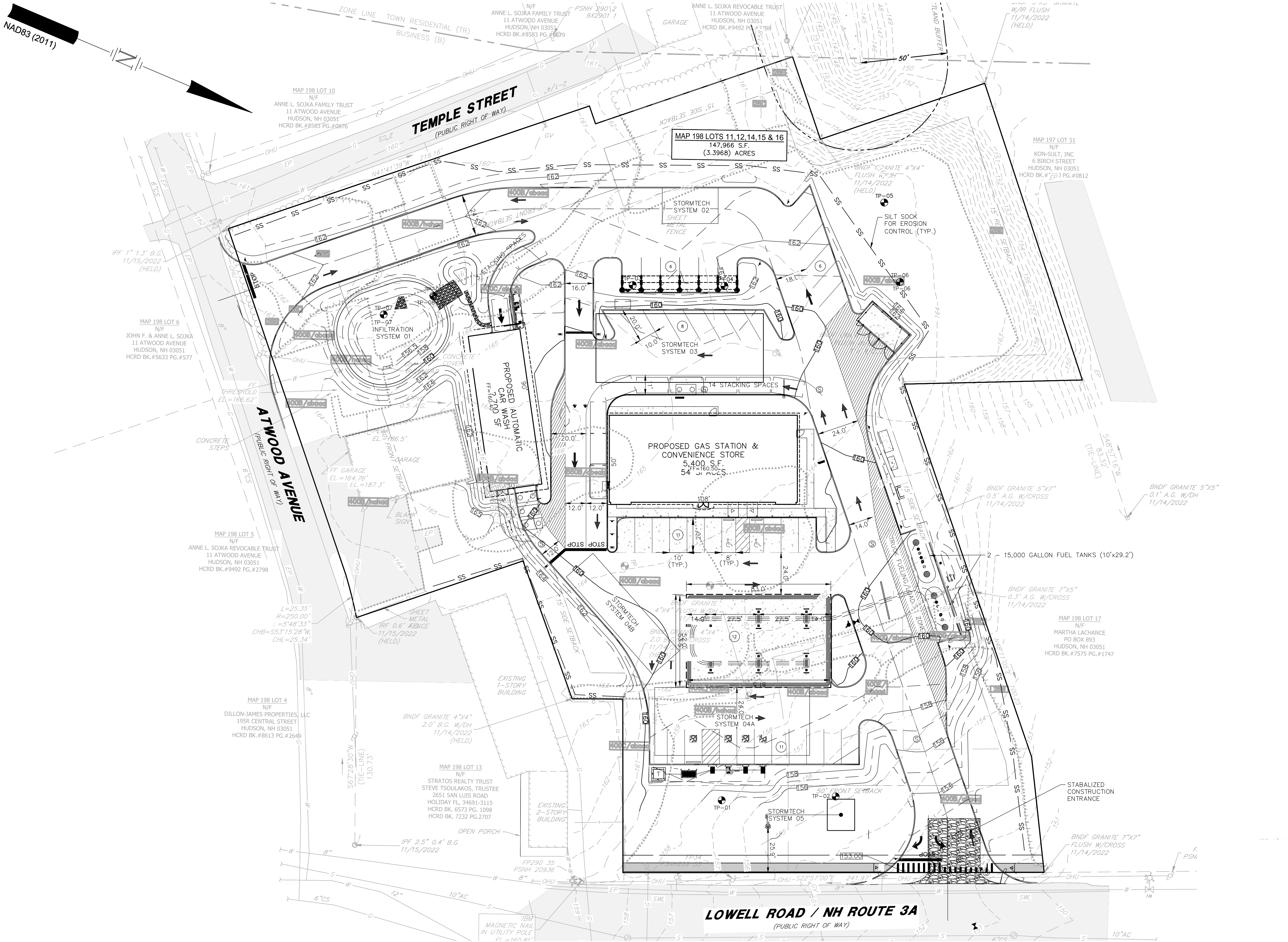
REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

FILE	18149.00	DR	JKC	FB	-
		CK	CRR	CADFILE	18149-00_LANDSCAPE

C-12



- ### NOTES
- SEE NOTES ON SHEET C-01, EROSION CONTROL NOTES ON SHEET C-15, EROSION CONTROL DETAILS, AND THE APPROVED SWPPP, AS APPLICABLE.
 - INSTALL SILT BARRIER ALONG THE PERIMETER OF THE AREA TO BE DISTURBED AS FIRST ORDER OF WORK.
 - 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.
 - 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.
 - 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 NOI 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.
 - SILT PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THIS PLAN SET.
 - CONSTRUCT JUTE MATTING ON ALL SLOPES STEEPER THAN 3:1, DISTURBED AREAS SLOPING TOWARDS WETLANDS AND ALL LOCATIONS SHOWN ON PLAN.
 - 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.
 - 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.
 - ALL DISTURBED AREAS SHALL BE REVEGETATED AS QUICKLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
 - ALL WORK AREAS TO BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY PREDICTED SIGNIFICANT RAIN EVENT.
 - AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - 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
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
 - ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
 - CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
 - THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.



SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

EROSION CONTROL PLAN

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=40' (11"X17')

SCALE: 1"=20' (22"X34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND _____

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

DIG SAFE

CONTACT THE UTILITY BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

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

18149.00

DR: JKC, FB
CK: CRR, CADFILE

18149-00_EROSION

C-13

Jul 18, 2024 - 12:22pm \\frn-beford4\projects\civil\survey\MSC Projects\18149-00 Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Erosion.dwg

SOIL CHARACTERISTICS

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF WINDSOR LOAMY SAND, THE MAJORITY OF THE SOIL IS HSG TYPE A.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 104,400 SQUARE FEET (2.40 ACRES). THIS TOTAL DOES NOT INCLUDE DISTURBANCE RELATED TO OFF-SITE DRAINAGE IMPROVEMENTS.

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.

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.

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.

- 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;

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.

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 NHDOS AOT PERMIT AND NHDDES EPA GCP, DISCHARGING TO A SENSITIVE WATERBODY, AT LEAST EVERY 7 DAYS AND AFTER A 0.25 INCH RAIN EVENT OR GREATER, AND INSPECTIONS SHALL BE CONDUCTED BY THE ENVIRONMENTAL MONITOR IF ONE IS REQUIRED, PURSUANT TO ENV-WQ 1505.03(B).

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:

Table with 3 columns: PHYSICAL PROPERTY, TEST, REQUIREMENTS. Rows include PH, PARTICLE SIZE, and MOISTURE CONTENT.

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.

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.

- 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.

- 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.

- 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.

- 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.

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.

Jul 18, 2024 - 12:22pm \\frn-bedford04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Erosion.dwg

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
EROSION CONTROL NOTES
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR COLBEA ENTERPRISES, LLC
1"=40' (11'X17')
SCALE: NTS 20' (22'X34') DECEMBER 13, 2023

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING
CHAIRMAN
SECRETARY

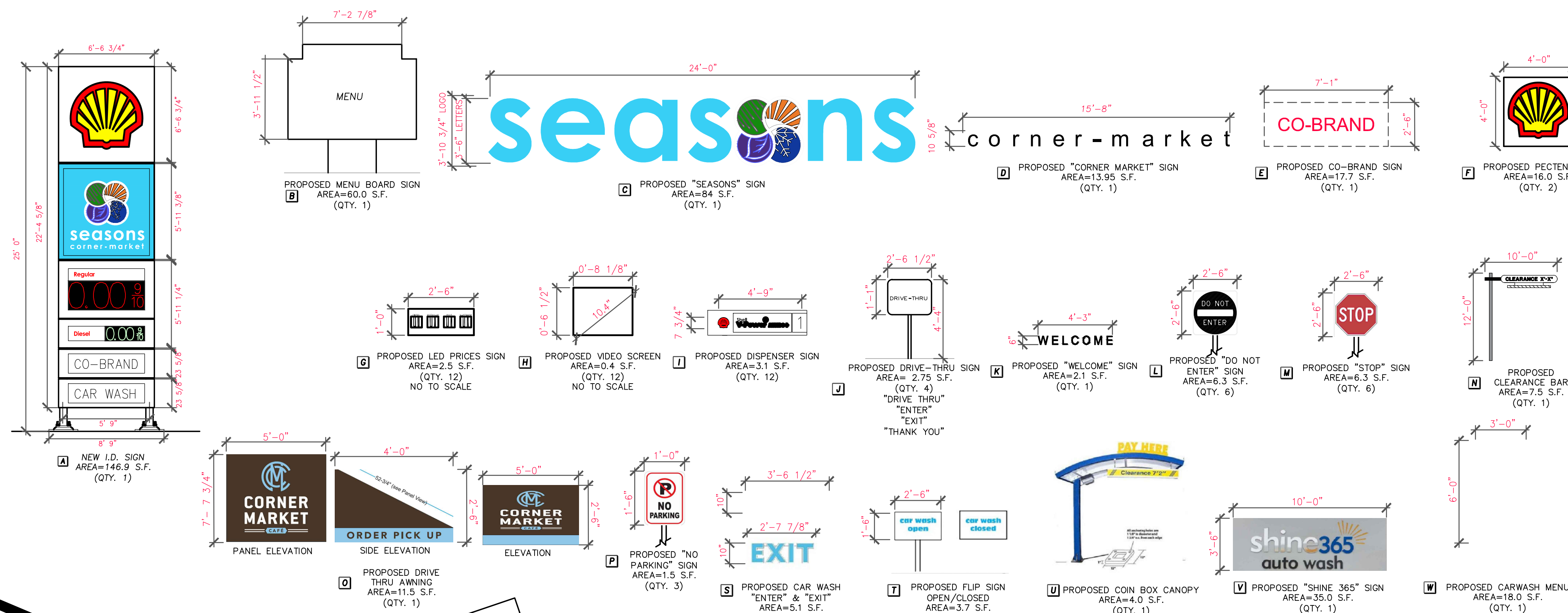
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc. 48 Constitution Drive, Bedford, N.H. 03110
All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



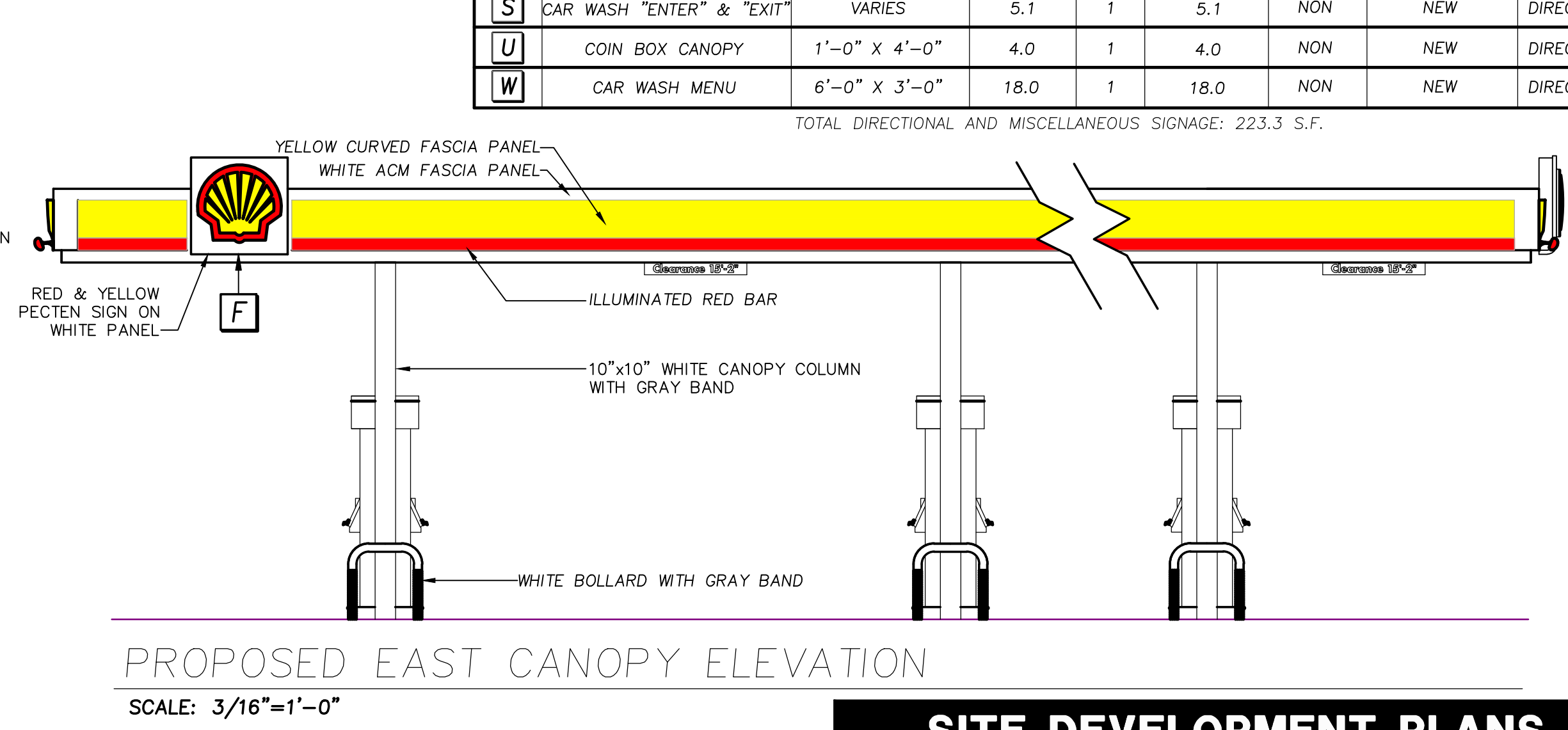
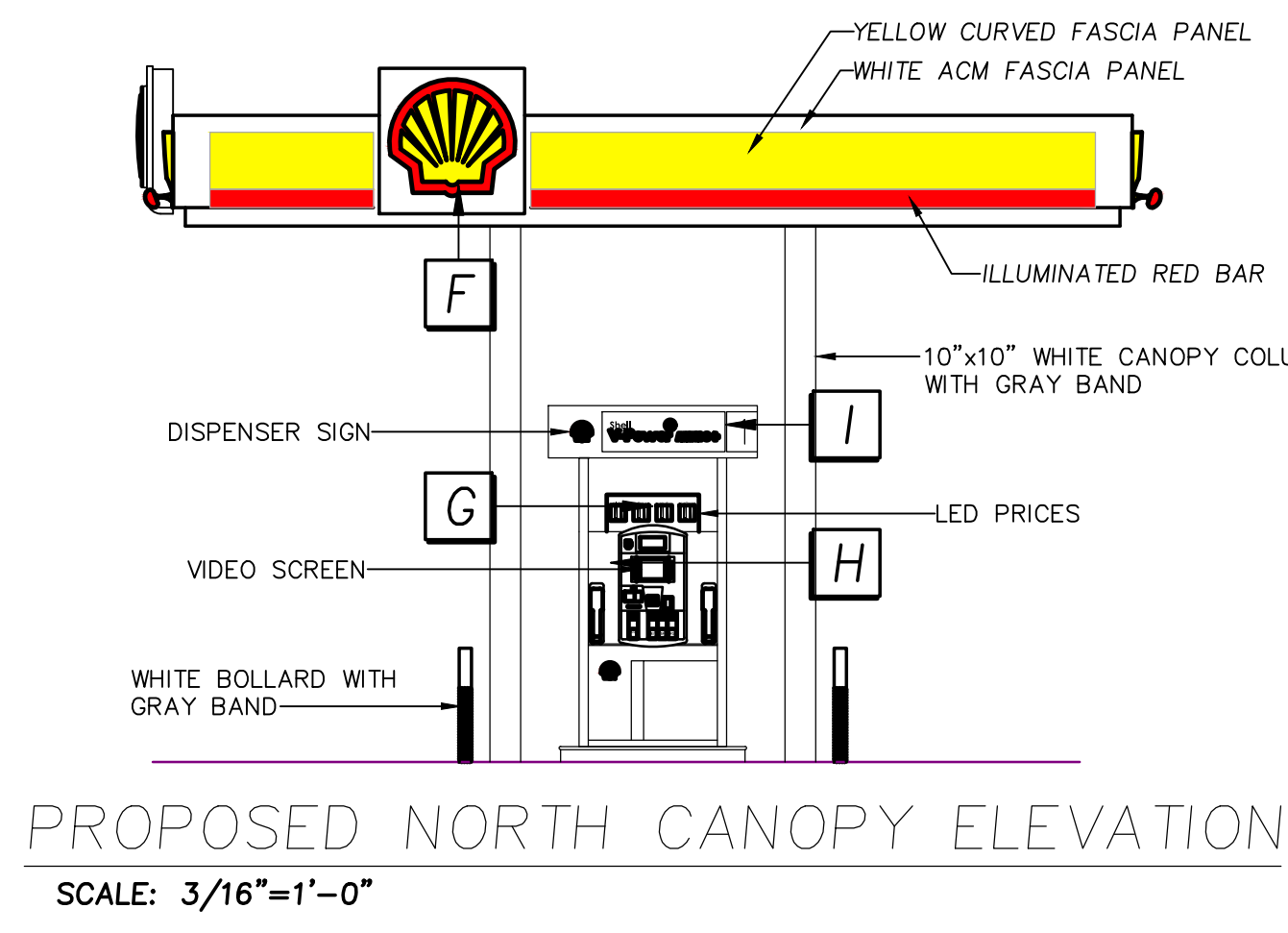
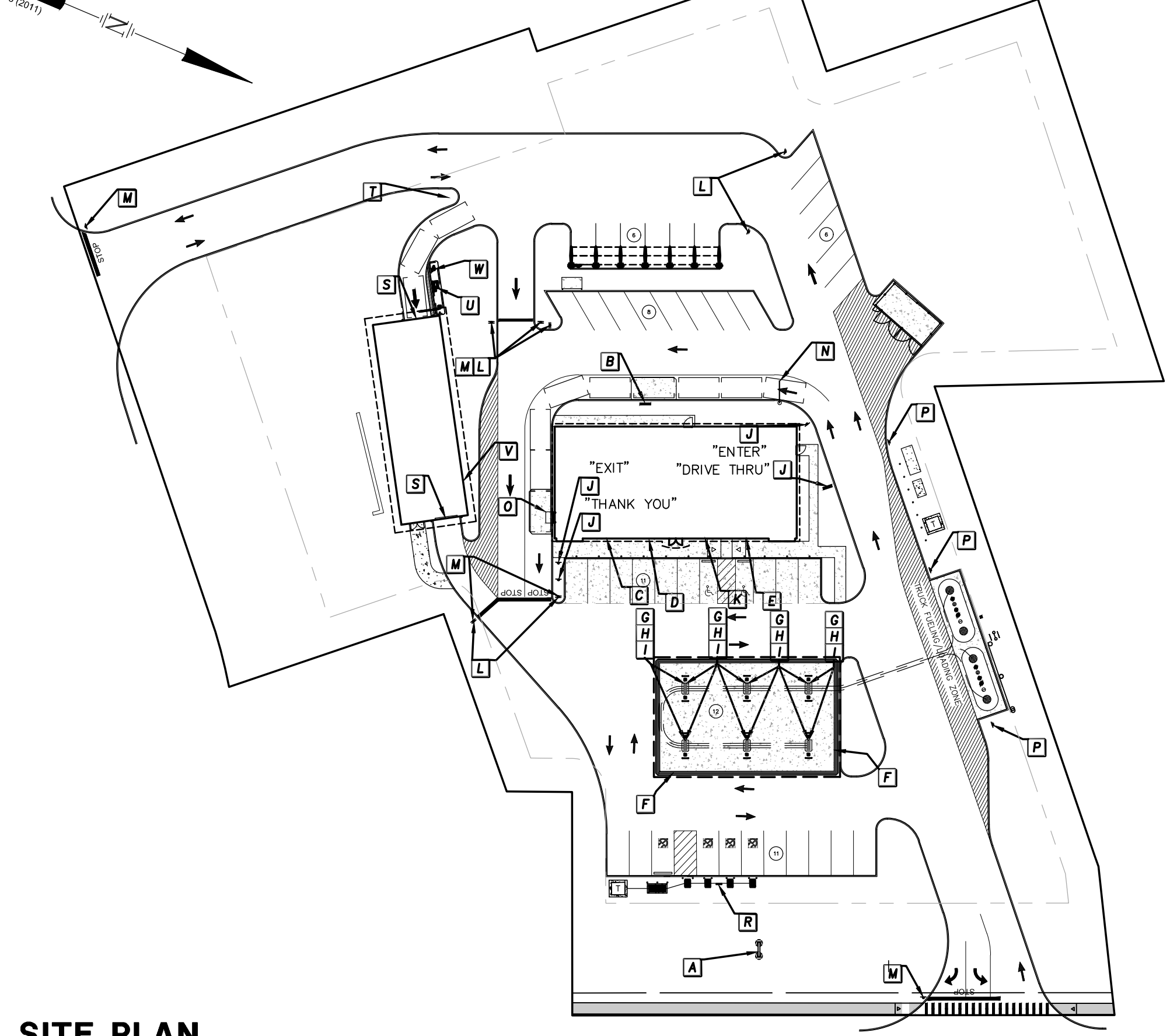
Table with 5 columns: REV, DATE, DESCRIPTION, DR, CK. Rows include dates 7/18/2024 and 5/24/2024.

Seacoast Division
TFM logo
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 18149.00 DR JKC FB - CK CR CADFILE 18149-00_EROSION C-14



PROPOSED SIGN SCHEDULE

MARK	DESCRIPTION	SIZE	AREA (SF)	QUAN.	SIZE (SF)	ILLUMINATION	REMARKS	TYPE
FREESTANDING SIGNS								
A	I.D. SIGN	6'-6 3/4" X 25'-0"	146.9	1	146.9	INT	NEW	GROUND
TOTAL FREESTANDING SIGNAGE: 146.9 S.F., 25.0' TALL (100 S.F. TOTAL PERMITTED; MAXIMUM HEIGHT 30')								
B	MENU BOARD SIGN	3'-11 1/2" X 7'-2 7/8"	60.0	1	60.0	INT	NEW	GROUND
TOTAL MENU BOARD SIGNAGE: 60 S.F.								
WALL SIGNS								
C	"SEASONS" SIGN	24' X 3'-6"	84	1	84	INT	NEW	WALL
D	"CORNER MARKET" SIGN	15'-8" X 0'-10 5/8"	13.95	1	13.95	NON	NEW	WALL
E	CO-BRAND SIGN	7'-1" X 2'-6"	17.7	1	17.7	INT	NEW	WALL
F	CANOPY SIGN	4'-0" X 4'-0"	16.0	2	32.0	INT	NEW	WALL
O	DRIVE-THRU AWNING	4'-4 3/4" X 5'-0"	11.5	1	11.5	NON	NEW	WALL
T	FLIP SIGN OPEN/CLOSED	1'-6" X 2'-6"	3.7	1	3.7	NON	NEW	WALL
V	"SHINE 365" SIGN	3'-6" X 10'-0"	35.0	1	35.0	NON	NEW	WALL
TOTAL WALL SIGNAGE: 197.85 S.F. (276 S.F. PERMITTED - 2X BUILDING FRONTAGE) (CONVENIENCE STORE FRONTAGE = 108'; CAR WASH FRONTAGE = 30')								
DIRECTIONAL AND MISCELLANEOUS SIGNS								
G	LED PRICES	2'-6" X 1'-0"	2.5	12	30.0	INT	NEW	MISC.
H	VIDEO SCREEN	0'-8 1/2" X 0'-6 1/2"	0.4	12	4.8	INT	NEW	MISC.
I	DISPENSER SIGN	4'-9" X 0'-7 3/4"	3.1	12	37.2	NON	NEW	MISC.
J	DRIVE-THRU SIGN	2'-6" X 2'-0"	2.75	4	11.0	INT	NEW	DIRECTIONAL
K	"WELCOME" SIGN	4'-3" X 0'-6"	2.1	1	2.1	INT	NEW	DIRECTIONAL
L	"DO NOT ENTER" SIGN	2'-6" X 2'-6"	6.3	7	44.1	NON	NEW	DIRECTIONAL
M	"STOP" SIGN	2'-6" X 2'-6"	6.3	6	37.8	NON	NEW	DIRECTIONAL
N	CLEARANCE BAR	7'-10 1/2" X 0'-11 1/2"	7.5	1	7.5	NON	NEW	DIRECTIONAL
P	"NO PARKING" SIGN	1'-0" X 1'-6"	1.5	3	4.5	NON	NEW	DIRECTIONAL
R	CHARGING BAY SIGN	6'-6 3/4" X 2'-7 1/2"	17.2	1	17.2	NON	NEW	DIRECTIONAL
S	CAR WASH "ENTER" & "EXIT"	VARIABLES	5.1	1	5.1	NON	NEW	DIRECTIONAL
U	COIN BOX CANOPY	1'-0" X 4'-0"	4.0	1	4.0	NON	NEW	DIRECTIONAL
W	CAR WASH MENU	6'-0" X 3'-0"	18.0	1	18.0	NON	NEW	DIRECTIONAL
TOTAL DIRECTIONAL AND MISCELLANEOUS SIGNAGE: 223.3 S.F.								



SITE PLAN

APPROVED BY THE HUDSON, NH PLANNING BOARD

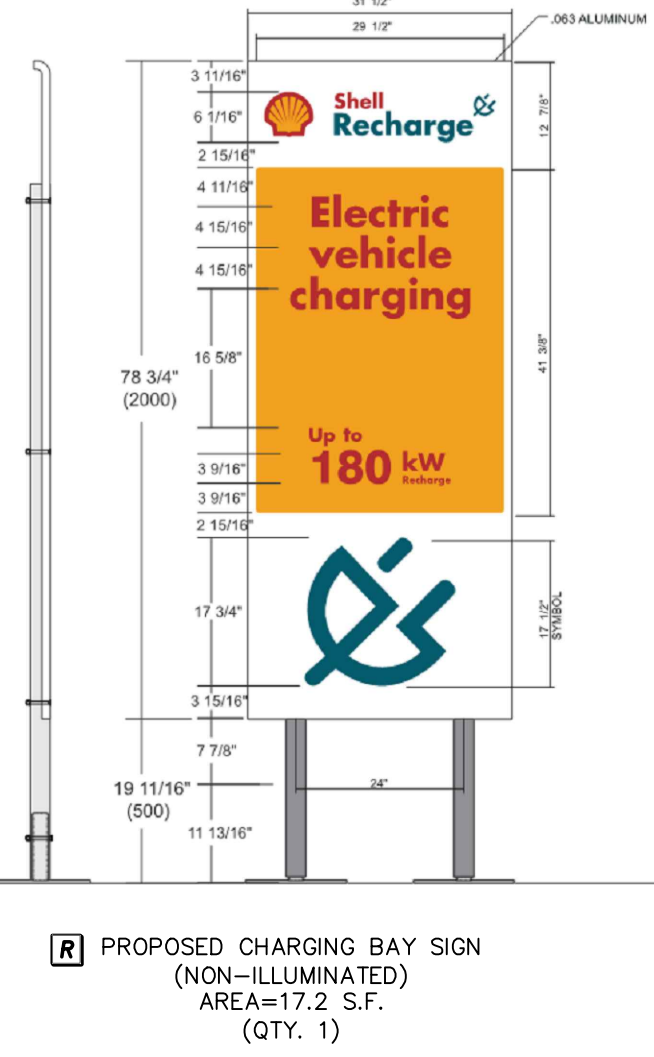
DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Copyright 2024 © TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110
All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



REV	DATE	DESCRIPTION	JKC	CRR	DR	CK
2	7/18/2024	NO REVISIONS THIS SHEET				
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR		

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
SIGNAGE PLAN & ELEVATIONS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS APRIL 18, 2024

Seacoast Division

TFM

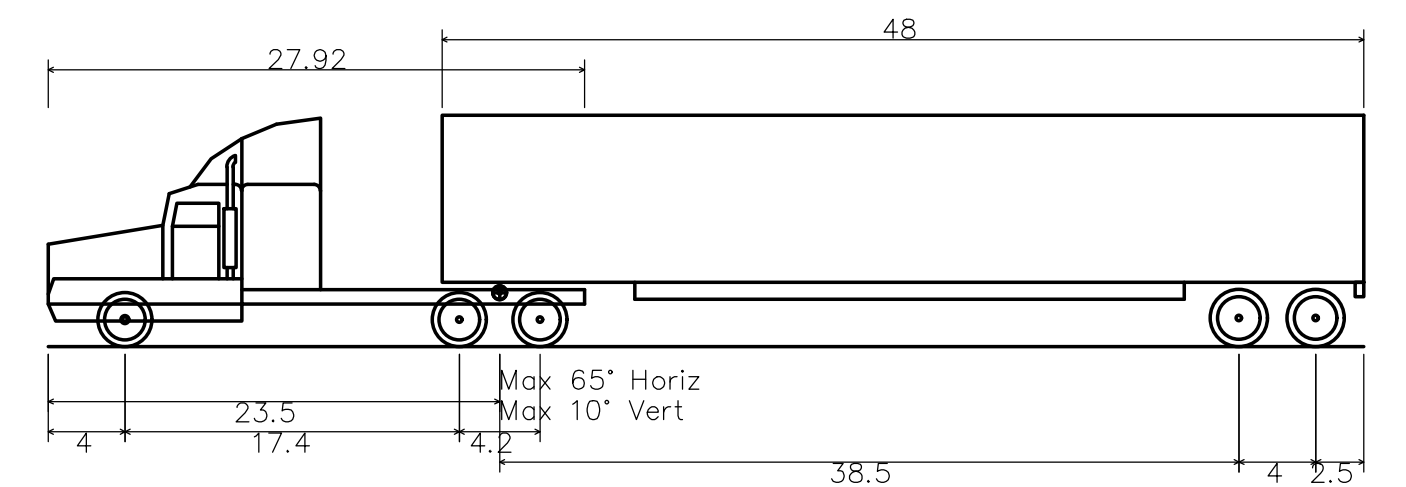
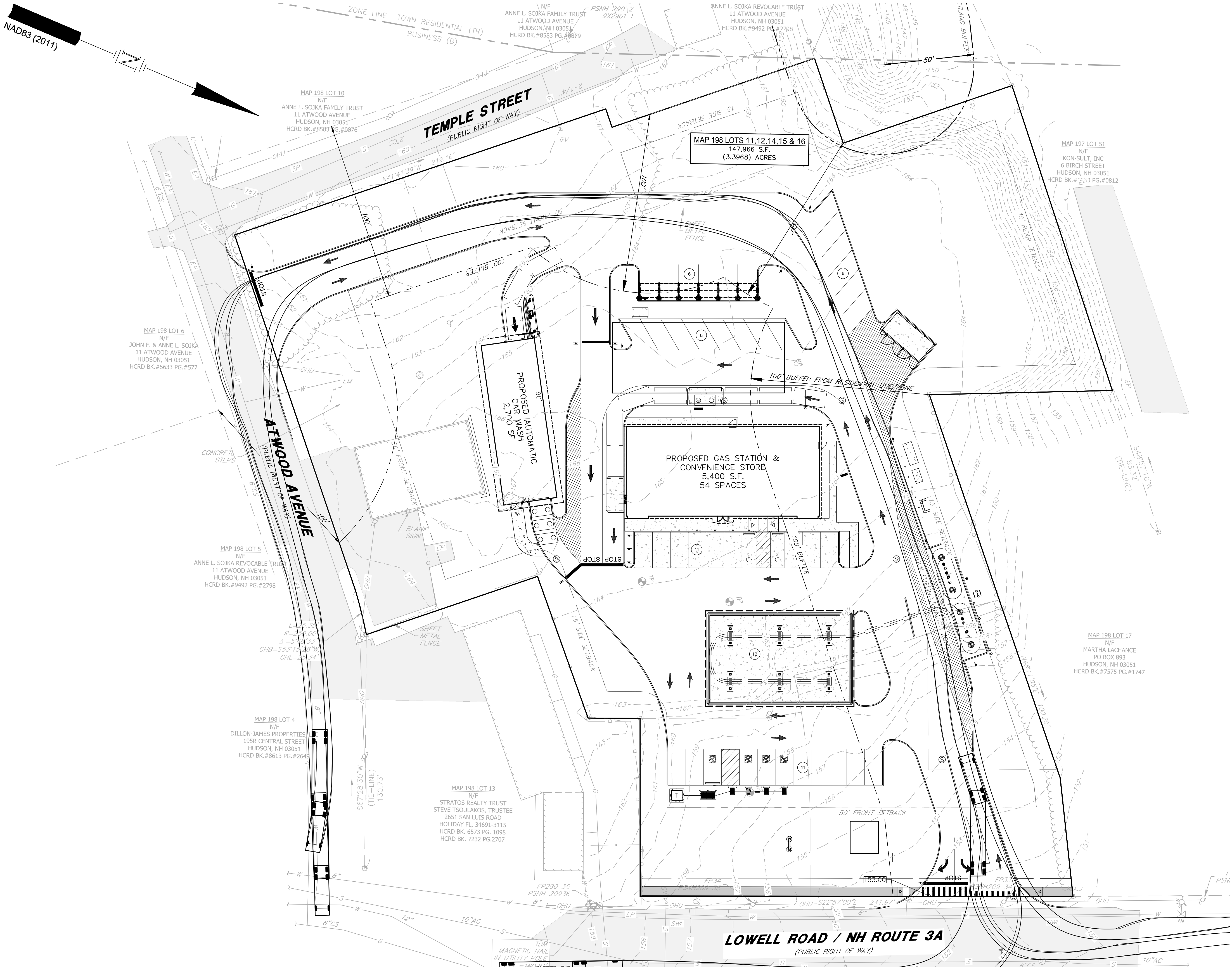
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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

FILE NO. 18149.00
 DR JKC FB
 CK CRR CADFILE
 18149-00_SIGN

C-15

Jul 18, 2024 - 12:22pm
\\fmr-beford04\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Sign.dwg



WB-62 – Interstate Semi-Trailer
 Overall Length 68.500ft
 Overall Width 8.500ft
 Overall Body Height 12.052ft
 Min Body Ground Clearance 1.334ft
 Max Track Width 8.500ft
 Lock-to-lock time 6.00s
 Max Steering Angle (Virtual) 28.40°

SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
WB-62 TRUCK MOVEMENT PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11"x17')
SCALE: 1"=30' (22"x34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

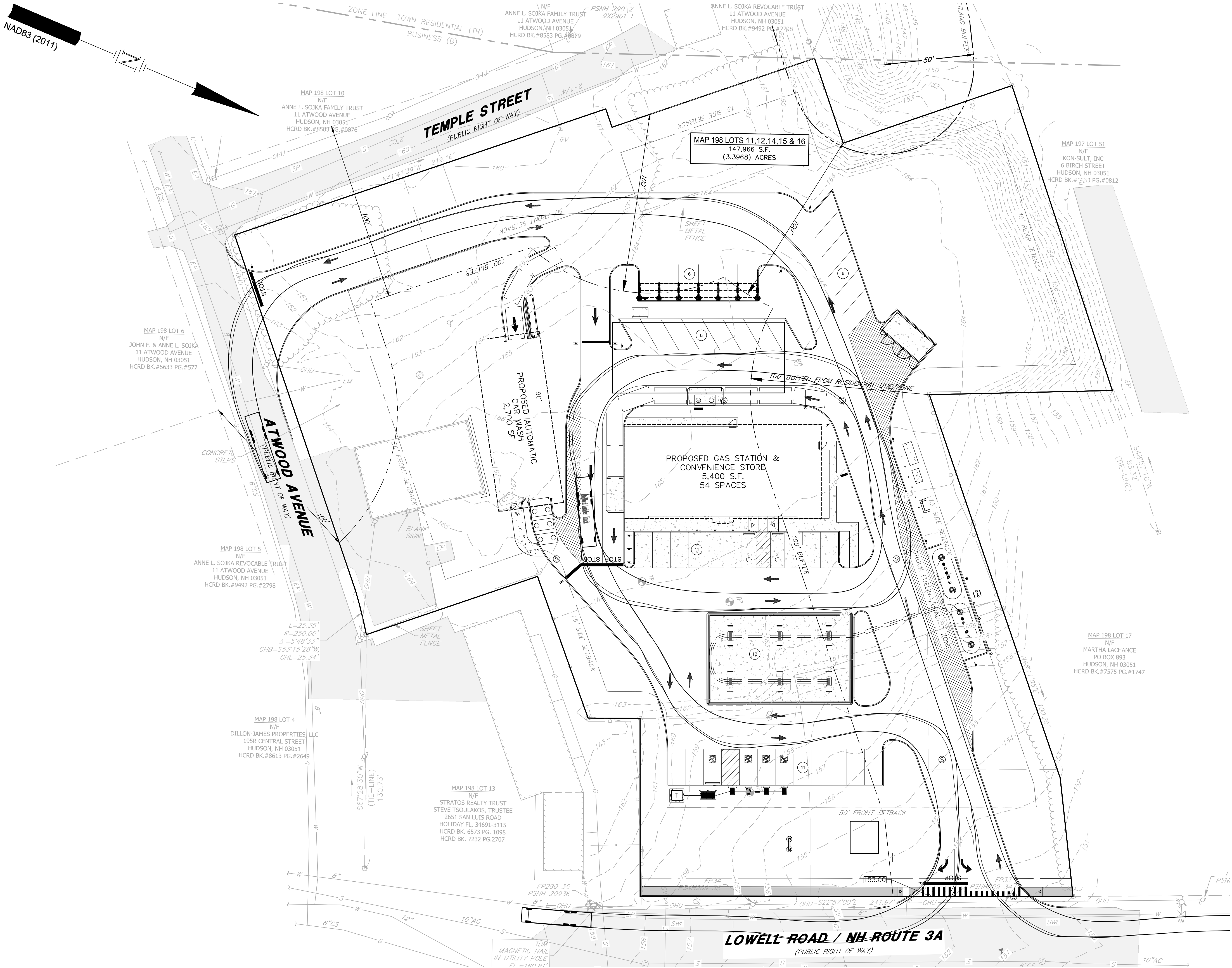
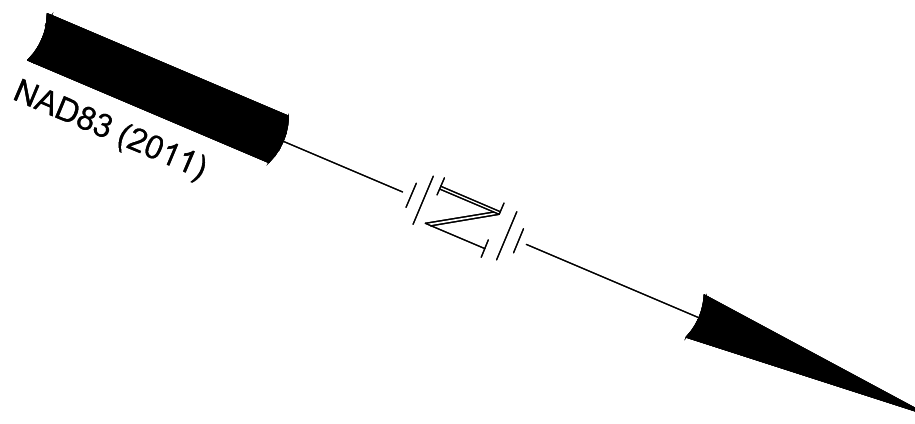
Seacoast Division

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

18149.00 DR JKC FB
 CK CRR CADFILE 18149-00_TRUCK C-16

Jul 18, 2024 - 12:22pm \\frn-bedford\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00_Colbea - Seacoast Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Truck.dwg



SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
FIRE TRUCK MOVEMENT PLAN
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11"x17')
SCALE: 1"=30' (22"x34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

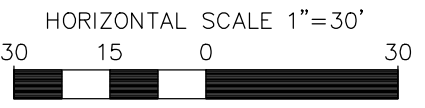
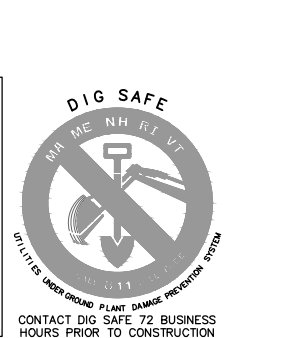
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER TOWN ENGINEERING REVIEW COMMENTS	JKC	CRR

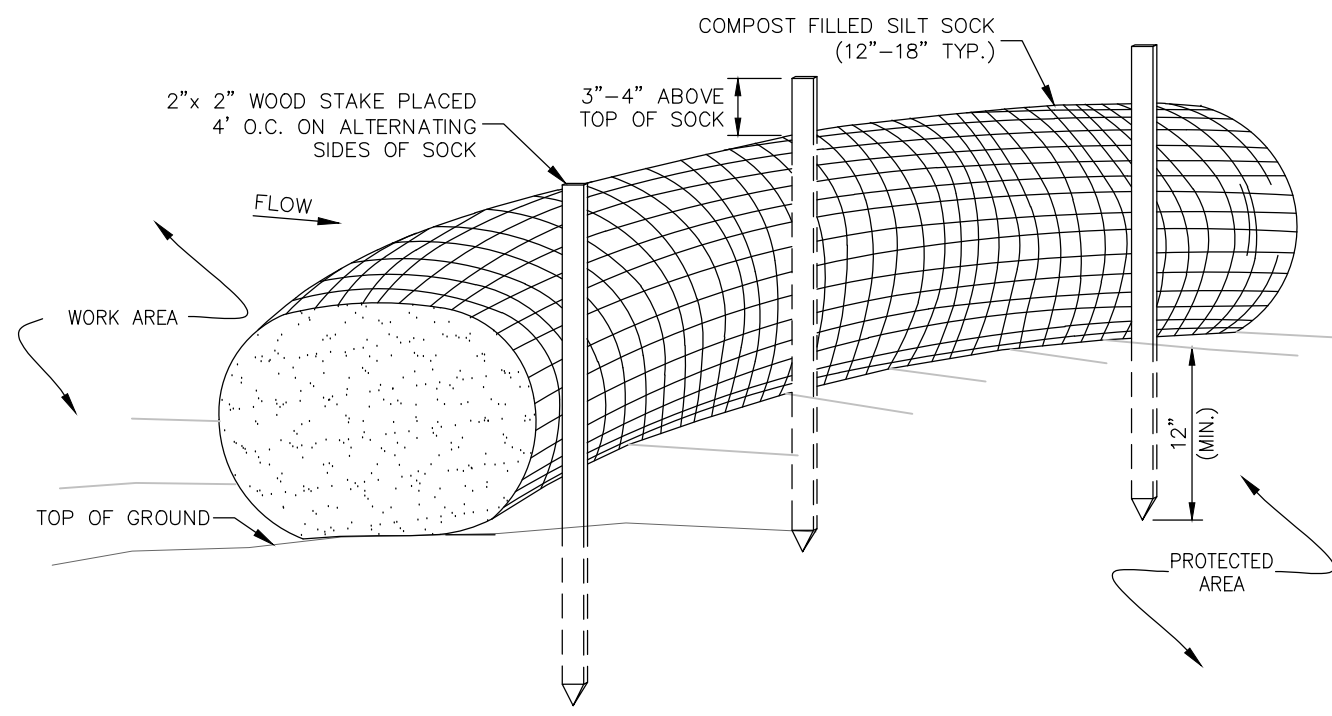
Seacoast Division

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

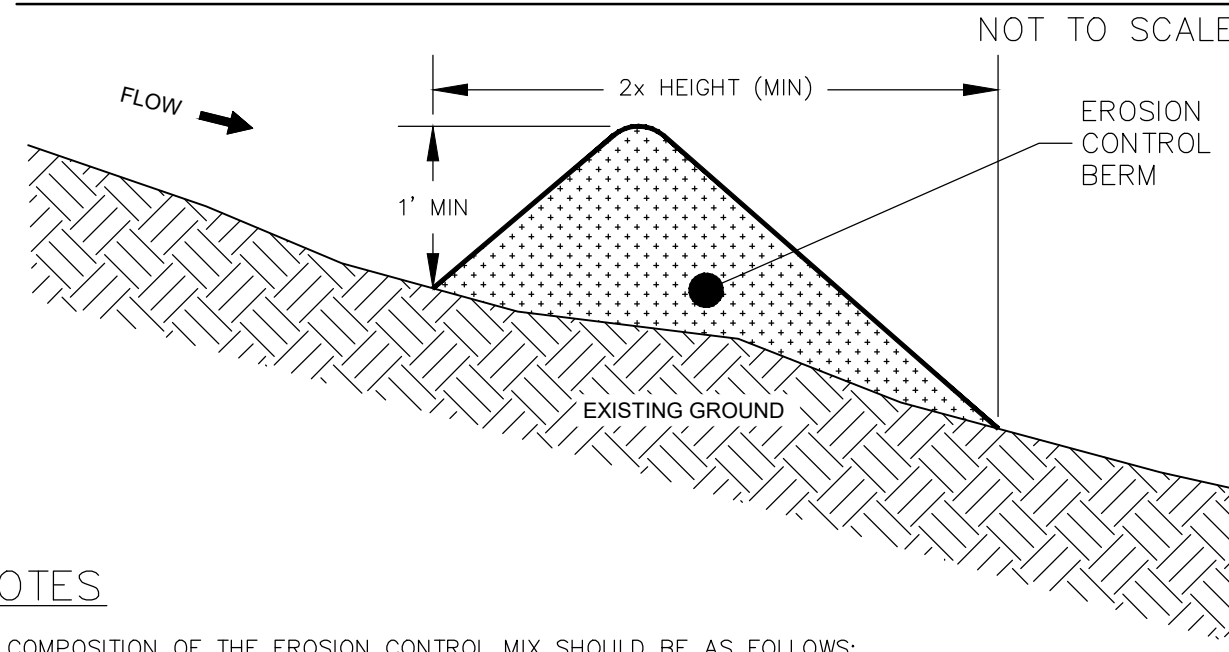
FILE: 18149.00
 DR: JKC
 CK: CRR
 FB: -
 CADFILE: 18149-00_TRUCK
 C-17

Jul 18, 2024 - 12:23pm
 \\frn-bedford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00_Colbea - Seacoast Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Truck.dwg



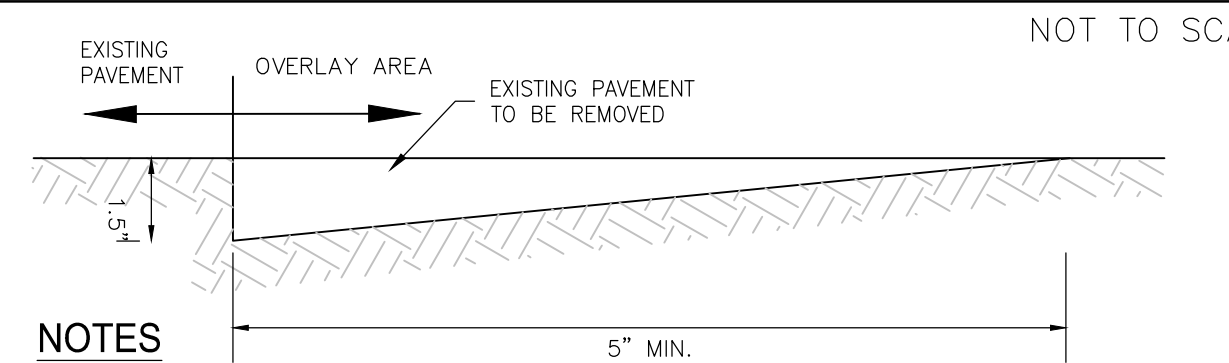
- NOTES**
- SILT SOCK SHALL BE FILTREXXSM SILT SOCKSM OR APPROVED EQUIVALENT.
 - SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
- SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
- COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK



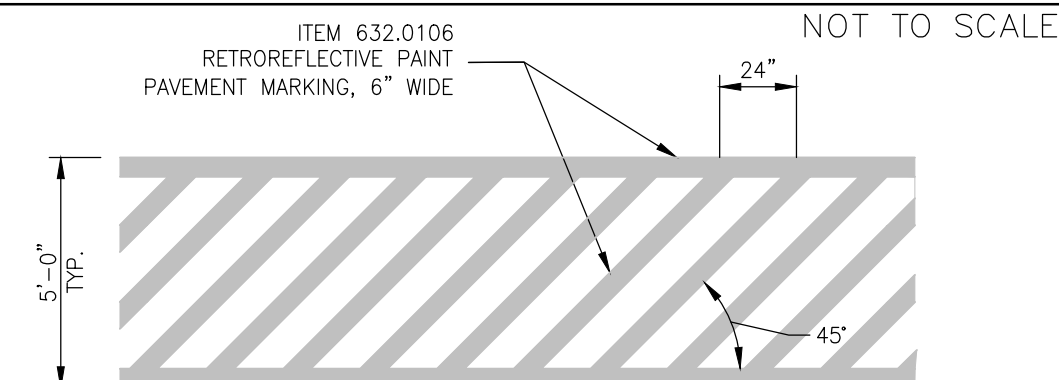
- NOTES**
- COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:
 - EROSION CONTROL MIX SHOULD CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHOULD MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC MATTER CONTENT SHOULD BE BETWEEN 25% AND 65%, DRY WEIGHT BASIS.
 - PARTICLE SIZE BY WEIGHT SHOULD BE 100% PASSING A 3" SCREEN, 90% TO 100% PASSING A 1" SCREEN, 70% TO 100% PASSING A 3/4" SCREEN, AND A MAXIMUM OF 30% TO 75% PASSING A 1/4" SCREEN.
 - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - THE MIX SHOULD NOT CONTAIN SILTS, CLAYS OR FINE SANDS.
 - SOLUBLE SALTS CONTENT SHOULD BE < 4.0 mmhos/cm.
 - THE pH SHOULD BE BETWEEN 5.0 AND 8.0.
 - THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.
 - THE BARRIER MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF TWO FEET WIDE.

EROSION CONTROL MIX BERM



- NOTES**
- USE KEY JOINT AT ALL LOCATIONS WHERE OVERLAY MEETS EXISTING PAVEMENT OR CONCRETE.
 - NEW PAVEMENT SHALL BE FLUSH WITH EXISTING PAVEMENT AND SHALL MEET OVERLAY GRADE WHERE IT ABUTS EXISTING PAVEMENT TO BE OVERLAPPED.

KEY JOINT



CROSSWALK (ON-SITE)

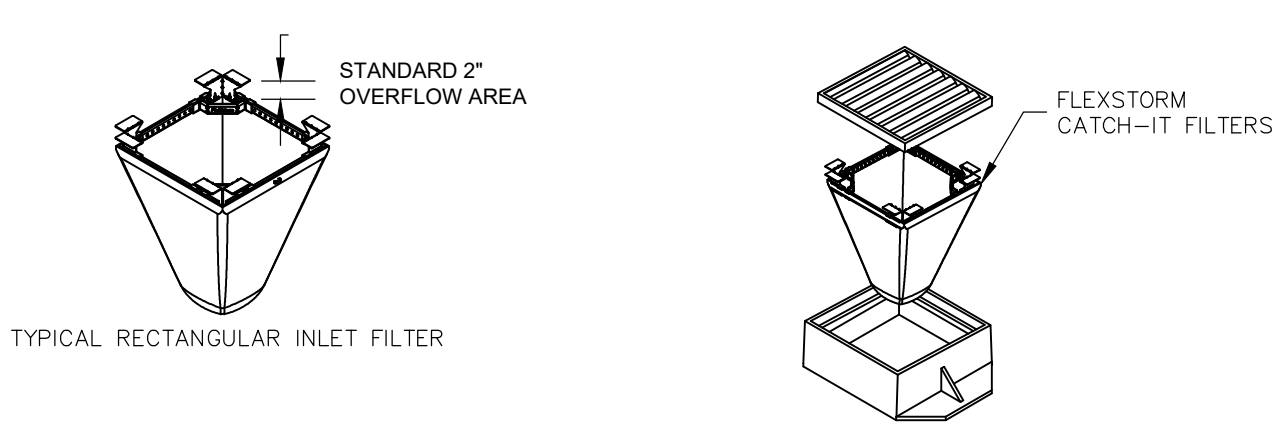
NOT TO SCALE

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

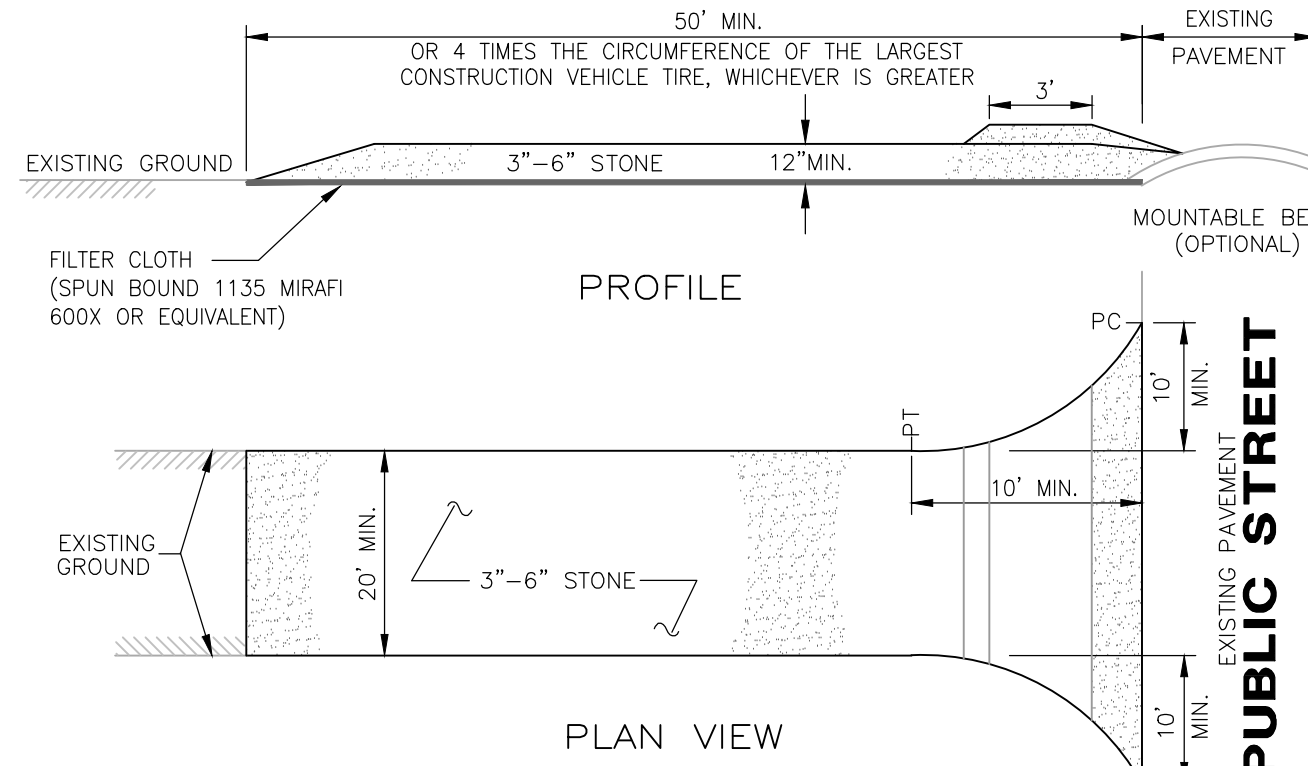
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL



- NOTES:**
- INSTALL PER MANUFACTURER'S SPECIFICATIONS.
 - INSPECTION SHOULD OCCUR FOLLOWING ANY RAIN EVENT > 1/4".
 - EMPTY THE SEDIMENT BAG PER MANUFACTURER'S SPECIFICATIONS.
 - REMOVED CAKED ON SILT FROM SEDIMENT BAG AND FLUSH WITH MEDIUM SPRAY WITH OPTIMAL FILTRATION.
 - REPLACE BAG IF TORN OR PUNCTURED TO > 1/2" DIAMETER ON LOWER HALF OF BAG.
- ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC. A DIVISION OF ADS, INC. WWW.INLETFILTERS.COM (866) 287-8655 INFO@INLETFILTERS.COM

INLET PROTECTION

NOT TO SCALE



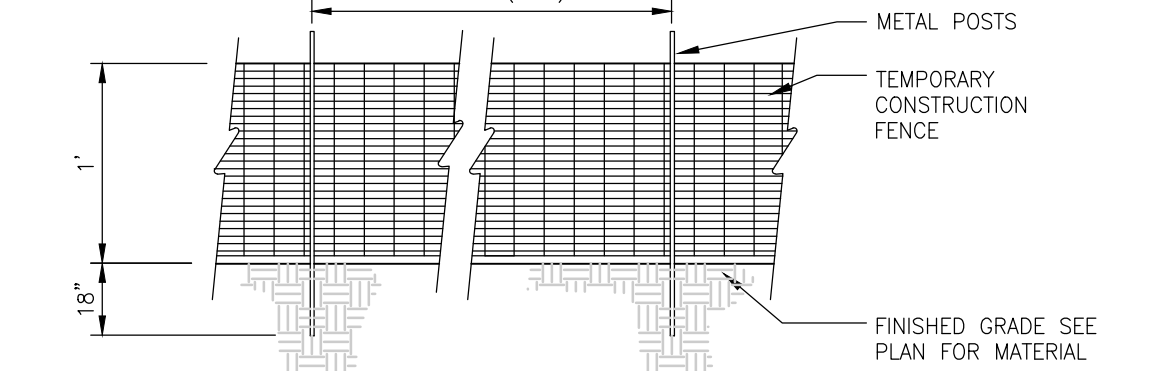
- NOTES**
- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
 - WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
 - MAINTENANCE - 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.
 - 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.
 - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

NOTE

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



TEMPORARY CONSTRUCTION FENCE

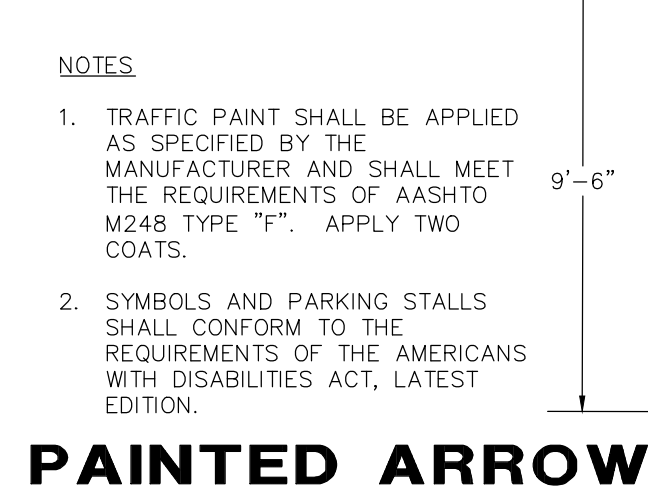
NOT TO SCALE



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

STOP BAR

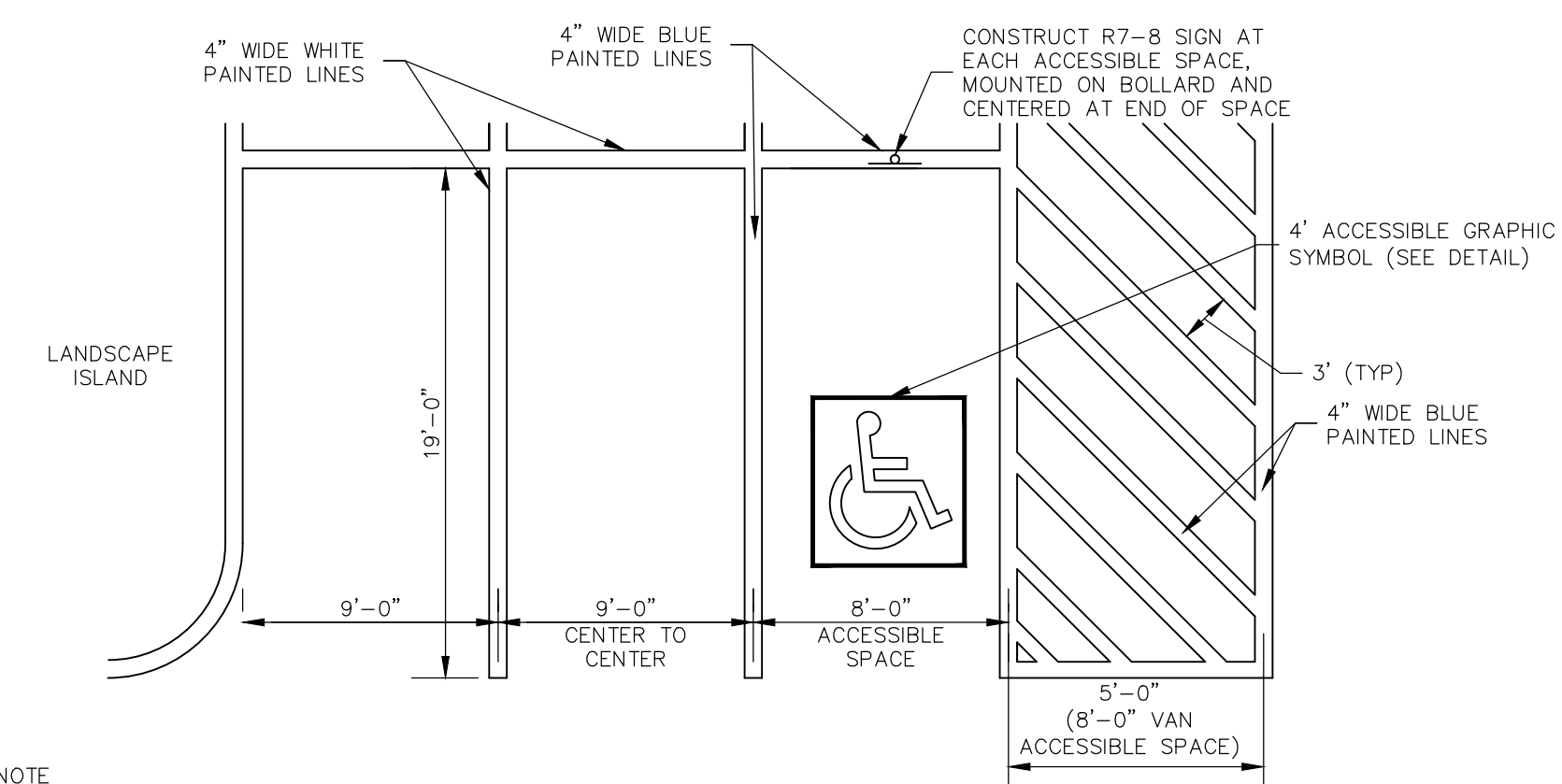
NOT TO SCALE



PAINTED ARROW

NOT TO SCALE

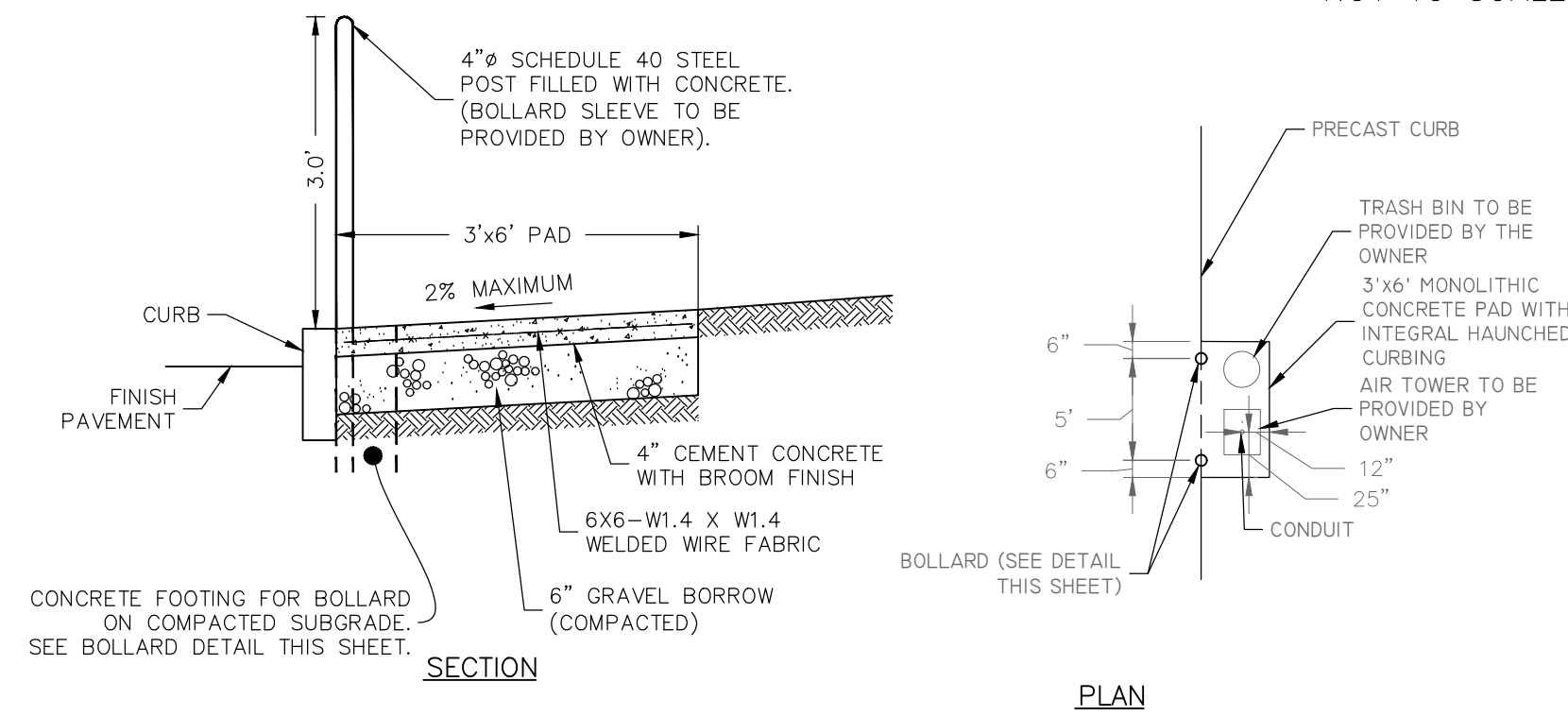
Copyright 2024 ©TFMoran, Inc. 48 Constitution Drive, Bedford, N.H. 03110
 All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
 This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



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

TYPICAL PARKING LAYOUT

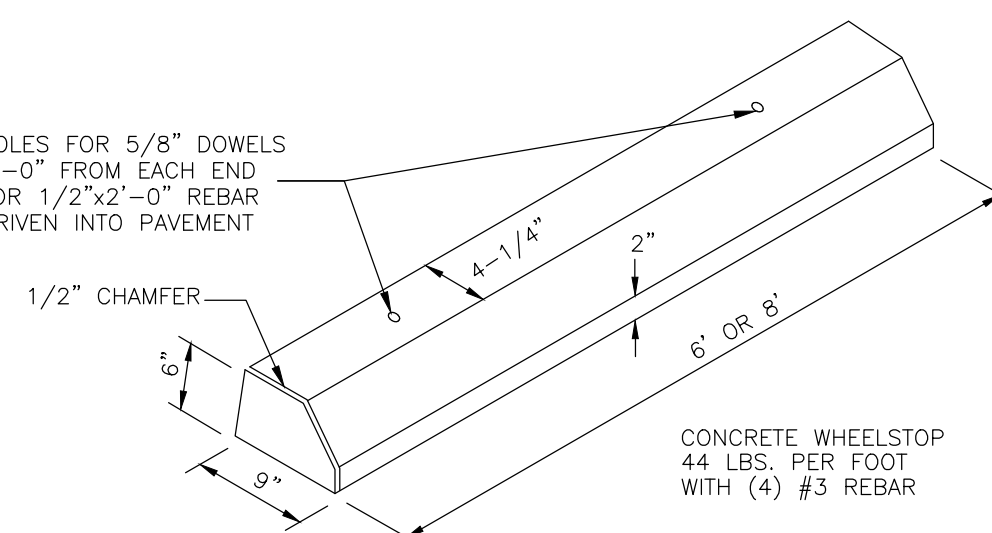
NOT TO SCALE



- NOTES:**
- AIR TOWER AND SIGN INSTALLED BY OWNER.

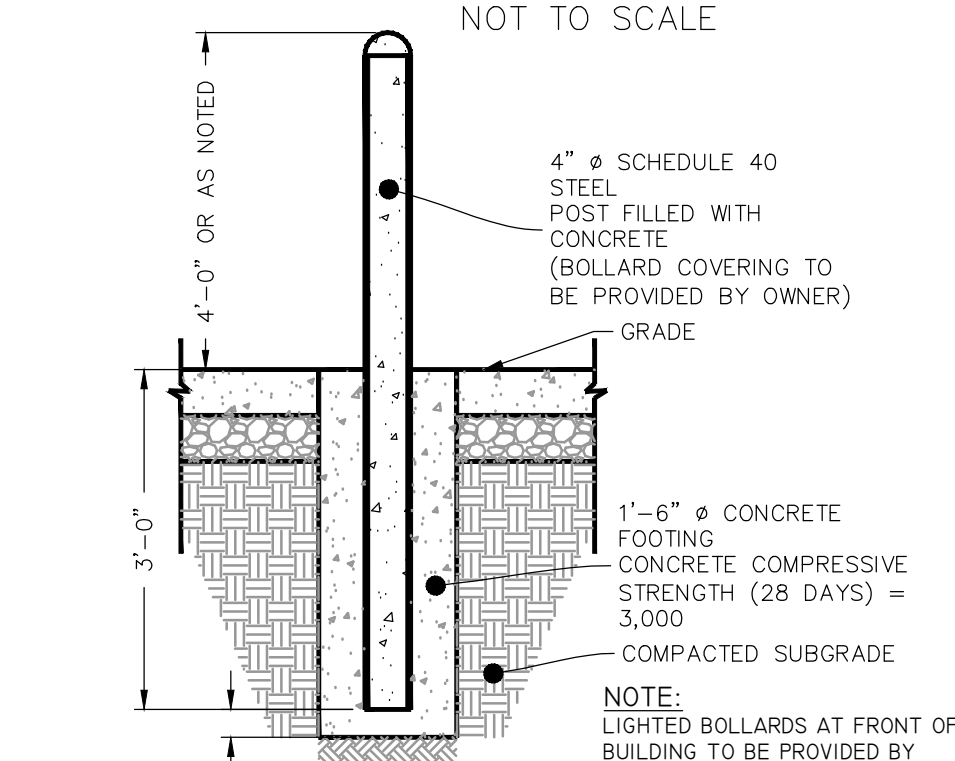
AIR TOWER FOUNDATION DETAIL

NOT TO SCALE



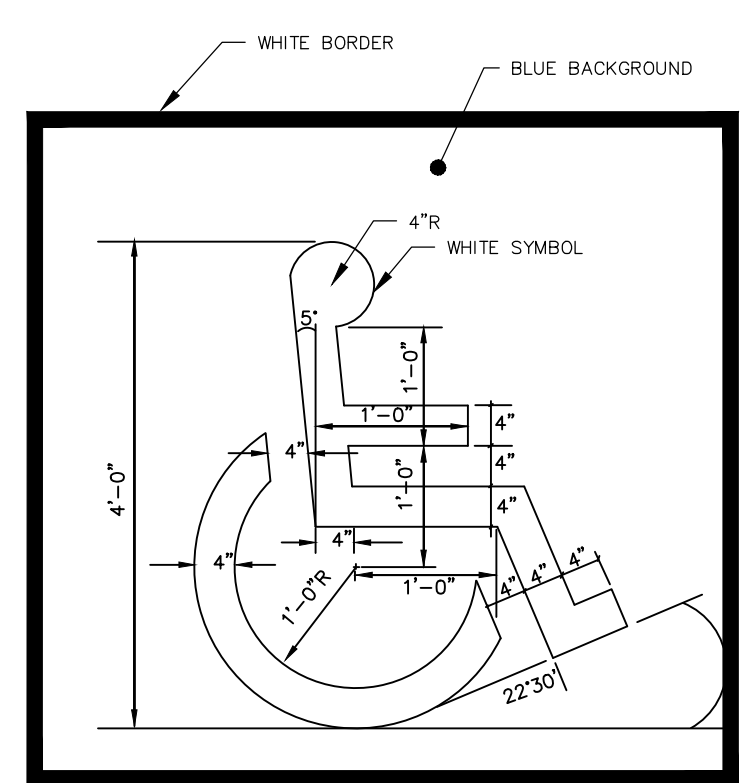
CONCRETE WHEEL STOP

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE



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

ACCESSIBLE GRAPHIC SYMBOL

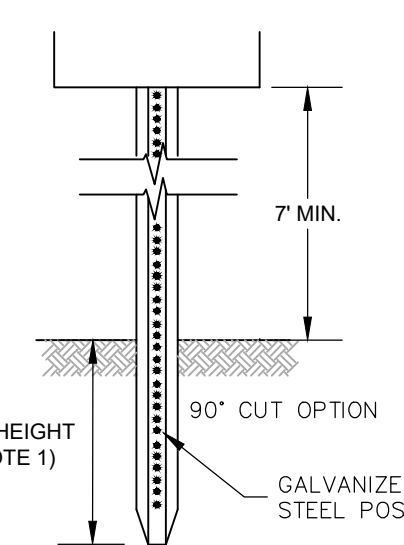
NOT TO SCALE



- NOTES:**
- SIGNS TO BE WALL MOUNTED WITH WEATHER RESISTANT DOUBLE SIDED TAPE, PLACED BEHIND ACCESSIBLE SPACES AS SHOWN ON SITE PLAN.
 - 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



SIGN POST

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-DRYED PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

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

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
 GAS STATION/CONVENIENCE STORE/CAR WASH
 91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
 COLBEA ENTERPRISES, LLC

SCALE: NTS

DECEMBER 13, 2023



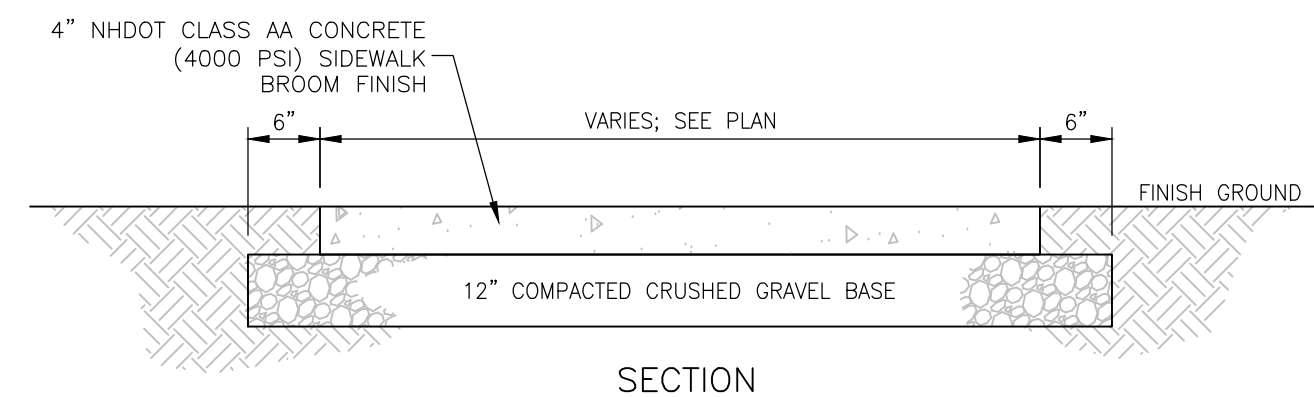
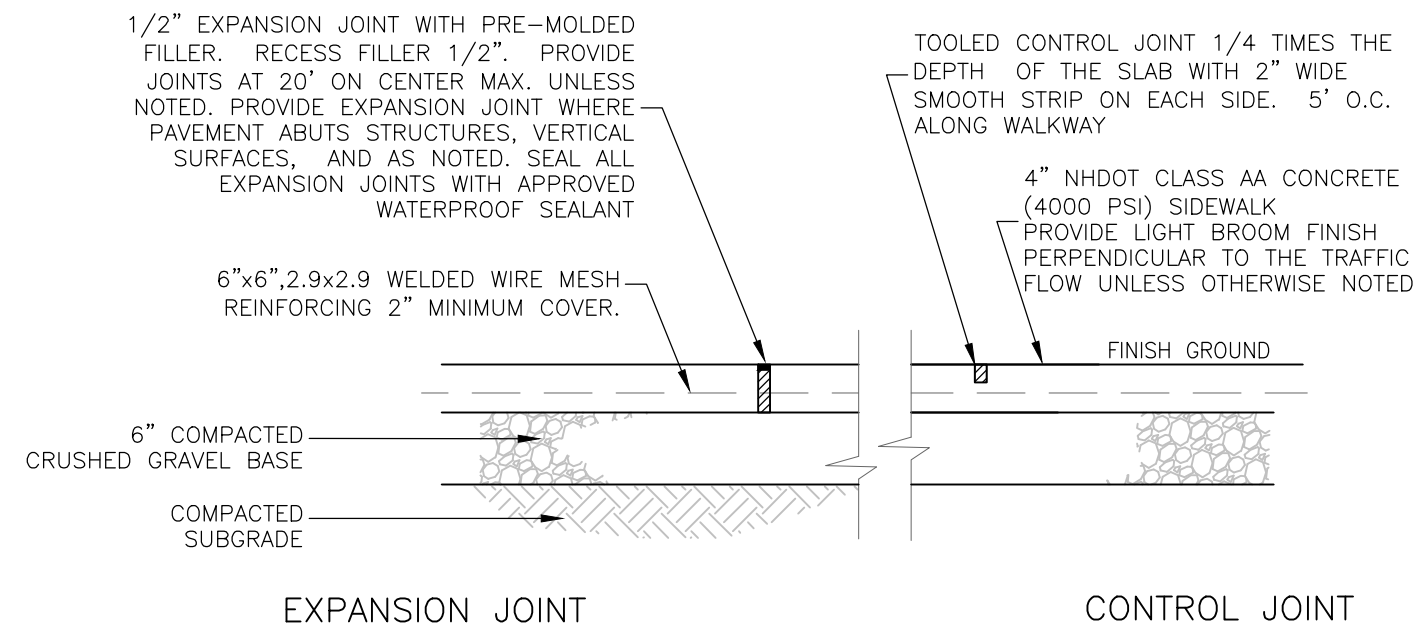
Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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

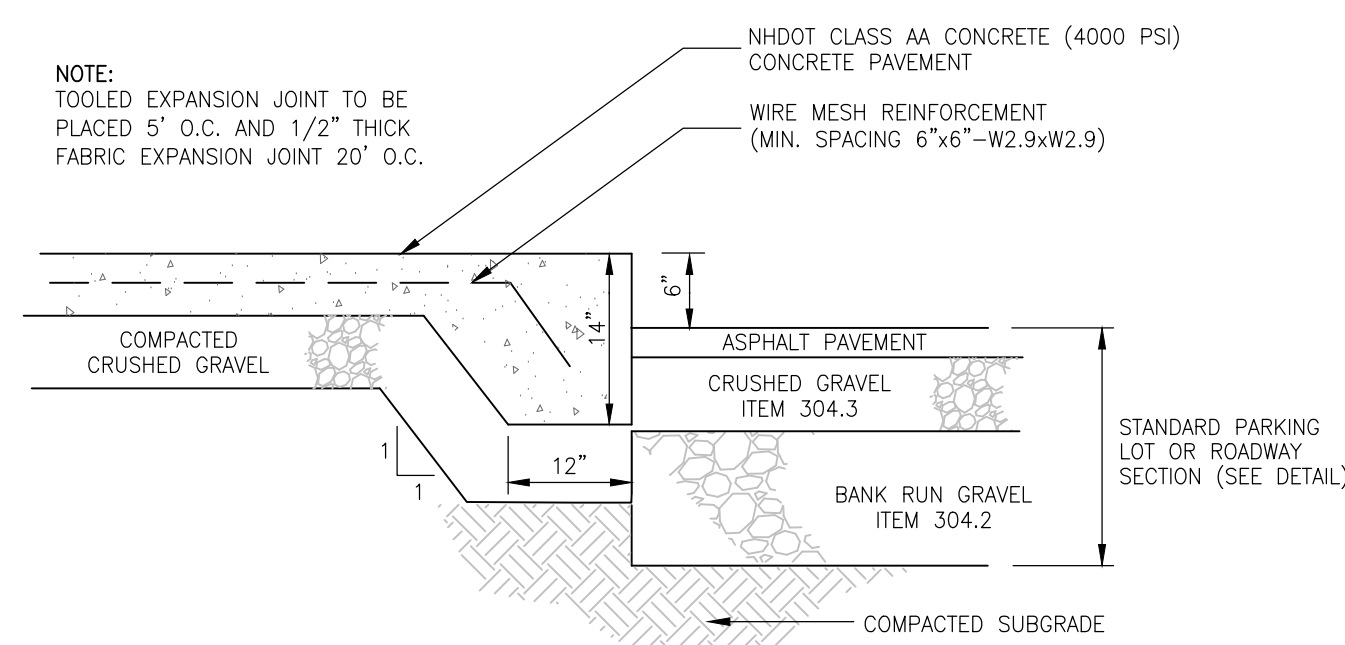
REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

18149.00	DR	JKC	FB	-
	CK	CRR	CADFILE	18149-00_DETAILS

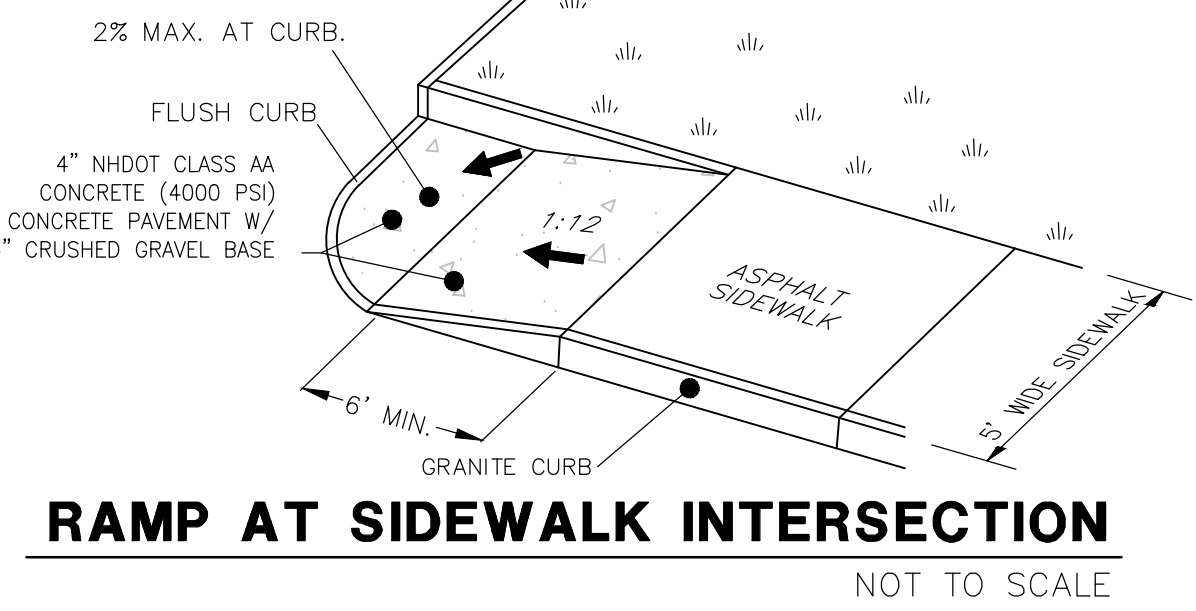
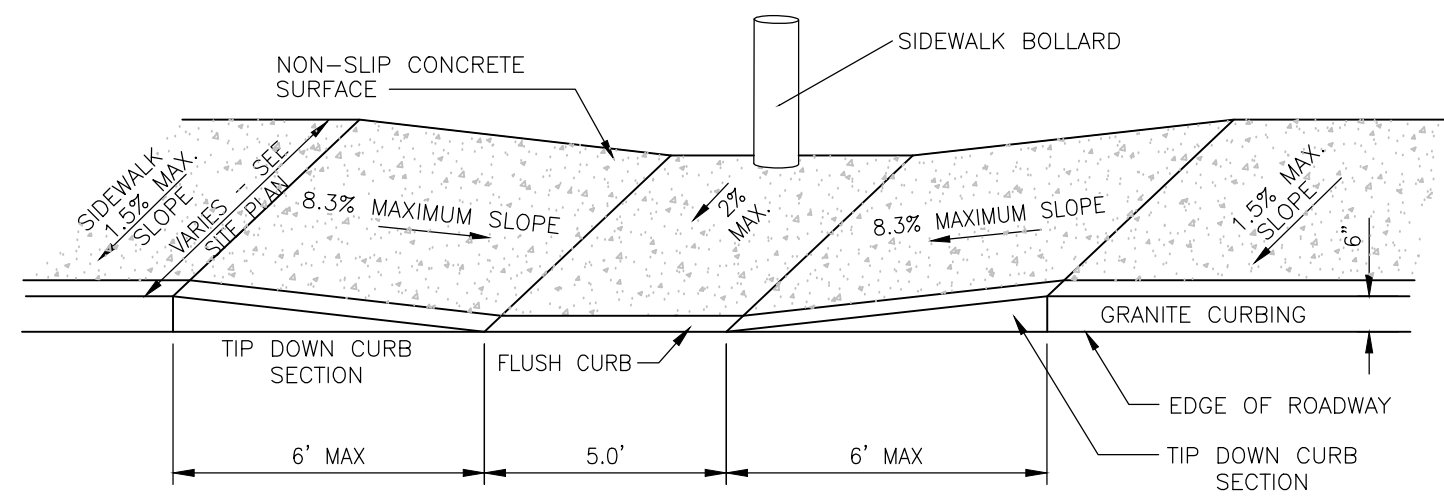
C-18



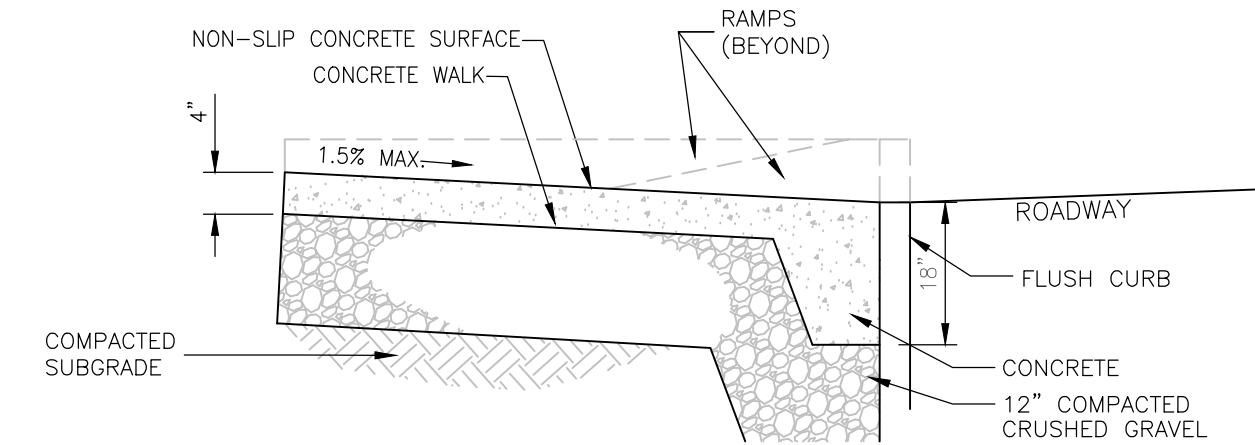
CONCRETE SIDEWALK
NOT TO SCALE



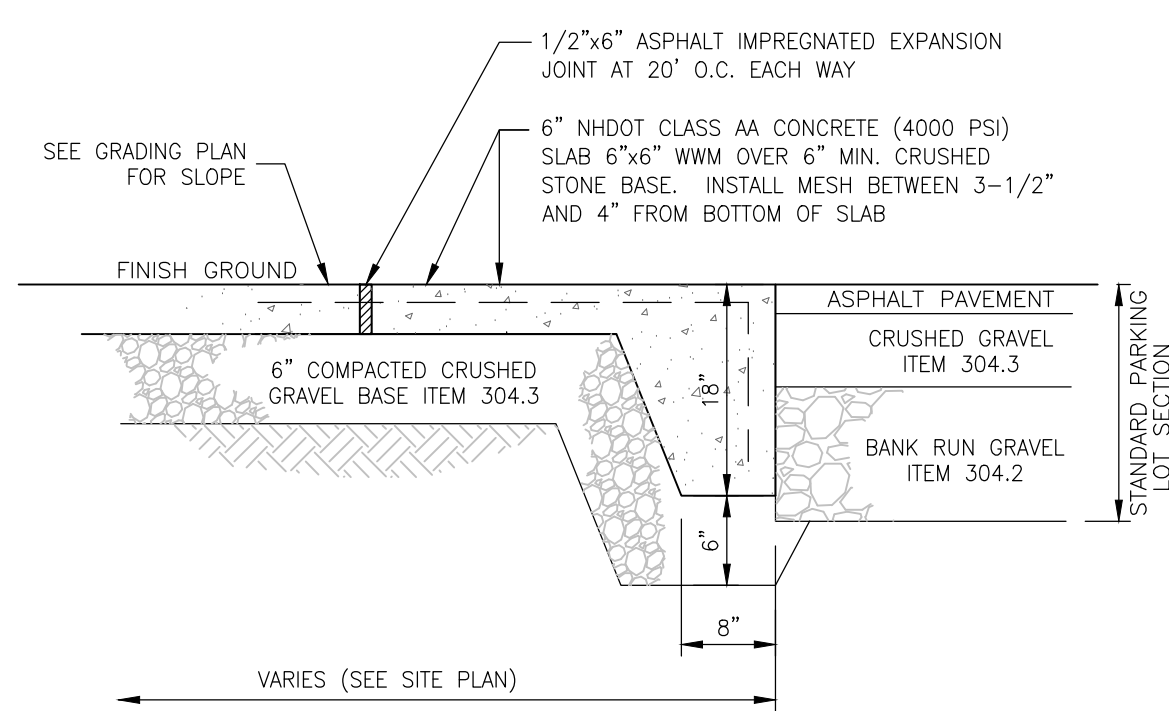
INTEGRATED CONCRETE CURB AT SIDEWALK
NOT TO SCALE



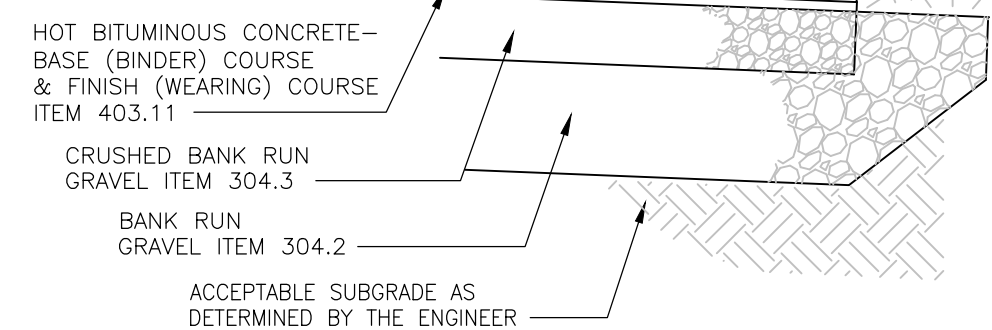
RAMP AT SIDEWALK INTERSECTION
NOT TO SCALE



ACCESSIBLE RAMP RECESSED IN WALK
NOT TO SCALE

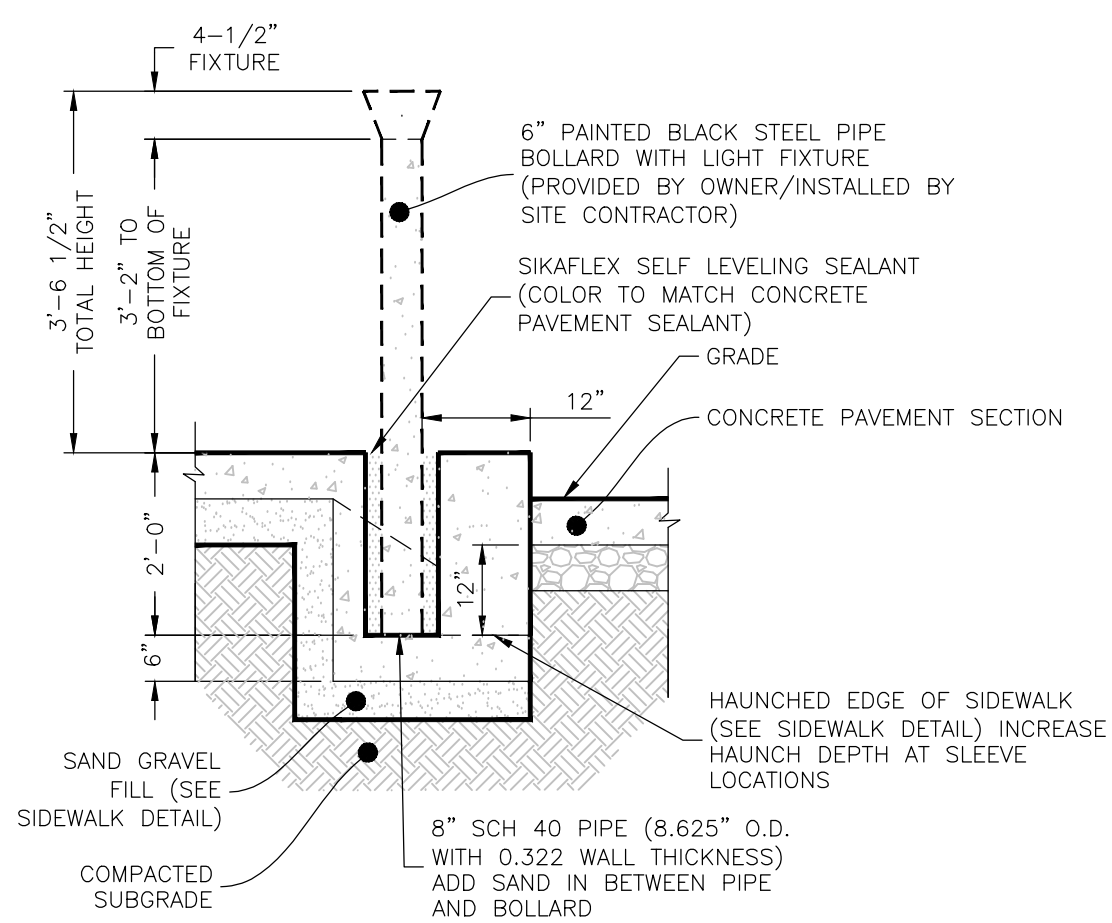


CONCRETE LOADING APRON
NOT TO SCALE

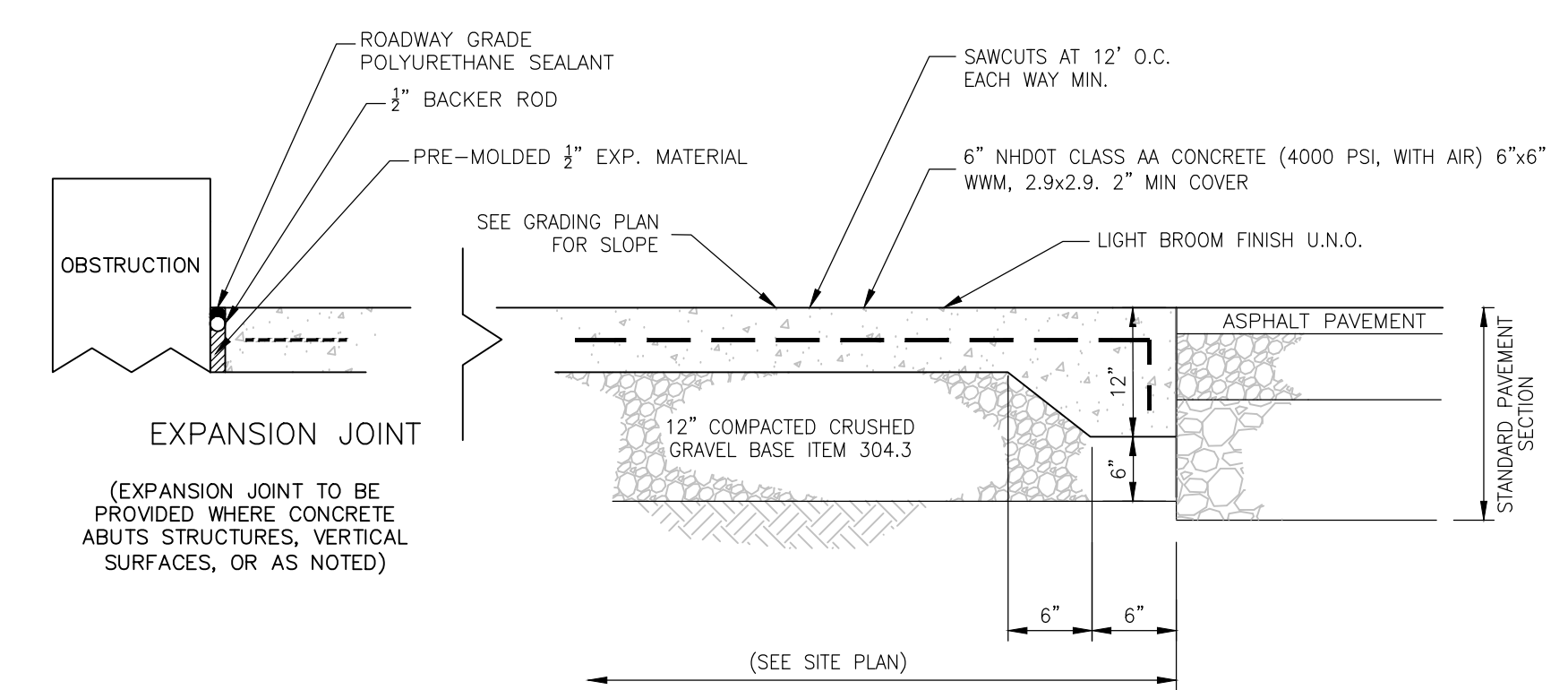


- NOTES**
- SEE GRADING & DRAINAGE PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
 - PROVIDE CLEAN BUTT TO EXISTING PAVEMENT— USE TACK COAT. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
 - REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
 - ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.
 - 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.
 - 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.
 - 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.
 - THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.
 - IT IS THE RESPONSIBILITY OF THE OWNER TO HIRE A TESTING AGENCY TO INSPECT PAVEMENT SUBGRADE AREAS DURING CONSTRUCTION.
 - ALL PAVEMENT TO MEET AASHTO H-20 LOADING.

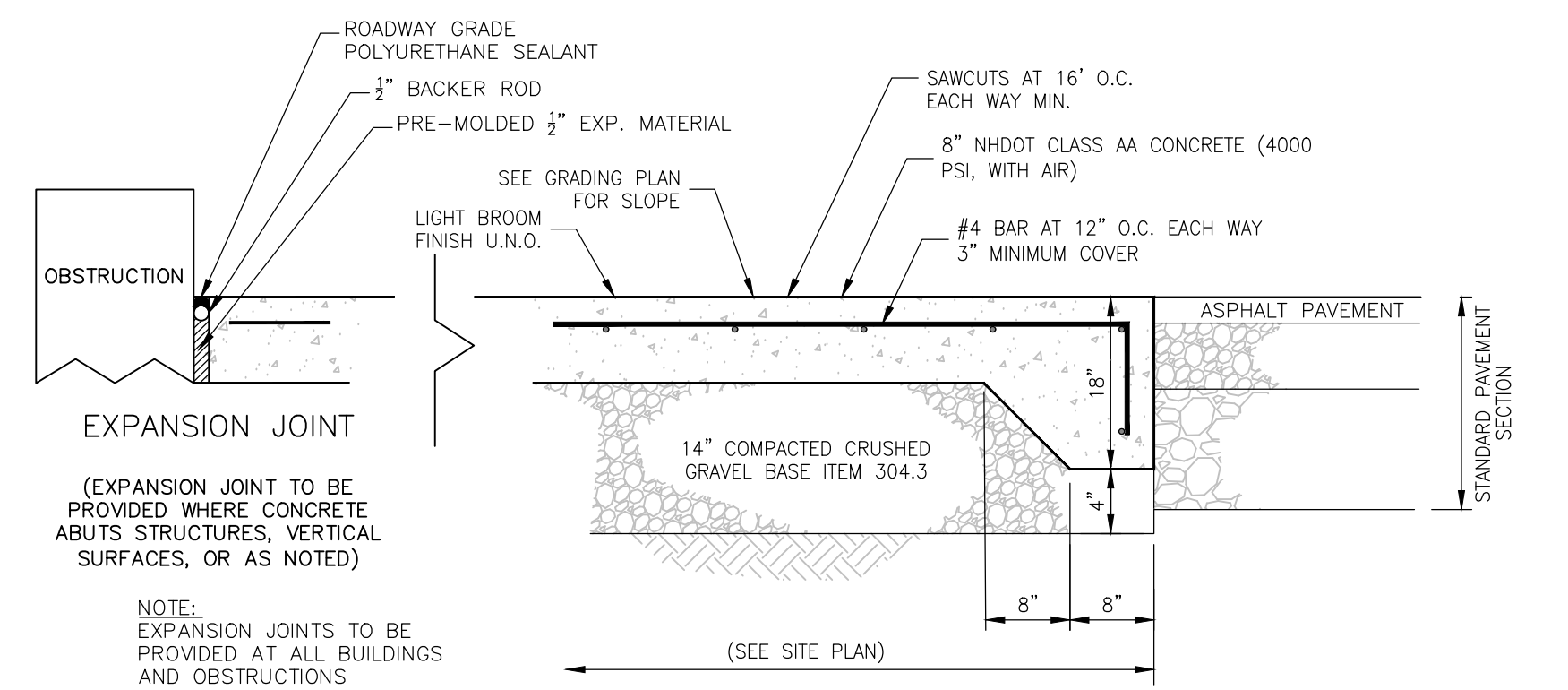
PARKING LOT SECTION
NOT TO SCALE



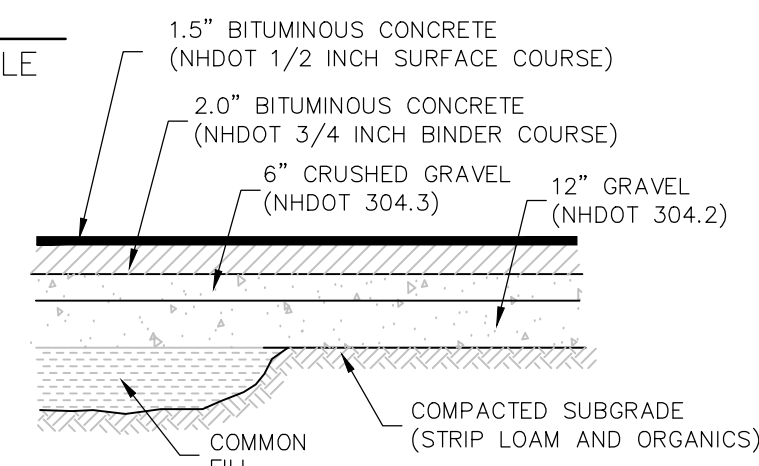
SIDEWALK LIGHTED BOLLARD DETAIL
NOT TO SCALE



LIGHT DUTY CONCRETE PAD
NOT TO SCALE



HEAVY DUTY CONCRETE PAD
NOT TO SCALE



STANDARD DUTY PAVEMENT

- NOTES**
- SEE GRADING & EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
 - 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.
 - REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
 - BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SECTION 401.
 - 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.
 - 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.
 - 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.
 - THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.
 - ALL PARKING SPACES SHALL BE STANDARD DUTY. ALL OTHER LOCATIONS SHALL BE HEAVY DUTY.

PAVEMENT SECTIONS
NOT TO SCALE

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

SITE DEVELOPMENT PLANS
TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS
DECEMBER 13, 2023

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

18149.00
DR JKC FB
CK CRR CADFILE
18149-00-DETAILS
C-19

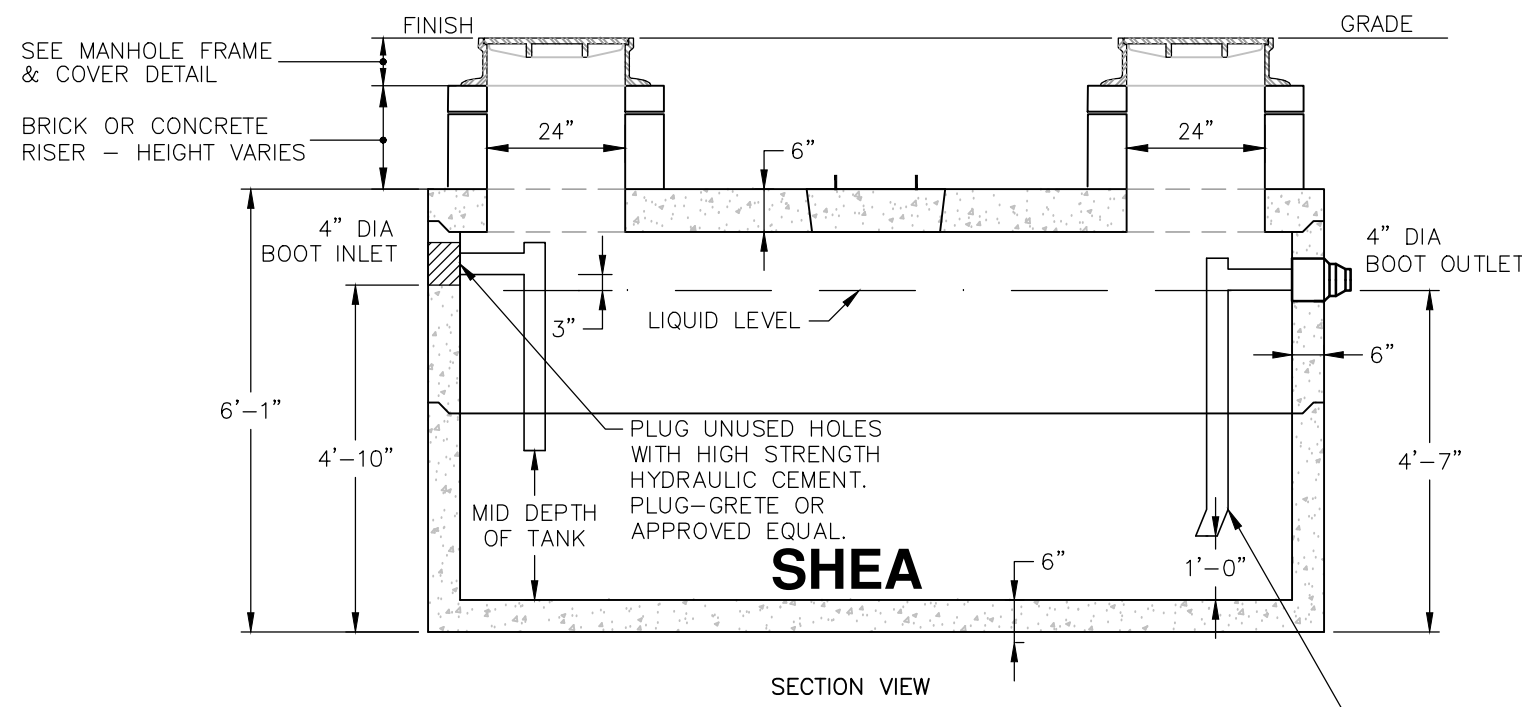
APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
CHAIRMAN _____ SIGNATURE DATE _____ AND
SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

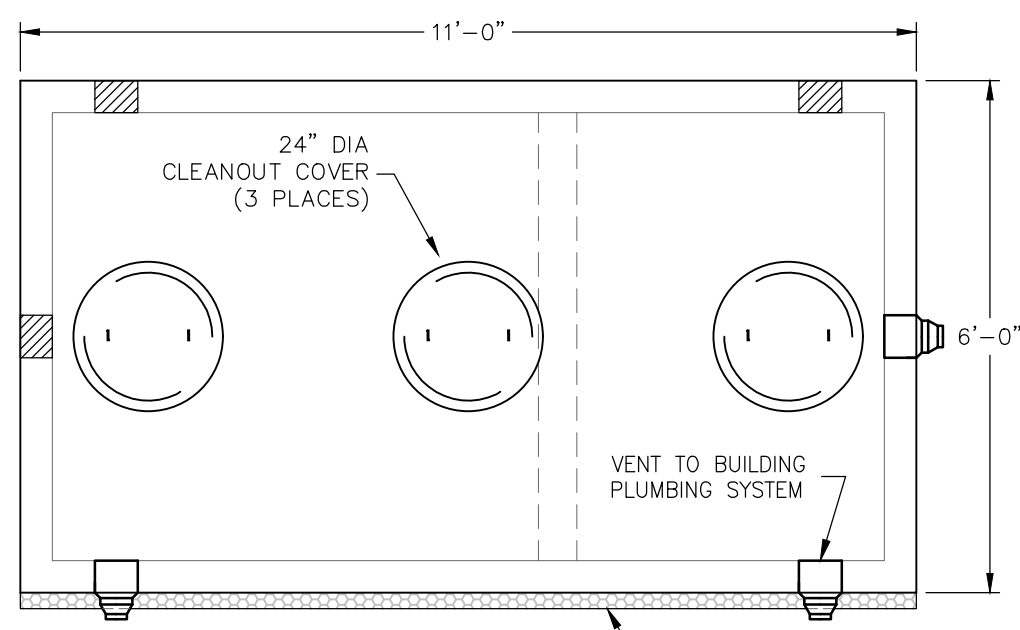
Copyright 2024 ©TFMoran, Inc.
48 Constitution Drive, Bedford, N.H. 03110
All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



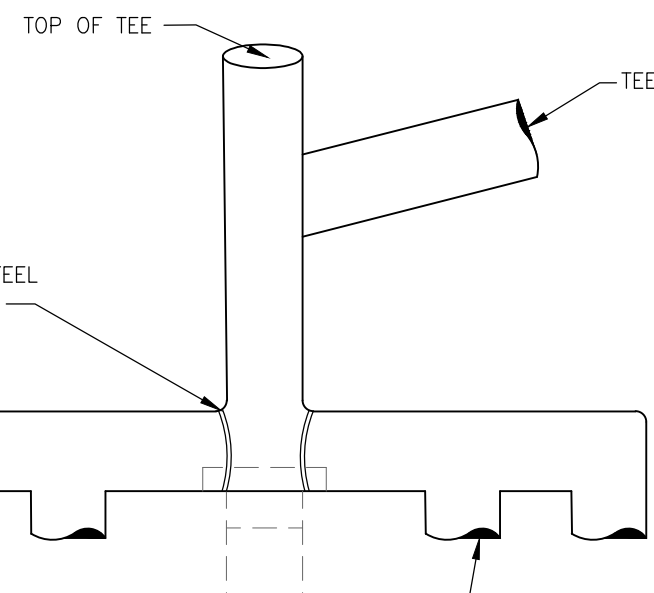
NOTES:

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 BATTLE 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.

ANGLED TEE (22 1/2°)
MANIFOLD (SEE DETAIL)

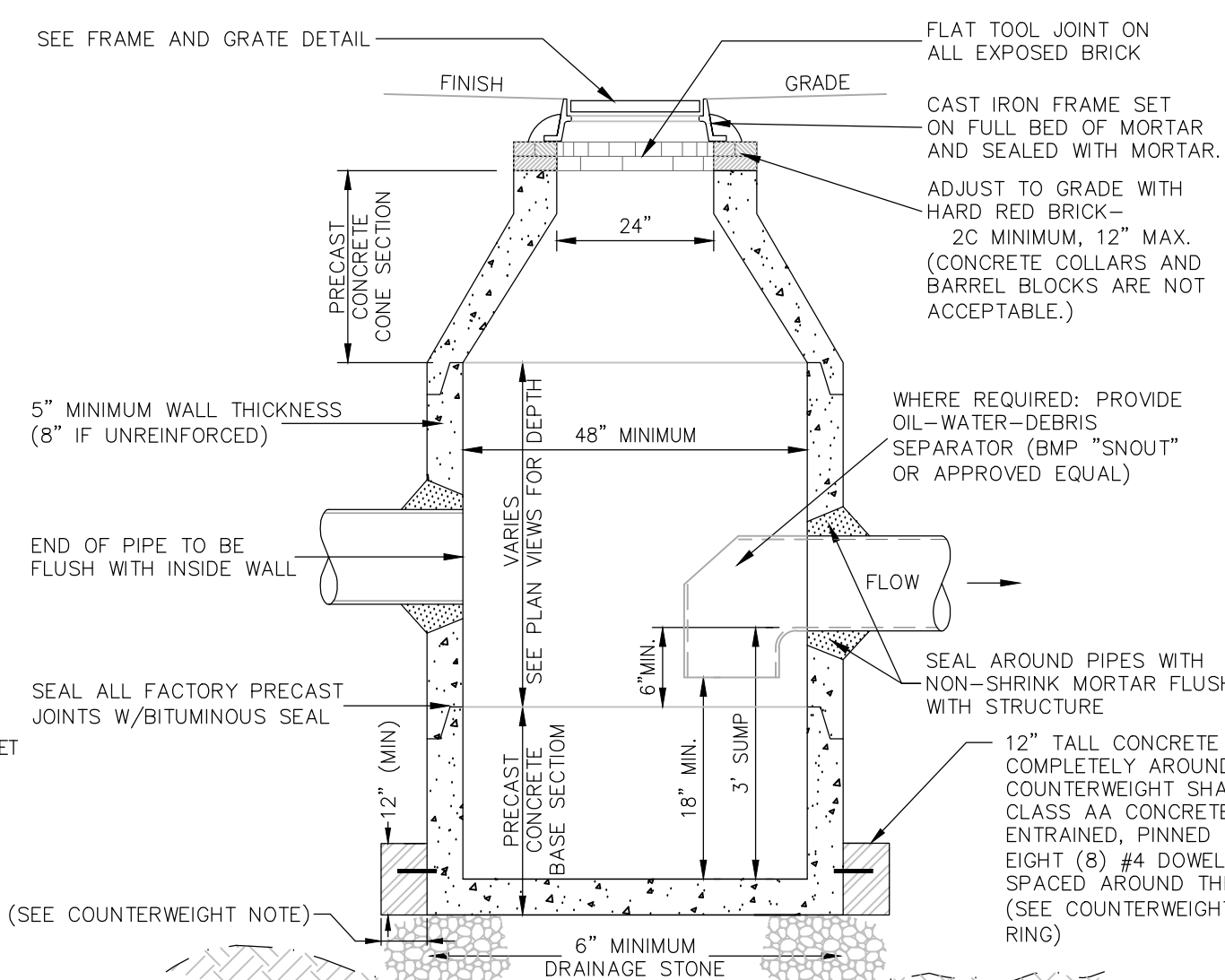


INSULATE WITH RIGID STYROFOAM
INSULATION (DOW HI-40 OR EQUAL)
ON WALL BETWEEN TANK AND BUILDING



TEE MANIFOLD

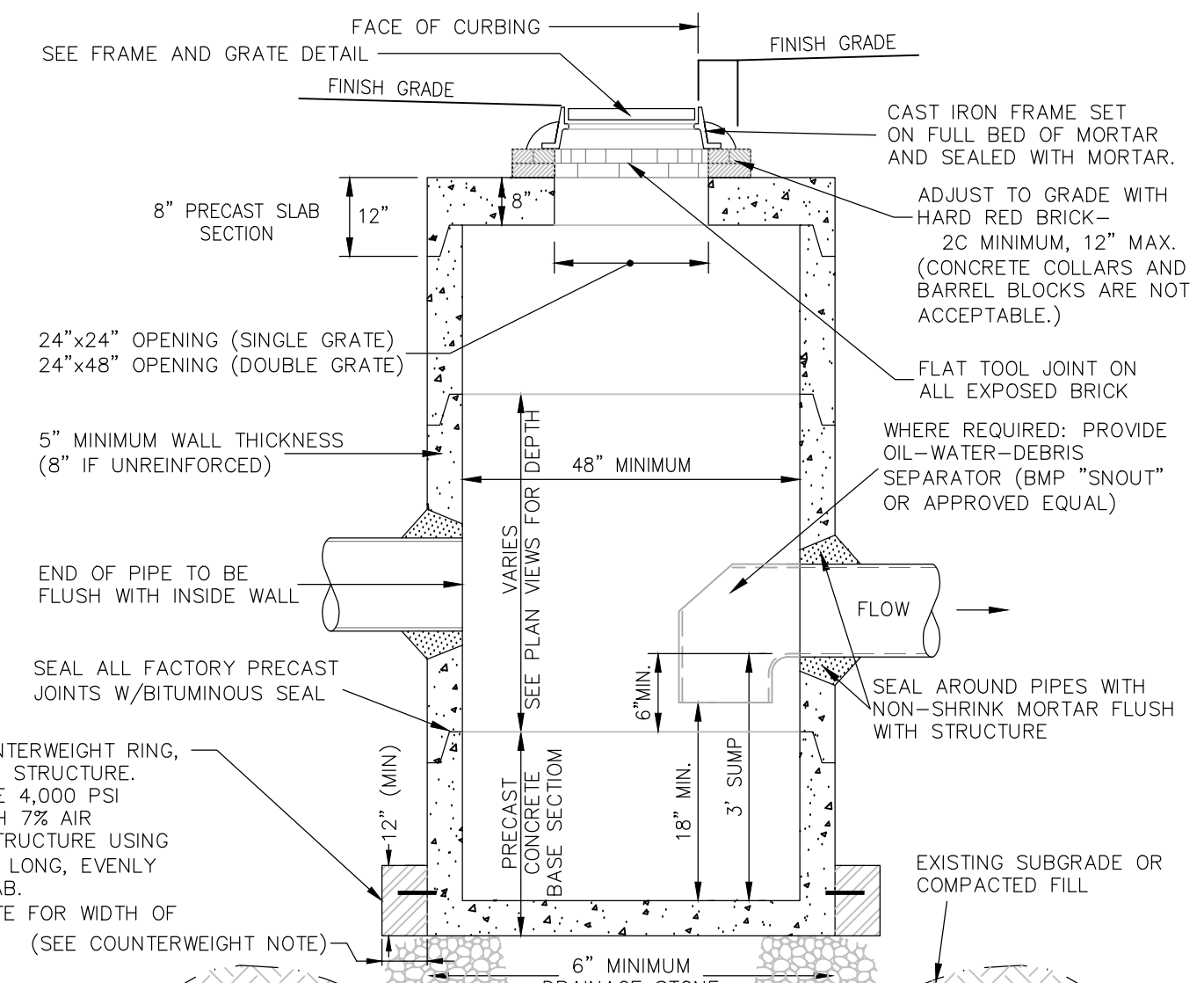
GREASE TRAP SCALE AS NOTED



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

CATCH BASIN

CONCENTRIC CONE NOT TO SCALE

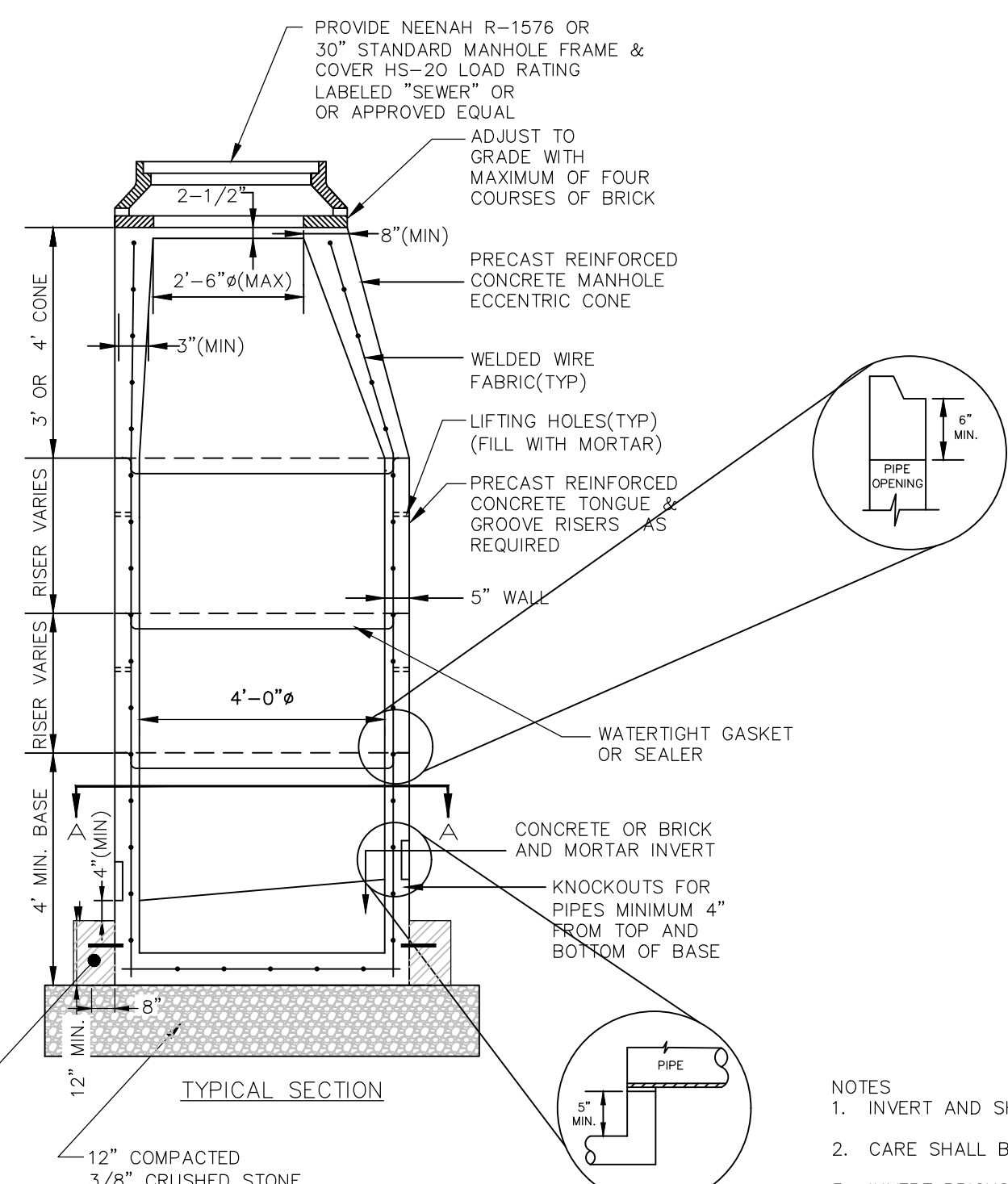


NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478

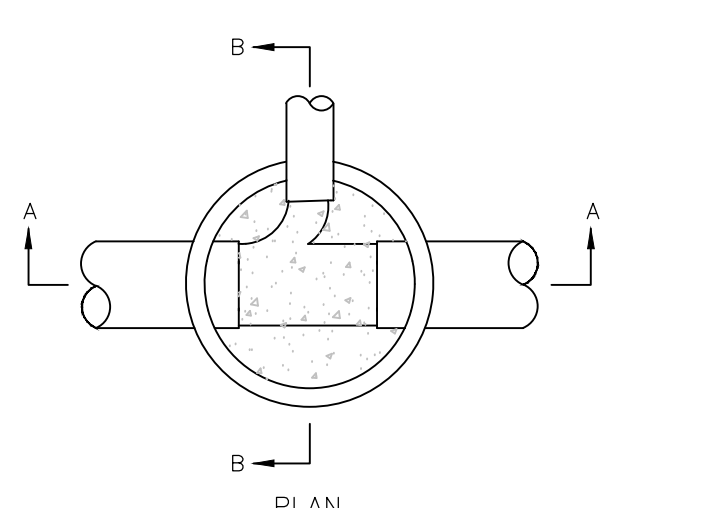
CATCH BASIN

SLAB TOP NOT TO SCALE

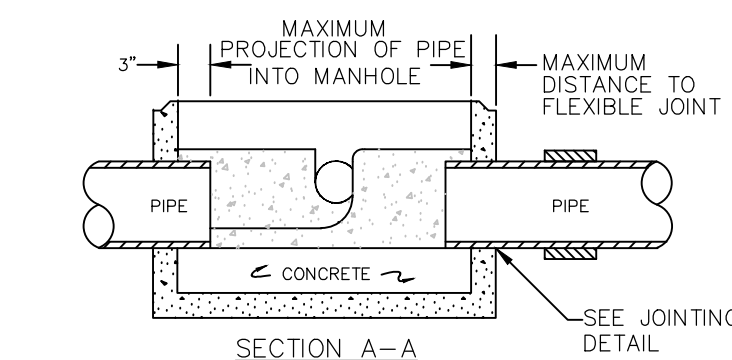
1,500 GALLON GREASE TRAP CHAMBER



NOT TO SCALE



SECTION B-B

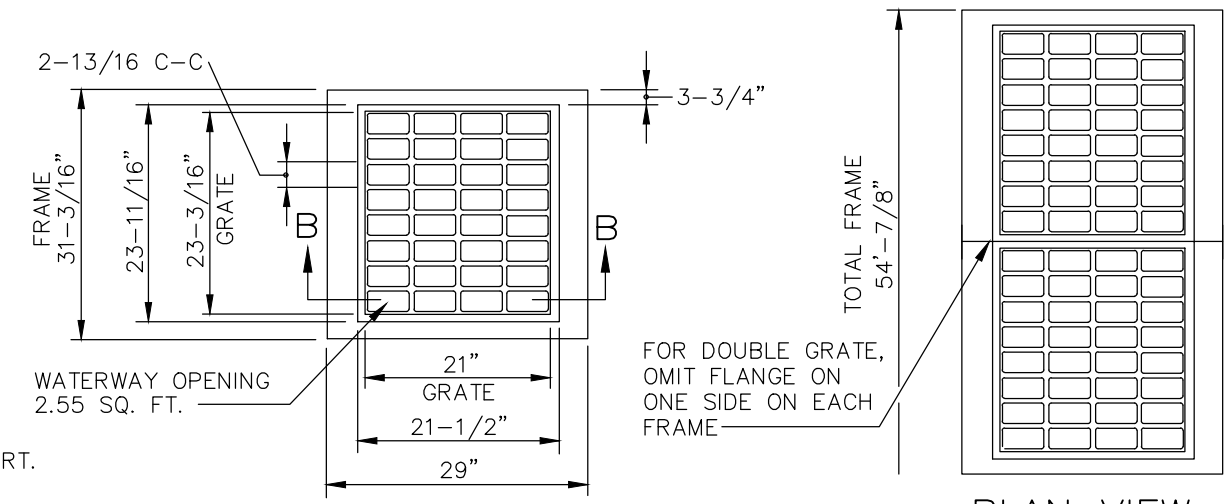


NOTES:

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.
4. MANHOLE FRAME AND COVERS SHALL BE OF HEAVY DUTY DESIGN, GRAY IRON CASTING, AND SHALL HAVE THE WORD "SEWER" PLAINLY CAST INTO THE CENTER OF EACH COVER IN 3-INCH (MIN. HEIGHT) LETTERS.
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.

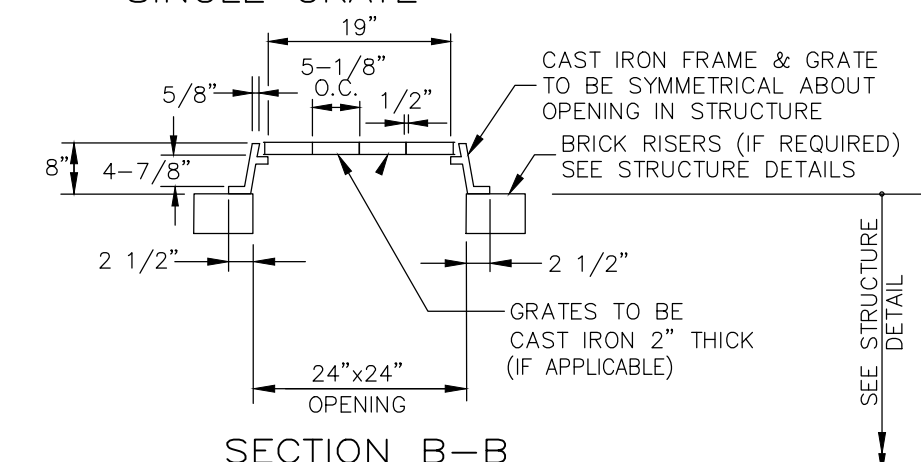
SEWER MANHOLE

NOT TO SCALE



PLAN VIEW SINGLE GRATE

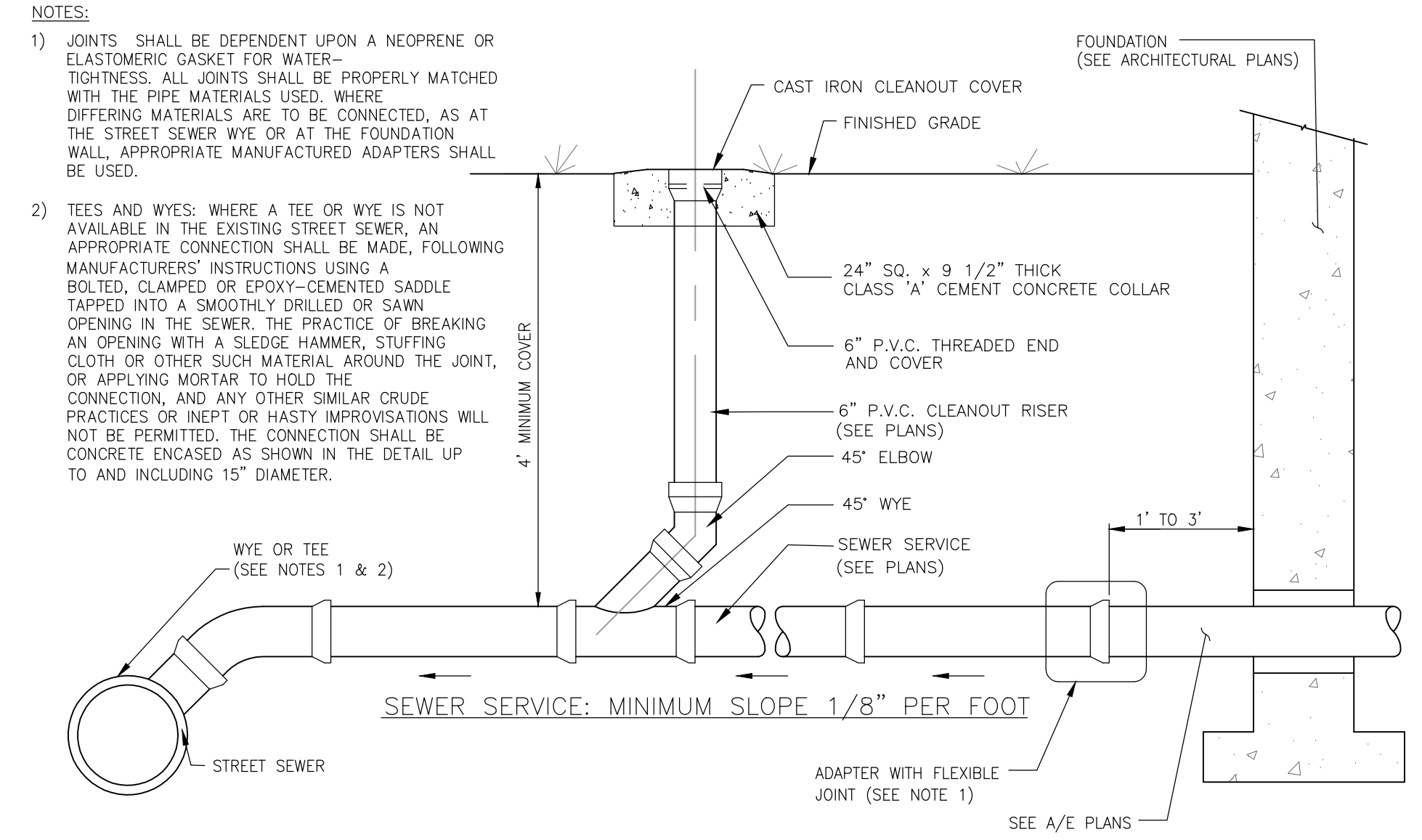
PLAN VIEW DOUBLE GRATE



SECTION B-B

FRAME AND GRATE (NHDOT TYPE B ALT 1)

NOT TO SCALE



SEWER SERVICE & CLEANOUT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS

DECEMBER 13, 2023

Seacoast Division



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

18149.00 DR JKC FB
 CK CRR CADFILE 18149-00-DETAILS C-21

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE _____ DATE _____ AND
 SECRETARY _____ SIGNATURE _____ DATE _____

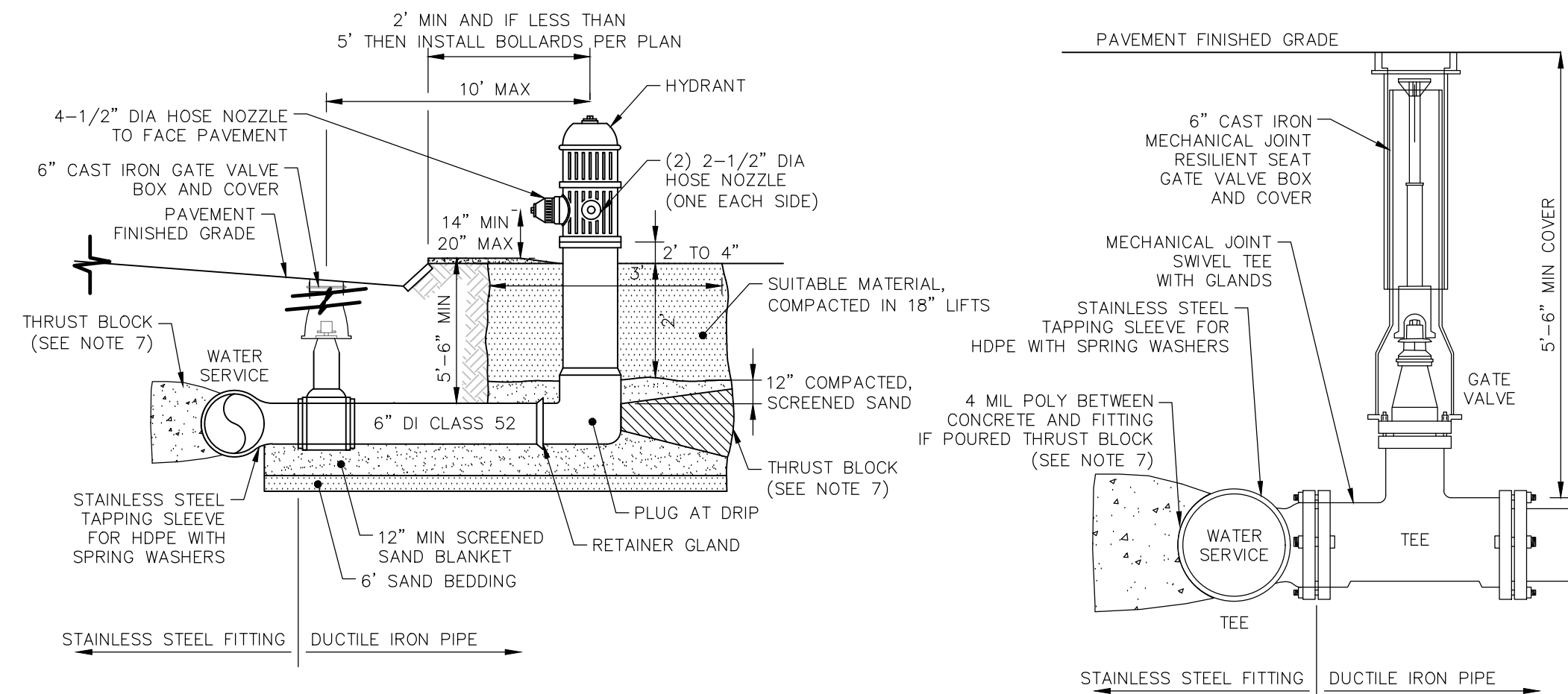
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

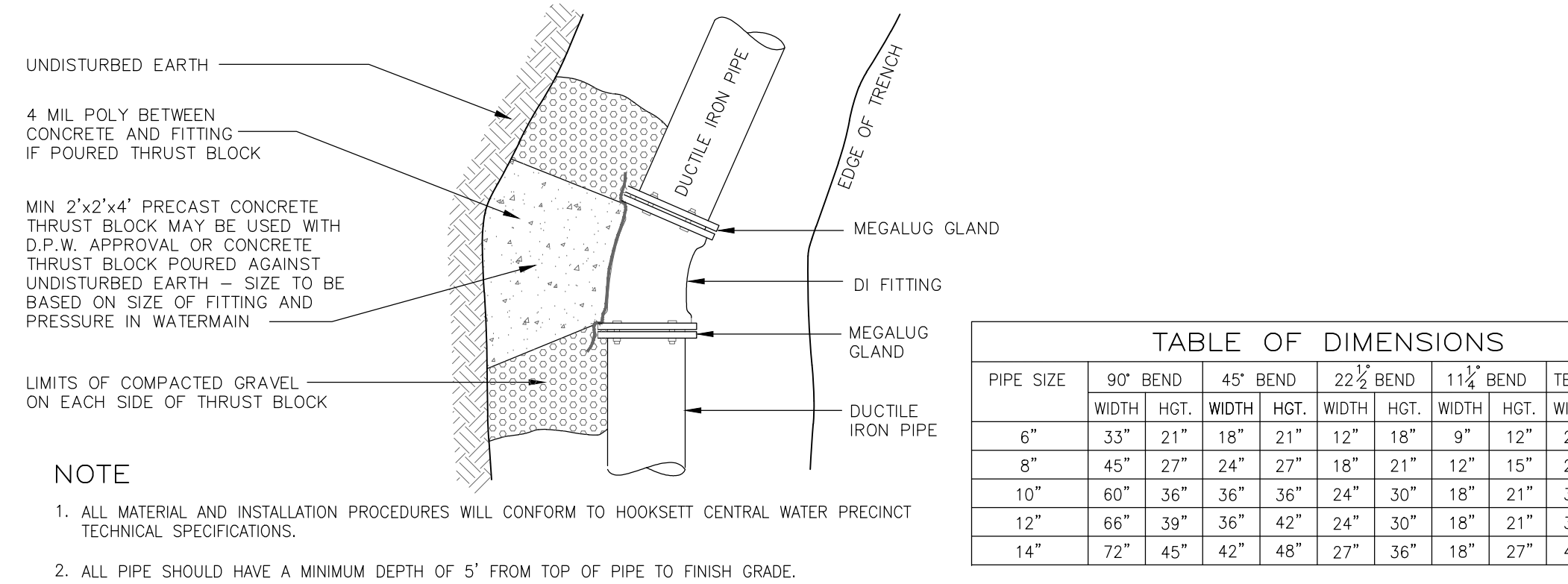
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



- NOTES:**
- ALL MATERIALS, INSTALLATION, OPERATION, MANUFACTURER AND MODEL, AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY/TOWN'S ESTABLISHED RULES AND PROCEDURES.
 - HYDRANT SHALL BE PAINED PER CITY/TOWN REQUIREMENTS.
 - HYDRANT SHALL CONFORM TO AWWA C502 AND CITY/TOWN SPECIFICATIONS AND PROCEDURES.
 - HYDRANT SHALL BE FURNISHED WITH A TEFLON-COATED 5-1/4 INCH VALVE, ONE 4-INCH STEAMER CONNECTION, TWO 2-1/2 INCH HOSE CONNECTIONS, PLUGGED DRAIN HOLES, AND SHALL OPEN LEFT.
 - HYDRANT INLET SHALL HAVE MECHANICAL JOINTS CONFORMING TO ANSI A21.11/AWWA C111.
 - THE STAINLESS STEEL TAPPING SLEEVE SHALL BE BOLTED DIRECTLY TO THE 6" DUCTILE IRON GATE VALVE. ALL MATERIAL FROM THE GATE VALVE TO HYDRANT SHALL BE DUCTILE IRON.
 - MINIMUM 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH CITY/TOWN APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN (SEE ASSOCIATED DETAIL).

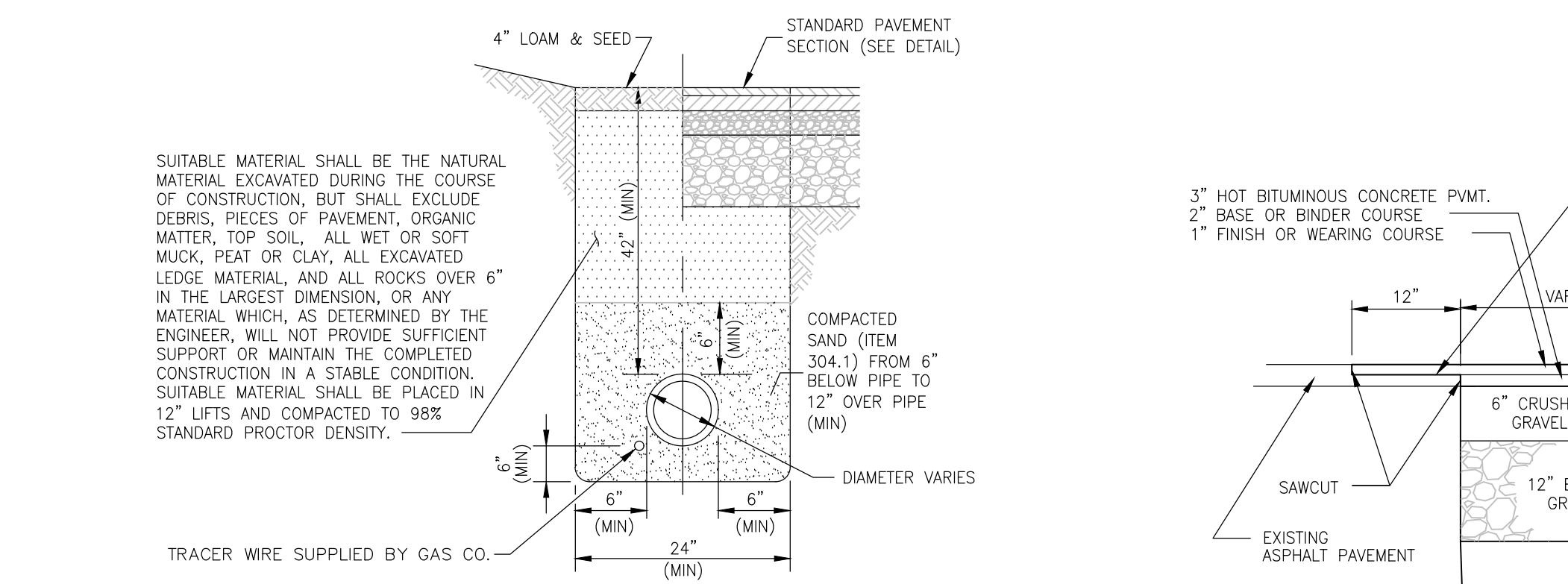
FIRE HYDRANT AND GATE VALVE

NOT TO SCALE



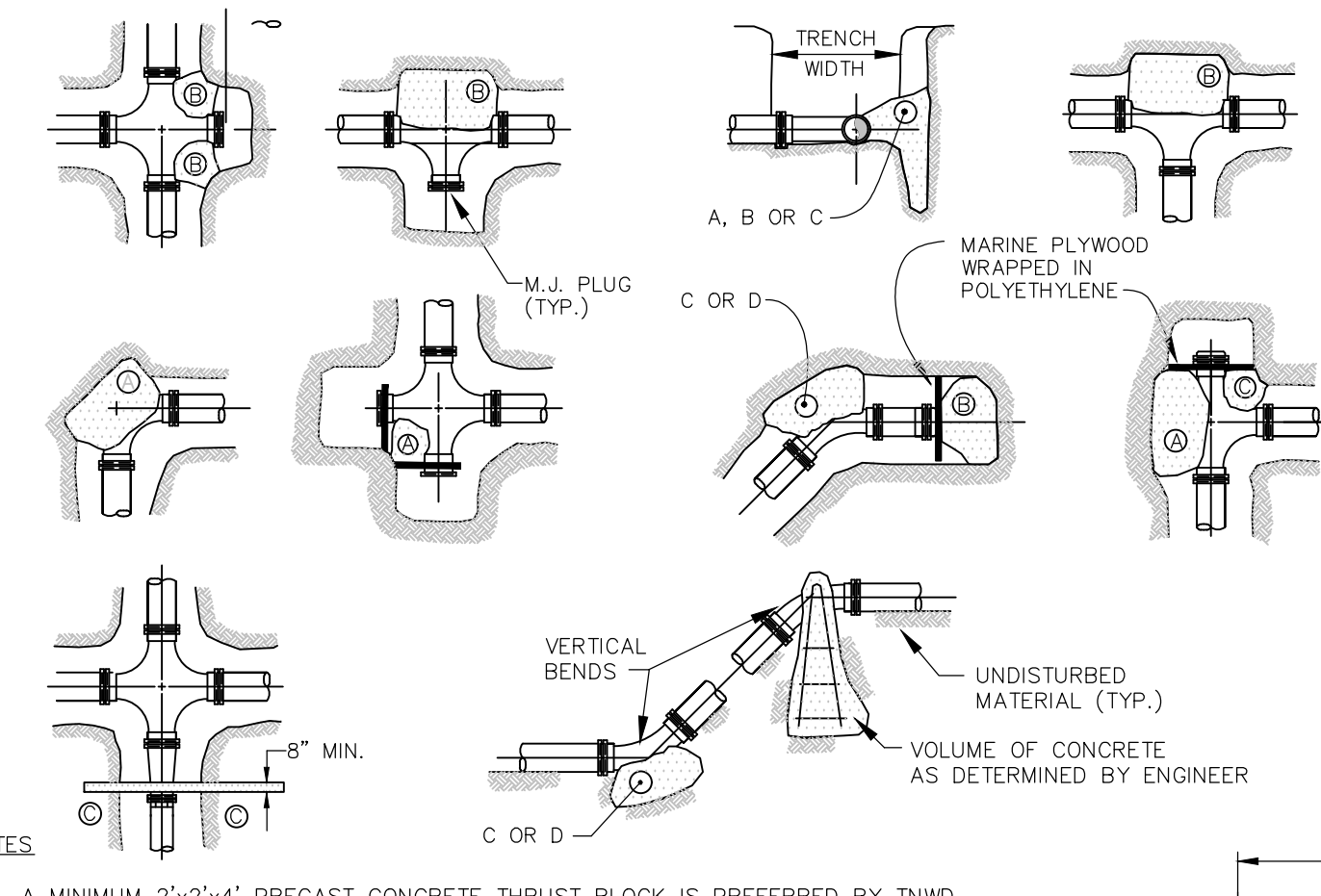
THRUST BLOCKING BEHIND FITTINGS INSTALLATION

NOT TO SCALE



GAS MAIN TRENCH

NOT TO SCALE



- NOTES:**
- A MINIMUM 2'x2'x4' PRECAST CONCRETE THRUST BLOCK IS PREFERRED BY TNWD.
 - POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO PIPE JOINTS SHALL BE COVERED WITH CONCRETE.
 - ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
 - PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS. PLACE ROOFING FELT AROUND HYDRANT ELBOW BEFORE POURING THRUST BLOCKS AND ENSURE CONCRETE DOES NOT PLUG HYDRANT DRAIN PORTS.
 - INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TNWD ESTABLISHED RULES AND PROCEDURES.

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

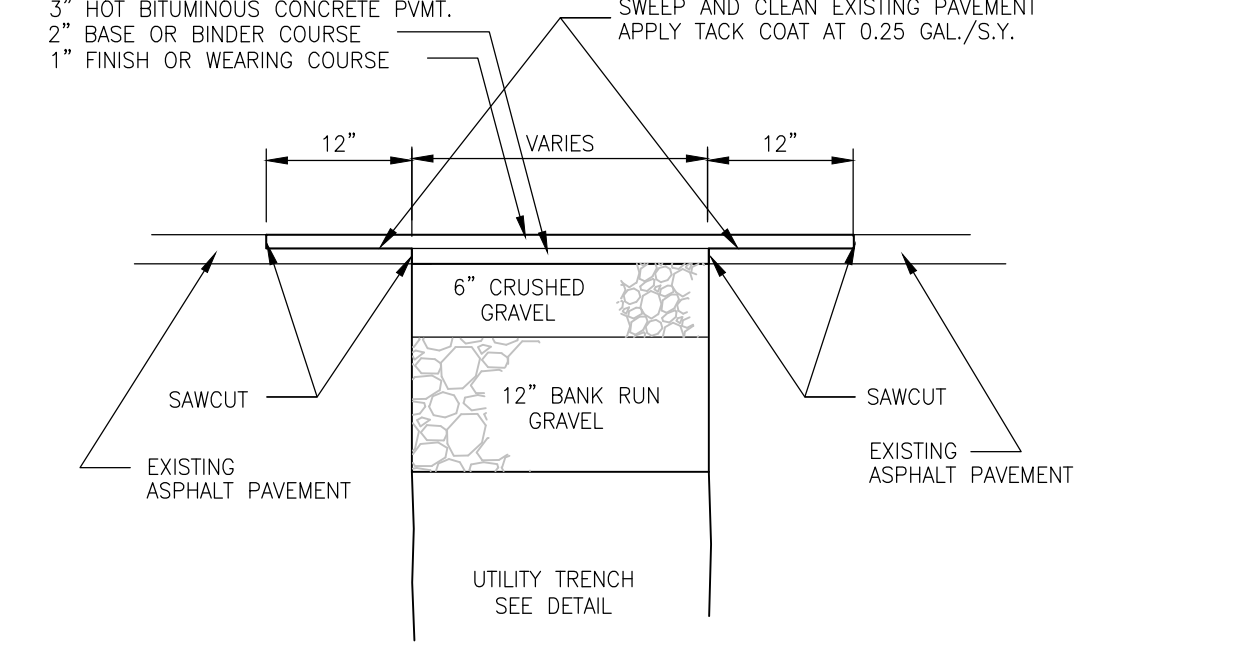
THRUST BLOCKS

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
 - VALVE BOXES - TYLER OR APPROVED EQUAL
 - JOINT RESTRAINTS - GRIP RINGS BY ROMAC BY EJ PRESCOTT OR MEGALUG BY EBBA
 - HYDRANTS - AMERICAN DARLING B-84-B BY EJ PRESCOTT
 - BLOW-OFF HYDRANT - MAINGUARD BY EJ PRESCOTT
 - 8" GATE VALVES - AMERICAN FLOW CONTROL BY EJ PRESCOTT OR MUELLER
 - 2" GATE VALVES - MUELLER 2" MECHANICAL JOINT RESILIENT WEDGE GATE VALVE
 - BRASS CORPORATIONS, CURB STOPS, UNIONS, AND FITTINGS - FORD AND MCDONALD
 - SADDLES - ROMAC 305-H BY EJ PRESCOTT, FORD, OR MUELLER BRIS
- THE FOLLOWING ARE TFM-RECOMMENDED MANUFACTURERS FOR WATER MATERIALS:
- STAINLESS STEEL TAPPING SLEEVE - ROMAC SST BY EJ PRESCOTT
 - MECHANICAL JOINT TAPPING SLEEVE - AMERICAN FLOW CONTROL BY EJ PRESCOTT
 - MECHANICAL JOINT ADAPTER FITTING - INTEGRIFUSE BY EJ PRESCOTT
 - MECHANICAL JOINT RETAINER GLAND - FORD BY EJ PRESCOTT

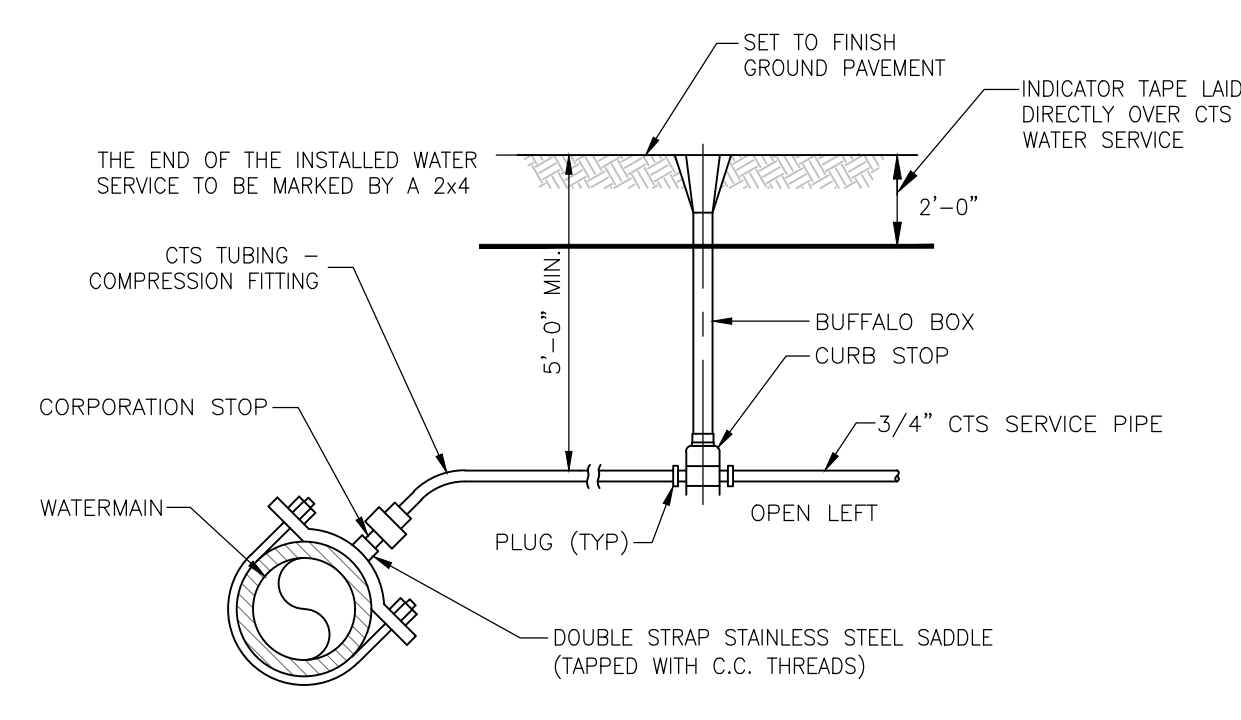
WATER MATERIAL MANUFACTURERS

NOT TO SCALE



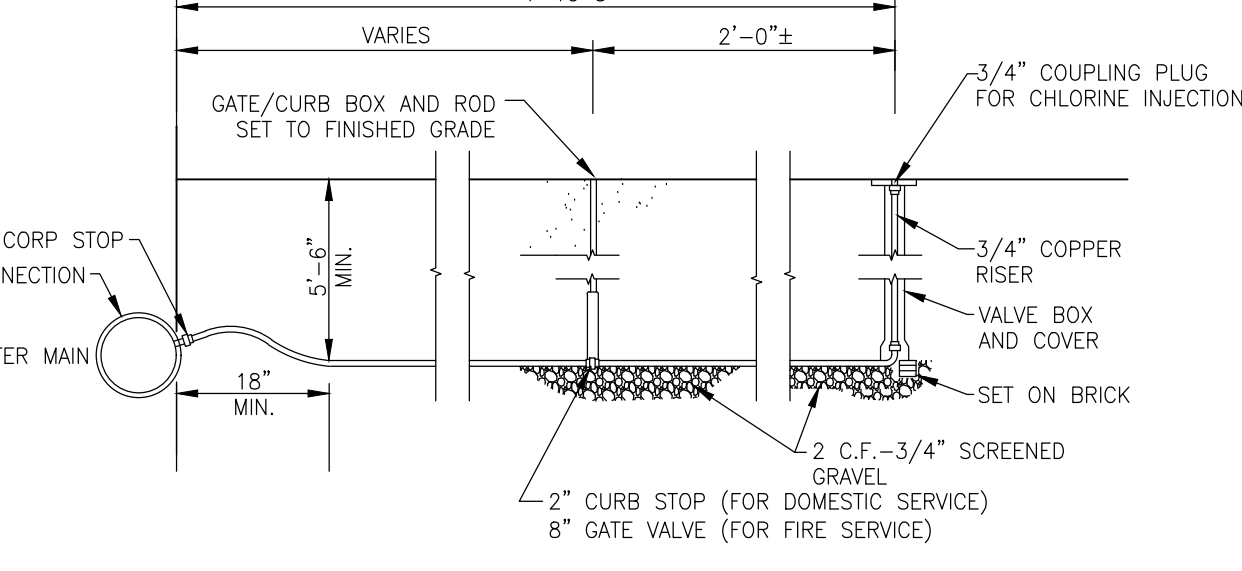
PAVEMENT TRENCH PATCH

NOT TO SCALE



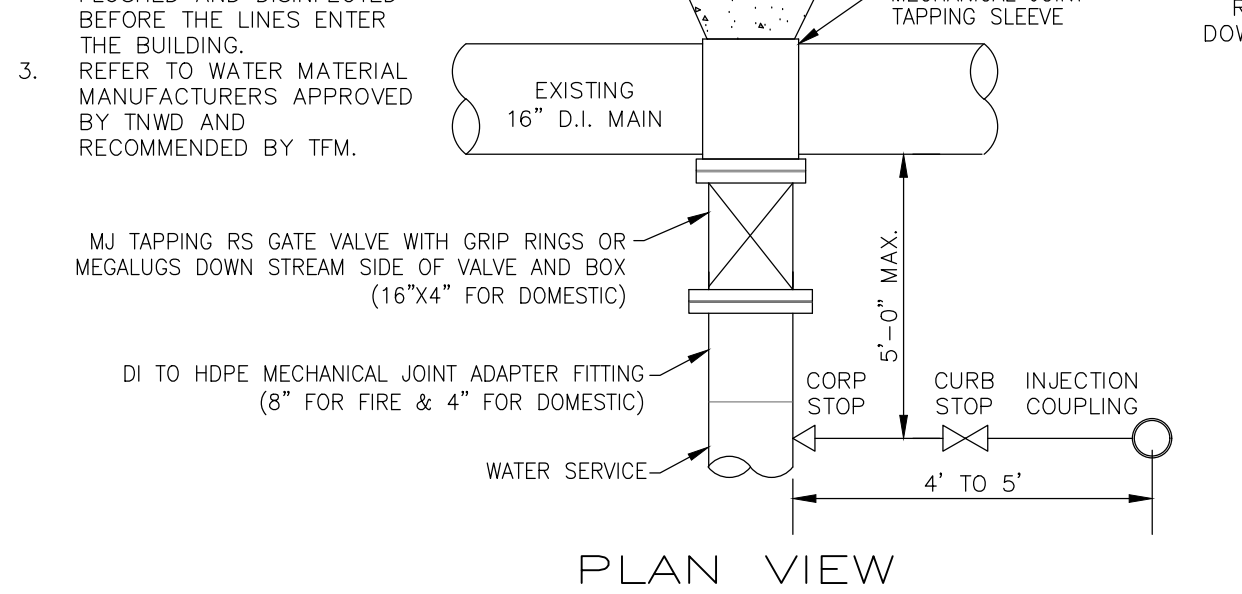
WATER SERVICE CONNECTION

NOT TO SCALE



SECTION

NOT TO SCALE

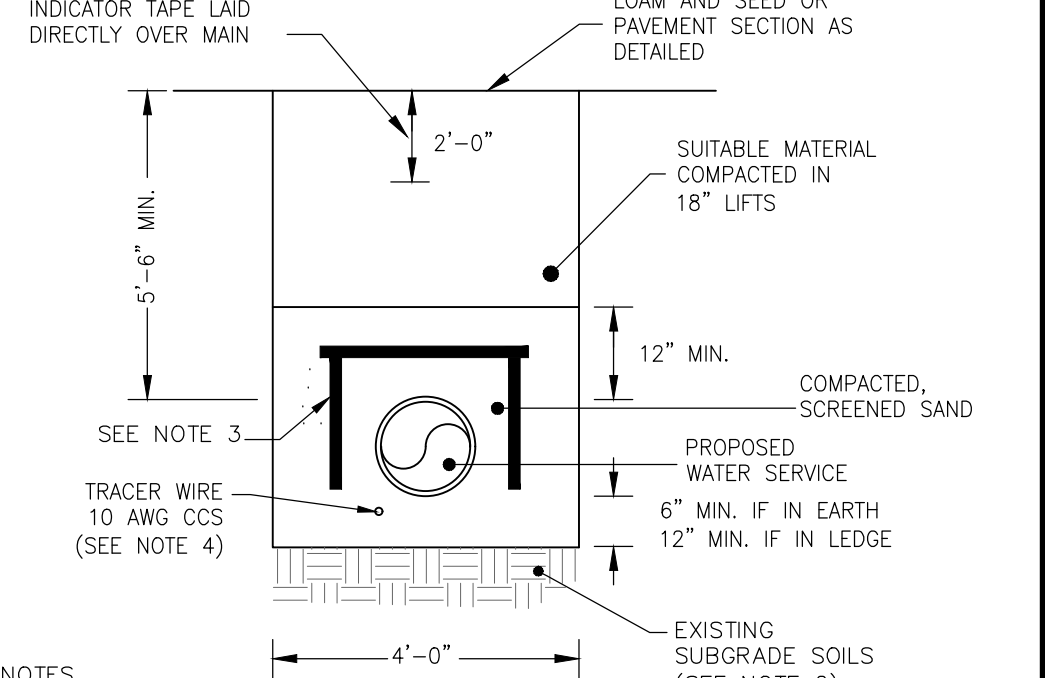


PLAN VIEW

NOT TO SCALE

CHLORINE INJECTION CONNECTION

NOT TO SCALE



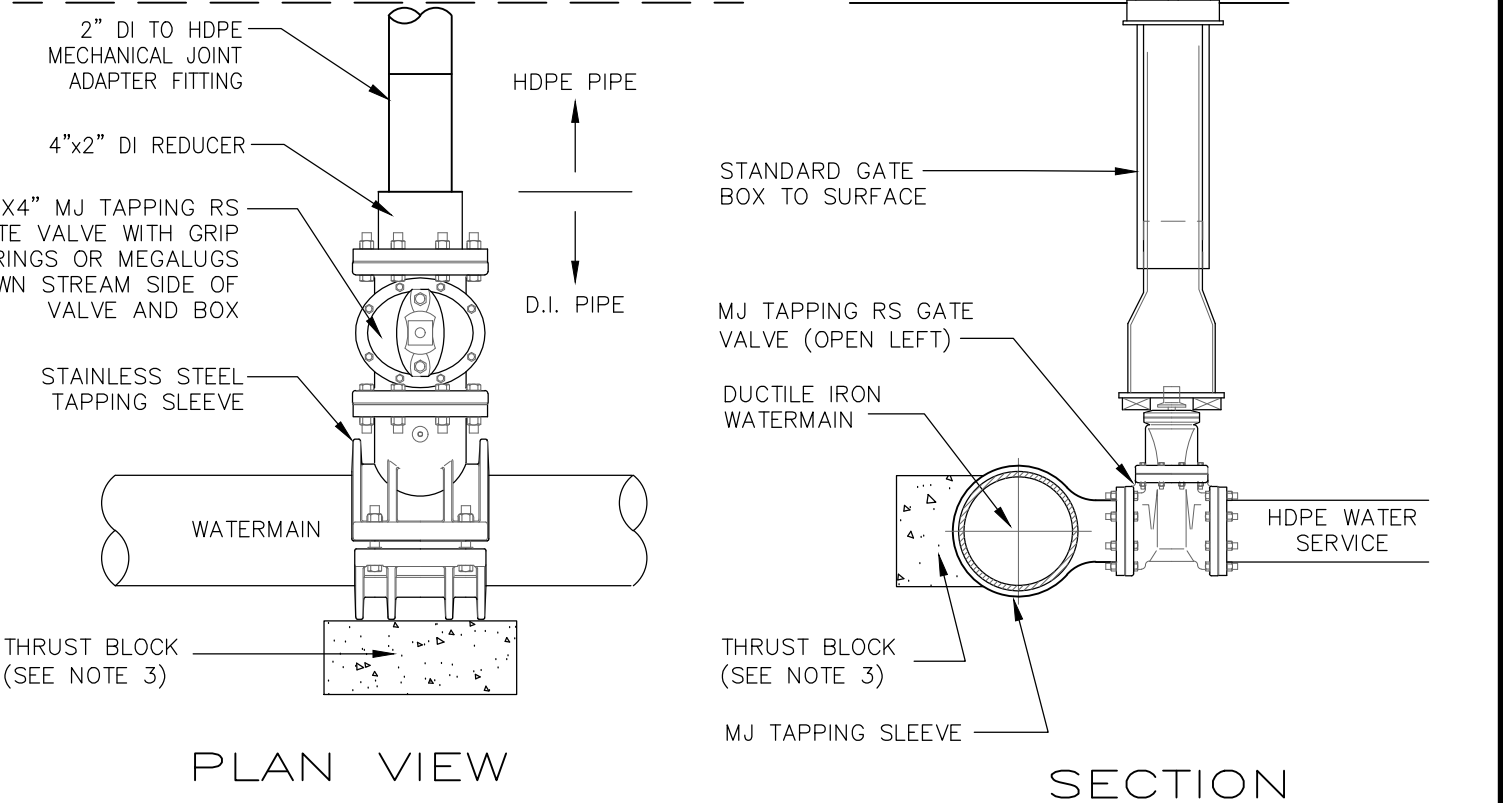
WATER TRENCH

NOT TO SCALE

- NOTES:**
- ALL FITTINGS SHALL BE DR 9.
 - 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.
 - 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".
 - TRACER WIRE SPECIFIED FOR NON-METALLIC WATER LINES SHALL BE INSTALLED BELOW AND TO THE SIDE OF THE PIPE AND PER THE MANUFACTURER REQUIREMENTS. TRACER WIRE PRODUCT SHALL BE SELECTED FOR OPEN CUT INSTALLATION TECHNIQUE. REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.
 - REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.

WATER TRENCH

NOT TO SCALE



DOMESTIC SERVICE WET TAP INSTALLATION

NOT TO SCALE

- NOTES:**
- TAPPING SLEEVES SHALL BE STAINLESS STEEL (SS) WITH SS HARDWARE.
 - PRECAST CONCRETE THRUST BLOCK TO BE USED, SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.
 - REFER TO WATER MATERIAL MANUFACTURERS APPROVED BY TNWD AND RECOMMENDED BY TFM.

DOMESTIC SERVICE WET TAP INSTALLATION

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS DECEMBER 13, 2023

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

18149.00	DR	JKC	FB		
	CK	CRR	CADFILE	18149-00_DETAILS	C-22

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Jul 18, 2024 - 12:23pm
 \\fr-beford4\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Details.dwg

GENERAL NOTES

- 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.
- BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
- PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
- BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
- MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
- 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.
- ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
- SHALL 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.
- HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
 - SIKAFLEX-12-SL
 - SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
- 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.
- 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 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
 - (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
 - THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
 - 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
- ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
- 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".

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, BUSTERS, 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 ORGANIC 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

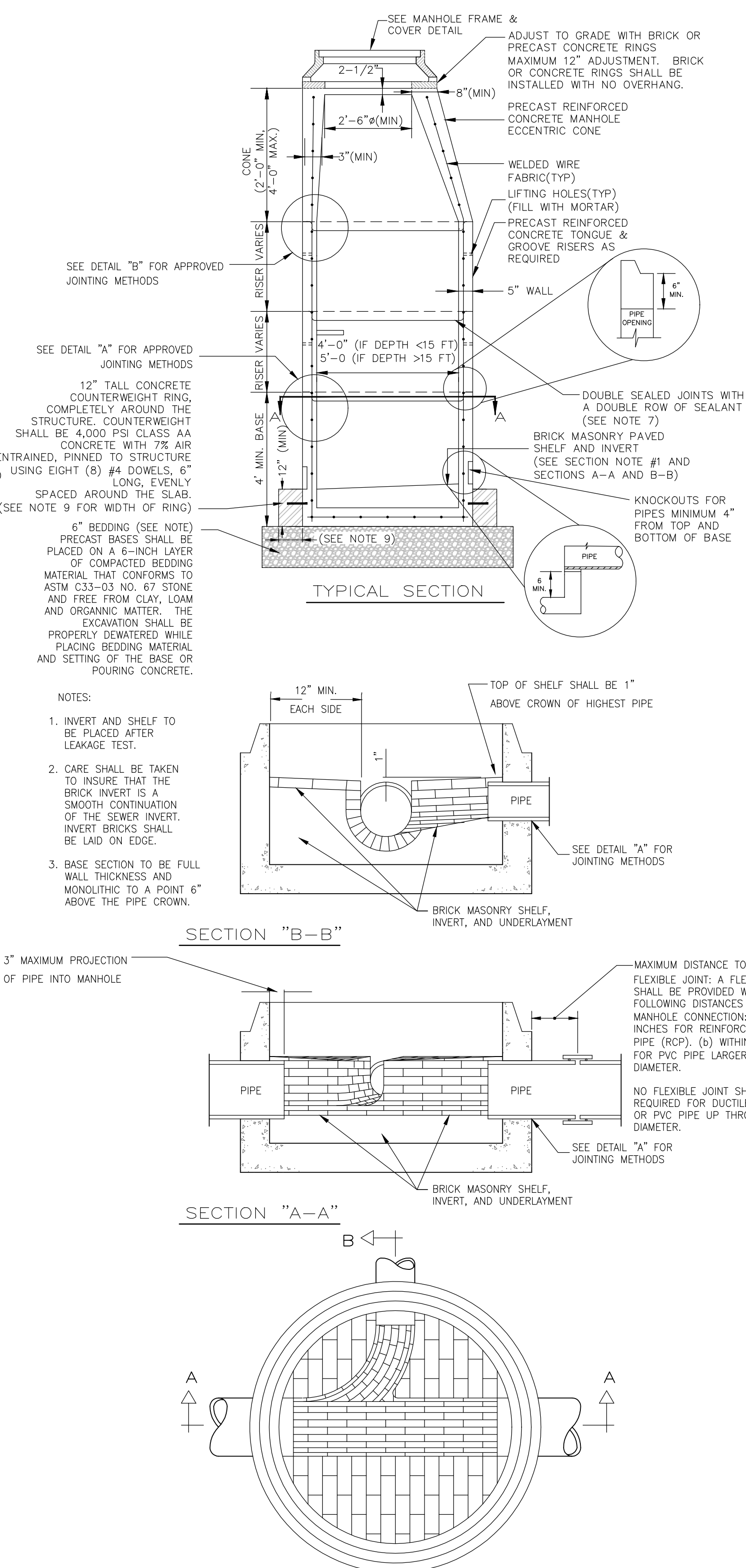
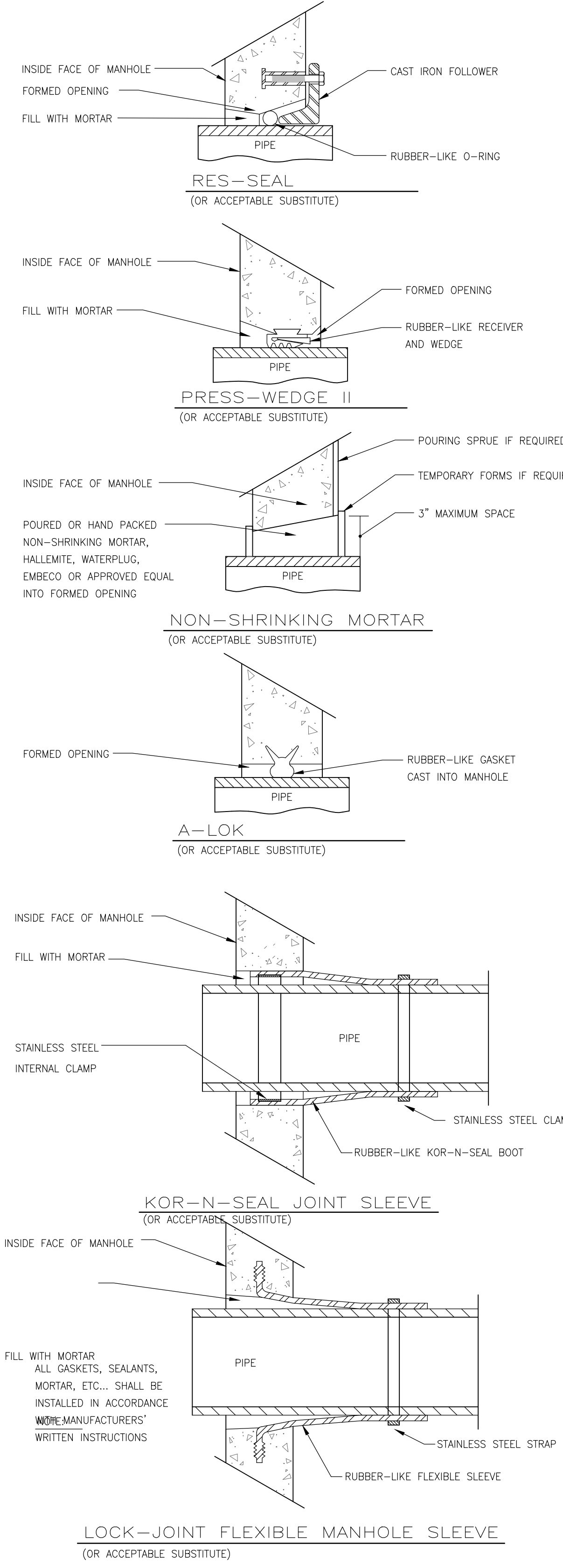
17. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.

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

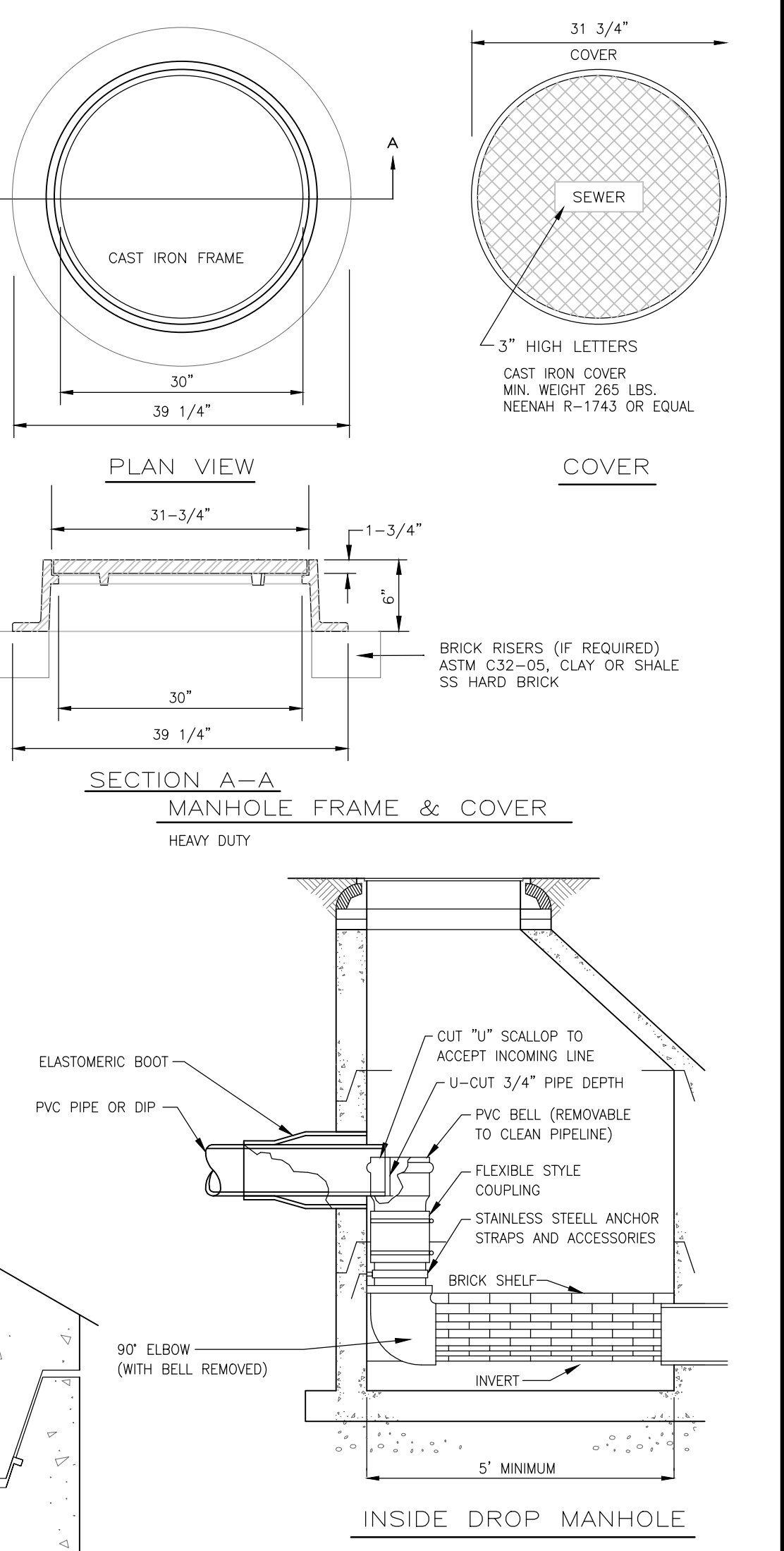
19. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:

- A. ELASTOMERIC, RUBBER SLEEVE WITH WATER TIGHT 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 WATER TIGHT 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.



- NOTES
- UNDERLAYMENT OF MANHOLE INVERT AND SHELF SHALL BE BRICK MASONRY PER ENV-WQ 704.12(K).
 - INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
 - 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.
 - PRECAST CONCRETE MANHOLES SHALL MEET AASHTO M199-93/ ASTM C478-90B, RATED FOR HS-20 LOADING WITH CONCRETE STRENGTH OF 4000 PSI OR GREATER.
 - ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
 - HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER TIGHTNESS 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:
- 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.
 - 5" DIAMETER MANHOLES
 - a. LESS THAN 9" DEEP MUST HAVE 10" WIDE COUNTERBALANCE RINGS.
 - b. EQUAL TO OR GREATER THAN 9" DEEP AND LESS THAN 18" DEEP MUST HAVE 12" WIDE COUNTERBALANCE RINGS.
 - c. EQUAL TO OR GREATER THAN 18" DEEP MUST HAVE 14" WIDE COUNTERBALANCE RINGS.
 - 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.
- HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
- 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



- NOTES:
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE TO THE TOWN OF HOOKSETT STANDARDS FOR SANITARY MANHOLE CONSTRUCTION.
 - INSIDE DROP MANHOLES SHALL HAVE A MINIMUM 5' INSIDE DIAMETER.
 - 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.

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

DETAILS

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR

COLBEA ENTERPRISES, LLC

SCALE: NTS

DECEMBER 13, 2023

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

18149.00

DR JKC FB
 CK CRR CADFILE

18149-00-DETAILS

C-23

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

STANDARD MANHOLE

NOT TO SCALE

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Jul 18, 2024 - 12:24pm
 \\fr-beford04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seacoast Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Details.dwg

SEWER SERVICE NOTES

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

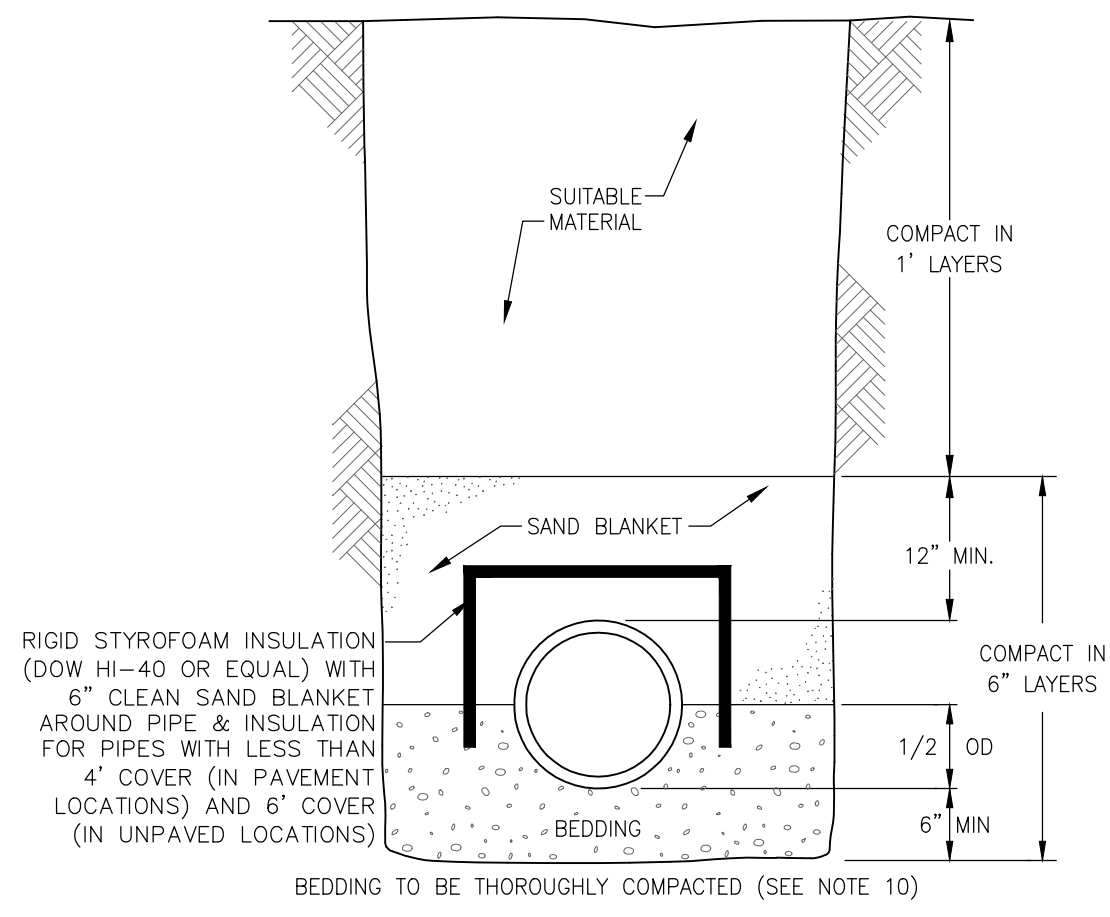
ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F799	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE
 - JOINTS 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.
 - DUCTILE-IRON PIPE, FITTINGS AND JOINTS.
 - DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
 - A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
 - A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
 - JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
 - A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS
- DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
- TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING 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 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 DEMATER THE TRENCH.
- TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)
 - AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
 - THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
 - DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

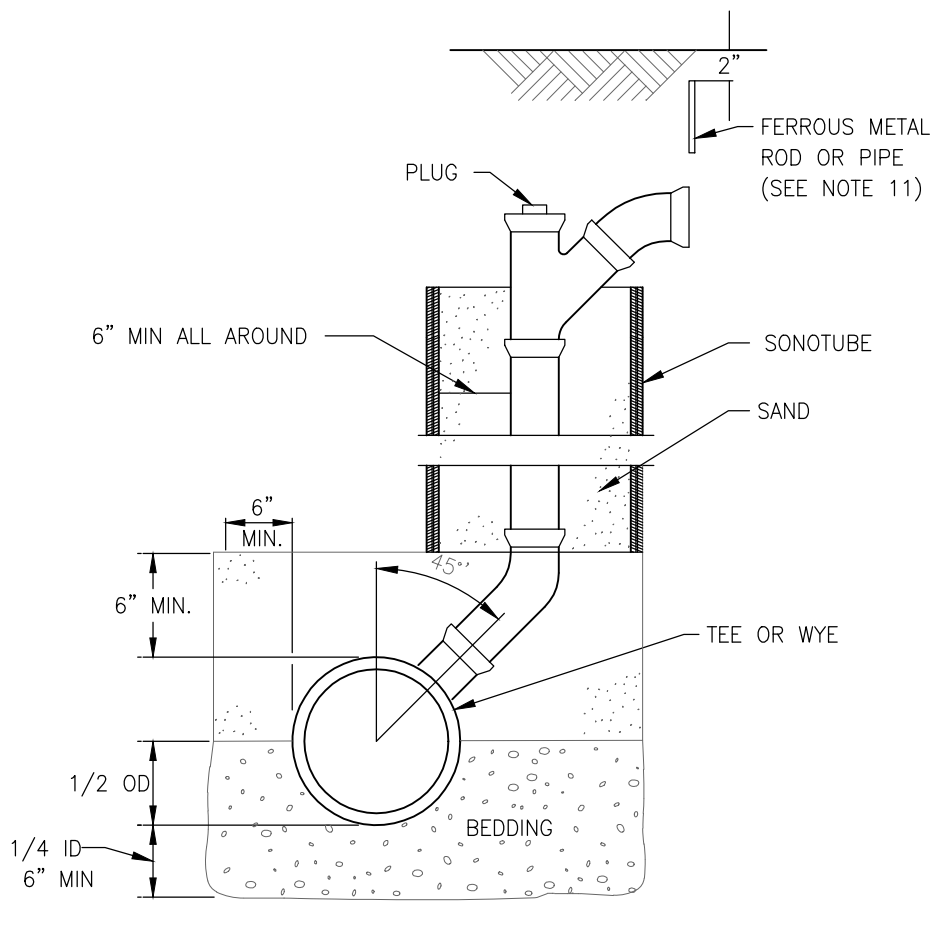
LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.
- ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
- WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-87.

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

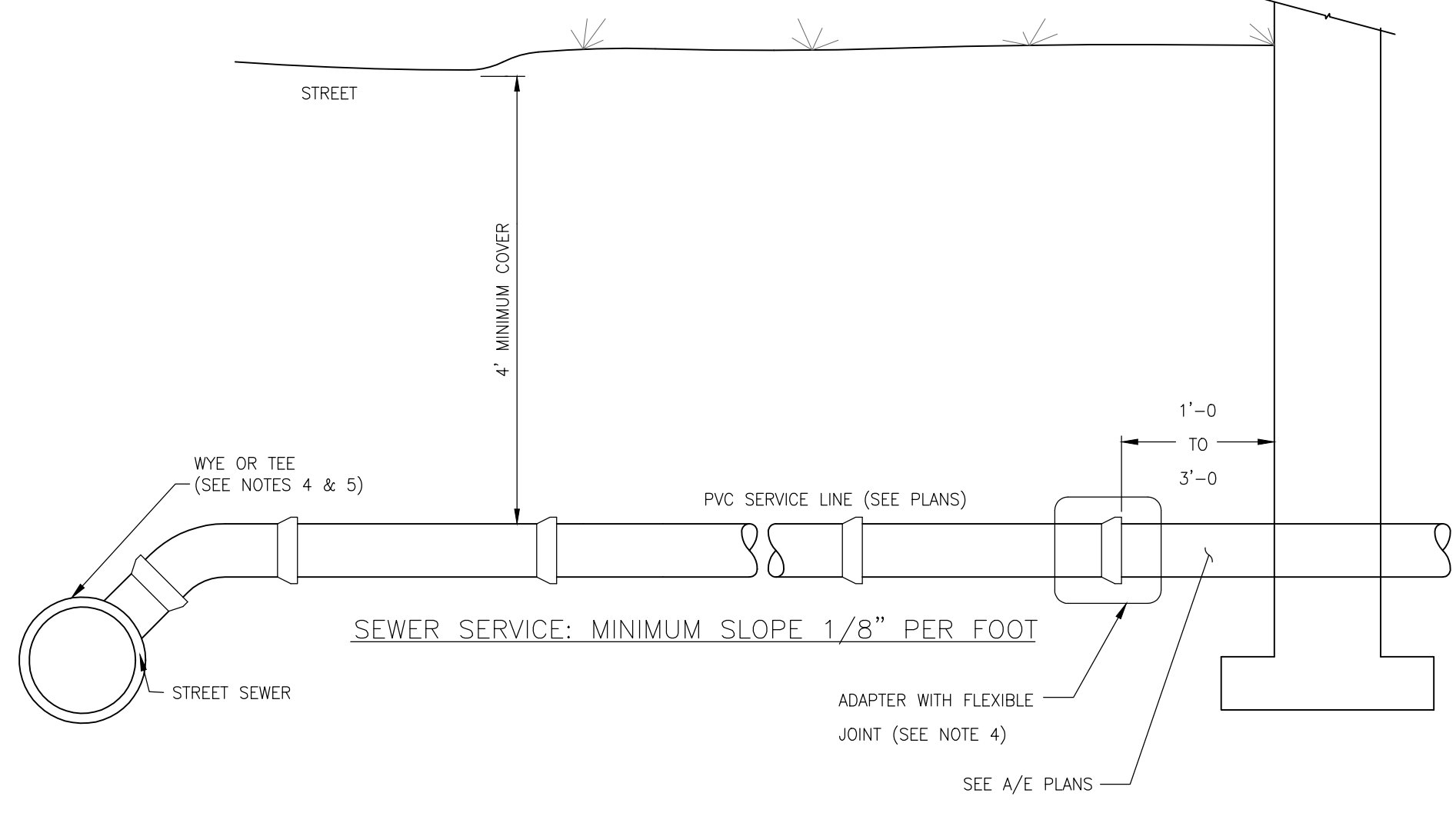
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.
- LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
- 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



CHIMNEY
NOT TO SCALE



SEWER SERVICE
NOT TO SCALE

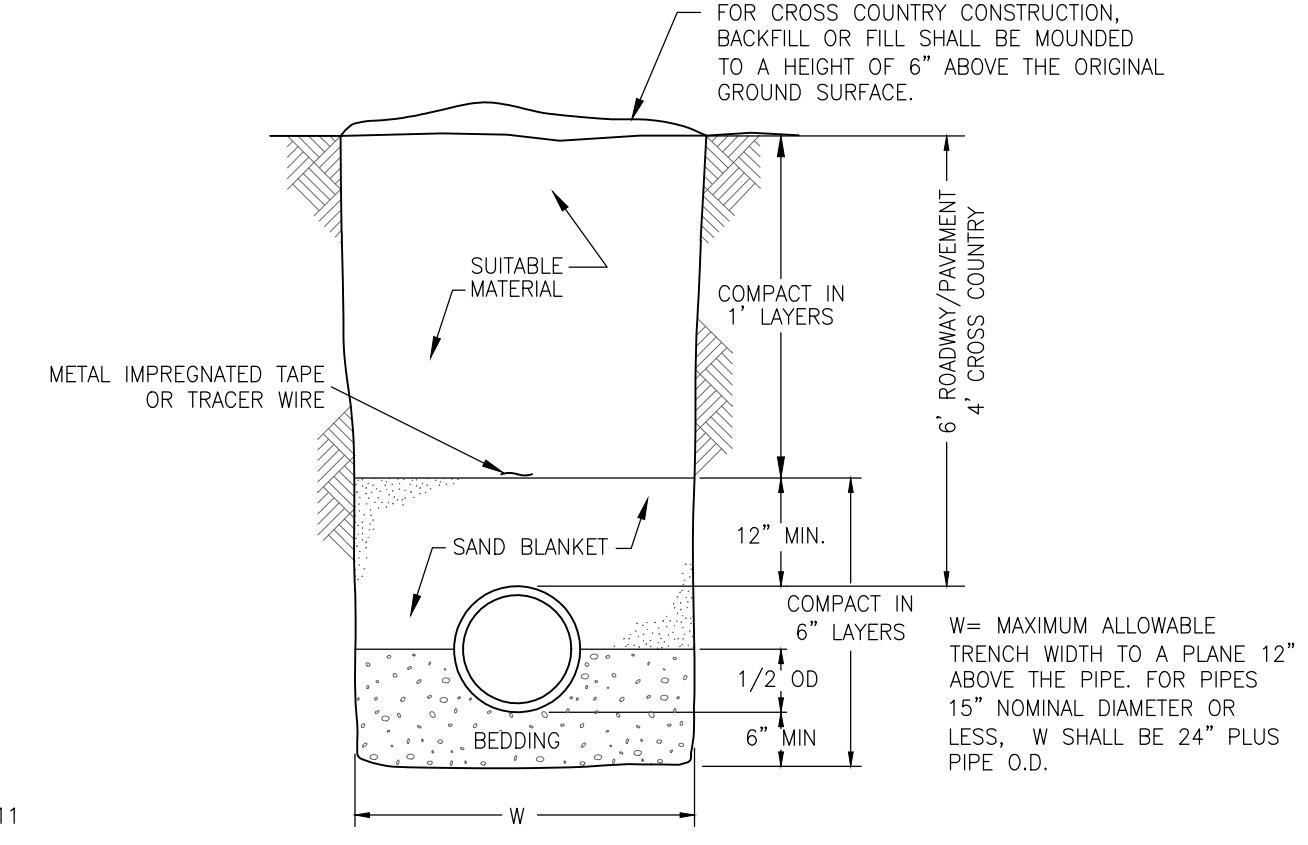
GRAVITY SEWER NOTES

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

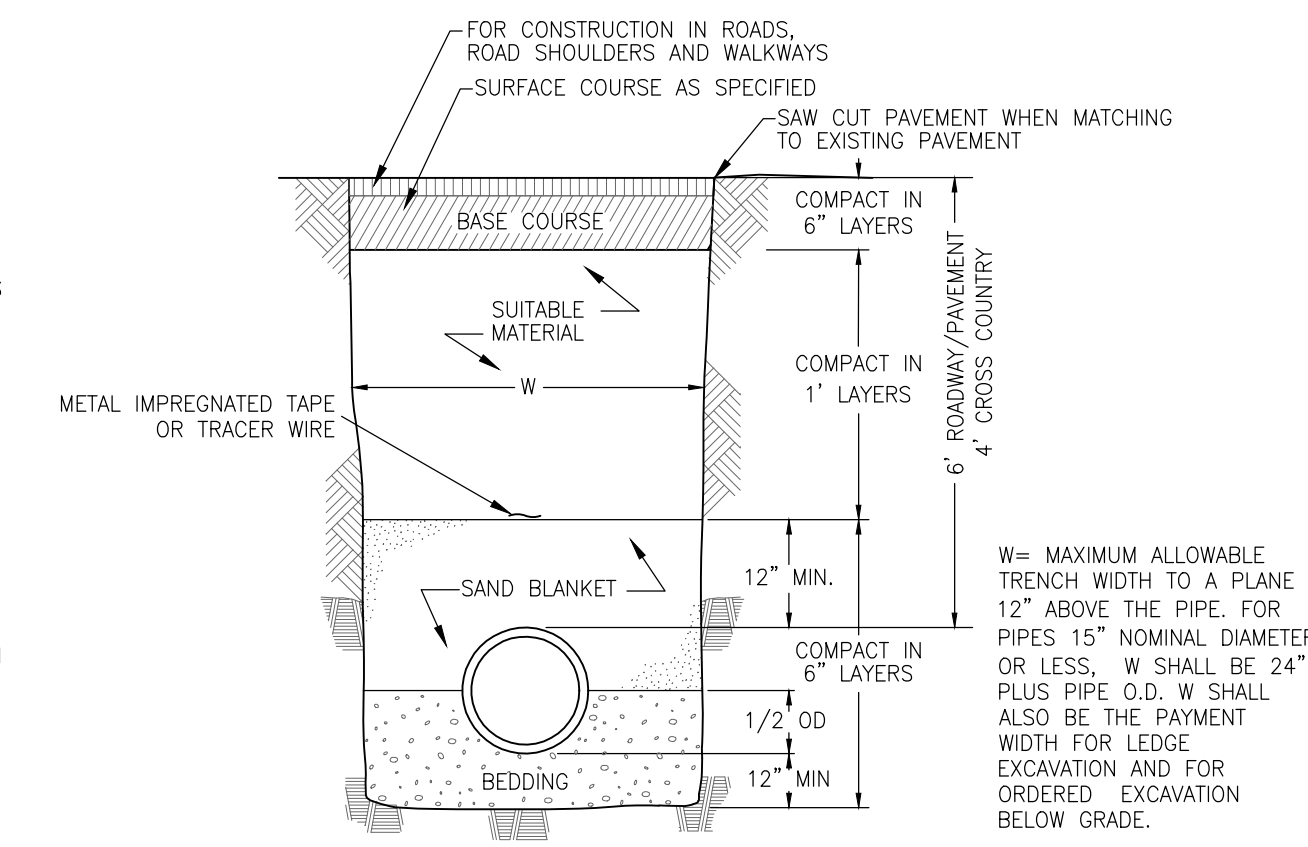
ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE
- PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
- JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
- DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).
 - AWWA C151/A21.51-02 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536-84 (2004) DUCTILE IRON CASTINGS.
 - AWWA C151/A21.51-02 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
- CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
- PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
 - JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
- DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:
 - ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.
 - LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:
 - ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".
 - UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
- ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
- ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
- THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5.0 PERCENT OF THE AVERAGE INSIDE DIAMETER.
- TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:
 - SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.
 - WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.
 - TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.
 - PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.
 - PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.
 - PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.
 - COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.
 - BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.
 - TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.
 - TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUND 6-INCHES ABOVE ORIGINAL GROUND.
 - BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
 - WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.
 - TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPE BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.



EARTH CONSTRUCTION
NOT TO SCALE



LEDGE CONSTRUCTION
NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS DECEMBER 13, 2023

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

FILE	18149.00	DR	JKC	FB	-	C-24
		CK	CRR	CADFILE	18149-00_DETAILS	

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110
 All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.
 This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN², 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.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.56 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED USING A FLASHLIGHT AND STADIA ROD. MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROW PLUS ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS USING A FLASHLIGHT. INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - 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 FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - 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

- 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.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

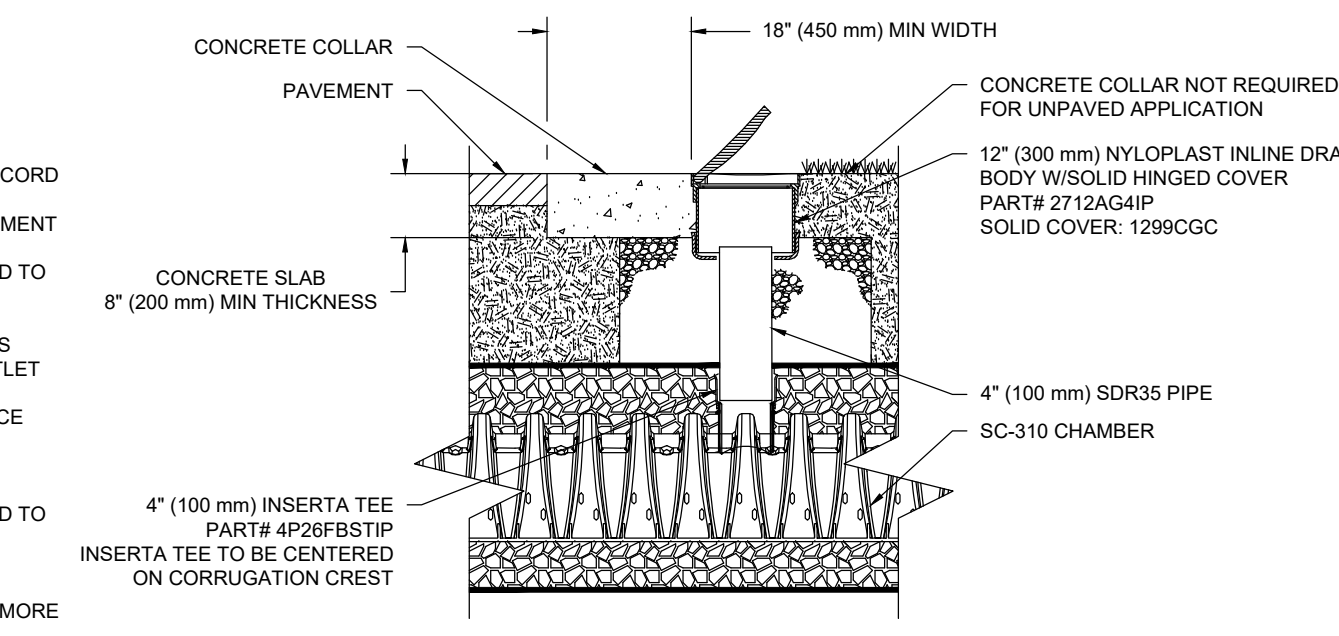
JELLYFISH DESIGN NOTES

MAINTENANCE:

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

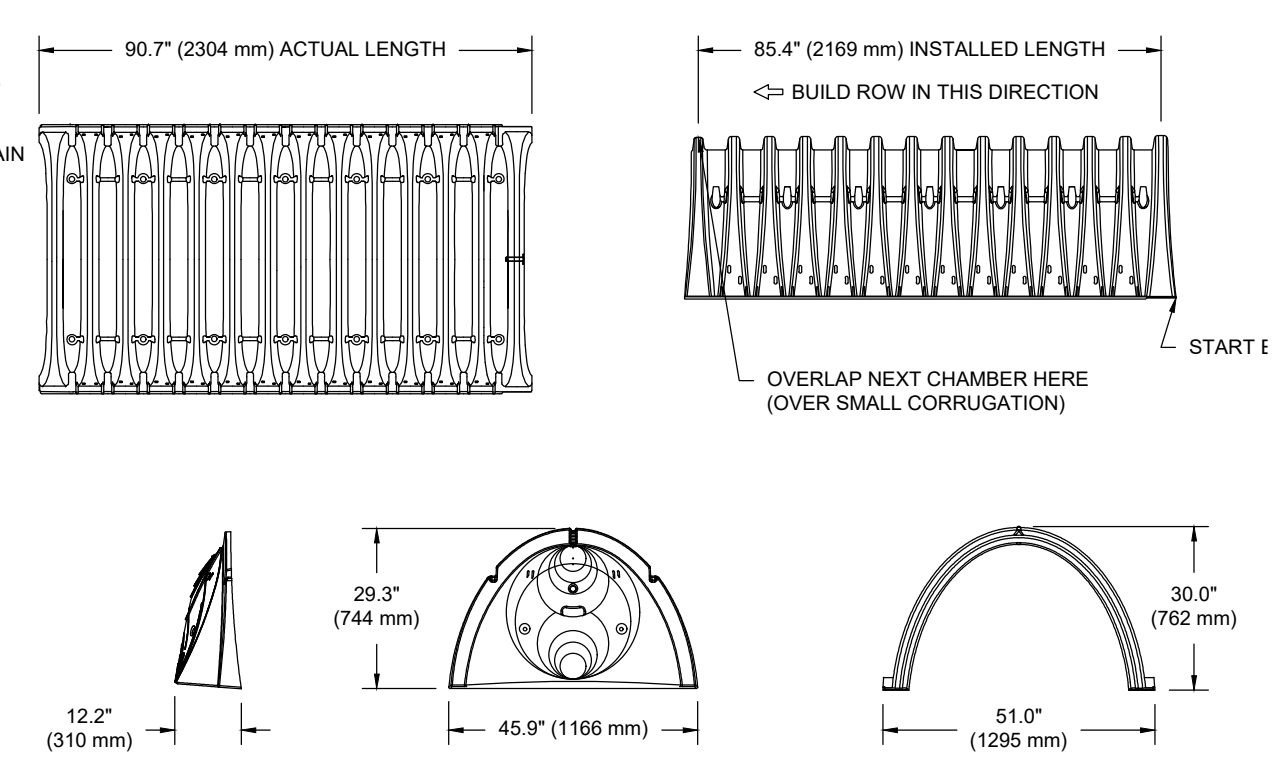
CONSTRUCTION SPECIFICATIONS:

- THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12".
- STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
- ADD ANIMAL SCREEN TO FLARED END SECTION OUTLET.



4" INSPECTION PORT DETAIL

NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m ³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m ³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

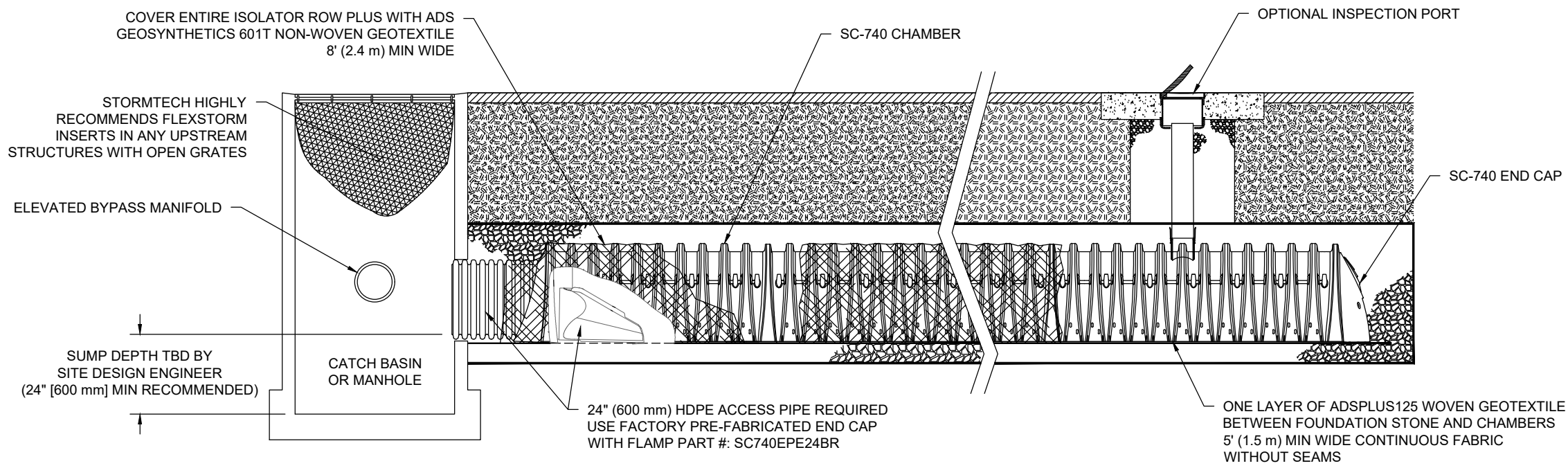
PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "R"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EP06T / SC740EP06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EP06B / SC740EP06BPC	---	---	---	0.5" (13 mm)
SC740EP08T / SC740EP08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EP08B / SC740EP08BPC	---	---	---	0.6" (15 mm)
SC740EP10T / SC740EP10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EP10B / SC740EP10BPC	---	---	---	0.7" (18 mm)
SC740EP12T / SC740EP12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EP12B / SC740EP12BPC	---	---	---	1.2" (30 mm)
SC740EP15T / SC740EP15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EP15B / SC740EP15BPC	---	---	---	1.3" (33 mm)
SC740EP18T / SC740EP18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EP18B / SC740EP18BPC	---	---	---	1.6" (41 mm)
SC740EP24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)
SC740EP24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EP24B/SC740EP24BR ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

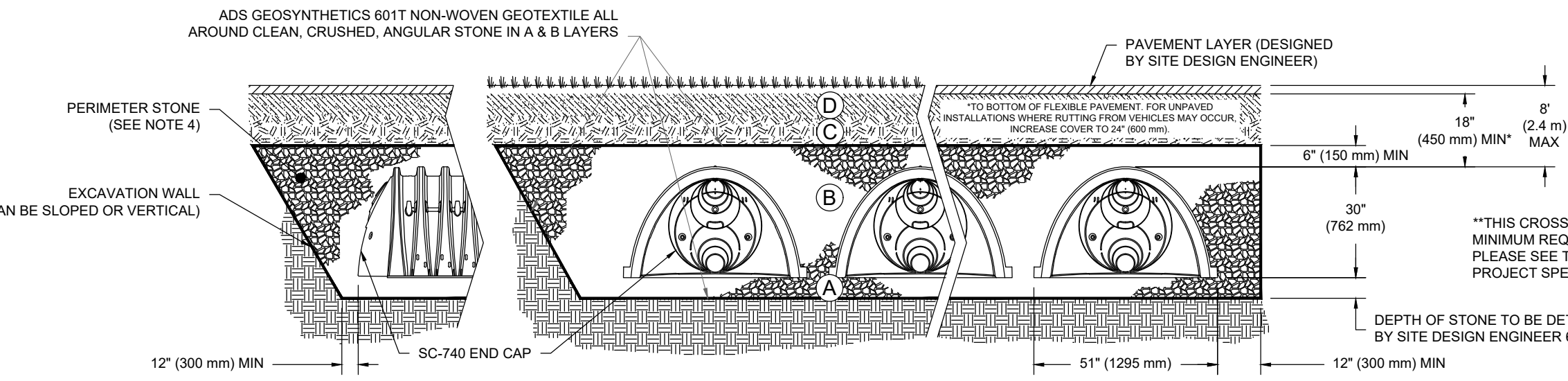
* FOR THE SC740EP24B/SC740EP24BR THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



SC-740 ISOLATOR ROW PLUS DETAIL

NOT TO SCALE



RIP RAP AND FLARED END SECTION WITH OUTLET PROTECTION

NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT	
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 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* A-1, A-2.4, A-3 OR AASHTO M43* 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	AASHTO M43* 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	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- 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".
- 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.
- 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.
- 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.

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

SC-740 TYPICAL CROSS SECTION DETAIL

NOT TO SCALE

NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN². 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.

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND _____

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 © TFMoran, Inc. 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS **DECEMBER 13, 2023**

Seacoast Division

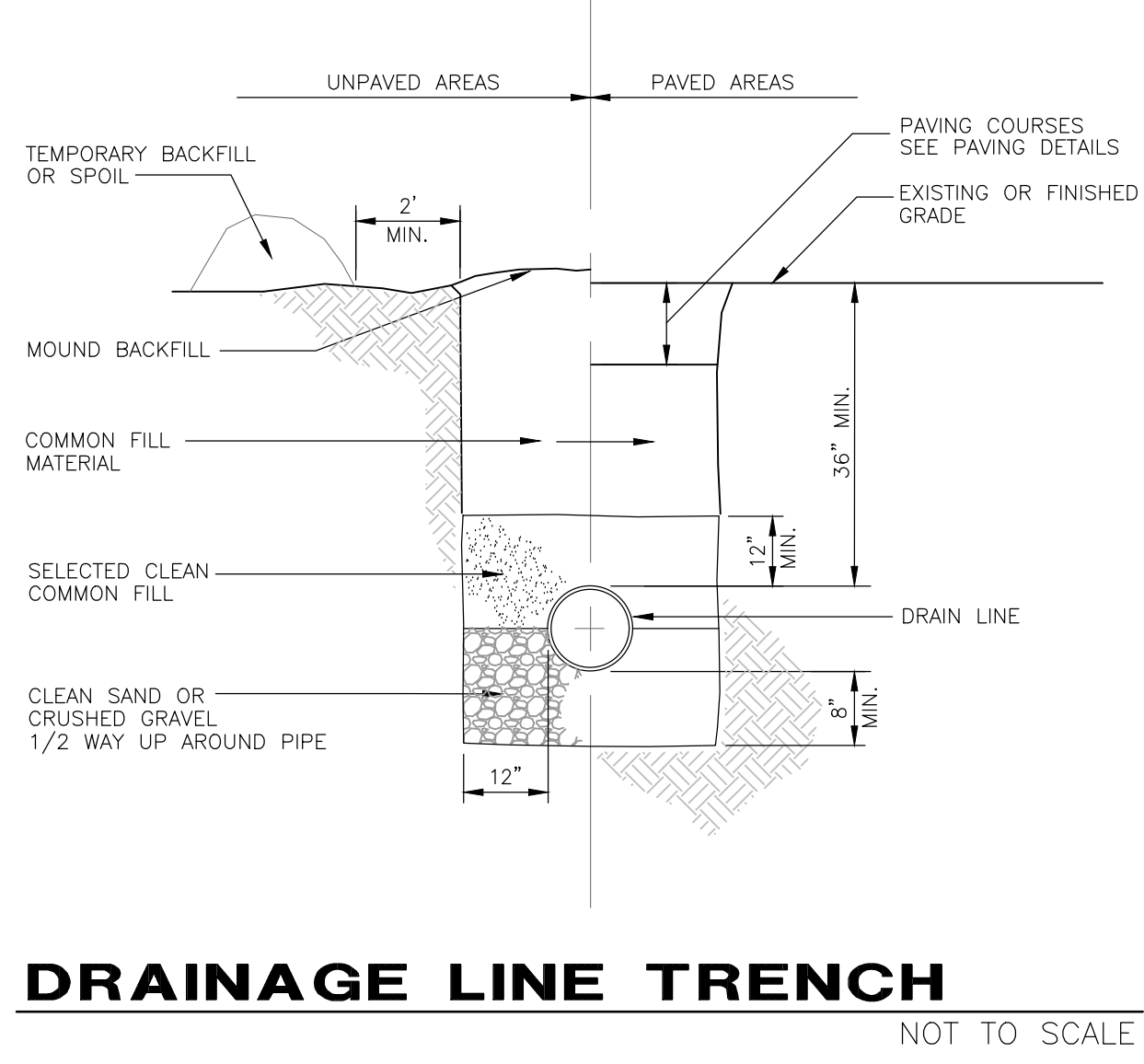
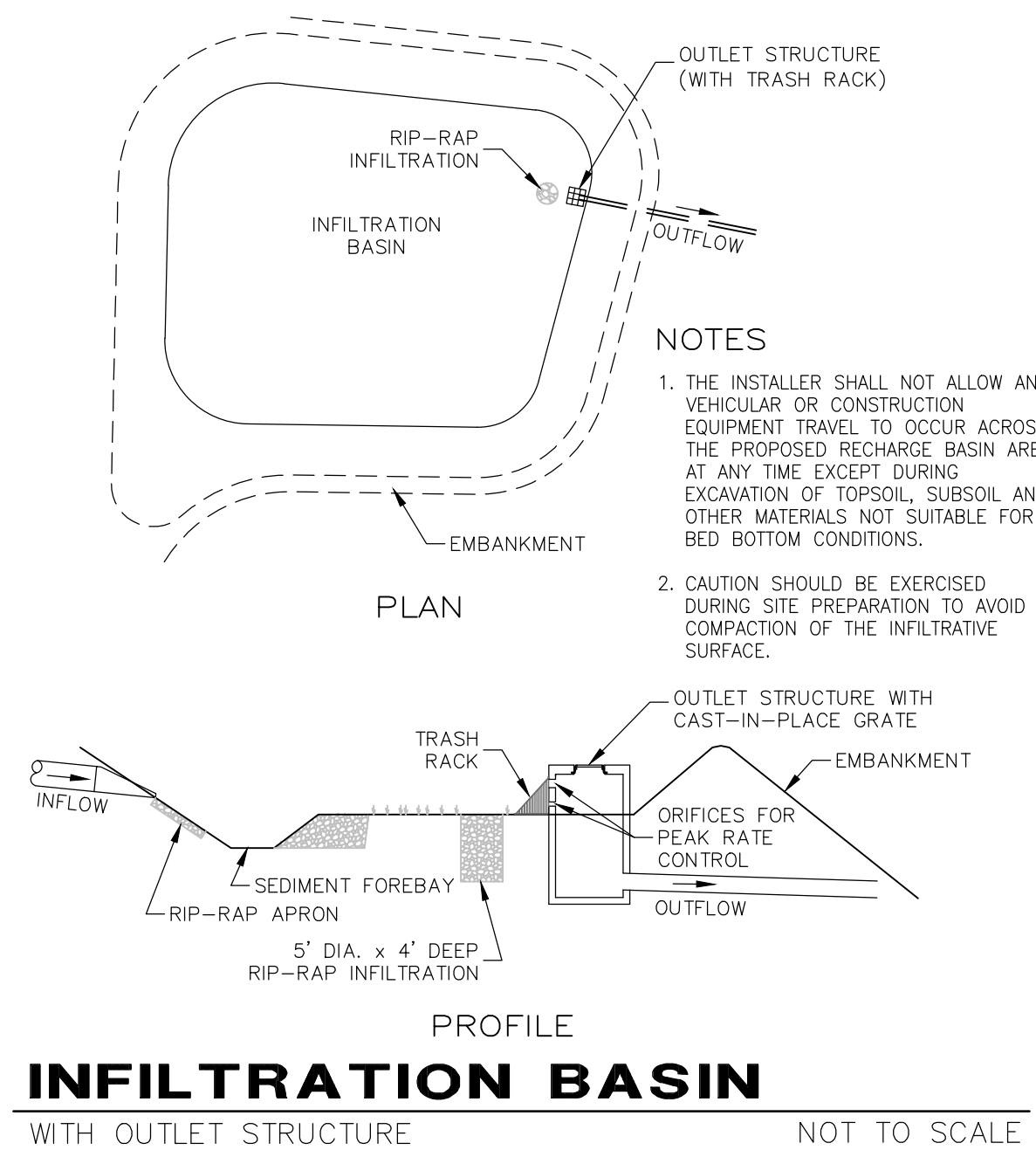
TFM

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

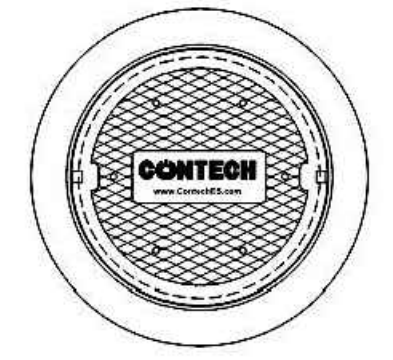
18149.00 DR JKC FB
CK CRR CADFILE 18149-00_DETAILS

C-25



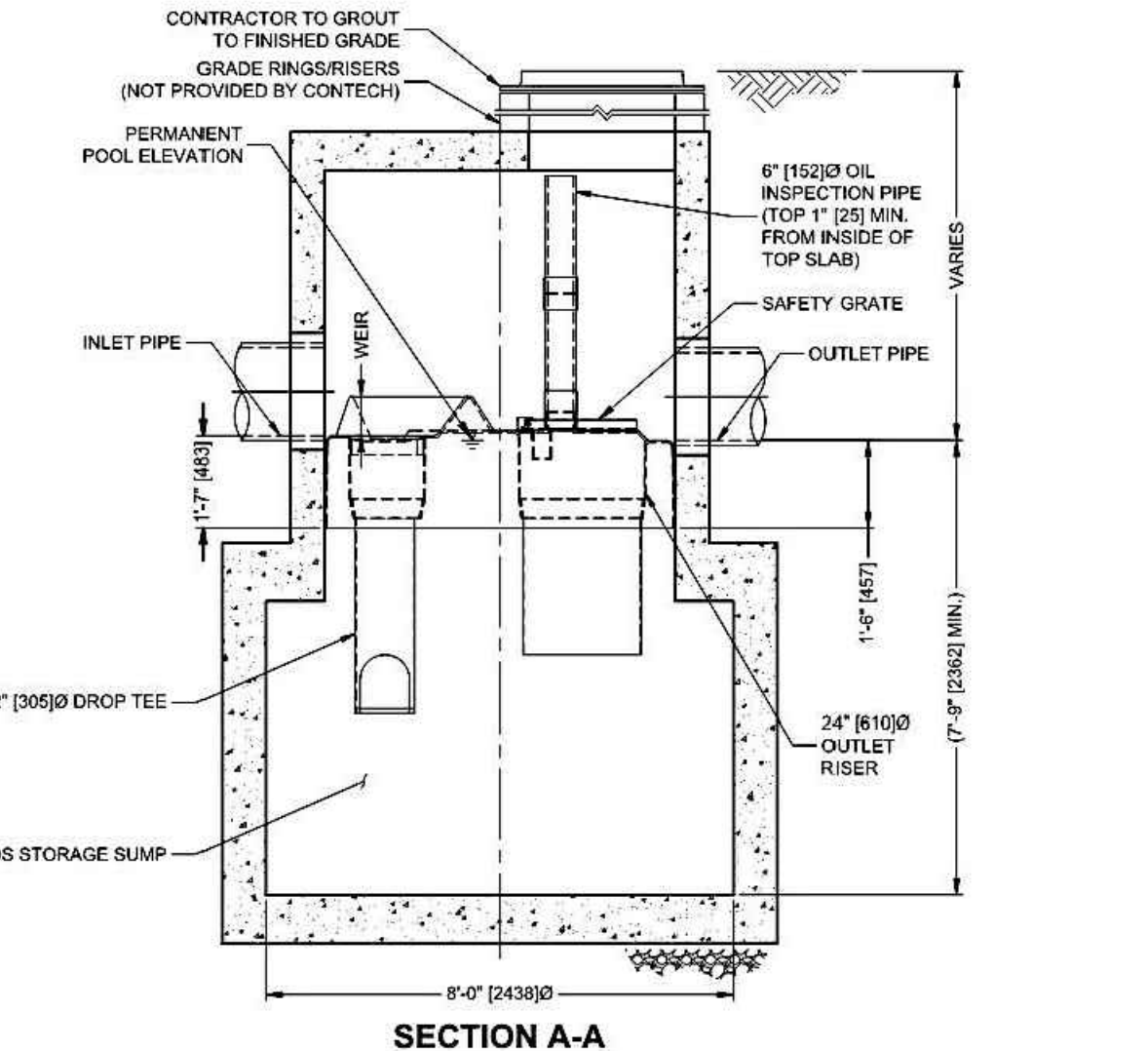
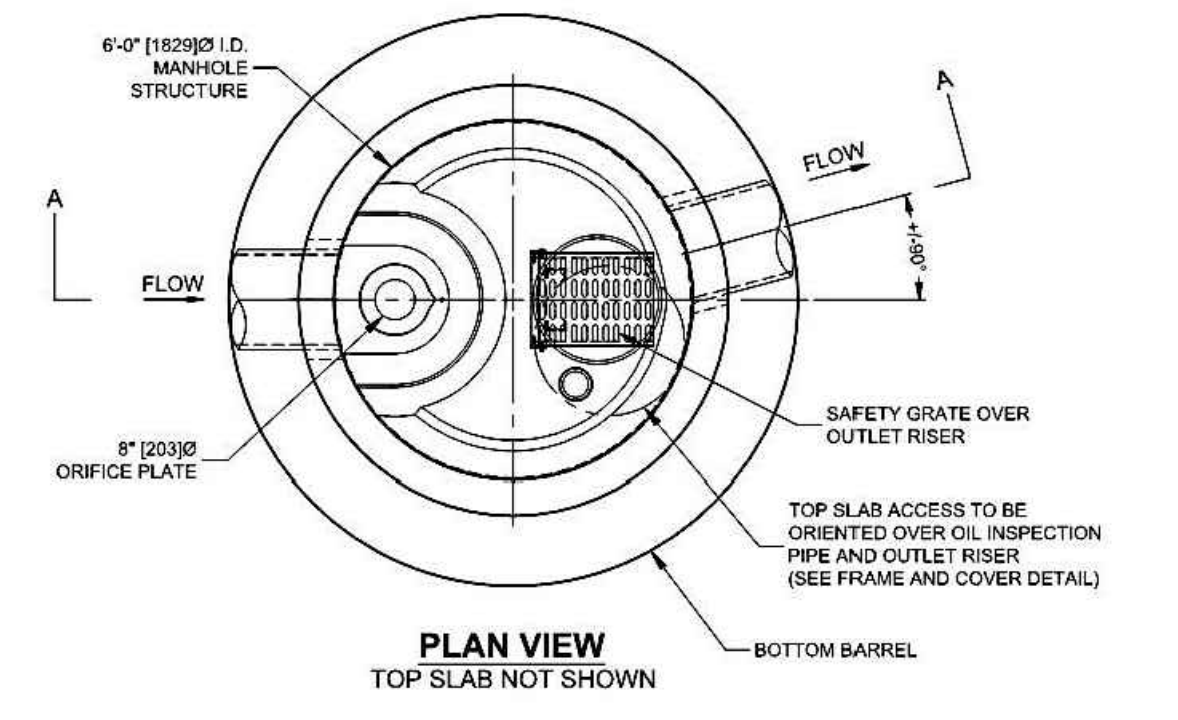
STORMCEPTOR DESIGN NOTES

THE STANDARD STC2400 CONFIGURATION IS SHOWN.



SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:			
INLET PIPE 1	INVERT	MATERIAL	DIAMETER
INLET PIPE 2			
OUTLET PIPE			
NOTES/SPECIAL REQUIREMENTS:			



GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- 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.
- 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.
- STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS (mm).

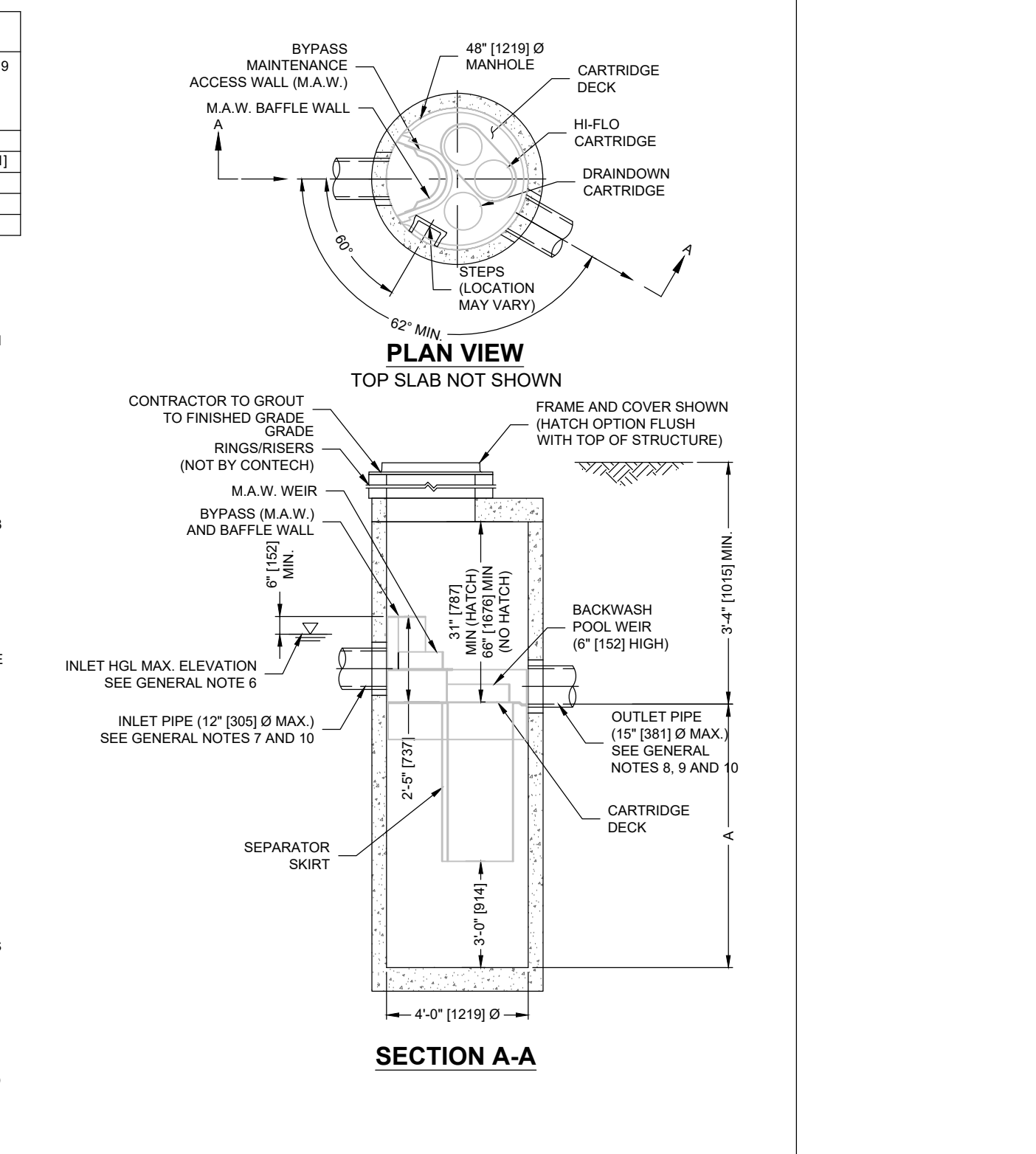
INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- 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.
- 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
 8025 Centre Pointe Dr., Suite 400, West Chester, OH 45386
 800-338-1122 513-648-7000 513-648-7993 FAX

STC2400 STORMCEPTOR STANDARD DETAIL



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CR

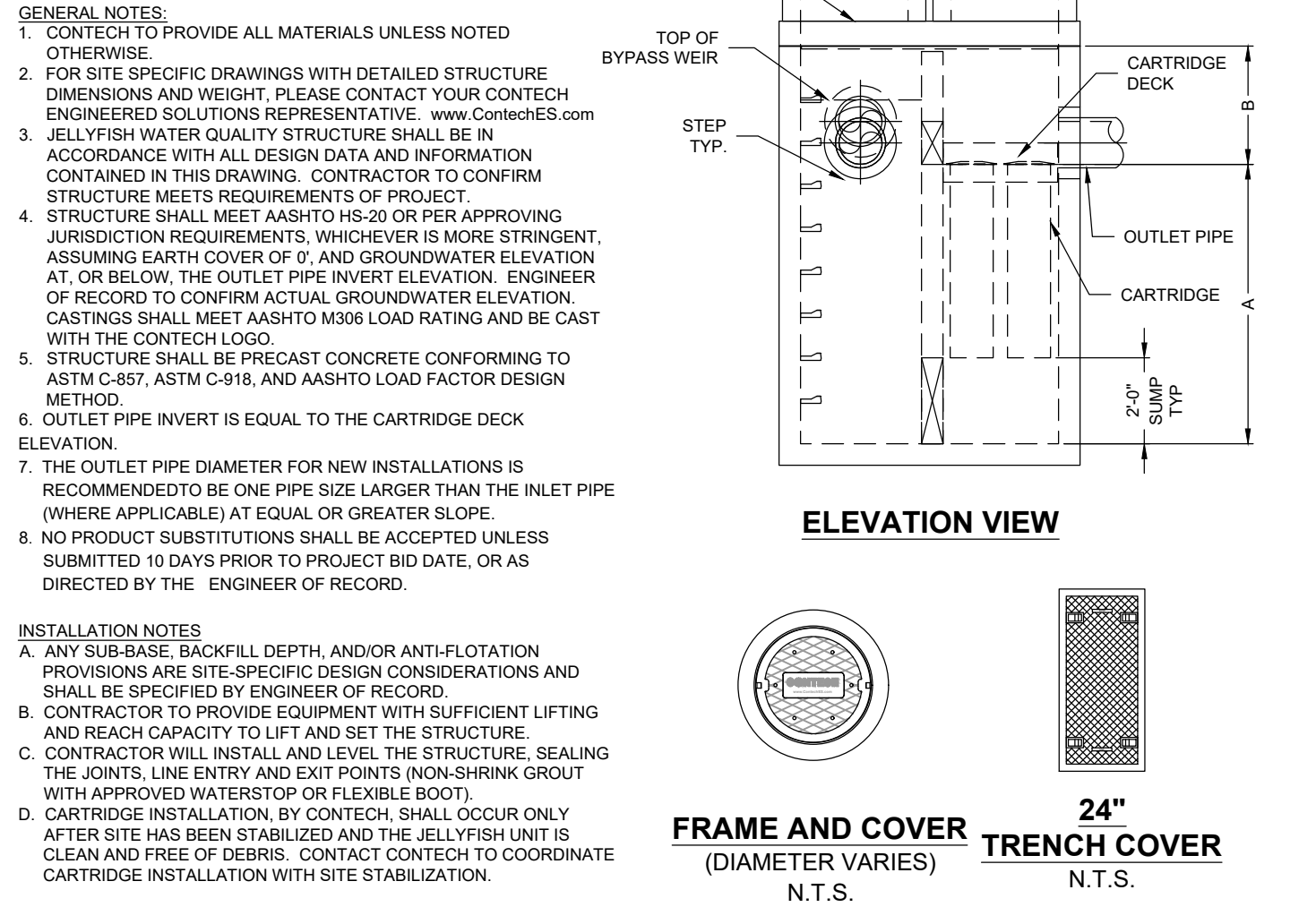
JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD SURFACE INLET STYLE WITH TRENCH GRADE AND COVER IS SHOWN. ALTERNATE CURB INLET OR PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SELECTION	54"	40"	27"	18"
CARTRIDGE LENGTH	54"	40"	27"	18"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-4"	4'-3"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	0.89	0.67	0.45	0.25
OUTLET INVERT TO RIM (MIN) (B)	5'-0"	4'-0"	4'-0"	4'-0"

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID					
WATER QUALITY FLOW RATE (cfs)					
PEAK FLOW RATE (cfs)					
RETURN PERIOD OF PEAK FLOW (yrs)					
# OF CARTRIDGES REQUIRED (HF / DD)					
CARTRIDGE LENGTH					
PIPE DATA:					
INLET #1	I.E.	MATL.	DIA.	SLOPE %	HGL.
INLET #2					
OUTLET					
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.					
RIM ELEVATION					
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT			
NOTES/SPECIAL REQUIREMENTS:					
* PER ENGINEER OF RECORD					



APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____

CHAIRMAN _____ SIGNATURE DATE _____ AND _____

SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SIZE, TYPE AND QUANTITY. THE STANDARD MANHOLE STYLE IS SHOWN. THE 48" (1219 mm) Ø MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 0.45 cfs (12.74 L/s) AND MAXIMUM BYPASS CAPACITY IS 2.50 cfs (70.79 L/s). IF THE SITE CONDITIONS EXCEED THE BYPASS CAPACITY OF THE SYSTEM, AN UPSTREAM DIVERSION STRUCTURE IS REQUIRED. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SIZE	54"	40"	27"	15"
FLOW RATE, HIGH-FLO / DRAINDOWN (cfs [L/s])	0.18 / 0.09 [5.10 / 2.55]	0.13 / 0.065 [3.68 / 1.84]	0.09 / 0.045 [2.55 / 1.28]	0.05 / 0.025 [1.42 / 0.71]
MAXIMUM CARTRIDGE QUANTITY HIGH-FLO / DRAINDOWN	211	211	211	211
PEAK TREATMENT CAPACITY (cfs [L/s])	0.45 [12.74]	0.33 [9.34]	0.22 [6.23]	0.12 [3.40]
OUTLET INVERT TO STRUCTURE INVERT (A) (ft. [mm])	7.42 [188]	6.25 [159]	5.17 [131]	4.17 [106]

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
NUMBER OF CARTRIDGES REQUIRED (HF / DD)			
CARTRIDGE SIZE (54, 40, 27, 15)			
RIM ELEVATION			
PIPE DATA:			
INLET PIPE 1	INVERT	MATERIAL	DIAMETER
INLET PIPE 2			
OUTLET PIPE			
NOTES/SPECIAL REQUIREMENTS:			

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.contechES.com
- JELLYFISH 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.
- STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3' (305), AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- INLET PIPE INVERT ELEVATION VARIES FROM 1' TO 6" (25 TO 152) ABOVE THE OUTLET PIPE INVERT.
- OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
- THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
- THE DIFFERENCE IN THE INLET AND OUTLET PIPE ELEVATIONS FOR RETROFIT INSTALLATIONS TO EXISTING STORM DRAIN PIPES SHALL BE EQUAL TO THE SLOPE OVER THE DIAMETER OF THE MANHOLE, NOT TO EXCEED 6" (152) IN VERTICAL DIFFERENTIAL BETWEEN INLET AND OUTLET PIPES.
- NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.
- ALTERNATE UNITS ARE SHOWN IN [mm].

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
- CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16

DETAILS

GAS STATION/CONVENIENCE STORE/CAR WASH

91-97 LOWELL ROAD, HUDSON, NH

OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS DECEMBER 13, 2023

Seacoast Division

TFM

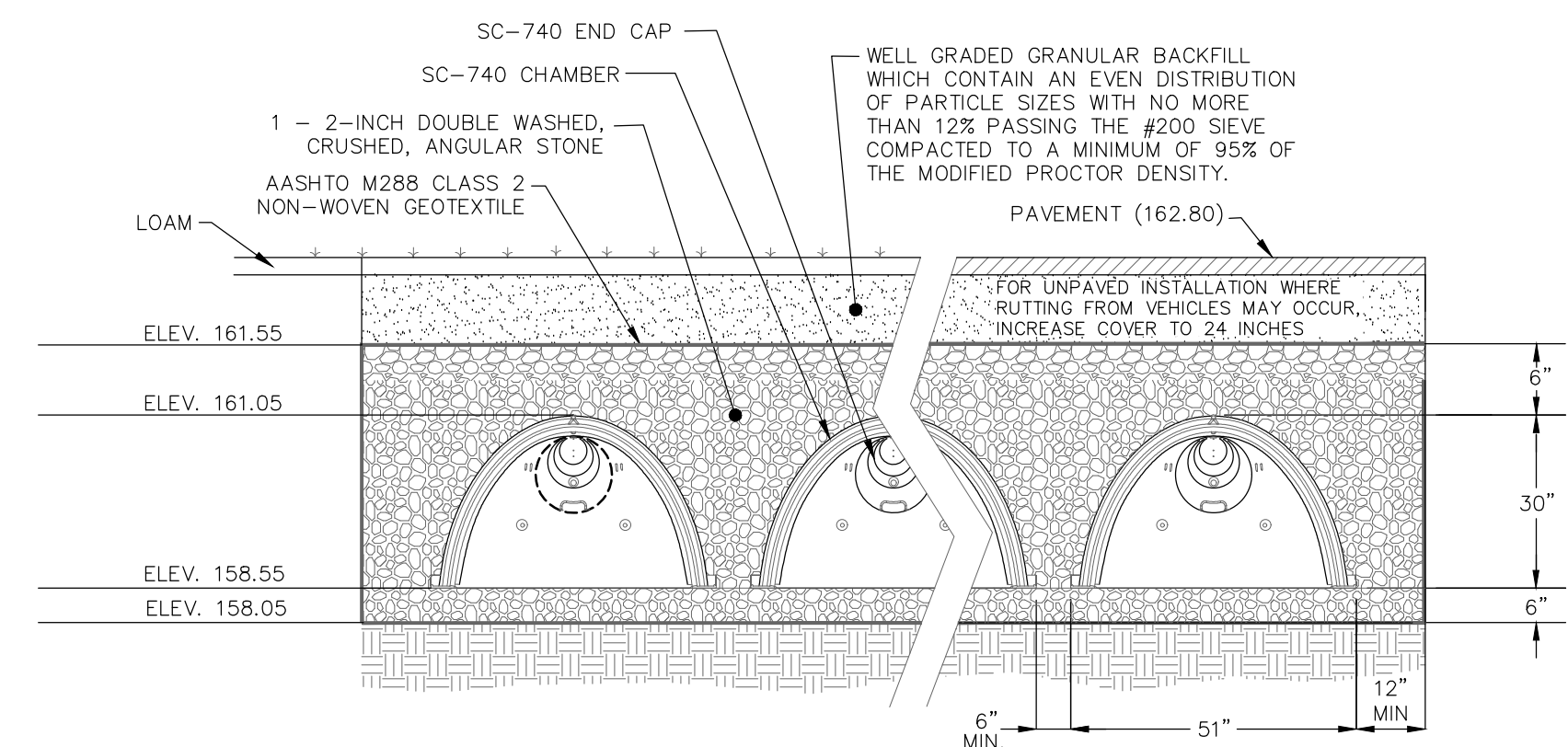
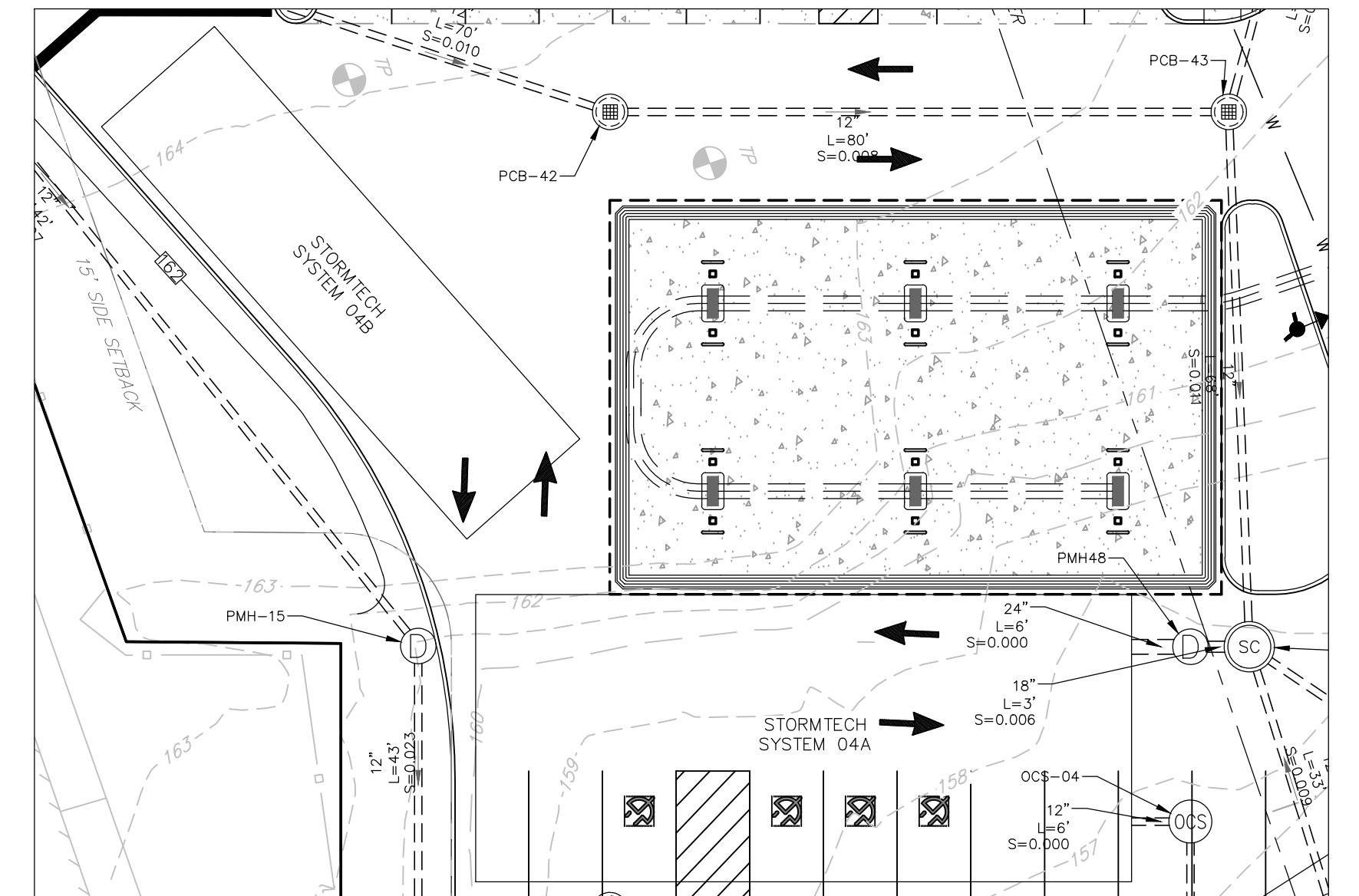
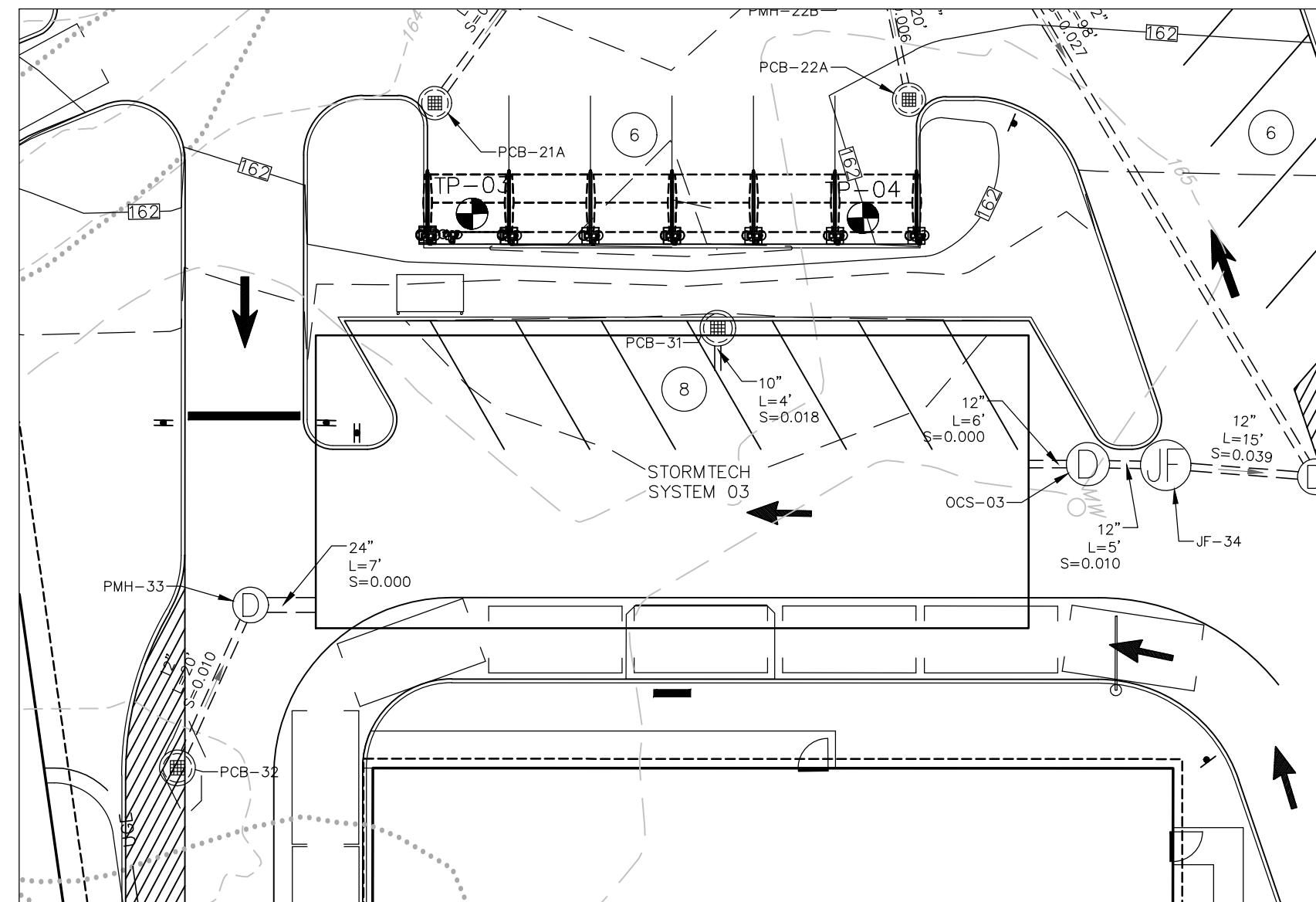
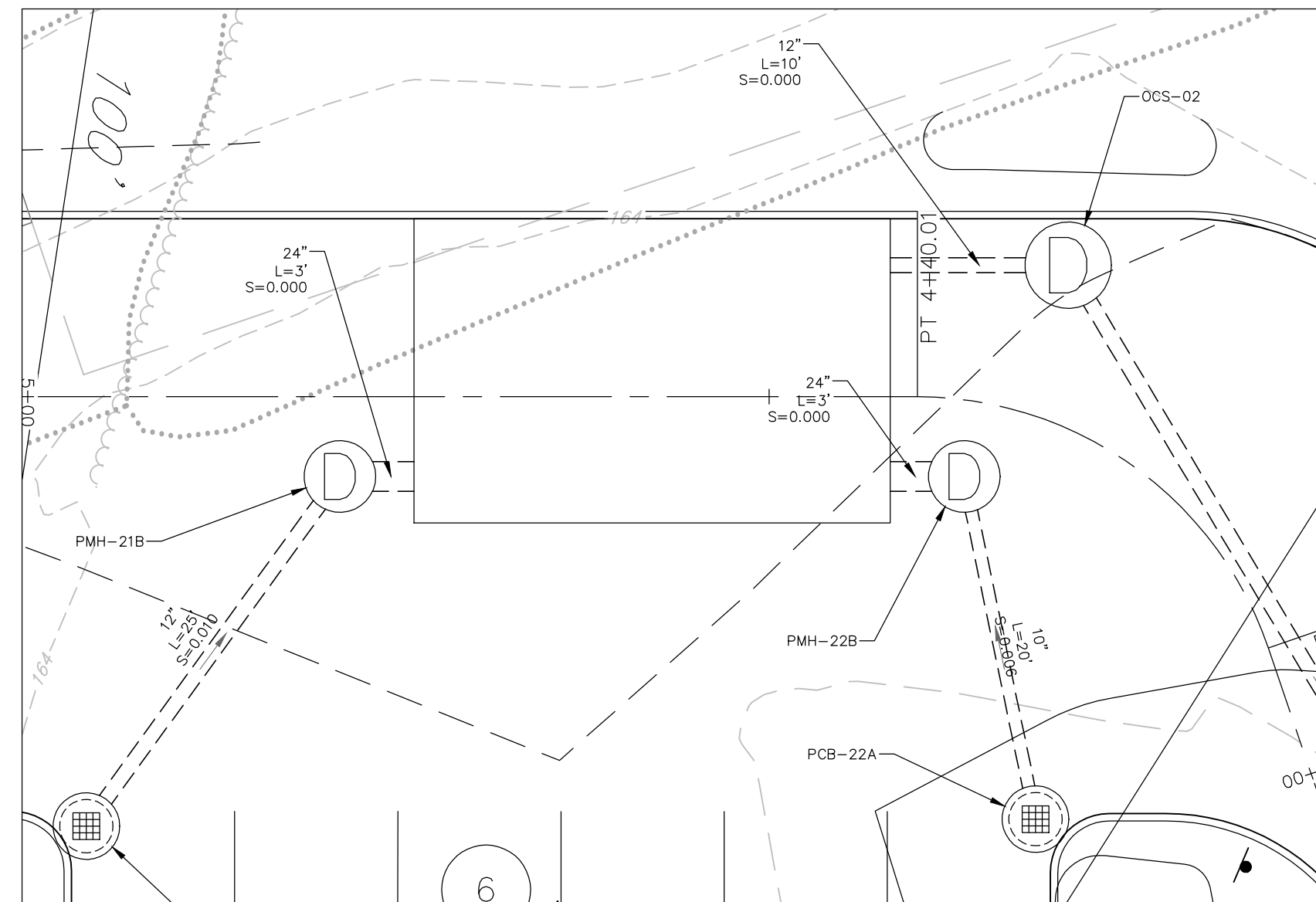
Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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

18149.00	DR	JKC	FB		
	CK	CR	CADFILE	18149-00_DETAILS	

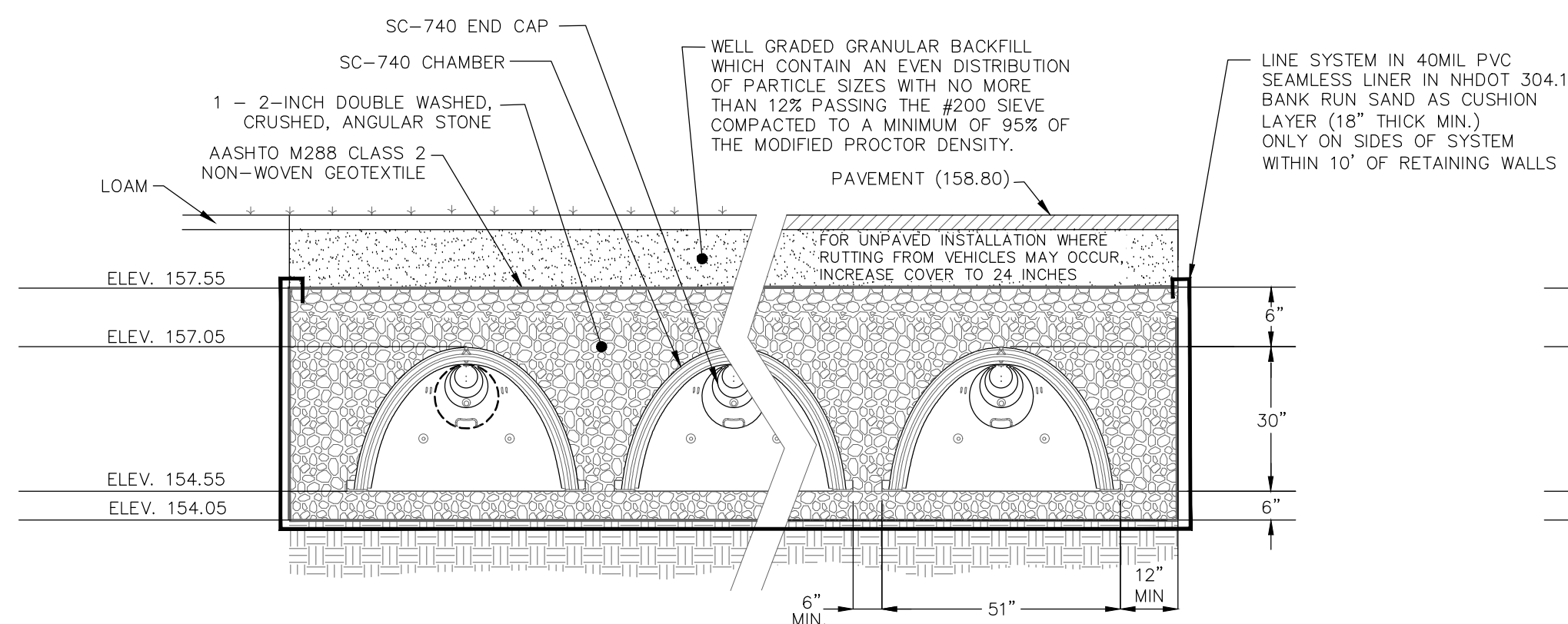
C-26

Jul 18, 2024 - 12:24pm
 \\fr-beford04\projects\civil\survey\MSC Projects\18149-00 Colbea - Seacoast Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Details.dwg



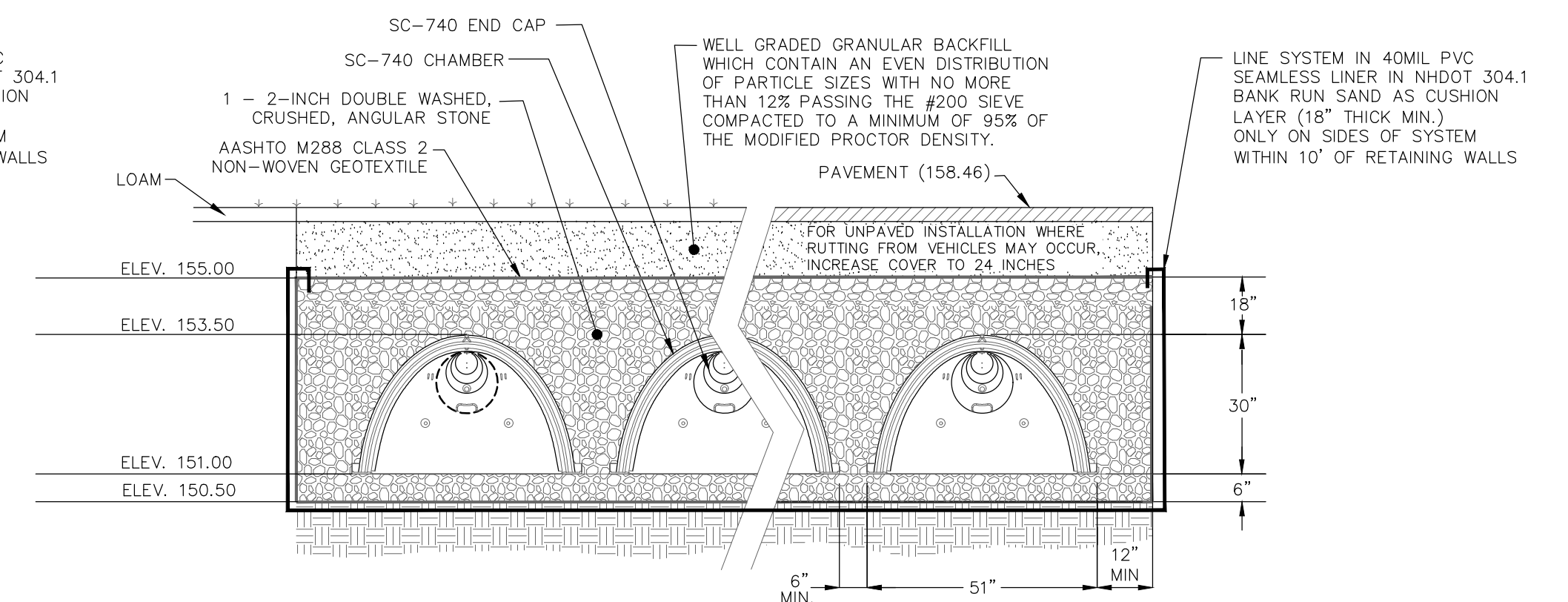
STORMTECH SC-740 CHAMBER SYSTEM CROSS SECTION DETAIL STORMTECH SYSTEM #2

NOT TO SCALE



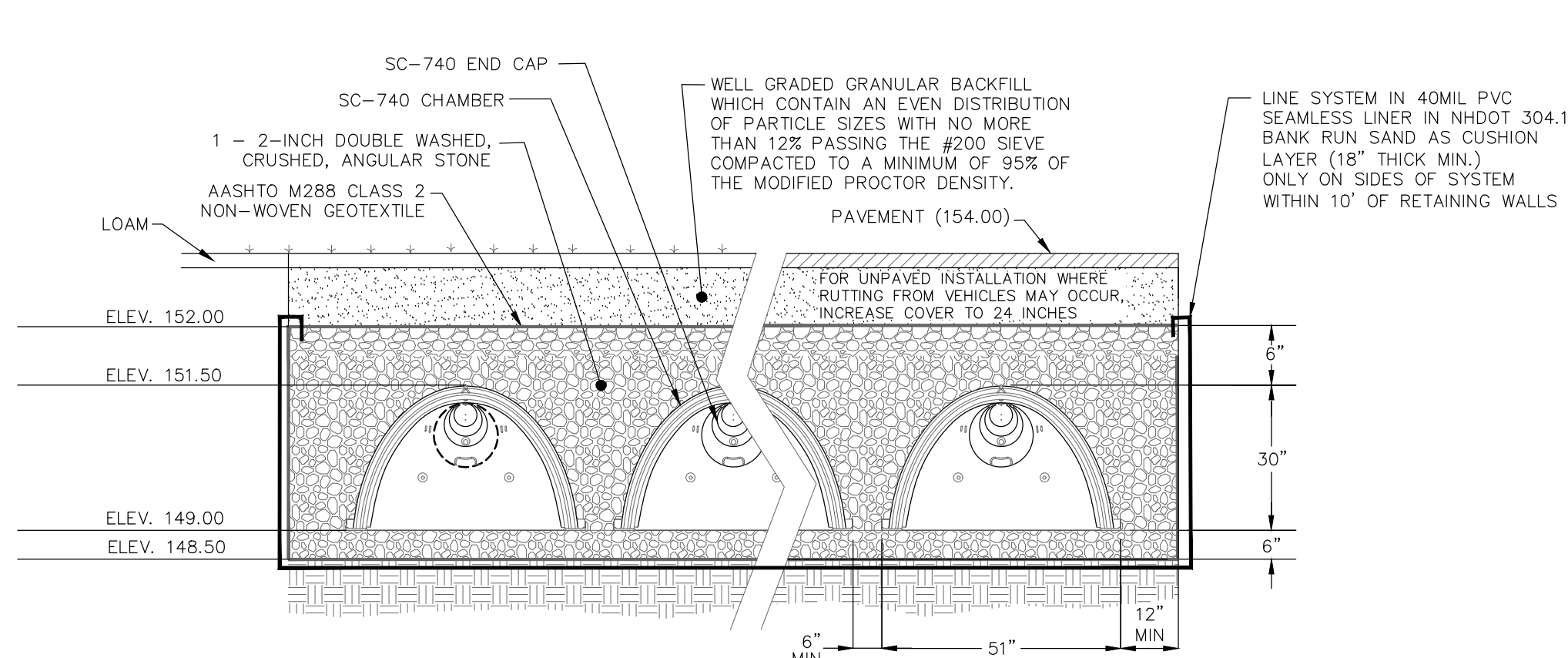
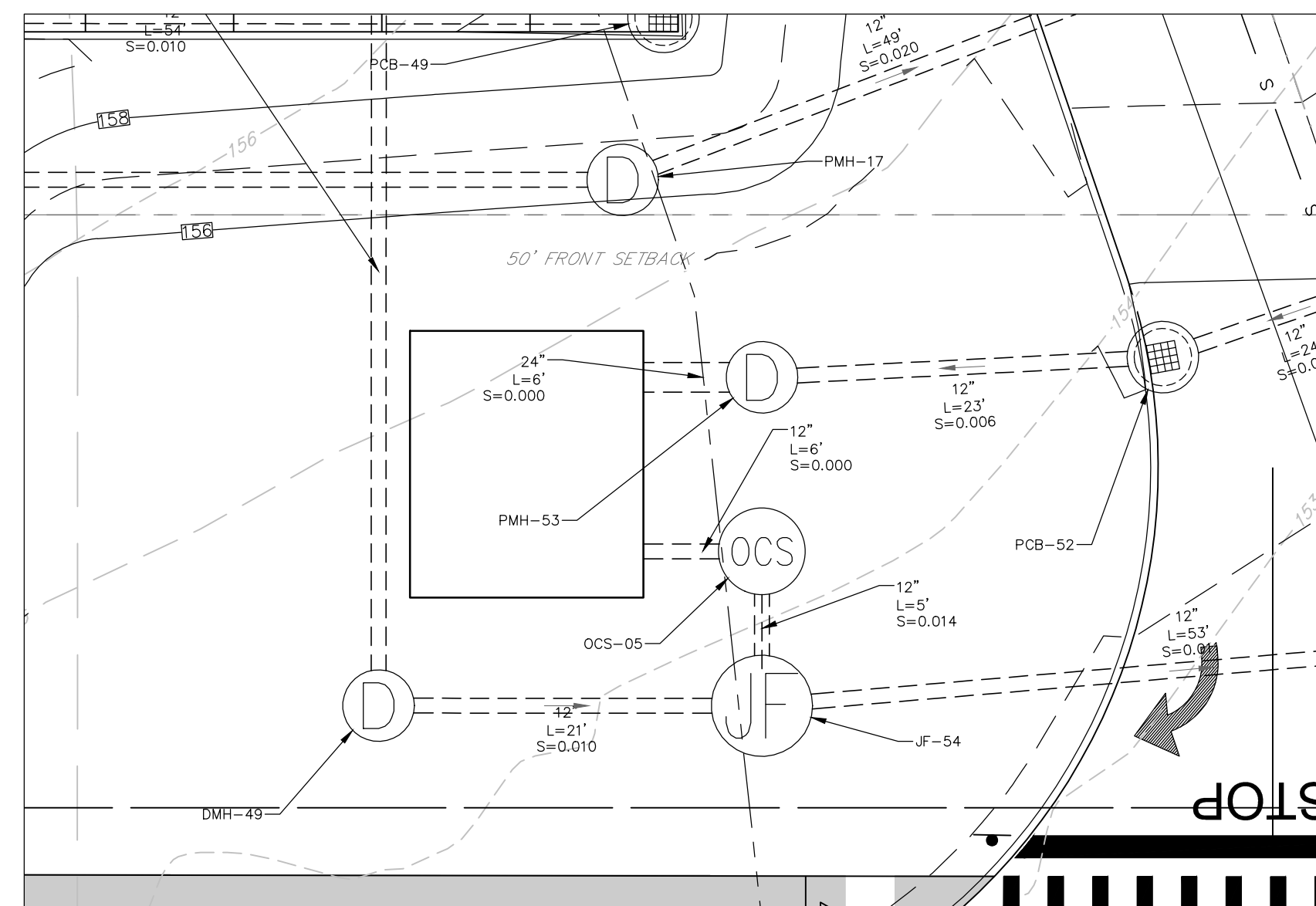
STORMTECH SC-740 CHAMBER SYSTEM CROSS SECTION DETAIL STORMTECH SYSTEM #3 (LINED)

NOT TO SCALE



STORMTECH SC-740 CHAMBER SYSTEM CROSS SECTION DETAIL STORMTECH SYSTEM #4 (LINED)

NOT TO SCALE



STORMTECH SC-740 CHAMBER SYSTEM CROSS SECTION DETAIL STORMTECH SYSTEM #5 (LINED)

NOT TO SCALE

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

SITE DEVELOPMENT PLANS

TAX MAP 198 LOTS 11, 12, 14, 15, & 16
DETAILS
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

SCALE: NTS

DECEMBER 13, 2023

Seacoast Division



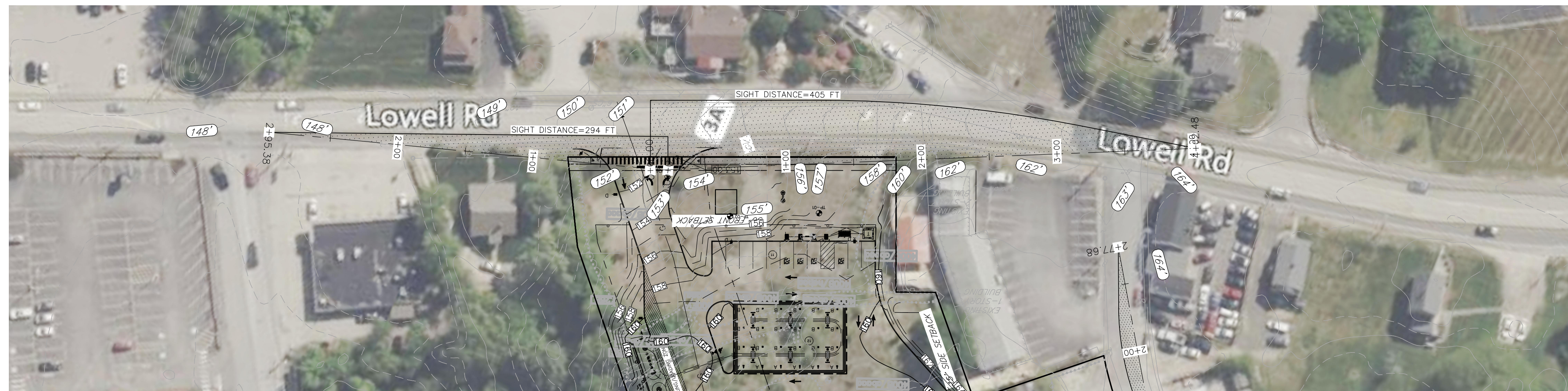
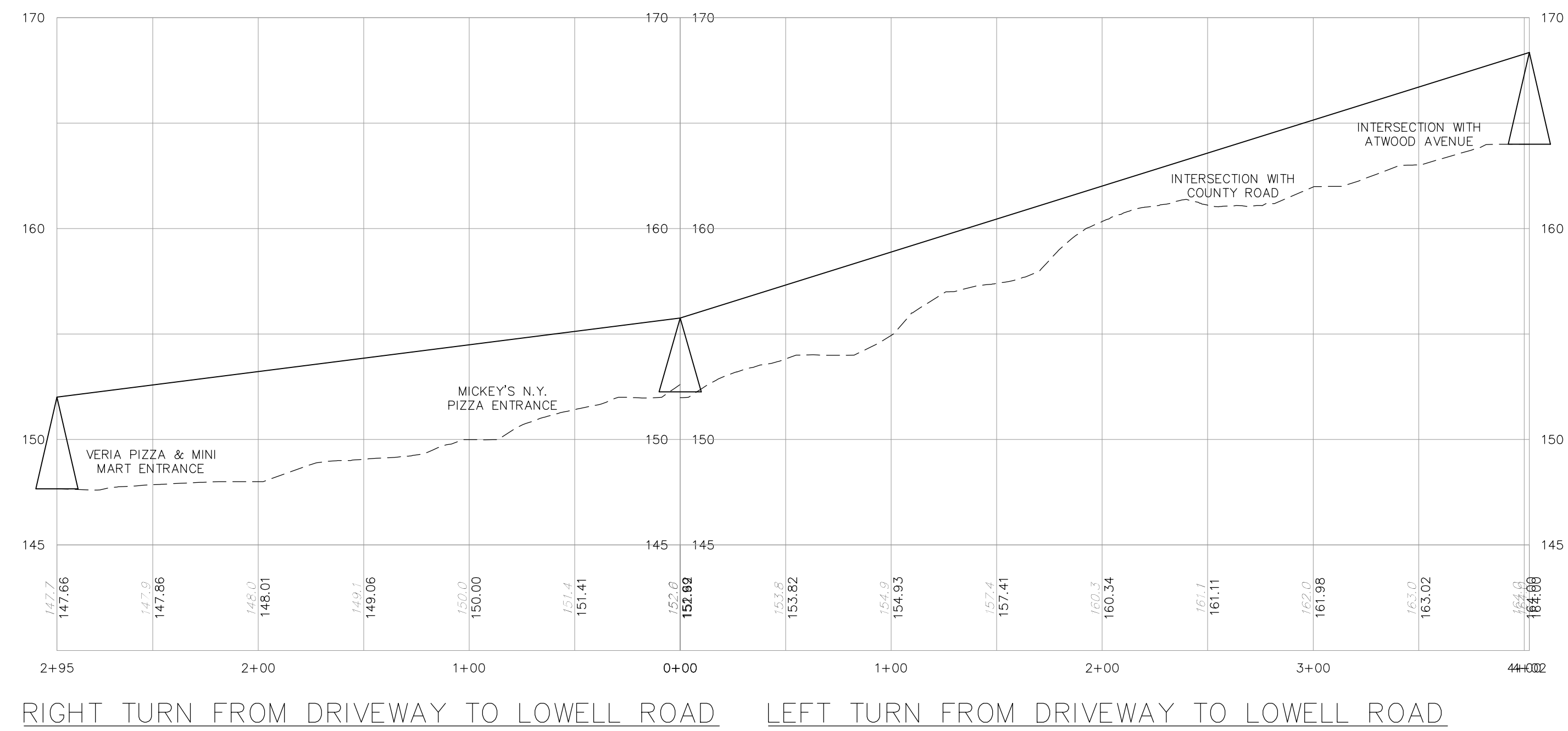
Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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

REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

18149.00 DR JKC FB
 CK CRR CADFILE 18149-00_DETAILS C-27

Jul 18, 2024 - 12:25pm
 \\fmr-bdfor4\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Sight_Distance.dwg



SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
LOWELL ROAD SIGHT DISTANCE PLAN
 GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=100' (11"x17")
SCALE: 1"=50' (22"x34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

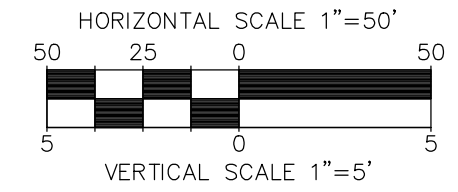
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

Seacoast Division

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

18149.00
 DR JKC FB
 CK CRR CADFILE 18149-00_SIGHT DISTANCE

C-28

Jul 18, 2024 - 12:25pm
 \\frn-bedford4\projects\civil\survey\MSC Projects\18149_Lowell Rd-Hudson\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00_Sight Distance.dwg



SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
ATWOOD AVENUE SIGHT DISTANCE PLAN
 GAS STATION/CONVENIENCE STORE/CAR WASH
 91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=60' (11"x17')
SCALE: 1"=30' (22"x34') **DECEMBER 13, 2023**

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____
 CHAIRMAN _____ SIGNATURE DATE _____ AND
 SECRETARY _____ SIGNATURE DATE _____

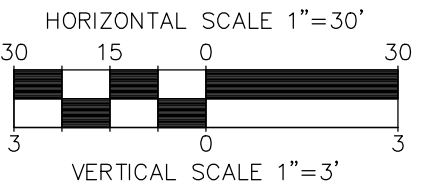
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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

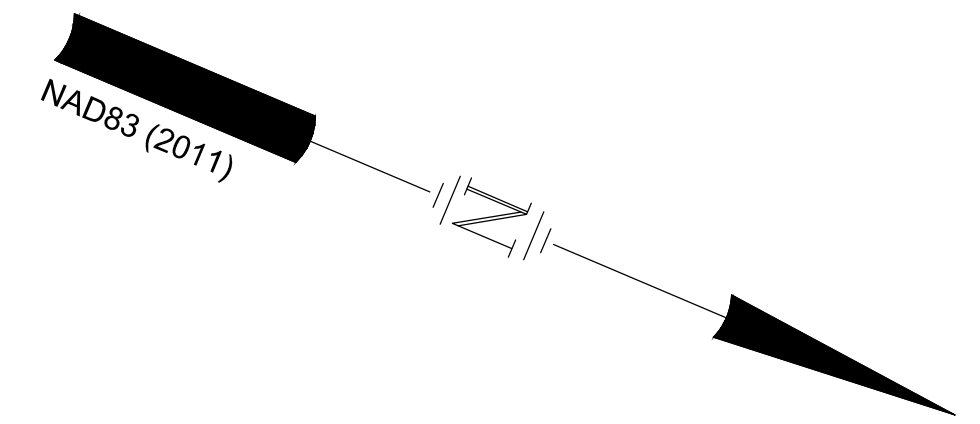


REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW COMMENTS	JKC	CRR

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	18149.00	DR	JKC	FB	-
CK	CRR	CADFILE	18149-00_SIGHT DISTANCE		C-29



NOTES

1. PROPOSED PROJECT TO INCLUDE IMPROVEMENTS TO OFF-SITE DRAINAGE. ALL OFF-SITE WORK TO BE COORDINATED WITH THE TOWN OF HUDSON INCLUDING INSTALLATION AND SUPPLY OF CATCH BASINS.
2. ALL WORK TO BE LOCATED WITHIN THE RIGHT-OF-WAY. AREAS OF DISTURBANCE ARE TO BE RESTORED AFTER INSTALLATION.



SITE DEVELOPMENT PLANS
 TAX MAP 198 LOTS 11, 12, 14, 15, & 16
OFF-SITE DRAINAGE
GAS STATION/CONVENIENCE STORE/CAR WASH
91-97 LOWELL ROAD, HUDSON, NH
 OWNED BY & PREPARED FOR
COLBEA ENTERPRISES, LLC

1"=100 (11"x17")
SCALE: 1"=50' (22"x34') **DECEMBER 13, 2023**

Jul 18, 2024 - 12:25pm \\tfm-bdfor4\projects\civil\survey\MSC Projects\18149-00 Colbea - Seasons Market - Hudson, NH\Design\PRODUCTION DRAWINGS\18149-00 Off-Site Drainage.dwg

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING _____ SIGNATURE DATE _____ AND
 CHAIRMAN _____ SECRETARY _____

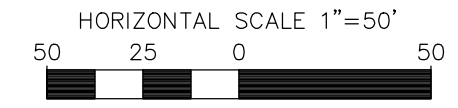
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

Copyright 2024 ©TFMoran, Inc.
 48 Constitution Drive, Bedford, N.H. 03110

All rights reserved. These plans and materials may not be copied, duplicated, replicated or otherwise reproduced in any form whatsoever without the prior written permission of TFMoran, Inc.

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



REV	DATE	DESCRIPTION	DR	CK
2	7/18/2024	REVISED PER TOWN INTERNAL REVIEW COMMENTS	JKC	CRR
1	5/24/2024	REVISED PER ENGINEERING REVIEW 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	18149.00	DR	JKC	FB	-	OS-01
CK	CRR	CADFILE	18149-00 OFF-SITE DRAINAGE			