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# METAL CABINET
NEW

MH-7

ULINE

**PRICE**
SEE BELOW

**WEBSITE**

**AS OF** JAN 2024

## Welded Storage Cabinet - 36 x 24 x 74"

More Images

Strength and security for storing your heavy tools and equipment.

- 14-gauge steel with durable powder-coat finish.
- Padlockable handle with three-point locking system.
- Reinforced doors open on full-height hinges.
- Shelves adjust in 2 1/2" increments.

| MODEL NO. | DESCRIPTION | DIMENSIONS W x D x H | NO. OF SHELVES | SHELF CAPACITY (LBS.) | WT. (LBS.) | PRICE EACH | | IN STOCK SHIPS TODAY |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 2+ | |
| H-4459 | Welded Industrial | 36 x 24 x 74" | 5 | 1,200 | 370 | $1,415 | $1,355 | 1 ADD |

SHIPS ASSEMBLED VIA MOTOR FREIGHT

Weston & Sampson
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# CANTILEVER RACK
# 24" ARMS
NEW

MH-10

**ITEM NAME/NUMBER**

**Starter Straight Cantilever Rack, No. of Sides: 1, 8 Arms, Arm Length: 24"**
Jarke

Product # 3W588 Manufacturer # SC-8J

Web Price
$2,089.19 / each

**WEBSITE**
GRAINGER

**AS OF** MARCH 2024

**IMAGES**

**Product Description**

Heavy-duty pin-lock cantilever racks hold heavier materials than medium-duty and light-duty cantilever racks, such as heavy bar stock, tube stock, and sheet material. Items can be placed onto or taken off of the racks with a lift truck or forklift. The racks consist of vertical uprights and arms, and they do not require special tools or bolts to assemble. The arms attach to the uprights with a locking pin that holds them securely in place, and the height of the arms can be adjusted on the uprights.

**SPECIFICATIONS**

## Technical Specs

| | | | |
|---|---|---|---|
| Item | Cantilever Rack | Overall Width | 37" |
| Number of Sides | 1 | Overall Depth | 32" |
| Cantilever Arm Style | Straight | Arm Steel Gauge | 11 |
| Shelving Type | Starter | Column Steel Gauge | 11 |
| Arm Length | 24" | Finish | Gray Enamel |
| Capacity per Arm | 2000 lb. | Lip | Removable |
| Center Brace Length | 72" | Lip Height | 1-1/2" |
| Load Capacity | 12,530 lb. | Material | Steel |
| Number of Arms | 8 | Includes | Arms Adjustable on 3" Centers |
| Overall Height | 8 ft. | | |

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# PALLET RACK
# HANGING TOOL STORAGE
NEW

MH-11

## Double Arm Tool Holder

SHELVING.com
we RACK your world

1-800-637-9508

Our Price: $155.68
AS OF APRIL 2024

### IMAGES

Place double arm tool holders at the top or bottom of a pallet rack bay to organize goods that are harder to store such as brooms, rakes, shovels, and tools. With two arms, the divider is equipped to support both short and long-handled items.

- 31"l and 33"l x 1.5"w x 1.5"h arms
- Stores short or long-handled items vertically on pallet racking
- Arms welded at upward angle to stop items from shifting forward
- 2"w clearance between tubing
- Front flat plate for labeling
- Mounts to beam at desired level
- Installs and repositions without tools

### Product Details

- Overall Dimensions: 36"d x 5"w x 7"h
- Color: Gray
- Finish: Powder Coat
- Material: Steel
- ***Pallet racking not included**

Product Code: DIVIDERARM-DBL

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transform your environment

# PALLET SIGN RACK
# 3'D X 8'W X 8'H
NEW

HH-4

## ITEM NAME/NUMBER

Model #: WB796562N

EXCLUSIVE BRANDS

**Global Industrial™ Teardrop Pallet Rack Starter, 96"W X 36"D X 96"H**

PRICE
**$559.00**

GLOBAL INDUSTRIAL
We can supply that.

**AS OF MARCH 2024**

## IMAGES

**Global Industrial™ TEAR DROP PALLET RACKS Starter Unit**
Premium quality pallet racks at a low price. Global Industrial™ pallet racks offer quick and easy, tool free assembly for all your pallet storage needs. These pre-configured starter and add-on industrial storage rack systems are made of durable heavy gauge steel for years of service. Starter Unit includes 2 upright frames and 2 pairs of shelf beams. Heavy duty, one-piece 14 gauge steel uprights allow height adjustments at 2" increments for easy beam adjustment. High strength 15 gauge steel beams have a 1-5/8"H step beam design that accommodates cross bars and decking. Beams provide secure connection to upright frame using a positive 6-way locking action; right to left, front to back and up and down. Lock automatically snaps into place and secures beam. Welded braces provide maximum rigidity and stability. 3-1/4" x 4-1/4" x 12 gauge welded base plate anchors upright to floor and distributes weight evenly. Uprights feature a long lasting epoxy finish. The pallet should overhang the frame by 3" front and back. Interchangeable with Teardrop styles of the following manufacturers: Interlake, Kingway, Steel King, USP, Wireway/Husky, Unarco and Speed Rack. Easy assembly.

**27600 lb rated capacity, higher than other pallet racking in the market. Capacity based on 36" beam shelf spacing.**

### Weights & Dimensions

| | | | |
|---|---|---|---|
| Width | 96 in | Beam Height | 4-1/2 in |
| Depth | 36 in | Weight Capacity | 27600 lbs |
| Height | 96 in | Column Size | 3 x 3 in |

### Product Details

| | | | |
|---|---|---|---|
| Assembly Required | Yes | Material | Steel |
| Beam Ledge Type | Unslotted | Construction Type | Welded Frame |
| Type | Starter | Description | Global Tear Drop Pallet Rack Add-on |
| Shelf Capacity | 5030 lbs | Manufacturers Part Number | 796562N |
| Color | Orange | Brand | Global Industrial |
| Number of Levels | 2 | | |

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MM-8

# PARTS WASHER
NEW

## ITEM NAME/NUMBER

safety-kleen
A Clean Harbors Company

**MODEL 16/30**

## PRICE

WILL NEED TO CONTACT REP

## WEBSITE

www.safety-kleen.com/

**AS OF** 5-14-2020

## IMAGES


## DESCRIPTION

Time tested.
Our legacy sink-on-a-drum has been around more than 50 years. A sink on a 16- or 30-gallon drum parts washer with solvent, featuring a fusible link cover, plastic spigot, hose and brush, and lamp. Soiled parts are manually washed in the sink, with the solvent draining into the reservoir below.

## SPECIFICATIONS

| | Model 16* | Model 30** |
|---|---|---|
| **Chemistry** | Premium Solvent, QSOL 220/300, PD 680 Type II, PRF 680 Type II, Odorless Solvent | Premium Solvent, QSOL 220/300, PD 680 Type II, PRF 680 Type III, Odorless Solvent |
| **Operation Type** | Manual | Manual |
| **Floor Space** | | |
| Height | 53" (134.7 cm) | 60" (152.4 cm) |
| Width | 16" (40.7 cm) | 19.5" (49.6 cm) |
| **Sink Size** | | |
| Height | 7.5" (19.1 cm) | 8" (20.4 cm) |
| Width | 27.5" (69.9 cm) | 33.25" (84.5 cm) |
| Depth (front to back) | 16.25" (41.3 cm) | 22.25" (56.6 cm) |
| **Electric Power** | 115 VAC, 60 Hz, 1.4 A | 115 VAC, 60 Hz, 1.4 A |
| **Standard Fill** | 8 gal. (30.2 L) | Max Fill: 15 gal. (56.8 L) |
| **Operating Temp** | Ambient | Ambient |
| **Material** | Steel | Steel |
| **Machine Color** | Red | Red |
| **Max Workload** | 25 lbs. (11.3 kg) | 25 lbs. (11.3 kg) |
| **Shipping Weight** | 57 lbs. (25.9 kg) | 62 lbs. (28.1 kg) |
| **Max Filled Weight** | 111 lbs. (50.3 kg) | 162 lbs. (73.5 kg) |
| **Listing** | cETLus | cETLus |

*Certified reconditioned equipment. Local regulations may cause variations in requirements. Drum and chemistry sold separately.

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MM-9

# PEDESTAL GRINDER
NEW

**ITEM NAME/NUMBER**

**JET** Benchtop Shop Grinder with Stand 8in. Dia. Wheel

Model# JBG-8A/JPS-2A
Item# 70607

**PRICE**

**$509.99**

**WEBSITE**

NORTHERN TOOL + EQUIPMENT

**AS OF** FEB 2024

**IMAGES**


**SPECIFICATIONS**

| | | | |
|---|---|---|---|
| **Item#** | 70607 | **Volts** | 120 |
| **Brand** | Jet | **Spindle Size** | 5/8 |
| **Manufacturer's Warranty** | 24 months parts / 24 months labor | **Cord Length (ft.)** | 6 |
| **Ship Weight** | 140.0 lbs | **Wheel Included** | Yes |
| **Wheel Diameter** | 8 | **Dimensions L x W x H (in.)** | 31 x 21 x 19 |
| **Speed (RPM)** | 3,450 | **Tool Weight** | 60 |
| **Horsepower** | 1 | | |

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transform your environment

# COMPUTER CART
NEW

SD-2

**ITEM NAME/NUMBER**

**Model #:** WB694561BKA

## Global Industrial™ Mobile Computer Workstation, Black, Assembled

**PRICE**

**$459.95**

**WEBSITE**

globalindustrial.com

**AS OF** 12-19-2024

**IMAGES**


**DESCRIPTION**

Mobile Computer Workstation from Global Industrial™ is constructed of 20 gauge steel and provides secure storage in the lockable 24-5/8"W x 22-7/8"D x 22-5/8"H lower compartment. CPU shelf adjusts to accommodate either tower or desktop styles. Rear cabinet access holes are provided. Middle 11-1/2"H fixed shelf provides room for printer. The slide out keyboard tray has a comfortable wrist rest area to reduce fatigue, 23"W x 21"D. Rolls easily on 5" polyolefin casters (2 swivel w/brakes, 2 rigid). The top surface is 47-3/4"H for convenient monitor viewing and has 1-1/2"H back and end stops to keep items from rolling off. Wire ties and mounting holes provided for tidy cable management. Durable baked black enamel finish. Cabinet and shelves ship fully assembled.

# MANUAL WASH SYSTEM



## IMAGES

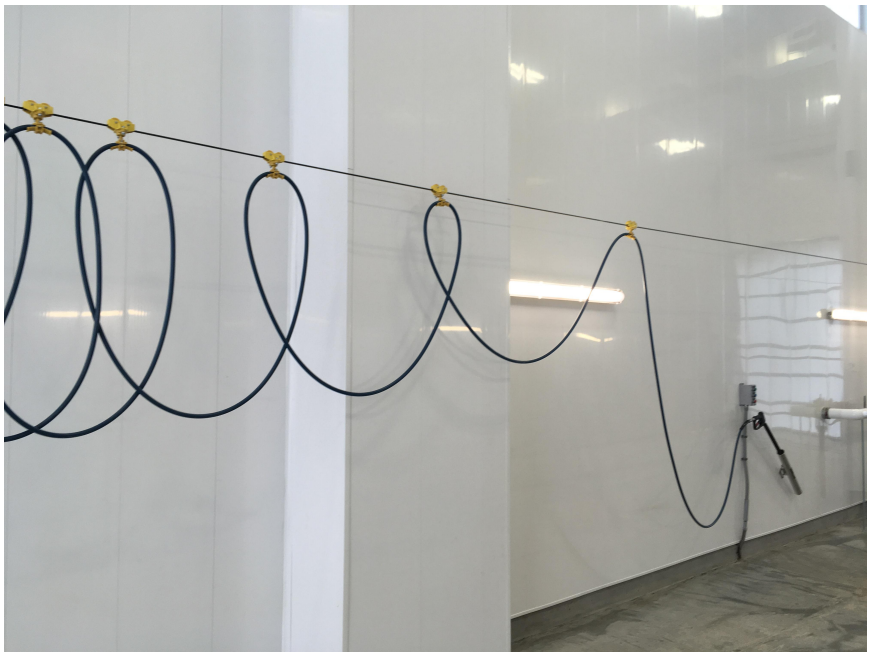



**Dimensions:**
**37" L x 27" D x 73"H**

**Control Panel Dimensions:**
**25" L x 12" D x 31" H**

# FESTOON SYSTEM

## IMAGES



# MANUAL WASH ON/OFF CONTROLS

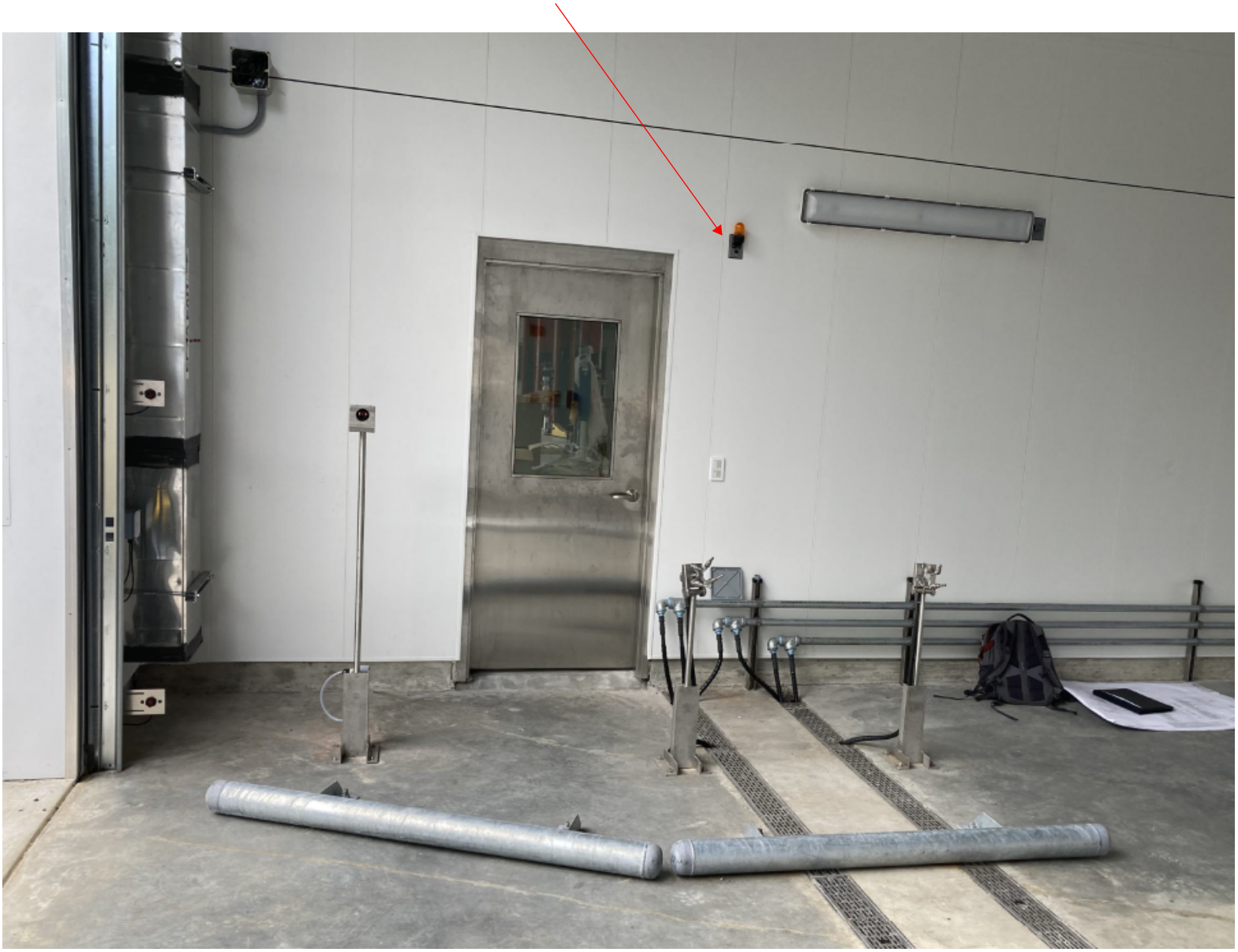


## IMAGES

# UNDERCARRIAGE WASH STATUS LIGHT

V-4

## IMAGES



# AUTOMATIC UNDERCARRIAGE WASH SYSTEM



## IMAGES

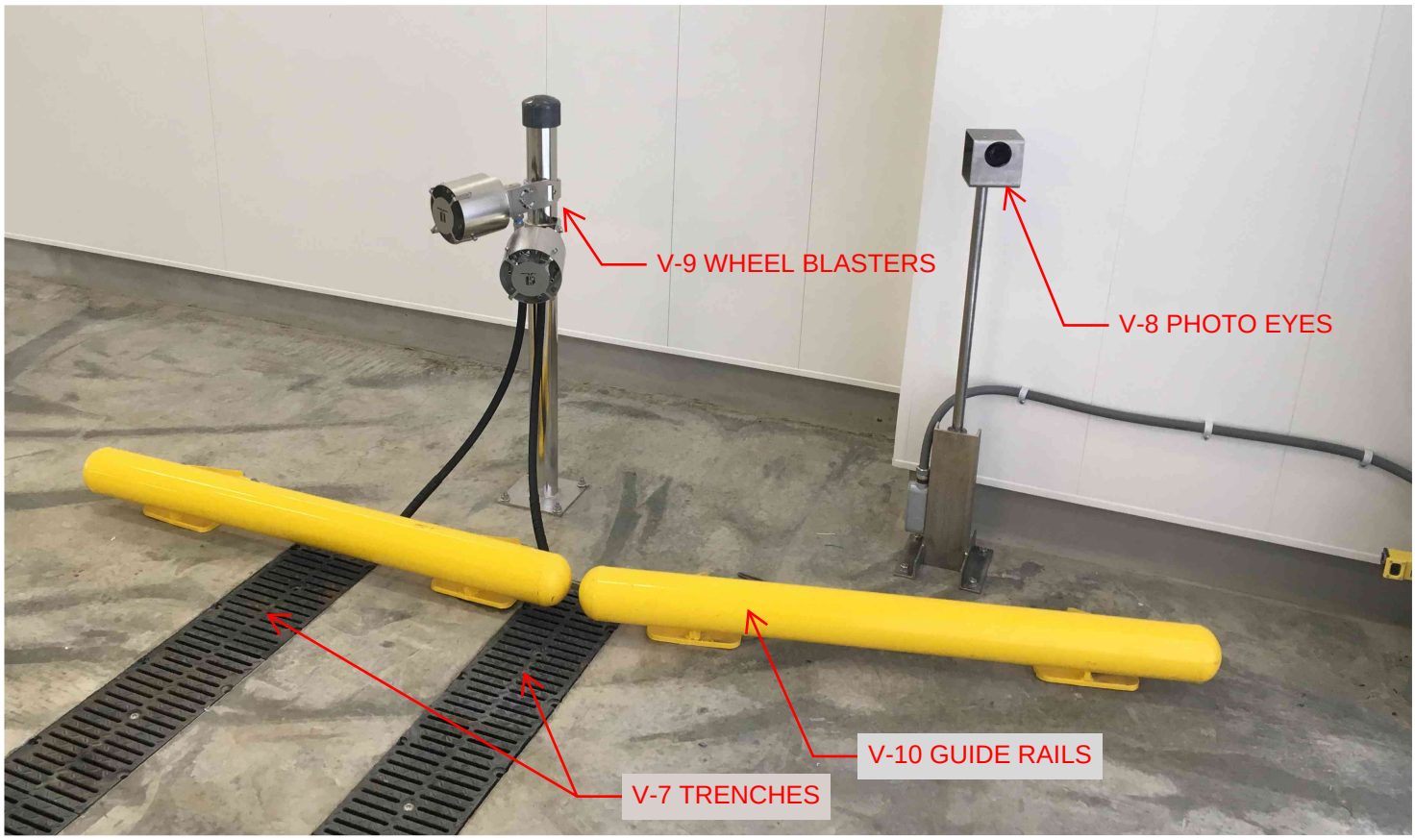

**Dimensions:**
**90" L x 32" D x 73" H**

**Control Panel Dimensions:**
**25" L x 12" D x 31" H**

# UNDERCARRIAGE WASH ASSEMBLY (WHEEL BLASTERS, GUIDE RAILS, PHOTO EYES, & TRENCHES)

V-7,8,9,10

## IMAGES




# UNDERCARRIAGE WASH CONTROL STATION

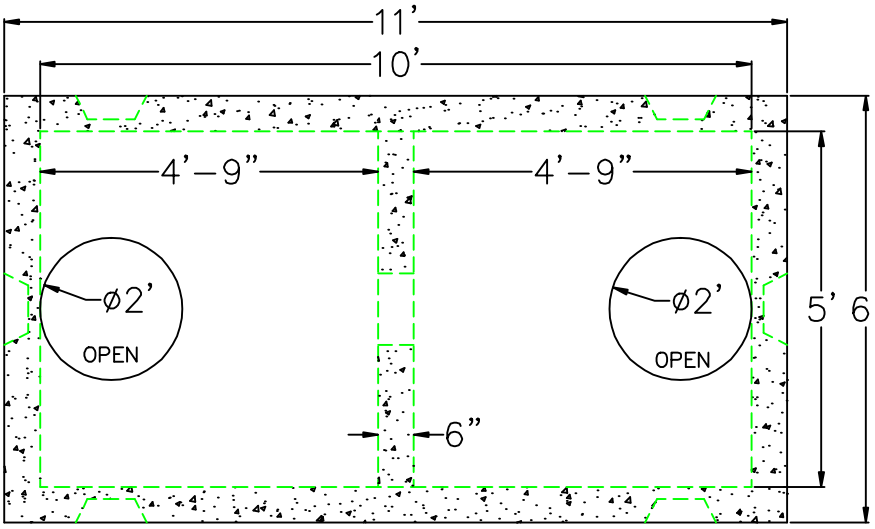


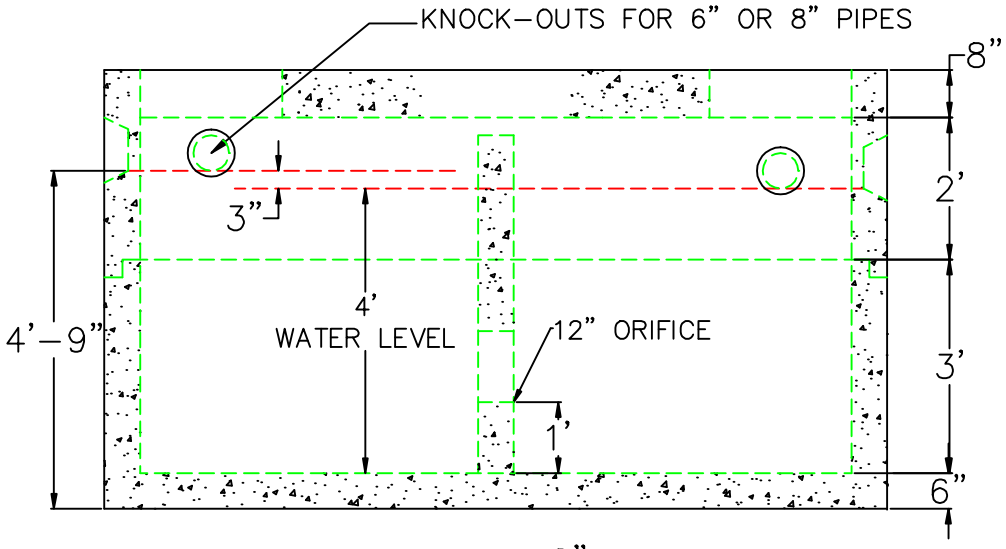
## IMAGES

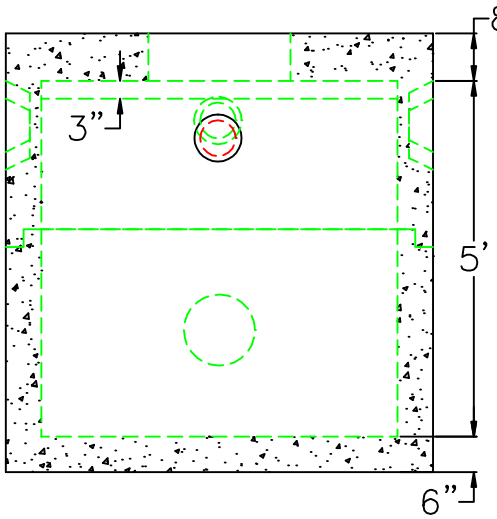
# UNDERCARRIAGE WASH
# TRAFFIC LIGHT



## 1,500 GALLON TANK WITH BAFFLE




NPCA
Precast ... The Concrete Solution.

DESIGN NOTES:
1. CONRETE 5,000 PSI. @ 28 DAYS
2. HS–20–44 LOADING WITH 12" TO 60" OF COVER
3. REINFORCING ASTM A–615 GRADE 60
4. CONST. JOINT TO HAVE MIN. 1" BUTYL SEALANT

| | FLOOR | VERT. FT | FLAT TOP |
|---|---|---|---|
| WEIGHT | 4,850 lbs. | 2,470 lbs. | 6,400 lbs. |
| VOLUME | | 375gal. | |

SCITUATE COMPANIES

SCITUATE RAY PRECAST
120 CLAY PIT ROAD
MARSHFIELD, MA 02050
PHONE # 1–800–440–0009
FAX # 781–837–4320

CONTRACTOR: WESTON & SAMPSON

JOB NAME: HOPKINTON DPW

DATE: 6/30/2016 | APPROVED BY: | DRAWING BY: JOHN KASPER

SEE ATTACHED PAGE

# Cotterman®

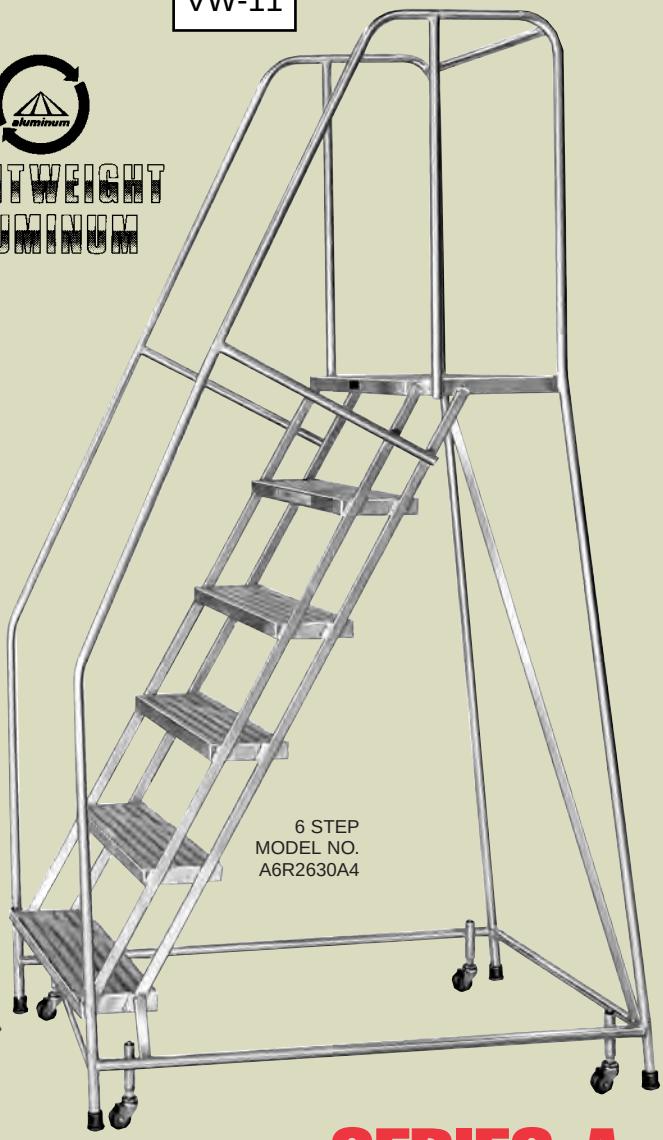
**COTTERMAN ALUMINUM SERIES "A" SAFETY LADDERS** are one-piece set-up assemblies of high strength aluminum alloy. The solid ribbed aluminum steps and platform provide sure footing in areas where dress shoes or high heels are worn. In addition to being light-weight, aluminum ladders are corrosion resistant and easy to clean. They are also non-magnetic.

LIGHTWEIGHT ALUMINUM

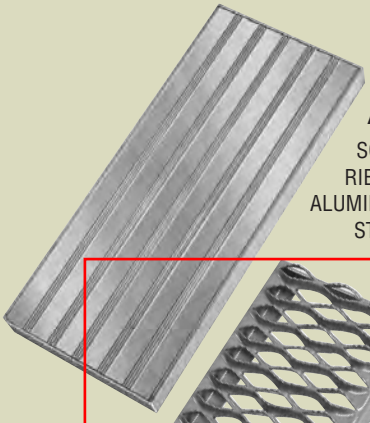
## FEATURES:

- **The structural framework is of 1" O.D. 6061-T6 high strength aluminum alloy tube.**
- **Both the steps and the top step are 16" or 24" wide and available in solid ribbed extruded aluminum alloy or aluminum grip strut. The steps are 7" deep. The top step is 14" deep.**
- **All ladders are provided with spring loaded 2" ball bearing swivel brake casters and reinforced rubber tipped legs.**
- **Ladders are normally furnished with unpainted aluminum mill finish.**
- **Series A aluminum ladders comply with OSHA 1910.29 and ANSI A14.7 standards with a 350 lb. load rating. Cal-OSHA models also available.**

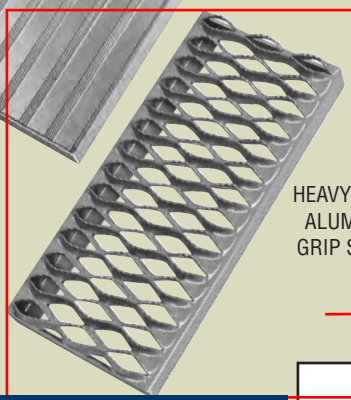
3 STEP
MODEL NO.
A3R2630A3



6 STEP
MODEL NO.
A6R2630A4



**A4**
SOLID RIBBED ALUMINUM STEPS



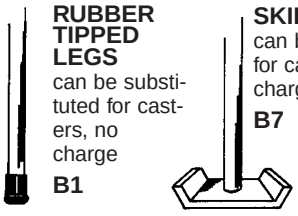
**A3**
HEAVY DUTY ALUMINUM GRIP STRUT

## WELDED ALUMINUM SAFETY LADDERS SERIES A

| NO. STEPS INCL. TOP STEP | TYPE OF RAILS | TOP STEP HT. | OVER-ALL HT. | 18" WIDE AT TOP | | | | | 26" WIDE AT TOP | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MODEL NO. | BASE W"xL" | SHPG. WT. | A4 TREAD | A3 TREAD | MODEL NO. | BASE W"xL" | SHPG. WT. | A4 TREAD | A3 TREAD |
| 1 | NONE | 12" | 12" | *A1N1818 | 18x20 | 13 | | | *A1N2626 | 26x20 | 14 | | |
| 2 | NONE | 20" | 20" | *A2N1818 | 20x23 | 16 | | | *A2N2626 | 26x23 | 20 | | |
| 2 | HAND | 20" | 50" | A2R1818 | 20x23 | 19 | | | A2R2626 | 26x23 | 21 | | |
| 3 | NONE | 30" | 30" | A3N1822 | 22x29 | 21 | | | A3N2630 | 30x29 | 25 | | |
| 3 | HAND | 30" | 60" | A3R1822 | 22x29 | 24 | | | A3R2630 | 30x29 | 27 | | |
| 4 | NONE | 40" | 40" | A4N1822 | 22x36 | 26 | | | A4N2630 | 30x36 | 30 | | |
| 4 | HAND | 40" | 70" | A4R1822 | 22x36 | 28 | | | A4R2630 | 30x36 | 32 | | |
| 5 | HAND | 50" | 80" | A5R1822 | 22x43 | 35 | | | A5R2630 | 30x43 | 39 | | |
| 6 | HAND | 60" | 90" | A6R1824 | 24x50 | 39 | | | A6R2630 | 30x50 | 44 | | |
| 7 | HAND | 70" | 100" | - | - | - | | | A7R2630 | 30x57 | 54 | | |
| 8 | HAND | 80" | 110" | - | - | - | | | A8R2630 | 30x63 | 61 | | |

***Shippable via UPS at additional boxing cost**

## OPTIONS



**RUBBER TIPPED LEGS** can be substituted for casters, no charge
**B1**

**SKID PLATES** can be substituted for casters, no charge
**B7**

COTTERMAN COMPANY IS PROUD TO BE A MEMBER OF THE FOLLOWING ASSOCIATIONS:

MEMBER ANSI

MHIA® The Material Handling Industry of America MEMBER COMPANY

MEMBER SCAFFOLD INDUSTRY ASSOCIATION SIA

National Safety Council

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# UNDERCARRIAGE WASH
# TRAFFIC LIGHT



## IMAGES

# SECTION VIII

# Appendix

Weston & Sampson

westonandsampson.com

55 Walkers Brook Drive, Suite 100
Reading, MA 01867
tel: 978.532.1900

# REPORT

May 30, 2025

PREPARED FOR:

## Town of Truro

**Geotechnical Engineering Report**
Department of Public Works Facility
Truro, Massachusetts

55 Walkers Brook Drive, Reading, MA 01867 (HQ)
Tel: 978.532.1900

**WSE Project No. ENG24-1552**

May 30, 2025

Town of Truro
c/o Della Rae Donahue
Weston & Sampson Engineers, Inc.
100 Foxborough Blvd, Suite 250
Foxborough, MA 02035

Re: Geotechnical Engineering Report
Proposed Department of Public Works
Truro, Massachusetts

Dear Ms. Donahue:

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to submit our Geotechnical Engineering Report for the referenced project. This report presents descriptions and summaries of our services, encountered subsurface conditions, and geotechnical considerations and recommendations for design and construction of the proposed project.

We appreciate the opportunity to be of service to you. If you have questions concerning this report or require additional information, please contact us at 978-532-1900.

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.

Stephen T. Spink, PE
Geotechnical Engineering Team Leader

# TABLE OF CONTENTS

Page



## FIGURES

## APPENDICES



AJC:STS

\\wse03.local\WSE\Projects\MA\Truro MA\ENG24-1552_Truro Public Works Facility\07-DesignMaterials\02-Geotechnical\Report\Truro DPW Facility_Geotechnical Engineering Report_05-30-025.docx

# 1.0 INTRODUCTION

Weston & Sampson Engineers, Inc. (Weston & Sampson) has prepared this geotechnical engineering report for the proposed Truro Department of Public Works (DPW) facility at 17 Town Hall Road in Truro, Massachusetts (hereinafter the "Site"). The Site's location relative to surrounding physical features is shown in *Figure 1 – Locus Map*.

Our understanding of the existing conditions and the proposed project are based on our recent discussions with the design team and our review of the following information:

- A set of schematic design plans titled "Town of Truro, MA, New Department of Public Works Facility," prepared by Weston & Sampson and dated May 2, 2025. Selected schematic design plans are included in *Appendix A*.
- A report titled "Immediate Response Action Plan," prepared by HRP Associates, Inc. (HRP) dated November 4, 2024.
- A presentation titled "Update on DPW and Landfill PFAS Environmental Assessment Activities," prepared by HRP dated February 26, 2025.

## 1.1 Purpose and Scope

The purpose of our geotechnical engineering evaluation was to explore subsurface conditions, identify geotechnical considerations, and provide geotechnical engineering recommendations for design and construction of the proposed DPW facility and related site improvements.

Our scope included field reconnaissance, observations of subsurface explorations, geotechnical laboratory testing, geotechnical engineering analyses, and preparation of this report summarizing our geotechnical engineering recommendations.

## 1.2 Existing Site Conditions

### *1.2.1 General*

The Site is located within a parcel that is owned and operated by the Town of Truro and is generally bordered by Meetinghouse Road to the north, Town Hall Road to the south, and residential properties to the east and west. The existing facility includes three one- to two-story maintenance buildings, a one-story office building, a fuel island with an above-ground fuel tank, material storage areas and sheds, asphalt concrete (AC) paved parking areas and driveways, and associated landscaped areas as shown on *Figure 2 – Site Plan*. Existing subsurface utilities at the Site include water, stormwater drainage, and electric. An existing on-site septic system is also located in the northeastern portion of the Site. Existing site features are shown on the "Existing Conditions Plan" of the above-referenced schematic design plans, which are included in *Appendix A*.

### *1.2.2 Site Topography*

Based on the aforementioned existing conditions plan, grades slope significantly downward from the existing developed portion of the Site to the north, east, and south. Grades in existing developed areas of the Site range from approximately El. 125 to the east to El. 120 to the west. In the undeveloped wooded areas grades decrease from approximately El. 120 to the south to approximately El. 70 to the northeast where the Site is bordered by Meetinghouse Road. Adjacent to the developed portions of the Site, fairly steep slopes of up to about 1H:1V (Horizontal:Vertical) extend to the north and east before transitioning to more gradual slopes of about 4H:1V. Vertical elevations in this report are in feet and reference the North American Vertical Datum of 1988 (NAVD88).

### *1.2.3 Environmental Site History*

Based on the above-referenced report and presentation prepared by HRP regarding environmental assessments completed at the Site, per- and polyfluoroalkyl substances (PFAS) that were above applicable MassDEP standards were detected in groundwater samples collected at the site during a limited site investigation between July and August 2024. Based on the information provided, we understand the PFAS impacts appear to be limited to the northeast corner of the site behind the existing office building. Remedial strategy in conjunction with proposed development at the site is currently planned to include a combination of capping and groundwater treatment.

## 1.3 Proposed Conditions

Based on the schematic design plans included in *Appendix A*, the existing office and garage buildings are planned to be demolished and replaced with an approximately 23,600 square foot (SF) DPW building, a salt shed, and a canopy. The new DPW building will include offices and employee facilities, vehicle storage and maintenance areas, workshops, and a vehicle wash bay. The finished floor elevation (FFE) of the new DPW building is planned to be El. 124. The existing fuel island is to remain.

Related site improvements are planned to include new underground utilities, a concrete generator pad, AC paved parking areas and driveways, and retaining walls with exposed heights of up to approximately four (4) feet. Cuts and fills on the order of about four (4) feet are anticipated to achieve proposed site grading.

We understand that the new DPW building is planned to be supported using conventional shallow foundations. Structural loads for the new building were not available at the time of this report, but based on our experience with similar structures, we anticipate that loads will be less than 300 kips for columns and 6 kips per lineal foot (klf) for walls. First floor slab-on-grade loads are anticipated to be less than 250 pounds per square foot (psf). We assume that the new building will not include basement and/or below grade areas except for possible below grade vaults in isolated areas.

The recommendations in this report are based on the above stated assumptions. We should be provided with actual project information as it becomes available and have the opportunity to review

and revise our recommendations as necessary if proposed conditions differ from those described above.

# 2.0 SUBSURFACE CONDITIONS

## 2.1 Geologic Setting

Surficial geology information available from the Massachusetts Office of Geographic Information (Mass GIS) indicates the site is located in an area of glacial stratified coarse deposits composed predominantly of sand and gravel.

The "Bedrock Geologic Map of Massachusetts" (United States Geological Survey, Zen et. al., 1983) indicates the Site is located within an area of undivided granite, gneiss, and shist of the Proterozoic Z age. Shallow bedrock and outcrops are not mapped in the immediate site vicinity.

## 2.2 Borings

A total of six test borings (B-1 through B-6) were completed between April 15 and 16, 2025 within the limits of the proposed site improvements as described in Section 1.3. Approximate boring locations are shown in *Figure 2*.

Desmond Well Drilling, Inc. of Orleans, Massachusetts completed the borings using a truck-mounted drill rig to depths of up to approximately 39 feet below the existing ground surface. Standard penetration tests (SPTs) were conducted in each boring by driving a split spoon sampler with an automatic hammer in general accordance with ASTM D1586. Sampling intervals ranged from continuous (every 2 feet) to standard (every 5 feet). Upon completion, each boring was backfilled with drill cuttings. B-3 and B-6 were completed in existing pavement areas and patched at the ground surface with asphalt cold patch.

Weston & Sampson geotechnical engineering representatives observed drilling activities, measured boring locations using a handheld GPS, and prepared logs for each boring. The boring logs are included in *Appendix B*. Select soil samples obtained from the explorations were submitted for geotechnical laboratory testing as described in Section 2.4.

## 2.3 Subsurface Conditions

Subsurface conditions encountered in the explorations were generally consistent with the mapped surficial geology. Descriptions of the major soil groups encountered in the borings are provided below in order of their general occurrence with depth from ground surface. The general Unified Soil Classification System (USCS) designation for each stratum is included in the descriptions below in parentheses.

Subsurface conditions described below have been interpreted based on a limited number of explorations that were observed by Weston & Sampson. Variations may occur and should be expected between locations. The strata boundaries shown in our boring logs are based on our interpretations and the actual transitions may be gradual. Refer to the boring logs for detailed descriptions of the soil samples collected.

### *2.3.1 General*

*Surface Materials* – B-3 and B-6 were completed within existing pavement areas and encountered approximately 3 inches of asphalt concrete (AC) pavement. B-4 and B-5 were located in existing landscape areas and encountered approximately 4 inches of topsoil. B-1 and B-2 were advanced in unvegetated areas.

*Fill* – Existing fill was encountered at the ground surface in B-1 and B-2, and below the surface materials in B-3 through B-6. The fill generally consisted of very loose to medium dense, brown SAND with trace to little non-plastic fines and trace to little gravel (SP, SP-SM, SM). Trace amounts of debris consisting of asphalt, wood, ceramic, glass, and roots were observed within the fill at various locations. The majority of the fill extended to relatively shallow depths of approximately 0.5 to 4 feet except for B-1 where the fill extended to a depth of approximately 13 feet.

*Subsoil* – Subsoil was encountered below the fill in B-3 through B-5. The subsoil generally consisted of loose, orange SAND with little non-plastic fines, and trace roots (SM). The subsoil extended to depths of approximately 2 to 5 feet.

*Native Sand* – Native soils encountered below the fill and subsoil in each of the borings generally consisted of loose to medium dense, light brown SAND with trace gravel and trace non-plastic fines (SP). Each boring was terminated within the native soils at depths ranging between approximately 29 and 39 feet.

### *2.3.2 Groundwater*

Groundwater was not encountered in any of the borings completed as part of this geotechnical investigation. Based on the referenced HRP environmental report, groundwater levels at the site were measured at depths between approximately 117 and 122 feet in 2024.

Groundwater levels should be expected to fluctuate with season, variations in precipitation, construction in the area, and other factors. Perched groundwater conditions could exist close to the ground surface or along the top of bedrock surface, especially during and after extended periods of wet weather.

## 2.4 Geotechnical Laboratory Testing

Selected soil samples obtained during drilling were submitted for particle size analysis (ASTM D6913/D7928) to confirm field classifications. Geotechnical laboratory testing was performed by Thielsch Engineering of Cranston, Rhode Island. The geotechnical laboratory test results are incorporated into our boring logs and included in *Appendix C*.

# 3.0 GEOTECHNICAL RECOMMENDATIONS

## 3.1 General

Based on the subsurface conditions encountered in our explorations and our engineering analyses, the primary geotechnical engineering considerations for the proposed project include the presence of existing undocumented (non-engineered) fill and coordination with environmental requirements within portions of the areas of planned development. Geotechnical design and construction recommendations are provided below and in the following sections.

## 3.2 Existing Non-Engineered Fill

Subsurface conditions encountered in our explorations generally consisted of relatively shallow (i.e., depths of 4 feet or less) non-engineered fill except for B-1 where the fill extended to a depth of up to approximately 13 feet. B-1 was located within the currently developed portion of the Site in relatively close proximity to an existing slope along the northern portion of the Site.

Topsoil, subsoil, and existing non-engineered fill is not suitable (or allowed by the Massachusetts State Building Code, MSBC) for support of foundations or other rigid structural site improvements that could be adversely affected by differential settlement. Topsoil, subsoil, and existing fill should be completely removed from within the zone-of-influence beneath proposed foundations and other structural elements. The 'zone-of-influence' is defined by a plane extending away from the bottom outside edges of footings and other structural site improvements a horizontal distance of two feet in all directions, then down and away at 1H:1V (horizontal:vertical) slopes to the intersection with undisturbed native soils.

The in-place existing fill may provide adequate support of flexible site improvements such as flexible AC pavements provided subgrades are prepared and evaluated as recommended herein.

## 3.3 Environmental Considerations

As described in the environmental report prepared by HRP, PFAS compounds were detected in the groundwater in some monitoring wells installed at the Site as part of a separate study. Based on the current information, we understand the areas of environmental concern are generally located in the northern/northeastern portions of the Site.

At the time of this report, capping of a portion of the Site in the northeast corner was planned in the general area of the proposed salt shed structure. The design of the cap had not yet been finalized but was anticipated to include a High-Density Polyethylene (HDPE) liner and a layer of soil cover.

As design progresses in this area of the Site, alterations or changes in planned foundation type for the salt shed may be required depending on the impacts of the proposed capping system.

## 3.4 Shallow Foundations – Main DPW Structure & Salt Shed

Based on the subsurface conditions encountered in our explorations, the proposed DPW facility can be supported using conventional shallow foundations bearing in the native, undisturbed, inorganic,

native sand soils or properly constructed Structural Fill placed directly over such soils following removal of the topsoil, subsoil and existing fill.

A maximum net allowable bearing capacity of 2,000 psf is recommended to be used for design of spread footings. Resistance to lateral loads can be obtained by a passive equivalent fluid pressure of 225 pounds per cubic foot (pcf), ignoring the top 12 inches of embedment, and by a footing base friction coefficient of 0.45. Shallow foundations constructed as recommended herein are anticipated to undergo total and differential settlements of less than 1 inch and ½ inch, respectively.

As noted above, topsoil, subsoil and existing fill are not suitable (or allowed by the Massachusetts Building Code) for support of foundations or other rigid structural site improvements that could be adversely affected by differential settlement. Topsoil, subsoil, existing fill and other unsuitable soils, as determined by the Engineer, should be completely removed from within the zone-of-influence (ZOI) beneath proposed structures and slabs, and the resulting excavation backfilled with compacted Structural Fill.

Foundations for proposed structures should be designed in accordance with the provisions of the current edition of the Massachusetts State Building Code (MSBC). Footings should be embedded at least 4 feet below the nearest proposed adjacent ground surface exposed to freezing.

Existing below grade structures and the existing septic system that may be located within the ZOI of proposed structures should be removed in their entirety and replaced with compacted Structural Fill as described herein.

If footing construction is to occur in wet conditions, the subgrade may be overcut by a few inches, observed by the Engineer for suitability, and then backfilled to the footing subgrade elevation with crushed stone to reduce subgrade disturbance and softening during construction.

If footing construction occurs during freezing conditions, insulating blankets, heaters, or other suitable measures should be employed to prevent foundation subgrades from freezing until the foundations are backfilled sufficiently to prevent frost from reaching the footing subgrades. The Contractor should be responsible for subgrade protection.

## 3.5 Slabs On-Grade

Slabs on-grade supporting loads up to 250 psf and bearing on properly constructed Structural Fill overlying recompacted, native undisturbed soils are expected to induce less than one inch of total settlement. A minimum of six inches of clean, angular crushed stone with no more than 6 percent passing a #200 sieve is recommended for underslab stone. Any areas contaminated with fines should be removed and replaced with clean stone. If the underslab stone is saturated or trapping water, the water should be removed prior to slab placement.

Based on the subgrade preparation procedures recommended herein and the existing soil conditions, concrete slabs (including mat slab foundations) and pads may be designed using a modulus of subgrade reaction ($k_{s1}$) of 60 psi/inch. This value for $k_{s1}$ is for a 1 x 1 square foot area, and should be adjusted for larger areas using the following expression:

$$Modulus\ of\ Subgrade\ Reacion\ (k_s) = k_{s1} * \left(\frac{B+1}{2B}\right)^2$$

Where:

$k_s$ = Coefficient of vertical subgrade reaction for loaded area,
$k_{s1}$ = Coefficient of vertical subgrade reaction for a 1 x 1 square foot area, and
B = width of loaded area in feet.

The ground floor slab should be insulated and dampproofed in accordance with the Building Code. Some flooring manufacturers require specific slab moisture levels and/or vapor barriers to validate the warranties on their products. A properly installed and protected vapor flow retardant can reduce slab moisture. If a vapor flow retardant is used, care should be taken not to trap moisture within the overlying granular fill and floor slab concrete.

## 3.6 Canopy Structure Foundations

As previously described, non-engineered fill was encountered in B-1 to a depth of approximately 13 feet within the northern portion of the Site in the general area of the proposed canopy structure. Due to the depth and density of the existing fill, canopy structures in this area are recommended to be supported using deep foundations consisting of driven piles or helical piers. Due to the size, relatively lightly loaded nature of the proposed structure, cost considerations and potential need to reduce the amount of excavated soils from the Site due to environmental considerations, helical piers are currently anticipated to be the most economical foundation support alternative for the referenced structures.

Helical piers, or other deep foundation alternatives, should fully penetrate the existing fill and loose sand layers to develop their resistance in the underlying soils. The pier design should be stamped by a Professional Engineer licensed in the Commonwealth of Massachusetts and include calculations that demonstrate adequate vertical geotechnical and structural capacities (including resistance to buckling).

Estimated deep foundations depths and capacities will need to be further evaluated as design progresses based on final site layout and structural load requirements.

## 3.7 Seismic Design Considerations

Seismic site class was determined in accordance with the International Building Code (IBC) as adapted by the Massachusetts State Building Code using a weighted average of SPT blow counts and shear wave velocity data in the upper 100 feet of soil. Based on our explorations within the proposed main building footprint, analyses, and our previous experience with similar geologic conditions, we recommend the project be evaluated using parameters associated with Site Class D.

Liquefaction can occur in loose, saturated, granular soils. Strong shaking, such as that experienced during earthquakes, can cause a sudden loss of shear strength, densification, and subsequent settlement of these soils. Based on the anticipated depth to groundwater in excess of about 100 feet based on measurements at the Site, the soil types and density encountered in our explorations, the risk of structurally damaging ground deformations related to liquefaction is low.

## 3.8 Retaining Walls

Based on the preliminary design plans, two primary retaining walls are currently planned in the northeast and northwest portions of the site. Both walls are expected to have an exposed wall height of up to about 4 feet or less. Based on the proposed wall heights and subsurface conditions, we recommend the walls be constructed as segmental block retaining walls (SRWs) due to their relatively low construction cost and ability to tolerate differential settlement in areas where undocumented fill is encountered. SRWs generally consist of pre-manufactured stacked masonry blocks placed on a leveling pad of crushed stone.

SRWs should be designed by a Civil Engineer, registered in the Commonwealth of Massachusetts, and hired by the contractor. Design of the retaining wall should include an assessment of sliding, overturning, and internal stability. Based on the maximum proposed wall height of approximately 4 feet, we anticipate that geogrid reinforcement will not be required for the proposed walls, however this should be confirmed by the wall designer. Reinforcement lengths vary but are typically about 70 to 80 percent of the wall height where required.

*Retaining Wall Foundations*

SRWs can be supported on a minimum 12-inch-thick leveling pad of compacted angular crushed stone overlying either native undisturbed sand or Structural Fill. The crushed stone leveling pad should extend at least 12 inches horizontally past the edges of the bottom blocks, or as recommended by the block manufacturer.

Where encountered at retaining wall foundation subgrade, existing fill should be removed to a minimum depth of 2 feet from within the zone-of-influence (ZOI) below proposed retaining wall leveling pad foundations.

*Lateral Pressures*

All retaining walls should be designed to resist lateral pressures exerted by soil, water, seismic, temporary construction loads, and any additional surcharge loads including sloped backfill as appropriate.

Lateral earth pressures on retaining walls unrestrained from rotation with level backfill and drainage provided behind the wall should be calculated using an equivalent fluid unit weight of 40 pounds per cubic foot (pcf). This unit weight should be increased to 60 pcf for walls that are restrained from rotation such as embedded building walls or walls connected to structures such as backfilled stem walls supporting floor slabs. For sloping backfill up to 3H:1V, the equivalent fluid unit weights should be increased to 65 pcf for walls unrestrained from rotation and to 95 pcf for walls restrained from rotation.

A minimum uniform lateral pressure of 125 pounds per square foot (psf) should be added to the above pressures and applied over the full backfill height of all walls. The 125 psf lateral pressure is intended to account for vertical surcharge pressures at the tops of walls up to 250 psf. Additional

lateral pressures equal to 0.5 times the additional surcharge pressure should be added to walls where surcharge pressures exceed 250 psf.

We recommend that passive pressures acting on the base of the wall be ignored due to the possibility of future removal of toe material. Driving forces acting on the wall can be resisted by friction along the base of the wall footing using a friction coefficient of 0.45 for SRW blocks bearing on crushed stone and compacted Structural Fill overlying either native undisturbed sand or recompacted existing granular fill at the site.

*Backfill and Drainage*

All retaining walls should include drainage behind the wall unless designed to resist hydrostatic pressures. A retaining wall drain should consist of a minimum 12-inch wide (horizontal measure) zone of crushed, free-drainage gravel with less than five-percent fines (such as washed crushed stone) with the stone fully encased with a non-woven filter fabric. Weep holes are recommended to assist with drainage of water from behind the wall. We recommend that weep holes be spaced approximately 10 feet on center, or a drainage pipe connected into a surface water drainage system should be installed behind the wall.

Behind the drainage zone, retaining walls should be backfilled with Structural Fill. The SRW designer should provide specific backfill placement and compaction requirements as part of their submitted wall design. Retaining structures typically rotate and displace up to 1 percent of the wall height during development of active pressures behind the wall. We therefore recommend that construction of improvements adjacent to the top of walls be delayed until approximately two weeks after wall construction and backfill.

Stormwater runoff should be collected and diverted away from the retaining wall areas to prevent erosion and to reduce the potential of elevated water pressures developing behind the wall.

# 4.0 CONSTRUCTION CONSIDERATIONS

## 4.1 Site Preparation

Prior to earthwork and foundation construction, the areas of proposed development should be prepared by removing any existing structures, foundation elements, and abandoned utilities. Associated pavement, topsoil, subsoil and existing fill materials should also be removed. Excavations resulting from site preparation should be brought back to grade using Structural Fill. Utilities should be removed or properly abandoned using Structural Fill, controlled density fill (CDF), or grouting in such a manner to prevent voids.

## 4.2 Excavation Considerations

Excavation will be required for site preparation, grading, and construction of foundations and utilities. Surface water should be controlled during construction and prevented from eroding temporary slopes and disturbing excavation and subgrade materials. If excavations encounter perched groundwater, moderate to severe caving should be expected where seepage is present.

All excavations should be made in accordance with applicable OSHA safety regulations. Temporary excavation support may be required depending on depths of excavations and if excavations need to approach the zone-of-influence beneath existing structures, utilities, or other site features. Excavation support systems, if necessary, should be the responsibility of the Contractor and designed by a Professional Engineer licensed in the Commonwealth of Massachusetts. Foundations and utilities should be designed and constructed so that excavations into zones-of-influences below and adjacent to footings are not required.

Based on the groundwater conditions observed during drilling, extensive dewatering is not anticipated to be required during construction. However, depending on excavation depth and the amount of potentially perched groundwater, dewatering may be necessary. Flow rates for dewatering are likely to vary depending on location, soil type, and the season during which the excavation occurs. The dewatering system should be capable of lowering the groundwater table at least 2 feet below the anticipated excavation depths and be kept operational until fill placement and compaction and concrete installation have been completed to at least 2 feet above the groundwater table elevation. The dewatering system should be capable of handling variable flow rates and should be the responsibility of the Contractor.

## 4.3 Subgrade Preparation and Protection

Based on the subsurface conditions encountered in our explorations, stripping and subgrade preparation will likely expose existing fill, subsoil, and native sand. After stripping (i.e., removal of unsuitable materials), subgrades consisting of native granular soils should be recompacted until dense and stable with several passes of a minimum 12-ton vibratory roller. Weston & Sampson should be contacted to evaluate the exposed subgrade. Subgrades will be evaluated based on probing or observation of a proof roll using a fully loaded 10-wheeled dump truck or suitable alternative.

The native sand is susceptible to disturbance from vehicle and foot traffic. We therefore recommend placement of a minimum of 6 inches of compacted ¾ inch crushed stone above the prepared subgrade.

Soft and/or disturbed areas will require over-excavation and backfilling with compacted angular crushed stone or compacted Structural Fill. A geosynthetic separation layer between the excavation subgrade and crushed stone backfill may also be required. We recommend that the project budget and schedule include contingencies for over-excavation and stabilization of soft and variable subgrade conditions.

Soils with more than trace amounts of fines (i.e., silt and clay) are highly susceptible to softening and disturbance by construction activity during wet or freezing weather. Subgrade protection is the responsibility of the contractor, and special precautions and protective measures appropriate for the weather and traffic conditions during construction should be used during earthwork and foundation construction to preserve the integrity of subgrades.

If footing construction occurs during freezing conditions, insulating blankets, heaters, or other suitable measures should be employed to prevent foundation subgrades from freezing until the foundations are backfilled sufficiently to prevent frost from reaching the footing subgrades. The Contractor should be responsible for subgrade protection.

Construction traffic should not operate directly on subgrades. Existing pavement areas can be used as staging areas, but the existing AC pavement section should not be expected to protect subgrades from concentrated heavy construction traffic.

## 4.4 Fill Materials

Well graded sand and gravel fill with less than approximately 10 percent fines (such as MassDOT M1.03.0-type B Gravel Borrow or M2.01.7 Dense-graded Crushed Stone) is recommended for use as imported Structural Fill in foundation, slab on-grade, and other structural areas. On-site materials meeting the gradation requirements for the aforementioned MassDOT materials may be acceptable for use as Structural Fill if approved by the Geotechnical Engineer. Structural Fill should have a maximum particle size of 3 inches and be placed in maximum 10-inch-thick lifts (measured prior to compaction) with each lift compacted to at least 95 percent of maximum dry density as determined by ASTM D1557 (Modified Proctor) for the specific fill material.

On-site granular soils containing less than approximately 25 percent fines and free of organics, contamination (including metals, VOCs, SVOCs, etc.), and other deleterious materials may be suitable for use as fill in areas outside proposed structures (i.e., Common Fill) if properly moisture conditioned. The native sand encountered in the borings generally appear suitable for re-use as Common Fill provided additional laboratory testing is completed to confirm gradation results prior to the start of fill placement.

In confined areas and where only hand-operated compaction equipment can be used, lift thicknesses should be reduced to not more than 6 inches. In addition to density testing, we

recommend that the fill lifts pass a proof roll using a fully loaded dump 10-wheel truck or equipment of similar size and weight and observed by a geotechnical engineer.

## 4.5 Slopes

All slopes and excavations should be constructed in accordance with applicable OSHA and local safety standards. Temporary slopes up to 10 feet high can be inclined up to 1.5H:1V provided no seepage or sloughing is present. Equipment should not be allowed to induce vibration or infiltrate water above the slopes and no surcharges should be located within 20 feet of slope crests. Temporary slopes should be expected to ravel somewhat, depending on weather conditions, soil conditions, seepage, and duration of exposure. Soft or loose fill soils and the presence of seepage may require flatter slopes, erosion control measures, drainage elements, and/or temporary excavation support.

Permanent cut and fill slopes up to 10 feet high should be formed at 2H:1V or flatter, however shallower (3H:1V) slopes are recommended for ease of maintenance and mowing. The faces of fill slopes should be overbuilt and cut back into compacted materials with a smooth excavator bucket. If steeper fill slopes are desired, we should be consulted to evaluate the use of grid reinforcement, rock blankets, or rock fill buttresses.

# 5.0 LIMITATIONS

## 5.1 Observation of Construction

Satisfactory earthwork and foundation performance depends to a large degree on the quality of construction. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated. In addition, sufficient monitoring of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications.

## 5.2 Variations of Subsurface Conditions and Use of Report

We have prepared this report for use by members of the design and construction team for the subject project and this site only. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Subsurface explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect subsurface conditions that may exist between exploration locations. If subsurface conditions differing from those described are noted during excavation and construction, reevaluation will be necessary.

Site development plans and design details were not finalized at the time this report was prepared. If changes are made in site grades, configuration, design loads, or type of construction for the proposed structures, the conclusions and recommendations may not be applicable. We should be consulted to review final design drawings and specifications to see that our recommendations are suitably followed. If design changes are made, we should be retained to review our conclusions and recommendations and provide a written evaluation or modification. Additional geotechnical engineering analyses and explorations may be necessary.

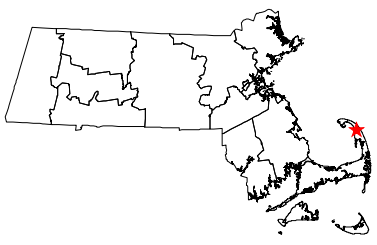
The recommendations in this report are preliminary as actual subsurface conditions may differ from those interpreted based on our subsurface explorations. In order for our recommendations to be considered final, we must be retained to observe the actual subsurface conditions encountered during construction. Our observations will allow us to interpret the actual conditions present during construction and adapt our recommendations if needed.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, is given. For additional information about use of this report, see the Geoprofessional Business Association, Inc (GBA) documents included in *Appendix D*.

FIGURES


Weston & Sampson

**FIGURE 1**
**LOCUS MAP**
**TRURO DPW**
**17 TOWN HALL ROAD**
**TRURO, MA**
**BARNSTABLE COUNTY**



**SCALE IN FEET**

0 1000 2000

\\wse03.local\WSE\Projects\MA\Truro MA\ENG24-1552_Truro Public Works Facility\07-DesignMaterials\02-Geotechnical\CAD\Truro DPW - Figure 1 - Locus Map.dwg


\\wse03.local\WSE\Projects\MA\Truro MA\ENG24-1552_Truro Public Works Facility\07-DesignMaterials\02-Geotechnical\CAD\Truro DPW - Figure 2 - Site Plan.dwg


Weston & Sampson

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com


## NOTES

1. THIS PLAN IS BASED ON A GRADING AND DRAINAGE PLAN PREPARED BY WESTON & SAMPSON ENGINEERS, INC. DATED APRIL 15, 2025.
2. APPROXIMATE LIMIT OF PFAS CONTAMINATION AS DETERMINED DURING A LIMITED SITE INVESTIGATION PERFORMED BY HRP ASSOCIATES, INC. BETWEEN JULY AND AUGUST 2024.
3. BORINGS WERE COMPLETED BY DESMOND WELL DRILLING, INC. OF ORLEANS, MA BETWEEN APRIL 15 AND 16, 2025.
4. STORMWATER DESIGN TEST PITS WERE COMPLETED BY TOWN OF TRURO DEPARTMENT OF PUBLIC WORKS PERSONNEL OF TRURO, MA ON APRIL 15, 2025.
5. ALL BORINGS WERE OBSERVED BY A WESTON & SAMPSON ENGINEER.
6. BORING LOCATIONS SHOWN ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS USING A HANDHELD GPS.

## LEGEND

B-X — DESIGNATION AND APPROXIMATE LOCATION OF BORING

GRAPHIC SCALE

60 30 0 60 120

SCALE: 1"=60'

| ORIENTATION | TITLE |
|---|---|
| | SITE PLAN |
| | PROJECT: TRURO DPW<br>17 TOWN HALL ROAD<br>TRURO, MA 02666 |

| | |
|---|---|
| DATE | 04/2025 |
| DRWN BY | AJC |
| CHKD BY | STS |
| PRJ. NO. | ENG24-1552 |
| REV. NO. | - |

FIGURE

# FIGURE 2

# APPENDIX A

Selected Schematic Design Plans

(Refer to Section II for Schematic Design Drawings)

# APPENDIX B

Boring Logs

# GUIDE TO SUBSURFACE EXPLORATION LOGS

Weston & Sampson℠

# INDEX SHEET 1 GENERAL INFORMATION

## GENERAL NOTES AND USE OF LOGS

1.) Explorations were made by ordinary and conventional methods and with care adequate for Weston & Sampson's study and/or design purposes. The exploration logs are part of a specific report prepared by Weston & Sampson for the referenced project and client, and are an integral part of that report. Information and interpretations are subject to the explanations and limitations stated in the report. Weston & Sampson is not responsible for any interpretations, assumptions, projections, or interpolations made by others.

2.) Exploration logs represent general conditions observed at the point of exploration on the date(s) stated. Boundary lines separating soil and rock layers (strata) represent approximate boundaries only and are shown as solid lines where observed and dashed lines where inferred based on drilling action. Actual transitions may be gradual and changes may occur over time.

3.) Soil and rock descriptions are based on visual-manual examination of recovered samples, direct observation in test pits (when permissible), and laboratory testing (when conducted).

4.) Water level observations were made at the times and under the conditions stated. Fluctuations should be be expected to vary with seasons and other factors. Use of fluids during drilling may affect water level observations. The absence of water level observations does not necessarily mean the exploration was dry or that subsurface water will not be encountered during construction.

5.) Standard split spoon samplers may not recover particles with any dimension larger than 1-3/8 inches. Reported gravel conditions or poor sample recovery may not reflect actual in-situ conditions.

6.) Sections of this guide provide a general overview of Weston & Sampson's practices and procedures for *identifying* and *describing* soil and rock. These procedures are predominantly based on ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)*, the International Society of Rock Mechanics (ISRM) standards, and the *Engineering Geology Field Manual* published by the Bureau of Reclamation. Not all aspects of this guide relating to description and identification procedures of soil and rock may be applicable in all circumstances.

## SAMPLER GRAPHICS

- Split Spoon (Standard) 2" OD, 1-3/8" ID
- Split Spoon (Oversize) 3" OD, 2-3/8" ID
- Shelby or Piston Tube 3" OD, 2-7/8" ID
- Double-Tube Rock Core Barrel 2" Core Diameter
- Direct Push with Acetate Liner Various Liner Sizes
- A — Auger Sample *(from cuttings or hand auger)*
- G — Grab Sample *(manual, from discrete point)*
- C — Composite Sample *(multiple grab samples)*

## WELL GRAPHICS

- Cement concrete seal around casing or riser pipe
- Bentonite seal around casing or riser pipe
- Cement grout seal around casing or riser pipe
- Soil backfill around riser pipe or beneath screen
- Gravel backfill around screen or riser pipe
- Sand backfill around screen or riser pipe (filter sand)
- Solid-wall riser; Sch. 40 PVC, 1" ID unless noted otherwise
- Slotted screen; Sch. 40 PVC, 1" ID with machined slots

## CAVING / SEEPAGE TERMS

The following caving and/or seepage terms may appear on a test pit log.

| Caving Term | Criteria |
|---|---|
| Minor | less than 1 cubic ft. |
| Moderate | 1 to 3 cubic ft. |
| Severe | greater than 3 cubic ft. |

| Seepage Term | Criteria |
|---|---|
| Slow | less than 1 gpm |
| Moderate | 1 to 3 gpm |
| Fast | greater than 3 gpm |

## KEY TO WATER LEVELS

- Observed in exploration during advancement.
- Measured in exploration at completion, prior to backfilling or well installation.
- Measured in exploration after the stated stabilization period, prior to backfilling, or in well installation if noted.

## DEFINITIONS OF COMMON TERMS

**Sample Recovery Ratio** - The length of material recovered in a drive or push type sampler over the length of sampler penetration, in inches (e.g. 18/24).

**Standard Penetration Test (*SPT*)** - An in-situ test where a standard split-spoon sampler is driven a distance of 12 or 18 inches (after an initial 6-inch seating interval) using a 140-lb. hammer falling 30 inches for each blow.

**SPT Blows** - The number of hammer blows required to drive a split-spoon sampler each consecutive 6-inch interval during a *Standard Penetration Test*. If no discernable advancement of a split spoon sampler is made after 50 consecutive hammer blows, 50/X indicates *sampler refusal* and is the number of blows required to drive the sampler X inches.

**SPT N-Value (*N*)** - The uncorrected blow count representation of a soil's penetration resistance over a 12-inch interval after an initial 6-in. seating interval, reported in blows per foot (bpf). The N-value is correlated to soil engineering properties.

**Auger Refusal** - No discernable advancement of the auger over a period of 5 minutes with full rig down pressure applied.

**Casing Refusal (Driven)** - Casing penetration of less than 6 inches after a minimum 50 blows of a drop hammer weighing 300 lbs. or a minimum 100 blows of a drop hammer weighing 140 lbs.

**PID Measurement** - A measurement (electronic reading) taken in the field using a photoionization detector (PID) to detect the presence of volatile organic compounds in a soil sample. Values are reported as benzene equivalent units in parts per million (ppm) unless noted otherwise.

**Rock Quality Designation (RQD)** - A qualitative index measure of the degree of jointing and fracture of a rock core taken from a borehole. The RQD is defined as the sum length of solid core pieces 4 inches or longer divided by the run (cored) length, expressed as a percentage. Higher RQD values may indicate fewer joints and fractures in the rock mass.

**Fill (Made Ground)** - A deposit of soil and/or artificial waste materials that has been placed or altered by human processes.

## LABORATORY TESTS AND FIELD MEASUREMENTS

| | | | |
|---|---|---|---|
| MC | Moisture Content | IC | 1D Incremental Consolidation |
| OC | Organic Content | VS | Laboratory Vane Shear |
| PL | Plastic Limit | US | Unconfined Compression |
| LL | Liquid Limit | TC | Triaxial Compression |
| GC | Gravel Content | PP | Pocket (Hand) Penetrometer |
| SC | Sand Content | TV | Torvane (Hand Vane) |
| FC | Fines Content | PID | Photoionization Detector |
| DS | Direct Shear | FID | Flame Ionization Detector |

## BORING ADVANCEMENT METHODS

**Hollow-Stem Auger Drilling** - Utilizes continuous flight auger sections with hollow stems to advance the borehole. Drill rods and a plug are inserted into the auger stem to prevent the entrance of soil cuttings into the augers.

**Rotary Wash Drilling** - Utilizes downward pressure and rotary action applied to a non-coring bit while washing the cuttings to the surface using a circulating fluid injected down the drill rods. The borehole is supported with either steel casing or the drilling fluid. Where a casing is used, the borehole is advanced sequentially by driving the casing to the desired depth and then cleaning out the casing. The process of driving and cleaning the casing is commonly referred to as the 'drive-and-wash' technique.

**Continuous Sampling** - Includes a variety of methods and procedures during which the borehole is advanced via continuous recovery of soil samples. *Direct Push* sampling is a common method that uses static downward pressure combined with percussive energy to drive a steel mandrel into the ground at continuous intervals while recovering soil samples in disposable acetate liners.

**Rock Coring** - Utilizes downward pressure and rotary action applied to a core barrel equipped with a diamond-set or tungsten carbide coring bit. During conventional coring, the entire barrel is retrieved from the hole upon completion of a core run. Wireline coring allows for removal of the inner barrel assembly containing the actual core while the the drill rods and outer barrel remain in the hole. Various types and sizes of core barrels and bits are used.

# GUIDE TO SUBSURFACE EXPLORATION LOGS

Weston & Sampson℠

# INDEX SHEET 2
# SOIL DESCRIPTION

## SOIL CONSTITUENTS

Naturally occurring soils consist of one or more of the following matrix constituents defined in terms of particle size.

| Constituent | | U.S. Sieve Size | | | Observed Size (in.) | | |
|---|---|---|---|---|---|---|---|
| Gravel | (Coarse) | 3/4 in. | - | 3 in. | 3/4 | - | 3 |
| Gravel | (Fine) | No. 4 | - | 3/4 in. | 1/5 | - | 3/4 |
| Sand | (Coarse) | No. 10 | - | No. 40 | 1/16 | - | 1/5 |
| Sand | (Medium) | No. 40 | - | No. 10 | 1/64 | - | 1/16 |
| Sand | (Fine) | No. 200 | - | No. 40 | 1/300 | - | 1/64 |
| Fines | (Silt or Clay) | Smaller than | | No. 200 | Less than | | 1/300 |

## SOIL IDENTIFICATION

*Soil identification* refers to the grouping of soils with similar physical characteristics into a category defined by a **group name** and corresponding **group symbol** based on estimation of the matrix soil constituents to the nearest 5% and simple manual tests. Proportions of cobbles, boulders, and other non-matrix soil materials are not considered during this procedure but are included in the overall soil description if observed or thought to be present. Refer to the following descriptions and tables adapted from ASTM D2488.

**Coarse-Grained Soil** - Coarse-grained soils contain fewer than 50% fines and are identified based on the following table.

| Primary Constituent | Fines Percent | Type of Fines and Gradation | | Group Symbol | Group Name [1] |
|---|---|---|---|---|---|
| GRAVEL *% gravel > % sand* | ≤ 5% | well graded | | GW | Well graded gravel |
| | | poorly graded | | GP | Poorly graded gravel |
| | 10% | clayey fines | well graded | GW-GC | Well graded gravel with clay |
| | | | poorly graded | GP-GC | Poorly graded gravel with clay |
| | | silty fines | well graded | GW-GM | Well graded gravel wth silt |
| | | | poorly graded | GP-GM | Poorly graded gravel with silt |
| | 15% to 45% | clay fines | | GC | Clayey gravel |
| | | silt fines | | GM | Silty gravel |
| SAND *% sand ≥ % gravel* | ≤ 5% | well graded | | SW | Well graded sand |
| | | poorly graded | | SP | Poorly graded sand |
| | 10% | clayey fines | well graded | SW-SC | Well graded sand with clay |
| | | | poorly graded | SP-SC | Poorly graded sand with clay |
| | | silty fines | well graded | SW-SM | Well graded sand with silt |
| | | | poorly graded | SP-SM | Poorly graded sand with silt |
| | 15% to 45% | clay fines | | SC | Clayey sand |
| | | silt fines | | SM | Silty sand |

*[1] If soil is a gravel and contains 15% or more sand, add "with sand" to the group name. If soil is a sand and contains 15% of more gravel, add "with gravel" to the group name.*

**Inorganic Fine-Grained Soil** - Fine-grained soils contain 50% or more fines and are identified based on the following table.

| Plasticity Criteria | Dry Strength | Coarse Fraction S = Sand, G = Gravel | | Group Symbol | Group Name [1] |
|---|---|---|---|---|---|
| Medium | Medium to high | < 15% S + G | | CL | Lean clay |
| | | ≥ 30% | % S ≥ % G | CL | Sandy lean clay |
| | | S + G | % S < % G | CL | Gravelly lean clay |
| Non-plastic | None to low | < 15% S + G | | ML | Silt |
| | | ≥ 30% | % S ≥ % G | ML | Sandy silt |
| | | S + G | % S < % G | ML | Gravelly silt |
| High | High to very high | < 15% S + G | | CH | Fat clay |
| | | ≥ 30% | % S ≥ % G | CH | Sandy fat clay |
| | | S + G | % S < % G | CH | Gravelly fat clay |
| Low to Medium | Low to medium | < 15% S + G | | MH | Elastic silt |
| | | ≥ 30% | % S ≥ % G | MH | Sandy elastic silt |
| | | S + G | % S < % G | MH | Gravelly elastic silt |

*[1] If soil contains 15% to 25% sand or gravel, add "with sand" or "with gravel" to the group name.*

**Organic Fine-Grained Soil** - Fine-grained soils that contain enough organic particles to influence the soil properties are identified as Organic Soil and assigned the group symbol **OL** or **OH**.

**Highly Organic Soil (Peat)** - Soils composed primarily of plant remains in various stages of decomposition are identified as Peat and given the group symbol **PT**. Peat usually has an organic odor, a dark brown to black color, and a texture ranging from fibrous (original plant structure intact or mostly intact) to amorphous (plant structure decomposed to fine particles).

## SOIL DESCRIPTION

Soils are *described* in the following general sequence. Deviations may occur in some instances.

**Identification Components**

(1) Group Name and Group Symbol

**Description Components**

(2) Consistency (Fine-Grained) or Apparent Density (Coarse-Grained)
(3) Color (*note, the term "to" may be used to indicate a gradational change*)
(4) Soil Moisture
(5) Matrix Soil Constituents (Gravel, Sand, Fines)
  └► Proportion (*by weight*), particle size, plasticity of fines, angularity, etc.
(6) Non-Matrix Soil Materials and Proportions (*by volume*)
(7) Other Descriptive Information (Unusual Odor, Structure, Texture, etc.)
(8) [Geologic Formation Name or Soil Survey Unit]

## SPT N-VALUE CORRELATIONS

| Consistency | SPT N-Value | Apparent Density | SPT N-Value |
|---|---|---|---|
| Very soft | 0 - 2 | Very loose | 0 - 5 |
| Soft | 2 - 4 | Loose | 5 - 10 |
| Medium stiff | 4 - 8 | Medium dense | 10 - 30 |
| Stiff | 8 - 15 | Dense | 30 - 50 |
| Very stiff | 15 - 30 | Very dense | > 50 |
| Hard | > 30 | | |

## SOIL MOISTURE

**Dry**..... Apparent absence of moisture; dry to the touch.
**Moist**..... Damp but no visible water.
**Wet**..... Visible free water; saturated.

## PROPORTIONS / PERCENTAGES

Proportions of gravel, sand, and fines (excluding cobbles, boulders, and other constituents) are stated in the following terms indicating a range of percentages by weight (to nearest 5%) of the minus 3-in. soil fraction and add up to 100%.

**Mostly** ..... 50% - 100%
**Some** ..... 30% - 45%
**Little** ..... 15% - 25%
**Few** ..... 5% - 10%
**Trace**..... Less than 5%

Proportions of cobbles, boulders, and other non-matrix soil materials including artificial debris, roots, plant fibers, etc. are stated in the following terms indicating a range of percentages by volume (to the nearest 5%) of the total soil.

**Numerous** ..... 40% - 50%
**Common** ..... 25% - 35%
**Occasional** ..... 10% - 20%
**Trace**..... Less than 5%

## PLASTICITY (FINES ONLY)

**Non-plastic**.....Dry specimen ball falls apart easily. Cannot be rolled into thread at any moisture content.
**Low**.....Dry specimen ball easily crushed with fingers. Can be rolled into 1/8-in. thread with some difficulty.
**Medium**.....Difficult to crush dry specimen ball with fingers. Easily rolled into 1/8-in. thread.
**High**.....Cannot crush dry specimen ball with fingers. Easily rolled and re-rolled into 1/8-in. thread.

## COBBLES AND BOULDERS

**Cobbles** - Particles of rock that will pass a 12-in. square opening and be retained on a 3-in. sieve.

**Boulders** - Particles of rock that will not pass a 12-in. square opening.

*Note: Where the percentage (by volume) of cobbles and/or boulders cannot be accurately or reliably estimated, the terms "with cobbles", "with boulders", or "with cobbles and boulders" may be used to indicate observed or inferred presence.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-1



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | **Desmond Well Drilling, Inc.** | BORING LOCATION: | **See Attached Figure** | DATE START: | **April 16, 2025** |
| FOREMAN: | **Pat Desmond** | ADVANCE METHOD: | **Hollow-Stem Auger Drilling** | DATE FINISH: | **April 16, 2025** |
| LOGGED BY: | **Aaron Chabot** | AUGER DIAMETER: | **4-1/4" ID (Stem), 7-5/8" OD (Flights)** | GROUND EL: | **121.0 ± (NAVD88)** |
| CHECKED BY: | **Stephen Spink** | SUPPORT CASING: | **N/A** | FINAL DEPTH: | **39.0 ft.** |
| EQUIPMENT: | **CME 45, Truck Mounted** | CORING METHOD: | **N/A** | GRID COORDS: | **N:2828052.0 ± / E:1048383.8 ±** |
| SPT HAMMER: | **Automatic (140-lb.)** | BACKFILL MATERIAL: | **Drill Cuttings** | GRID SYSTEM: | **NAD83 State Plane (MA)** |

| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA (N-Value, Raw (bpf); Organic Content (%); Moisture Content (%); Plastic Limit, PL (%); Liquid Limit, LL (%)) | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|
| | | | | | Surface: Bare soil, no vegetation. | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | S-1 21/24 | 2 3 3 3 | 6 | | **Poorly graded sand with silt (SP-SM)** - Very loose to loose; brown; moist; mostly fine to medium SAND, few fine gravel, few non plastic fines; trace asphalt. **[FILL]** | | |
| | S-2 12/24 | 2 2 2 1 | 4 | | | | [3.0] GC: 9%, SC: 83%, FC: 8% |
| | S-3 14/24 | 1 1 1 2 | 2 | | | | |
| 5 | | | | | | 116 | |
| | S-4 19/24 | 2 2 1 2 | 3 | | | | |
| | S-5 16/24 | 1 1 1 1 | 2 | | **Silty sand (SM)** - Very loose; brown; moist; mostly fine to medium SAND, little non plastic fines, few fine gravel; trace wood. **[FILL]** | | |
| 10 | | | | | | 111 | |
| | S-6 18/24 | 1 2 1 1 | 3 | | **Poorly graded sand with silt (SP-SM)** - Very loose to loose; brown; moist; mostly fine to medium SAND, few fine gravel, few non plastic fines; trace debris (ceramic, glass). **[FILL]** | | |
| | S-7 18/24 | 1 2 3 4 | 5 | | | | |
| | S-8 12/24 | 3 4 5 7 | 9 | | **Poorly graded sand with gravel (SP)** - Loose; tan with orange; moist; mostly fine to medium SAND, little fine to coarse gravel, trace non plastic fines. | | |
| 15 | | | | | | 106 | |
| | S-9 18/24 | 3 3 2 3 | 5 | | **Poorly graded sand (SP)** - Loose to medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | [17.0] GC: 0%, SC: 98%, FC: 2% |
| 20 | | | | | | 101 | |
| | S-10 15/24 | 5 7 8 9 | 15 | | | | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-1



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | ● N-Value, Raw (bpf)<br>⊠ Organic Content (%)<br>10 20 30 40<br>⊕ Moisture Content (%)<br>▶ Plastic Limit, PL (%)<br>◀ Liquid Limit, LL (%)<br>25 50 75 100 | | | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-11<br>19/24 | 4<br>4<br>5<br>8 | ● 9 | | **Poorly graded sand (SP)** - Loose; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | | | | | | 91 | |
| | | S-12<br>19/24 | 5<br>7<br>7<br>11 | ● 14 | | **Poorly graded sand (SP)** - Medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 35 | | | | | | | 86 | |
| | | S-13<br>15/24 | 4<br>7<br>9<br>11 | ● 16 | | | | |
| 40 | | | | | | | 81 | **Exploration ended at 39.0 ft.** |
| 45 | | | | | | | 76 | |
| 50 | | | | | | | 71 | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-2

**WSE Project: ENG24-1552**



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | Desmond Well Drilling, Inc. | BORING LOCATION: | See Attached Figure | DATE START: | April 16, 2025 |
| FOREMAN: | Pat Desmond | ADVANCE METHOD: | Hollow-Stem Auger Drilling | DATE FINISH: | April 16, 2025 |
| LOGGED BY: | Aaron Chabot | AUGER DIAMETER: | 4-1/4" ID (Stem), 7-5/8" OD (Flights) | GROUND EL: | 121.0 ± (NAVD88) |
| CHECKED BY: | Stephen Spink | SUPPORT CASING: | N/A | FINAL DEPTH: | 39.0 ft. |
| EQUIPMENT: | CME 45, Truck Mounted | CORING METHOD: | N/A | GRID COORDS: | N:2828167.6 ± / E:1048540.8 ± |
| SPT HAMMER: | Automatic (140-lb.) | BACKFILL MATERIAL: | Drill Cuttings | GRID SYSTEM: | NAD83 State Plane (MA) |

| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA (N-Value, Raw (bpf); Organic Content (%); Moisture Content (%); Plastic Limit, PL (%); Liquid Limit, LL (%)) | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Surface: Bare soil, no vegetation. | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-1 19/24 | 2 2 1 2 | 3 | | **Poorly graded sand with silt (SP-SM)** - Very loose; brown; moist; mostly fine to medium SAND, few fine gravel, few non plastic fines; trace asphalt. **[FILL]** | | |
| | | S-2 13/24 | 2 1 2 2 | 3 | | **Silty sand (SM)** - Very loose; brown; moist; mostly fine to medium SAND, little non plastic fines; trace roots. **[FILL]** | | |
| | | S-3 14/24 | 2 2 4 4 | 6 | | **Silty sand (SM)** - Loose; orange; moist; mostly fine to medium SAND, little non plastic fines; trace roots. **[SUBSOIL]** | | |
| 5 | | S-4 19/24 | 2 3 2 4 | 5 | | **Poorly graded sand (SP)** - Loose; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | 116 | [7.0] GC: 1%, SC: 98%, FC: 2% |
| 10 | | S-5 12/24 | 2 2 3 3 | 5 | | | 111 | |
| 15 | | S-6 19/24 | 2 2 2 2 | 4 | | | 106 | |
| 20 | | S-7 17/24 | 2 4 3 3 | 7 | | *Coarse gravel* | 101 | |

***Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.***

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-2



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | ● N-Value, Raw (bpf)<br>⊠ Organic Content (%)<br>10 20 30 40<br>⊕ Moisture Content (%)<br>▶ Plastic Limit, PL (%)<br>◀ Liquid Limit, LL (%)<br>25 50 75 100 | | | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-8<br>20/24 | 4<br>5<br>5<br>6 | ● 10 | | **Poorly graded sand (SP)** - Loose to medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | | | | | | 91 | |
| | | S-9<br>20/24 | 2<br>4<br>4<br>4 | ● 8 | | | | |
| 35 | | | | | | | 86 | |
| | | S-10<br>13/24 | 5<br>7<br>10<br>12 | ● 17 | | | | |
| 40 | | | | | | | 81 | **Exploration ended at 39.0 ft.** |
| 45 | | | | | | | 76 | |
| 50 | | | | | | | 71 | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-3

**WSE Project: ENG24-1552**



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | **Desmond Well Drilling, Inc.** | BORING LOCATION: | **See Attached Figure** | DATE START: | **April 15, 2025** |
| FOREMAN: | **Pat Desmond** | ADVANCE METHOD: | **Hollow-Stem Auger Drilling** | DATE FINISH: | **April 15, 2025** |
| LOGGED BY: | **Aaron Chabot** | AUGER DIAMETER: | **4-1/4" ID (Stem), 7-5/8" OD (Flights)** | GROUND EL: | **122.5 ± (NAVD88)** |
| CHECKED BY: | **Stephen Spink** | SUPPORT CASING: | **N/A** | FINAL DEPTH: | **39.0 ft.** |
| EQUIPMENT: | **CME 45, Truck Mounted** | CORING METHOD: | **N/A** | GRID COORDS: | **N:2828056.7 ± / E:1048574.5 ±** |
| SPT HAMMER: | **Automatic (140-lb.)** | BACKFILL MATERIAL: | **Drill Cuttings and Asphalt Patch** | GRID SYSTEM: | **NAD83 State Plane (MA)** |

| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA (N-Value, Raw (bpf); Organic Content (%); Moisture Content (%); Plastic Limit, PL (%); Liquid Limit, LL (%)) | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Surface: Asphalt concrete pavement. | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | | | | | Asphalt- 3 inches thick. | | |
| | | S-1 18/18 | 5 5 6 | 11 | | **Poorly graded sand with silt (SP-SM)** - Medium dense; brown; moist; mostly fine to medium SAND, few non plastic fines, trace fine gravel. **[FILL]** | | |
| | | S-2 19/24 | 4 4 4 5 | 8 | | **Silty sand (SM)** - Medium dense; orange; moist; mostly fine to medium SAND, little non plastic fines; trace roots. **[SUBSOIL]** | | [3.0] GC: 1%, SC: 96%, FC: 4% |
| 5 | | S-3 19/24 | 2 3 3 5 | 6 | | **Poorly graded sand (SP)** - Loose; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | 118 | |
| | | S-4 13/24 | 2 2 3 3 | 5 | | | | |
| 10 | | | | | | | 113 | |
| | | S-5 16/24 | 2 3 3 5 | 6 | | | | |
| 15 | | | | | | | 108 | |
| | | S-6 20/24 | 2 3 3 3 | 6 | | | | |
| 20 | | | | | | | 103 | |
| | | S-7 19/24 | 2 2 3 3 | 5 | | | | |
| | | | | | | | 98 | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-3



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | ● N-Value, Raw (bpf)<br>⊠ Organic Content (%)<br>10 20 30 40<br>⊕ Moisture Content (%)<br>▶ Plastic Limit, PL (%)<br>◀ Liquid Limit, LL (%)<br>25 50 75 100 | | | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-8<br>19/24 | 4<br>5<br>5<br>4 | ● 10 | | **Poorly graded sand (SP)** - Medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | S-9<br>20/24 | 3<br>5<br>6<br>6 | ● 11 | | | 93<br>88 | |
| 35 | | S-10<br>18/24 | 5<br>8<br>8<br>12 | ● 16 | | | 83 | **Exploration ended at 39.0 ft.** |
| 40 | | | | | | | 78 | |
| 45 | | | | | | | 73 | |
| 50 | | | | | | | | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

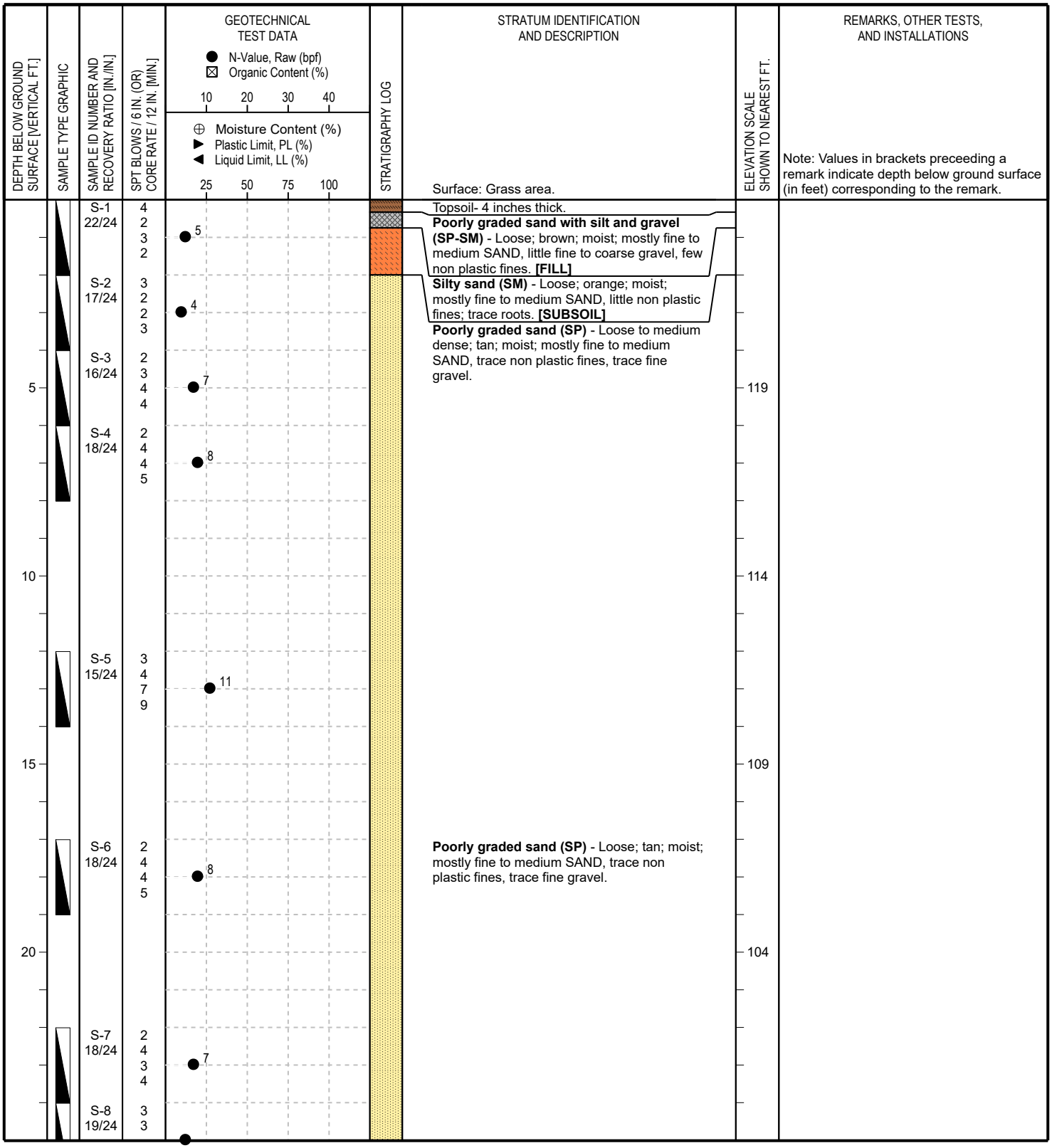
**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-4



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | Desmond Well Drilling, Inc. | BORING LOCATION: | See Attached Figure | DATE START: | April 15, 2025 |
| FOREMAN: | Pat Desmond | ADVANCE METHOD: | Hollow-Stem Auger Drilling | DATE FINISH: | April 15, 2025 |
| LOGGED BY: | Aaron Chabot | AUGER DIAMETER: | 4-1/4" ID (Stem), 7-5/8" OD (Flights) | GROUND EL: | 124.0 ± (NAVD88) |
| CHECKED BY: | Stephen Spink | SUPPORT CASING: | N/A | FINAL DEPTH: | 34.0 ft. |
| EQUIPMENT: | CME 45, Truck Mounted | CORING METHOD: | N/A | GRID COORDS: | N:2827922.3 ± / E:1048496.1 ± |
| SPT HAMMER: | Automatic (140-lb.) | BACKFILL MATERIAL: | Drill Cuttings | GRID SYSTEM: | NAD83 State Plane (MA) |




*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-4



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | 2<br>3 | | | **Poorly graded sand (SP)** - Loose; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| | | S-9<br>18/24 | 6<br>11<br>13<br>14 | 24 | | **Poorly graded sand (SP)** - Medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | | | | | | 94 | |
| | | S-10<br>18/24 | 7<br>9<br>11<br>10 | 20 | | | | |
| | | | | | | | | **Exploration ended at 34.0 ft.** |
| 35 | | | | | | | 89 | |
| 40 | | | | | | | 84 | |
| 45 | | | | | | | 79 | |
| 50 | | | | | | | 74 | |

GEOTECHNICAL TEST DATA
- ● N-Value, Raw (bpf)
- ⊠ Organic Content (%)
- 10 20 30 40
- ⊕ Moisture Content (%)
- ▶ Plastic Limit, PL (%)
- ◀ Liquid Limit, LL (%)
- 5 25 50 75 100

Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.

Weston & Sampson

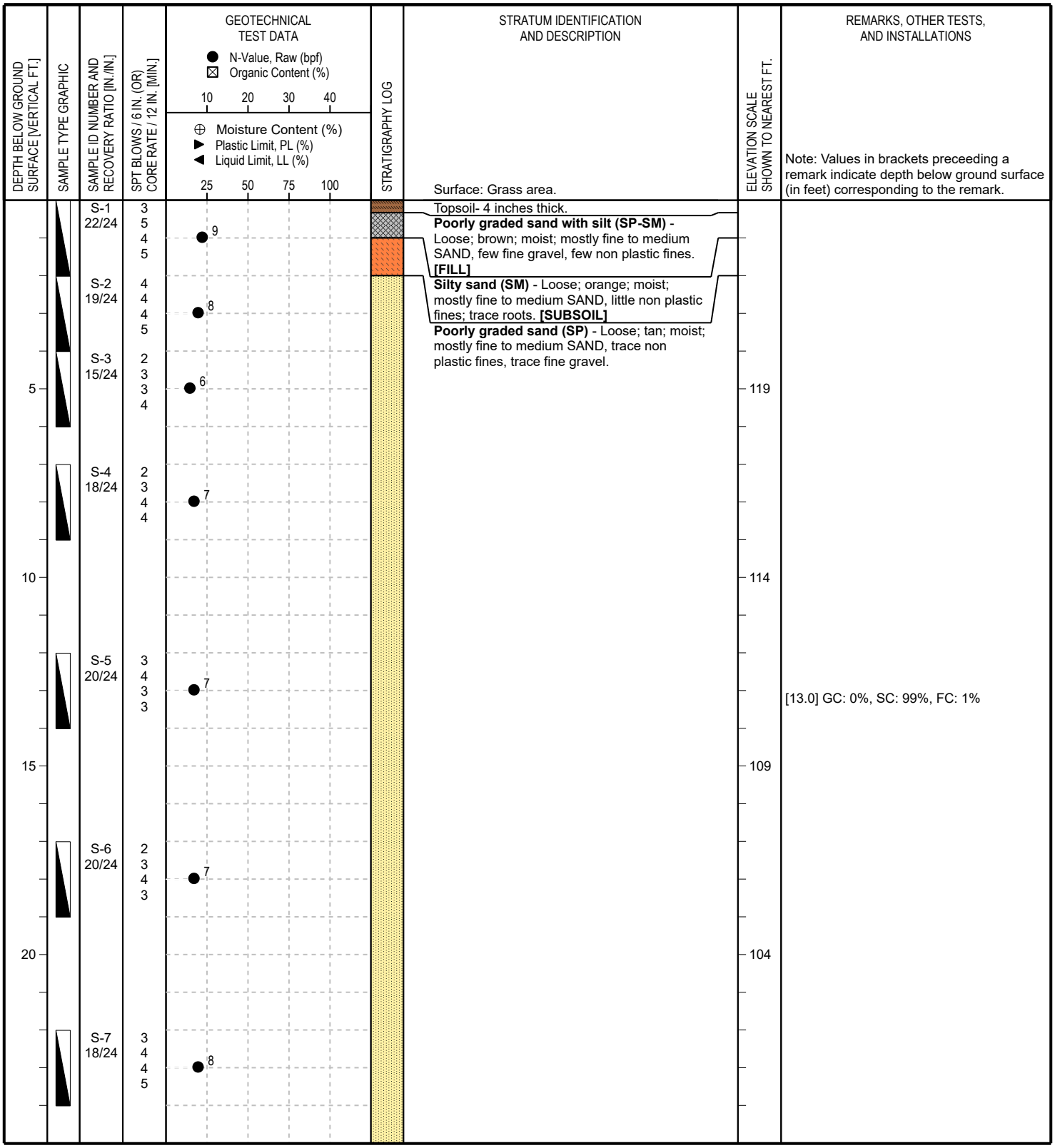
**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-5

**WSE Project: ENG24-1552**



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | Desmond Well Drilling, Inc. | BORING LOCATION: | See Attached Figure | DATE START: | April 15, 2025 |
| FOREMAN: | Pat Desmond | ADVANCE METHOD: | Hollow-Stem Auger Drilling | DATE FINISH: | April 15, 2025 |
| LOGGED BY: | Aaron Chabot | AUGER DIAMETER: | 4-1/4" ID (Stem), 7-5/8" OD (Flights) | GROUND EL: | 124.0 ± (NAVD88) |
| CHECKED BY: | Stephen Spink | SUPPORT CASING: | N/A | FINAL DEPTH: | 39.0 ft. |
| EQUIPMENT: | CME 45, Truck Mounted | CORING METHOD: | N/A | GRID COORDS: | N:2827852.4 ± / E:1048544.3 ± |
| SPT HAMMER: | Automatic (140-lb.) | BACKFILL MATERIAL: | Drill Cuttings | GRID SYSTEM: | NAD83 State Plane (MA) |




*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-5



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | ● N-Value, Raw (bpf)<br>⊠ Organic Content (%)<br>10 20 30 40<br>⊕ Moisture Content (%)<br>▶ Plastic Limit, PL (%)<br>◀ Liquid Limit, LL (%)<br>25 50 75 100 | | | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-8<br>19/24 | 5<br>6<br>5<br>7 | 11 | | **Poorly graded sand (SP)** - Loose to medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | S-9<br>20/24 | 4<br>5<br>5<br>7 | 10 | | | 94 | |
| | | S-10<br>16/24 | 5<br>5<br>5<br>5 | 10 | | | | |
| 35 | | | | | | | 89 | |
| | | S-11<br>18/24 | 3<br>4<br>5<br>7 | 9 | | | | |
| | | | | | | | | **Exploration ended at 39.0 ft.** |
| 40 | | | | | | | 84 | |
| 45 | | | | | | | 79 | |
| 50 | | | | | | | 74 | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-6

**WSE Project: ENG24-1552**



| | | | | | |
|---|---|---|---|---|---|
| CONTRACTOR: | Desmond Well Drilling, Inc. | BORING LOCATION: | See Attached Figure | DATE START: | April 16, 2025 |
| FOREMAN: | Pat Desmond | ADVANCE METHOD: | Hollow-Stem Auger Drilling | DATE FINISH: | April 16, 2025 |
| LOGGED BY: | Aaron Chabot | AUGER DIAMETER: | 4-1/4" ID (Stem), 7-5/8" OD (Flights) | GROUND EL: | 122.0 ± (NAVD88) |
| CHECKED BY: | Stephen Spink | SUPPORT CASING: | N/A | FINAL DEPTH: | 29.0 ft. |
| EQUIPMENT: | CME 45, Truck Mounted | CORING METHOD: | N/A | GRID COORDS: | N:2827945.1 ± / E:1048637.9 ± |
| SPT HAMMER: | Automatic (140-lb.) | BACKFILL MATERIAL: | Drill Cuttings and Asphalt Patch | GRID SYSTEM: | NAD83 State Plane (MA) |

| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA (N-Value, Raw (bpf); Organic Content (%); Moisture Content (%); Plastic Limit, PL (%); Liquid Limit, LL (%)) | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Surface: Asphalt concrete pavement. | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | | | | | Asphalt- 3 inches thick. | | |
| | | S-1 17/18 | 5 6 6 | 12 | | **Poorly graded sand with silt and gravel (SP-SM)** - Medium dense; brown; moist; mostly fine to medium SAND, little fine gravel, few non plastic fines. **[FILL]** | | |
| | | S-2 19/24 | 4 5 5 5 | 10 | | **Poorly graded sand (SP)** - Loose to medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 5 | | S-3 17/24 | 2 3 4 5 | 7 | | | 117 | |
| | | S-4 19/24 | 2 4 6 7 | 10 | | **Poorly graded sand (SP)** - Medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | [8.0] GC: 1%, SC: 98%, FC: 1% |
| 10 | | | | | | | 112 | |
| | | S-5 19/24 | 5 7 8 9 | 15 | | | | |
| 15 | | | | | | | 107 | |
| | | S-6 15/24 | 3 5 5 8 | 10 | | | | |
| 20 | | | | | | | 102 | |
| | | S-7 20/24 | 4 5 5 6 | 10 | | | | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

Weston & Sampson

**WSE Project: ENG24-1552**

**Department of Public Works**
**17 Town Hall Road, Truro, MA**

# BORING ID: B-6



| DEPTH BELOW GROUND SURFACE [VERTICAL FT.] | SAMPLE TYPE GRAPHIC | SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.] | SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.] | GEOTECHNICAL TEST DATA | STRATIGRAPHY LOG | STRATUM IDENTIFICATION AND DESCRIPTION | ELEVATION SCALE SHOWN TO NEAREST FT. | REMARKS, OTHER TESTS, AND INSTALLATIONS |
|---|---|---|---|---|---|---|---|---|
| | | | | ● N-Value, Raw (bpf)<br>⊠ Organic Content (%)<br>10 20 30 40<br>⊕ Moisture Content (%)<br>▶ Plastic Limit, PL (%)<br>◀ Liquid Limit, LL (%)<br>25 50 75 100 | | | | Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark. |
| | | S-8<br>16/24 | 5<br>11<br>14<br>12 | 25 | | **Poorly graded sand (SP)** - Medium dense; tan; moist; mostly fine to medium SAND, trace non plastic fines, trace fine gravel. | | |
| 30 | | | | | | | 92 | **Exploration ended at 29.0 ft.** |
| 35 | | | | | | | 87 | |
| 40 | | | | | | | 82 | |
| 45 | | | | | | | 77 | |
| 50 | | | | | | | 72 | |

*Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.*

# APPENDIX C

Geotechnical Laboratory Test Results

Thielsch
DIVISION OF THE RISE GROUP

195 Frances Avenue
Cranston RI, 02910
Phone: (401)-467-6454
Fax: (401)-467-2398
cts.thielsch.com
*Let's Build a Solid Foundation*

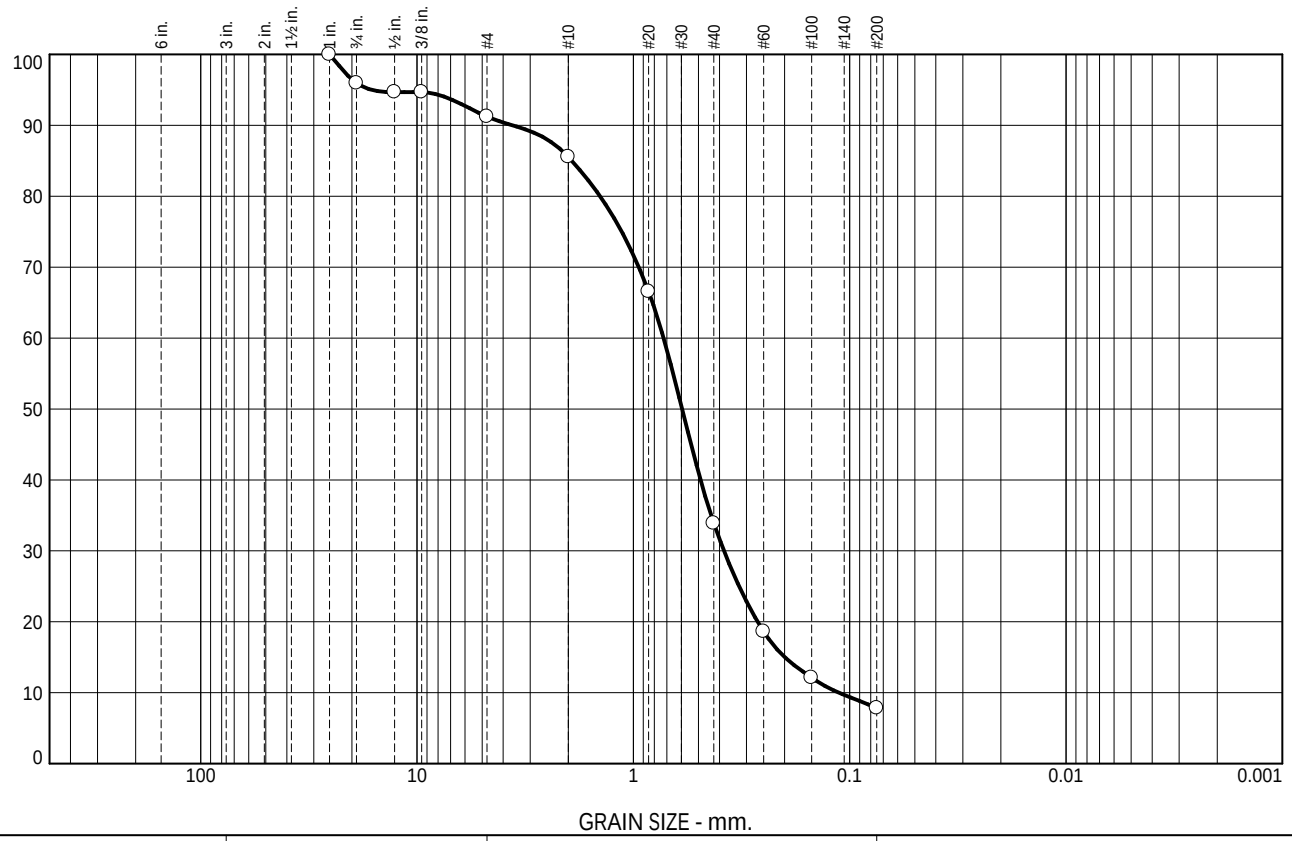
| Client Information: | | Project Information: | |
|---|---|---|---|
| **Weston & Sampson** | | **Truro DPW** | |
| **Foxborough, MA** | | **17 Town Hall Road, Truro MA** | |
| **(508) 698-3034** | | Project Number: | ENG24-1552 |
| Project Contact: | Stephen Spink | Summary Page: | 1 of 1 |
| Collected By: | AJC | Report Date: | 5/28/2025 |

## LABORATORY TESTING DATA SHEET, Report No.: 7425-E-163

| Boring No. | Sample ID | Depth (ft) | Laboratory No. | Identification Tests | | | | | | | | | Proctor / CBR / Permeability Tests | | | | | | | | Laboratory Log and Soil Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | As Rcvd Moisture Content % | LL % | PL % | OD LL | Gravel % | Sand % | Fines % | Org. % | pH | $g_d$ MAX (pcf) $W_{opt}$ (%) | $g_d$ MAX (pcf) $W_{opt}$ (%) (Corr.) | Dry unit wt. (pcf) | Test Moisture Content % | Target Test Setup as % of Proctor | CBR @ 0.1" | CBR @ 0.2" | Permeability cm/sec | |
| | | | | D2216 | D4318 | | | D6913 | | | D2974 | D4792 | D1557 | | | | | | | | |
| B-1 | S-2 | 2-4 | 25-S-1782 | | | | | 8.8 | 83.4 | 7.8 | | | | | | | | | | | Brown f-m SAND, trace f-c Gravel, trace Silt |
| B-1 | S-9 | 16-18 | 25-S-1783 | | | | | 0.2 | 98.3 | 1.5 | | | | | | | | | | | Light Brown f-m SAND, trace Silt |
| B-2 | S-4 | 6-8 | 25-S-1784 | | | | | 0.7 | 97.7 | 1.6 | | | | | | | | | | | Light Brown f-m SAND, trace Silt |
| B-3 | S-2 | 2-4 | 25-S-1785 | | | | | 1.0 | 95.5 | 3.5 | | | | | | | | | | | Light Brown f-m SAND, trace Silt, trace fine Gravel |
| B-5 | S-5 | 12-14 | 25-S-1786 | | | | | 0.3 | 98.6 | 1.1 | | | | | | | | | | | Light Brown f-m SAND, trace Silt |
| B-6 | S-4 | 7-9 | 25-S-1787 | | | | | 0.7 | 98.2 | 1.1 | | | | | | | | | | | Light Brown f-m SAND, trace Silt |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

Date Received: **5/20/2025** Reviewed By: Date Reviewed: **5/28/2025**

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 4.1 | 4.7 | 5.7 | 51.6 | 26.1 | 7.8 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1" | 100.0 | | |
| 3/4" | 95.9 | | |
| 1/2" | 94.7 | | |
| 3/8" | 94.7 | | |
| #4 | 91.2 | | |
| #10 | 85.5 | | |
| #20 | 66.6 | | |
| #40 | 33.9 | | |
| #60 | 18.6 | | |
| #100 | 12.1 | | |
| #200 | 7.8 | | |

* (no specification provided)

**Soil Description**

Brown f-m SAND, trace f-c Gravel, trace Silt

**Atterberg Limits**

PL= NP LL= NV PI= NP

**Coefficients**

$D_{90}$= 3.6105 $D_{85}$= 1.9265 $D_{60}$= 0.7252
$D_{50}$= 0.5952 $D_{30}$= 0.3813 $D_{15}$= 0.1995
$D_{10}$= 0.1123 $C_u$= 6.45 $C_c$= 1.78

**Classification**

USCS= SW-SM AASHTO= A-1-b

**Remarks**

Source of Sample: Boring Depth: 2-4'
Sample Number: B-1 / S-2

Date: 5.27.25

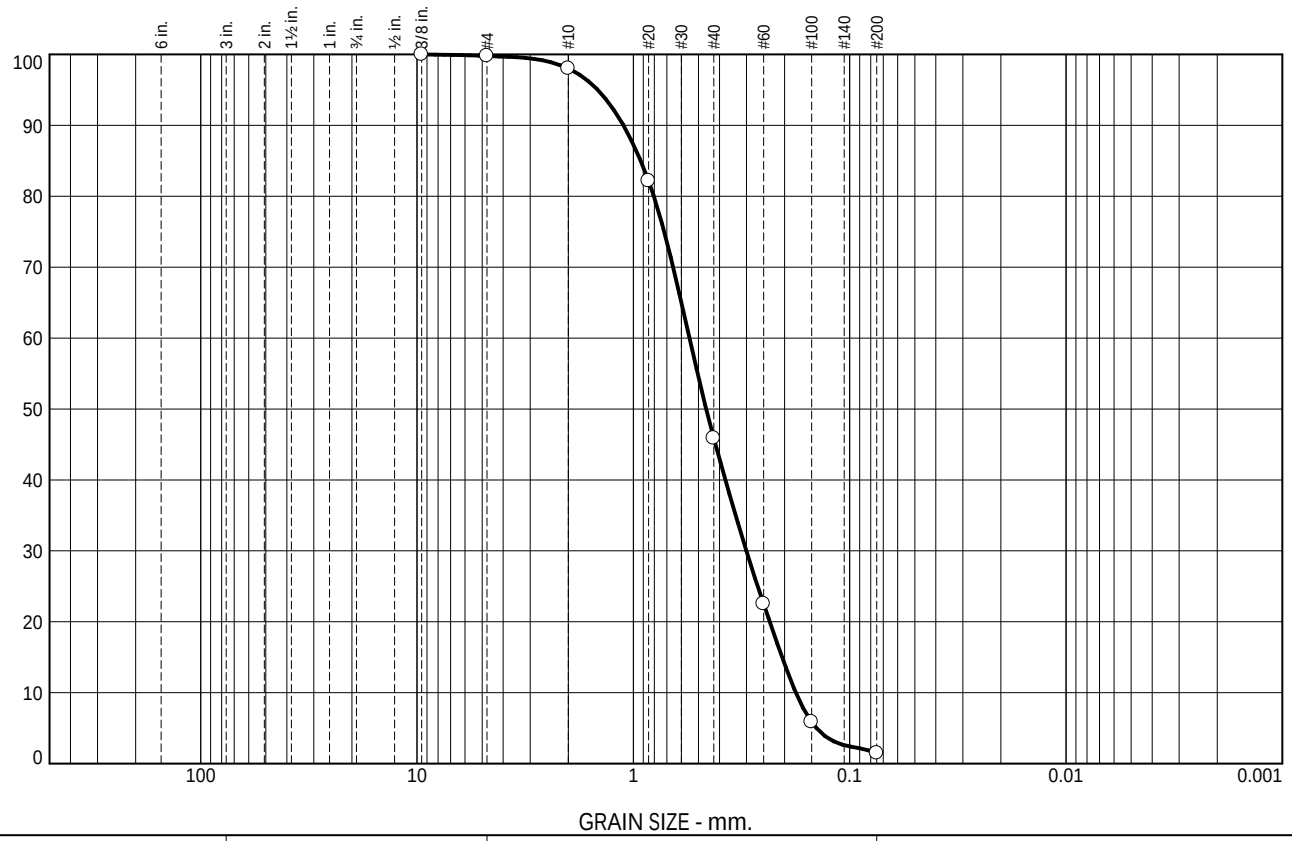
Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1782

Tested By: TG Checked By: Kris Roland

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.2 | 1.8 | 52.1 | 44.4 | 1.5 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 3/8" | 100.0 | | |
| #4 | 99.8 | | |
| #10 | 98.0 | | |
| #20 | 82.2 | | |
| #40 | 45.9 | | |
| #60 | 22.5 | | |
| #100 | 5.8 | | |
| #200 | 1.5 | | |

* (no specification provided)

Source of Sample: Boring Depth: 16-18'
Sample Number: B-1 / S-9

Soil Description
Light Brown f-m SAND, trace Silt

Atterberg Limits
PL= NP LL= NV PI= NP

Coefficients
$D_{90}$= 1.1121 $D_{85}$= 0.9255 $D_{60}$= 0.5502
$D_{50}$= 0.4608 $D_{30}$= 0.3005 $D_{15}$= 0.2054
$D_{10}$= 0.1773 $C_u$= 3.10 $C_c$= 0.93

Classification
USCS= SP AASHTO= A-1-b

Remarks

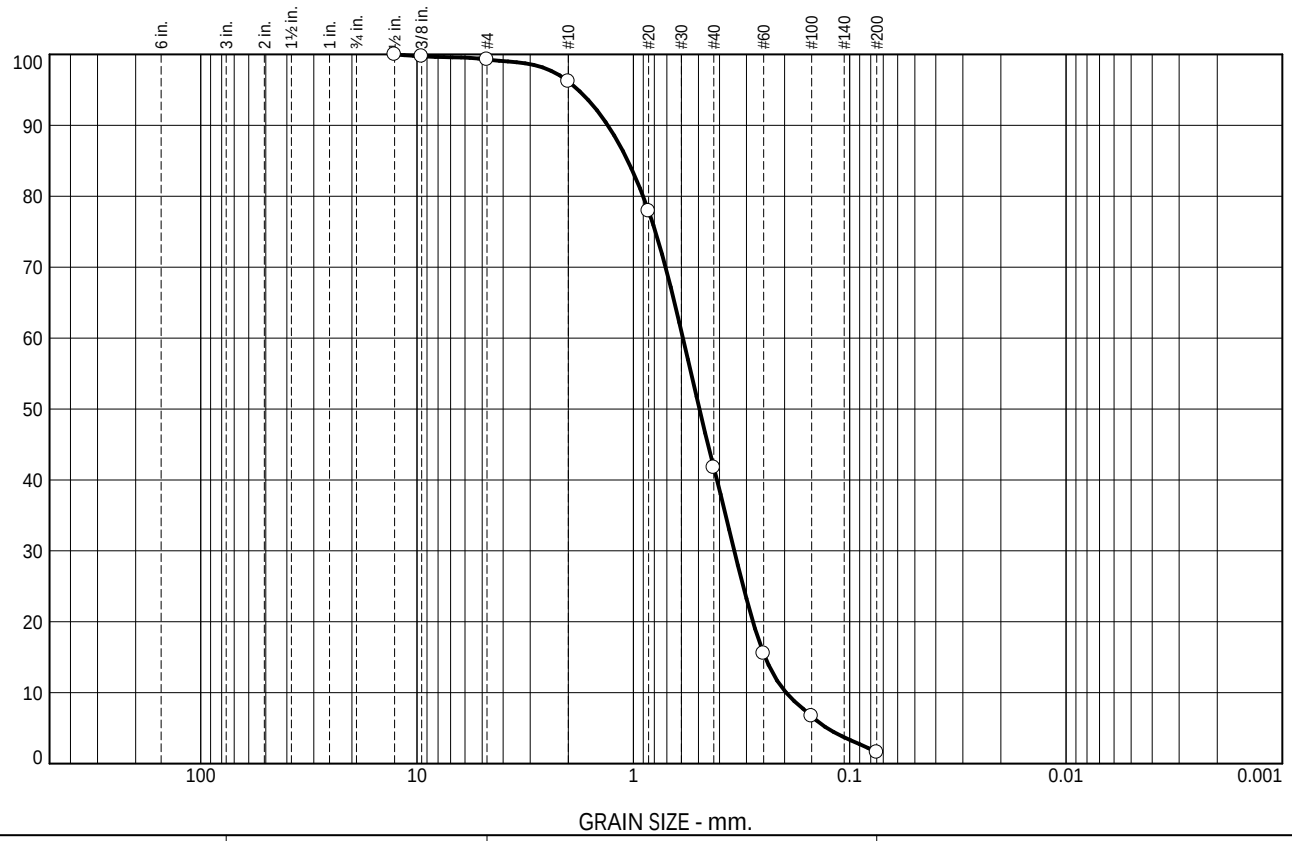
Date: 5.27.25

Thielsch Engineering Inc.
Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1783

Tested By: TG Checked By: Kris Roland

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.7 | 3.1 | 54.4 | 40.2 | 1.6 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1/2" | 100.0 | | |
| 3/8" | 99.7 | | |
| #4 | 99.3 | | |
| #10 | 96.2 | | |
| #20 | 77.9 | | |
| #40 | 41.8 | | |
| #60 | 15.5 | | |
| #100 | 6.7 | | |
| #200 | 1.6 | | |

* (no specification provided)

**Soil Description**

Light Brown f-m SAND, trace Silt

**Atterberg Limits**

PL= NP LL= NV PI= NP

**Coefficients**

$D_{90}$= 1.3126 $D_{85}$= 1.0612 $D_{60}$= 0.5899
$D_{50}$= 0.4951 $D_{30}$= 0.3416 $D_{15}$= 0.2461
$D_{10}$= 0.1969 $C_u$= 3.00 $C_c$= 1.00

**Classification**

USCS= SP AASHTO= A-1-b

**Remarks**

Source of Sample: Boring Depth: 6-8'
Sample Number: B-2 / S-4

Date: 5.27.25

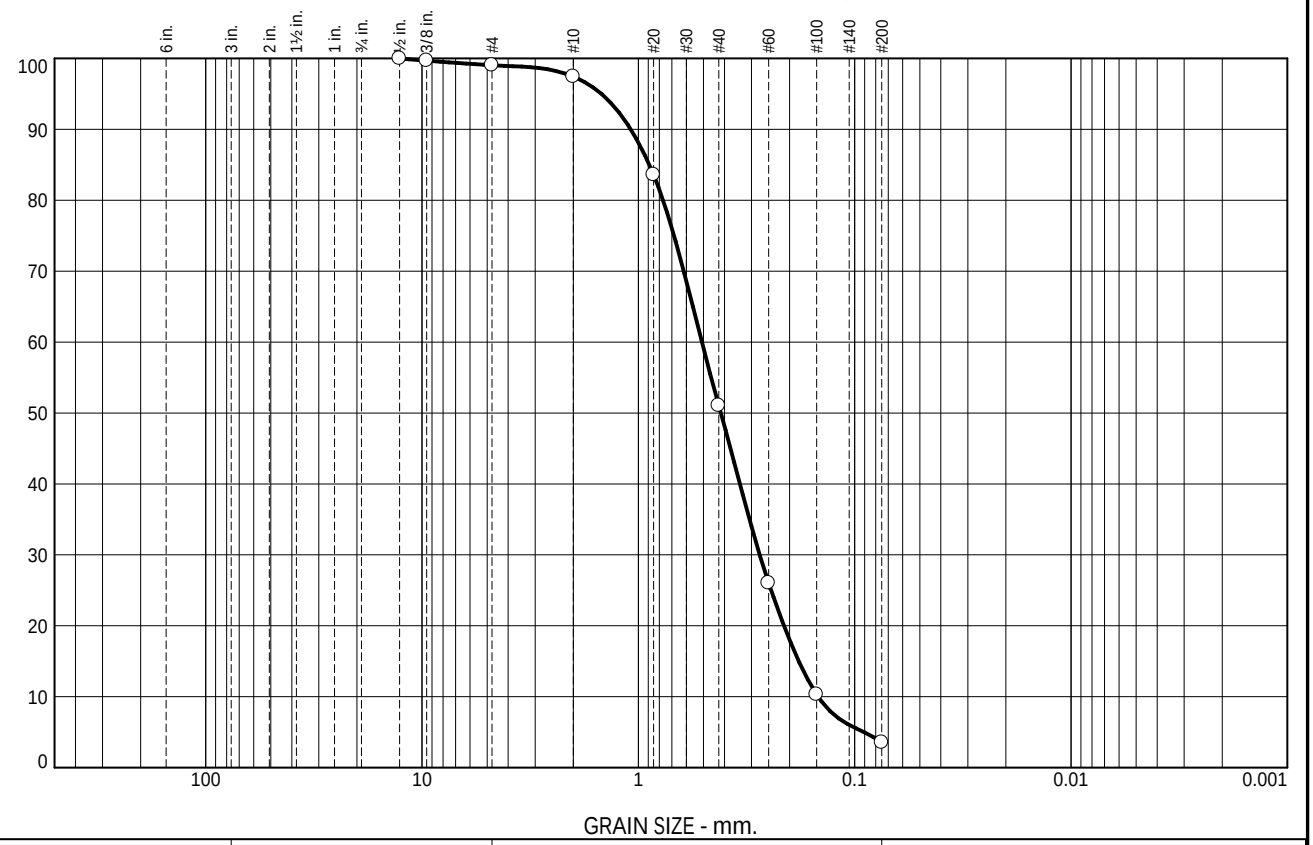
Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1784

Tested By: TG Checked By: Kris Roland

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 1.5 | 46.5 | 47.5 | 3.5 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 1/2" | 100.0 | | |
| 3/8" | 99.7 | | |
| #4 | 99.0 | | |
| #10 | 97.5 | | |
| #20 | 83.6 | | |
| #40 | 51.0 | | |
| #60 | 26.0 | | |
| #100 | 10.3 | | |
| #200 | 3.5 | | |

* (no specification provided)

**Soil Description**

Light Brown f-m SAND, trace Silt, trace fine Gravel

**Atterberg Limits**

PL= NP LL= NV PI= NP

**Coefficients**

$D_{90}$= 1.0846 $D_{85}$= 0.8898 $D_{60}$= 0.5084
$D_{50}$= 0.4157 $D_{30}$= 0.2750 $D_{15}$= 0.1814
$D_{10}$= 0.1477 $C_u$= 3.44 $C_c$= 1.01

**Classification**

USCS= SP AASHTO= A-3

**Remarks**

Source of Sample: Boring Depth: 2-4'
Sample Number: B-3 / S-2

Date: 5.27.25

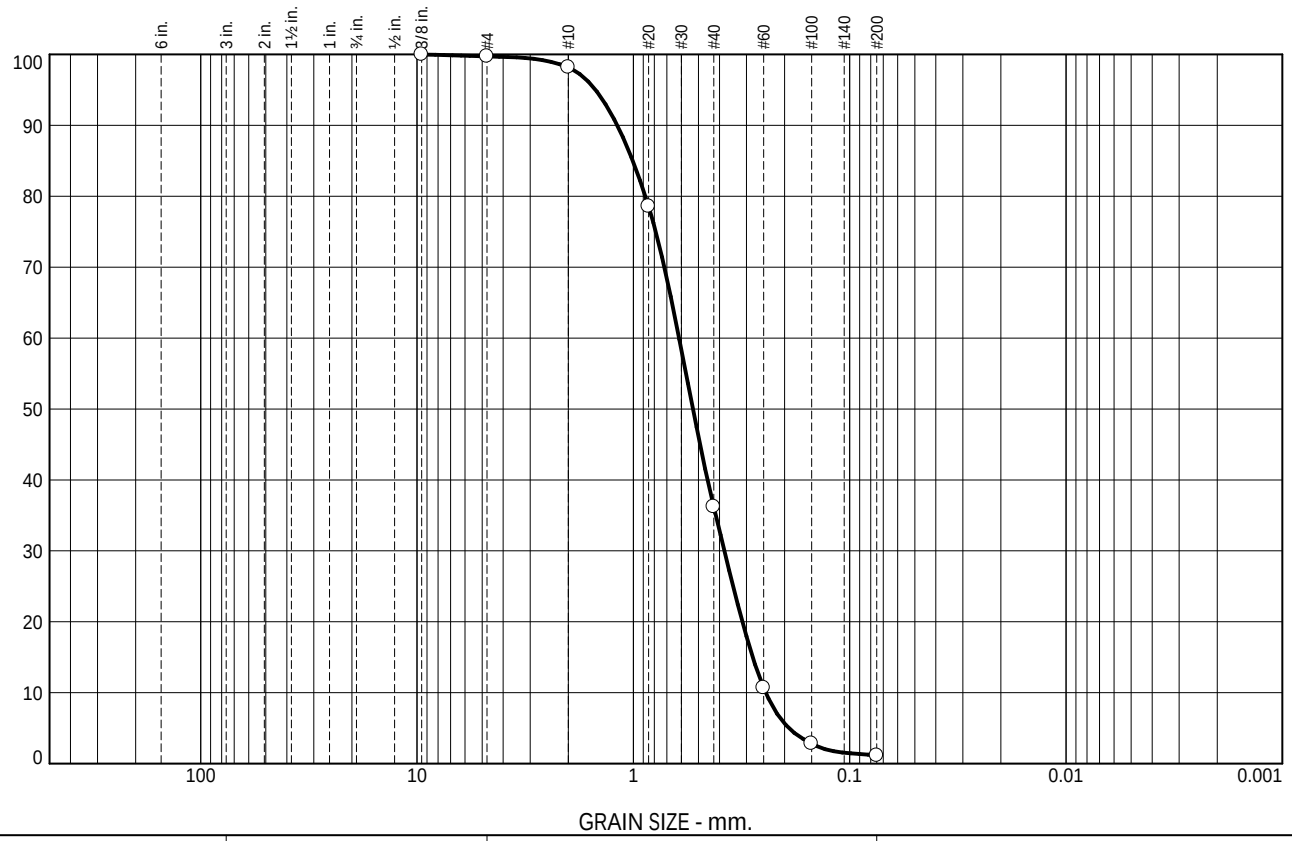
Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1785

Tested By: TG Checked By: Kris Roland

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.3 | 1.5 | 62.0 | 35.1 | 1.1 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 3/8" | 100.0 | | |
| #4 | 99.7 | | |
| #10 | 98.2 | | |
| #20 | 78.6 | | |
| #40 | 36.2 | | |
| #60 | 10.7 | | |
| #100 | 2.8 | | |
| #200 | 1.1 | | |

* (no specification provided)

**Soil Description**

Light Brown f-m SAND, trace Silt

**Atterberg Limits**

PL= NP LL= NV PI= NP

**Coefficients**

$D_{90}$= 1.1871 $D_{85}$= 1.0066 $D_{60}$= 0.6148
$D_{50}$= 0.5304 $D_{30}$= 0.3796 $D_{15}$= 0.2809
$D_{10}$= 0.2445 $C_u$= 2.51 $C_c$= 0.96

**Classification**

USCS= SP AASHTO= A-1-b

**Remarks**

Source of Sample: Boring Depth: 12-14'
Sample Number: B-5 / S-5

Date: 5.27.25

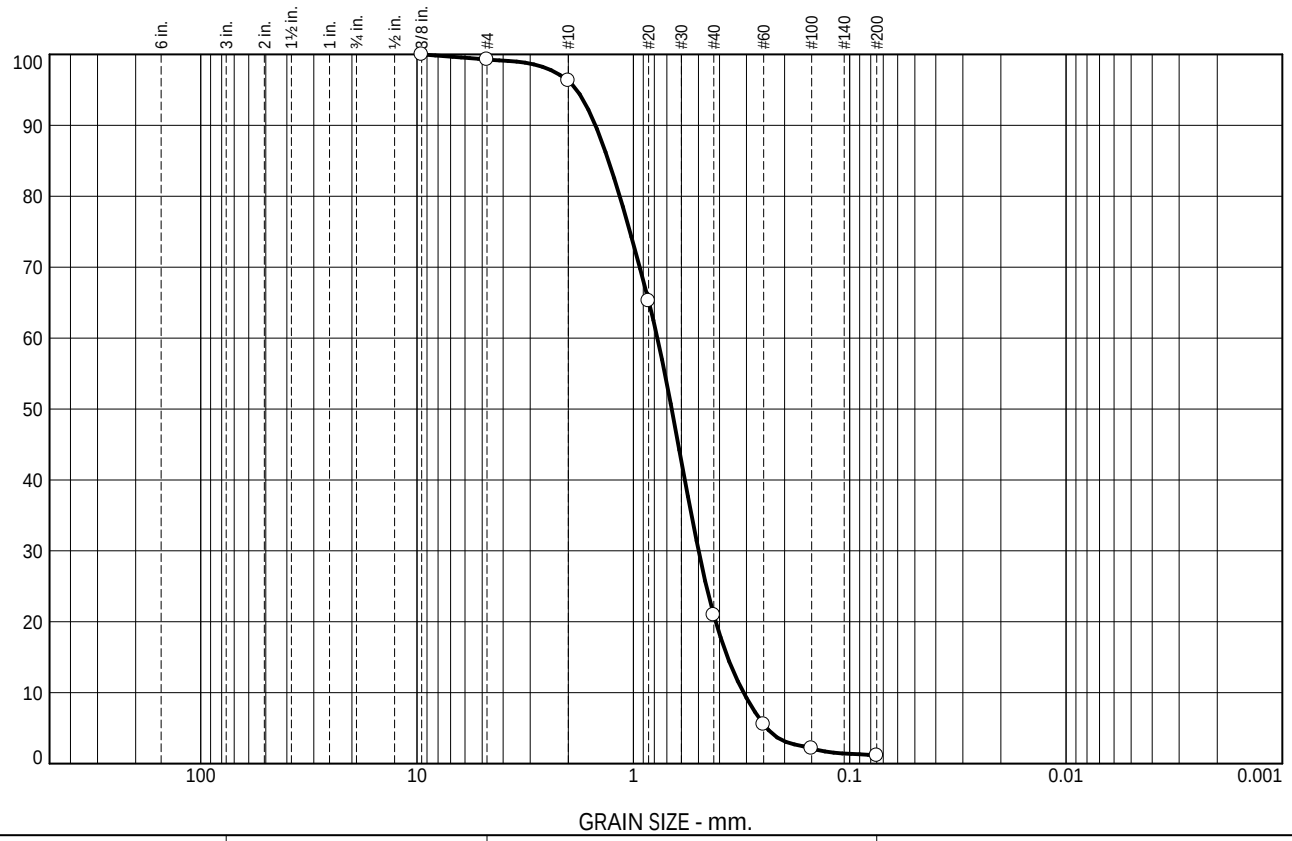
Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1786

Tested By: TG Checked By: Kris Roland

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.7 | 3.0 | 75.4 | 19.8 | 1.1 | |

| SIEVE SIZE OR DIAMETER | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| 3/8" | 100.0 | | |
| #4 | 99.3 | | |
| #10 | 96.3 | | |
| #20 | 65.2 | | |
| #40 | 20.9 | | |
| #60 | 5.5 | | |
| #100 | 2.1 | | |
| #200 | 1.1 | | |

* (no specification provided)

**Soil Description**

Light Brown f-m SAND, trace Silt

**Atterberg Limits**

PL= NP LL= NV PI= NP

**Coefficients**

$D_{90}$= 1.4980 $D_{85}$= 1.3029 $D_{60}$= 0.7736
$D_{50}$= 0.6652 $D_{30}$= 0.4995 $D_{15}$= 0.3669
$D_{10}$= 0.3097 $C_u$= 2.50 $C_c$= 1.04

**Classification**

USCS= SP AASHTO= A-1-b

**Remarks**

Source of Sample: Boring Depth: 7-9'
Sample Number: B-6 / S-4

Date: 05.27.25

Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Truro DPW
17 Town Hall Rd, Truro MA
Project No: ENG24-1552 Fig. 25-S-1787

Tested By: TG Checked By: Kris Roland

## APPENDIX D

"Important Information about This Geotechnical-Engineering Report," by GBA, Inc.

# Important Information about This

# Geotechnical-Engineering Report

**Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.**

**While you cannot eliminate all such risks, you can manage them. The following information is provided to help.**

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

## Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

## Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

## You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

*responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

## Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

## This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

## This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

## Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

## Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

## Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

## Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Weston & Sampson
55 Walkers Brook Drive, Reading, MA 01867 (HQ)
Tel: 978.532.1900

May 29, 2025

Jarrod Cabral
DPW Director
17 Town Hall Road
Truro, MA 02666

RE: Report of Hazardous Building Materials Investigation
17 Town Hall Road
Truro, MA 02666

Dear Mr. Cabral,

## INTRODUCTION

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to present this report of our Hazardous Building Materials Investigation (HBMI) services associated with the Truro Department of Public Works (DPW) building located at 17 Town Hall Road in Truro, Massachusetts (the Site). Our services were completed in accordance with our agreement. In response to the proposed renovation activities at the Site, Weston & Sampson performed a survey to identify asbestos-containing materials (ACMs), lead based paints/coatings, and other hazardous materials (OHMs) within the renovation area.

## SITE DESCRIPTION

The Truro DPW is composed of three main structures each with distinct separate areas. The southernmost structure is a four-bay garage with an office and storage addition on the rear and two storage sheds on the West. The four-bay garage and additions share a roof with seemingly three types of shingles, only one of which being accessible to sample. The approximate footprint of the 4-bay garage with additions is 3,500 SF. In the center of site is a salt shed with a footprint of approximately 3,000 SF with two garages on either side, each with an approximate footprint of 1750 SF and shingled roofing on both the salt shed and garages. The Northernmost structure has an approximate footprint of 3,000 and is composed of six different buildings. Starting from West to East the buildings are as follows: Shop office, Shop, Two-bay garage, Shed, Office, and Office addition. The Two-bay garage has an EPDM roof while the others are shingled.

## SURVEY RESULTS

### Asbestos Survey

The asbestos survey was performed by Massachusetts-licensed asbestos inspector Mr. Caleb Pettigrew (license No.: AI901112) on May 9th, 2025. A total of 101 samples of suspect asbestos-containing materials were collected from 50 homogenous materials. We performed the bulk sampling in the subject area according to methods outlined in the U.S. Environmental Protection Agency (EPA) guidance document titled, "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Document No. 560/5-85/024). Samples were analyzed by EMSL Analytical, Inc. in Woburn, Massachusetts. The results of the sampling are summarized below.

*Asbestos Sample Results*

| Client ID | Description | Location | Analytical Result (% Asbestos) |
|---|---|---|---|
| 01A-B | Tan carpet mastic | Office Closet | NAD |
| 02A-C | White leveling compound | Office Closet | NAD |
| 03A-B | Wall sheetrock | Office Bathroom | NAD |
| 04A-B | Joint compound | Office Bathroom | NAD |
| 05A-B | Grey sink caulk | Office Bathroom | NAD |
| 06A-B | Building paper | Office Exterior | NAD |
| 07A-B | Tan caulk on door wood to concrete | 2-Bay Garage Exterior | NAD |
| 08A-B | White window glazing | 2-Bay Garage Exterior | NAD |
| 09A-B | White caulk on door wood to wood | 2-Bay Garage Exterior | NAD |
| 10A-B | White window glazing | 2-Bay Garage Interior | NAD |
| 11A-B | White window caulk | Shop Exterior | NAD |
| 12A-B | White door caulk | Shop Office Exterior | NAD |
| 13A-B | Building paper | Shop Office Exterior | NAD |
| 14A-B | Red shingle | Shed Exterior | NAD |
| 15A-B | Black foundation damp proofing | Salt Shed Garage Exterior | NAD |
| 16A-B | Black rafter sealant | Salt Shed Garage Interior | NAD |
| 17A-B | Roof shingle | Shed Exterior | NAD |
| 18A-B | Grey caulk | Concrete Shed Exterior | NAD |
| 19A-B | White window glazing | Concrete Shed Exterior | NAD |
| 20A-B | White caulk | Concrete Shed Interior | NAD |
| 21A-B | White window glazing | 4-Bay Garage Exterior | NAD |
| 22A-B | Corner white caulk | 4-Bay Garage Exterior | NAD |
| 23A-B | White window caulk | 4-Bay Garage Exterior | NAD |
| 24A-B | Roof shingle | Shed | NAD |
| 25A-B | Expansion Joint | 4-Bay Garage Interior | NAD |
| 26A-B | Sink undercoat | 4-Bay Garage Office | NAD |
| 27A-B | Black mastic on wall | 4-Bay Garage Office | NAD |
| 28A-B | Sheetrock | 4-Bay Garage Office | NAD |
| 29A-B | Joint compound | 4-Bay Garage Office | NAD |
| 30A-B | Grey window caulk | 4-Bay Garage Bathroom | NAD |
| 31A-B | Sheetrock | 4-Bay Garage Boiler Room | NAD |
| 32A-B | Joint compound | 4-Bay Garage Boiler Room | NAD |

| Client ID | Description | Location | Analytical Result (% Asbestos) |
|---|---|---|---|
| 33A-B | Ceiling panel | 4-Bay Garage Interior | NAD |
| 34A-B | Black building paper | 4-Bay Garage Attic | NAD |
| 35A-B | Roof shingle | 4-Bay Garage Exterior | NAD |
| 36A-B | Roof paper | 4-Bay Garage Exterior | NAD |
| 37A-B | Roof shingle | Shop Office Shed | NAD |
| 38A-B | White roof trim caulk | Shop/Shop Office Exterior | NAD |
| 39A-B | Black caulk | Shop Exterior | NAD |
| 40A-B | Roof shingle | Shop Office Exterior | NAD |
| 41A-B | White caulk | Shop Office Exterior | NAD |
| 42A-B | Roof shingle | Shop Exterior | NAD |
| 43A-B | Tan seam sealant | Shop/2-Bay Garage Exterior | NAD |
| 44A-B | Ceiling sheetrock | 2-Bay Garage Interior | NAD |
| 45A-B | Roof shingle | Office Exterior | NAD |
| 46A-B | Roof paper | Office Exterior | NAD |
| 47A-B | Roof shingle | Office Addition Exterior | NAD |
| 48A-B | Roof paper | Office Addition Exterior | NAD |
| 49A-B | Foundation damp proofing | TP-7 (4-Bay Garage Exterior) | NAD |
| 50A-B | Addition foundation damp proofing | TP-7 (4-Bay Garage Exterior) | NAD |

NAD=no asbestos detected

The EPA and Massachusetts Department of Environmental Protection (MassDEP), consider materials identified to contain greater than or equal to 1% asbestos to be ACMs. As shown in the tables above, none of the building materials sampled by Weston & Sampson contained asbestos exceeding 1%. According to MassDEP regulations, ACMs must be removed by a licensed contractor prior to any activity that would disturb the material.

*Asbestos Limitations*

Our survey was limited to the building area scheduled to be renovated. Our survey did not include an evaluation of materials of soils or underground materials that may be present at the Site. Limited exploratory demolition was performed to access potentially hidden materials. Other suspect ACMs may be present at the Site outside the survey area or within other building areas that may not have been accessible by Weston & Sampson during our survey. ACMs must be removed by a licensed contractor prior to any activity that would disturb the material. Weston & Sampson recommends that if any suspect materials are uncovered during demolition or renovation activities that were not identified during the survey, that the materials be sampled and analyzed for asbestos content prior to disturbance. This document is not intended to be nor will it suffice to serve as a bid document or specification.

Per MassDEP regulations, the owner/operator must maintain a copy of this written asbestos survey report at the subject facility for at least two years. If the facility is unstaffed or if it is demolished, the owner/operator must maintain a copy at their regular place of business.

Lead Paint Screening

As part of the HBMI, Weston & Sampson performed a lead paint screening of the site buildings. During the screening, we collected eight (8) paint chip samples from representative painted/coated building components for analysis via Atomic Absorption Spectrometry using method SW846-3050B. Samples were analyzed by EMSL Analytical, Inc. of Orlando, Florida.

The paint screening revealed that one of the paint chip samples collected from the renovation area contained levels of lead paint greater than the EPA residential standard of 0.50% lead by weight. However, the Occupational Health and Safety Administration (OSHA) Lead in Construction Standard 29 CFR 1926.62 considers *any* detectable level of lead to be a potential for exposure if dust is generated from disturbances of surfaces coated with paint containing lead.

*Lead Paint Sample Results*

| Sample ID | Sample Description | Analytical Results (% lead by weight) |
|---|---|---|
| L1 | Office Bathroom-Light blue wall paint | <0.0081 % wt |
| L2 | Office Exterior-White trim paint | 11.9 % wt |
| L3 | 2-Bay Garage Exterior-Grey/green paint | 0.147 % wt |
| L4 | Shop Office Exterior-Green paint | <0.0064 % wt |
| L5 | Sale Shed Garage Exterior-Grey paint | <0.0064 % wt |
| L6 | 4-Bay Garage Exterior-Grey paint | 0.0105 % wt |
| L7 | 4-Bay Garage Interior-Office white wall | <0.0064 % wt |
| L8 | 4-Bay Garage Interior-White paint | <0.0064 % wt |

*Regulatory Implications and Regulations*

OSHA defines any detectable concentration of lead in paint as a potential lead exposure hazard to workers doing construction/demolition-type work on these surfaces as even small concentrations of lead can result in unacceptable employee exposures depending upon the method of removal and other workplace conditions. Since these conditions can vary greatly, the lead-in-construction standard was written to require exposure monitoring or the use of historical or objective data to ensure that employee exposures do not exceed the Action Level of 30 micrograms per cubic meter of air ($\mu g/m^3$). Historical data may be applied to some construction tasks involving lead.

OSHA requires that if coated surfaces with paint containing lead are impacted during demolition, then lead exposure monitoring must be performed by the contractor. Contractors and employers of staff who may disturb these materials are obligated to perform a 'negative exposure assessment' in accordance with OSHA regulations in order to document that, although minimal levels of lead are present in these materials, exposure to lead does not exceed the aforementioned OSHA Action Level.
OSHA states that until the employer performs an exposure assessment (or can supply prior data regarding the same type of work which may exempt them from the standard) and documents that employees are not exposed

above the permissible exposure limit (PEL) of greater than 50 µg/m3 of air, the employer must treat employees as if they were exposed above the PEL for the following operations:

- manual demolition of structures, manual scraping, manual sanding, and use of heat gun where lead-containing coatings or paints are present;
- abrasive blasting enclosure movement and removal;
- power tool cleaning;
- lead burning;
- using lead-containing mortar or spray painting with lead-containing paint;
- abrasive blasting, rivet busting, or welding, cutting, or burning on any structure where lead-containing coatings or paint are present;
- cleanup activities where dry expendable abrasive are used; and
- any other task the employer believes may cause exposure in excess of the PEL.

The contractor must provide respiratory protection, protective work clothing and equipment, change areas, hand washing facilities, biological monitoring, and training until an exposure assessment has determined that the work activity will result in an exposure below the PEL. Additional requirements under this standard include a written compliance program as well as record keeping.

## Other Hazardous Materials

As part of the survey, Weston & Sampson performed a survey/inventory of potentially hazardous chemicals and mechanical equipment located within the survey areas that will require special handling and disposal prior to building renovation / demolition activities. The following hazardous materials were observed in the site buildings:

| Material | Quantity |
|---|---|
| Fire extinguisher | 10 |
| 6' Fluorescent bulb | 30 |
| 4' Fluorescent bulb | 120 |
| Paint (5 Gallon) | 10 |
| Hydrophast paint (5 Gallon) | 35 |
| Adhesive (5 Gallon) | 10 |
| Varnish (2 Quarts) | 10 |
| Joint compound (2 Quarts) | 10 |
| Waste oil drum (55 Gallon) | 1 |
| Waste coolant drum (55 Gallon) | 1 |

We appreciate the opportunity to assist you with this project. If you have any questions or require any additional information, please do not hesitate to contact us at (978) 532-1900.

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.

Craig Miner, LEED AP
Team Leader

Caleb Pettigrew
Environmental Scientist III

Attachments:

Laboratory Analytical results

# EMSL Analytical, Inc.

**5 Constitution Way, Unit A Woburn, MA 01801**

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com


| | |
|---|---|
| **EMSL Order:** | 132502701 |
| **Customer ID:** | WESA62 |
| **Customer PO:** | |
| **Project ID:** | |

| | | | |
|---|---|---|---|
| **Attention:** | Craig Miner | **Phone:** | (978) 532-1900 |
| | Weston & Sampson Engineers, Inc. | **Fax:** | (978) 977-0100 |
| | 55 Walkers Brook Drive | **Received Date:** | 05/13/2025 10:15 AM |
| | Suite 100v | **Analysis Date:** | 05/17/2025 |
| | Reading, MA 01867 | **Collected Date:** | 05/09/2025 |
| **Project:** | Truro DPW | | |

## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 01A<br>*132502701-0001* | Office Closet - Tan Carpet Mastic | Tan<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 01B<br>*132502701-0002* | Office Closet - Tan Carpet Mastic | Tan<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 02A<br>*132502701-0003* | Office Closet - White Leveling Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 02B<br>*132502701-0004* | Office Closet - White Leveling Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 02C<br>*132502701-0005* | Office Closet - White Leveling Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 03A<br>*132502701-0006* | Office Bathroom - Wall Sheetrock | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 03B<br>*132502701-0007* | Office Bathroom - Wall Sheetrock | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 04A<br>*132502701-0008* | Office Bathroom - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 04B<br>*132502701-0009* | Office Bathroom - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 05A<br>*132502701-0010* | Office Bathroom - Gray Sink Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 05B<br>*132502701-0011* | Office Bathroom - Gray Sink Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 06A<br>*132502701-0012* | Office Exterior - Building Paper | White<br>Fibrous<br>Homogeneous | 95% Cellulose | 5% Non-fibrous (Other) | None Detected |
| 06B<br>*132502701-0013* | Office Exterior - Building Paper | White<br>Fibrous<br>Homogeneous | 95% Cellulose | 5% Non-fibrous (Other) | None Detected |
| 07A<br>*132502701-0014* | 2-Bay Garage Exterior - Tan Caulk on Door, Wood to Concrete | Tan<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 07B<br>*132502701-0015* | 2-Bay Garage Exterior - Tan Caulk on Door, Wood to Concrete | Tan<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 08A<br>*132502701-0016* | 2-Bay Garage Exterior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |

Initial report from: 05/17/2025 15:15:49

**EMSL Analytical, Inc.**
**5 Constitution Way, Unit A Woburn, MA 01801**
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

**EMSL Order:** 132502701
**Customer ID:** WESA62
**Customer PO:**
**Project ID:**

## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 08B<br>*132502701-0017* | 2-Bay Garage Exterior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 09A<br>*132502701-0018* | 2-Bay Garage Exterior - White Caulk on Door, Wood to Wood | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 09B<br>*132502701-0019* | 2-Bay Garage Exterior - White Caulk on Door, Wood to Wood | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 10A<br>*132502701-0020* | 2-Bay Garage Interior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 10B<br>*132502701-0021* | 2-Bay Garage Interior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 11A<br>*132502701-0022* | Shop Exterior - White Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 11B<br>*132502701-0023* | Shop Exterior - White Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 12A<br>*132502701-0024* | Shop Office Exterior - White Door Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 12B<br>*132502701-0025* | Shop Office Exterior - White Door Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 13A<br>*132502701-0026* | Shop Office Exterior - Building Paper | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 13B<br>*132502701-0027* | Shop Office Exterior - Building Paper | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 14A<br>*132502701-0028* | Shed Exterior - Red Shingle | Red/Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 14B<br>*132502701-0029* | Shed Exterior - Red Shingle | Red/Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 15A<br>*132502701-0030* | Salt Shed Garage Exterior - Black Foundation Damproofing | Black<br>Non-Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 15B<br>*132502701-0031* | Salt Shed Garage Exterior - Black Foundation Damproofing | Black<br>Non-Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 16A<br>*132502701-0032* | Salt Shed Garage Interior - Black Rafter Sealant | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 16B<br>*132502701-0033* | Salt Shed Garage Interior - Black Rafter Sealant | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 17A<br>*132502701-0034* | Shed Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 5% Synthetic<br>5% Glass | 90% Non-fibrous (Other) | None Detected |

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**EMSL Analytical, Inc.**
**5 Constitution Way, Unit A Woburn, MA 01801**
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

**EMSL Order:** 132502701
**Customer ID:** WESA62
**Customer PO:**
**Project ID:**

## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 17B<br>*132502701-0035* | Shed Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 5% Synthetic<br>5% Glass | 90% Non-fibrous (Other) | None Detected |
| 18A<br>*132502701-0036* | Concrete Shed Exterior - Gray Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 18B<br>*132502701-0037* | Concrete Shed Exterior - Gray Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 19A<br>*132502701-0038* | Concrete Shed Exterior - White Window Glazing | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 19B<br>*132502701-0039* | Concrete Shed Exterior - White Window Glazing | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 20A<br>*132502701-0040* | Concrete Shed Interior - White Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 20B<br>*132502701-0041* | Concrete Shed Interior - White Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 21A<br>*132502701-0042* | 4-Bay Garage Exterior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 21B<br>*132502701-0043* | 4-Bay Garage Exterior - White Window Glazing | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 22A<br>*132502701-0044* | 4-Bay Garage Exterior - Corner White Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 22B<br>*132502701-0045* | 4-Bay Garage Exterior - Corner White Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 23A<br>*132502701-0046* | 4-Bay Garage Exterior - White Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 23B<br>*132502701-0047* | 4-Bay Garage Exterior - White Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 24A<br>*132502701-0048* | Shed - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 24B<br>*132502701-0049* | Shed - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 25A<br>*132502701-0050* | 4-Bay Garage Interior - Expansion Joint | Black<br>Non-Fibrous<br>Homogeneous | 15% Cellulose | 85% Non-fibrous (Other) | None Detected |
| 25B<br>*132502701-0051* | 4-Bay Garage Interior - Expansion Joint | Black<br>Non-Fibrous<br>Homogeneous | 15% Cellulose | 85% Non-fibrous (Other) | None Detected |
| 26A<br>*132502701-0052* | 4-Bay Garage Office - Sink Undercoat | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 26B<br>*132502701-0053* | 4-Bay Garage Office - Sink Undercoat | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |

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**Customer PO:**
**Project ID:**

## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 27A<br>*132502701-0054* | 4-Bay Garage Office - Black Mastic on Wall | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 27B<br>*132502701-0055* | 4-Bay Garage Office - Black Mastic on Wall | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 28A<br>*132502701-0056* | 4-Bay Garage Office - Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 28B<br>*132502701-0057* | 4-Bay Garage Office - Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 29A<br>*132502701-0058* | 4-Bay Garage Office - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 29B<br>*132502701-0059* | 4-Bay Garage Office - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 30A<br>*132502701-0060* | 4-Bay Garage Bathroom - Gray Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 30B<br>*132502701-0061* | 4-Bay Garage Bathroom - Gray Window Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 31A<br>*132502701-0062* | 4-Bay Garage Boiler Room - Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose<br>2% Glass | 88% Non-fibrous (Other) | None Detected |
| 31B<br>*132502701-0063* | 4-Bay Garage Boiler Room - Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose<br>2% Glass | 88% Non-fibrous (Other) | None Detected |
| 32A<br>*132502701-0064* | 4-Bay Garage Boiler Room - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 32B<br>*132502701-0065* | 4-Bay Garage Boiler Room - Joint Compound | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 33A<br>*132502701-0066* | 4-Bay Garage Interior - Ceiling Panel | Brown/White<br>Fibrous<br>Homogeneous | 95% Cellulose | 5% Non-fibrous (Other) | None Detected |
| 33B<br>*132502701-0067* | 4-Bay Garage Interior - Ceiling Panel | Brown/White<br>Fibrous<br>Homogeneous | 95% Cellulose | 5% Non-fibrous (Other) | None Detected |
| 34A<br>*132502701-0068* | 4-Bay Garage Attic - Black Building Paper | Black<br>Fibrous<br>Homogeneous | 80% Cellulose | 20% Non-fibrous (Other) | None Detected |
| 34B<br>*132502701-0069* | 4-Bay Garage Attic - Black Building Paper | Black<br>Fibrous<br>Homogeneous | 80% Cellulose | 20% Non-fibrous (Other) | None Detected |
| 35A<br>*132502701-0070* | 4-Bay Garage Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 35B<br>*132502701-0071* | 4-Bay Garage Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 36A<br>*132502701-0072* | 4-Bay Garage Exterior - Roof Paper | Black<br>Fibrous<br>Homogeneous | 80% Cellulose | 20% Non-fibrous (Other) | None Detected |

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**EMSL Order:** 132502701
**Customer ID:** WESA62
**Customer PO:**
**Project ID:**

## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 36B<br>*132502701-0073* | 4-Bay Garage Exterior - Roof Paper | Black<br>Fibrous<br>Homogeneous | 80% Cellulose | 20% Non-fibrous (Other) | None Detected |
| 37A<br>*132502701-0074* | Shop Office Shed - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Synthetic | 90% Non-fibrous (Other) | None Detected |
| 37B<br>*132502701-0075* | Shop Office Shed - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Synthetic | 90% Non-fibrous (Other) | None Detected |
| 38A<br>*132502701-0076* | Shop/Shop Office Exterior - White Roof Trim Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 38B<br>*132502701-0077* | Shop/Shop Office Exterior - White Roof Trim Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 39A<br>*132502701-0078* | Shop Exterior - Black Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 39B<br>*132502701-0079* | Shop Exterior - Black Caulk | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 40A<br>*132502701-0080* | Shop Office Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 40B<br>*132502701-0081* | Shop Office Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 41A<br>*132502701-0082* | Shop Office Exterior - White Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 41B<br>*132502701-0083* | Shop Office Exterior - White Caulk | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 42A<br>*132502701-0084* | Shop Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 42B<br>*132502701-0085* | Shop Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 43A<br>*132502701-0086* | Shop 2-Bay Garage Exterior - Tan Seam Sealant | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 43B<br>*132502701-0087* | Shop 2-Bay Garage Exterior - Tan Seam Sealant | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 44A<br>*132502701-0088* | 2-Bay Garage Interior - Ceiling Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 44B<br>*132502701-0089* | 2-Bay Garage Interior - Ceiling Sheetrock | Gray/Tan<br>Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 45A<br>*132502701-0090* | Office Exterior - Roof Shingle | Black<br>Non-Fibrous<br>Homogeneous | 30% Cellulose | 70% Non-fibrous (Other) | None Detected |
| 45B<br>*132502701-0091* | Office Exterior - Roof Shingle | Black<br>Non-Fibrous<br>Homogeneous | 30% Cellulose | 70% Non-fibrous (Other) | None Detected |

Initial report from: 05/17/2025 15:15:49

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**EMSL Order:** 132502701
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## *Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 46A<br>*132502701-0092* | Office Exterior - Roof Paper | Black<br>Non-Fibrous<br>Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 46B<br>*132502701-0093* | Office Exterior - Roof Paper | Black<br>Non-Fibrous<br>Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 47A<br>*132502701-0094* | Office Addition Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 47B<br>*132502701-0095* | Office Addition Exterior - Roof Shingle | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 48A<br>*132502701-0096* | Office Addition Exterior - Roof Paper | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 48B<br>*132502701-0097* | Office Addition Exterior - Roof Paper | Black<br>Fibrous<br>Homogeneous | 10% Glass | 90% Non-fibrous (Other) | None Detected |
| 49A<br>*132502701-0098* | TP - 7 - 4-Bay Garage Exterior - Foundation Damproofing | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 49B<br>*132502701-0099* | TP - 7 - 4-Bay Garage Exterior - Foundation Damproofing | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 50A<br>*132502701-0100* | TP - 7 - 4-Bay Garage Exterior - Addition Foundation Damproofing | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 50B<br>*132502701-0101* | TP - 7 - 4-Bay Garage Exterior - Addition Foundation Damproofing | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |

Analyst(s)
*Kevin Pine (101)*

Steve Grise, Laboratory Manager
or Other Approved Signatory



Initial report from: 05/17/2025 15:15:49

OrderID: 132502701

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

# Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only

132502701

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

| Customer Information | | Billing Information | |
|---|---|---|---|
| Customer ID: | | Billing ID: | |
| Company Name: | Weston & Sampson | Company Name: | |
| Contact Name: | Craig Miner | Billing Contact: | |
| Street Address: | 55 Walkers Brook Drive | Street Address: | |
| City, State, Zip: | Reading, MA 01867 | Country: USA | City, State, Zip: | Country: |
| Phone: | 1-800-SAMPSON | Phone: | |
| Email(s) for Report: | minerc@wseinc.com, Pettigrew.Caleb@wseinc.com | Email(s) for Invoice: | |

**Project Information**

| | | | |
|---|---|---|---|
| Project Name/No: | Truro DPW | Purchase Order: | |
| EMSL LIMS Project ID: (If applicable, EMSL will provide) | | US State where samples collected: MA | State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable) |
| Sampled By Name: | Caleb Pettigrew | Sampled By Signature: | Date Sampled: 5-9-25 / No. of Samples in Shipment: 101 |

**Turn-Around-Time (TAT)**

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

**Test Selection**

**PLM - Bulk (reporting limit)**

- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

**TEM - Bulk**

- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable - NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

**Other Tests (please specify)**

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA)

| Sample Number | HA Number | Sample Location | Material Description |
|---|---|---|---|
| 01A-B | | Office Closet | Tan carpet mastic |
| 02A-C | | ↓ | white leveling compound |
| 03A-B | | Office Bathroom | Wall sheetrock |
| 04A-B | | ↓ | Joint compound |
| 05A-B | | ↓ | Grey sink caulk |
| 06A-B | | Office Exterior | Building paper |
| 07A-B | | 2-Bay Garage Exterior | Tan caulk on door, wood to concrete |
| 08A-B | | ↓ | white window glazing |
| 09A-B | | ↓ | White caulk on door, wood to wood |
| 10A-B | | 2-Bay Garage Interior | White window glazing |

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

| | | | |
|---|---|---|---|
| Method of Shipment: | Drop-off | Sample Condition Upon Receipt: | 8M 1015 |
| Relinquished by: | | Date/Time: 5-13-25 10:00 | Received by: REC'D EMSL-BOSTON MAY 13 2025 | Date/Time |
| Relinquished by: | | Date/Time: | Received by: walk in | Date/Time |

Controlled Document - Asbestos Bulk R7 9/14/2021

☒ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

**EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.**

EMSL ANALYTICAL, INC.
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# Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only

132502701

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

| Sample Number | HA Number | Sample Location | Material Description |
|---|---|---|---|
| 11A-B | | Shop Exterior | White Window caulk |
| 12A-B | | Shop office Exterior | White door caulk |
| 13A-B | | ↓ | Building paper |
| 14A-B | | Shed Exterior | Red Shingle |
| 15A-B | | Salt Shed Garage Exterior | Black foundation damproofing |
| 16A-B | | Salt Shed Garage Interior | Black rafter sealant |
| 17A-B | | Shed Exterior | Roof shingle |
| 18A-B | | Concrete shed Exterior | Grey caulk |
| 19A-B | | ↓ | White window glazing |
| 20A-B | | Concrete Shed Interior | White caulk |
| 21A-B | | 4-Bay Garage Exterior | White window glazing |
| 22A-B | | ↓ | Corner white caulk |
| 23A-B | | ↓ | White window caulk |
| 24A-B | | Shed | Roof shingle |
| 25A-B | | 4-Bay Garage Interior | Expansion joint |
| 26A-B | | 4Bay Garage office | Sink undercoat |
| 27A-B | | ↓ | Black mastic on sill |
| 28A-B | | ↓ | Sheetrock |
| 29A-B | | ↓ | Joint compound |
| 30A-B | | 4-Bay Garage Bathroom | Grey window caulk |
| 31A-B | | 4-Bay Garage Boiler Room | Sheetrock |
| 32A-B | | ↓ | Joint compound |
| 33A-B | | 4-Bay Garage Interior | Ceiling panel |
| 34A-B | | 4-Bay Garage Attic | Black building paper |
| 35A-B | | 4-Bay Garage Exterior | Roof Shingle |

| | | | | | |
|---|---|---|---|---|---|
| Method of Shipment: | drop off | | Sample Condition Upon Receipt: | | |
| Relinquished by: | | Date/Time: 5-13-25 10:00 | Received by: | Date/Time | |
| Relinquished by: | | Date/Time: | Received by: | Date/Time | |

REC'D EMSL-BOSTON MAY 13 2025

Controlled Document - Asbestos Bulk R7 09/14/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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OrderID: 132502701

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

# Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

132502701

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

| Sample Number | Sample Location / Description | Volume, Area or Homogeneous Area | Date / Time Sampled (Air Monitoring Only) |
|---|---|---|---|
| 36 A-B | 4-Bay Garage Exterior | Roof paper | |
| 37 A-B | Shop office Shed | Roof shingle | |
| 38 A-B | Shop / Shop office Exterior | White roof trim caulk | |
| 39 A-B | Shop Exterior | Black caulk | |
| 40 A-B | Shop Office Exterior | Roof Shingle | |
| 41 A-B | ↓ | White caulk | |
| 42 A-B | Shop Exterior | Roof Shingle | |
| 43 A-B | Shop 12-Bay Garage Exterior | Tan seam sealant | |
| 44 A-B | 2-Bay Garage Interior | Ceiling Sheetrock | |
| 45 A-B | Office Exterior | Roof shingle | |
| 46 A-B | ↓ | Roof paper | |
| 47 A-B | Office Addition Exterior | | |
| 48 A-B | ↓ | | |
| 49 A-B | TP-7-4Bay Garage Exterior | Foundation dampproofing | |
| 50 A-B | ↓ | Addition foundation dampproofing | |

| | | | | | |
|---|---|---|---|---|---|
| Method of Shipment: | Drop-off | | | Sample Condition Upon Receipt: | |
| Relinquished by: | | Date/Time: | 5-13-25 10:00 | Received by: REC'D EMSL-BOSTON MAY 13 2025 | Date/Time |
| Relinquished by: | | Date/Time: | | Received by: | Date/Time |

Controlled Document - COC-05 Asbestos R16 10/26/2021

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**EMSL Analytical, Inc.**

3303 Parkway Center Court, Orlando, FL, 32808
Telephone: (407)-599-5887 Fax:(407)-599-9063
www.emsl.com

**EMSL Order ID:** 342551235
**LIMS Reference ID:** JD51235
**EMSL Customer ID:** WESA62

**Attention:** Craig Miner
Weston & Sampson Engineers, Inc. [WESA62]
55 Walkers Brook Drive, Suite 100v
Reading, MA 01867
(978) 532-1900
minerc@wseinc.com

**Project Name:** Truro DPW
**Customer PO:**
**EMSL Sales Rep:** Josh Silverman
**Received:** 05/14/2025 10:22
**Reported:** 05/21/2025 10:10

## Analytical Results

| Analyte | Results | RL | Weight(g) | Prep Date & Tech | Prep Method | Analysis Date & Analyst | Analytical Method | Q | DF |
|---|---|---|---|---|---|---|---|---|---|
| **Client Sample ID: L1/Office Bathroom, Light Blue Wall Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-01** |
| **Lead** | <0.0081 % wt | 0.0081 % wt | 0.1975 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L2/Office Exterior, White Trim Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-02** |
| **Lead** | 11.9 % wt | 0.582 % wt | 0.2751 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | D | 100 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L3/2- Bay Garage Exterior, Grey/Green Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-03** |
| **Lead** | 0.147 % wt | 0.0064 % wt | 0.2534 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L4/Shop Office Exterior, Green Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-04** |
| **Lead** | <0.0064 % wt | 0.0064 % wt | 0.2943 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L5/Salt Shed Garage Exterior, Grey Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-05** |
| **Lead** | <0.0064 % wt | 0.0064 % wt | 0.2561 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L6/4- Bay Garage Exterior, Grey Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-06** |
| **Lead** | 0.0105 % wt | 0.0064 % wt | 0.274 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L7/4- Bay Garage Interior, Office White Wall** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-07** |
| **Lead** | <0.0064 % wt | 0.0064 % wt | 0.254 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |
| **Client Sample ID: L8/4- Bay Garage Interior, White Paint** | | | | | | | | | **Date Sampled: 05/13/25** |
| **Matrix: Chips** | | | | | | | | | **LIMS Reference ID: JD51235-08** |
| **Lead** | <0.0064 % wt | 0.0064 % wt | 0.2587 | 05/15/25 DT | SW-846 3050B | 05/15/25 SM | SW 846-7000B | | 1 |
| Sample Comments: | | | | | | | | | |

**EMSL Analytical, Inc.**

3303 Parkway Center Court, Orlando, FL, 32808
Telephone: (407)-599-5887 Fax:(407)-599-9063
www.emsl.com

**EMSL Order ID:** 342551235
**LIMS Reference ID:** JD51235
**EMSL Customer ID:** WESA62

**Attention:** Craig Miner
Weston & Sampson Engineers, Inc. [WESA62]
55 Walkers Brook Drive, Suite 100v
Reading, MA 01867
(978) 532-1900
minerc@wseinc.com

**Project Name:** Truro DPW
**Customer PO:**
**EMSL Sales Rep:** Josh Silverman
**Received:** 05/14/2025 10:22
**Reported:** 05/21/2025 10:10

## Certified Analyses included in this Report

| Analyte | Certifications |
|---|---|
| ***SW 846-7000B in Chips*** | |
| Lead | 34-AIHA ELLAP,34-LA,34-OH |

## List of Certifications

| Code | Description | Number | Expires |
|---|---|---|---|
| 34-LA | LA - Asbestos (PCM, PLM and TEM), Fungi and Bacteria, Lead and Metals | 0519 | 06/30/2027 |
| 34-AIHA ELLAP | American Industrial Hygiene Association (AIHA LAP, LLC) - ELLAP | 163563 | 03/01/2026 |
| 34-AIHA IHLAP | American Industrial Hygiene Association (AIHA LAP, LLC) - IHLAP | 163563 | 03/01/2026 |
| 34-A2LA Food | A2LA Food Microbiology Certificate | 2845.49 | 03/31/2026 |
| 34-OH | OH - Lead in Paint Chips, Wipes, Soil and Air | E10057 | 11/22/2025 |

Please see the specific Field of Testing (FOT) on www.emsl.com <http://www.emsl.com> for a complete listing of parameters for which EMSL is certified.

## Notes and Definitions

| Item | Definition |
|---|---|
| D | Analyte was reported from a dilution run. |
| (Dig) | For metals analysis, sample was digested. |
| [2C] | Reported from the second channel in dual column analysis. |
| DA | Direct Analysis |
| DF | Dilution Factor |
| MDL | Method Detection Limit. |
| ND | Analyte was NOT DETECTED at or above the detection limit. |
| NR | Spike/Surrogate showed no recovery. |
| Q | Qualifier |
| RCS | Respirable Crystalline Silica |
| RL | Reporting Limit |
| Wet | Sample is not dry weight corrected. |

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

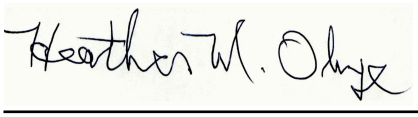
**EMSL Analytical, Inc.**

3303 Parkway Center Court, Orlando, FL, 32808
Telephone: (407)-599-5887 Fax:(407)-599-9063
www.emsl.com

**EMSL Order ID:** 342551235
**LIMS Reference ID:** JD51235
**EMSL Customer ID:** WESA62

**Attention:** Craig Miner
Weston & Sampson Engineers, Inc. [WESA62]
55 Walkers Brook Drive, Suite 100v
Reading, MA 01867
(978) 532-1900
minerc@wseinc.com

**Project Name:** Truro DPW
**Customer PO:**
**EMSL Sales Rep:** Josh Silverman
**Received:** 05/14/2025 10:22
**Reported:** 05/21/2025 10:10



Heather Ohye Laboratory Manager or other approved signatory



Analysis following EMSL SOP for the Determination of Environmental Lead by FLAA. The laboratory has a reporting limit of 0.0064% by wt., based upon a minimum sample weight of 0.25g submitted to the lab, and is not responsible for any result or reporting limit provided in mg/cm2 since it is dependent upon an area value provided by non-lab personnel. A "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty and definitions of modifications are available upon request. Results in this report are not blank corrected unless specified.

T065559

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

# Lead Chain of Custody

EMSL Order Number / Lab Use Only

JD51235

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnaminsonLeadLab@emsl.com

| Customer Information | | Billing Information | |
|---|---|---|---|
| Customer ID: | | Billing ID: | |
| Company Name: | Weston & Sampson | Company Name: | |
| Contact Name: | Craig Miner | Billing Contact: | |
| Street Address: | 55 Walkers Brook Drive | Street Address: | |
| City, State, Zip: | Reading, MA 01867 | Country: USA | City, State, Zip: / Country: |
| Phone: | 1-800-SAMPSON | | Phone: |
| Email(s) for Report: | minerc@wseinc.com, Pettigrew.Caleb@wseinc.com | | Email(s) for Invoice: |

**Project Information**

| | | | |
|---|---|---|---|
| Project Name/No: | Truro DPW | Purchase Order: | |
| EMSL LIMS Project ID: (If applicable, EMSL will provide) | | US State where samples collected: MA | State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable) |
| Sampled By Name: | Caleb Pettigrew | Sampled By Signature: | No. of Samples in Shipment: 8 |

**Turn-Around-Time (TAT)**

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

| MATRIX | METHOD | INSTRUMENT | REPORTING LIMIT | SELECTION |
|---|---|---|---|---|
| CHIPS ☒ % by wt. ☐ ppm (mg/kg) ☐ mg/cm² *Reporting Limit based on a minimum 0.25g sample weight. **Not appropriate for Ceramic Tiles - XRF is recommended | SW 846-7000B | Flame Atomic Absorption | 0.008% (80ppm) | ☒ |
| | SW 846-6010D* | ICP-OES | 0.0004% (4ppm) | ☐ |
| AIR | NIOSH 7082 | Flame Atomic Absorption | 4µg/filter | ☐ |
| | | | | |
| | NIOSH 7300M / NIOSH 7303M | ICP-OES | 0.5µg/filter | ☐ |
| | NIOSH 7300M / NIOSH 7303M | ICP-MS | 0.05µg/filter | ☐ |
| WIPE ☐ ASTM ☐ NON-ASTM | SW 846-7000B | Flame Atomic Absorption | 10µg/wipe | ☐ |
| *If no box is checked, non-ASTM Wipe is assumed | SW 846-6010D* | ICP-OES | 1.0µg/wipe | ☐ |
| TCLP | SW 846-1311 / 7000B / SM 3111B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | SW 846-1311 / SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| SPLP | SW 846-1312 / 7000B / SM 3111B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | SW 846-1312 / SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| TTLC | 22 CCR App. II, 7000B | Flame Atomic Absorption | 40mg/kg (ppm) | ☐ |
| | 22 CCR App. II, SW 846-6010D* | ICP-OES | 2mg/kg (ppm) | ☐ |
| STLC | 22 CCR App. II, 7000B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | 22 CCR App. II, SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| Soil | SW 846-7000B | Flame Atomic Absorption | 40mg/kg (ppm) | ☐ |
| | SW 846-6010D* | ICP-OES | 2mg/kg (ppm) | ☐ |
| Wastewater | SM 3111B / SW 846-7000B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| Unpreserved ☐ / Preserved with HNO3 ☐ PH<2 | EPA 200.7 | ICP-OES | 0.020 mg/L (ppm) | ☐ |
| Drinking Water | EPA 200.5 | ICP-OES | 0.003 mg/L (ppm) | ☐ |
| Unpreserved ☐ / Preserved with HNO3 ☐ PH<2 | EPA 200.8 | ICP-MS | 0.001 mg/L (ppm) | ☐ |
| TSP/SPM Filter | 40 CFR Part 50 | ICP-OES | 12 µg/filter | ☐ |
| Other: | | | | ☐ |

| Sample Number | Sample Location | Volume / Area | Date / Time Sampled |
|---|---|---|---|
| L1 | Office Bathroom | Light blue wall paint | |
| L2 | Office Exterior | White trim paint | |
| L3 | 2-Bay Garage Exterior | Grey/green paint | |
| L4 | Shop Office Exterior | Green paint | |
| L5 | Salt Shed Garage Exterior | Grey paint | |

| | | | |
|---|---|---|---|
| Method of Shipment: | Drop-off | Sample Condition Upon Receipt: | |
| Relinquished by: | Date/Time: 5-13-25 10:00 | Received by: | Date/Time: MAY 14 2025 |
| Relinquished by: | Date/Time: | Received by: | Date/Time |

REC'D EMSL-BOSTON MAY 13 2025

*6010C Available Upon Request

☒ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

# Lead Chain of Custody

Lab Use Only

JD51235

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnaminsonLeadLab@emsl.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

| Sample Number | Sample Location | Volume / Area | Date / Time Sampled |
|---|---|---|---|
| L6 | 4-Bay Garage Exterior | Grey paint | |
| L7 | 4-Bay Garage Interior | office white wall | |
| L8 | ↓ | white paint | |
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|---|---|---|---|
| Method of Shipment: Drop off | | Sample Condition Upon Receipt: | |
| Relinquished by: | Date/Time: 5-13-25 10:00 | Received by: | Date/Time: MAY 14 2025 10:22 AM |
| Relinquished by: | Date/Time: | Received by: | Date/Time |

Controlled Document - COC-25 Lead R17 05/09/2022

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REC'D EMSL-BOSTON MAY 13 2025

**EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.**

T065559

EMSL ANALYTICAL, INC.
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# Lead Chain of Custody

EMSL Order Number / Lab Use Only

JD51235

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnaminsonLeadLab@emsl.com

| Customer Information | | Billing Information | |
|---|---|---|---|
| Customer ID: | | Billing ID: | |
| Company Name: | Weston & Sampson | Company Name: | |
| Contact Name: | Craig Miner | Billing Contact: | |
| Street Address: | 55 Walkers Brook Drive | Street Address: | |
| City, State, Zip: | Reading, MA 01867 | Country: USA | City, State, Zip: / Country: |
| Phone: | 1-800-SAMPSON | | Phone: |
| Email(s) for Report: | minerc@wseinc.com, Pettigrew.Caleb@wseinc.com | | Email(s) for Invoice: |

**Project Information**

| | | | |
|---|---|---|---|
| Project Name/No: | Truro DPW | Purchase Order: | |
| EMSL LIMS Project ID: (If applicable, EMSL will provide) | | US State where samples collected: MA | State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable) |
| Sampled By Name: | Caleb Pettigrew | Sampled By Signature: | No. of Samples in Shipment: 8 |

**Turn-Around-Time (TAT)**

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

| MATRIX | METHOD | INSTRUMENT | REPORTING LIMIT | SELECTION |
|---|---|---|---|---|
| CHIPS* ☒ % by wt. ☐ ppm (mg/kg) ☐ mg/cm² *Reporting Limit based on a minimum 0.25g sample weight. **Not appropriate for Ceramic Tiles - XRF is recommended | SW 846-7000B | Flame Atomic Absorption | 0.008% (80ppm) | ☒ |
| | SW 846-6010D* | ICP-OES | 0.0004% (4ppm) | ☐ |
| AIR | NIOSH 7082 | Flame Atomic Absorption | 4µg/filter | ☐ |
| | | | | |
| | NIOSH 7300M / NIOSH 7303M | ICP-OES | 0.5µg/filter | ☐ |
| | NIOSH 7300M / NIOSH 7303M | ICP-MS | 0.05µg/filter | ☐ |
| WIPE ☐ ASTM ☐ NON-ASTM *If no box is checked, non-ASTM Wipe is assumed | SW 846-7000B | Flame Atomic Absorption | 10µg/wipe | ☐ |
| | SW 846-6010D* | ICP-OES | 1.0µg/wipe | ☐ |
| TCLP | SW 846-1311 / 7000B / SM 3111B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | SW 846-1311 / SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| SPLP | SW 846-1312 / 7000B / SM 3111B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | SW 846-1312 / SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| TTLC | 22 CCR App. II, 7000B | Flame Atomic Absorption | 40mg/kg (ppm) | ☐ |
| | 22 CCR App. II, SW 846-6010D* | ICP-OES | 2mg/kg (ppm) | ☐ |
| STLC | 22 CCR App. II, 7000B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| | 22 CCR App. II, SW 846-6010D* | ICP-OES | 0.1 mg/L (ppm) | ☐ |
| Soil | SW 846-7000B | Flame Atomic Absorption | 40mg/kg (ppm) | ☐ |
| | SW 846-6010D* | ICP-OES | 2mg/kg (ppm) | ☐ |
| Wastewater | SM 3111B / SW 846-7000B | Flame Atomic Absorption | 0.4 mg/L (ppm) | ☐ |
| Unpreserved ☐ / Preserved with HNO3 ☐ PH<2 | EPA 200.7 | ICP-OES | 0.020 mg/L (ppm) | ☐ |
| Drinking Water | EPA 200.5 | ICP-OES | 0.003 mg/L (ppm) | ☐ |
| Unpreserved ☐ / Preserved with HNO3 ☐ PH<2 | EPA 200.8 | ICP-MS | 0.001 mg/L (ppm) | ☐ |
| TSP/SPM Filter | 40 CFR Part 50 | ICP-OES | 12 µg/filter | ☐ |
| Other: | | | | ☐ |

| Sample Number | Sample Location | Volume / Area | Date / Time Sampled |
|---|---|---|---|
| L1 | Office Bathroom | Light blue wall paint | |
| L2 | Office Exterior | white trim paint | |
| L3 | 2-Bay Garage Exterior | Grey/green paint | |
| L4 | Shop Office Exterior | Green paint | |
| L5 | Salt Shed Garage Exterior | Grey paint | |

| | | | |
|---|---|---|---|
| Method of Shipment: Drop-off | | Sample Condition Upon Receipt: | |
| Relinquished by: | Date/Time: 5-13-25 10:00 | Received by: | Date/Time: MAY 14 2025 |
| Relinquished by: | Date/Time: | Received by: | Date/Time |

REC'D EMSL-BOSTON MAY 13 2025

Controlled Document - COC-25 Lead R11 05/01/2022

*6010C Available Upon Request

☒ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

**EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.**

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnaminsonLeadLab@emsl.com

# Lead Chain of Custody

EMSL Order Number (Lab Use Only)

JD51235

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

| Sample Number | Sample Location | Volume / Area | Date / Time Sampled |
|---|---|---|---|
| L6 | 4-Bay Garage Exterior | Grey paint | |
| L7 | 4-Bay Garage Interior | office white wall | |
| L8 | ↓ | white paint | |
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|---|---|---|---|
| Method of Shipment: Drop off | | Sample Condition Upon Receipt: | |
| Relinquished by: | Date/Time: 5-13-25 10:00 | Received by: | Date/Time: MAY 14 2025 10:22 AM |
| Relinquished by: | Date/Time: | Received by: | Date/Time |

Controlled Document - COC-25 Lead R17 05/09/2022

☒ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

REC'D EMSL-BOSTON MAY 13 2025

**EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.**

TABLE OF CONTENTS

# VOLUME 1
(Divisions 00 through 01)

## DIVISION 00 — PROCUREMENT AND CONTRACTING REQUIREMENTS



## DIVISION 01 – GENERAL REQUIREMENTS

| | |
|---|---|
| Section 01 45 00 | Quality Control |
| Section 01 45 23 | Structural Tests and Inspections |
| Section 01 45 29 | Testing Laboratory Services |
| Section 01 52 13 | Temporary Facilities |
| Section 01 55 26.13 | Signage (Traffic Control) |
| Section 01 56 00 | Construction Zone Safety Plan |
| Section 01 57 19 | Environmental Protection |
| Section 01 73 29 | Cutting, Coring, and Patching |
| Section 01 74 13 | Cleaning Up |
| Section 01 78 00 | Project Closeout |
| Section 01 78 39 | Project As-Built Record Drawings |
| Section 01 91 13 | General Commissioning Requirements |
| Section 01 91 13.01 | Commissioning of Building Assemblies |
| Section 01 92 13 | Operations and Maintenance Manuals |

## VOLUME 2
(Divisions 02 through 22)

**DIVISION 02 – EXISTING CONDITIONS**

| | |
|---|---|
| Section 02 41 13.36 | Utility Abandonment |
| Section 02 41 16 | Demolition |
| Section 02 61 00.16 | Handling, Transportation, Reuse and Off-Site Disposal of Excavated Material |
| Section 02 61 26.13 | Asbestos Abatement for Underground Utilities |
| Section 02 80 00.13 | Universal and Hazardous Waste |
| Section 02 82 33 | Asbestos Abatement |
| Section 02 83 19 | Lead Based Coatings Removal |
| Section 02 83 90 | Abatement of PCB-Containing Materials |

**DIVISION 03 - CONCRETE**

| | |
|---|---|
| Section 03 05 00 | Field Concrete |
| Section 03 05 10 | Concrete Moisture Vapor Reduction Admixture |
| Section 03 05 13 | Concrete Sealers |
| Section 03 30 00 | Cast-in-Place Concrete |
| **Section 03 48 46** | **Precast Concrete Block** |

**DIVISION 04 — MASONRY**

| | |
|---|---|
| Section 04 00 01* | Masonry Filed Sub-Bid Requirements<br>* Filed Sub-Bid Required |
| Section 04 20 00 * | Unit Masonry<br>(* Filed Sub-Bid Required as part of 04 00 01) |
| Section 04 72 00 * | Cast Stone Masonry<br>(* Filed Sub-Bid Required as part of 04 00 01) |

**DIVISION 05 — METALS**

| | |
|---|---|
| Section 05 00 01 * | Miscellaneous and Ornamental Iron Filed Sub-Bid Requirements<br>* Filed Sub-Bid Required |
| Section 05 40 00 | Cold-Formed Metal Framing |
| Section 05 50 00 * | Metal Fabrications<br>(*Filed Sub-Bid Required as part of 05 00 01) |
| Section 05 50 01 * | Miscellaneous Metals – Salt Shed<br>(*Filed Sub-Bid Required as part of 05 00 01) |
| Section 05 51 13 * | Metal Pan Stairs<br>(*Filed Sub-Bid Required as part of 05 00 01) |
| Section 05 51 19 * | Metal Grating Stairs<br>(*Filed Sub-Bid Required as part of 05 00 01) |
| Section 05 52 13 * | Pipe and Tube Railings<br>(*Filed Sub-Bid Required as part of 05 00 01) |

**DIVISION 06 — WOOD, PLASTICS AND COMPOSITES**

| | |
|---|---|
| Section 06 10 00 | Rough Carpentry |
| Section 06 16 00 | Sheathing |
| Section 06 20 13 | Exterior Finish Carpentry |
| Section 06 20 23 | Interior Finish Carpentry |
| Section 06 40 23 | Interior Architectural Woodwork |
| Section 06 64 00 | Plastic Paneling |

**DIVISION 07 — THERMAL AND MOISTURE PROTECTION**

| | |
|---|---|
| Section 07 00 01* | Waterproofing, Dampproofing, and Caulking Requirements<br>*Filed Sub-Bid Required |
| Section 07 00 02* | Roofing and Flashing<br>*Filed Sub-Bid Required |
| Section 07 11 13* | Bituminous Dampproofing<br>(*Filed Sub-Bid Required as part of 07 00 01) |
| Section 07 13 53* | Membrane Water Proofing<br>(*Filed Sub-Bid Required as part of 07 00 01) |
| Section 07 21 00 | Thermal Insulation |
| Section 07 21 19 | Formed-In-Place Insulation |
| Section 07 26 00 | Vapor Retarders |
| Section 07 27 13* | Modified Bituminous Sheet Air Barriers<br>(*Filed Sub-Bid Required as part of 07 00 01) |
| Section 07 27 26 | Fluid-Applied Membrane Air Barriers |
| Section 07 42 93 | Soffit Panels |
| Section 07 54 19 * | Polyvinyl Chloride (PVC) Roofing<br>(*Filed Sub-Bid Required as part of 07 00 02) |
| Section 07 62 00 * | Sheet Metal Flashing and Trim<br>(*Filed Sub-Bid Required as part of 07 00 02) |
| Section 07 84 43 | Joint Firestopping |
| Section 07 92 00 * | Joint Sealants<br>(*Filed Sub-Bid Required as part of 07 00 01) |

**DIVISION 08 — OPENINGS**

| | |
|---|---|
| Section 08 11 00 | Metal Doors and Frames |
| **Section 08 11 19** | **Stainless-Steel Doors and Frames** |
| Section 08 14 16 | Flush Wood Doors |
| **Section 08 17 43** | **Integrated Composite Door Opening Assemblies** |
| Section 08 31 13 | Access Doors and Frames |
| **Section 08 36 13** | **Sectional Doors** |
| **Section 08 43 13** | **Aluminum Framed Storefronts** |
| **Section 08 45 13** | **Structured-Polycarbonate-Panel Assemblies** |
| Section 08 71 00 | Door Hardware |
| Section 08 80 00 * | Glazing *<br>*Filed Sub-Bid Required |
| Section 08 91 19 | Fixed Louvers |

**DIVISION 09 — FINISHES**

| | |
|---|---|
| Section 09 00 01 * | Resilient Floors Filed Sub-Bid Requirements<br>* Filed Sub-Bid Required |
| Section 09 05 06 | Common Work Results for Flooring |
| Section 09 21 16.23 | Gypsum Board Shaft Wall Assemblies |
| Section 09 22 16 | Non-Structural Metal Framing |
| Section 09 29 00 | Gypsum Board |
| Section 09 30 13* | Ceramic Tiling*<br>*Filed Sub-Bid Required |
| Section 09 51 23* | Acoustical Tile Ceilings*<br>*Filed Sub-Bid Required |
| Section 09 65 13 * | Resilient Base and Accessories<br>(*Filed Sub-Bid Required as part of 09 00 01) |
| Section 09 65 19 * | Resilient Tile Flooring<br>(*Filed Sub-Bid Required as part of 09 00 01) |
| Section 09 65 66 * | Resilient Athletic Flooring<br>(*Filed Sub-Bid Required as part of 09 00 01) |
| Section 09 67 23 | Resinous Flooring |
| Section 09 68 13 | Tile Carpeting |
| Section 09 77 23 | Plastic Wall Panels |
| Section 09 90 00* | Painting*<br>(*Filed Sub-Bid Required as part of 09 90 00) |

**DIVISION 10 — SPECIALTIES**

| | |
|---|---|
| Section 10 14 16 | Plaques |
| Section 10 14 19 | Dimensional Letter Signage |
| Section 10 14 20 | Building Signage |
| Section 10 14 23.16 | Room-Identification Panel Signage |
| Section 10 21 13.19 | Plastic Toilet Compartments |
| Section 10 22 13 | Wire Mesh Partitions |
| Section 10 26 00 | Wall & Door Protection |
| Section 10 28 00 | Toilet, Bath, and Laundry Accessories |
| Section 10 44 13 | Fire Extinguisher Cabinets |

| | |
|---|---|
| Section 10 44 16 | Fire Extinguishers |
| Section 10 51 13 | Metal Lockers |
| Section 10 75 16 | Ground-Set Flagpoles |

**DIVISION 11 — EQUIPMENT**

| | |
|---|---|
| Section 11 11 26 | Vehicle Washing Equipment |
| Section 11 11 29 | Lubrication Dispensing System |
| Section 11 24 23 | Fall Protection |
| Section 11 30 13 | Residential Appliances |

**DIVISION 12 — FURNISHINGS**

| | |
|---|---|
| Section 12 24 13 | Roller Window Shades |
| Section 12 35 30 | Residential Casework |
| Section 12 36 61.16 | Solid Surfacing Countertops |
| Section 12 40 00 | Equipment, Furnishings and Accessories |
| Section 12 48 13 | Entrance Floor Mats |
| Section 12 48 16 | Entrance Floor Grilles |

**DIVISION 13 — SPECIAL CONSTRUCTION**

| | |
|---|---|
| **Section 13 42 00** | **Pre-Engineered Metal Building** |

**DIVISION 14 — CONVEYING SYSTEMS**

| | |
|---|---|
| Section 14 22 13 | Crane Systems |
| Section 14 45 00 | Vehicle Lifts |

**DIVISION 21 — FIRE SUPPRESSION**

| | |
|---|---|
| Section 21 00 01 * | Fire Suppression Filed Sub-Bid Requirements<br>*Filed Sub-Bid Required |
| Section 21 00 50 * | Basic Fire Suppression Requirements<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 05 23 * | General-Duty Valves for Fire Protection Piping<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 05 29 * | Hangers and Supports for Fire Suppression Piping and Equipment<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 05 48 * | Vibration and Seismic Controls for Fire Suppression Piping<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 11 00 * | Facility Fire-Suppression Water-Service Piping<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 11 19 * | Fire Department Connections<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 13 13 * | Wet-Pipe Sprinkler Systems<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |
| Section 21 13 16 * | Dry-Pipe Sprinkler Systems<br>(* Filed Sub-Bid Required as part of Section 21 00 01) |

**DIVISION 22 — PLUMBING**

| | |
|---|---|
| Section 22 00 01 * | Plumbing Filed Sub-Bid Requirements<br>*Filed Sub-Bid Required |
| Section 22 00 50 * | Basic Plumbing Requirements<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 05 13 * | Common Motor Requirements for Plumbing Equipment<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 05 19 * | Meters and Gages for Plumbing Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 05 23 * | Valves for Plumbing Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 05 29 * | Hangers and Supports for Plumbing Piping and Equipment<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 05 48 * | Vibration and Seismic Controls for Plumbing Piping and Equipment<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 07 19 * | Plumbing Piping Insulation<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 08 00 * | Commissioning of Plumbing<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 11 16 * | Domestic Water Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 11 19 * | Domestic Water Piping Specialties<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 11 22 * | Domestic Water Pumps<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 13 16 * | Sanitary Waste and Vent Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 13 19 * | Sanitary Waste Piping Specialties<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 13 20 * | Sanitary Drains<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 13 23 * | Sanitary Waste Interceptors<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 14 13 * | Facility Storm Drainage Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 14 23 * | Storm Drain Piping Specialties<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 15 13 * | General-Service Compressed-Air Piping<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 15 19 * | General-Service Packaged Air Compressors and Receivers<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| ~~**Section 22 34 00 ***~~ | ~~**Fuel-Fired Domestic Water Heater**~~<br>~~**(* Filed Sub-Bid Required as part of Section 22 00 01)**~~ |
| Section 22 42 00 * | Commercial Plumbing Fixtures<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |
| Section 22 45 00 * | Emergency Plumbing Fixtures<br>(* Filed Sub-Bid Required as part of Section 22 00 01) |

# VOLUME 3
(Divisions 23 through 33)

## DIVISION 23 — HEATING, VENTILATING AND AIR CONDITIONING

| | |
|---|---|
| Section 23 00 01 * | HVAC Filed Sub-Bid Requirements<br>*Filed Sub-Bid Required |
| Section 23 00 50 * | Basic HVAC Requirements<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 13 * | Common Motor Requirements for HVAC Equipment<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 16 * | Expansion Fittings and Loops for HVAC Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 17 * | Sleeves and Sleeve Seals for HVAC Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 19 * | Meters and Gages for HVAC Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 23 * | General-Duty Valves for HVAC Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 29 * | Hangers and Supports for HVAC Piping and Equipment<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 48 * | Vibration and Seismic Controls for HVAC<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 53 * | Identification for HVAC Piping and Equipment<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 05 93 * | Testing, Adjusting, and Balancing for HVAC<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 07 13 * | Duct Insulation<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 07 19 * | HVAC Piping Insulation<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 08 00 * | Commissioning of HVAC<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 09 00 * | Building Management System<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 09 24 * | Gas Monitoring Systems<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 21 13 * | Hydronic Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 21 16 * | Hydronic Piping Specialties<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 21 23 * | Hydronic Pumps<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 23 00 * | Refrigerant Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 25 13 * | Water Treatment for Closed-Loop Hydronic Systems |

| | |
|---|---|
| | (* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 31 10 * | Ductwork and Accessories<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 34 23 * | HVAC Power Ventilators<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 35 16 * | Vehicle Exhaust Systems<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 37 13 * | Air Diffusers, Registers, and Grilles<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 37 23 * | HVAC Gravity Ventilators<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| **Section 23 38 13** | **Commercial-Kitchen Hoods** |
| Section 23 51 23 * | Gas Vents<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| **Section 23 57 33** | **Geothermal Energy – Direct Use (Heating Applications)** |
| Section 23 72 00 * | Air to Air Energy Recovery Equipment<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 74 33 * | Dedicated Outdoor-Air Units<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 81 26 * | Split System Air-Conditioners<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 82 16 * | Heating and Cooling Coils<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 82 39 * | Unit Heaters<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |
| Section 23 83 16 * | Radiant Heating Hydronic Piping<br>(* Filed Sub-Bid Required as part of Section 23 00 01) |

**DIVISION 26 — ELECTRICAL**

| | |
|---|---|
| Section 26 00 01 * | Electrical Filed Sub-Bid Requirements<br>*Filed Sub-Bid Required |
| Section 26 00 50 * | Electrical Work – General Provisions<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 00 51 * | Electrical Temporary Light and Power<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 19 * | Low Voltage Electrical Power Conductors and Cables<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 26 * | Grounding and Bonding for Electrical Systems<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 29 * | Hangers and Supports for Electrical Systems<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 33 * | Raceways and Boxes for Electrical Systems<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 44 * | Sleeves and Seals for Electrical Raceways and Cabling<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 48 * | Seismic Controls for Electrical Work<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 53 * | Identification for Electrical Systems |

| | |
|---|---|
| | (* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 05 73 * | Protective Device Coordination<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 08 00 * | Commissioning of Electrical Systems<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 09 23 * | Lighting Control Devices<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 09 43 * | Lighting Control System<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 09 43.23 * | Relay-Based Lighting Controls<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 22 13 * | Low-Voltage Distribution Transformers<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 24 16 * | Panelboards<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 27 13 * | Electricity Metering<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 27 26 * | Wiring Devices<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 28 16 * | Enclosed Switches and Circuit Breakers<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 29 13 * | Manual and Magnetic Motor Controllers<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 29 23 * | Variable Frequency Motor Controllers<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 31 00 | Photovoltaic Collectors |
| Section 26 32 13.14 * | Diesel Engine Generator |
| Section 26 36 00 * | Transfer Switches<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 43 13 * | Surge Protection for Low-Voltage Electrical Power Circuits<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 51 00 * | Interior Lighting<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |
| Section 26 56 00 * | Exterior Lighting<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |

**DIVISION 27 — COMMUNICATIONS**

| | |
|---|---|
| **Section 27 15 13 *** | **Communications Copper Horizontal Cabling<br>(* Filed Sub-Bid Required as part of Section 26 00 01)** |

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

| | |
|---|---|
| Section 28 31 11 * | Digital, Addressable Fire-Alarm System<br>(* Filed Sub-Bid Required as part of Section 26 00 01) |

**DIVISION 31 — EARTHWORK**

| | |
|---|---|
| Section 31 00 00 | Earthwork |
| Section 31 05 13.22 | Controlled Density Fill |
| Section 31 05 19 | Geotextile Fabric |

| | |
|---|---|
| Section 31 11 00 | Clearing and Grubbing |
| Section 31 23 16.26 | Rock Excavation and Disposal |
| Section 31 23 19 | Dewatering |
| Section 31 25 00 | Erosion and Sedimentation Control |
| Section 31 37 00 | Riprap |
| Section 31 50 00 | Support of Excavation |

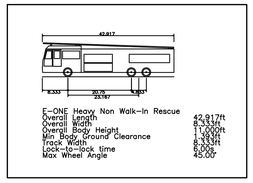
**DIVISION 32 — EXTERIOR IMPROVEMENTS**

| | |
|---|---|
| Section 32 11 00 | Sidewalk Construction and Replacement |
| Section 32 12 00 | Paving |
| Section 32 14 13 | Precast Concrete Unit Paving |
| Section 32 16 00 | Curbing |
| **Section 32 31 11** | **Barrier Arm Gate and Gate Operators** |
| Section 32. 32 23.13 | Segmental Retaining Wall System |
| Section 32 91 19 | Loaming & Seeding |
| Section 32 93 00 | Trees, Shrubs, Groundcovers and Landscaping |

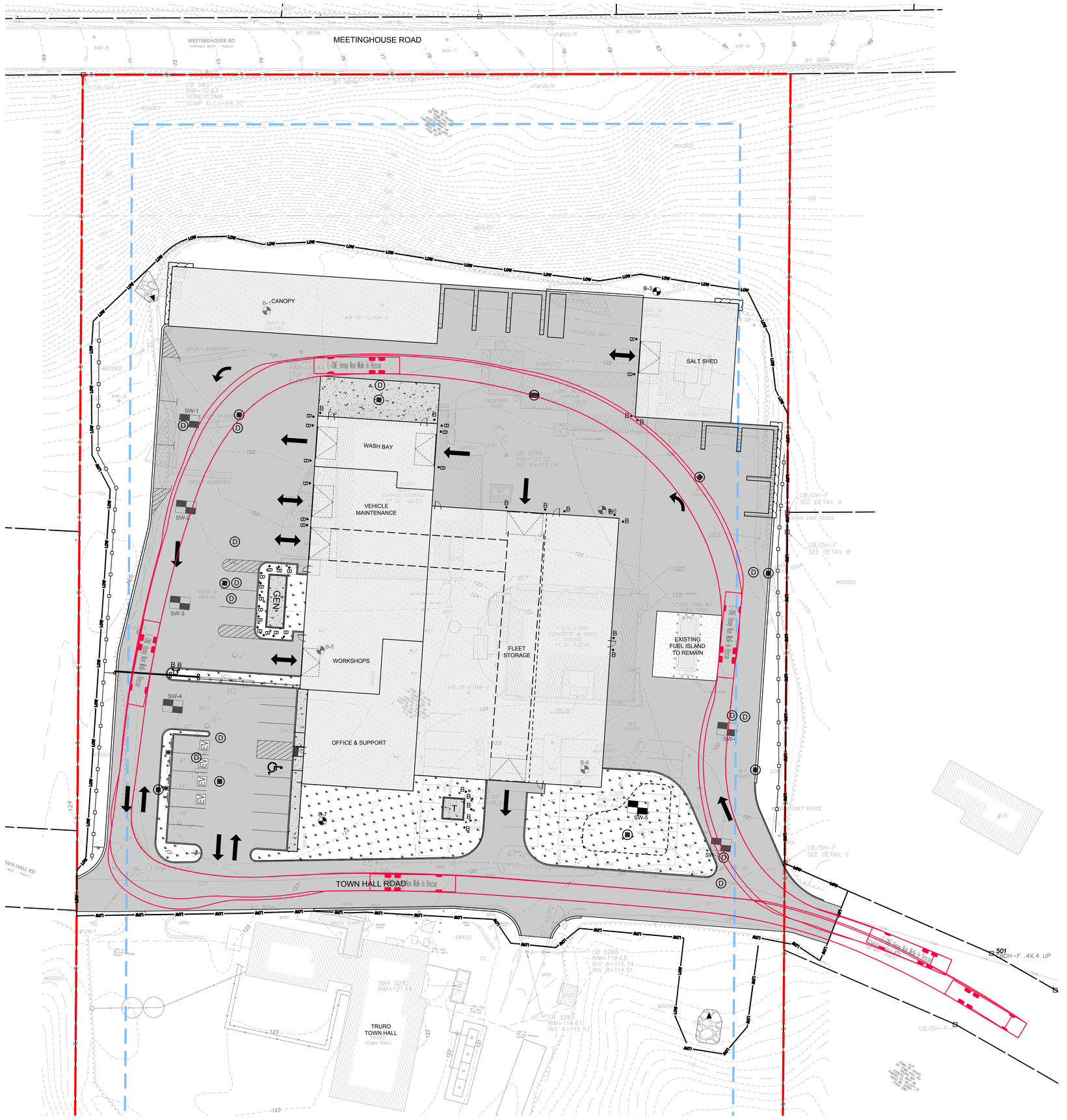
**DIVISION 33 — UTILITIES**

| | |
|---|---|
| Section 33 05 26.13 | Tracer Tape |
| Section 33 11 13 | Water Service Connections |
| Section 33 11 13.13 | Ductile Iron Pipe and Fittings for Water Mains |
| Section 33 11 13.28 | HDPE Pipe |
| Section 33 11 13.34 | Connections to Existing Water Mains |
| Section 33 11 13.43 | Insulation for Pipelines |
| Section 33 12 22 | Hydrants and Valves for Potable Water Work |
| **Section 33 16 56** | **Ground-Level Plastic Water Storage Cisterns** |
| Section 33 31 13.16 | Polyvinyl Chloride Gravity Pipe and Fittings |
| Section 33 31 13.46 | Connections to Existing Structures |
| **Section 33 32 16.25** | **Grinder Pump Units** |
| **Section 33 34 00** | **On-Site Wastewater Disposal** |
| Section 33 39 13 | Precast Manholes and Catch Basins |
| Section 33 41 13 | Reinforced Concrete Pipe |
| Section 33 41 13.16 | Polyethylene Drainage Pipe (Perforated) |
| Section 33 41 13.22 | Corrugated Polyethylene (HDPE) Drainage Pipe |
| Section 33 44 20 | Downspout Boots |
| Section 33 44 26 | Underground Stormwater Chamber System |

**--- END OF TABLE ---**




| | |
|---|---|
| E-ONE Heavy Non Walk-In Rescue | |
| Overall Length | 42.917ft |
| Overall Width | 8.333ft |
| Overall Body Height | 11.000ft |
| Min Body Ground Clearance | 1.383ft |
| Track Width | 8.333ft |
| Lock-to-lock time | 6.00s |
| Max Wheel Angle | 45.00° |

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SCALE: 1" = 20'

Project:

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TRURO, MA 02666


Weston & Sampson

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON

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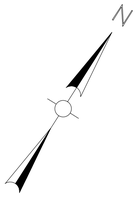
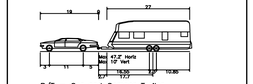
TRUCK TURNING PLAN
FIRE TRUCK CIRCULATION

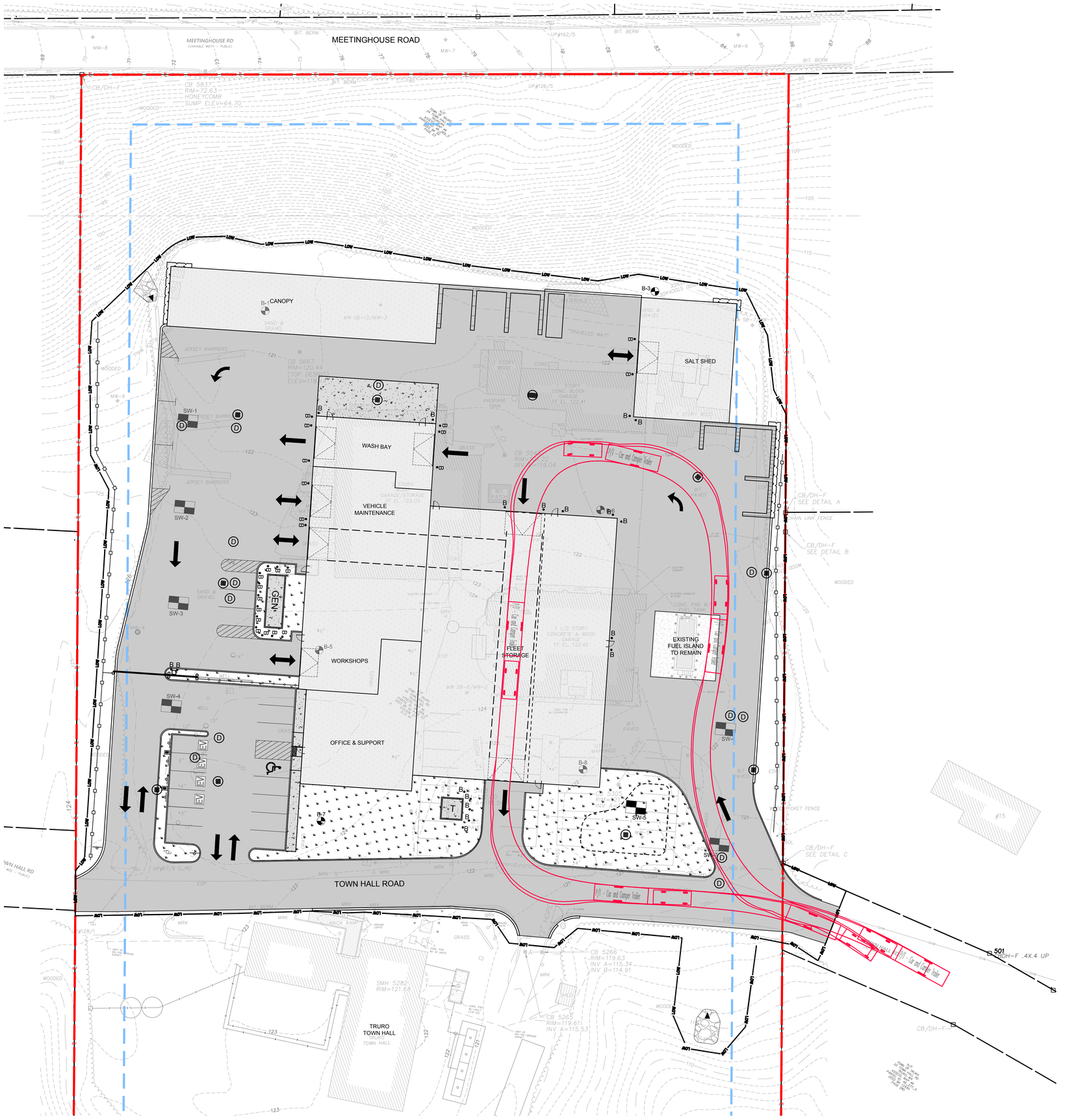
Sheet Number:

FIG.1






| P/T – Car and Camper Trailer | |
|---|---|
| Overall Length | 48.701ft |
| Overall Width | 8.000ft |
| Overall Body Height | 10.009ft |
| Min Body Ground Clearance | 0.795ft |
| Max Track Width | 8.000ft |
| Lock-to-lock time | 4.00s |
| Max Steering Angle (Virtual) | 21.50° |

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TRURO, MA 02666


Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON

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TRUCK TURNING PLAN "TRASH COMPACTOR"

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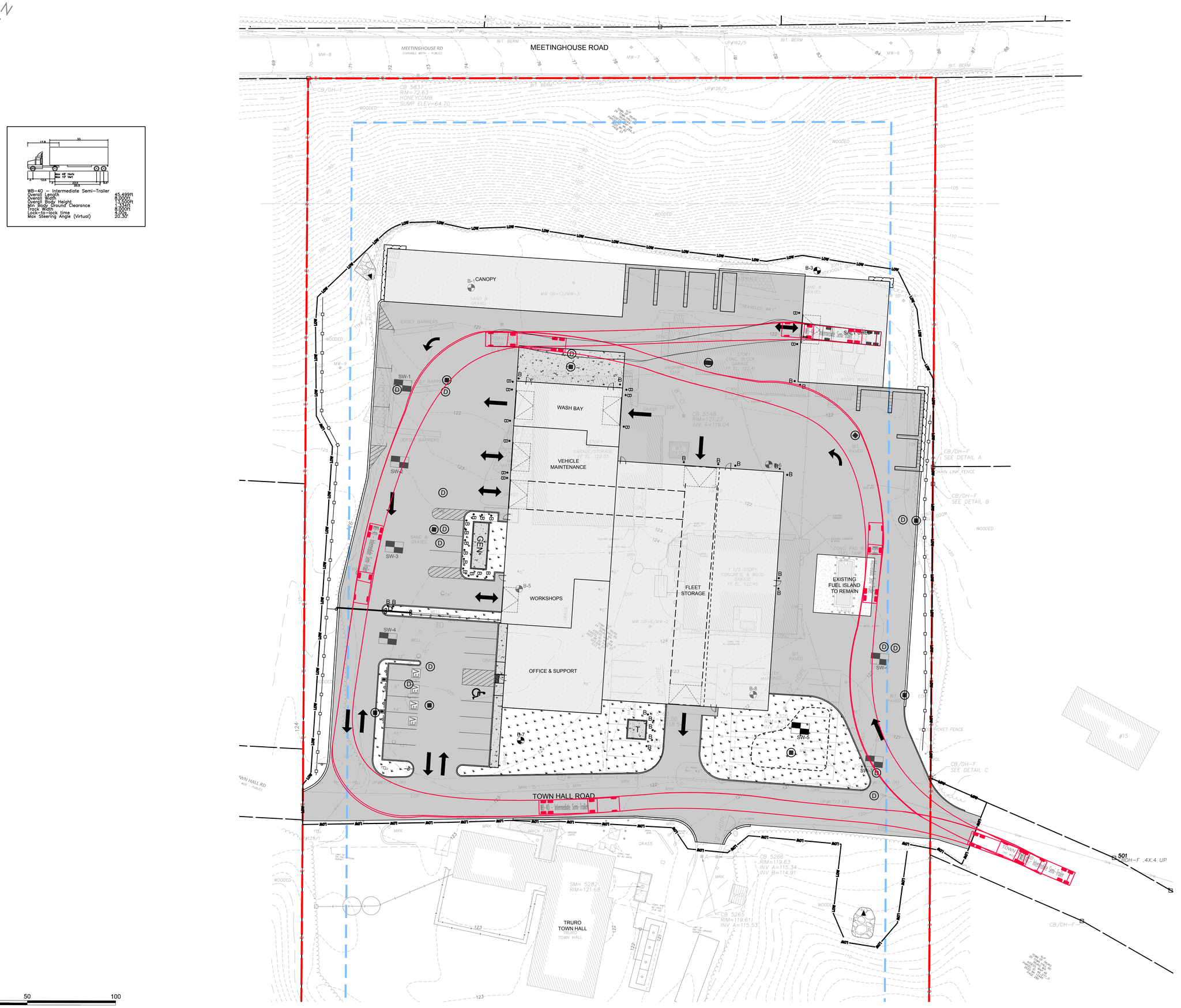
FIG.2







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TRURO, MA 02666

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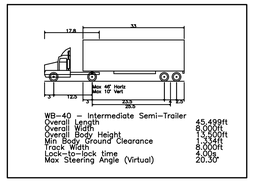
W&S File No.:

Drawing Title:

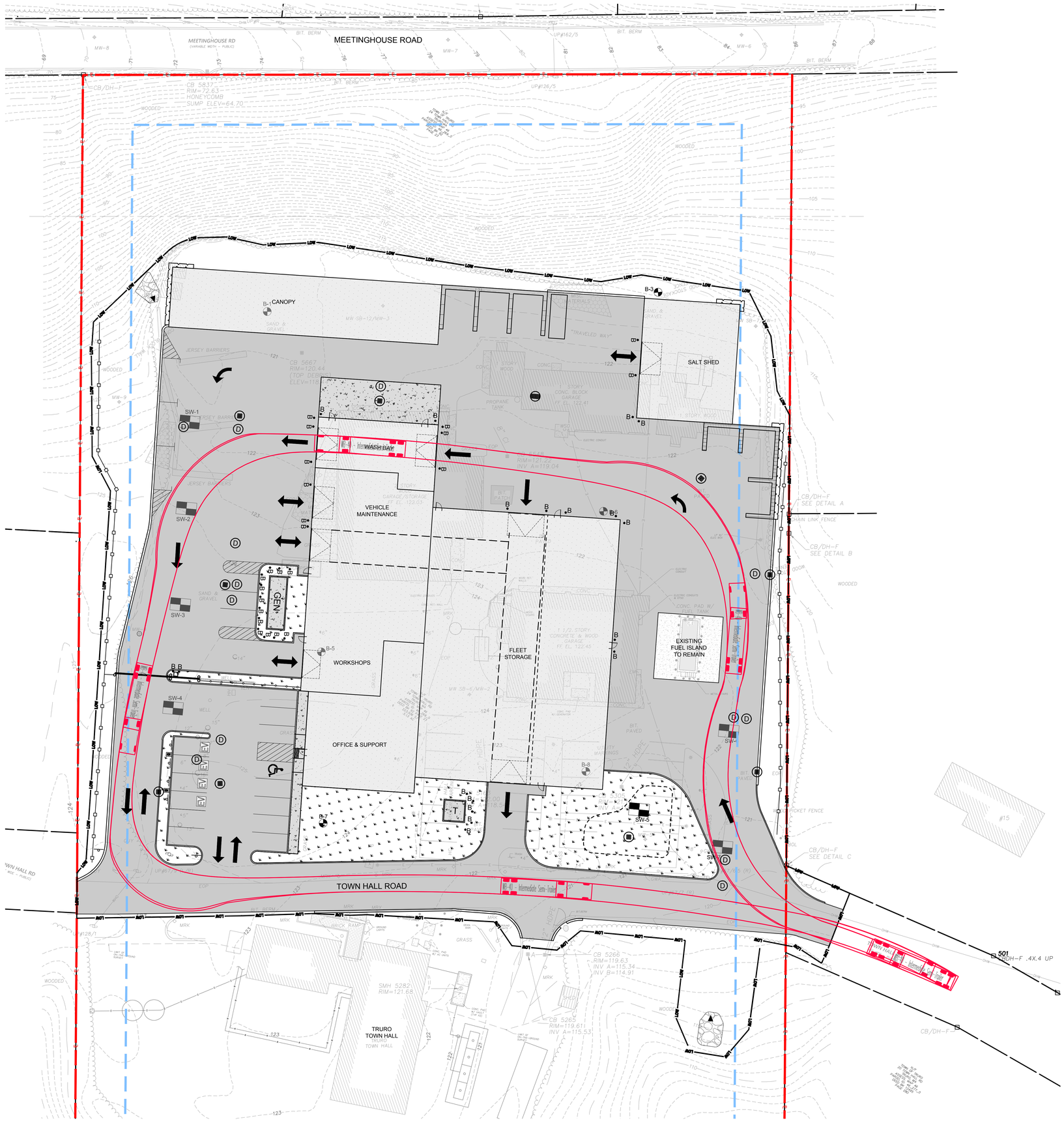
TRUCK TURNING
PLAN
WB-40
SALT SHED

Sheet Number:

FIG.3




| WB-40 – Intermediate Semi-Trailer | |
|---|---|
| Overall Length | 45.499ft |
| Overall Width | 8.000ft |
| Overall Body Height | 13.500ft |
| Min Body Ground Clearance | 4.000ft |
| Track Width | 8.000ft |
| Lock-to-lock time | 4.0s |
| Max Steering Angle (Virtual) | 20.0° |

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100 Foxborough Boulevard, Suite 250
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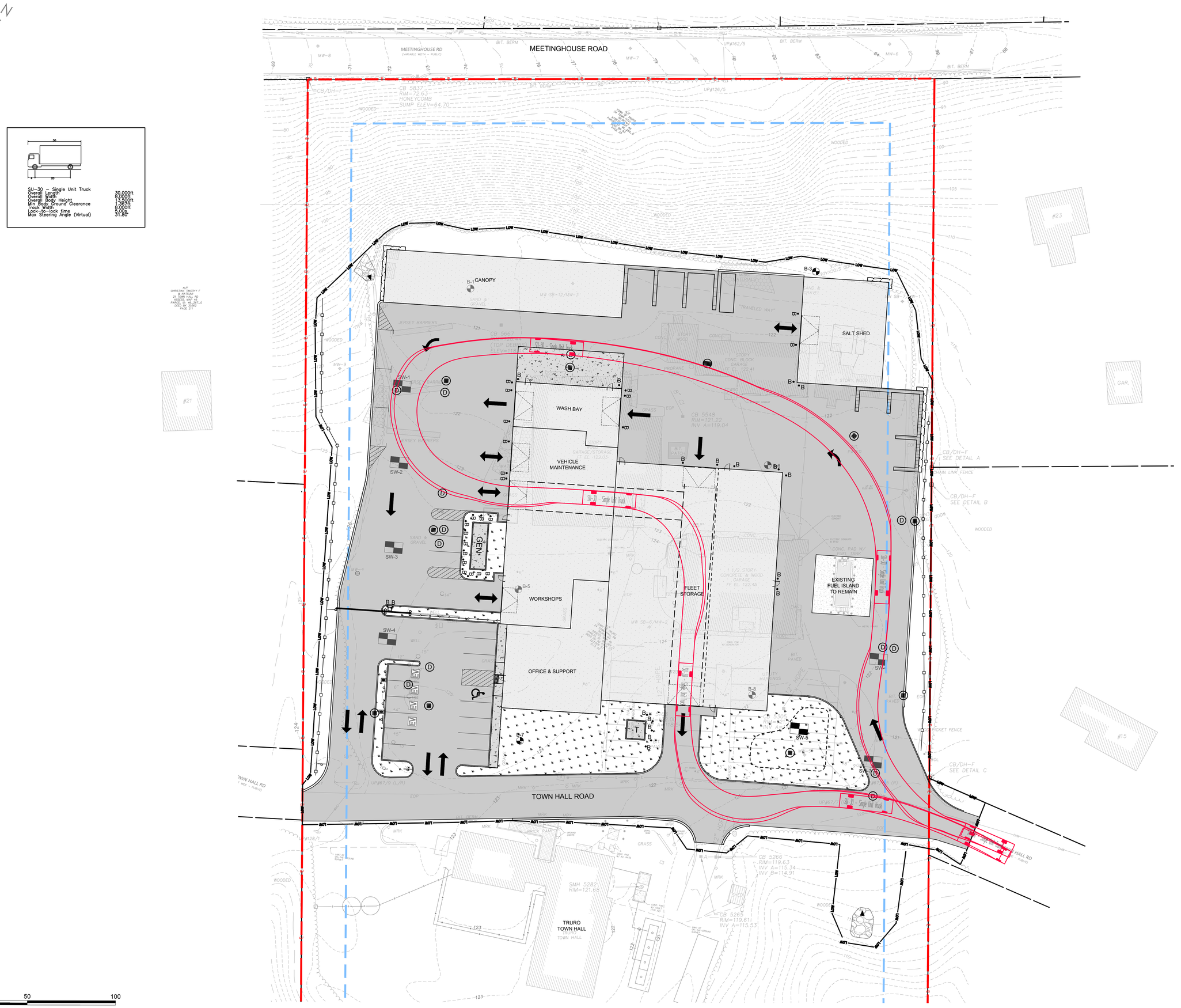
Drawing Title:
TRUCK TURNING
PLAN
WB-40
WASH BAY

Sheet Number:
FIG.4

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TRURO, MA 02666

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
978.532.1900 800.SAMPSON
www.westonandsampson.com

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Drawing Title:
TRUCK TURNING PLAN (SU-30) THROUGH INTERIOR FLEET MAINTENANCE

Sheet Number:
FIG.5