

Addendum #1

This Addendum modifies, amends, and supplements designated parts of the Contract Documents, Specifications and Drawings for:

Waterville Armory ORG Parking, Waterville, Maine
Project No. 23SC16-304-D, Bid Number #15-041

Directorate of Facilities Engineering

20 August 2015

It shall be the responsibility of the Contractor to notify all Subcontractors and Suppliers for various portions of the work of any changes or modifications contained in this Addendum.

Specification Items:

1. NONE

Drawing Items:

1. An addition of 2 bollards, located in front of the natural gas service outside the boiler room to protect the natural gas entrance from vehicular traffic, plowing, etc. The bollards should be provided in accordance with details and notes on Sheet C4 and appropriate specification sections and will be located per Owner or Designer.

Clarification Items:

1. Pre-bid Meeting Minutes including Q & A are attached.
2. Pre-Bid Attendance Sheet is attached
3. Soils Report by S.W. Cole is attached
4. Contractor Deliverables list is attached



Plymouth Engineering, Inc.

P.O. Box 46 – 30 Lower Detroit Road
Plymouth, Maine 04969
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tel: (207) 257-2071 fax: (207) 257-2130

PRE-BID MEETING MINUTES AUGUST 20, 2015 – 9:00 A.M. WATERVILLE ARMORY ORG PARKING PROJECT

Attendees: Darlene Estabrook, owner's representative, State of Maine
Scott E. Braley, Plymouth Engineering, Inc., Engineer of Record
Sgt. School, MEARNG Waterville Unit Representative
Various potential bidders as listed in Attendance Sheet

Ms. Estabrook opened with a welcome and provided overview of administrative items. The following list of items served as the pre-bid agenda. It has been amended to reflect actions taken at the meeting.

1. Introductions:
 - a. Ms. Estabrook introduced herself, the AE and the unit rep. She explained each representative's role in the project.
2. Sign In Sheet:
 - a. Ms. Estabrook circulated an attendance sheet for all potential bidders to provide contact information including email. She stressed that all pre-bid clarifications, etc. would be provided via email addendum.
 - b. She further emphasized that the email address provided must be accurate for the project contact and checked regularly to ensure that any information issued prior to the bid was received by the responsible party.
3. Points of Contact. Ms. Estabrook referred to the contract documents and a contact sheet to clarify the following:
 - a. All project technical questions are to be directed to the AE.
 - b. All project bidding questions and procedure are to go to Mr. Ray Cloutier.
4. Deadline for Questions:
 - a. The deadline for all technical questions is 2 pm, Monday, August 24th. Any final addendum will be emailed by 2 pm, August 25th.
5. Bid Opening will be Friday, August 28 at 2 pm at Camp Keyes, Augusta, Maine, in the Bldg 8 DFE conference room. This bid opening is open to the public.
 - a. Contractors are responsible to ensure their bids are received by the contracting office prior to the 2 pm deadline. Late bids will not be accepted by the contracting office.

- b. Contractors are responsible to ensure that their bids are complete. Any and all addenda will be annotated on the bid form.
6. Wage Rates:
- a. State of Maine Wage Rates are in effect for this project and are included in the bidding documents. This project does not meet the requirements for Davis-Bacon Wage Rates to apply.
7. Project Execution:
- a. The substantial completion date for the project is October 30, 2015.
 - b. Project may start upon the receipt of a valid contract.
 - c. Dates of drills:
 - i. September 24-27
 - ii. October 3-4
 - d. Notes on Above Dates:
 - i. Items i. and ii: Partial access to the parking area must be allowed.
 - e. Parking and Staging:
 - i. ORG area but can be in small area of non-ORG parking lot if needed.
 - f. Organizational Parking Area:
 - i. Unit will remove equipment prior to project starting. Unit will also remove non-fixed items such as concrete Jersey barriers, barbed wire, etc.
 - g. Permits:
 - i. All applicable permits required from the City of Waterville must be secured (at contractor cost) and copy furnished to Ms. Estabrook prior to starting work on this project. A road opening permit may be necessary.
 - ii. Erosion control requirements will be adhered to. Our environmental office plus the Maine DEP may inspect to ensure compliance.
 - h. Changes to contract plans and specifications:
 - i. The only person who is authorized to make any changes to the plans and specifications is Ms. Estabrook with technical input from the AE. If an issue arises with a unit rep requesting changes, additions or omissions, the contractor is to immediately contact Ms. Estabrook and she will resolve it in conjunction with the engineer of record.
 - ii. If a regulatory authority comes on site and requests a change, the contractor shall contact Ms. Estabrook immediately and both she and the engineer of record will contact that authority and make any changes required.
 - iii. The only person who can make changes to stamped drawings is the engineer of record.
 - i. Safety:
 - i. Contractor is responsible to ensure that all OSHA and applicable safety requirements are met.
 - j. Security:
 - i. Contractor is responsible to the security of all their materials and equipment on this site. It is not the unit's responsibility.

8. AE Presentation:

- a. Project Specifics: Understanding that most of the potential bidders had not reviewed plans as of the pre-bid meeting, the project AE provided a summary of the project goals and intentions. He further discussed various items of consideration for the bidders such as demolition items, electrical and drainage requirements and the need for erosion and sedimentation to be in place prior to the start of excavation. Additional information for the bidders' consideration is that all excavated materials belong to the contractor and shall be removed from the site.
- b. Site Walk: The pre-bid meeting concluded with a site walk. Bidders were encouraged to walk around and even come back to the site at a later date to view the site. Ms. Estabrook indicated that visits to the site after today should be preceded by a telephone call to Ray Cloutier to request access.
- c. Natural gas conversion project will be done during this construction contract. Propane bottles will need to be protected and contractor will need to work with/alongside the natural gas conversion company.

9. Contractor Questions:

- a. Can the fence be taken down as a contractor convenience?
 - i. Contractor may select means and methods in regards to work around the fence area in regards to whether or not to remove the fence. If fence is removed, it must be replaced as it was prior to removal, and the bottom of the fence fabric must be within 2" of the finished gravel surface if replaced.
 - ii. In the area of fence relocation, the fence must be installed in such a manner to ensure that the fence fabric bottom is 2 inches or less from the ground surface.
- b. Do we know the depth of the existing natural gas line?
 - i. The natural gas line contract required 24" deep cover but the natural gas line at other guard facilities was found at 18" – 20", so we cannot guarantee 24" depth.
- c. Assuming the excavation work is below the natural gas line, what is the bedding specification for the line?
 - i. Bedding shall be sand and shall encompass the natural gas line 6" in all directions.
- d. Do we know the existing gravel depth?
 - i. Hard to determine. Base is silt/sand/reclaim/gravel mix. See attached soil report from S. W. Cole.

Pre Bid Attendance sheet
Waterville Organizational Parking Repair Project

Fill out Completely and Please Print Clearly

Project # 23SC16-304-D **Bid # 15-041** **Date & Time: Thursday August 20, 9:00 am**

Incomplete or illegible information may exclude you from bidding

| Company name & Mailing address | Attendee Name | Phone # | e-mail |
|---|--------------------------------|--------------|--|
| Nelson Property Services 7 Hardy Rd | Mike Melanson | 207-252-7514 | Nelson property services@yahoo.com |
| Callahan Construction, LLC 630 Riverside Dr. Augusta, ME 04330 | Pete Callahan | 207-441-6081 | CallahanL@Yahoo.com |
| JAKE BARBOUR, INC. P.O. BOX 1178 ROCKLAND, ME | JAKE BARBOUR CARMEL OUELLET | 207-975-1515 | JAKE@JAKEBARBOUR.FNL.COM CARMEL@JAKEBARBOUR.INC.COM |
| A.H. STEVENSON INC. | Mike Needham | 207-655-3600 | ALake@Chstone.com ALAKE |
| SARGENT CORP. 378 BANCROFT RD. ST. LEWIS, ME | Michael Thibodeau | 207-827-4435 | POURAY E SARGENT-CORP.COM |
| R. A Paradis & Son Inc. 81 Blandell Rd. Newport | Justin Paradis Ron Paradis | 207-368-5432 | Justinparadis@Roadrunner.com |
| Marter Construction of Maine, Inc | Eddie Marten | 207-547-3500 | info@Marterconstruction.com |
| Ranger Contracting Inc. | Les Marcue | 207-509-5766 | Les@Ranger-Contracting.Com |
| E.L. Vining & Son, Inc. 563 Tamm Farm Road Farmington, ME 04938 | Steve Hunt | 207-778-4875 | Steve@elvining.com |
| Maine Earth 283 Western av Hamden ME | James McCarthy | 207-862-4300 | Jmccarthy@Mainearth.com JSargent@Mainearth.com |

REPORT

May 20, 2015
15-0305 S

Geotechnical Engineering Services

Proposed Waterville Armory Parking Lot Reconstruction
74 Drummond Avenue
Waterville, Maine

PREPARED FOR:

Department of Defense Veterans & Emergency Management
Attn: Darlene Estabrook
Building 8, Camp Keyes
Augusta, ME 04333-0033

PREPARED BY:

S. W. Cole Engineering, Inc.
37 Liberty Drive
Bangor, ME 04401-5784
(207) 848-5714



S.W. COLE
ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing*
- *GeoEnvironmental Services*
- *Ecological Services*

www.swcole.com

15-0305 S

May 20, 2015

Department of Defense Veterans & Emergency Management
Attention: Darlene Estabrook
Building 8, Camp Keyes
Augusta, ME 04333-0033

Subject: Geotechnical Engineering Services
Proposed Waterville Armory Parking Lot Reconstruction
74 Drummond Avenue
Waterville, Maine

Dear Darlene:

In accordance with our Proposal dated April 21, 2015, we have made a geotechnical assessment for the subject project. The purpose of our services was to explore the base and subgrade conditions at the site and provide recommendations relative to reconstruction. The assessment has included the making of nine test borings, laboratory testing, and a geotechnical evaluation of the findings. The contents of this report are subject to the Limitations set forth in Attachment A.

PROJECT CONDITIONS AND EXPLORATIONS

The project site is located at 74 Drummond Avenue in Waterville, Maine and consists of a fenced-in gravel area located on the west side of the existing armory building. We understand proposed construction will consist of reconstructing the parking and drive areas as a bituminous paved parking lot.

Ten test borings (designated B-1 through B-10) were made at the site on May 05, 2015 by New England Boring Contractors of Hermon, Maine working under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected and established in the field by S.W.COLE using measurements from existing site features. The approximate site location is shown on the "Site Location Map" attached as Sheet 1. The approximate test boring locations are shown on the "Exploration Location Plan"

attached as Sheet 1A. Logs of the test borings are attached as Sheets 2 through 11. A key to the notes and symbols used on the logs is attached as Sheet 12.

SUBSURFACE FINDINGS AND LABORATORY TESTING

The test borings generally encountered 5 to 9 inches of silty gravel and sand followed by loose to medium dense fine sand and silt or hard to very stiff clayey silt subgrade soils. The test borings were terminated in native soils at a depth of 7 feet.

Test Boring B-8 encountered varying layers of granular fill overlying a possible concrete slab at a depth of 2.7 to 3.7 feet overlying silty gravelly sand (fill) to a depth of at least 5 feet where the boring was terminated.

Groundwater was observed in Test Borings B-4, B-5, B-6 and B-10 at depths of 3.8, 3.6, 3.1 and 5.1 feet, respectively. Results of two grain size analyses performed on selected base samples recovered from the test borings are presented on Sheets 13 and 15. Based on the gradation test results and observation of samples, the base materials consist of silty gravelly sands with about 15 percent silt size particles. A third grain size analysis was performed on the native silt and sand with the results presented on Sheet 14.

Please refer to the boring logs and gradation test results for more detailed subsurface information.

EVALUATION AND RECOMMENDATIONS

The existing parking lot base gravel has poor drainage characteristics and is frost susceptible. We recommend that the proposed paved area be reconstructed with new base and subbase materials and new pavement.

We understand that the entrance drive and a large portion of the parking area will be subject to heavy vehicle loadings and the remainder of the parking areas will be subjected to passenger car and light truck traffic.

We recommend the following pavement sections for your consideration. The materials are based on Maine Department of Transportation Standard Specifications.

| BITUMINOUS PAVEMENT SECTIONS | | |
|---|----------------------|-------------------|
| Pavement Layer | Standard Duty | Heavy Duty |
| Maine DOT 12.5 mm Superpave (50 Gyration Design) | 1½ inches | 1½ inches |
| Maine DOT 19.0 mm Superpave (50 Gyration Design) | 2 inches | 2½ inches |
| Maine DOT Crushed Aggregate Base 703.06 Type A | 6 inches | 6 inches |
| Maine DOT Aggregate Subbase 703.06 Type D | 12 inches | 18 inches |
| Geotextile Stabilization Fabric (Mirafi 600X or equivalent) | | |

Given the variable subgrade soils and potential for saturated and disturbed subgrades, we recommend the use of a geotextile stabilization fabric such as Mirafi 600X (or equivalent) between subgrade soils and new subbase gravel.

The base and subbase materials should be compacted to at least 95 percent of their maximum dry densities as determined by ASTM D-1557 (Modified Proctor). Bituminous pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041. The binder and surface pavements should be placed during the same construction season. Tack coat between pavement layers is recommended.

Consideration should be given to the development of both surface and subgrade drainage. We recommend an underdrain be placed along the access road in the area of B-4 through B-6 and along the southwest edge of the paved area to provide positive drainage for the base/subbase materials. The underdrains may consist of 4-inch diameter slotted underdrain pipe with filter sock enveloped in Maine DOT 703.22 Type B Underdrain. The underdrains should be installed at a depth of 5 feet to provide frost protection and the outlets should be protected from freezing. The underdrains will require positive gravity outlets.

Where utilities are proposed beneath the new paved areas, backfilling of the utility trenches should be made in a manner to reduce differential frost action. Utility pipes

should be bedded and surrounded using materials consistent with the manufacturer's specifications. Above the utility bedding, backfill in trenches should be material similar to that in the trench sidewalls to lessen the potential for differential frost action between the trench and the adjacent materials. The backfill material should be placed in horizontal lifts not exceeding 12 inches in thickness and should be compacted to a density similar to that of the material in the adjacent trench sidewalls.

Frost penetration can be on the order of 5 feet or more in this area of the state. In the absence of full depth excavation of frost susceptible soils or use of insulation, frost will penetrate into the subgrade and some frost heaving and pavement distress must be anticipated.

CLOSURE

It is recommended that S.W.COLE be retained to observe subgrades and to provide observation and testing services during construction. This is to observe compliance with the design concepts and design recommendations and to allow design changes in the event that subsurface conditions are found to differ from those anticipated prior to start of construction.

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

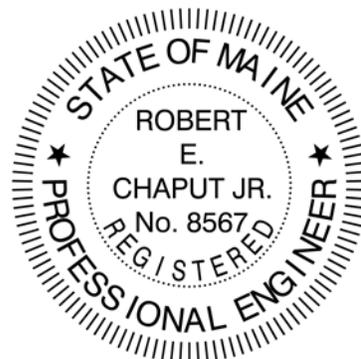
Sincerely,

S. W. Cole Engineering, Inc.

Kevin Hanscom
Geotechnical Engineer



Robert E. Chaput, P.E.
Senior Geotechnical Engineer



REC:kjh

ATTACHMENT A

Limitations

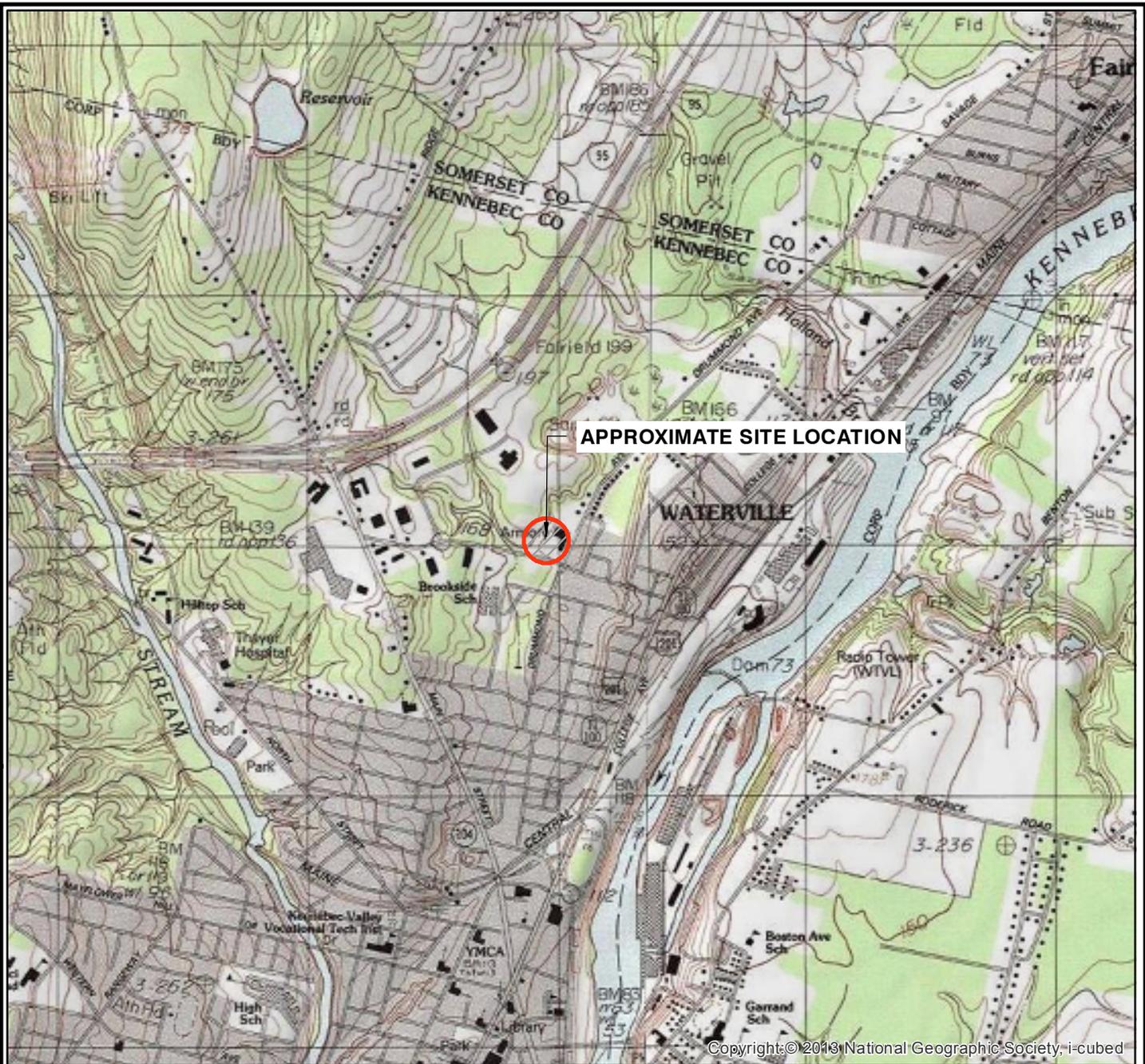
This report has been prepared for the exclusive use of Department of Defense Veterans & Emergency Management for specific application to the Proposed Waterville Armory Parking Lot Reconstruction at 74 Drummond Avenue in Waterville, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

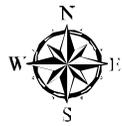
The analyses performed during this assessment and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.



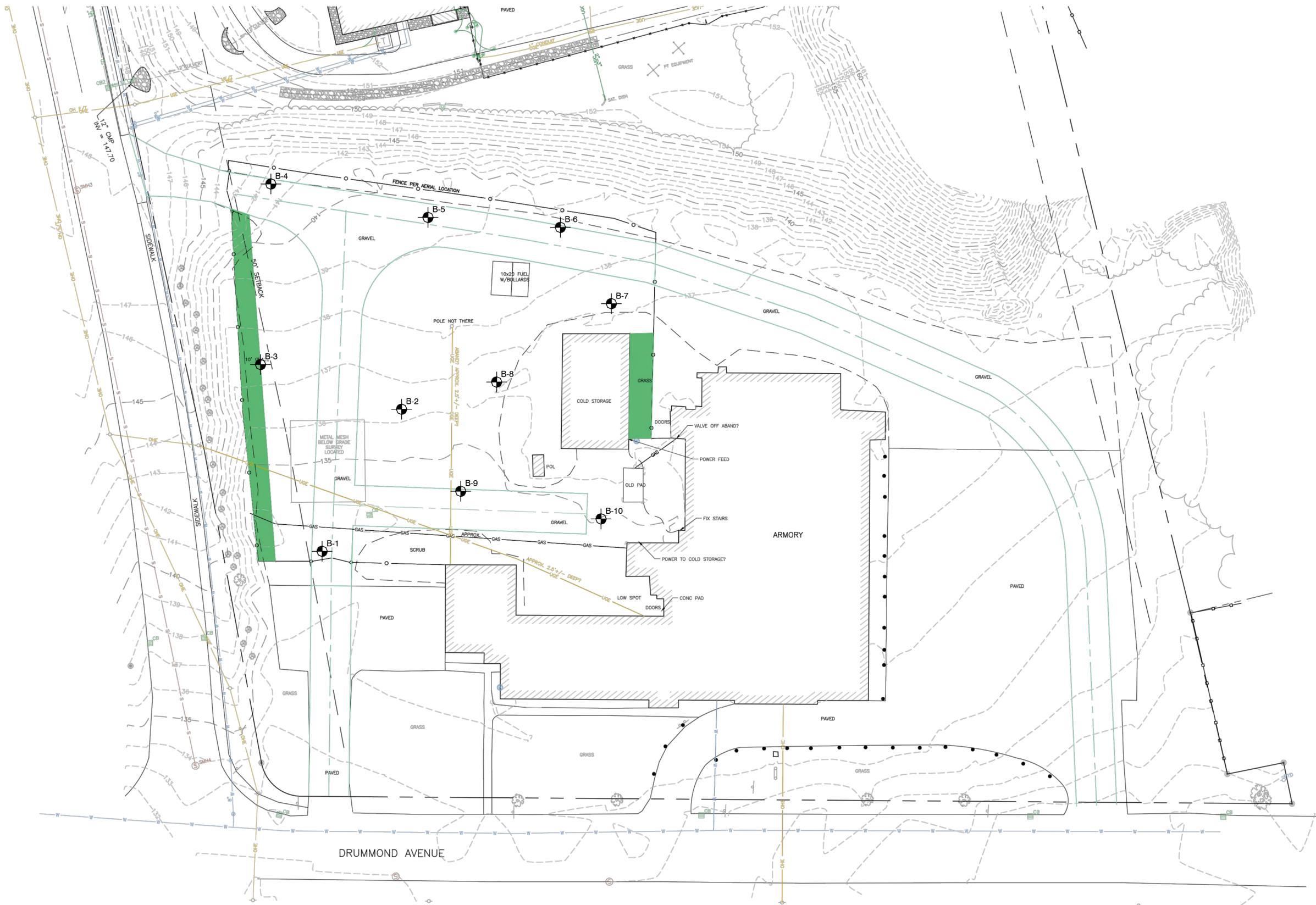
APPROXIMATE SITE LOCATION



DEPARTMENT OF DEFENSE VETERANS &
EMERGENCY MANAGEMENT
SITE LOCATION MAP
WATERVILLE ARMORY PARKING LOT RECONSTRUCTION
74 DRUMMOND AVENUE
WATERVILLE, MAINE

NOTE:
SITE LOCATION MAP PREPARED FROM
ESRI ArcGIS ONLINE AND DATA PARTNERS
INCLUDING USGS AND © 2007 NATIONAL
GEOGRAPHIC SOCIETY.

| | | | |
|---------|------------|-------|---------|
| Job No. | 15-0305 | Scale | 1:24000 |
| Date: | 05/08/2015 | Sheet | 1 |

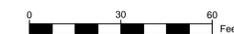


LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1" = 30' SCALE PLAN OF THE SITE ENTITLED "WATERVILLE ARMORY SITE PLAN," PREPARED BY OAK POINT ASSOCIATES AND DIRECTORATE OF FACILITIES ENGINEERING, DATED 12/09/2014, AND PROVIDED AS A PORTABLE DOCUMENT FORMAT (PDF).
2. THE BORINGS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.



| | |
|---|------------|
| | |
| DEPARTMENT OF DEFENSE VETERANS & EMERGENCY MANAGEMENT EXPLORATION LOCATION PLAN WATERVILLE ARMORY PARKING LOT RECONSTRUCTION 74 DRUMMOND AVENUE WATERVILLE, MAINE | |
| Job No.: | 15-0305 |
| Date: | 05/08/2015 |
| Scale: | 1" = 30' |
| Sheet: | 1A |

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BORING LOG

BORING NO.: **B-3**
 SHEET: 1 OF 1
 PROJECT NO.: 15-0305 S
 DATE START: 5/5/2015
 DATE FINISH: 5/5/2015
 ELEVATION: 137.5±
 SWC REP.: KJH
 WATER LEVEL INFORMATION
 NO FREE WATER OBSERVED

PROJECT / CLIENT: ARMORY PARKING AREA RECONSTRUCTION / U.S. DEPARTMENT OF DEFENSE
 LOCATION: 74 DRUMMOND AVENUE, WATERVILLE, MAINE
 DRILLING CO.: NEW ENGLAND BORING CONTR. DRILLER: TOM SHEAFER

CASING: TYPE HSA SIZE I.D. 2 1/2" HAMMER WT. HAMMER FALL
 SAMPLER: SS 1 3/8" 140 LB 30"
 CORE BARREL:

| CASING BLOWS PER FOOT | SAMPLE | | | | SAMPLER BLOWS PER 6" | | | | DEPTH | STRATA & TEST DATA |
|-----------------------|--------|------|------|-------------|----------------------|------|-------|-------|-------|--|
| | NO. | PEN. | REC. | DEPTH @ BOT | 0-6 | 6-12 | 12-18 | 18-24 | | |
| | | | | | | | | | 0.4' | BROWN SILTY GRAVEL AND SAND (FILL) |
| | 1D | 24" | 15" | 2.0' | 3 | 3 | 4 | 6 | 3.8' | BROWN FINE SAND AND SILT ~ MEDIUM DENSE ~ |
| | 2D | 24" | 18" | 4.0' | 5 | 5 | 5 | 5 | | |
| | 3D | 24" | 19" | 7.0' | 4 | 5 | 7 | 5 | 7.0' | BROWN SILTY FINE SAND ~ MEDIUM DENSE ~ |
| | | | | | | | | | | BOTTOM OF EXPLORATION @ 7.0' |

SAMPLES: D = SPLIT SPOON
 C = 2" SHELBY TUBE
 S = 3" SHELBY TUBE
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY: DRILLER - VISUALLY
 SOIL TECH. - VISUALLY
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

4

BORING NO.: **B-3**



BORING LOG

BORING NO.: **B-10**
 SHEET: 1 OF 1
 PROJECT NO.: 15-0305 S
 DATE START: 5/5/2015
 DATE FINISH: 5/5/2015
 ELEVATION: 135±
 SWC REP.: KJH

PROJECT / CLIENT: ARMORY PARKING AREA RECONSTRUCTION / U.S. DEPARTMENT OF DEFENSE
 LOCATION: 74 DRUMMOND AVENUE, WATERVILLE, MAINE
 DRILLING CO.: NEW ENGLAND BORING CONTR. DRILLER: TOM SHEAFER

CASING: TYPE HSA SIZE I.D. 2 1/2" HAMMER WT. HAMMER FALL
 SAMPLER: SS 1 3/8" 140 LB 30"
 CORE BARREL:

WATER LEVEL INFORMATION
WATER @ 5.1' AT COMPLETION OF BORING

| CASING BLOWS PER FOOT | SAMPLE | | | | SAMPLER BLOWS PER 6" | | | | DEPTH | STRATA & TEST DATA |
|-----------------------|--------|------|------|-------------|----------------------|------|-------|-------|-------|--|
| | NO. | PEN. | REC. | DEPTH @ BOT | 0-6 | 6-12 | 12-18 | 18-24 | | |
| | | | | | | | | | 0.8' | BROWN SILTY GRAVEL AND SAND (FILL) |
| | 1D | 24" | 15" | 2.0' | 8 | 8 | 6 | 5 | | BROWN FINE SAND AND SILT ~ MEDIUM DENSE BECOMING LOOSE WITH DEPTH ~ |
| | 2D | 24" | 18" | 4.0' | 4 | 5 | 6 | 6 | | |
| | 3D | 24" | 20" | 7.0' | 1 | 2 | 2 | 1 | 7.0' | |
| | | | | | | | | | | BOTTOM OF EXPLORATION @ 7.0' |

SAMPLES:
 D = SPLIT SPOON
 C = 2" SHELBY TUBE
 S = 3" SHELBY TUBE
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
 DRILLER - VISUALLY
 SOIL TECH. - VISUALLY
 LABORATORY TEST

REMARKS:
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.



KEY TO THE NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

- w - water content, percent (dry weight basis)
- q_u - unconfined compressive strength, kips/sq. ft. - laboratory test
- S_v - field vane shear strength, kips/sq. ft.
- L_v - lab vane shear strength, kips/sq. ft.
- q_p - unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
- O - organic content, percent (dry weight basis)
- W_L - liquid limit - Atterberg test
- W_P - plastic limit - Atterberg test
- WOH - advance by weight of hammer
- WOM - advance by weight of man
- WOR - advance by weight of rods
- HYD - advance by force of hydraulic piston on drill
- RQD - Rock Quality Designator - an index of the quality of a rock mass.
- γ_T - total soil weight
- γ_B - buoyant soil weight

Description of Proportions:

- Trace: 0 to 5%
- Some: 5 to 12%
- “Y” 12 to 35%
- And 35+%
- With Undifferentiated

Description of Stratified Soils

- Parting: 0 to 1/16” thickness
- Seam: 1/16” to 1/2” thickness
- Layer: ½” to 12” thickness
- Varved: Alternating seams or layers
- Occasional: one or less per foot of thickness
- Frequent: more than one per foot of thickness

REFUSAL: Test Boring Explorations - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: Test Pit Explorations - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

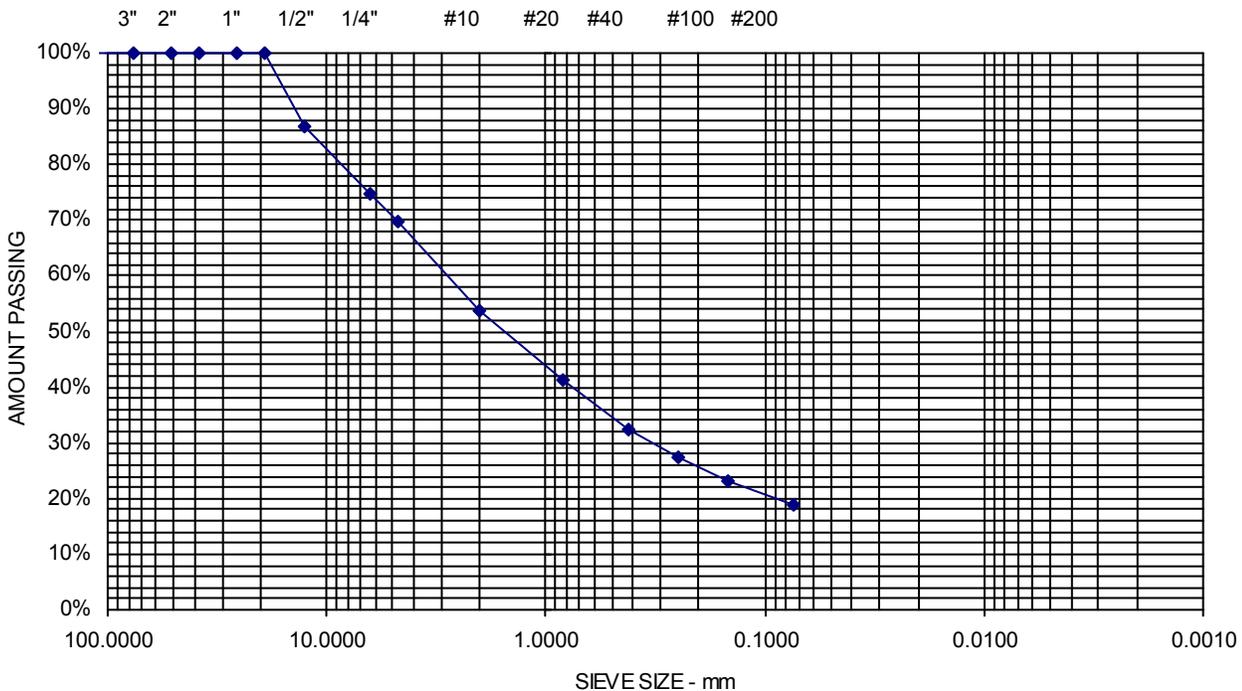
Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

Project Name WATERVILLE ME - WATERVILLE ARMORY PARKING LOT
RECONSTRUCTION - GEOTECHNICAL ENGINEERING SERVICES
Client DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANA
Exploration **B-5**
Material Source **1D, 0-0.5'**

Project Number 15-0305
Lab ID 18403B
Date Received 5/14/2015
Date Completed 5/15/2015
Tested By NICOLAS TRÉBOUET

| <u>STANDARD DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> | |
|-------------------------------------|-------------------|---------------------------|--------------|
| 150 | 6" | 100 | |
| 125 | 5" | 100 | |
| 100 | 4" | 100 | |
| 75 | 3" | 100 | |
| 50 | 2" | 100 | |
| 38.1 | 1-1/2" | 100 | |
| 25.0 | 1" | 100 | |
| 19.0 | 3/4" | 100 | |
| 12.5 | 1/2" | 87 | |
| 6.3 | 1/4" | 75 | |
| 4.75 | No. 4 | 70 | 30.1% Gravel |
| 2.00 | No. 10 | 54 | |
| 850 | No. 20 | 41 | |
| 425 | No. 40 | 32 | 51.2% Sand |
| 250 | No. 60 | 27 | |
| 150 | No. 100 | 23 | |
| 75 | No. 200 | 18.7 | 18.7% Fines |

SILTY GRAVELLY SAND

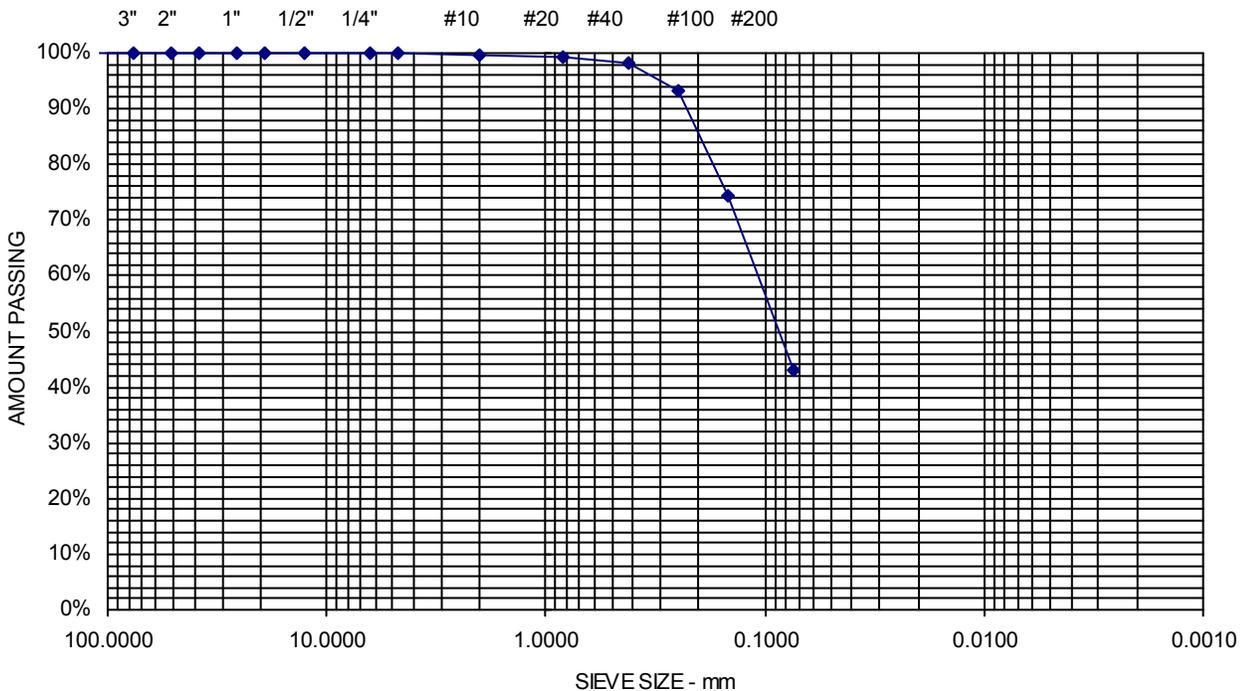


Project Name WATERVILLE ME - WATERVILLE ARMORY PARKING LOT
RECONSTRUCTION - GEOTECHNICAL ENGINEERING SERVICES
Client DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANA
Exploration **B-5**
Material Source **2D, 2-4'**

Project Number 15-0305
Lab ID 18404B
Date Received 5/14/2015
Date Completed 5/15/2015
Tested By NICOLAS TRÉBOUET

| <u>STANDARD DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> | |
|-------------------------------------|-------------------|---------------------------|-----------|
| 150 | 6" | 100 | |
| 125 | 5" | 100 | |
| 100 | 4" | 100 | |
| 75 | 3" | 100 | |
| 50 | 2" | 100 | |
| 38.1 | 1-1/2" | 100 | |
| 25.0 | 1" | 100 | |
| 19.0 | 3/4" | 100 | |
| 12.5 | 1/2" | 100 | |
| 6.3 | 1/4" | 100 | |
| 4.75 | No. 4 | 100 | 0% Gravel |
| 2.00 | No. 10 | 100 | |
| 850 | No. 20 | 99 | |
| 425 | No. 40 | 98 | 57% Sand |
| 250 | No. 60 | 93 | |
| 150 | No. 100 | 74 | |
| 75 | No. 200 | 43.0 | 43% Fines |

FINE SAND AND SILT

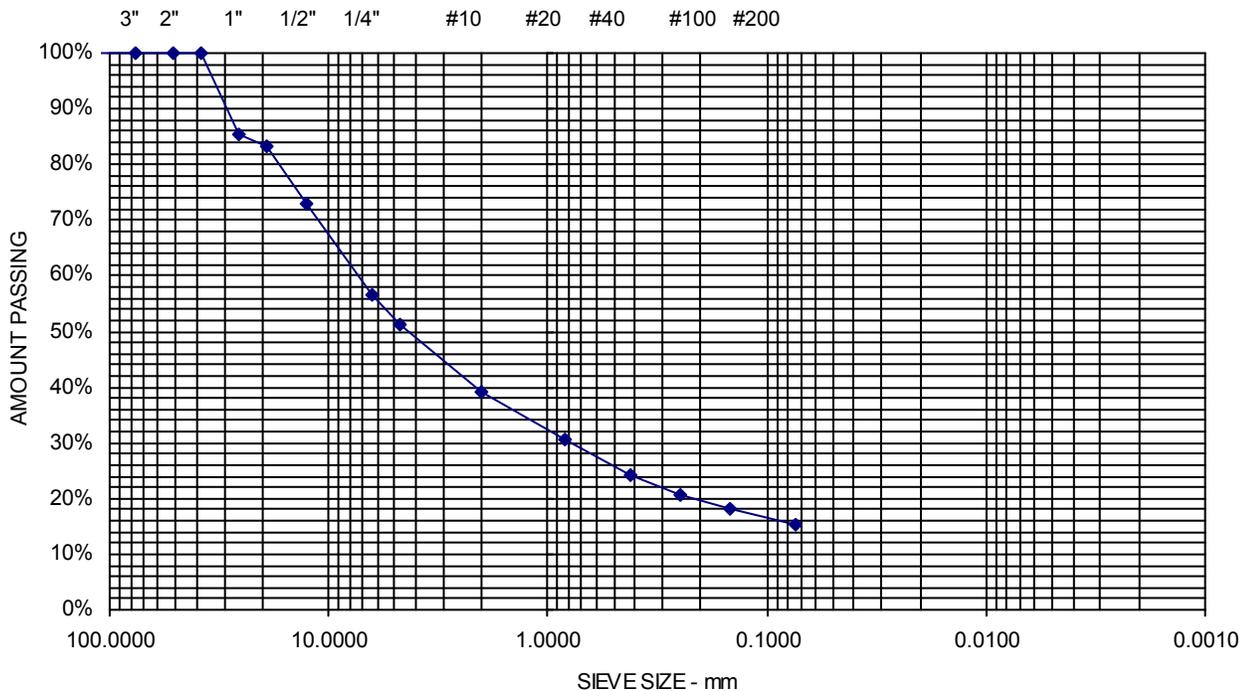


Project Name WATERVILLE ME - WATERVILLE ARMORY PARKING LOT
RECONSTRUCTION - GEOTECHNICAL ENGINEERING SERVICES
Client DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANA
Exploration **B-9**
Material Source **1D, 0-0.8'**

Project Number 15-0305
Lab ID 18405B
Date Received 5/14/2015
Date Completed 5/15/2015
Tested By NICOLAS TRÉBOUET

| <u>STANDARD DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> | |
|-------------------------------------|-------------------|---------------------------|--------------|
| 150 | 6" | 100 | |
| 125 | 5" | 100 | |
| 100 | 4" | 100 | |
| 75 | 3" | 100 | |
| 50 | 2" | 100 | |
| 38.1 | 1-1/2" | 100 | |
| 25.0 | 1" | 85 | |
| 19.0 | 3/4" | 83 | |
| 12.5 | 1/2" | 73 | |
| 6.3 | 1/4" | 56 | |
| 4.75 | No. 4 | 51 | 48.7% Gravel |
| 2.00 | No. 10 | 39 | |
| 850 | No. 20 | 31 | |
| 425 | No. 40 | 24 | 35.8% Sand |
| 250 | No. 60 | 21 | |
| 150 | No. 100 | 18 | |
| 75 | No. 200 | 15.5 | 15.5% Fines |

SILTY GRAVEL AND SAND





Plymouth Engineering, Inc.

P.O. Box 46 – 30 Lower Detroit Road

Plymouth, Maine 04969

info@plymouthengineering.com

tel: (207) 257-2071 fax: (207) 257-2130

August 17, 2015

Job #: 15044

| Contractor Deliverable | Referenced Section | Time Frame |
|--|--|--|
| Proposed Phasing and Project Schedule | 01 00 00, Part 1.02-A.3 01 00 00, Part 1.05-C.1 | Within 10 working days of Owner-Contractor Agreement * |
| Schedule of values | 01 00 00, Part 1.05-D | Within 10 working days of Owner-Contractor Agreement * |
| Pre-Construction Meeting request | 00 72 13, Part 1.1 and 01 00 00, Part 1.04-A | Prior to commencing work |
| List of subcontractors & independent contractors on the job site | 00 72 13, Part 13.5 | Prior to work |
| Request work on Holidays | 01 00 00, Part 1.01-D.3 | 2 working days' notice |
| Request access in buildings | 01 00 00, Part 1.01-D.5 | 2 working days' notice |
| Product Lists | 01 00 00, Part 1.08-D | Within 15 days of Owner-Contractor Agreement * |
| Samples | 00 72 13, Part 7.1 | Before affected work starts |
| Shop Drawings | 00 72 13, Part 6 00 72 13, Page 18 | Before affected work starts |
| Product data sheets | 01 00 00, Part 1.05-F | With each submittal |
| Manufacturer's Instructions | 01 00 00, Part 1.05-G | With each submittal |
| Manufacturer's certificates | 01 00 00, Part 1.06-D | With each submittal |
| Construction Logs | 00 72 13, Part 6.3 | Monthly |
| Progress Meetings | 01 00 00, Part 1.04-C | As agreed to |
| Progress Meeting Minutes | 01 00 00, Part 1.04-C.2 | Distribute within 2 days of meeting |
| Initial progress schedule | 01 00 00, Part 1.05-C.1 | As Agreed |
| Final progress schedule | 01 00 00, Part 1.05-C.2 | 4 days after Owner comments received |
| Revised progress schedule | 01 00 00, Part 1.05-C.4 | With each pay requisition |
| Revised schedule of values | 01 00 00, Part 1.05-D.5 | With each pay requisition |
| Pay Requisition | 01 00 00, Part 1.01-J | Monthly |
| Monthly payroll records | 00 72 13, Part 13.3 | Monthly with Pay Requisition, only when Maine wage determination required. |
| Change Order Notification | 00 72 13, Part 26.13 | Immediately upon notice |
| Change Order Request | 00 72 13, Part 26.14 | Within 10 days of instruction from Designer |
| Submittal submissions | 01 00 00, Part 1.05 | As required |
| Start-up of systems | 01 00 00, Part 3.02-B | Notify Designer 7 Days prior to start-up |
| System/ equipment functionality Reports | 01 00 00, Part 3.02-G | Upon proper functioning |
| Demonstration of products | 01 00 00, Part 3.03-A | Two weeks prior to Substantial Completion |
| Test certification reports | 01 00 00, part 3.04-A | Upon completion of tests |

| | | |
|---------------------------------------|--|---|
| Closeout documentation | 01 00 00, Part 1.09-A.1 01 00 00, Part 3.06-G | 10 days prior to Substantial Completion date |
| O&M Manual Submission | 01 00 00, part 3.07.5 | 10 days prior to Substantial Completion date |
| Certificate of Substantial Completion | 01 00 00, Part 1.09-A.2 01 00 00, Page 20 | When work is complete in accordance with Contract Documents so Owner can occupy/utilize the Work for its intended use |
| Written notice of Final Completion | 01 00 00, Part 1.09-A.3 | 7 calendar days prior to Owner final inspection |
| Release of Liens & Claims | 01 00 00, Part 1.09-A.4 | With final Pay Requisition |
| Waste Disposal Tracking Sheet | 01 35 43, Part 3.03-A.2 01 35 43, Page 5 | With final Pay Requisition |
| Product Warrantees and Bonds | 01 00 00, Part 3.08 | Before final Pay Requisition |

*Owner-Contractor Agreement date is date of BGS Division Director signature on contract.